Steve Miller
Mayor

Mark Scharringhausen
Council Member at Large

Chad Oberson
Council Member at Large

Bill Woeste
Council Member at Large

Leslie Besl
Council Member, 1st Ward

Dale Paullus
Councilmember, 2nd Ward

Terry Senger
Councilmember, 3rd Ward

Tim Abbott
Council Member, 4th Ward

CITY OF FAIRFIELD CITY COUNCIL
REGULAR MEETING AGENDA
MONDAY, SEPTEMBER 14, 2020 7:00 PM
5350 PLEASANT AVENUE, FAIRFIELD, OH 45014

Guidelines for Citizen Comments: Thank you for your interest and participation in city government. Fairfield City Council's Guidelines for Citizen Comments describe the rules for addressing City Council. The guidelines are posted in the Council Chambers.

ADA Notice: The City of Fairfield is pleased to provide accommodations to disabled individuals or groups and encourage full participation in city government. Should special accommodations be required, please contact the Clerk of Council at 867-5383 at least 48 hours in advance of the meeting.

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1. COUNCIL-MANAGER BRIEFING

A. 6:00 PM - Water & Sewer Rate Study Review

2. BUSINESS MEETING CALL TO ORDER

3. PRAYER/PLEDGE OF ALLEGIANCE

4. ROLL CALL

5. AGENDA MODIFICATIONS

6. EXECUTIVE SESSION REQUESTS

7. SPECIAL PRESENTATIONS AND CITIZEN COMMENTS

8. PUBLIC HEARING(S)

9. APPROVAL OF MINUTES

a. Regular Meeting held August 24, 2020

10. OLD BUSINESS AND REPORTS

A. COMMUNITY & PUBLIC RELATIONS COMMITTEE

Dale Paullus, Chair; Leslie Besl, Vice Chair; Terry Senger, Member

B. DEVELOPMENT SERVICES COMMITTEE

Bill Woeste, Chair; Tim Abbott, Vice Chair; Mark Scharringhausen, Member

1. Ordinance to amend Section 1113.01 of Ordinance No. 166-84, the Codified Ordinances of Fairfield, Ohio, to adopt an amended Design, Construction and Materials Specification Handbook, 2020 Sixth Edition.

   • Legislation - Second Reading (see attached Planning Commission Recommendation)

C. PARKS, RECREATION AND ENVIRONMENT COMMITTEE

Leslie Besl, Chair; Dale Paullus, Vice Chair; Tim Abbott, Member

D. PUBLIC SAFETY COMMITTEE

Mark Scharringhausen, Chair; Terry Senger, Vice Chair; Dale Paullus, Member

E. PUBLIC WORKS COMMITTEE

Chad Oberson, Chair; Mark Scharringhausen, Vice Chair; Bill Woeste, Member

1. Ordinance to authorize the release of the maintenance bond and accept the public improvements for the Palomino Estates Subdivision.

   • Legislation - Second Reading

F. PUBLIC UTILITIES COMMITTEE

Terry Senger, Chair; Chad Oberson, Vice Chair; Leslie Besl, Member

G. FINANCE & BUDGET COMMITTEE

Tim Abbott, Chair; Bill Woeste, Vice Chair; Chad Oberson, Member

11. NEW BUSINESS

A. PUBLIC WORKS COMMITTEE

Chad Oberson, Chair; Mark Scharringhausen, Vice Chair; Bill Woeste, Member

1. Ordinance to authorize the City Manager to execute the Electric Vehicle Charging Station Grant Application and Agreement with the Ohio Environmental Protection Agency (OEPA) for the Fairfield Community Arts Center and declaring an emergency.

   • Motion - Read by Title Only (Optional)
   • Legislation - First Reading
   • Motion - Suspend Second and Third Readings
   • Motion - Adoption

2. Ordinance to authorize the City Manager to execute and file the application for financial assistance and enter into an agreement with ODOT for a grant to fund a major portion of the Route 4/Seward Road Improvement Project and declaring an emergency.

- Motion - Read by Title Only (Optional)
- Legislation - First Reading
- Motion - Suspend Second and Third Readings
- Motion - Adoption

B. PUBLIC UTILITIES COMMITTEE

Terry Senger, Chair; Chad Oberson, Vice Chair; Leslie Besl, Member

1. Ordinance to authorize the City Manager to enter into a contract with Ferguson Waterworks for water meters and an automated meter reading system, and declaring an emergency.

   - Motion - Read by Title Only (Optional)
   - Legislation - First Reading
   - Motion - Suspend Second and Third Readings
   - Motion - Adoption

C. FINANCE & BUDGET COMMITTEE

Tim Abbott, Chair; Bill Woeste, Vice Chair; Chad Oberson, Member

1. Resolution Accepting the Amounts and Rates as Determined by the Budget Commission and authorizing the necessary tax levies and certifying them to the County Auditor.

   - Motion - Read by Title Only (Optional)
   - Legislation - First Reading
   - Motion - Suspend Second and Third Readings
   - Motion - Adoption

2. Ordinance to amend Ordinance No. 119-19 entitled "An Ordinance to make estimated appropriations for the expenses and other expenditures of the City of Fairfield, Ohio, during a period beginning January 1, 2020, and ending December 31, 2020."
   Contractual Appropriations: $250,000 for water meters and advanced automated meter reading system.

   - Motion - Read by Title Only (Optional)
   - Legislation - First Reading
   - Motion - Suspend Second and Third Readings
   - Motion - Adoption

3. Ordinance to amend Ordinance No. 119-19 entitled "An Ordinance to make estimated appropriations for the expenses and other expenditures of the City of Fairfield, Ohio, during a period beginning January 1, 2020, and ending December 31, 2020."
   Non-Contractual Appropriations: $32,985 for golf course maintenance and improvements; $37,500 for IT-Video surveillance archivers; $10,000 for cameras for Central Traffic System; $14,500 for High Service Pump 6 Rebuild; $44,931 for Energy Management Software upgrade; $19,000 for clarifier walkway repairs;

$27,000 for raw water well 8 pump; $15,000 for miscellaneous traffic signal upgrades/spare parts; $10,720 for permanent radar signs for two school zones; $8,800 for Turblex Blower service at Wastewater Treatment Plant; $42,650 for Network Infrastructure (multiple vendors).

- Motion - Read by Title Only (Optional)
- Legislation - First Reading
- Motion - Suspend Second and Third Readings
- Motion - Adoption

12. MEETING SCHEDULE

A. Monday, September 28 - Council-Manager Briefing, 6:00 PM; Regular Meeting 7:00 PM

B. Tuesday, October 13 - Council-Manager Briefing, 6:00 PM; Regular Meeting 7:00 PM

C. Monday, October 26 - Council-Manager Briefing, 6:00 PM; Regular Meeting 7:00 PM

13. EXECUTIVE SESSION OF COUNCIL (IF NEEDED)

14. ADJOURNMENT

City of Fairfield
Minutes
Regular Meeting of City Council
August 24, 2020

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

Council-Manager Briefing

6:00 PM - Financial Update

Financial Update

Mayor Miller called the briefing to order at 6:00 PM. Councilmembers present: Leslie Besl, Dale Paullus, Terry Senger, Tim Abbott, Mark Scharringhausen, Chad Oberson and Bill Woeste.

Staff members present: Mark Wendling, Dan Wendt, Scott Timmer, Steve Wolterman, Alisha Wilson, Steve Maynard, Don Bennett, Adam Sackenheim, Ben Mann, Greg Kathman, Tiphanie Howard.

Finance Director Scott Timmer presented the financial update for the city for 2020. See attached slides.

Business Meeting Call to Order

Mayor Miller called the Regular Meeting to order at 7:00 PM.

Prayer/Pledge of Allegiance

Councilmember Senger led in prayer and Pledge of Allegiance.

Roll Call

Councilmembers present included:

Attendee Name	Title	Status	Arrived
Mark Scharringhausen	Council Member at Large	Present	
Chad Oberson	Council Member at Large	Present	
Bill Woeste	Council Member at Large	Present	
Leslie Besl	Council Member, 1st Ward	Present	
Dale Paullus	Councilmember, 2nd Ward	Present	
Terry Senger	Councilmember, 3rd Ward	Present	
Tim Abbott	Council Member, 4th Ward	Present	
Steve Miller	Mayor	Present	

Agenda Modifications

None.

Executive Session Requests

Councilmember Abbott, seconded by Councilmember Paullus, moved for Executive Session to discuss pending and imminent litigation and the status of collective bargaining with public employees. Motion carried 7-0.

Special Presentations and Citizen Comments

Public Hearing(s)

Joint Public Hearing - Construction Handbook Update

Mayor Miller opened the joint public hearing at 7:02 PM. Planning Commission members present: Dean Langevin, Melissa O'Brien, Don Hassler, Scott Lepsky and Brian Begley. Commissioner Lepsky, seconded by Commissioner Langevin, moved to excuse Commissioner Ritchie. Motion carried 5-0. Clerk Wilson read the Joint Public Hearing Notice. Development Services Director Greg Kathman presented the proposed updates to the Construction Handbook. See attached slides. Mayor Miller closed the joint public hearing at 7:07 PM.

Approval of Minutes

The Regular Meeting Minutes of August 10, 2020 were approved as written and submitted.

OLD BUSINESS AND REPORTS

Community & Public Relations Committee

Dale Paullus, Chair; Leslie Besl, Vice Chair; Terry Senger, Member

Development Services Committee

Bill Woeste, Chair; Tim Abbott, Vice Chair; Mark Scharringhausen, Member

Ordinance to amend Section 1113.01 of Ordinance No. 166-84, the Codified Ordinances of Fairfield, Ohio, to adopt an amended Design, Construction and Materials Specification Handbook, 2020 Sixth Edition.

Recommendation:
It is recommended that Council hold a first reading on August 10, schedule a joint public hearing with Planning Commission for August 24, and await a written recommendation from Planning Commission.

The second reading of this ordinance was held pending Planning Commission recommendation.

RESULT:	**TABLED [UNANIMOUS]**	**Next: 9/14/2020 7:00 PM**
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott	

Parks, Recreation and Environment Committee

Leslie Besl, Chair; Dale Paullus, Vice Chair; Tim Abbott, Member

Public Safety Committee

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

Mark Scharringhausen, Chair; Terry Senger, Vice Chair; Dale Paullus, Member

Public Works Committee

Chad Oberson, Chair; Mark Scharringhausen, Vice Chair; Bill Woeste, Member

Public Utilities Committee

Terry Senger, Chair; Chad Oberson, Vice Chair; Leslie Besl, Member

Finance & Budget Committee

Tim Abbott, Chair; Bill Woeste, Vice Chair; Chad Oberson, Member

NEW BUSINESS

Community & Public Relations Committee

Dale Paullus, Chair; Leslie Besl, Vice Chair; Terry Senger, Member

Simple Motion: Motion to approve the following 2020 Boards/Commissions Appointments effective August 24, 2020: Kevin Corey - Income Tax Review Board (term ending 3/31/21)

Recommendation:
It is recommended that City Council, via simple motion, appoint the following residents to serve on the various boards and commissions **effective August 24, 2020**:

Kevin Corey - Income Tax Review Board (term ending 3/31/21)

SIMPLE MOTION NO. 14-20. APPROVED 7-0.

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Dale Paullus, Councilmember, 2nd Ward
SECONDER:	Chad Oberson, Council Member at Large
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Public Safety Committee

Mark Scharringhausen, Chair; Terry Senger, Vice Chair; Dale Paullus, Member

Motion to Read by Title Only

Motion to read one ordinance by title only.

RESULT:	**CARRIED [UNANIMOUS]**
MOVER:	Mark Scharringhausen, Council Member at Large
SECONDER:	Tim Abbott, Council Member, 4th Ward
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Motion to Suspend Second and Third Readings

Councilmember Scharringhausen presented the first reading of this ordinance.

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

RESULT:	**CARRIED [UNANIMOUS]**
MOVER:	Mark Scharringhausen, Council Member at Large
SECONDER:	Dale Paullus, Councilmember, 2nd Ward
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Ordinance to authorize the City Manager to execute the application for an accept the AFG Grant for the replacement of commercial laundry equipment for the Fire Department in the amount of $55,800 and declaring an emergency.

ORDINANCE NO. 67-20. APPROVED 7-0.

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Mark Scharringhausen, Council Member at Large
SECONDER:	Chad Oberson, Council Member at Large
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Public Works Committee

Chad Oberson, Chair; Mark Scharringhausen, Vice Chair; Bill Woeste, Member

Motion to Read by Title Only

Motion to read one ordinance by title only.

RESULT:	**CARRIED [UNANIMOUS]**
MOVER:	Chad Oberson, Council Member at Large
SECONDER:	Bill Woeste, Council Member at Large
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Ordinance to authorize the release of the maintenance bond and accept the public improvements for the Palomino Estates Subdivision.

Recommendation:
It is recommended that City Council authorize and direct preparation of legislation accepting these public improvements.

Councilmember Oberson presented the first reading of this ordinance.

RESULT:	**FIRST READING Next: 9/14/2020 7:00 PM**

Public Utilities Committee

Terry Senger, Chair; Chad Oberson, Vice Chair; Leslie Besl, Member

Motion to Read by Title Only

Motion to read one ordinance by title only. Councilmember Abbott recused himself and stepped out of the room.

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

RESULT:	**CARRIED [6 TO 0]**
MOVER:	Terry Senger, Councilmember, 3rd Ward
SECONDER:	Dale Paullus, Councilmember, 2nd Ward
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger
RECUSED:	Abbott

Motion to Suspend Second and Third Readings

Councilmember Senger presented the first reading of this ordinance. He commended the Public Utilities Department for negotiating this agreement to save the city over $200,000.

RESULT:	**CARRIED [6 TO 0]**
MOVER:	Terry Senger, Councilmember, 3rd Ward
SECONDER:	Dale Paullus, Councilmember, 2nd Ward
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger
RECUSED:	Abbott

Ordinance to authorize the City Manager to enter into a Master Supply Agreement with Interstate Gas Supply, Inc. d/b/a IGS Energy for competitive retail electric service and electric power for all municipal facilities and lights, from January 2021 to December 2024 and declaring an emergency.

Recommendation:
It is recommended that City Council authorize the City Manager to execute and enter into a Master Supply Agreement with IGS Energy for competitive retail electric service and electric power for all municipal facilities and lights, from January 2021 to December 2024.

ORDINANCE NO. 68-20. APPROVED 6-0.

Councilmember Abbott returned to the meeting.

RESULT:	**ADOPTED [6 TO 0]**
MOVER:	Terry Senger, Councilmember, 3rd Ward
SECONDER:	Leslie Besl, Council Member, 1st Ward
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger
RECUSED:	Abbott

Finance & Budget Committee

Tim Abbott, Chair; Bill Woeste, Vice Chair; Chad Oberson, Member

Motion to Read by Title Only

Motion to read the following three ordinances by title only.

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

RESULT:	**CARRIED [UNANIMOUS]**
MOVER:	Tim Abbott, Council Member, 4th Ward
SECONDER:	Bill Woeste, Council Member at Large
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Ordinance to amend Ordinance No. 119-19 entitled "An Ordinance to make estimated appropriations for the expenses and other expenditures of the City of Fairfield, Ohio, during a period beginning January 1, 2020, and ending December 31, 2020." - Supplemental Appropriations

Recommendation:
It is recommended that City Council authorize and direct the preparation of legislation amending the annual operating budget for 2020.

ORDINANCE NO. 69-20. APPROVED 7-0.

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Tim Abbott, Council Member, 4th Ward
SECONDER:	Bill Woeste, Council Member at Large
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Motion to Suspend Second and Third Readings

Councilmember Abbott presented the first reading of this ordinance.

RESULT:	**CARRIED [UNANIMOUS]**
MOVER:	Tim Abbott, Council Member, 4th Ward
SECONDER:	Dale Paullus, Councilmember, 2nd Ward
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Ordinance to amend Ordinance No. 119-19 entitled "An Ordinance to make estimated appropriations for the expenses and other expenditures of the City of Fairfield, Ohio, during a period beginning January 1, 2020, and ending December 31, 2020."

Recommendation:
It is recommended that City Council suspend the rules requiring a second and third reading of this Ordinance and adopt the appropriations listed above.

ORDINANCE NO. 70-20. APPROVED 7-0.

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Tim Abbott, Council Member, 4th Ward
SECONDER:	Bill Woeste, Council Member at Large
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Motion to Suspend Second and Third Readings

Councilmember Abbott presented the first reading of this ordinance.

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

RESULT:	**CARRIED [UNANIMOUS]**
MOVER:	Tim Abbott, Council Member, 4th Ward
SECONDER:	Dale Paullus, Councilmember, 2nd Ward
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Ordinance to amend Ordinance No. 119-19 entitled "An Ordinance to make estimated appropriations for the expenses and other expenditures of the City of Fairfield, Ohio, during a period beginning January 1, 2020, and ending December 31, 2020."

Recommendation:
It is recommended that City Council suspend the rules requiring a second and third reading of this Ordinance and adopt the appropriations listed above.

ORDINANCE NO. 71-20. APPROVED 7-0.

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Tim Abbott, Council Member, 4th Ward
SECONDER:	Terry Senger, Councilmember, 3rd Ward
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Motion to Suspend Second and Third Readings

Councilmember Abbott presented the first reading of this ordinance.

RESULT:	**CARRIED [UNANIMOUS]**
MOVER:	Tim Abbott, Council Member, 4th Ward
SECONDER:	Bill Woeste, Council Member at Large
AYES:	Scharringhausen, Oberson, Woeste, Besl, Paullus, Senger, Abbott

Meeting Schedule

Clerk Wilson read the following meeting schedule:

A. Monday, September 14th - Council-Manager Briefing, 6:00 PM; Regular Meeting 7:00 PM

B. Monday, September 28th - Council-Manager Briefing, 6:00 PM; Regular Meeting 7:00 PM

C. Tuesday, October 13th - Council-Manager Briefing, 6:00 PM; Regular Meeting 7:00 PM

Executive Session of Council (if needed)

Council recessed to Executive Session at 7:20 PM.

14. ADJOURNMENT

The Regular Meeting adjourned at 7:40 PM.

ATTEST:

_____

Clerk of Council

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

_____
Mayor's Approval

Date Approved_____

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

FAIRFIELD
OHIO

Financial Update

Monday, August 24, 2020

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

Agenda

- General Fund
  - ✓ Revenue Year-to-Date
  - ✓ Income Tax Withholding Analysis (General Fund Only)
- Income Tax
  - ✓ All Funds
  - ✓ All Types
- Water and Sewer Revenue Funds
- Departmental Operating Expenditures
- Capital Improvement Program Update
- CARES Act Funding

General Fund – Revenue Year-to-Date

- Total General Fund Revenue – July 31
  - ✓ 2019 - $19,547,785.88
  - ✓ 2020 - $19,251,618.08
  - ✓ Down 1.52%
- Primary Revenue Sources
  - ✓ Income Tax – Down 0.81% (82.2% of General Fund Revenue)
    - Up 2.0% from estimated receipts
  - ✓ Property Tax - Down 0.38% (3.7% of General Fund Revenue)

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General Fund – Withholding Data – Quarterly Analysis

Q1-2006	3,302,081.06	1.53%	Q2-2006	3,397,562.81	7.36%	Q3-2006	3,217,737.80	5.46%	Q4-2006	3,551,010.02	4.6
Q1-2007	3,524,258.18	6.73%	Q2-2007	3,512,650.16	3.39%	Q3-2007	4,078,354.61	26.75%	Q4-2007	3,633,360.14	2.3
Q1-2008	3,859,431.22	9.51%	Q2-2008	3,438,947.02	-2.10%	Q3-2008	3,493,843.56	-14.33%	Q4-2008	3,572,818.07	-1.6
Q1-2009	3,618,384.80	-6.25%	Q2-2009	3,317,088.80	-3.54%	Q3-2009	3,329,513.60	-4.70%	Q4-2009	3,398,408.00	-4.8
Q1-2010	3,496,315.52	-3.37%	Q2-2010	3,345,409.17	0.85%	Q3-2010	3,304,829.93	-0.74%	Q4-2010	3,451,925.87	1.5
Q1-2011	3,687,155.22	5.46%	Q2-2011	3,582,403.16	7.08%	Q3-2011	3,253,147.09	-1.56%	Q4-2011	3,642,492.61	5.5
Q1-2012	3,713,607.38	0.72%	Q2-2012	3,731,162.30	4.15%	Q3-2012	3,736,818.68	14.87%	Q4-2012	3,657,324.16	0.4
Q1-2013	3,653,023.49	-1.63%	Q2-2013	4,055,280.97	8.69%	Q3-2013	3,843,530.33	2.86%	Q4-2013	3,599,165.78	-1.5
Q1-2014	4,299,484.62	17.70%	Q2-2014	4,101,731.44	1.15%	Q3-2014	4,052,441.56	5.44%	Q4-2014	3,830,271.66	6.4
Q1-2015	4,724,755.88	9.89%	Q2-2015	4,086,130.03	-0.38%	Q3-2015	3,990,155.09	-1.54%	Q4-2015	4,326,109.63	12.9
Q1-2016	4,688,622.71	-0.76%	Q2-2016	4,463,474.10	9.23%	Q3-2016	4,110,701.53	3.02%	Q4-2016	4,593,127.62	6.1
Q1-2017	4,584,657.95	-2.22%	Q2-2017	5,326,158.05	19.33%	Q3-2017	4,429,377.75	7.75%	Q4-2017	4,760,000.32	3.6
Q1-2018	4,758,413.33	3.79%	Q2-2018	5,392,504.94	1.25%	Q3-2018	4,878,974.86	10.15%	Q4-2018	4,708,172.61	-1.0
Q1-2019	4,896,304.81	2.90%	Q2-2019	5,328,088.70	-1.19%	Q3-2019	4,926,750.41	0.98%	Q4-2019	4,891,434.58	3.8
Q1-2020	5,442,658.80	11.16%	Q2-2020	5,228,507.38	-1.87%						

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Income Tax – All Funds & Types

Individual	2018	2019	2020
Jan	170,672.81	300,202.07	264,845.06
Feb	191,593.73	165,674.22	161,138.34
Mar	354,684.91	318,534.50	283,574.70
Apr	1,300,019.17	1,303,768.58	335,964.17
May	130,795.93	48,606.94	125,433.57
Jun	261,996.91	273,520.30	323,361.95
Jul	104,216.96	114,889.77	863,733.65
	2,513,980.42	2,525,196.38	2,358,051.44

Down 6.6% '19 to '20

Withholding	2018	2019	2020
Jan	2,211,702.56	2,041,846.17	2,228,365.07
Feb	1,763,387.96	2,004,451.53	2,376,965.91
Mar	1,972,926.14	2,074,083.31	2,197,992.52
Apr	3,056,346.97	2,765,031.06	2,792,656.73
May	1,887,099.33	1,827,186.94	1,834,408.29
Jun	1,797,184.88	2,067,892.87	1,908,569.20
Jul	2,109,003.17	2,054,077.30	1,923,781.50
	14,797,651.01	14,834,569.18	15,262,739.22

Up 2.9% '19 to '20

Business	2018	2019	2020
Jan	125,976.05	82,700.63	102,724.61
Feb	67,076.89	234,349.33	102,325.19
Mar	368,670.90	319,545.12	485,619.92
Apr	1,033,658.84	1,174,700.46	213,278.30
May	91,906.85	146,712.67	110,903.24
Jun	248,512.72	464,956.59	203,674.59
Jul	55,740.32	161,001.78	942,792.07
	1,991,542.57	2,583,966.58	2,161,317.92

Down 16.4% '19 to '20

Total	2018	2019	2020
Jan	2,508,351.42	2,424,748.87	2,595,934.74
Feb	2,022,058.58	2,404,475.08	2,640,429.44
Mar	2,696,281.95	2,712,162.93	2,967,187.14
Apr	5,390,024.98	5,243,500.10	3,341,899.20
May	2,109,802.11	2,022,506.55	2,070,745.10
Jun	2,307,694.51	2,806,369.76	2,435,605.74
Jul	2,268,960.45	2,329,968.85	3,730,307.22
	19,303,174.00	19,943,732.14	19,782,108.58

Down 0.81% '19 to '20

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

Water and Sewer – Revenue Year-to-Date

- Water Revenue Fund & Water Replacement & Improvement Fund
  - ✓Metered Sales (Water)
    - 2019 - $3,936,448.99
    - 2020 - $4,192,980.09
    - Up 6.52%

- Sewer Revenue Fund & Sewer Replacement & Improvement Fund
  - ✓Sewer Revenue (Waste Water) – July 31
    - 2019 - $4,717,141.74
    - 2020 - $5,084,632.65
    - Up 7.79%

Note: Revenue through July 31, 2020 compared to July 31, 2019

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

Departmental Operating Expenditures (Excluding Transfers)

Department	Actual 7/31/2019	Actual 7/31/2020	% Δ
City Manager's Office	968,702.10	849,561.21	-12.30%
Council & Mayor	125,049.28	121,037.71	-3.21%
Development Services	856,511.37	866,403.72	1.15%
Finance*	1,209,822.04	1,006,584.70	-16.80%
Fire	4,231,979.71	4,092,178.24	-3.30%
Law	315,278.06	354,952.29	12.58%
Municipal Court	1,334,450.66	1,462,035.16	9.56%
Parks & Recreation	2,817,405.88	2,115,104.77	-24.93%
Police	7,189,746.86	6,814,725.08	-5.22%
Public Works	3,365,521.21	3,268,255.53	-2.89%
Public Utilities	4,675,931.96	4,308,634.32	-7.86%
Grand Total	**27,090,399.13**	**25,259,472.73**	

**Excludes Sewer Refunds (Sewer Refunds are up 28%);*

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

Capital Improvement Program

Department	Orig. Total	Revised Total	% Reduced	Appropriated	Remaining
City Manager's Office	347,050	329,700	-5.00%	(133,000)	196,700
Development Services	170,000	35,000	-79.41%	-	35,000
Finance	175,000	175,000	0.00%	(175,000)	-
Police	376,000	301,000	-19.95%	(200,004)	100,996
Fire	1,254,500	1,235,000	-1.55%	(1,194,324)	40,676
Public Works - Facilities	175,500	95,500	-45.58%	(25,500)	70,000
Public Works - Streets	5,581,130	5,416,130	-2.96%	(4,720,393)	695,737
Parks & Rec	3,350,500	349,500	-89.57%	(234,495)	115,005
Aquatics & Golf	343,000	92,000	-73.18%	(56,662)	35,338
Water	2,079,500	1,864,500	-10.34%	(1,472,777)	391,723
Sewer	1,287,700	1,171,200	-9.05%	(882,865)	288,335
	15,139,880	**11,064,530**	**-26.92%**	**(9,095,020)**	**1,969,510**

Note: All Fleet projects were allocated to their respective Department

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

CARES Act Update – Administrative Leave

Fund	Administrative Leave Wages	OPERS	Medicare	Total
100 – General Fund	94,240.08	13,193.61	1,366.48	**108,800.17**
201 – Street Construction, Maintenance & Repair	40,213.91	5,629.95	583.10	**46,426.96**
202 – State Highway Improvement	8,936.42	1,251.10	129.58	**10,317.10**
212 – Municipal Motor Vehicle	14,681.27	2,055.38	212.88	**16,949.53**
601 – Water Revenue	55,015.36	7,702.15	797.72	**63,515.23**
620 – Sewer Revenue	64,030.08	8,964.21	928.44	**73,922.73**
640 – Recreational Activities	8,688.41	1,216.38	125.98	**10,030.77**
705 – Municipal Garage Services	16,226.96	2,271.77	235.29	**18,734.02**
	302,032.49	**42,284.55**	**4,379.47**	**348,696.51**

- Ohio Office of Budget & Management & US Treasury
  - ✓ If the cost of an employee was allocated to administrative leave to a greater extent than was expected, the cost of such administrative leave may be covered using payments from the Fund.
- Ohio Auditor of State
  - ✓ Auditor Faber stated he did not believe Administrative Leave was eligible
- Clarification is being sought

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

CARES Act Update – Supplies

Supplies / Equipment	
Fund	**Expenditures**
100 – General Fund	51,427.03
201 – Street Construction, Maintenance & Repair	4,353.12
203 – Fire Levy	23,755.27
216 – Probation Services	435.91
601 – Water Revenue	2,364.64
620 – Sewer Revenue	3,044.75
640 – Recreational Activities	2,460.74
641 – Recreation Facilities	796.64
705 – Municipal Garage Services	818.77
	89,456.87

- Fund payments may be used only for expenditures necessary to address the current COVID-19 public health emergency.
- For example, a State may spend Fund payments to create a reserve of personal protective equipment.

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

CARES Act Update – EMS Staffing Change

- Fire Department EMS Staffing Change
  - ✓ During the height of the COVID-19 spread, the Fairfield Fire Department amended its staffing on all EMS units.
  - ✓ US Treasury Guidance:
    - "Local government may presume that **payroll costs for** public health and **public safety employees** are payments for services **substantially dedicated to** mitigating or **responding to the COVID-19 public health emergency.**"
    - Costs incurred for a "substantially different use" include, but are not necessarily limited to, costs of personnel and services that were budgeted for in the most recently approved budget but which, **due entirely to the COVID-19 public health emergency, have been diverted to substantially different functions.**

Fire Department Personnel Deployment Change				
Fund	**Wages**	**OP&F**	**Medicare**	**Total**
203 – Fire Levy	302,781.93	72,667.80	4,389.87	379,839.60

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

CARES Act Update – Summary

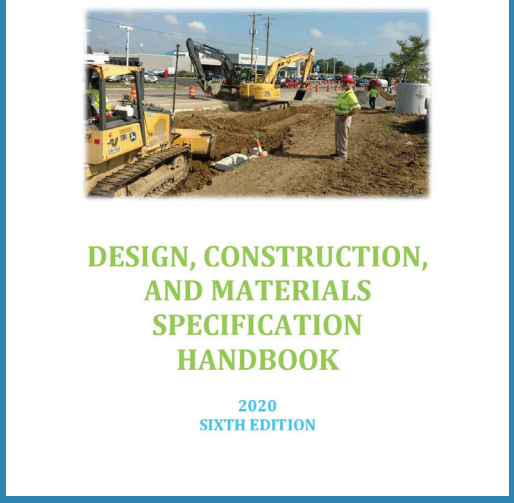
Fund	Grand Total Reimbursable
100 – General Fund	160,227.20
201 – Street Construction, Maintenance & Repair	50,780.08
202 – State Highway Improvement	10,317.10
203 – Fire Levy	403,594.87
212 – Municipal Motor Vehicle	16,949.53
216 – Probation Services	435.91
601 – Water Revenue	65,879.87
620 – Sewer Revenue	76,967.48
640 – Recreational Activities	12,491.51
641 – Recreation Facilities	796.64
705 – Municipal Garage Services	19,552.79
	817,992.98

- Amount Received: $853,072.70
- Amount Eligible: $817,992.98
- Amount Remaining: $ 35,079.72

- Supplemental Appropriation
  - ✓On tonight's agenda, there is an appropriation for medical supplies for $100,000 for the Fire Department.
  - ✓Anticipate this will utilize the remaining CARES Act funds

Note: Numbers are still being reviewed; additional items may be included and change Fund Breakout

Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)



Design, Construction, and Materials Specification Handbook

Public Hearing

August 24, 2020

Overview

- Handbook provides details, standards and specifications for all public and some private infrastructure
- Balance between durability/lifespan of infrastructure and the associated costs
- Updated periodically (last update 2014)
  - Industry best practices
  - New technology
  - Alignment with peers (ODOT, Butler Co, etc…)
  - First-hand experience
- Also includes new guidelines and codifies existing practices

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- Chapter 2 - Storm Drainage
- Chapter 3 - Roadway
- Chapter 4 - Water Supply
- Chapter 5 - Wastewater
- Chapter 6 - Fire Services
- Appendix A - Work Within Public Right-of-Way
- Appendix B - Traffic Impact Studies
- Appendix C - Small Cell Infrastructure Within Public Right-of-Way
- Standard Construction Drawings

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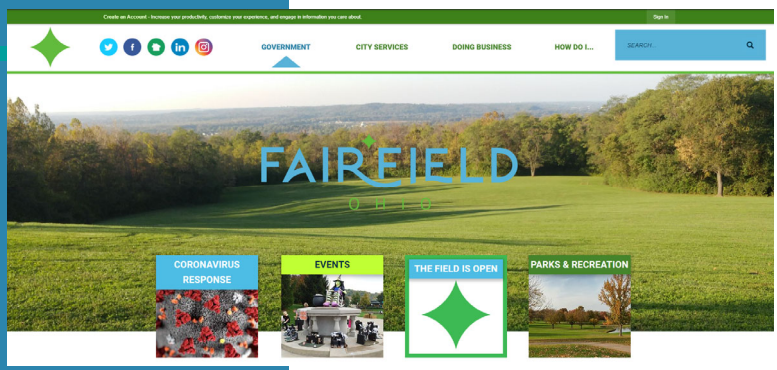

Draft Handbook

Available for public review:

https://www.fairfield-city.org/DocumentCenter/View/6785/2020-Construction-Handbook-Draft-

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Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

Schedule

August 10 – Council 1st Reading
August 24 – Joint Public Hearing
August 26 – Planning Commission
September 14 – Council 2nd Reading
September 28 – Council 3rd Reading

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Minutes Acceptance: Minutes of Aug 24, 2020 7:00 PM (Approval of Minutes)

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Greg Kathman,
Submitting Department: Development Services

Subject:
Design, Construction, and Materials Specification Handbook

Legislation Title:
Ordinance to amend Section 1113.01 of Ordinance No. 166-84, the Codified Ordinances of Fairfield, Ohio, to adopt an amended Design, Construction and Materials Specification Handbook, 2020 Sixth Edition.

Recommendation:
It is recommended that Council hold a first reading on August 10, schedule a joint public hearing with Planning Commission for August 24, and await a written recommendation from Planning Commission.

Background/Synopsis:
The Design, Construction, and Materials Specification Handbook outlines the technical requirements for construction on City-owned property, privately-owned service lines connected to a public utility, and all construction which the City has, or will, assume maintenance responsibility.

The City of Fairfield owns and maintains public infrastructure valued at hundreds of millions of dollars. The Handbook was developed to establish and communicate the standards required for any work performed on this infrastructure, to ensure its long-term function and viability.

The Handbook was last updated in 2014. This update was developed via multi-departmental collaboration.

Financial Impact:
There is no financial impact resulting from approving this Handbook update.

Emergency Provision Explanation:
N/A

Rule Suspension Requested:
No

Emergency Provision Needed:
No

Attachments:

1. 2020 Design, Construction, and Materials Specification Handbook
2. Design Construction and Maintenance-Ord
3. Signed Construction Handbook 8.26.20

FAIRFIELD
OHIO

DESIGN, CONSTRUCTION, AND MATERIALS SPECIFICATION HANDBOOK

2020
SIXTH EDITION

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

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INTRODUCTION – SECTION 100

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

SECTION 100

INTRODUCTION AND PROCEDURE

100.00 GENERAL INFORMATION

The Design, Construction, and Materials Specification Handbook applies to all construction on City-owned property within the public right-of-way or easement, as well as privately owned service lines connected to a public utility, and all construction which the City has, or will assume, maintenance responsibility.

Unless modified, deleted, replaced, or otherwise changed by requirements contained herein, or contained in the City of Fairfield Standard Construction Drawings, construction requirements and material specifications shall conform to the current edition of the "State of Ohio Department of Transportation – Construction and Material Specifications", "State of Ohio Department of Transportation – Standard Construction Drawings", and other manuals/reference materials included herein.

Unless modified, deleted, replaced, or otherwise changed by requirements contained herein, items pertaining to traffic control shall conform to the most current edition of the "Ohio Manual of Uniform Traffic Control Devices" and "State of Ohio Department of Transportation – Standard Sign Design Manual."

Plans are approved subject to compliance with all applicable laws, rules, regulations, and standards. An approval of plans by the City of Fairfield does not constitute a waiver of such compliance.

The proposed construction project may be constructed only in accordance with approved plans. There will be no deviation from the approved plans without the expressed, written approval of the City of Fairfield.

Approval of plans does not constitute an assurance that the proposed project will properly function, operate, or meet compliance with Federal, State, or City laws and regulations.

101.00 DESIGN

It is not the intent of this document to eliminate responsibility of the design engineer for the technical adequacy of his or her design or freedom to use their engineering judgment and discretion in the practice of their profession. It is recognized that matters of engineering design cannot be fully covered in every situation. Any design methods or

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

criterion different than those listed herein will be given due consideration provided the proposed variances are submitted in writing to the City of Fairfield.

The City will, at any time during design or construction, have the authority to require the modification of any engineering or construction detail, whenever necessary, for the protection of the public interests. Such modification does not relieve the design engineer of his or her responsibility.

102.00 INSPECTION OF CONSTRUCTION

At least 2 working days prior to the start of any construction, the Developer or Contractor shall notify the Construction Services Division at (513) 867-4200 of their intent to commence work. Inspection services shall be provided by the City of Fairfield Construction Services Division for all construction projects including public work projects, subdivisions, or any project which will be maintained in the future with public funds. When the extent of work in any project so justifies, the Public Works Director may provide for a full-time inspector. When a project does not require full-time inspection, the Public Works Director may provide for intermittent inspection and may use the inspector for more than one such project.

The City shall send a monthly bill to the contractor for the time spent for inspection. Fees for inspection will be billed at the hourly rate paid to the inspectors by the City, plus 30 percent, with a minimum billing of 1/2 hour. If inspection is required at a time when the inspector is designated to receive overtime pay, the charge shall be at the overtime rate paid the inspector, plus 30 percent, with a minimum billing of 1/2 hour. The City reserves the right to request testing on any material (e.g., concrete, asphalt, subgrade, or trench backfill, etc.) at any time it deems necessary. Fees for outside inspection and testing will be billed to the Contractor at 1.5 times the cost. All fees must be paid in full prior to the work being accepted by the City.

The work is under the control and supervision of the Developer or Contractor until written acceptance is given by the Public Works Director and/or the Public Utilities Director. The City inspector shall check periodically as the work progresses and shall call to the attention of the person in charge of the work any deviations, omissions, or unsatisfactory work as noted. However, no acceptance of any portion of the work is to be inferred by the action or lack of action of the inspector.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

103.00 AS-BUILT PLANS

At the completion of construction, the plans shall be revised, as necessary, to provide as-built plans. This work shall be done by the Contractor's engineer who was responsible for setting grades and the staking for improvements. As-built plans containing any changes to elevations, major drainage ditches/swales, structures, retention/detention basins, water lines and appurtenances, sewer lines and appurtenances, and buffering landscape mounds shall be submitted to the Public Works Director and/or the Public Utilities Director for review and approval. The following note shall be included on the as-built drawing:

> "The planned contour lines on this grading plan do not necessarily reflect the final grading conditions for each individual lot. Please refer to ballooned spot elevations and individual plot plans for as-built data."

As-built plans shall be provided on reproducible sheets measuring 24 inches by 36 inches and sealed and signed by the engineer to certify that the as-builts are per field conditions, along with an accepted electronic format.

104.00 PROCEDURE FOR ACCEPTANCE

The procedure for acceptance of public improvements that will be dedicated to and accepted for future maintenance by the City of Fairfield is as follows:

1. Subdivision improvements shall be dedicated and accepted in accordance with the Codified Ordinances of Fairfield, Ohio relative to subdivisions of land. The provisions for inspection of construction and as-built plans shall apply to subdivisions and related public improvements.

2. Other non-subdivision public improvements must meet City specifications for materials and construction methods and must have been inspected by City inspectors/staff during construction as provided herein.

3. The City of Fairfield shall require a performance bond in an amount and with surety satisfactory to the Law Director to assure completion of a public improvement prior to issuance of a permit or permission to construct the public improvement. The City shall also require a one year maintenance bond for such improvement in an appropriate amount, generally 10 percent of the cost of the public improvement.

4. The City of Fairfield will provide a punch list of any items requiring repairs prior to final acceptance and release of the maintenance bond.

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5. As-built plans will be provided to the City within 30 days after the public improvement becomes operable in accordance with the requirements.

6. The City of Fairfield may take immediate action to correct any defect in materials, methods, or workmanship which jeopardizes the public health, safety, or welfare in the construction and/or maintenance of a public improvement. The installer of the public improvement shall be responsible for reimbursement to the City of costs incurred.

7. The installer of the public improvement shall be responsible for the preparation, proper execution, and recording of all legal documents necessary for the dedication of right-of-way, easements, or other conveyances/ legal title in conjunction with the public improvement, subject to the approval of the Law Director.

This procedure does not apply to public improvements performed under formal contract awarded by the City of Fairfield, the conditions for acceptance of which shall be specified in the contract documents.

105.00 COST RECOVERY

The City reserves the right to recover from responsible parties any and all costs associated with or related to damages to public infrastructure, including but not limited to: roadways, drinking water systems, storm water and sanitary sewer systems. Cost recovery is authorized regardless of whether the damage was intentional or unintentional. Costs may be recovered for any efforts associated with the mitigation of the damaged infrastructure, including but not limited to: City staff time, after-hour call-outs, materials, equipment, contractor services.

106.00 RESTORATION

Any person performing work within and/or adjacent to the road right of way shall fully restore the area to original conditions within 2 weeks of work completion. Restoration may include but is not limited to: road, driveway apron, and/or sidewalk restoration, trench backfilling, site grading, topsoil application, seeding, and straw application.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

STORM DRAINAGE – SECTION 200

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

SECTION 200

STORM DRAINAGE

INTRODUCTION

The latest published edition of the following documents shall be the accepted standard for materials and/or procedures for the construction, modification, alteration, or expansion of the City of Fairfield's roadway infrastructure:

1. ***City of Fairfield Design, Construction, and Materials Specification Handbook***
2. ***City of Fairfield Codified Ordinances***
3. ***City of Fairfield Comprehensive Plan***
4. ***Ohio Manual of Uniform Traffic Control Devices (OMUTCD)***
5. ***Ohio Department of Transportation Location and Design Manual Volume 2 Roadway Design (ODOT L&D)***
6. ***Ohio Department of Transportation Construction and Materials Specification (ODOT CMS)***
7. ***Ohio Department of Transportation Construction Administration Manual of Procedures (ODOT MOP)***
8. ***Ohio Department of Natural Resources Rainwater and Land Development Manual***
9. ***Ohio EPA Laws and regulations (OEPA)***

If a conflict shall exist between reference sources, the more restrictive requirement shall prevail. The Public Works Director shall provide interpretation as requested.

Plan approval by the City of Fairfield does not imply nor assure approval by any other governing jurisdiction. Plans are approved subject to the conditions of compliance with all applicable laws, rules, regulations and standards. The proposed project may be constructed only in accordance with the approved plans. There may be no deviation from the approved plans without the written approval of the City. Approval of the plans does not constitute an assurance that the proposed project will operate in compliance with all Ohio laws and regulations. Plans should also note "All work within the right of way within City limits will require a permit from Public Works". Permits can be found at https://www.fairfield-city.org/448/Permits-Specifications

201.00 STORM DESIGN BASIS

201.01 Frequency

- Storm sewers, open ditches, drive culverts — 10-year frequency
- Roadway culverts — 25-year frequency
- Protection for buildings — 50-year frequency

(Ord.167-95. Passed 11-13-95)

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

201.02 Runoff

- 100 acres or less — Rational method, Q = CIA
- More than 100 acres — S.C.S. TR-55 method

201.03 Overland Flow Time

- **Use Chart 201-A**
- First pavement inlet — Min. 10 minutes
- First ditch catch basin — Min. 15 minutes

201.04 Rainfall Intensity

- **Use Chart 201-B**

201.05 Stormwater Management Requirements

1. INTRODUCTION

a) Stormwater Management refers to the collection, safe conveyance, and storage of excess storm runoff on a development or redevelopment site that involves use of a single or multiple stormwater management facility(ies) to capture, temporarily store, and treat runoff with gradual release of the stored runoff at an acceptable flow rate into the downstream conveyance system. Stormwater management facilities include, but are not limited to, detention basins or retention basins.

b) Detention basins are dry surface areas created by constructing an excavated or embankment basin.

c) Retention basins are permanent ponds where additional storage capacity is provided above the normal water level.

d) The objective of a detention/retention facility is to regulate the runoff from a rainfall and to control discharges to downstream areas in order to reduce the impact on downstream drainage systems.

2. STORMWATER MANAGEMENT GENERAL REQUIREMENTS

a) **Quantitative Control.** Detention/retention of stormwater will be required for each subdivision or land development and redevelopment activity unless specifically exempted.

b) **Qualitative Control**. Stormwater quality control shall be implemented into sites within developing and redeveloping areas in accordance with general and specific requirements

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outlined in the latest edition of the Ohio EPA General (NPDES) permit for stormwater discharges associated with construction activity (see Part IIIG2e of the Ohio EPA's NPDES permit (Permit No. OHC0005 or latest edition).)

c) **Expansion/Redevelopment**. If a site is redeveloped (demolition of existing structures and/or construction of new structures), the entire site shall be brought up to current stormwater standards.

d) **Stormwater Detention Must Meet Current Standards**. If a site is improved or expanded such that the impervious area of the site is increased by an amount greater than or equal to 50 percent of the original development of the site, stormwater detention provisions shall be provided to improve the stormwater runoff from the entire site to the maximum extent practicable. The City reserves the right to inspect areas downstream of the discharge point and require stormwater detention improvements based upon the findings of the inspection.

e) **Stormwater Detention Improvements Shall Be Made To Improve The Impact Of The Stormwater Runoff From The Site**. For sites originally developed after 1980, the calculations shall be based upon a virgin site (runoff coefficient of 0.30).

f) **Stormwater Quality**. Regardless of when the site was originally developed, the entire site shall be treated for stormwater quality according to the regulations found in this manual.

3. EXEMPTIONS TO STORMWATER MANAGEMENT QUANTITATIVE CONTROL REQUIREMENTS

a) The developer may apply to the City Engineer for exemption from requirement for construction of stormwater management quantitative control facilities.

b) Each request will be reviewed on its own merit and as it affects the entire drainage area in which it lays and into which it flows.

c) If an exemption for stormwater management quantitative control is granted by the City Engineer, the developer shall be required to pay a fee in lieu of the construction of the stormwater management facilities. The fee shall be at a rate per cubic foot of detention/retention volume that would have been required if an exemption had not been granted, as indicated in the City of Fairfield Planning & Zoning Code. This fee must be paid to the City prior to recording of the plat of a subdivision or issuance of the building permit if no subdivision plat is involved. Exemptions will only be considered in cases

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where construction is impractical, not feasible, and/or not in the best interests of the City of Fairfield

d) Quantitative requirements for expansions to existing development will generally not be considered for stand-alone improvements of less than 0.25 acres.

e) The developer may appeal the denial of an exemption to the Board of Zoning Appeals.

4. DESIGN

a) **Runoff and Volume Calculation Methods**. The methods outlined in the City Subdivision Rules and Regulations**,** as well as requirements contained in Section 1117.07, Section 1182.03, and requirements contained in the City of Fairfield Design, Construction, and Material Specifications document (latest edition), shall be used to determine the runoff and storage volumes.

1) Quantity of Runoff

i. The peak rate of runoff during the 100-year post development storm cannot exceed the peak rate of runoff during the 2-year pre-development storm.

ii. For those areas where a study of the downstream area indicates the extended time of high discharge and/or velocity due to restricted release rate and storage may cause flooding and/or excessive erosion, the City Engineer may require additional controls.

2) Quality of Runoff

i. The design of stormwater quality controls, also known as Post-Construction Best Management Practices, shall comply with standards and requirements as contained in the latest edition of the Ohio EPA General (NPDES) permit for stormwater discharges associated with construction activity (See Part IIIG2e of the Ohio EPA's NPDES Permit).

b) **Basin Construction**

1) The side slopes of a detention/retention basin shall not exceed four to one (4:1) unless the existing topographic conditions of the development site make this impractical.

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2) The bottom of the basin shall be seeded or sodded and sloped to the outlet flow control device. A method of carrying low flow through the basin shall be provided and include appropriate erosion control.

3) The maximum water depth for detention basins shall be 6 feet.

4) The top of the embankment shall have a minimum width of 8 feet.

5) Outlet flow control devices may be either single-stage or multi-stage.

6) Seed, sod, or other approved erosion control methods/devices shall be used to protect all basin slopes.

7) An emergency spillway capable of discharging a 100-year storm event at a depth not to exceed 1 foot and at non-erosive velocities (less than 10 feet per second) for the spillway lining materials and downstream surfaces over and through which the spillway discharge will flow, shall be constructed at the discharge end of every detention/retention facility upon undisturbed/unexcavated material.

8) Other requirements may be imposed for specific cases.

5. SUBMISSION REQUIREMENTS

Plans and supporting data to verify storage volumes, release rates, etc., shall be submitted. The submission shall include, but is not limited to, the following:

a) A plan, which may be the Improvement Plan, Drainage and Grading Plan, or similar plan at a scale of 1" - 100' or larger, shall be submitted and contain at least the following information:

1) The outline and designation of the drainage area(s). Clearly label the impervious, pervious, and total areas.

2) All existing and proposed drainage facilities.

3) Existing and proposed contours.

4) Existing and proposed buildings/structures.

5) The detention/retention basin with outlet structure(s) details.

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6) Pertinent elevations (e.g. water surface, 100-year ponding, flowline of flow control devices, etc.)

7) A recommendation from a soil engineer for the foundation and design of the embankment to be used for the retention/detention basin.

8) Any other information required by the City to clarify intent or design features.

b) All calculations and other supporting data in sufficient detail and form to facilitate an expedient and accurate review.

6. FEE

Work performed by professional consultants and other costs incurred by the City will be charged to the applicant at their billed cost plus 10 percent. The fee must be paid in full prior to approval of the plans by the City Engineer. (Ord. 25-14. Passed 4-14-14)

201.06 Storm Drainage and Sedimentation Control

1. INTENT

a) No change shall be made in the contour of the land; no grading, excavating, removal or destruction of the topsoil, trees, or other vegetative cover of the land shall be commenced until such time that a plan for minimizing erosion and sedimentation has been processed with and approved by the City Engineer or Public Works Director or there has been a determination by the Planning Commission that such plans are not required.

b) For sites regulated under the Ohio EPA General Construction Permit for stormwater discharges (Ohio EPA permit no. OHC000005, or latest edition), the person seeking coverage under that Ohio EPA Construction permit, shall provide a copy of the "Notice of Intent" to do so and a copy of the Ohio EPA's related "Letter of Coverage Authorization", prior to start of construction.

c) No subdivision shall be approved unless:

1) There has been a plan approved by the City Engineer or Public Works Director that provides for minimizing erosion and sediment as consistent with the intent of this chapter, and performance bond or other acceptable securities are deposited with the City in the form of escrow guarantee which will insure installation and completion of the required improvements; or

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2) There has been a determination by the Planning Commission and the Ohio EPA that such plans are not required.

2. PERFORMANCE PRINCIPLES AND STANDARDS

a) The following principles are effective in minimizing erosion and sedimentation and shall be met where applicable for a developing site and included in the control plan:

1) Development or redevelopment sites that are covered under the Ohio EPA General Construction Permit shall develop a stand-alone Stormwater Pollution Prevention Plan (SWP3) per the requirements of the Ohio EPA Permit OHC000005 (or latest edition). This SWP3 shall be provided to the City Engineer for review when the plan for minimizing erosion and sedimentation is submitted for the development proposal. After the SWP3 is approved and during construction, it shall be kept on the construction site, along with a copy of the NOI and letter granting permit coverage under the Ohio EPA general construction permit.

2) Stripping of vegetation, regrading or other development shall be done in such a way that will minimize erosion. Whenever feasible, natural vegetation shall be retained, protected, and supplemented.

3) Development plans shall preserve salient natural features, keep cut-fill operations to a minimum, and ensure conformity with topography so as to create the least erosion potential.

4) The smallest practical area of land shall be exposed at any one time; the topsoil shall be preserved and returned to the surface areas to be revegetated.

5) Disturbed soils shall be stabilized as quickly as practicable with temporary vegetation and/or mulching to protect exposed critical areas during development.

6) The permanent final vegetation and structural erosion control and drainage measures shall be installed as soon as practical in the development.

7) Provisions shall be made to effectively accommodate the increased run-off caused by changed soil and surface conditions during and after development. Where necessary, surface water run-off shall be structurally retarded.

8) Sediment in the run-off water shall be trapped until the disturbed area is stabilized by the use of debris basins, sediment basins, silt traps or similar measures.

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b) The following standards shall be followed in all water management and sediment control plans:

1) All lots shall be graded to provide proper drainage away from buildings and to dispose of it without ponding. All land within a development shall be graded to drain and dispose of surface water without ponding, except where waived by the Planning Commission.

2) All drainage provisions shall be of such design to adequately handle the surface run-off and to carry it to the nearest suitable outlet such as a curbed street, storm drain, or natural watercourse. Where drainage swales are used to divert surface waters away from buildings, they shall be sodded, planted, or paved as required and shall be of such slope, shape and size as to conform to the requirements of the City. (Ord. 167-95. Passed 11-13-95.)

3) The installation of the specified water management and sediment control measures shall be accomplished in accordance with the most recent standards and specifications available from the Ohio Department of Natural Resources document entitled, "Rainwater and Land Development Manual"**.** A copy of such standards and specifications will be kept on file in the offices of the Public Works Director and Development Services Director. (Ord. 127-03. Passed 8-11-03.)

c) The approved plan for water management and sedimentation control required of the landowner or his agent shall include, but not be restricted to, the following requirements:

1) A description of the nature and type of the construction activity.

2) Indicate the total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavation, filling or grading, including off-site borrow areas).

3) An estimate of the impervious area and percent imperviousness created by the construction activity.

4) A calculation of the runoff coefficients for both the pre-construction and post-construction site conditions.

5) Existing data describing the soil and, if available, the quality of any discharge from the site.

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6) The name and/or location of the immediate receiving stream or surface water(s) and the first subsequent named receiving water(s) and the areal extent and description of wetlands or other special aquatic sites at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project. For discharges to the MS4, the point of discharge to the MS4 and the location where the MS4 ultimately discharges to a stream or surface water of the state shall be indicated.

7) A description of prior land uses at the site.

8) A site map identifying the following:

i. Limits of earth-disturbing activity of the site including associated off-site borrow or spoil areas that are not addressed by a separate NOI and associated SWP3.

ii. Elevations and/or contours, dimensions, location, and extent of all work proposed to be done, and the existing elevations and/or contours of the land all in 2-foot increments. A delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed, in acres.

iii. Soils types for all areas of the site, including locations of unstable or highly erodible soils.

iv. Location of any buildings, structures, utilities, sewers, water, and storm drains on the site where the work is to be performed.

v. Location of any building or structure on land of adjacent property owners within 100 feet of the site.

vi. The location of all erosion and sediment control practices that are designed in accordance with the Ohio EPA General Construction Permit requirements and ODNR Rainwater and Land Development manual standards, including the location of areas likely to require temporary stabilization during the course of site development.

vii. Sediment and stormwater management basins noting their sediment settling volume and contributing drainage area.

viii. For subdivided developments where the SWP3 does not call for a centralized sediment control capable of controlling multiple individual lots, a detailed drawing of a typical individual lot showing standard individual lot erosion and sediment control practices.

ix. The location of designated construction entrances where the vehicles will access the construction site.

x. The location of any in-stream activities including stream crossings.

xi. Areas designated for the storage or disposal of solid, sanitary, and toxic wastes, including dumpster areas, areas designated for cement truck washout, and vehicle fueling.

xii. Detailed plans of all drainage provisions, retaining walls, cribbing, vegetative practices, erosion and sediment control measures, location of proposed fences around sediment basins, steep excavations, or ponding areas, and other protective devices to be constructed in connection with, or as a part of the proposed work, together with a map showing the drainage area of land tributary to the site, and estimated cubic foot per second run-off of the area served by any drain, computed in accordance with current City storm drainage criteria.

9) Structural practices shall be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days. Sediment control structures shall be functional throughout the course of earth disturbing activity. Sediment basins and perimeter sediment barriers shall be implemented prior to grading and within seven days from the start of grubbing.

10) Temporary and permanent soil stabilization controls in accordance with the Ohio EPA General Construction Permit requirements and ODNR Rainwater and Land Development manual standards.

11) Detailed drawings for all structural practices that include installation, inspection, and maintenance procedures.

12) A certification of the quantity of excavation and fill involved.

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13) A timing schedule and sequence indicating the anticipated starting and completion dates of the development; stripping and/or clearing, rough grading and construction, final grading and vegetative establishment, and maintenance and the time of exposure of each area prior to the completion of effective erosion and sediment control measures.

14) The estimated cost of the grading and/or filling and the cost of the required erosion controls.

d) Approval Procedures

1) Three backline copies of complete plans shall be filed with the Development Services Department.

2) In order to insure that emergency measures could be taken by the City if the water management and sediment control measures were not implemented according to the agreed upon plan and schedule, a performance bond in the amount of the cost of the water management and sediment control measures shall be required to be filed with the City. Such performance bond shall authorize immediate payment to the City upon certification of the Planning Commission that necessary emergency work must be done immediately to ensure proper water management and sediment control as a result of the landowner's failure to complete or adhere to the approved water management and sediment control plan.

3) The Planning Commission and the City Engineer shall make a continuing review and evaluation of the methods used and overall effectiveness of the stormwater management and sediment control program. (Ord. 167-95. Passed 11-13-95.)

e) Enforcement

1) The Public Works Director or his designee shall enforce compliance with the approved sediment control plans for projects that involve the construction of public infrastructure, including residential and commercial subdivisions.

2) The Development Services Director or his designee shall enforce compliance with the approved sediment control plans for individual lot development projects.

3) The Public Works Director and Development Services Director have the authority to issue stop work orders to any person, firm, or corporation performing work where

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sediment and erosion control measures are not provided in accordance with the approved site development plans. (Ord.25-14. Passed 4-14-14)

201.07 Special Storm Sewer Rules

1. **PERMIT; FEE**. No connection shall be made to a public storm sewer within the City until the written permission of the Public Works Director or his designee has been obtained by the person, firm, or corporation proposing to or employed to perform the work. An application for a permit shall be signed by the owner or agent of the property for which the connection is desired and by the person, firm, or corporation employed to perform the work; shall describe the property and state the purpose for which the connection is desired; and shall be accompanied by a fee in accordance with the following schedule:

• Existing residential structure sump pump drain pipe	$10.00
• Existing residential structure roof downspout	$10.00
• Existing residential structure yard drain pipe (6-inch diameter or less)	$10.00
• Existing residential structure storm sewer pipe (up to 12-inch diameter)	$25.00
• All other connections	$125.00

No permit shall be issued until the appropriate application is made and the applicable fee is paid.

2. **DISCHARGES INTO STORM SEWERS REGULATED**. Stormwater and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as storm sewers, or to a natural outlet approved by the Public Works Director. Industrial cooling water or unpolluted process waters may be discharged, upon approval of the Public Works Director, to a storm sewer or natural outlet after obtaining the appropriate permits from the State, Environmental Protection Agency, or any other required agencies.

3. **PROHIBITION OF ILLEGAL DISCHARGES**. No person, firm, or corporation shall discharge or cause to be discharged into a public storm sewer or watercourse any substance other than stormwater, except as follows:

a) Water line flushing or other potable water discharges, irrigation or lawn watering, diverted stream flows, rising groundwater, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, foundation or footing drains, water from crawl space pumps, air conditioning condensation, springs, individual residential vehicle washing, natural riparian habitat or wetland flows, dechlorinated swimming pool

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discharges, water from firefighting activities, and any other water source not containing pollutants that are not otherwise identified by the Ohio EPA as a prohibited non-stormwater discharge source.

b) Discharges specified in writing by the Public Works Director or his designee as being necessary to protect public health and safety.

c) Any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharge is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations.

4. **PROHIBITION OF CERTAIN CONNECTIONS**. The construction, use, maintenance, or continued existence of any drain or conveyance, whether on the surface or subsurface, which allows a prohibited substance to enter a public storm sewer or watercourse is prohibited. This prohibition expressly includes, without limitation, connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection. When a prohibited connection is discovered, the Public Works Director will provide written notice to the property owner ordering its disconnection from the storm sewer system or watercourse. No person, firm, or corporation shall fail to eliminate such connection(s) to the storm sewer or watercourse within thirty days after being ordered to do so as provided herein.

5. **INSPECTION OF STORM SEWERS**. After a connection to a public storm sewer is built, and before it is covered, it shall be inspected and approved by the Public Works Director or his designee.

6. **PROHIBITION OF CURB LINE DISCHARGES**. No roof downspout, sump drain, or other surface or groundwater drainage line may be constructed to discharge directly into the curb line of any public street. This prohibition expressly includes, without limitation, any curb line discharge established in the past, regardless of whether its construction was permissible under law or practices applicable or prevailing at the time. When such a curb line discharge is discovered, the Public Works Director will provide written notice to the property owner ordering its disconnection from the curb line. No person, firm, or corporation shall fail to eliminate such curb line discharge(s) within 30 days after being ordered to do so as provided herein.

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7. **EROSION AND SEDIMENT CONTROL**. To minimize the entry of sediment and other pollutants into the City's storm sewer system that is caused by construction site runoff, erosion and sediment control measures must be provided on all new development and redevelopment projects. These measures are to be shown in a sedimentation plan that has been prepared in accordance with the applicable requirements of the subdivision rules and regulations. Construction activities disturbing 1 or more acres of total land, or that will disturb less than 1 acre of land but are a part of a larger common plan of development, redevelopment, or sale that will ultimately disturb 1 or more acres of land, shall seek coverage under the Ohio EPA General Construction Permit for stormwater discharges (Ohio EPA permit no. OHC000005 or latest edition). As such, any person seeking approval of a Plan for erosion and sediment control measures, shall submit to the City Public Works Director prior to start of construction, a copy of the "Notice of Intent" that seeks coverage under the State of Ohio Construction Permit that has been or will be filed with that state agency.

8. **STORMWATER MANAGEMENT CONTROLS**

   a) To minimize the impact of land development and redevelopment activities on storm runoff and drainage, stormwater management controls shall be required on new development and redevelopment sites, pursuant to requirements contained in Chapter 1182, 1117.07, and per the design requirements contained in The City Design, Construction and Material Specifications document, or any subsequent supplements to this document.

   b) Construction activities disturbing one or more acres of total land, or that will disturb less than one acre of land but are a part of a larger common plan of development, redevelopment or sale that will ultimately disturb one or more acres of land, shall seek coverage under the Ohio EPA General Construction Permit for stormwater discharges (Ohio EPA permit no. OHC000005 or latest edition). As part of that compliance, Post-Construction Best Management Practices shall be made part of the stormwater management controls on land development sites, pursuant to the requirements of the Ohio EPA permit and per the requirements in Chapter 1182.

9. **MAINTENANCE RESPONSIBILITY FOR DETENTION/RETENTION BASINS**

   a) **Commercial, industrial, multi-family residential property**. The property owner(s) shall fully maintain detention/retention basins located on private commercial, industrial, or multi-family residential property, whether such basins are located within a public easement or not. This maintenance responsibility shall include both routine maintenance such as mowing, cleaning, debris removal, and erosion repair and non-routine

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maintenance such as the repair or replacement of damaged or missing structural components.

b) **Single family residential property**. The property owner(s) and/or homeowner's association shall be responsible for routine maintenance such as mowing, cleaning, debris removal, and erosion repair for detention/retention basins located on private single family residential property, whether such basins are located within a public easement or not. The City shall be responsible for non-routine maintenance such as the repair or replacement of damaged or missing structural components of such basins.

c) **Notification**. When the maintenance of a detention/retention basin is found to be in violation of this subsection, the Public Works Director will provide written notice to the appropriate property owner(s) and/or homeowner's association ordering that the necessary maintenance be performed within a reasonable period of time. No person, firm, or corporation shall fail to perform the required maintenance within the required period after being ordered to do so as provided herein. (Ord. 127-03. Passed 8-11-03.)

10. STORMWATER QUALITY MANAGEMENT PLAN. As a requirement of the City's NPDES Phase II Stormwater Permit, Council has adopted a "Stormwater Quality Management Plan", prepared by City staff as the City's official planning document for addressing stormwater quality and pollution prevention. All subsequent amendments to the "Stormwater Quality Management Plan" shall also be adopted by legislative action of Council. A copy of this plan is on file in the office of the Clerk of Council.

11. VIOLATION AND ENFORCEMENT COSTS. In addition to other penalties listed in this chapter, any person, firm, or corporation who violates any provision of this chapter shall be liable to the City for any expense, loss or damage resulting from the cleaning, repair or replacement work caused by the violation. Any person, firm, or corporation who violates any provision of this chapter shall also be liable for any fine or penalty incurred by the City caused by their violation. Any person, firm, or corporation who must be monitored by the City for enforcement and/or compliance shall be liable for the associated costs.

12. COMPLIANCE WITH OTHER REGULATIONS. Compliance with the provisions of this chapter or other sections of City Code does not relieve the site owner from obtaining all other necessary permits and/or approvals from federal, state, and/or county agencies. If requirements vary, the most stringent requirement shall apply. (Ord. 127-03. Passed 8-11-03.)(Ord. 25-14. Passed 4-14-14)

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201.08 Drainage Maintenance and Abatement Procedure

1. ROUTINE AND REMEDIAL MAINTENANCE

a) Owners of properties with stormwater Best Management Practices (BMPs) are responsible for operation and maintenance as specified in Section 906.03. The Public Works Director shall provide for inspection and routine maintenance of facilities that have been accepted for maintenance by the City. City maintenance may include stormwater conveyance-related structure cleaning and repair.

b) The Public Works Director, in the Public Works Director's sole discretion, may provide for remedial maintenance of facilities based upon the severity of stormwater problems and potential hazard to the public health and safety, through the abatement procedures described in Section 906.02. For purposes of this Chapter, maintenance associated with retention/detention basins including, but not limited to, mowing, rivulet repair, basin bottom fill, seeding, fertilizing, and/or algae removal, are not considered "potentially hazardous" to the public nor "severe" stormwater problems, and maintenance will not be provided by the City except in case of public emergency as determined by the Public Works Director.

2. ABATEMENT PROCEDURES

a) Notice To Correct Improper Drainage

1) Whenever the City shall find that (1) a tract of land not maintained by the City is inadequately drained, or (2) there is excessive erosion or sedimentation upon such land, or (3) there is an obstruction to a culvert or watercourse upon such land that interferes with water naturally flowing therein, or (4) that such culvert, storm sewer, or watercourse upon such land is of insufficient capacity to reasonably accommodate the flow of water, as required by the City, the City shall notify the owner or person having possession, charge, or management of such land to remove the obstruction, provide adequate drainage, fill or drain such land, enlarge the culverts, drains, or watercourses, mitigate excessive erosion or sedimentation, and/or accomplish any other act determined by the Public Works Director necessary to be necessary to further the purposes of this chapter. Such notice shall be served on such persons or entity in the same manner as provided by the Ohio Rules of Civil Procedure for service of Summons and the Public Works Director or his designee may post a Notice at the property. The address utilized for any service shall be the property address itself and the tax billing address for such premises as maintained on the records of the Butler County Auditor.

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2) The owner must comply with the City's orders within a reasonable time not to exceed 30 days, unless an extension is granted by the Public Works Director for good cause shown. Failure to comply with such order shall constitute an unlawful act. Each additional day thereafter during which the owner fails to carry out the order of the City shall constitute a separate offense.

3) In any case where a condition described above exists for more than 30 days after service of notice, the Public Works Director or his designee may issue an order to the property owner(s) stating that they are in violation; that the City may affect the necessary repairs per section 906.02 (b) or that the City may file criminal charges, or both.

4) In the event an owner fails or refuses to comply with the Public Works Director's directive, the City may provide the performance of the required work and charge the owner the abatement costs.

5) Each and every owner of real property in the City consents to the entry upon any real property in the City for all reasonable times during normal business hours for the purpose of inspection, repair or maintenance required by this chapter.

6) Failure of the City to observe or recognize hazardous or unsightly conditions or to recommend denial of a permit/zoning change shall not relieve the owner or person having possession, charge, or management of such land from the responsibility for the condition or damage resulting therefrom, and shall not result in the City, its officers or agents from being responsible for any condition or damage resulting therefrom.

7) Nothing in this chapter shall be construed as authorizing any person to maintain a private or public nuisance on his property, and compliance with the provisions of this chapter shall not be a defense in any action to abate such nuisance.

8) Nothing in this chapter shall be construed to prevent immediate action by the City in emergency situations. In case of an emergency, the City may direct that action be taken immediately to correct the condition or abate the activity to protect the public health, safety, and welfare. The City may perform the required work and charge the owner the abatement costs.

b) Abatement Costs

1) If the owner or occupant having the care of the lands mentioned in Section 906.01 fails to comply with the notice provided in for Section 906.02 (A), the City shall cause such abatement procedures to be implemented. The cost for such abatement procedures shall be immediately due and payable to the City, provided, however, that an administrative fee shall be charged in the amount of five hundred dollars. The cost of the administrative fee together with the cost of the abatement procedure together with any legal fees incurred by the City shall be assessed against the owner and, if unpaid, against the lot or land together with interest thereon at the then judgment rate in effect in the State of Ohio.

2) Notice of such assessment shall be given to the owner of the lot or land charged therewith and the occupant by mailing such notice to the address utilized by the County Treasurer for billing purposes and by posting a notice of assessment at the subject premises. Service may also be made in any manner provided for service of summons by the Ohio Rules of Civil Procedure. All assessments not paid within ten days after such mailing and posting, after approval by Council, shall be certified by the Clerk of Council to the County Auditor to be placed on the tax duplicate and collected as other taxes are collected.

3. POST CONSTRUCTION STORMWATER BEST MANAGEMENT PRACTICE OPERATION AND MAINTENANCE

a) Operation and Maintenance Plan

1) The developer/property owner shall prepare an Operation and Maintenance Plan meeting the minimum requirements of the latest version of the Ohio EPA NPDES Construction Stormwater Permit for redevelopment and new development projects wherein construction activities will result in the disturbance of one or more acres.

2) The Operation and Maintenance Plan shall be submitted by the developer/property owner to City of Fairfield for review and approval prior to the City issuing the building permit.

3) The Operation and Maintenance Plan must be a stand-alone document containing the following:

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i. Designate the entity associated with providing the Best Management Practices (BMPs) inspection and maintenance.

ii. Indicate routine and non-routine maintenance tasks to be undertaken.

iii. Indicate a schedule for inspection and maintenance tasks.

iv. Provide proof of any necessary legally binding maintenance easements and agreements that are necessary to properly inspect and maintain the BMP(s).

v. Provide a map showing the location of the BMP(s) that are indicated on the City of Fairfield approved Stormwater Pollution Prevention Plan (SWPPP) and necessary access and maintenance easements.

vi. Provide detailed BMP drawings and inspection and maintenance procedures.

viii. Ensure that the collected pollutants resulting from BMP maintenance activities are disposed of in accordance with local, state and federal guidelines.

b) Declaration of Covenants and Restrictions

A Declaration of Covenants and Restrictions shall be made between the Owner and the City of Fairfield ensuring that the BMP(s) shall be properly inspected and maintained and shall be included within the Operation and Maintenance Plan.

c) Inspection

1) Personnel identified within the Operation and Maintenance Plan shall inspect the BMP(s) to ensure proper functionality and determine if maintenance is necessary.

2) At a minimum, inspections are to be conducted on an annual basis, or as specified in the Operation and Maintenance Plan.

3) Written inspection reports summarizing the BMP(s) inspection observations and maintenance requirements are to be submitted to the City of Fairfield upon request by the City.

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d) Maintenance

1) All BMPs are to be maintained according to the measures outlined within the Operation and Maintenance Plan.

2) Ensure that the collected pollutants resulting from BMP maintenance activities are disposed of in accordance with local, state and federal guidelines.

3) The Owner shall make necessary repairs within fourteen days of their discovery as identified within the inspection reports or through a request from the City of Fairfield resulting from City conducted inspections.

4) Maintenance activities performed are to be documented on a written report and submitted to the City of Fairfield upon request.

5) In addition to any applicable provisions of Sections 906.01and 906.02, the Owner shall grant permission to the City of Fairfield to enter the property and inspect the BMP(s) whenever the City deems necessary. In an event of any default or failure by the Owner in properly maintaining the BMP(s) in accordance with the approved Operation and Maintenance Plan, or, in the event of an emergency as determined by the City of Fairfield, it is the sole discretion of the City, after providing reasonable notice to the Owner, to enter the property and take whatever steps necessary to correct deficiencies and to charge the cost of such repairs to the Owner. Nothing herein shall obligate the City to maintain the BMP(s).

4. PENALTY

a) Any person or entity having been determined to violate this chapter or who enters a plea to a violation thereof shall be guilty of a third-degree misdemeanor. Each and every day during which such violation continues shall constitute a separate offense.

b) The imposition of any fine or penalty pursuant to this chapter shall not preclude the Law Director from instituting any appropriate legal proceeding in a Court of proper jurisdiction to correct or abate a violation, require compliance with this chapter or other applicable chapters, ordinances, regulations or rules of the City or State of Ohio as determined to be appropriate by such Law Director. (Ord.25-14. Passed 4-14-14)

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201.09 Run-off Coefficients

- **Use Table 201-C**

201.10 Declaration of Covenants and Restrictions

- **Use Attachment 201-D**

201.11 Watercourse Protection

Every person owning or operating property through which a watercourse passes shall keep and maintain that part of the watercourse within the legal boundaries of the property and areas adjacent to the watercourse within such person's direct control, free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly hinder the flow of water through the watercourse. In addition, the owner, operator, or other person in control of the premises, shall maintain existing privately owned (permanent or temporary) structures, buildings, and improvements within or adjacent to a watercourse, so that such structures, buildings, or improvements will not become a hazard to the use, function, or physical integrity of the watercourse.

201.12 Notification of Spills

a) Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into stormwater, the storm drainage system, or waters of the State, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release to protect the health, safety and welfare of the public and to mitigate any damage to the environment and the storm sewer system.

b) In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services (911) and the authorized enforcement agency. Emergency response agencies shall include without limitation, the City of Fairfield Fire Department, the City of Fairfield Public Works Department, Butler County Emergency Management Agency, and the Ohio Environmental Protection Agency. Such notification in no way alleviates other federal, state, or local reporting obligations imposed by law.

c) In the event of a release of non-hazardous materials, said person shall notify the authorized enforcement agency in person or by telephone or by email no later than the next business day after the date of said incident. Notifications in person or by phone shall be confirmed by written notice from the person responsible for such known or suspected release addressed and mailed to the authorized enforcement agency within three business days of the initial

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verbal notice.

d) If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence.

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TABLE 201-C

Run-off Coefficients Use Weighted Average

TYPE OF AREA	RUN-OFF COEFFICIENT
Business	0.60 - 0.75
Residential - Single Family	0.40 - 0.50
Residential - Multi-Family	0.60 - 0.75
Industrial – Light	0.60 - 0.80
Industrial – Heavy	0.70 - 0.90
Parks, Cemeteries	0.25 - 0.40
Playgrounds	0.35 - 0.45
Railroad Yard	0.30 - 0.40
Woodland	0.20 - 0.40
Grassland	0.25 - 0.45
Cropland	0.40 - 0.50
Pavement	0.95
Roofs	0.90
Lawns, Flat, 0-2%	0.20 - 0.25
Lawns, Average, 2%-6%	0.25 - 0.35
Lawns, Steep, over 6%	0.35 - 0.40

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DECLARATION OF COVENANTS AND RESTRICTIONS

This Declaration of Covenants and Restrictions (this "Declaration") is made on this ___ day of _____, 20__ by _____, an Ohio _____ (the "Declarant").

Recitals:

A. Declarant owns certain property located in the City of Fairfield, Ohio as more particularly described on the legal description attached hereto as Exhibit A and incorporated herein by reference (the "Property").

B. The Property is subject to Ohio EPA Permit No. OHCO00005, dated April 23, 2018, (hereinafter referred to as the "General Permit"), which General Permit requires Declarant to submit a post-construction operation and maintenance plan for stormwater facilities and practices, and further requires implementation of the plan be ensured through recording of a legally binding easement, agreement and/or other document.

C. In accordance with the General Permit, Declarant hereby agrees to restrict the use of the Property as set forth in this Declaration, with the intent that such covenants and restrictions run with the land.

NOW, THEREFORE, for valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Declarant, for itself and its successors and assigns as owners of the Property, hereby agrees as follows:

§1. Covenants and Restrictions. Declarant hereby agrees, for itself and its successors and assigns as owners of the Property, that the Property shall be subject to the following covenants and restrictions:

1. Declarant has submitted, and the City of Fairfield has approved, a post-construction operation and maintenance for stormwater facilities and practices (hereinafter referred to as the "Maintenance Plan"), a copy of which Maintenance Plan is attached hereto as Exhibit B and incorporated herein by reference. Declarant covenants that the owner of the Property shall be the designated entity for the stormwater inspection and maintenance responsibilities set forth in the Maintenance Plan. The owner accordingly shall undertake any routine and/or non-routine inspection and maintenance tasks set forth in the Maintenance Plan in accordance with the schedule set forth in the Maintenance Plan.

2. Declarant hereby acknowledges that these covenants and restrictions run with the land and the declarant will note on the individual property deed that the subject parcel(s) have stormwater management responsibilities as designated on the plat.

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Specific stormwater management responsibilities for this subdivision are as follows_____
_____
_____.

3. Declarant hereby acknowledges and agrees that neither the City of Fairfield nor the Ohio Environmental Protection Agency is or shall be responsible for the inspection and maintenance tasks set forth in the Maintenance Plan.

§2. Perpetual Restrictions. The covenants and restrictions set forth in this Declaration shall be perpetual and shall run with the land for the benefit of, and shall be enforceable by the City of Fairfield. This Declaration and the covenants and restrictions set forth herein shall not be amended, released, extinguished or otherwise modified without the prior written consent of the City of Fairfield, which consent may be withheld in its sole and absolute discretion.

§3. Enforcement. If Declarant, or its successors or assigns as owner of the Property, should fail to observe the covenants and restrictions set forth herein, the City of Fairfield shall have the right to enforce, by any proceedings at law or in equity, all restrictions, conditions and covenants set forth herein. Failure by the City of Fairfield to proceed with such enforcement shall in no event be deemed a waiver of the right to enforce at a later date the original violation or a subsequent violation.

§4. Severability. Each provision of this Declaration and the application thereof to the Property are hereby declared to be independent of and severable from the remainder of this Declaration. If any provision contained herein shall be held to be invalid or to be unenforceable or not to run with the land, such holding shall not affect the validity or enforceability of the remainder of this Declaration.

§5. Notices. Notices or other communication hereunder shall be in writing and shall be sent certified or registered mail, return receipt requested, or by other national overnight courier company, or personal delivery. Notice shall be deemed given upon receipt or refusal to accept such delivery. Each party may change from time to time their respective address for notice hereunder by like notice to the other party. The notice addresses of the parties are as follows:

Declarant:

City : City of Fairfield
[address - line 1]
[address - line 2]
ATTN: [City responsible person]

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§7. Governing Law. This Declaration shall be governed by, and construed in accordance with the law of the State of Ohio.

IN WITNESS WHEREOF, the Declarant has caused this Declaration of Covenants and Restrictions to be executed this ___ day of _____, 20__.

DECLARANT:

_____

By: _____
Name: _____
Title: _____

STATE OF OHIO)
) SS
COUNTY OF)

The foregoing instrument was acknowledged before me this ___ day of _____, 20__, by _____, the _____ of _____, a _____, on behalf of the _____.

_____
Notary Public

This instrument was prepared by:

_____
_____

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202.00 STORM SEWER

202.01 Pipe Size

- (Manning's Formula) $Q = A \left(\frac{1.486}{n} \times R^{2/3} \times S^{1/2} \right)$

202.02 Values of "n"

- Refer to section 1104.4.5, and Figure 1105-2 of the current ODOT, Location and Design Manual, Volume 2, Drainage Design.

202.03 Minimum Size

- 12 inches

202.04 Minimum Cover

- 2 feet to top of pipe or as recommended by the manufacturer.

202.05 Minimum Mean Velocity

- 3.0 feet per second

202.06 Maximum Mean Velocity

- 14.0 feet per second for Corrugated Metal Pipe
- 20.0 feet per second for Plastic and Concrete Pipe.

202.07 Maximum Manhole Spacing

- 400 feet (36" and under)

202.08 Manhole Placement

- Intersections, termini of sewers, changes in size and/or slope, changes in alignment (36 inches and under), places where inlet leads are to be connected.

- Drop manholes are required at stream entrances for storm sewer outfalls if the difference between stream and pipe inverts is greater than 12 inches. The manhole outlet pipe shall be directed with the flow of the stream.

202.09 Maximum Inlet Spacing (each side of street)

- Flat (0.3% - 1.0%) 150' - 250' (normal conditions)
- Normal (1.0% - 5.0%) 250' (normal conditions)
- Steep (5% & greater) 150' - 250' (normal conditions)

- Spacing shall be governed by a 2 inch allowable depth of gutter flow based upon a 10 minute time of concentration and a 10 year design storm if it would be less than the above spacing.

- All low spots, where the street grade changes to a flatter slope, dead end of descending streets, at P.C. or P.T. of all intersection radius curves where the curb and gutter grade

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descends toward radius curve, (locate on property line extended or at mid-lot).
Vane grates will be required for all street grades in excess of 2 percent.

See the Modified Type 3 and Type 3A Catch Basins drawing on Page 1 of the Standard Construction Drawings.

202.10 Outlet Protection

- 3 fps or less — No protection required
- 3 fps to 5 fps — Sodded ditch
- 5 fps to 18 fps — Rock channel protection
  (If the mean velocity is between 5 fps and 18 fps, dumped rock channel protection will be as per Figure 1107-1 of the current ODOT Location and Design Manual, Volume 2.)
- greater than 18 fps — Special outlet protection

202.11 Steep Slope Protection

- Sewers of a 15% slope or greater shall be anchored with concrete anchors spaced as follows:
  - Grades from 15% to 35% shall be anchored on 36 feet center to center.
  - Grades from 35% to 50% shall be anchored on 24 feet center to center.
  - Grades from 50% and over shall be anchored on 16 feet center to center.

202.12 Headwalls

- Headwalls or end sections will be per ODOT specifications. Full height headwalls will be required in rear and side yard areas.

203.00 CHANNEL DESIGN

203.01 Pipe Size

- (Manning's Formula) $Q = A \left(\frac{1.486}{n} \times R^{2/3} \times S^{1/2} \right)$

203.02 Values of "n"

- Rock Lined Channels — 0.08
- Grassed Channels — 0.03
- Concrete/Asphalt Lining — 0.015

203.03 Side Slopes (grass)

- Desired — 4:1
- Maximum — 3:1

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203.04 Minimum Freeboard

- 1 foot

203.05 Minimum Grade

- Grass 1.0 %
- Concrete 0.35 %

- The minimum grade for all ditches shall be 1 percent except for streams, large channels with a paved bottom, and slopes paved to a height approved by the City Engineer. (Ord.167-95. Passed 11-13-95)

203.06 Channel Protection

- Seeding 0% - 2%
- Sodding 2% - 5%
- Lining > 5% and at all channel curves and at junctions with other channels.

- Where possible, natural streams, including growth along the banks, shall not be disturbed. Roughness coefficients and increased peak flows and velocities shall be evaluated to determine stability. (Ord.167-95. Passed 11-13-95)

203.07 Policy

- **Open Ditches**
  Open ditches will be avoided wherever possible in a subdivision. Where pipe sizes are larger than 60 inches, the requirements for storm sewer pipes may be waived in favor of ditches.

- **Roof Down Spouts, Sump Pumps, and Footing Drains**
  Sump pumps are not permitted to be discharged into the sanitary sewer or the curb and gutter adjacent to the roadway. All subdivisions, unless waived by the Public Works Director or his/her Designee, shall provide satisfactory drainage facilities for the disposal of water generated by sump pumps and footing drains. Sumps and footing drains shall be directed to a storm sewer system, ditch or swale built as part of the drainage plan. Roof down spout pipes are not permitted to be discharged into the curb and gutter adjacent to the roadway. New development and redevelopment will require that all down spouts are connected to an underground drainage system whenever feasible. Down spouts, sump drains, and footing drains shall not be constructed to negatively impact neighboring properties.

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204.00 CONSTRUCTION REQUIREMENTS AND MATERIALS SPECIFICATIONS

204.01 Trench Excavation

a) Item 611 of the current State of Ohio Department of Transportation Construction and Material Specifications and the following shall apply:

1) Open road cuts require an Open Road Cut permit approved by the Public Works Director or his/her Designee. Roadway restoration shall be per Public Works standard drawings for typical restoration sections. Trenches not backfilled and resurfaced by the end of the work day shall be plated in accordance to standard drawing. Steel plates shall be accompanied by appropriate signage warning motorists of the plates in the roadway, the plates must be secured and wedged in a manner acceptable to the Public Works Department, and plates are not to be used between November 1 and April 1 except for emergency circumstances. Plates used between November 1 and April 1 must be recessed for all locations.

2) Open no more trench in advance of pipe laying than is necessary to expedite the work.

3) Trench excavation will be performed according to OSHA and any State of Ohio regulations.

4) In existing street rights-of-way, a Right-of-Way Permit must be obtained from the Public Works Director or his/her Designee to lay back slopes in the public right-of-way.

See the Trench Detail and Full Depth Asphalt Concrete Pavement drawings on Pages 3 and 10, respectively, of the Standard Construction Drawings.

204.02 Pipe Bedding

Item 611.02 and 611.06 of the current State of Ohio Department of Transportation Construction and Material Specifications will apply.

204.03 Pipe Laying

a) Item 611.05 of the current State of Ohio Department of Transportation Construction and Material Specifications and the following will apply:

1) Grade stakes shall be required prior to laying any pipe. Line and grade will be controlled by laser alignment. Pipe will be protected during handling against impact

shocks and free fall. Do not permit hooks to come in contact with pre-molded joint surfaces. Handle pipe having pre-molded joint rings or attached couplings so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material. Take care to avoid dragging the spigot ring on the ground or allowing it to be damaged by contact with gravel, crushed stone, or other hard objects. After delivery alongside the trench, carefully examine each piece of pipe for roundness and specification compliance. Acceptable pipe may be marked with paint or other permanent marking material so that the marks are plainly visible after installation in the trench and before the pipe is covered.

2) A mandrel test will be required for Item 707 plastic and polyethylene type pipe to determine the pipe deflection prior to acceptance of the storm sewer by the City of Fairfield. When the development/subdivision has completed the one year maintenance period, the plastic and polyethylene pipe may be videotaped with a copy of the recording supplied to the City of Fairfield in lieu of a mandrel test; only with the permission of the Public Works Director. The maximum allowable pipe deflection is 5 percent.

204.04 Joints

a) Item 611.08 of the current State of Ohio Department of Transportation Construction and Material Specifications and the following shall apply:

1) In all jointing operations, the trench shall be dry.

204.05 Backfilling Trenches

a) Item 611.06 of the current State of Ohio Department of Transportation Construction and Material Specifications and the following shall apply:

1) Unless other protection work is directed, backfill trenches immediately after the pipe is laid. In the case of concrete cradle bedding, delay backfilling until the concrete has set sufficiently to support the backfill load. Except for unusual circumstances such as sub-aqueous installations, permit no water to rise in non-backfilled trenches after the pipe is in place. Backfill material to be placed above pipe bedding shall be free of brush, debris and junk. Backfill under existing paved roadways will be flowable fill per ODOT item 613 unless waived by the Director of Public Works.

See the Trench Plate Detail and Trench Detail drawings on Pages 2 and 3, respectively, of the Standard Construction Drawings.

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2) Unless specifically authorized, place no rock or rock excavation material in the upper 18 inches of the trench. Place no rock or stones having a dimension larger than 4 inches within 3 feet of the top of the pipe. Large stones may be placed in the remainder of the trench as backfill only if well separated and arranged so that no backfill settlement will result. Use puddling, jetting, or water flooding for consolidating backfill material only when approved by the Public Works Director or his/her Designee.

204.06 Pipe Material Specification for Storm Sewer

a) Items 611, 706 and 707 of the current State of Ohio Department of Transportation Construction and Material Specifications shall apply.

b) All pipes that cross under road pavement/curbs shall be reinforced concrete pipe. The class of pipe shall be determined by a design engineer.

c) **Corrugated/Smooth Metal Pipe**. All corrugated/smooth metal pipes shall be aluminized type 2 coated, welded, seam pipe conforming to ODOT specifications unless approved by the Public Works Director.

204.07 Manholes, Catch Basins, & Structures

a) See Item 611 of the current State of Ohio Department of Transportation Construction and Material Specifications.

b) Catch basins, trench drains, and other storm structures shall not be placed within or immediately adjacent to dumpster pads/dumpster enclosures.

204.08 Drywells

a) Drywells will not be approved within the City of Fairfield without supporting calculations provided by a licensed professional engineer based on a permeability test performed by a licensed geotechnical engineer.

See the Standard Pre-Cast Concrete Drywell drawing on Page 4 of the Standard Construction Drawings.

b) If drywells are to be used for stormwater drainage control or stormwater detention/retention in any new subdivision or dedication of public improvements, the developer shall be required to execute an agreement with the City of Fairfield satisfactory to the Law Director prior to recording of the plat or dedication, which provides a warranty by the developer of the proper and efficient operation of all

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stormwater drainage and retention/detention facilities of the subdivision in accordance with the requirements of this chapter for a period of five years after the recording of the plat or dedication. The agreement shall require the developer to take any and all corrective action, including, but not limited to, the installation of new or additional facilities in order for the subdivision or improvements to meet the requirements of this chapter. The developer's performance of the agreement shall be secured by an appropriate performance bond or other security approved by the Law Director.
(Ord. 214-98. Passed 12-7-98.)

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ROADWAY – SECTION 300

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SECTION 300

ROADWAY

INTRODUCTION

The latest published edition of the following documents shall be the accepted standard for materials and/or procedures for the construction, modification, alteration, or expansion of the City of Fairfield's roadway infrastructure:

1. ***City of Fairfield Design, Construction, and Materials Specification Handbook***
2. ***City of Fairfield Codified Ordinances***
3. ***City of Fairfield Thoroughfare Plan***
4. ***City of Fairfield Comprehensive Plan***
5. ***Ohio Manual of Uniform Traffic Control Devices (OMUTCD)***
6. ***Ohio Department of Transportation Location and Design Manual Volume 1 Roadway Design (ODOT L&D)***
7. ***Ohio Department of Transportation Construction and Materials Specification (ODOT CMS)***
8. ***Ohio Department of Transportation Construction Administration Manual of Procedures (ODOT MOP)***
9. ***Ohio Department of Transportation State Highway Access Management Manual***
10. ***Ohio Department of Transportation Pavement Design Manual***
11. ***Ohio Department of Natural Resources Rainwater and Land Development Manual***
12. ***American Association of State Highway and Transportation Officials "A Policy on Geometric Design of Highways and Streets" (AASHTO)***
13. ***Ohio Department of Transportation Traffic Engineering Manual (ODOT TEM)***
14. ***Transportation Research Board Highway Capacity Manual***
15. ***Institute of Transportation Engineers Traffic Engineering Handbook***
16. ***Ohio EPA Laws and regulations (OEPA)***

If a conflict exists between reference sources, the more restrictive requirement shall prevail. The Public Works Director shall provide interpretation as requested.

Plan approval by the City of Fairfield does not imply nor assure approval by any other governing jurisdiction. Plans are approved subject to the conditions of compliance with all applicable laws, rules, regulations, and standards. The proposed project may be constructed only in accordance with the approved plans. There may be no deviation from the approved plans without the written approval of the City. Approval of the plans does not constitute an assurance that the proposed project will operate in compliance with all Ohio laws and regulations. Plans should also note "All work within the right of way within City limits will require a permit from Public Works". Permits can be found at https://www.fairfield-city.org/448/Permits-Specifications

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301.00 DESIGN INTERSECTIONS

a) At street and alley intersections, property line corners shall be rounded by an arc, the minimum radius of which shall be 15 feet and 10 feet respectively. In business districts, a chord may be substituted for such arcs.

b) Street curb intersections shall be rounded by radii of at 25 feet.

c) The above minimum radii shall be increased when the smallest angle of intersection is less than 90 degrees. (Ord.141-83. Passed 9-26-83)

302.00 MINIMUM PAVEMENT WIDTHS

Minimum pavement widths, back to back of curb, required to be installed at the subdivider's expense, shall be as follows:

a) Primary and secondary thoroughfares, as shown on the Thoroughfare Plan.

b) Collector streets, 38 feet.

c) Local and minor streets, 28 feet.

d) The pavement of a turning circle at the end of a cul-de-sac street will have a minimum outside diameter of 80 feet. A "T" or "Y" shaped paved space, when approved by the Commission, in place of a turning circle, will extend entirely across the width of the street right of way and will be at least 20 feet wide with the flared portion rounded by minimum radii of 20 feet.

e) Alleys, full width of right of way, 20 feet. (Ord.141-83. Passed 9-26-83)

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303.00 STREET DESIGN STANDARDS

	Primary & Secondary	Industrial	Collector	Local & Cul-de-sac
Minimum centerline grade	0.50%	0.50%	0.50%	0.50%
Maximum centerline grade	5.0%	5.0%	10.0%	12.0%
Minimum length of vertical curve (See Note 2)	100'	100'	50'	50'
Minimum length of tangent between horizontal curves	100'	100'	50'	50'
Minimum edge of pavement radius	40'	50'	25'	25'
Minimum stopping sight distance (See Note 3)	Refer to ODOT L&D Manual	Refer to ODOT L&D Manual	Refer to ODOT L&D Manual	Refer to ODOT L&D Manual
Maximum centerline grade approaching an intersection (See Note 4)	2.0%	2.0%	4.0%	6.0%
Cul-de-sac pavement turnaround diameter from back-to-back of curb (See Note 5)	N/A	120'	N/A	80’
Minimum traffic lane width for multi-lane streets (See Note 6)	12'	12'	12'	11.5'
Minimum Centerline Radius	Refer to ODOT L & D Manual	Refer to ODOT L & D Manual	Refer to ODOT L & D Manual	100'
Maximum driveway grade (See Note 9)	15%	15%	15%	15%

a) Any exceptions to these standards must be approved in writing by the Public Works Director.

b) All changes in street grades shall be connected by vertical curves of a minimum length in feet equivalent to 15 times the algebraic difference between the rates in grade.

c) Vertical sight distance shall be measured from an eye level of 3.5 feet to the top of a 2-foot-

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high object.

d) The grades shall be shown every 10 feet around the radius of intersecting streets to the point of curve or tangency for a distance of 50 feet from an intersection with the front of curb or edge of pavement of another street.

e) A "T" or "Y" shaped turnaround shall not be used unless approved by the Planning Commission and the design has been approved by the Public Works Director.

f) Minimum pavement widths as detailed in the Thoroughfare Plan for the City of Fairfield shall be used for all two lane streets except that all industrial streets shall have a minimum width of 38 feet as measured from back-to-back of the curb and all cul-de-sacs at the termini of said industrial streets shall be offset to eliminate the need for semi-trucks to negotiate an "s"-curve into and through the turning circle. Exit curves as measured along the edge of pavement within an industrial cul-de-sac shall be a minimum radius of 45 feet. Underdrains are required on all newly developed streets and shall be 6-inch perforated plastic pipe with an approved geotextile fabric wrap around the pipe and shall be installed 6 to 12 inches behind and parallel to the back of curb and approximately 3 feet below subgrade on both sides of the roadway. Under drains shall be used to drain the subgrade. The under drains shall be connected to a positive drainage outlet (i.e. curb inlets) and shall be backfilled with #8 sized granular material.

g) The minimum design speed for all projects shall be equal to or greater than the legal speed for the facility and the preferred design speed shall be 5 miles per hour higher than the posted legal speed.

h) Sump collector lines are required in all residential developments. The 8-inch sump collector line shall be located approximately 2 feet behind the curb and approximately 2 feet below grade. When used in parallel with underdrains, the sump collector line should be located above the underdrain pipe. Cleanouts on the sump collector lines will be required every 200 feet. Tie-ins to sump lines must be done using approved commercial fittings and shall be inspected by the City of Fairfield Public Works Department. A minimum of 24 hours notification is required for inspection request. The proposed sump line tie in shall be shown on the site plan. Concrete collars shall not be permitted. **See the Two-Way Clean Out (For Sanitary and Storm Applications) drawing on Page 27 of the Standard Construction Drawings.** The 8-inch sump collector line shall be PVC (SDR-35, schedule 40, or approved equal). All private sump lines connecting to the 8-inch sump collector line shall be of the same material and properly bedded within the public right-of-way. **See the Sump or Downspout Drain drawing on Page 5 of the Standard Construction Drawings.**

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i) All residential and commercial driveways which are new construction will be reviewed on a case by case basis. For any design questions regarding these driveways not described in Sections 304.04 or 308.00, the City of Fairfield Public Works and Fire Departments shall make the final determination involving a workable driveway design. Driveways shall not be constructed or widened to within 5 feet of a utility pole, fire hydrant, catch basin, etc. Driveway flares shall not project across the neighboring property line

j) Curb ramps shall be installed according to the most recent ODOT standard drawings BP-7.1. Detectable warnings shall be cast in place (2'x 4') by Armor Tile, ADA Solutions, or Tuftile and match Federal Color #20109 (Dark Red in Color).

k) All newly constructed, repaired, or replaced sidewalk and/or curb ramps shall be made completely compliant with the latest edition of the American with Disabilities Act (ADA). This includes providing proper slopes and cross-slopes of all sidewalk and curb ramps and the provision of truncated dome paver warning devices at all curb ramps. Sidewalk and curb ramp cross-slopes for new construction shall be designed to no greater than 1.5%. The maximum acceptable resultant construction cross-slope is 2.0%. For longitudinal slope, the maximum grade is 5% with replacement ramps required to replace up to 15 feet of existing sidewalk in order to accommodate the ramp.

304.00 PAVEMENT STANDARDS

304.01 Rigid Pavement

The use of rigid pavement in the City is not preferred and requires prior approval and acceptance by the Public Works Director or his/her designee. Concrete pavement shall be designed and as specified by the design engineer. If approved, concrete pavement shall be a minimum 7 inches thick for residential streets and 9 inches thick for commercial streets. Curb and gutter shall not be integral to the roadway pavement. The concrete pavement design shall include a minimum 6 inches of Aggregate Base.

304.02 Flexible Pavement

a) Flexible pavement for commercial/industrial, primary, secondary, and collector streets shall consist of minimum thickness of asphalt concrete base, asphalt intermediate course, and asphalt surface course as designed and as specified by the design engineer over a uniformly compacted subgrade. Tack coat will be applied at a minimum rate of 0.1 gallon per square yard unless otherwise specified by the design engineer. The surface lift shall be installed just before the final acceptance of the subdivision.

b) A minimum design for local residential streets will be 5 inches of Asphalt Concrete Base, 1.5

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inches of Asphalt Concrete Intermediate Course and 1.5 inches of Asphalt Concrete Surface Course.

c) A minimum design for industrial streets will be 8 inches of Asphalt Concrete Base, 1.5 inches of Asphalt Concrete Intermediate Course and 1.5 inches of Asphalt Concrete Surface Course.

d) The City of Fairfield reserves the right to increase the pavement thickness, require underdrains or require additional subgrade preparation as typical traffic loadings are anticipated or if poor soils are encountered.

304.03 Pavement Design and Acceptance

Design of rigid and flexible pavement shall be based on traffic volumes, geotechnical investigation, and methods set forth in the current Pavement Design Manual from the State of Ohio Department of Transportation. The City will not accept maintenance responsibility for new construction of public streets constructed by a developer until 80% of the final build-out has been completed.

304.04 Driveways, Culverts, and Sidewalks

a) Concrete residential drive aprons within the public right-of-way shall be 7 inches thick. Concrete commercial drive aprons within the public right-of-way shall be 9 inches thick. Concrete sidewalk within the public right-of-way shall be 4 inches thick. Concrete sidewalk that is part of the drive/apron shall be the same thickness as the drive apron. All driveway aprons behind concrete curb must be concrete. Aprons in areas where no curb is present may be asphalt if approved by the Public Works Director or his/her designee. Asphalt aprons must be an equal or greater thickness than what is required for concrete.

b) Culverts are required under all drive aprons that do not have curb or if deemed necessary by the Public Works Director or his/her designee. Culverts shall be a minimum of 12 inches in diameter and shall be reinforced concrete pipe.

c) Proposed driveways on thoroughfares are required to have turnarounds built equal to or greater than the required dimensions of a parking stall. These turnarounds are to ensure that vehicles will be able to enter the highway without backing. **See the Item 452 – Non-Reinforced Concrete Pavement Drive Apron drawing on Page 8 of the Standard Construction Drawings.**

304.05 Road Cut Restoration / Trench Excavation (Same as 204.01)

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a) Open road cuts require an Open Road Cut permit approved by the Public Works Director or his/her Designee. Roadway restoration shall be per Public Works standard drawings for typical restoration sections. Trenches not backfilled and resurfaced by the end of the work day shall be plated in accordance to standard drawing. Steel plates shall be accompanied by appropriate signage warning motorists of the hazard in the roadway. The plates must be secured and wedged in a manner acceptable to the Public Works Department, and plates are not to be used between November 1 and April 1 except for emergency circumstances. Plates used between November 1 and April 1 must be recessed for all locations.

b) Low Strength Mortar (LSM) backfill is required for all trench work within 3 feet of the edge of pavement/back of curb of the public street. LSM shall be of an approved mix design and have a compressive strength of no greater than 50 psi. The mix design must be submitted to the Public Works Department for approval at least 48 hours in advance of delivery.

c) Open no more trench in advance of pipe laying than is necessary to expedite the work.

d) Trench excavation will be performed according to OSHA and any State of Ohio regulations.

e) For trenches outside the public Right-of-Way, a Right-of-Way Permit may be required from the Public Works Director or his/her Designee to lay back slopes in the public right-of-way.

f) No boring, drilling, or tunneling shall be permitted in a public roadway, or right of way, unless authorized by permit and review by the Public Works Department.

g) For pavement excavation, the Contractor shall use such methods as; drilling, chipping, or sawing to assure the breaking of pavement along straight lines. The face of the remaining pavement shall be approximately vertical. If the Contractor removes or damages pavement or surfaces beyond the limits specified, such pavement and surfaces shall be repaired or replaced at the Contractors' expense. The Public Works Department must be notified 24 hours in advance and an inspector present for any pavement restoration to be acceptable.

See the Trench Plate Detail, Trench Detail, and Full Depth Asphalt Concrete pavement drawings on Pages 2, 3, and 10, respectively, of the Standard Construction Drawings.

304.06 Cold Weather Placement of Concrete

a) ACI 306R (latest edition), published by the American Concrete Institute, shall be followed when cold weather is expected and/or encountered, as determined by the City Engineer.

1) Cold weather is determined as follows:

   i. The average daily air temperature (average of the highest and lowest temperatures from midnight to midnight) is below 40 degrees Fahrenheit, and

   ii. The air temperature is not greater than 50 degrees Fahrenheit for more than one half of any 24-hour period.

b) In no case will the placement of concrete be allowed to be placed on frozen (less than 33 degrees Fahrenheit) ground or sub base.

c) Prior to allowing placing any concrete during cold weather, the Contractor shall submit a formal written cold weather placement policy/procedure to the Public Works Department.

d) Concrete shall be kept above freezing by the continuous use of blankets or other approved methods for a minimum of 7 days after being placed and finished.

305.00 WORK WITHIN THE PUBLIC RIGHT-OF-WAY

All work within the public right-of-way requires a permit to be approved by the Public Works Director or his/her designee. **See Appendix A for detailed information on work within the public right-of-way**

306.00 TRAFFIC IMPACT STUDIES

Traffic studies for new development and redevelopment within the City shall follow the procedures outlined by this document and must be approved by the City Engineer or his/her designee. **See Appendix B for detailed information on Traffic Impact Studies**

307.00 SMALL CELL DESIGN GUIDELINES

Small cell infrastructure within the public right-of-way requires a permit to be approved by the Public Works Director or his/her designee. **See Appendix C for detailed information on Small Cell Design Guidelines**

308.00 ACCESS MANAGEMENT STANDARDS AND GUIDELINES

1. PURPOSE & INTENT

a) Access Management is an efficient way of dealing with the problems associated with traffic congestion and safety caused by motorists turning at driveways and intersections. Congestion and the threat of accidents become greater as the number of driveways and

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intersections increase and the distance between them decreases.

b) The City of Fairfield is committed to the following principles: promoting public safety by minimizing accidents; improving the driving experience by increasing mobility and decreasing delay; providing necessary and safe access to property; and minimizing costs by making more efficient use of existing and proposed roads.

c) The City considers: (1) modifications to existing roadways to provide better access management, (2) proper access management along all new roadways, and (3) proper management and design of the site access and circulation systems associated with planned new developments.

2. DRIVEWAY TYPES

a) Farm or Field Drives: A driveway providing access to an agricultural tract of land.

b) Single Family Residential: A driveway providing access to a single-family residence.

c) Multi-Family Residential: A driveway providing access to multiple single-family residences or to multi-family dwelling units.

d) Commercial: A driveway providing access to an office, business, commercial, or institutional building or buildings, or to an industrial facility (that services fewer than ten trucks per day).

e) Industrial/Retail: A driveway serving a retail center (such as a community shopping center) or an industrial facility (that services ten or more trucks per day).

For Access Management purposes, driveways are also classified by traffic volumes as follows:

a) Low Volume Driveway (LVD): greater than 5 and up to 100 two-way vehicle trips in one or more 60-minute periods of a day

b) Medium Volume Driveway (MVD): greater than 100 and up to 200 two-way vehicle trips in one or more 60-minute periods of a day

c) High Volume Driveway (HVD): greater than 200 two-way vehicle trips in one or more 60-minute periods of a day.

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3. DRIVEWAY LOCATION & SPACING

a) Residential properties will be limited to one drive per lot. Driveway turnarounds will be required for residential properties on streets with a speed limit above 25 mph.

b) The number of driveways afforded any one site shall be minimized. (The need for more than one driveway must be substantiated by a Traffic Impact Study.)

c) Access for multiple properties shall be combined, where feasible.

d) Driveways shall be located in accordance with applicable sight distance requirements (Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD) as contained in Section 200 of the ODOT Location and Design Manual).

e) Minimum driveway spacing (centerline to centerline), which is based on posted speed limits, shall be determined as follows:

Posted Speed (mph)	Minimum Distance (feet)
25	150
30	200
35	250
40	325
45	500
50	550
55	600

f) Driveway spacing shall consider the location of driveways on both sides of a roadway.

f) Driveways shall be located where they will not cause problems with movements to and from an existing or planned street, highway, or driveway on the opposite side of the roadway.

g) Driveways shall be located a sufficient distance from an adjacent public road intersection so as not to interfere with the traffic operations at the intersection. The following provides the minimum acceptable distances between drive locations and adjacent intersections. For all functional classifications set forth in the Thoroughfare Plan, where two roads of different functional classes intersect, the restrictions and distances of the higher-level roadway will apply along the lower classified roadway. (The defined distances are measured from the centerline of the intersecting road to the centerline of the proposed driveway).

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Higher Roadway Classification	Minimum Distance from Intersection
Major Arterials	600 feet
Minor Arterials, Collectors	300 feet

4. ACCESS MANAGEMENT STANDARDS

Reference the latest version of the ODOT State Highway Access Management Manual.

5. DRIVEWAY GEOMETRICS AND DESIGN

a) All drive aprons located within the public right-of-way shall be constructed of concrete or asphalt. The thickness of the concrete and aggregate base shall be consistent with the standards found in 304.04 of this manual.

b) The portion of a driveway and/or parking area located outside of the Right-of-Way shall be constructed of concrete, asphalt, pavers, or other durable and permanent material as approved by the City Engineer. New gravel driveways or parking areas or expansion of existing gravel driveways or parking areas shall not be permitted.

Driveway Design Standards

Driveway Type	Residential		Commercial		Industrial/Retail	
Design Vehicle	P		SU-30		WB-50/WB-67	
Width (ft)	Min.	Max.	Min.	Max.	Min.	Max.
One-Way	-	-	12	20	14	26
Two-Way	9	24	24	36*	26	38*
Right Turn Radius**	15	25	25	35	35	75

* The chart assumes one lane for ingress and one lane for egress. Additional lanes will increase the width requirement.

** Flares are generally preferred and when used are typically half the width of the tree lawn up to five feet maximum on either side of the drive.

P: Passenger car
SU-30: Single-unit truck; 30 feet in length
WB-50: Large semi-trailer truck; 55 feet in length
WB-67: Interstate semi-trailer truck; 74 feet in length

c) Two-way driveways shall intersect the highway at an intersection angle between 80º and 90º.

d) An angle less than 80º will not be permitted on new two-way driveways. One-way operation driveways (right in only or right out only) shall not have an angle less than 45º

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e) Drives shall not be obstructed within the right-of-way by gates, or similar obstacles. Any access with a gate shall be designed so that the longest vehicle can completely clear the traveled way when the gate is closed and as it is opened.

f) High volume driveways that do not meet signal warrants may be denied certain traffic movements if traffic volumes and conditions on the highway would make the full movement operation unsafe.

6. DRIVEWAY ISLANDS

a) In some situations, it is desirable to prohibit certain movements through the use of median or channelizing islands. Median islands can be used to separate inbound and outbound traffic. A curbed island prevents egressing traffic from encroaching on the side of the drive used by ingress traffic. Channelizing islands further designate the correct turning path and define the merge area thus reducing conflicting movements. The geometry shall physically define the permitted movements and block the prohibited movements.

b) Median islands shall be at least 4 feet wide -- with a maximum of 6 feet at the intersection. Median widths exceeding 6 feet are undesirable because they create turning problems, expand the intersection, and make it difficult to provide proper lane alignments with opposing existing or future driveways or roadways. Median islands shall be at least 25 feet in length. An island median shall be used to prevent encroachment on other driveway lanes whenever any combination of egress and ingress lanes exceeds 3 lanes. A median island shall be offset at least 12 feet from the edge of the traveled lane on the main road. The nose of a median island shall taper in height from 2 inches to 6 inches over a distance of 4 feet.

7. RIGHT-IN/RIGHT-OUT

In some situations, it is desirable to prohibit left turn movements through the use of right-in/right-outs. When applicable, the City requires new development and redevelopment to employ the standards of the Butler County Engineer's Office for right-in/right-outs without an acceleration lane (with a right drop lane). Other configurations such as a right-in only, all-in/right-out, etc. will be considered on a case by case basis at the discretion of the City Engineer.

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WATER SUPPLY – SECTION 400

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SECTION 400

WATER SUPPLY

INTRODUCTION

This section is subject to periodic revision to meet changing requirements for materials, and environmental regulations, etc. At the beginning of a project, users should verify that they have the latest edition.

The latest published edition of the following documents shall be the accepted standard for materials and/or procedures for the construction, modification, alteration, or expansion of the City of Fairfield's public water distribution system:

1. ***City of Fairfield Design, Construction, and Materials Specification Handbook.***
2. ***City of Fairfield Codified Ordinances.***
3. ***Ohio EPA Laws and regulations (OEPA).***
4. ***Ohio EPA Backflow Prevention and Cross Connection Control.***
5. ***American Water Works Association Standards. (AWWA).***
6. ***American National Standards Institute (ASNI).***
7. ***National Sanitation Foundation (NSF) Standard 61.***
8. ***Recommended Standards for Water Works; "The Great Lakes Upper Mississippi River Board" (G.L.U.M.R.B.) also known as the "Ten State Standards".***
9. ***Safe Drinking Water Act (SDWA).***
10. ***National Primary Drinking Water Regulation (NPDWR) "lead and copper rule".***
11. ***American Public Health Association (APHA).***
12. ***Water Pollution Control Federation (WPCF).***
13. ***National Fire Protection Association (NFPA).***
14. ***Insurance Service Office (ISO).***
15. ***Ductile Iron Pipe Research Association (DIPRA)***

If a conflict exists between reference sources, the more restrictive requirement shall prevail. The Public Utilities Director shall provide interpretation as requested.

Plan approval by the City of Fairfield does not imply nor assure approval by the Ohio EPA. Plans are approved subject to the conditions of compliance with all applicable laws, rules, regulations and standards. The proposed project may be constructed only in accordance with the approved plans. There may be no deviation from the approved plans without the written approval of the City. Approval of the plans does not constitute an assurance that the proposed project will operate in compliance with all Ohio laws and regulations. Plans should also note "All work within the right of way within City limits will require a permit from Public Works". Permits can be found at https://www.fairfield-city.org/448/Permits-Specifications

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Plans shall be submitted to the Ohio EPA for approval, as required by the Public Utilities Director. The cost of submitting plans to the Ohio EPA and review by the Ohio EPA, shall be paid for by the developer. Construction shall not begin until such plans are approved by the Ohio EPA, or unless the Public Utilities Director issues a conditional release. Work that is within a roadway or public right of way will require additional review by the City of Fairfield Public Works Department.

The contractor shall give the City of Fairfield advance notice before making any connection to an existing public water main. The City of Fairfield Water Department shall close the valves on the existing main for work requiring a non-pressure installation. The work shall be performed quickly and continuously until the connection is complete, and the water service can be restored.

401.00 CONSTRUCTION REQUIREMENTS AND MATERIALS SPECIFICATIONS

401.01 Determination of Water Use

Water lines must be sized to meet present water consumption and projected average and maximum daily demands, including fire flow hazard. The design engineer shall provide calculations to establish water usage demands. Public water mains should be installed in the public right-of-way, or upon approval in a public utility easement. Using the water main as a centerline, there shall be a minimum total of 15 feet; and 7.5 feet off the center of the water main to include an open area for maintenance.

401.02 Dead Ends

Dead-ends shall be minimized by looping of water mains with multiple feed points. Where dead-ends occur, they shall terminate with a fire hydrant for flushing purposes. Water mains shall not exceed 750 feet without looping unless waived by the Public Utilities Director. Dead end mains shall be avoided if possible, by arranging for mains supplied from both directions.

401.03 Pipe Size

The minimum size of public water mains shall be 8 inches in diameter. Larger size mains will be required if necessary, to allow withdrawal of required firefighting flows while maintaining minimum pressure. Any change in sizing shall be justified by hydraulic analysis and only upon the approval of the Public Utilities Director.

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401.04 Pressure

All water mains, including those not designed to provide fire protection, shall be designed to maintain a minimum pressure of 20 psi at ground level. All water mains shall have a maximum pressure of 200 psi at all points in the distribution system under all conditions of flow. Pressure reducing valves (PRV) are required to be installed on the water service when the static pressure is 80 psi or greater.

401.05 Service Valves

At least one service valve shall be installed at each source of water supply, except fire department connections. A DCDA shall be installed at each connection with the exception of fire hydrant leads where one hydrant exists solely for the Fire Department's firefighting water supply.

401.06 Depth of Cover

The top of the pipe shall be buried by 4 feet of cover. Depth of covering shall be measured from the top of pipe to finished grade, and due consideration shall always be given to future or final grade, and nature of soil.

402.00 WATER MAIN PIPE MATERIALS

402.01 Ductile Iron Pipe

Only AWWA C104 Cement-Mortar Lined Ductile Iron Pipe shall be used for the construction of public water mains. All ductile iron pipe shall be designed and manufactured in accordance with AWWA C150 and C151. In no case shall less than Class 53 (ductile iron pipe wall thickness) be used. All pressure pipe shall be clearly marked as to class by the manufacturer.

Under no conditions shall pipeline deflection measured between joints exceed manufacturers published recommended standard for that type of pipe. The maximum deflection at push-on joints and/or mechanical joints shall be 5 degrees. If deflections of 5 degrees are closer together than the standard length of pipe (approximately 20 feet), thrust restraints shall be installed in accordance with the plans, or as directed by the Public Utilities Director. **See AWWA C600, Standard for the Installation of Ductile-Iron Water Mains, and Their Appurtenances. See also the Restrained Joint Lengths drawing on Page 20 of the Standard Construction Drawings.**

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402.02 Polyethylene Encasement

Water main piping, fittings and valves shall be encased in 8 mil polyethylene encasement as outlined in AWWA C105. On fire hydrant branches, the encasement shall be installed up to and including the flange at the fire hydrant foot valve. Where thrust blocking is required, encasement will be completed before any concrete is placed. Install polyethylene encasement prior to the placement of concrete anchors, collars, support or thrust blocks. Repair all polyethylene material damaged during construction.

402.03 Pipe Joint

All pipe joints shall conform to AWWA C111/A21.11. Gasket material shall be standard styrene butadiene copolymer (SBR) per this standard. Bolts shall be high-strength, and corrosion resistant alloy conforming to AWWA C111.

402.04 Fittings

Ductile Iron, mechanical joint fittings, 3 inch through 24 inch shall conform to ANSI for ductile iron compact fittings, and AWWA C153. All fittings shall be supplied with ductile iron glands as per ASTM A536 and all required connecting bolts, nuts, glands, gaskets and accessories. Fittings are defined as those items, which are installed in a pipeline to change direction and include all bends, tees, crosses, and wyes necessary to provide a smooth transition from one direction to another.

402.05 Tapping Sleeves and Tapping Valves

Tapping sleeves shall be used for water services larger than 2 inch in diameter. All tapping sleeves shall be either ductile iron body with mechanical joint, or 304 Stainless steel body, full circumferential seal with a ductile iron flange. Ductile iron body tapping sleeves shall be: American-Darling 1004 tapping sleeve; Clow F-5205 tapping sleeve; or Mueller H-615 tapping sleeve. Stainless steel body tapping sleeves shall be: Ford “Fast”; Romac “SST”; or Mueller H-304 with ductile iron flange. All tapping valves shall conform to AWWA C509 or C515. Valves shall have a 2-inch square operating nut for key operation and “O” ring type stem seals. All valves shall open counterclockwise, and be of the non-rising stem type. The valve sealing mechanism shall be a wedge design of ductile iron completely encapsulated with a molded resilient covering permanently bonded to the iron wedge to meet ASTM D429 testing. Tapping sleeve and valve shall be tested per manufacturer’s recommendations.

402.06 Tapping Saddles

Tapping saddles shall be utilized only when exceeding the maximum recommended direct tap size as shown in the most current Ductile Iron Pipe Research Association installation guide. Tapping saddles shall be bronze, brass, or stainless steel. They shall be band-type, or double strap type, with an AWWA tapered thread inlet.

402.07 Water Main Valve Boxes

All buried valves shall be provided with domestic manufactured cast iron valve boxes. Valve boxes shall have a screw type extension sleeve if required, and also be designed for the size of valve on which it is to be used, and with the required depth of cover. There shall be an insulating centering device between the valve box and valve. The water main valve box shall be coated with an asphaltic coating by the manufacturer. The cover shall have the word “WATER” cast in it.

402.08 Gate Valves

All valves shall be AWWA C509 or C515 (resilient seated) for water supply service. Gate valves shall be of the iron body fusion bonded epoxy, bronze mounted type and shall have non-rising bronze stems. Gate valves shall open by opening to the left (counter-clockwise) and shall be fitted with a 2-inch square operating nut. All bonnet bolts and nuts for iron body valves shall be stainless steel. Mechanical joint end connections shall conform to AWWA C111. Adjust and test valve prior to backfill. Valve shall be certified to NSF 61 Drinking Water System Components-Health Effects.

402.09 Location Frequency

Sufficient valves shall be provided on water mains so inconvenience and public health hazards are minimized during repairs. Valves shall be located no less frequently than one per block, or at 800-foot intervals. Valve clusters are required at street intersections and in every direction from a tee or cross fitting. The number of required valves and their location shall be approved by the Public Utilities Director.

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403.00 FIRE HYDRANTS AND FIRE LINES (SEE ALSO SECTION 600 FIRE SERVICES)

403.01 Fire Hydrants

Fire hydrants shall conform to the "AWWA Standard for Dry-Barrel Fire Hydrants" AWWA C502 and subsequent revisions. Fire hydrants shall be connected only to water mains adequately sized to carry fire flows. The minimum size for a public fire main shall not be less than 8 inches. All fire hydrants and auxiliary valves shall be positively locked to the water main by restrained mechanical joints. The thread sizing on the 2 ½ inch hydrant nozzles shall be 3.187 x 7. All hydrants shall be provided with an integral 5" Storz fitting and cap with connecting cable. Hydrants shall have a dual rating of AWWA and FM-1510 approval. No chains connecting the 2 ½ inch caps to the hydrant or each other will be allowed.

Hydrants shall be permanently marked with the following information, which should be cast into the barrel:

a) Manufacturer's name or trademark.
b) Model or type designation.
c) Maximum rated working pressure.
d) Size of main valve opening.
e) Year of manufacture.
f) FM Approval mark.
g) The hydrant top shall have stamped on it the word "OPEN" and an arrow, showing the counterclockwise direction for opening.
h) The hydrant shall be a minimum rated working pressure of 250 psi.

All hydrants shall stand plumb and shall have their nozzles parallel with, or at right angles to the curb, with the pumper nozzle facing the curb. The horizontal centerline of the large outlet port shall be a minimum of 18 inches and a maximum of 30 inches above the final grade. In all cases the manufacturer's recommended relative elevation of the break flange to the final grade shall be maintained. The barrel shall have a breakable safety section and/or bolts just above the ground line. Hydrants shall have a main valve opening of 5 ¼ inches; a 6-inch mechanical joint inlet to be suitable for setting in a trench 4 feet deep. Each hydrant must be equipped with an auxiliary valve with valve box. The valve shall be a compression type, opening against the pressure so the main valve remains closed if the barrel is broken off. The hydrant shall provide automatic drainage when the valve is closed. Hydrants shall be effectively blocked by the placement of concrete thrust-blocking, or approved mechanical anchor. **See the Fire Hydrant Installation drawings on Pages 17 and 18 of the Standard Construction Drawings.**

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All underground water service pipe systems shall be thoroughly flushed before connection to any fire suppression system; **Refer to the "Disinfection of Water Mains" section 411.01.**

403.02 Color of Hydrants

Fire hydrants shall be coated by the manufacturer as per the City of Fairfield requirements with industrial epoxy exterior grade paint. Public fire hydrants shall be painted OSHA safety yellow. Private fire hydrants shall be painted OSHA safety red.

403.03 Spacing

a) Travel distance is defined as the route taken by fire apparatus on any surface to which it can support the weight of a fire apparatus not to be less than 75,000 lbs.
b) Spacing of fire hydrants shall be 400 feet in public rights-of-way.
c) In residential zoned areas, hydrants must be within 800 feet travel distance to a building with a flow rate of at least 1000 gpm.
d) In commercial and industrial zoned areas, hydrants must be within 400 feet of travel distance to all areas of the building with a flow rate of at least 1000 gpm. If the building is equipped throughout with an approved sprinkler system, the distance may be increased to 600 feet.
e) The number of hydrants to be provided shall be based on the required fire flow which also will be based on building construction and occupancy use.
f) All dead-end water mains shall have a hydrant. If the potential exists for an extension of the dead-end water main, a main line tee, valve and auxiliary valve shall be installed.
g) All the above-mentioned requirements under hydrant spacing are subject to change by the authority having jurisdiction.

403.04 Location

Fire hydrants shall be located to provide complete accessibility, and minimize the possibility of damage from vehicles or injury to pedestrians. When placed behind a curb, the hydrant barrel shall be set so that the pumper, or hose nozzle cap will be a maximum of 5 feet from the curb area. No fire hydrants shall be installed closer than 2 feet from the curb, street, driveway, or other traffic edge or 5 feet from any driveway apron or cross street. No portion of the hydrant or nozzle cap shall cause an obstruction to a sidewalk, or pedestrian traffic. Fire hydrants that are connected in close proximity to the public main and within the public right of way or public

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easement shall be considered a public fire hydrant. Fire hydrants that are connected to a private main, or that are installed for the sole purpose of fire protection on private property shall be considered privately owned fire hydrants and labeled as such on any plans.

403.05 Double Check Detector Assembly *(DCDA)*

When it is necessary for any customer to have full line flow for fire protection purposes, there shall be installed in the line a device known as a "Double Check Detector Assembly". A metered by-pass shall be provided of sufficient size to carry normal usage without activating the assembly. The detector check valve shall be as manufactured by Ames, Watts or an approved equal. A full flow meter may be used as approved by the Director of Public Utilities or his/her designee. **See the Double Check Detector Assembly drawings on Pages 22 and 23 of the Standard Construction Drawings.**

403.06 Fire Line Vault

In all cases a fire line vault is preferred; however, when a structure is more than 200 feet from the public water main, a fire line vault is required. The vault shall be constructed of ODOT QC2 concrete for the accommodation of a DCDA, and shall conform to AWWA C510-92. All pipe and fittings for fire protection purposes shall comply with all applicable NFPA requirements. The pipe supplied from the public main to a point 10 feet beyond the vault shall be Ductile Iron class 53 and comply with Section 402 of this specification. Privately owned pipe materials supplied starting 10 feet beyond the vault must comply with all AWWA standards. If a non-metallic fire line is installed after the City's metering device, the fire line shall be buried with a continuous 12ga tracer wire attached to the crown of the pipe. The tracer wire should be brought to grade in a valve box, meter pit, or vault to allow for locating equipment connections. The vault shall have a sump pump or floor drain which must discharge at a point that provides positive drainage away from the vault. The access door to vault shall be an aluminum double hatch door Bilco JD-AL Series or Halliday H-W model. The size of the vault doors shall be determined by the vault proportions and approved by the Public Utilities Director. **See the Fire Line Meter Vault With Double Check Detector Assembly drawing on Page 23 of the Standard Construction Drawings.**

403.07 Post Indicator Valve (PIV)

Connections to public water systems shall be controlled by post indicator valves of an approved type, and located not less than 40 feet from the protected building. The post indicator valves shall be placed where they will be readily accessible in case of

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fire. Post indicator valves shall be set so that the top of the post will be 36 inches above the final grade. Included with each PIV shall be a wrench and break away lock. Post indicator valve shall be properly protected against mechanical damage. Post indicator valves shall conform to NFPA 24.

403.08 Operating Test

Each hydrant and watch valve shall be fully opened and closed under system water pressure, and dry barrel hydrants checked for proper drainage. Where fire pumps are available, this shall be done with the pumps running. All testing shall comply with the most current version of NFPA requirements.

403.09 Fire Department Connections (FDC)

All required fire department connections or hose couplings shall be 5-inch Storz fittings and shall be placed within 100 feet of an accessible fire hydrant. All FDCs shall be red in color and 36” to their top elevation. Each FDC shall be clearly labeled with a 12” x 12” reflective sign, which is red in color with 2 inch white lettering. FDCs mounted to a building are not approved. The FDC and PIV shall be located in close proximity to each other as approved by the Fire Chief or his/her designee. **See the Double Check Detector Assembly drawings on Pages 22 and 23 of the Standard Construction Drawings.**

404.00 WATER SERVICE CONNECTIONS

404.01 Cross Connections

There shall be no connection between the water distribution system and any pipes, pumps, hydrants or tanks where there is a chance that contaminated water or other material may be discharged or drawn into the public water system. See AWWA manual 14, Backflow Prevention and Cross Connection Control and City ordinances pertaining to backflow.

404.02 Dead Ends

All dead ends on new mains shall be terminated with a valve and fire hydrant to facilitate flushing and the future extension thereof at the discretion of the Public Utility Director or his/her designee, As-Built or GPS location verification may be required.

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404.03 Water Services

The Contractor shall provide each lot with an individual water service. For each water service line, the Contractor shall purchase from the City and install the corporation stop, meter setting and meter pit, curb stop and curb box in a suitable manner. Taps shall be made no closer than 2 feet from a bell connection or pipe end, nor shall they be made any closer than 4 feet to each other. The elevation of the service line shall be established so that it is no less than 4 feet below the finished grade. The depth of the curb box shall be no more than 5½ feet. The service shall be set at the middle of the lot. The location of curb boxes for properties on cul-de-sac roadways shall be determined by the Director of Utilities and/or his/her designee. Water services shall not be connected to fire hydrant leads and shall extend directly from the public main whenever practical. All underground water service pipe systems shall be thoroughly flushed before a connection to any private system. The location of each curb stop shall be clearly marked with a "W" imprinted in the concrete curb, near the top before the concrete hardens. All installation work for the water service shall be performed prior to the construction of new sidewalk and the street roadway. **See the Water Service Installation drawing on Page 15 of the Standard Construction Drawings.**

All water service lines ¾", 1", 1 ½", and 2" shall be flexible Type "K" copper pipe. The minimum water service size shall be a ¾" inch diameter size. The service shall be installed from the water main into each lot. Fittings for copper service branches shall be high quality copper brass with AWWA C800 Dimensions and meeting AWWA Standards. All privately owned water services after the metering device shall comply with all AWWA standards. If a non-metallic water service is installed after the City's metering device, the service shall be buried with a continuous 12 ga tracer wire attached to the crown of the pipe. The tracer wire should be brought to grade in a valve box, meter pit or vault to allow for locating equipment connections.

404.04 Corporation Stop

Corporation stops for use with saddles shall be bronze alloy with AWWA tapered thread, and outlet thread compatible with connecting pipe, without special adapters. Corporation stops for direct tapping shall be bronze alloy with AWWA tapered inlet thread, and with outlet thread compatible with connection pipe, without special adapters. All corporation stops 3/4", 1", 1 ½", or 2" shall be Ford, Mueller or AY McDonald ball type. The corporation stop shall be installed at either the 2 o'clock or 10 o'clock position on the pipe and rotated to allow easy access to the shut off dial.

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404.05 Curb Stop

Service stops shall be bronze with coupling threads conforming to AWWA C800. The stop must be designed that water pressure from the inlet side of the body shall provide additional sealing action. The stop must open counter-clockwise and be manufactured with a ¼ turn stop. All curb stops 3/4", 1", 1 ½", or 2") shall be Ford, Mueller or AY McDonald quarter turn ball valve type. Service boxes shall be manufactured of cast iron and the covers shall have the word "WATER" cast in raised letters fastened by a bronze or brass bolt. The Contractor shall insure that the curb stop is free of mud and debris, and be operational at all times. Curb stop boxes shall be installed and maintained vertically so that the access to the stop-key is unobstructed. The curb stop and box shall be installed between the curb and the sidewalk for each lot. Each curb box shall be marked with a wooden stake painted blue, and inserted 18 inches into the ground next to the curb box. The blue stake shall be 36 inches above the ground level. The location of each curb stop shall be clearly marked with a "W" imprinted in the concrete curb, near the top before the concrete hardens. **See the Utility Service Location Designation drawing on Page 11 of the Standard Construction Drawings.**

405.00 METER SETS

405.01 Classification of Meter Sets

Meter sets are classified by location into two categories: Outdoor meter sets and indoor meter sets. Indoor meter sets shall only be used when outdoor meter sets cannot be used. Indoor meter sets require the approval of the Public Utilities Director. Meter sets are further classified by the use as follows: Domestic water meters and irrigation meters.

405.02 General Requirements for Meter Sets

a) All meters shall be set in an approved non-hazardous place and accessibility shall be maintained at all times.

b) The size of the meter shall be the same size as the water service, except a smaller sized meter may be installed based upon pressure available, the length of the service line and/or where it can be shown the water demand is less than the rated capacity of the meter.

c) Meters shall be installed on water service lines as soon as practical after installation of the line, but in no case will a certificate of occupancy be issued until/unless a meter is installed.

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d) Meters shall be owned and maintained by the Public Utilities Department.

e) Remote meter touchpads or radio read equipment shall be installed by authorized employees of the Public Utilities Department only. The Public Utilities Department shall not be responsible for defacement or damage to property caused by necessary holes, fastenings or other work required for proper installation.

The Public Utilities Department will maintain remote reading devices under the same provisions as meters. A charge for repairs to any remote reading device or connections thereto, necessitated by damage or neglect by the consumer or owner shall be made in addition to any other charge provided.

405.03 Outdoor Meter Sets

All outdoor meter sets shall be installed by a private contractor and shall conform to the following requirements:

a) Meter Pits – For services 2 inches and smaller

1) Meter sets shall be placed at the right of way line, when possible, at such location as to prevent an accumulation of water within the meter pit.

2) Meter sets shall require curb stops on public property in front of the property to be serviced.

3) Meters shall be set in a pit and in the arrangement as shown in the Standard Drawing Section of this manual. **See the Residential Meter Pit drawing on Page 16 of the Standard Construction Drawings.**

4) Outdoor meters must be in a location accessible to Public Utilities Department vehicles.

b) Meter Vault – For services 3 inches and larger

Meter vaults shall be of adequate size, and readily accessible for inspection, operation, testing, maintenance, and removal of equipment contained therein. They shall be constructed and arranged to properly protect the installed equipment from movement of earth, freezing, and accumulation of water. The pit shall be poured in place, or pre-cast reinforced concrete as approved by the Public Utilities Director.

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405.04 Indoor Meter Sets

All indoor meter sets must be approved by the Public Utilities Director before installation can begin. All indoor meter sets shall be installed by a private contractor and shall conform to the following requirements:

a) Meters shall not be set higher than 4 feet to center of connection above the floor.

b) Meters shall not be concealed and obstructed by cabinets, benches or other built-in fixtures.

c) Indoor meters sets shall be made as near as possible to the point where the service line enters the building.

d) Clear access to the meter set shall be maintained at all times.

e) Meter set shall be made in such a locality that reading and changing of meter shall in no way interfere with the customer's normal course of business.

f) Water meters shall be installed in a horizontal position as close as possible to the main stop. Where an approved basement is not or will not be available, the water meter shall be placed within the building or structure in an accessible location in the utility room and if no utility room is available, the meter shall be placed in an accessible location in the kitchen or other location as approved by the Public Utilities Department. The water meter shall always be located to provide protection from mechanical injury.

g) Meter Space. Accessible meter space shall be installed for all water services. Meters shall be so installed so as to be level. All meters shall be located as near as practicable to the point of entrance and in a position giving ample protection against freezing and other external damage. Water meters shall not be installed in sheds, garages, storage buildings, etc. that are not of standard construction or not properly heated.

405.05 Meters

It is the contractor’s responsibility to properly size the water service and metering system. Meters shall be sized to handle peak flows at 90 percent of rated capacity. Water meters shall be approved by the Public Utilities Director for the appropriate type of service. The applicant shall provide expected flow ranges for low, average, and peak flows, and type of metering system. All water meters shall be purchased from the City of Fairfield Public Utilities Department. Meters shall be installed by

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the contractor in a clean pipeline, free from foreign materials. The meter shall be installed horizontally, with the register facing upward; with the direction of flow as indicated by the arrow cast in the meter case; protected from freezing, damage, and tampering.

Meters remain under the sole control and ownership of the Public Utilities Department and shall not be removed or tampered with by unauthorized persons. Unserviceable or defective meters will be replaced by the Public Utilities Department. Maintenance of the meter is the responsibility of the Public Utilities Department. If a customer wishes his meter tested for accuracy, the City will comply in accordance with section 921.05 of the City of Fairfield Codified Ordinances, Inspection of Meters.

405.06 Servicing of Meters

The maintenance of meters shall occur during normal working hours of the Public Utilities Department. In the event that this procedure inconveniences a customer, they may request that the meter be changed after normal working hours; however, the customer will be required to bear the cost of this service.

405.07 Charges for Change of Meters

Whenever it is requested by the customer to change an existing meter for one of a different size, the authorization for such action shall be given in writing to the Public Utilities Department. The costs for changing meters shall be borne by the customer making the request. The customer will be required to pay the difference in the increased meter size as per the effective schedule of fees. No refund fees will be given for a reduction in meter size.

405.08 Protection of Meters

The property owner will be held responsible for the meter in his custody and shall pay all costs of damage from any cause over which he has control such as freezing or hot water or vandalism. If the meter is stolen or lost, the replacement cost shall be paid by the owner.

405.09 Meters Required

All water service branches shall be metered.

405.10 Number of Meters

Only one water meter is required for each building or development complex.

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However, at the owner's option, a meter may be installed for each dwelling unit. The Public Utilities Director has the authority to require any new or existing building/complex to install a master meter to meter all incoming water consumption.

The supply of water from the service connection may be measured by one or more meters. When more than one meter is used in a commercial or multi-family setting, the meters shall be set in an area not under the control of any tenant and accessible to the Public Utilities Department at all times. The minimum charge for each meter shall be based on the size of each meter. When more than one meter is used, each separate service shall be subject to the same rules and regulations as a service where one branch serves a single meter.

Proper provision shall be made to permit the City to discontinue service either by:

a) Installation of separate curb stop valves in public right-of-way or easements and separate lines from the curb stop to the meter,

Or

b) One valve and one line to the meter room and installation of lockout valves on the individual meters; and the right to enter upon private property by the Public Utilities Department to the location of the meters and lockouts. Denial of the right of entrance will result in the turn-off of water at the water main.

It is expected that the situation detailed in b) above will be for multi-family units where one service is run into the meter room and each individual service is taken from a manifold.

Meter readings shall be used to calculate utility charges. However, the Public Utilities Department shall be authorized to use other means, such as estimation, to calculate charges when it is apparent that a meter has not been operating properly, if it has been removed or cannot otherwise be read.

405.11 Manifolded Meters

a) Manifolded public meter sets are prohibited in new installations, unless authorized by the Public Utilities Director.

b) Meters set inside a building in an existing manifold shall be set and maintained in accordance with Public Utilities Department Standards.

c) Meters may not be placed in manifold unless the total of such meters

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satisfies the minimum requirements determined by the size of the service branch being utilized.

d) All water meters placed in manifold shall have the inlet valve equipped with padlock wings.

e) All rules which apply to the billing and collecting for individual service shall apply to every meter in manifold.

f) A meter set in manifold shall be considered an active account until the inlet valve is locked in the off position and the account is placed in hold status.

405.12 Deduct Meters; Water-Only Meters

When a considerable amount of water delivered to any premises is not returned to the City's wastewater collection system, the customer may apply to the City to allow for the installation of a separate water meter (also known as sewer deduct meter) to accurately quantify the amount of such water not returned to the wastewater disposal system. If approved by the Public Utilities Director or designee, the customer shall not be billed sewer use charges for such metered water not returned to the sewage disposal system. The cost of the water meter and its installation shall be the responsibility of the customer. The manner of installation of the meter and other related conditions must be specifically approved by the Public Utilities Director.

For irrigation purposes, and depending on the plumbing configuration, the customer may apply to the City to allow for the installation of a separate water-only meter as an alternative to a sewer deduct meter. This configuration requires an independent irrigation water line tapped from the public main separately from the domestic line, or the irrigation line tapped off the domestic water service prior to the primary water meter. If approved by the Public Utilities Director or designee, the customer shall only pay water charges on usage registered through the water-only meter. The cost of the water meter and its installation shall be the responsibility of the customer. The manner of installation of the meter and other related conditions must be specifically approved by the Public Utilities Director.

406.00 SEPARATION OF WATER MAINS AND SEWERS

406.01 Separation of Water Mains and Sewers

In all cases, the most recent revision of *Recommended Standards for Water Works* and *Recommended Standards for Wastewater Facilities* shall be followed. The

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following factors should be considered in providing adequate separation between water mains and sewers:

a) Materials and joint placement for water and sewer pipe.
b) Soil conditions.
c) Service and branch connections into the water main and sewer pipe.
d) Compensating variations in horizontal and vertical separation between water main and sewer pipe.
e) Space for repair and alterations between water mains and sewer pipe.
f) Off-setting of pipes around manholes and other obstructions.
g) No water pipe shall pass through or come into contact with any part of a sewer, or sewer manhole.

406.02 Parallel Installation of Water and Sewer Lines

Under normal conditions, water mains shall be laid at least 10 feet horizontally from any sanitary sewer, storm sewer, or sewer manhole. The distance shall be measured from edge of pipe to edge of pipe. When conditions prevent a horizontal separation of 10 feet, a water main may be laid closer to a storm or sanitary sewer provided that the bottom of the water main is at least 18 inches above the top of the sewers. Where this vertical separation cannot be obtained, the sewer shall be constructed of materials with joints that equivalent to water main standard of construction. In addition, they shall be pressure tested to assure water tightness prior to backfilling.

406.03 Crossing of Water and Sewer Lines

Under normal conditions, water mains shall not cross lateral sewers, or sanitary sewers. Water mains shall be laid to provide a vertical separation of at least 18 inches between the bottom of the water main and the top of the sewer. When conditions prevent a vertical separation of 18 inches, sewers shall be constructed of materials with joints that equivalent to water main standards of construction, and shall be pressure tested to assure water tightness before backfilling.

All water mains passing under a sewer shall have the following additional protection:

a) A vertical separation of at least 18 inches between the bottom of the sewer and top of the water main.
b) Adequate structural support for sewers to prevent excessive deflection of joints and seepage.

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c) The length of the water pipe centered at the point of crossing, so water main joints shall be equidistant from the sewer, and as far away as possible from the sewer.
d) No water pipe shall pass through, or come in contact with any part of the sewer manhole.

407.00 PROTECTION AND INTERRUPTION

407.01 Protection of Existing Underground Utilities

The accuracy and location of existing underground utilities as shown on plans is not guaranteed. It shall be the duty of the Contractor to locate these utilities in advance of excavation, and to protect same from damage after uncovering. The Contractor shall contact the owners of the utilities for assistance in locating these service lines. The Contractor shall call the Ohio Utilities Protection Service (8-1-1 or 1-800-362-2764) at least 48 hours in advance of digging. Any expense incurred by reason of damaged or broken lines shall be the responsibility of the Contractor.

407.02 Service Interruptions

It is the responsibility of the Contractor to notify the Public Utilities Department in advance, when it becomes necessary for the purpose of making connections, or to shut off, or to turn on the water in existing mains. Such work shall not be performed outside the City's normal business hours or during City observed holidays. These holidays can be found on the City of Fairfield's website. The Contractor shall notify the City Water Division as to when, and for how long the water service will be interrupted. No valve or other control on the existing system shall be operated for any purpose by the Contractor. The City of Fairfield will operate all valves, hydrants, blow-offs, and curb-stops.

408.00 EXCAVATION

408.01 Trenching and Excavation

a) No trenching or laying of pipe and fittings shall be done until grade stakes have been set. The Contractor shall use excavating equipment that produces an even trench foundation. The trench shall conform to the *Typical Trench Detail* found in the *Standard Construction Drawings*. All water lines shall be installed with a minimum cover of 48 inches. The open trench ahead of pipe-laying shall be kept to a minimum, and shall not be in excess of 25 feet at the end of the working day, or at the ceasing of work.

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b) Open cut trenches shall be sheeted and braced as required by governing state laws, and municipal ordinances, and as may be necessary to protect life, property, the work, or as ordered by the project engineer, or inspector. To protect persons from injury, and to avoid property damage, adequate barricades, construction signs, torches, red lanterns, and guards shall be placed and maintained during the progress of the construction work until it is safe.

c) The width of the trench shall be ample to permit the pipe to be laid and joined properly, and the backfill to be placed and compacted as specified. Trenches shall be of such extra width, when required, to permit the convenient placing of timber supports, sheeting and/or bracing.

d) Whenever wet or unstable soil is incapable of properly supporting the pipe in the trench bottom; such soil shall be removed to the depth and length as determined by the engineer or project inspector. The trench shall be back filled to grade with a controlled or non-shrinkable type of back fill as determined by the City of Fairfield.

e) All grading in the vicinity of a trench excavation shall be controlled to prevent surface water from flowing into the trench. Any water accumulating in the trench shall be removed by pumping or other approved method. Material excavated from the trench shall be stacked in an orderly manner at a safe, sufficient distance away from the trench edge. The project inspector will have the contractor remove materials unsuitable for backfilling. The Contractor will keep the City informed a reasonable time in advance of the location and time that the Contractor intends to work. Any unauthorized excavation below grade shall be backfilled at the Contractors expense with good, well-compacted material.

f) All trenching, grade and cover work shall conform to the lines and grades given by the engineer. Work shall be done according to the drawings and specifications; subject to such modifications as the City of Fairfield may determine necessary during the project period. **See the Trench Detail drawing on Page 3 of the Standard Construction Drawings.**

g) For public and private work within the City's right-of-way, the contractor performing the work is required to restore any disturbed areas in the right-of-way within 48 hours after the completion of the work.

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408.02 Allowable Removal of Pavement

No trenching or tunneling shall be permitted in a public roadway, or right of way, unless authorized by permit and review by the Public Works Department. The Contractor shall utilize full depth sawing to assure the breaking of pavement along straight lines. The face of the remaining pavement shall be approximately vertical. If the Contractor removes or damages pavement or surfaces beyond the limits specified, such pavement and surfaces shall be repaired or replaced at the Contractors expense. The Public Works Department must be notified 24 hours in advance and an inspector present for any pavement restoration to be acceptable.

408.03 Trenchless Methods

Trenchless methods (Boring, tunneling, etc.), when necessary, shall be done under the supervision of the engineer or project inspector. No trenchless work shall be permitted in a public roadway or right-of-way, unless authorized by permit and review by the Public Works Department. The Public Works Department must be notified 24 hours in advance and an inspector must be present. **See the Casing Pipes drawing on Page 19 of the Standard Construction Drawings.**

408.04 Protection of the Public

During the period that any work is being performed within the public right-of- way, or that an open trench or pit exists within the limits of said right-of-way, the Contractor shall furnish and utilize such signs, lights, barricades, and safety devices in order to properly guide and protect the public. The Contractor shall conduct his work to not interfere with public travel. Whenever it is necessary to cross or interfere with railroads, intersecting streets, driveways, public or private, crosswalks, or approaches to any buildings, the Contractor shall provide and maintain a safe bridge or crossing for public travel. The Contractor shall promptly remove any temporary structures when requested by the city. The Contractor shall post, where directed by the engineer, suitable signs indicating that the street is closed, and necessary detour signs for the proper maintenance of traffic compliant with the most recent version of the *Ohio Manual and Uniform Traffic Control Devices.*

409.00 INSTALLATION

409.01 Installation

a) Pipe and fittings shall be handled in such a manner as to insure delivery to the work in a sound, undamaged condition. All pipe shall be inspected for

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defects before installation. All pipe, fittings, valves, and hydrants shall be carefully lowered into the trench piece by piece by means of a derrick, ropes, or other suitable tools or equipment, in such a manner as to prevent damage to water main materials, protective coatings, and linings. Under no circumstances shall the water main materials be dropped, or dumped into the trench.

b) All pipe or fittings shall be carefully examined for cracks, and other defects while suspended above the trench immediately before installation into final position. Defective pipe or fittings shall be laid aside for inspection by the engineer, or inspector who will prescribe corrective repairs or rejection.

c) The pipe and fittings shall be thoroughly cleaned by swabbing before being lowered into the trench, and shall be kept clean until the joints are completed. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the trench. All open ends are to be closed to with caps or plugs at all times, unless pipe is actually being laid. At times when pipe laying is not in progress, the open ends of the pipe shall be closed by watertight plug or other means approved by the engineer, or inspector. This provision shall apply during the noon hour as well as overnight. If water is in the trench, the seal shall remain in place until the trench is pumped completely dry.

d) Deflections from a straight line or grade, as required by vertical or horizontal curves, shall not exceed manufacturer's recommendations and approval by the engineer or project inspector. Valve boxes shall have the interiors cleaned of all foreign matter before installation.

e) Mechanical joints shall be installed under the provisions of the recommendations of the joint manufacturer. Fittings at bends or dead-ends shall be firmly blocked against the vertical face of the trench to prevent fittings from being blown off the lines when under full pressure. Thrust blocking shall conform to City of Fairfield specifications. Where pipe ends are left for future connections, they shall be valved, plugged, or capped as shown on the plans. Where connections are made, between any new work and existing mains, the connections shall be made by using the fittings as required by the City of Fairfield.

409.02 Thrust Blocking

When required on existing mains, all bends over 5 degrees, shall be securely blocked against movement with concrete blocking placed against undisturbed earth

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in accordance with AWWA C600. All concrete shall be Class QC1/QC Misc. **See the Thrust Blocking drawing on Page 21 of the Standard Construction Drawings.**

Concrete thrust blocking shall be placed at least 2 days in advance of testing mains. All caps or plugs used in mains to undergo hydrostatic testing, shall be properly installed and thrust blocked in advance. All securing and blocking of caps shall be inspected by the City Water Division, or project inspector.

409.03 Restrained Joint Systems

When restraint is required on new water mains, connections must be restrained by restraining joint systems, or locking gaskets provided that sufficient length is available. Retraining joint systems are acceptable when designed in accordance with "Thrust Restraint Design for Ductile Iron Pipe" and shall meet ASTM A536-80. **See the Restrained Joint Lengths drawing on Page 20 of the Standard Construction Drawings.**

409.04 Pipe Cutting

Cutting the pipe shall be kept to a minimum, and shall be done in a neat and skillful manner without damage to the pipe. Cutting shall be done by means of an approved mechanical cutter. Wheel type cutters shall be used when practical.

409.05 Connection to City Mains

Newly installed piping shall not be connected to existing City mains until disinfected per AWWA C651 and have passed pressure and leakage tests. Test plugs, corporation stops, connecting sleeves, and temporary piping to a water source, shall be furnished by the Contractor.

410.00 BACKFILLING

410.01 Backfilling of Trenches

a) The Contractor shall remove and properly dispose of all surplus materials from the work site. In addition, the Contractor shall restore berm, and unpaved driveways to original condition. The Contractor shall reinstall any fencing, mail boxes, signs, poles, etc. that were removed for the installation of the water mains. The removal and disposal of surplus materials shall be done at the Contractors expense.

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b) The Contractor shall use sod or seeding to restore any grass areas damaged or destroyed by the installation of the water mains. The use of sod or seeding shall be determined and mutually agreed upon by the Contractor and the Public Utilities Director. Reasonable protection and care, including any necessary watering of sod or seed, shall be maintained by the Contractor until a satisfactory stand of grass has been established.

c) Backfilling shall not be done in freezing weather, except by permission of the Public Utilities Department or the project inspector. Backfilling shall not be made with frozen material. No fill shall be made where the material already in the trench is frozen.

410.02 Backfilling Under Pavement

Flowable controlled density fill (Low Strength Mortar –LSM 50) shall be per ODOT 613 under the roadway and curb. Granular backfill item 304 may be used under private driveways. **See the Trench Detail drawing on Page 3 of the Standard Construction Drawings.**

411.00 TESTING, DISINFECTING, AND FLUSHING MAINS

411.01 Disinfection and Flushing of Water Mains

The Contractor shall pay for the costs of disinfecting, and flushing of the water mains as well as the cost for all required bacteriological tests. The Contractor shall furnish all labor, pumps, pipe connections, additional line plugs, adapters, caps, and other necessary apparatus and materials. All work shall conform to the "AWWA Standard for Disinfecting Water Mains"; AWWA C-651.

412.00 PRESSURE AND LEAKAGE TEST

412.01 Pressure Testing

The Contractor shall pay for the costs of hydrostatic and/or leakage testing of all new water mains. The Contractor shall furnish all labor, pumps, pipe connections, additional line plugs, adapters, caps, and other necessary apparatus and materials. All work shall conform to AWWA Standard "Installation of Ductile Iron Mains and their Appurtenances" and the most current version of DIPRA's Installation Guide for Ductile Iron Pipe.

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412.02 As-Builts

Within thirty days after completion of construction work on any part of the water system, the contractor shall provide a complete set of certified, reproducible as-built drawings to the Public Utilities Director or his/her designee, for all water improvements and repairs, including those constructed in subdivisions and on private property. These plans must be clearly marked "As-built" on every sheet with all water services, fire hydrants and main valve locations verified by a post construction survey made at the Contractor's expense.

As-built plans shall be provided on reproducible sheets measuring 24 inches by 36 inches and sealed and signed by the engineer to certify that the as-builts are per field conditions and along with an AutoCAD file (.dwg or .dxf).

413.00 BACKFLOW PREVENTION, CROSS-CONNECTION CONTROL, AND BOOSTER PUMPS

413.01 General

If, in the judgment of the Public Utilities Director and/or his/her designee, an approved testable backflow prevention device is necessary for the safety of the public water system, notice will be given to the water customer to install and maintain such an approved device. The water consumer, at their own expense, shall install such an approved device at a location and in a manner approved by the Director and shall have inspections and tests made of such approved devices on an annual basis.

All provisions of the most current edition of Chapter 3745-95 of the Ohio Administrative Code (OAC) are hereby incorporated into this Handbook.

413.02 Booster Pumps

No person shall install or maintain a water service connection where a booster pump has been installed, unless an approved method is in place and is operational to maintain a minimum suction pressure. The water consumer, at his own expense, shall have inspections and tests made of any approved device installed for the purpose of minimum suction pressure maintenance on an annual basis. Tests shall be performed to certify to the supplier of water that the device is in proper working order.

All provisions of the most current edition of Chapter 3745-95 of the Ohio Administrative Code are hereby incorporated into this Handbook.

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413.03 Violations

a) The supplier of water shall deny or discontinue, after reasonable notice to the occupants thereof, the water service to any premises wherein any required backflow prevention device is not installed, tested and maintained in a manner acceptable to the supplier of water, or if it is found that the backflow prevention device has been removed or bypassed or if an unprotected cross-connection exists on the premises or if a required low pressure cut-off device is not installed and maintained in working order or if the supplier of water or the Public Utilities Director or the authorized representative of either, is denied entry to determine compliance with this section.

b) Water service to such premises shall not be restored until the consumer has corrected or eliminated such conditions or defects in conformance with all applicable provisions of OAC 3745-95 and to the satisfaction of the supplier of water.

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WASTEWATER – SECTION 500

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SECTION 500

WASTEWATER

INTRODUCTION

This section is subject to periodic revision to meet changing requirements for materials, and environmental regulations, etc. At the beginning of a project, users should verify that they have the latest edition.

The latest published edition of the following documents shall be the accepted standard for materials and/or procedures for the construction, modification, alteration, or expansion of the City of Fairfield's public wastewater system.

1. ***City of Fairfield Design, Construction, and Materials Specification Handbook.***
2. ***City of Fairfield Codified Ordinances. Sewers Chapter 925.***
3. ***Ohio EPA Laws and Regulations (OEPA).***
4. ***Ohio EPA Backflow Prevention and Cross Connection Control.***
5. ***Recommended Standards for Sewage Works, "The Great Lakes Upper Mississippi River Board" (G.L.U.M.R.B.) also known as "The Ten Sate Standards".***
6. ***The Clean Water Act (CWA).***
7. ***40 Code of Federal Regulations Part 403. General Pretreatment Regulations.***
8. ***National Pollutant Discharge Elimination System (NPDES).***
9. ***Ohio Revised Code (ORC) 6111.032- Ohio Pretreatment Program.***
10. ***Solid Waste Disposal Act (SWDA).***

If a conflict exists between reference sources, the more restrictive requirement shall prevail. The Public Utilities Director shall provide interpretation, as requested.

Section 500 is intended to convey the general design and construction requirements for a typical project. It also lists specific City of Fairfield Wastewater Department requirements relating to plan review, inspection, testing, and acceptance of facilities. It is not intended as a substitute for site-specific engineering. Individual project conditions may require variances from the provisions in this document in which case the variances should be noted in the plans and other data submitted by the project design professional for the City of Fairfield's approval.

The standard details in the appendix are supplemental to the general construction materials and specifications. If the developer or designer notes any discrepancies or desires an interpretation of a specification, they shall submit their question to the City of Fairfield in writing for a decision.

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"Wastewater or sewage" means the spent water of a community, and may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any ground water, surface water, and storm water that may be present.

Any single family, or multi-family dwelling, commercial or industrial establishment shall be connected to a public sewer if the sanitary lines are available for connection. Service shall be considered available if the property can be connected by gravity flow within 100 feet of a main sanitary line in any public right-of-way or easement. Service may also be considered available if the property can be connected by force main within 500 feet of a main sanitary line in any public right-of-way or easement. The connection shall be at the cost of the property owner.

In all buildings in which any building drain is too low to permit gravity flow to the sewer main, sanitary sewage carried by such drain shall be lifted by artificial means as approved by the Public Utilities Director, and discharged into the sewer service.

Sewer availability will be determined by the City of Fairfield, or representative of the municipal authority in the area of the proposed development. The City of Fairfield will review the preliminary plans to determine if the wastewater treatment facilities, lift stations, and sanitary lines in the area of the proposed development have sufficient capacity to serve the proposed development.

Septic tanks, leech fields and mound systems are under the authority and review of the Butler County Board of Health. Butler County sanitary sewers are under the authority and review of Butler County Water and Sewer.

If the Director of Public Utilities, or his/her designee, requires that a subdivision sewer or sewers must be larger than the size required to handle the sewage flow from the subdivision, due to expansion of the sewer system beyond the subdivision in the future, the City shall pay the developer the difference in cost for the larger piping materials. Additional installation cost for the larger piping is the responsibility of the developer.

ABBREVIATIONS

The following abbreviations used in this manual shall have the designated meanings:

- **AASHTO** - ***American Association of State Highway Transportation Officials***
- **ABS** - ***Acrylonitrile-Butadiene-Styrene***
- **ANSI** - ***American National Standards Institute***

- **ASTM** - ***American Standard Test Methods***
- **BCWS** - ***Butler County Water and Sewer***
- **BOD** - ***Biochemical Oxygen Demand***
- **CCTV** - ***Closed Circuit Television***
- **CFR** - ***Code of Federal Regulations***
- **COD** - ***Chemical Oxygen Demand***
- **CWA** - ***Clean Water Act***
- **DI** - ***Ductile Iron***
- **FOG** - ***Fats, Oils, Grease***
- **GI** - ***Grease Interceptor***
- **GLUMRB** - ***Great Lakes Upper Mississippi River Board***
- **Gpd** - ***Gallons per Day***
- **Mg/l** - ***Milligrams per Liter***
- **NACE** - ***National Association of Corrosion Engineers***
- **NSF** - ***National Sanitary Foundation***
- **NPDES** - ***National Pollutant Discharge Elimination System***
- **ODOT** - ***Ohio Department of Transportation***
- **OEPA** - ***Ohio Environmental Protection Agency***
- **ORC** - ***Ohio Revised Code***
- **PDI** - ***Plumbing and Drainage Institute***
- **POTW** - ***Publicly Owned Treatment Works***
- **PVC** - ***Polyvinyl-Chloride***
- **RCRA** - ***Resource Conservation and Recovery Act***
- **SAE** - ***Society of Automotive Engineers***
- **SDR** - ***Standard Dimension Ratio***
- **SIC** - ***Standard Industrial Classification***
- **SSPWC** - ***Standard Specification Public Works Construction***
- **SWDA** - ***Solid Waste Disposal Act***
- **TDH** - ***Total Dynamic Head***
- **TOMP** - ***Toxic Organics Management Plan***
- **TSS** - ***Total Suspended Solids***
- **UPC** - ***Uniform Plumbing Code***
- **USEPA** - ***U.S. Environmental Protection Agency***

501.00 DISCHARGES TO WASTEWATER COLLECTION SYSTEM

501.01 Prohibited Discharges

No person shall discharge or cause to be discharged any storm water, surface water, ground, roof runoff, subsurface drainage, cooling water, or unpolluted industrial process water into any sanitary sewer of the City of Fairfield, or permit

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or allow to be discharged or conveyed to a public sewer any wastewater containing pollutants of such character or quantity that will:

a) Not be susceptible to treatment or interfere with the process or efficiency of the treatment system.
b) Constitute a hazard to human or animal life, or to the stream or water course receiving the treatment plant effluent.
c) Violate pretreatment standards.
d) Cause the treatment plant to violate its NPDES permit, or applicable receiving water standards.

No person shall discharge or cause to be discharged without prior written approval of the Director of Public Utilities, or his/her designee, any hazard waste into the sanitary sewer of the City of Fairfield. A hazardous waste shall be defined by OAC 3745-51-21 to 3745-51-24 inclusive, or is a waste listed in OAC 3745-51-31, 3745-51-32, 3745-51-33(E), or 3745-51-33(F).

501.02 Special Discharges

Special discharges to the wastewater collection system are prohibited unless approved in writing by the Public Utilities Director. An application for special discharges can be made through email at public_utilities@fairfieldoh.gov or regular mail at 5021 Groh Lane, Fairfield, Ohio 45014. There is no application fee for a special discharge. If the discharge is approved, the discharger will be billed for the amount of wastewater discharged to the City system in accordance with the effective wastewater treatment rates. Any analytical data obtained during the process of discharging to the wastewater collection system shall be submitted to the Public Utilities Department within 7 calendar days along with the total volume of water discharged to the system.

502.00 APPROVAL

502.01 Wastewater Approval

Plan approval by the City of Fairfield does not imply, nor assure approval from the Ohio EPA. Approval of the plans does not constitute an assurance that the proposed project will operate in compliance with all Ohio laws and regulations. Plans are approved subject to the conditions of compliance with applicable laws, rules, regulations, and standards. The proposed project may be constructed only in accordance with the approved plans. There may be no deviation from the approved plans without the written approval by the Director of Public Utilities, or his/her designee. Plans should contain a note stating “All work within the

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right-of-way within City limits will require a permit from Public Works". Permits can be found at https://www.fairfield-city.org/448/Permits-Specifications.

As required by the Director of Public Utilities or his/her designee, plans shall be submitted to the Ohio EPA for approval. The cost of submitting plans to the Ohio EPA, and review by the Ohio EPA shall be paid by the developer. Construction shall not begin until such plans are approved by the Ohio EPA, or unless the Director of Public Utilities, or his/her designee, issues a conditional release.

All sewers connecting to the City of Fairfield's public sewer system shall comply with all City of Fairfield standards, as well as federal, state, and City ordinances. The Public Utilities Director and other authorized employees of the City bearing proper credentials and identification shall be permitted to enter into or upon all properties for the purpose of inspection, observation, measurement, sampling, and testing, in accordance with the provisions of this section. No tie-in shall be made except in the presence of the City of Fairfield Inspector.

Inspection of Construction – See Section 102.00.

502.02 Determination of the Amount of Sewage and Average Flows

The average flow of sanitary sewage shall be computed on the basis of 100 gallons per capita. The estimated flows listed are to be used only for the design of sewers and lift stations, and should not be used in the design of treatment plants.

WASTEWATER SOURCE	ESTIMATED SEWAGE FLOW (gallons - per -day)
Airports	
Per Employee	20
Per Passenger	5
Apartments	
One bedroom	250
Two bedroom	300
Three bedroom	350
Assembly Halls	
Per seat	2
Bowling Alleys (no food service)	
Per Lane	75

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WASTEWATER SOURCE	ESTIMATED SEWAGE FLOW (gallons - per -day)
Camps	
With individual bath units-per person	50
With central bath house per person	35
Churches	
Small- per sanctuary seat	3-5
Large with kitchen-per sanctuary seat	5-7
Dance Halls	
Per person at maximum capacity	2
Factories	
No showers per employee	25
With showers per employee	35
Family Dwelling	
Per person	100
Food Service Operations	
Restaurant per seat	35
Banquet rooms-per seat	5
Tavern (very limited food service) per seat	35
Hospitals	
No resident personnel per bed	300
Institutions	
Residents per bed	100
Laundries	
Coin operated-per machine (standard size)	400
Motels	
Per Unit	100
Nursing and Rest Homes	
Per patient	150
Per resident employees	100
Office Buildings (exclusive of cafeteria)	
Per employee per shift	20

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WASTEWATER SOURCE	ESTIMATED SEWAGE FLOW (gallons - per -day)
Playgrounds and Daytime Parks	
With toilet facility-per person	5
With showers, bathhouse toilets-per person	10
Schools	
Elementary (not including showers or cafeteria-per pupil)	10
High and Junior High (not including showers or cafeteria per pupil)	15
Add for cafeteria – per pupil	5
Add for showers – per pupil	5
Service Gas Station	1000
Shopping Centers (without food service or laundries)	
Per area of floor space	0.2/sq.ft
Swimming Pool (average with hot shower)	
Per swimmer	3-5
Theaters	
Movie – per seat	5
Trailer Parks (mobile home parks)	
Per trailer space	300
Travel Trailer and Recreational Vehicle (parks and camps)	
Per trailer or tent space	125
Vacation Cottages	
Per person	50

502.03 Peak Flows

Sanitary sewers shall be designed on a peak flow basis using a peak factor of 4 times the total calculated average daily wastewater flow for collector sewers, and a peak factor of 2.5 for sub-mains and truck sewers. Pumps and force mains should be designed to carry the peak flow of all the sewers that discharge into the lift station. The peak flow for areas which do not have a 24-hour run-off period shall be calculated as follows:

$$\text{Peak Factor} \times \left(\frac{\textit{Calculated Wastewater Flow(gallons) x 24 hours}}{\textit{Run-off period (in hours)}}\right) = \textit{gpd}$$

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Peak Factor = 4.0 for collector sewer mains.
Peak Factor = 2.5 for trunk main sewers.

ENTITY	RUN-OFF PERIOD
Municipality	24 hours
Factories	Length of shift
Subdivisions (over 250 homes)	24 hours
Subdivisions (under 250 homes)	16 hours
Hospitals	12-24 hours
Camps	16 hours
Schools	8 hours
Restaurants	4 hours
Boarding Schools	16 hours
Mobile Home Parks	12 hours
Apartments	12 hours
Motels	4 hours

**Use of other run-off periods must be documented.*

503.00 DESIGN OF SEWERS

503.01 Approval of Sewers

In general, the City of Fairfield will approve plans for new systems, extensions to new areas, or replacement sanitary sewers only when designed upon the separate basis, in which rain water from roofs, streets, and other areas, and groundwater from foundation drains are excluded.

503.02 Design Capacity and Design Flow

In general, sewer capacities should be designed for the estimated ultimate tributary population, except in considering parts of the systems that can be given to the maximum anticipated capacity of institutions, industrial parks etc. Where future relief sewers are planned, economic analysis of alternatives should accompany initial permit applications.

503.03 Minimum Size

All public sanitary sewers conveying raw sewage shall be a minimum of 8 inches in diameter. Sanitary sewer laterals shall be a minimum of 6 inches of diameter,

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and run to within 5 feet of the building, and tied directly into the building sanitary sewer.

503.04 Depth

In general, sewers should be sufficiently deep to receive wastewater from basements, and to prevent freezing. Insulation shall be provided for sewers that cannot be placed at a depth sufficient to prevent freezing. A minimum depth for sewer laterals shall be 36 inches from the crown of the lateral to afford protection from frost. Sewer installation requiring less cover shall require the approval of the Director of Public Utilities, or his/her designee.

503.05 Buoyancy

Buoyancy of sewers shall be considered and shall be prevented with appropriate construction. The flotation of the pipe shall be prevented with appropriate construction where high groundwater conditions are anticipated.

503.06 Location

Public sewer mains shall be installed in public right-of-way, or upon approval, in a public utility easement. The width of a permanent sewer maintenance easement shall be governed by the following depth chart:

Depth	**Width of Maintenance Easement**
10-15 feet	20 feet
16-20 feet	30 feet
21-30 feet	2.0 x depth of sewer, plus 10 feet

**Sewers greater than 25 feet of depth shall require the approval of the Director of Public Utilities.*

The sewer maintenance easement shall be no less than 20 feet wide, and shall be totally within the public right-of-way, or public utility easement. The easement shall be evenly divided on both sides of the sewer line.

503.07 Flow Velocities

All sewers shall be designed and constructed to give mean velocities, when flowing full, of not less than 2.0 feet per second, based on Manning's formula using an "n" value of 0.013. When velocities greater than 12 feet per second are

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expected, provisions should be made to protect against displacement by erosion and impact.

503.08 Minimum Allowable Slope

The following minimum slopes, should be provided for sewers 18 inches or less. However, slopes greater than these may be desirable for construction, to control sewer gases, or to maintain self-cleansing velocities at all rates of flow within the design limits.

The minimum allowable slope shall be that which results in a velocity of at least 2 feet per second when the sewer pipe flows at ¼ of full depth. Sewers of 18 inches or less shall be laid with uniform slope and straight alignment between manholes. The line and grade alignment shall be checked with laser instruments.

Sewer size	Min. Slope 2.0 FPS Velocity (ft./100ft.) n-0.013	Approx. Capacity Minimum Slope (GPD)	Approx. Capacity Minimum Slope (CFS)
8 inch	0.50	520,000	0.80
10 inch	0.28	750,000	1.16
12 inch	0.22	1,100,000	1.70
15 inch	0.15	1,680,000	2.60
18 inch	0.12	2,330,000	3.60

503.09 Minimum Flow Depths

No slopes less than the recommended minimum will be permitted unless approved by the Director of Public Utilities or his/her designee.

503.10 Minimum Solids Deposition

The pipe diameter and slope shall be selected to obtain the greater practical velocities to minimize settling problems. Oversize sewers will not be approved to justify using flatter slopes. If the proposed slope is less than the minimum slope of the smallest pipe, which can accommodate the design peak hourly flow; the actual depths and velocities (minimum, average and maximum) shall be calculated by the design engineer, and shall be included in the plans.

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503.11 Steep Slope Protection

Sewers of a 15% slope or greater shall be anchored with concrete anchors spaced as follows:

a) Grades from 15% to 35% shall be anchored on 36 feet center to center.
b) Grades from 36% to 50% shall be anchored on 24 feet center to center and must be approved by the Public Utilities Director.
c) Grades from 51% and over shall be anchored on 16 feet center to center and must be approved by the Public Utilities Director.

503.12 Alignment

In general, sewers shall be laid with straight alignment between manholes. Straight alignment shall be checked by using a laser beam. A laser beam system shall conform to OSHA requirements, and have an early warning system. See Section 507.04 Laser System.

503.13 Changes in Pipe Size

A manhole or approved structure shall be placed at all changes in pipe diameter. At no time shall a pipe of a larger diameter flow into a pipe of a smaller diameter without the approval of the Public Utilities Director. The invert of the larger sewer should be lowered sufficiently to maintain the same energy gradient.

503.14 Connections

No buildings shall be connected to a lateral unless the building is completely under roof. In the case of building demolitions, the existing connection shall be abandoned at the right of way or as determined by the Public Utilities Director or his/her designee. Any utility abandonment during redevelopment or demolition requires an inspection by the Public Works Department.

503.15 Protection of Water Supplies

There shall be no physical connection between a public or private potable water system and a sewer, or it's appurtenance that would permit the passage of any sewage into the potable water supply.

503.16 Parallel Installation

Sanitary sewers and manholes shall be laid a minimum of 10 feet horizontally from any existing or proposed water main. When local conditions prevent a

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separation of 10 feet, a sewer line may be laid closer than 10 feet to water main if it is laid in a separate trench. The sewer shall be laid lower than the water line, with a minimum of 18 inches below the invert of the water main. When it is impossible to obtain proper separation, the sewer pipe material shall be pressure rated at 150 psi and shall be pressure tested to assure water tightness.

503.17 Crossings

Whenever sewers must cross under water mains, the sewer shall be laid at such an elevation that the top of the sewer is at least 18 inches below the bottom of the water main. When the elevation of the sewer cannot be buried to meet the above requirement, the water main shall be relocated to provide this separation, or reconstructed with ductile iron pipe, that will withstand a 150 psi pressure test, for a distance of ten feet on each side of the sewer. One full length of water main pipe shall be centered over the sewer so that both joints will be as far from the sewer as possible.

504.00 LATERALS

504.01 Lateral Size

No gravity lateral sewer conveying wastewater shall be less than 6 inches. Laterals for low-pressure force main systems shall be sized according to the hydraulic design criteria.

504.02 Lateral Slope

The slope of the 6-inch pipe shall be not less than 1/4 inch per foot (2%), while maintaining a minimum vertical separation of 36 inches. A minimum vertical separation of 36 inches shall be required as measured from the crown of the public sanitary main and the lowest floor elevation served by gravity sewers. In any structure in which the plumbing is too low to permit gravity flow to the utility system, or private sewer, the sewage shall be lifted by artificial means and discharged into the utility system. When only the lower floor of a structure is too low for gravity flow, the remaining floors must flow by gravity. **See the Service Line Details drawing on Page 24 of the Standard Construction Drawings.**

504.03 Location

No sewer lateral shall be laid parallel to within 5 feet of any bearing wall, which might thereby be structurally weakened. A 2-inch-tall “S” shall be stamped on the curb face at all sewer lateral locations. **See the Utility Service Location Designation drawing on Page 11 of the Standard Construction Drawings.**

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504.04 Depth

The minimum sewer lateral cover depth shall be 36 inches from the crown of the lateral to afford protection from frost. The sewer lateral shall be installed on the low point of the property being served and shall be sufficiently deep to receive wastewater from basements. A minimum vertical separation of 36 inches shall be required as measured from the crown of the public sanitary main and the lowest floor elevation served by gravity sewers.

504.05 Alignment

The sewer lateral shall be laid at a positive uniform grade and in straight alignment. Changes in direction shall be made only with properly made curved pipe-fittings with no deflections greater than 45º permitted. The maximum connection angle shall be no greater than 60º degrees into the public main.

504.06 Tap Connections

The connection of a building lateral to an existing sanitary sewer shall be air and water tight in an acceptable manner. The standard connection shall utilize standard pipe-fittings or manufacturer's recommended adapter designed to join the type of pipes together. The connection from a 4-inch pipe to a 6-inch lateral shall be made by use of a commercial fitting only and within 5 feet of the building. Cement grout shall not be permitted. Building connections are not to be completed until the structure is under roof in order to prevent unnecessary inflow and infiltration. Connections to gutters, sump pumps, or pool drains will not be allowed.

The tap for truss pipe shall be accomplished by installing a manufactured wye fitting to prohibit any degradation of the interior truss lining void structure. Coring a hole for the tap may be completed at the discretion of the Public Utilities Director. For truss pipe tapping connections, a solid sleeve type coupling shall be used to add integrity and stiffness to the pipe at each connection.

A manufactured tap saddle of a high durometer PVC shall be used on sanitary pipe materials other than truss pipe. The tap saddle apron shall be installed by a solvent weld system, in addition to stainless steel slip-lock clamps around the saddle on the sanitary main pipe.
All connections within the sanitary sewer system shall be inspected and approved by the City of Fairfield before being covered. No sewer pipe laid underground shall be covered, or the trenches filled, until after the sewer has

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been inspected for workmanship and proper material. If the City of Fairfield refuses to approve the work, the plumber or owner must proceed immediately to correct the work.

504.07 Clean Outs

Clean outs to grade shall use a 4-inch minimum diameter riser capped with a 4- or 6-inch cleanout plug. Clean outs are required at every 100 feet or fraction thereof along all straight lines of pipe and at the discretion of the Public Utilities Director or his/her designee, at changes of direction of 45 degrees or more. Clean out installation should be avoided in traffic areas, however if such installation is required, materials shall be capable of bearing traffic weight. Clean outs caps constructed of plastic material in traffic areas shall be un-acceptable. In all cases, a 2-way cleanout is preferred, however, in some cases the Engineer and his/her designee may approve a directional cleanout or wye. **See the Two Way Cleanout drawing on Page 27 of the Standard Construction Drawings.**

504.08 Bedding

All sanitary sewer laterals shall be bedded in #8's, #9's or #57's gravel. The granular bedding shall extend to 12 inches above the top of the lateral. Any over-dig area shall utilize #57 gravel. Bedding shall have bell holes for joint shape and locations.

504.09 Backfilling Under Pavement

Flowable controlled density fill (Low Strength Mortar –LSM 50) shall be per ODOT 613 under the roadway and curb. Granular backfill item 304 may be used under private driveways. **See the Trench Detail drawing on Page 3 of the Standard Construction Drawings.**

504.10 Sewer Stubs

All sewer lateral stubs shall be capped with a watertight plug. Plug location shall be marked with a 2 x 4 stake, 12 feet long, with one end buried at depth of the plug invert and extending at least 3 feet vertically out of ground. The portion of the stake above the ground shall be painted green, marked with the word "SEWER" and indicate the depth from the pipe invert to the ground surface. Any new street curb, or curb replacement over the sanitary lateral shall be stamped with an "S" symbol to identify the approximate location of the sewer. **See the Utility Service Location Designation drawing on Page 11 of the Standard Construction Drawings.**

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504.11 Cured-In-Place Pipe (CIPP) Service Lateral Lining

The intent of this CIPP lateral lining specification is to provide reconstruction of service laterals without excavating the entire existing pipeline. The existing pipe reconstruction will be accomplished using a scrim reinforced liner tube measured to exact length and inside diameter utilizing a thermosetting resin that meets required physical and chemical resistance properties. The scrim reinforced liner will be impregnated with resin then loaded into an approved air pressure launching system. The liner will be aligned to the open end of the existing lateral pipe. Once the liner is aligned, the launching system will invert the resin-impregnated liner with air pressure. The inversion process is completed once the liner has fully inverted to the sewer main collection pipe, stopping at the connection. The inversion process must conform with ASTM F 1216. The liner will be open to allow the calibration tube to invert beyond the liner end at the sewer main connection. A calibration tube is then inverted into the liner holding the liner in place during the curing process. At no time will the calibration tube lose air pressure and be re-pressurized during the inversion process. The calibration tube will be sealed at the sewer main, holding air pressure to secure the liner against the existing host pipe until the liner is fully cured. After the resin-impregnated liner is fully cured, the calibration tube is removed. The sewer lateral collection pipe will be immediately televised for the inspector’s approval. A copy of the televised inspection must be recorded digitally and provided to the City for future reference.

The liner tube will consist of scrim reinforcement and needled felt. The liner tube will be fabricated together using a butt-stitched seam sealing process with a heat welded sealing tape to ensure airtight seal. The liner tube will be capable of carrying resin and withstanding installation pressures and curing temperatures. The liner tube will be lined on one side with a translucent impermeable chemically resistant polyvinylchloride (PVC) water proof coating. This coating will be on the inner lateral collection lined pipe after curing is completed. The coating will provide a smooth and seamless inner wall.

The resin will be a two-part, 100% solids epoxy containing no styrene. The epoxy resin shall be formulated to have a gel (pot) life of approximately 30 minutes with a set cure time of three hours. The epoxy shall ambient cure by internal exothermic chemical reaction.

The scrim reinforced / seam stitched / heat welded seam tape / felt liner tube and resin will upon installation meet and/or exceed minimum testing standards as

required by ASTM, IAPMO and ANSI/NSF International. All materials must have 3rd party testing provided by independent laboratory. The materials must be ANSI/NSF Standard-14 and IAPMO Certified for small diameter pipe lining in Sewer Pipes and Vents. The scrim reinforced / seam stitched / heat welded seam tape / felt liner tube and resin must have NSF Standard 14 denoted on the tube.

a) The Contractor must have a valid City of Fairfield Sewer Tapper License in addition to being a certified CIPP installer with proof of certification.

b) The Contractor shall supply plans to the Director of Public Utilities or designee five days prior to construction. The Contractor will arrange for work to be inspected by the City Inspector prior to construction.

c) The owner shall be notified 24 hours in advance of project start time. No building utilities, such as toilets, sinks, dishwasher, laundry washer, bath tubs, or sump pumps will be used during the installation and curing process.

d) Lateral sewer collection pipe must be cleaned thoroughly prior to installation of liner. All sand, rocks, gravel, grease, mud, sludge, and other debris must be removed from the invert to permit proper installation. Roots must be removed to the extent necessary to effectively line the entire pipe to the main.

e) The existing service lateral will be inspected using a mini-television color camera system capable of viewing the interior condition of the host pipe. The TV inspection must be performed within 5 hours prior to installation of liner tube and be provided to the homeowner and City.

f) The resin-impregnated liner tube will be kept clean and loaded directly into the air pressured launching system. The launching system will be aligned to the existing host pipe for proper installation.

g) The resin shall not be contaminated and/or diluted prior to installation.

h) The liner tube shall be inverted using air pressure, inverting the liner inside-out until the liner tube reaches the sewer main collection pipeline. The liner tube will be open and not sealed off. The liner tube will be designed to fit tightly against the host pipe annular space and gaps. A calibration tube will be inverted inside the liner tube to ensure the liner is tight against the host pipe until fully cured. The resin-impregnated liner tube will cure within 4 hours without external heat sources.

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i) Once the curing process is finished, the calibration tube shall be removed and the lateral sewer collection pipe immediately inspected for final acceptance. The new lined pipe shall be free of any foreign objects providing a smooth, seamless and continuous lined pipe from entry point to main sewer connection pipe.

j) Any liner tube protruding from the lateral sewer collection pipe into the main sewer pipeline must be removed by remote robotic cutting equipment.

k) If the liner/repair contacts or affects the city sewer main in any manner, the contractor is solely responsible and must repair the main to meet city standards.

l) A final TV Inspection of the lined pipes will be recorded and provided to the owner and City for final approval.

Required Cured-In-Place Lateral Lining Standards

Flexural Strength	ASTM D-790	4,500 PSI (min.)
Flexural Modulus	ASTM D-790	250,000 PSI (min.)
Tensile Strength	ASTM D-638	3,000 PSI (min.)
Compressive Strength	ASTM D-695	4,000 PSI (min.)
Tensile Elongation	ASTM D-638	5 PSI (min.)
Chemical Resistance	ASTM D-543	>20% loss
Leakage Test*	NSF Standard 14	0/gal/in/day

*Leakage test performed by ANSI/NSF International

Manufacturer must have United States based manufacturing headquarters. The manufacturer must have at least five years of manufacturing / supplying CIPP Air Inversion Liner Tube and Materials. The manufacturing plant has a Quality Assurance / Quality Control program in place and overseen by NSF International and IAPMO R&T Laboratories.

505.00 SEWER MAIN PIPE MATERIALS

505.01 Force Main and Gravity Sewers

All materials for sewer pipe shall be new and furnished by the Contractor. The Manufacturer and Contractor shall use equipment and methods adequate to protect pipe, joint elements, and coatings from damage during hauling, storage and handling. When there is reasonable doubt as to the structural strength or water tightness of damaged sections, those sections shall be rejected and replaced

at the Contractor's expense. Any proposed deviations from these listed, or specified materials must first be approved by the City of Fairfield, Director of Public Utilities, or his/her designee. The force mains and sewers shall be constructed to the alignment and inverts shown on the construction plans, and of the size and type shown or specified.

A manufacturer's certificate that the material was manufactured and tested in accordance with the appropriate ASTM specification shall be furnished to the City of Fairfield prior to the installation of pipe.

PVC or HDPE pipe shall not be used in industrial areas where the effluent is detrimental to the integrity of the pipe. The Director of Public Utilities, or his/her designee, may request analytical data on the proposed industrial discharge. Any cost for the analysis will be encumbered by the contractor. The Director of Public Utilities, or his/her designee, shall make a determination on what type of pipe should be used based upon industrial sampling.

No sewer shall exceed 25 feet in depth without the approval of the City of Fairfield, Director of Public Utilities, or his/her designee.

All materials not specifically referenced shall comply with applicable sections ASTM, AWWA, APWA, GLUMRB, or ODOT standard specifications.

505.02 High Density Polyethylene Pipe (HDPE)

HDPE pipe material may be considered for force mains and service laterals only. All material shall be manufactured from a PE 4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material shall meet the specifications of ASTM D 3350 with a minimum cell classification of 445474C. HDPE pipe and fittings shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. HDPE products shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects. The polyethylene compound shall be suitably protected against degradation by ultraviolet light by means of carbon black of not less than 2 percent. The manufacture of the HDPE resin shall certify the cell classification indicated. Pipe sizes 3 inches and larger shall have a manufacturing standard of ASTM F 714, while pipe smaller than 3 inches shall be manufactured to the dimensional requirements listed in ASTM D 3035. Dimension Ratio (DR) and Outside Diameter (IPS/DIPS) shall be as specified on plans. Pipe shall meet AWWA C901 (1/2" to 3") or AWWA C906 (4" to 63"), and shall be listed as meeting

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NSF-61. HDPE pipe shall be either black in color or black with green stripes. Butt fusion shall be performed per manufacturer's recommendations. The Inspector shall have the right to test butt-fused joints at least once per day when butt fusion is being performed. Electro-fusion may be performed only when approved by the Public Utilities Director of his/her designee. A minimum 12 ga. tracer wire shall be installed with all HDPE pipe with the ends terminating in a test box or structure to allow easy access for locating equipment connections.

505.03 PVC Pipe

PVC pipe shall conform to ASTM D 3034-08 or current standard. PVC gravity sewer pipe may be installed according to manufacturer's recommendations except for the conditions noted on the following table:

PVC Gravity Pipe	Depth (feet)
SDR 35	3-14 feet
SDR 26	15-19 feet
SDR 21	20-25 feet

505.04 Ductile Iron Sewer Pipe

All ductile iron shall conform to ANSI/AWWA C150 /A21.50-08 or current standard. In no case shall the pipe be less than Class 53 (Ductile Iron Wall Thickness). The lining and coating for ductile iron pipe and fittings shall be cement mortar lined with bituminous seal coat conforming to ANSI/AWWA/C104 A/21 or current standard.

The fittings for ductile iron pipe shall be mechanical and shall conform to ANSI/AWWA/C111 A/21 or current standard. All ductile iron pipe shall bear the manufacturer's name or trademark, the year produced, and the letter's "DI" or word "Ductile". The Ductile Iron lining/coating system shall be impervious to sewer gases and waste (Protecto 401, or approved equal.). A Polyethylene Encasement conforming to AWWA C105 shall be utilized when ductile iron pipe is installed.

505.05 Deflection of Pipe

The deflection of pipe diameter shall not exceed 5 percent. Installed pipe shall be tested 30 days or more after trench has been back-filled to the finished grade.

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Test is to be scheduled and performed by the Developer or Contractor, under supervision by the City of Fairfield.

505.06 Joints

PVC pipe joints can be solvent-welded and conform to ASTM D2680-01 or current standard or elastomeric gasket joints which shall conform to ASTM D 3212-07 or current standard. Joints recommended for circular sewers where infiltration or exfiltration is a factor in design shall use flexible watertight joints using compression type rubber gaskets for sealing the joint, and shall conform to ASTM C443 or current standard. Sewer joints shall be premium joints, and shall be designed to minimize infiltration and to prevent entrance of roots. In all jointing operations, the trench shall be dry before making pipe joints. All surfaces to be joined and all parts of the joint shall be clean.

505.07 Concrete Encasement

In areas requiring concrete encasement, Ductile Iron Class 53 with poly wrap (refer to 505.04) shall be used unless waived by the Director of Public Utilities, or his/her designee. Concrete encasement is required where sanitary sewers cross under streams, drainage swales, points of heavy loading, or at other locations as directed by the City of Fairfield. Concrete encasement shall completely surround the pipe and shall have a minimum thickness at any point of 1/4 of the outside diameter of the pipe, or a minimum of 6 inches, whichever is greater. In addition, 4 reinforcing bars of a size selected by the inspector shall be evenly spaced around the pipe, and have a length equal to that of the encasement. The concrete encasement shall be designed to provide the necessary addition strength. **See the Gravity Sewer Creek Crossing drawing on Page 28 of the Standard Construction Drawings.**

505.08 Casing Spacers and Insulators

Field adjustable casing spacers shall be ISO-9001 certified and used to center, or adjust the position and elevation of the gravity sewer pipe to on-grade requirements within the casing. An appropriate end-seal shall be used on the encasement as recommended by the manufacturer or approved by the inspector.

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506.00 MANHOLES

506.01 Manholes

Manholes shall be installed in accordance with the City of Fairfield Sanitary Sewer Standard Construction Drawings and shall not be spaced further apart than 400 feet. Manholes shall conform to ASTM C478-12a or current standard for precast reinforced concrete manhole sections. In traffic load bearing conditions, manholes shall conform to AASHTO M199 or current standard. Pre-cast reinforced concrete manholes shall be constructed with use of Xypex C-1000, or approved equal, at the discretion of the Public Utilities Director. In addition, all pre-cast reinforced concrete manholes shall include the sidewall rings and base. The cone shall be of the eccentric type. Manhole joints shall be sealed with flexible watertight rubber gaskets conforming to ASTM C900, C443 or current standard. Prior to backfilling, 12-inch-wide rubber external seal wraps or approved equal shall be applied to each manhole section joint in accordance with ASTM C877 (Type III – Chemically-Bonded Adhesive Butyl Bands) or current standard. At points of pipe inlet, the pre-cast base manhole shall contain a wedge lock, or flexible O-ring joint conforming to ASTM C-923-08 or current standard. "Resilient Connections" to ensure the prevention of shearing the pipe due to differential settling. Grouted joints between sections and cast-in-place bases are not acceptable.

Pipe material changes between manholes shall not be permitted.

506.02 Manhole Castings

Manhole castings shall be made of cast iron, and conform to AASHTO M199 or current standard or Low-Density Traffic H-20 Loading to support traffic, or current standard. The manhole frame/lid shall be East Jordan 00160062 (Solid)/0016026 (Vented) or Neenah 1767-2001 Frame with 1767-5027 Cover (Solid)/1767-5023 (Vented) and have "SANITARY SEWER" factory cast into the lid. Water- tight manhole covers are to be used wherever the manhole covers may be flooded by street run-off, or predicted high water conditions. Water- tight covers shall be East Jordan 00104509 or Neenah R 1916-F. Vented Manhole covers shall be permitted only if the manhole, and sanitary system has high-pressure fluctuations and requires pipe venting. Vented lids shall have a maximum of (4), 1-inch ventilation holes and be utilized only in unpaved areas or when the elevation of the vented cover is above the surrounding ground elevation. Steps inside the manhole shall be polypropylene encapsulated steel spaced a minimum of 12 and a maximum of 16 inches apart. The standard base shall be precast by the manufacturer.

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506.03 Manhole Installation

Manholes shall be installed plumb. Whenever possible, the height of the manhole sections shall be selected in order to allow the manhole casting to be set directly on the top cone at the required elevation, rather than using pre-cast grade rings. In areas where the manholes are located in streets, the casting and cover shall be installed at the same grade as the street with use of pre-cast grade rings. Pre-cast grade rings may be utilized to adjust grade levels to a maximum of 16 inches. No more than 3 pre-cast grade rings may be utilized for grade adjustment.

The minimum diameter of the manhole shall be 48 inches and shall conform to the requirements of ASTM C478-12a or current standard. A minimum access opening of 22 inches shall be provided. Manholes shall be installed at the end of each sewer line, or service lateral having a length greater than 150 feet, at all changes in grade, size, alignment, and at all pipe intersections. Manholes shall also be installed at a spacing distance not greater than 400 feet for main sewers. The locating of a manhole in a sidewalk shall be avoided whenever possible. Private sewer systems must be separated from the City sewer systems by a manhole located at the right-of-way line.

Manholes installed in flood plains shall extend 2 feet above the 100-year flood elevation, and shall have an internal rubber seal installed to seal the frame-chimney joint area. Seals must be provided with the initial sleeve and extensions on the installation of manholes with multiple adjusting rings. The full chimney section, between the frame and cone section shall be open. Expansion bands are required at such intervals to ensure a complete rubber seal. A sleeve or boot shall have a vertical height of 12 inches and be capable of expanding 2 inches.

All resilient connectors, boots and sleeves between the reinforced concrete manhole structure its pipes and laterals shall conform to ASTM C-923-08 or current standard.

506.04 Drop Inlets

Drop inlets shall be avoided whenever possible. When approved, a drop pipe shall be provided for a sewer entering a manhole at an elevation of 24 inches or more above the manhole invert. Drop manholes shall be constructed with an outside drop connection. Inside drops shall only be used when tying into any existing sewer main, and requires approval by the Director of Public Utilities, or his/her designee. Where the difference in elevation between the incoming sewer and the manhole invert is less than 24 inches, the manhole bench or flow channel

shall be modified to prevent solids deposition. **See the Drop Manhole drawing on Page 33 of the Standard Construction Drawings.**

506.05 Flow Channel

The flow channel shall be straight through the manhole, and shall be made to conform in shape, slope and smoothness to that of the sewers. Flow direction changes in excess of 90 degrees will not be permitted. The channel walls should be formed or shaped to the full height of the crown of the outlet sewer in such a manner to not obstruct maintenance, inspection or flow in the sewers. A bench shall be provided on each side of the flow channel when pipe size is less than manhole diameter. No lateral sewer or drop manhole pipe shall discharge onto the surface of the bench. The bench shall slope one inch per foot.

506.06 Control and Inspection Manholes

All industrial dischargers shall provide for an on-site monitoring manhole. All discharge from the property must pass through one control manhole before entering the City of Fairfield sewer system. Control manholes are manholes through which all flow from a single user passes. Inspection manholes are manholes with additional monitoring features to allow for routine sampling of a user's wastewater discharge.

The City of Fairfield requires that a control manhole be installed for any new or changed industrial unit. The Public Utilities Director may require the user to install monitoring and/or flow measuring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the user at its own expense. The Director or his designated agent(s) shall have the right to enter the premises of any user to determine whether the user is complying with the requirements of the wastewater discharge permit, or order issued hereunder.

Users shall allow the Director ready access to all parts of the premises for purposes of inspection, sampling, records examination and copying, and the performance of any additional duties. Information and data on a user obtained from reports, surveys, wastewater discharge permit applications, and monitoring programs from the Director's inspection and sampling activities shall be available to the public without restriction, unless the user specifically requests, and is able to demonstrate to the satisfaction of the Director, that the release of such information would divulge information, processes, or methods of production entitled to protection as trade secrets under applicable State law.

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506.07 Manhole Inspections

Sanitary Sewer manholes will be inspected in the field for visual damage and water tightness. All manholes shall be vacuum tested by the contractor prior to acceptance using testing procedures described in 508.02. The vacuum test method shall demonstrate the integrity of the installed materials.

507.00 TRENCHING AND EXCAVATION

507.01 Protection of Underground Utilities

The accuracy of location of existing underground utilities as shown on plans is not guaranteed. It shall be the duty of the Contractor to locate these utilities in advance of excavation, and to protect same from damage after uncovering. The Contractor shall contact the owners of the utilities for assistance in locating these service lines. The Contractor shall contact the Ohio Utilities Protection Service (1-800-362-2764 or 811), (ohio811.org) at least 48 hours in advance of digging. Any expense incurred by reason of damaged or broken lines shall be the responsibility of the Contractor. **For Separation of Water Mains and Sewers, see Section 406.01.**

507.02 Installation

No trenching or laying of pipe, and fittings shall be done until grade stakes have been set. The Contractor shall use digging equipment that produces an even bedding and foundation on which the pipe and fittings shall be installed. The bottom of the trench shall be level and free from lumps, holes, excessive loose dirt and large stones. The bottom of the trench base shall be undercut 6 inches, and then back filled with #8's, #9's or #57's gravel. The bottom of the trench shall be accurately graded to provide uniform bearing and support for each section of pipe. Support of pipe shall be given at every point along its entire length, except to excavate for bell holes and joints. Allowing the pipe to be bridged by the bell or joint end is unacceptable. The trench shall be excavated to the depth required to provide a uniform and continuous bearing support for the pipe on solid and undisturbed ground at every point between joint ends.

All sanitary sewers shall have minimum cover of 36 inches. The open trench ahead of pipe-laying shall be kept to a minimum, and shall not be in excess of 25 feet at the end of the working day, or the ceasing of work.
Open cut trenches and excavations shall be sheeted and braced as required by OSHA standards and municipal ordinances, and as may be necessary to protect life, property, the project, or as ordered by the project engineer or inspector. To

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protect the persons from injury, and to avoid property damage, adequate barricades, construction signs, torches, red lanterns, and guards shall be placed and maintained as required during the progress of the construction until it is safe.

All grading in the vicinity of a trench excavation shall be controlled to prevent surface water from flowing into the trench. Any water accumulating in the trench shall be removed by pumping or other approved method. Material excavated from the trench shall be stacked in an orderly manner and a safe distance away from the trench edge. The project inspector will have the contractor remove materials unsuitable for backfilling.

The Contractor shall notify the City 24 hours in advance of the location and time that the Contractor intends to work. Any unauthorized excavation below the grade shall be backfilled at the Contractors expense with controlled fill. For public and private work within the City's Right-of-Way, the contractor performing the work is required to restore any disturbed areas in the Right-of Way within 48 hours after the completion of the work.

All trenching, grade and cover work shall conform to the lines and grades given by the engineer. Work shall be done according to the drawings and specifications; subject to such modifications as the City of Fairfield may determine necessary during the project period.

***Allowable Removal of Pavement,* see Section 408.02**

***Trenchless Methods,* see Section 408.03**

***Protection of the Public*, see Section 408.04**

507.03 Pipe Installation

Proper facilities shall be provided for stringing and lowering sections of pipe into the trench. The pipe shall be installed in accordance to the active standard ASTM D2321-05 for underground installation of buried thermoplastic pipe for sewers and other gravity-flow applications.

Existing sanitary sewer lines and flow shall remain in operation at all times. Any rerouting or blockage of sewer lines during construction by the Contractor shall require prior approval by the Director of Public Utilities, or his/her designee.

Pipe laying shall begin at existing sewer locations and shall proceed upgrade with the bell or groove end of the pipe placed upstream. The interior of the pipe shall be kept free from dirt, excess mortar and other foreign material as the

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laying progresses. Pipe shall not be laid when the condition of the trench or the weather is unsuitable, or when water or mud may interfere with proper joining. All open ends of pipe and fittings shall be adequately and securely closed whenever the work is discontinued. Any pipe, which shows undue settlement or is damaged shall be taken up and replaced at the Contractor's expense.

507.04 Laser System

The Contractor shall furnish and use, for grade and alignment control, a laser beam system, which complies with OSHA requirements. The laser system is to be provided by the Contractor, and shall have a minimum accuracy of 0.01 foot per 100 feet on line; and a minimum visible range of one thousand 1000 feet.

The battery for the laser device should be located far enough from the manhole or sewer pipe to ensure that it will not act as an ignition source for explosive hazards originating in the excavation or in existing sewer lines. When laser alignment is impractical, such as short pipe runs, the Contractor shall have a professional surveyor on site to set grade verify the installation of each pipe joint.

508.00 TESTING

508.01 Testing Requirements of Gravity Sewers

All completed piping shall be tested as specified herein by low-pressure air test, exfiltration, or infiltration test prior to backfilling to test for leaks. The maximum leakage allowance for all sanitary sewers shall be 50 gallons per inch diameter per mile of pipe per 24 hours. If the level of the current prevailing groundwater is two feet or more above the top of the sewer pipe, an infiltration test will be required. At the request of the Inspector, a low-pressure air test or exfiltration test will be performed instead of or in addition to an infiltration test if the ground water level is uncertain. Labor, equipment and supplies required for all tests shall be furnished by the Contractor. The Contractor shall flush and clean the sewer line to the satisfaction of the Inspector prior to testing. The Inspector shall witness and approve all leakage tests. In the event the Contractor performs any test without witness by the Inspector, the Contractor will be required to test the section again at no cost to the City. The Contractor and Inspector shall sign all test reports. Note that only four sections (approximately 1,200 – 1,600 feet) of sewer will be permitted to remain untested at any time.

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a) Low-Pressure Air Test:

The air test shall be conducted between two consecutive manholes. Low pressure air tests shall be in accordance with ASTM C 924-02, or current standard, for concrete pipe or ASTM F 1417-11a, or current standard, for plastic pipe, except as specified by the Director of Public Utilities or his/her designee, herein. All pipe outlets must be plugged in the section being tested with suitable test plugs. One of the plugs used at a manhole must be tapped and equipped for an air inlet connection for filling the line from the air compressor.

Air shall be supplied slowly to test section until the internal pressure reaches approximately 4 pounds per square inch (psi). At least 2 minutes shall be allowed for the air pressure to stabilize. When the pressure has stabilized and is at or above 3.5 psi, the air supply shall be disconnected and timing shall begin. Timing shall continue until the pressure has dropped 1.0 psi. If the time elapsed before the pressure drops 1.0 psi is greater than the specified minimum holding time, the section shall be considered to have passed the test. If the time is less than the specified minimum holding time, the section shall be considered to have failed and must be repaired or replaced.

Minimum holding time shall be calculated from the following equation:

Holding Time (minutes) = $0.00037 \times D^2 \times L / Q$

where D = Pipe Diameter (inches)
L = Length of Pipe Tested (feet)
Q = Allowable Air Loss (ft3/min) from Table: Minimum Holding Time for Low Pressure Air Test

An air pressure correction is necessary when the current prevailing groundwater is above the invert of the sewer line being tested. Under this condition, the air test pressure shall be increased 0.433 psi for each foot the groundwater level is above the invert of the pipe. All gauge pressures shall be increased by this amount. If the current prevailing groundwater is more than 24 inches above the invert of the pipe, the infiltration or exfiltration test should be used as required above. Thus, internal air pressures should never exceed 5.0 psi.

Minimum Holding Time for Low Pressure Air Test

Nominal Pipe Size, (Inches)	Time per 100 feet
6	42 seconds
8	1 minute – 12 seconds
10	1 minute – 30 seconds
12	1 minute – 48 seconds

15	2 minutes – 6 seconds
18	2 minutes – 24 seconds
21	3 minutes
24	3 minutes – 36 seconds
27	4 minutes – 12 seconds
30	4 minutes – 48 seconds
33	5 minutes – 24 seconds
36	6 minutes

Allowable Air Loss for Low Pressure Air Test

Nominal Pipe Size (Inches)	Air Loss (Q), ft^3/min
6 and 8	2
10	2.5
15	3
15	4
18	5
21	5.5
24	6
27	6.5
30	7
33	7.5
36	8
42	9
48	10
54	11
60	12
66	13
72	14

b) Infiltration Test:

The Contractor may elect to use an infiltration test when the level of the current prevailing groundwater is 2 feet or more above the top of the sewer pipe, including all service laterals, at the highest point of the section being tested. The inlet end(s) of the upstream manhole shall be securely sealed. The downstream sewer shall be completed and open to allow the sewer to drain. The Inspector shall approve the length of sewer to be tested at one time. The Inspector may require that each manhole span be tested separately. The amount of infiltration shall be measured by means of a weir located in the downstream manhole. The test head shall be maintained for a period of at least 24 hours before the weir measurement is made. Infiltration shall not exceed 50 gallons per inch diameter per mile of pipe per 24 hours. This infiltration test may not be performed until the sewer line and manholes are completed and all known leaks are repaired. The Contractor will be required to correct all conditions that permit visible

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infiltration and may be required to relay sections with such conditions that cannot be corrected, even though infiltration is within allowable limits.

c) Exfiltration Test:

When the exfiltration test is selected, the inlet ends of the upstream and downstream manholes shall be sealed with watertight plugs or bulkheads, and the sewer along with the upstream manhole shall be filled with water until the elevation of the water in the upstream manhole is: 1) two feet higher than the top of the sewer pipe, including all service laterals, at the highest point of the section being tested, or 2) two feet above the level of the current prevailing groundwater, whichever is the higher elevation. The test level shall be clearly marked in the upstream manhole. The entire length of section to be tested shall be filled and maintained full of water for a period of at least 24 hours prior to the start of the test. If the water level in the upper manhole drops during this 24-hour period, the level shall be raised to the test level mark prior to start of the test. Exfiltration will be determined by measuring the amount of water required to maintain the marked water level for a period of 1 hour from the start of the test. The allowable leakage of 50 gallons per inch diameter per mile of pipe per 24 hours based on a maximum difference in elevation of 8 feet between the water level in the upstream manhole and the invert of the pipe being tested in the lower manhole or the current prevailing groundwater level, whichever is higher. If this difference in elevation exceeds 8 feet, the allowable leakage shall be increased 5 percent for each 1 foot in excess of 8 feet. All observed leaks shall be corrected even if exfiltration is within the allowable limits.

508.02 Vacuum Testing of Manholes

This specification shall govern the vacuum testing of sanitary sewer manholes and structures and shall be used as a method of determining acceptability by the Director of Public Utilities, or his/her designee, in accepting maintenance of a sanitary sewer manhole or structure on behalf of the public. Vacuum testing shall be according to ASTM C1244-11, or current standard, except as specified otherwise herein. Other forms of testing of some manholes may be required, as deemed necessary by the Director of Public Utilities.

All manholes related to a project are subject to vacuum testing. Manholes to be tested shall be selected by the Inspector at the time of testing. No advance notice will be provided to the Contractor as to which manholes will be tested.

Manholes shall be tested after installation with all connections in place.

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a) Drop connections shall be installed prior to testing.

b) The vacuum test shall include testing of the seal between the cast iron frame and the concrete cone, slab or grade rings.

c) If a coating or lining is to be applied to the interior of the manhole the vacuum test must not be performed until the coating or lining has been cured according to the manufacture's recommendations.

d) If existing manholes are to be vacuum tested (e.g. in the case of a sewer rehabilitation project), the Inspector and Contractor must deem the manhole structurally sound prior to vacuum testing.

Procedure for testing shall be as follows:

a) Temporarily plug all pipes entering the manhole. Each plug must be installed at a location beyond the manhole/pipe gasket (i.e. outside the manhole wall), and shall be braced to prevent the plug or pipe from being drawn into the manhole.

b) The test head shall be placed on the rim of the cast iron frame at the top of the manhole, in accordance with the manufacturer's recommendations.

c) A vacuum of at least 10 inches of mercury (10" Hg) shall be drawn on the manhole. Shut the valve on the vacuum line to the manhole and shut off the pump or disconnect the vacuum line from the pump.

d) The pressure gauge shall be liquid filled, having a 3.5-inch diameter face with a reading from zero to thirty inches of mercury.

e) The manhole shall be considered to pass the vacuum test if the vacuum reading does not drop more than 1" Hg (i.e. from 10" to 9" Hg) during the following minimum test times.

MH Depth(feet)	4' Diameter MH	5' Diameter MH	6' Diameter MH
15 Feet or less	50 sec.	1 min. 5 sec.	1 min. 20 sec.
15.01 to 30 Feet	1 min. 20 sec.	1 min. 45 sec.	2 min. 10 sec.

f) If any manhole fails the vacuum test, the manhole shall be repaired with a non-shrinkable grout or other material or method approved by the Director of Public Utilities or his/her designee. The manhole surfaces shall be properly prepared prior to any repairs. Once the repair material

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has cured according to the manufacture's recommendations the vacuum test shall be repeated. This process shall continue until a satisfactory test is obtained.

g) All temporary plugs and braces shall be removed after each test.

508.03 Deflection of Pipe

The deflection of pipe diameter shall not exceed 5 percent. Installed pipe shall be tested 30 days or more after trench has been back-filled to the finished grade. Test is to be scheduled and performed by the Developer or Contractor, under supervision by the City of Fairfield.

508.04 Closed Circuit Television (CCTV)

All new sanitary sewer extensions shall be inspected with the City of Fairfield Wastewater Division's CCTV equipment prior to acceptance. The sanitary laterals may also require additional CCTV camera inspection as a condition of acceptance. All construction must be completed and approved by the inspector prior to the CCTV inspection. The sewer lines and manholes shall be cleaned before the inspection process. A camera inspection will be performed after the Air test of the sanitary system(s). Additional CCTV inspections shall be performed when warranted.

The contractor shall bear all costs for correction of deficiencies found during the CCTV inspection, including the cost for additional CCTV camera inspection(s) to verify the correction of deficiencies.

No performance bond shall be released until a CCTV inspection has been performed, and the sanitary work has been approved for quality assurance by the City of Fairfield. The City of Fairfield may also CCTV inspect the sewer lines prior the expiration of any warranty, or again before final acceptance of a subdivision or other project as necessary.

If an unsatisfactory condition is found, that condition shall be presumed to have been caused by defective workmanship, or materials. The Contractor shall be directed to correct the work in a manner as approved by the City of Fairfield Wastewater Division.

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508.05 Testing Requirements for Force Mains

A hydrostatic pressure test at 150 psi for at least 2 hours shall be performed. All tests will be conducted in accordance with the hydrostatic testing requirements of AWWA C600, or current standard, on all force mains and service laterals. Pressure shall be measured at low point on section of pipelines. The contractor shall furnish all gauges, meters, pumps and other equipment required and shall maintain said equipment for accurate testing.

If the pressure drops more than 5 psi or the leakage is greater than allowable as determined by the formula in AWWA C600, or current standard, the test shall be considered failed. Common force mains shall be tested after all air release valves, flushing installations, and other appurtenances have been installed and with all service laterals installed at least to the curb stop. Private force mains and service laterals (on the pump side of the curb-stop) shall be tested after the entire system is completely installed (except for the connection to the gravity sewer, when applicable).

An Occupancy Permit shall not be issued until the sanitary sewers are tested and accepted by the City of Fairfield. See section 511.00 for building permits and occupancy.

509.00 FAT, OIL, AND GREASE PREVENTION

509.01 Fat, Oil, and Grease (FOG), Waste Food, and Sand Interceptors

FOG, waste food, and sand interceptors shall be installed when in the opinion of the City of Fairfield they are necessary for the proper handling of liquid wastes containing fats, oils and grease, ground food waste, sand, soils, or other harmful ingredients in excessive amounts, which impact the wastewater collection system. All interceptors shall be of a type and capacity as approved by the City of Fairfield, or the Butler County Department Water and Sewer (BCWS) as the governing jurisdiction requires. In general, the interceptor shall be designed to meet the Plumbing and Drainage Institute (PDI) standards.

New construction and renovation of food service establishments shall be required to install adequately sized grease interceptors necessary to maintain FOG compliance. All car washes, truck washes, garages, service stations, laundries, airport facilities, and other sources of sand, soil and oil shall have effective sand, soil and oil interceptors installed.

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Oil and grease interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, watertight, and be equipped with easily removed covers, which when bolted in place shall be gas tight and waterproof. The interceptor shall be installed at a location where it can be easily accessed for inspection, cleaning, and removal of accumulated grease and installed as close as possible to the source of the FOG laden hot water. Access manholes, with a minimum diameter of 22 inches shall be provided over each grease interceptor chamber. The access manhole shall extend to finished grade and be designed and maintained to prevent water inflow or infiltration. Grease interceptor sizing shall be a minimum of 1000 gallons, and meet the PDI design guidelines.

Where installed, all oil, grease and sand interceptors shall be maintained by the owner at his expense while providing continuous operation at all times. The owner shall maintain a yearly maintenance logbook subject to the review by the Director of Public Utilities, or their agent(s). The owner shall provide for the proper removal and disposal of the captured material. Grease interceptors shall be fully pumped out and cleaned at a frequency such that the combined FOG and solids accumulation does not exceed 25% percent of the total design hydraulic depth of the grease interceptor.

All food service establishments shall pump out and fully clean the grease interceptor every 90 days or less. Permits for the hauling and disposal of this material must be secured from the Butler County Health Department.

510.00 GRINDER PUMPS AND LOW-PRESSURE FORCE MAINS

510.01 Grinder Pumps and Low-Pressure Force Main Systems

In developments where first-floor gravity service can be provided, but basements cannot be served by gravity, individual grinder pumps will be permitted to provide basement sewer service. In this event, gravity sewers shall be installed throughout the development such that each building can be provided with first-floor-only gravity sewer service.

The lowest level serviced by a gravity sewer shall be a minimum of 3 feet above the top of the receiving sewer at the point of connection. If the minimum separation cannot be achieved, then an on-site individual sanitary grinder pump system is required. No public or shared force mains will be permitted where first-floor gravity service can be provided.

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The installation of grinder pump systems creates an ongoing operation and maintenance expense for the property owners and transfers the burden of extending off-site trunk sewers to the City of Fairfield and its sewer customers (existing and future).

It is the goal of the City of Fairfield Public Utilities Department to provide for the conveyance of wastewater by natural gravity flow wherever, and whenever possible.

510.02 Complete System Design Requirements for Low-Pressure Mains

Plans shall be consistent with a complete system design submittal which shall be approved by the pump manufacturer and submitted to the City of Fairfield's Department of Public Utilities for approval.

The complete system design shall include:

a) Numbers of properties served by each force main and force main branch.

b) Type of occupancy and anticipated flow rate for each property.

c) Development sequence and timetable.

d) Design flows (average, daily peak, instantaneous peak etc.).

e) Grinder pump system manufacturer and model number(s). Include catalog cut sheets, pump curve(s), and a description of system features.

f) Small scale sketch of entire pump system, including pump locations and elevations; location and direction of flow for each individual force main/service lateral, and each common force main or branch; location and elevation of discharge point(s); locations and elevations of any high points in the system. Each branch or zone shall be identified on the sketch with a unique branch number. Branches/zones shall be divided as described below.

g) Table indicating the following information for each branch-zone to include:
    1) Branch number.
    2) Number of pumps connected directly to the branch.
    3) Accumulated total number of pumps connected directly or indirectly.
    4) Maximum daily flow in branch.

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5) Pipe size.
6) Maximum daily velocity in branch.
7) Length of branch.
8) Friction loss in branch per Hazen Williams with C 120.
9) Accumulated friction loss.
10) Maximum force main elevation (between branch and discharge).
11) Maximum pump elevation (connected directly to branch).
12) Maximum elevation difference.
13) Maximum total dynamic head (for pump connected directly to branch).

510.03 Maximum Daily Design

The force main design maximum daily velocity (i.e. minimum velocity anticipated to occur at least once each day) shall not be less than 1.90 feet per second (fps) and not greater than 4.0 fps. This requirement shall apply to each force main branch or zone. Zones shall be divided based on the number of grinder pumps connected as shown in the following table. A new zone shall also be defined on each side of any common force main junction. The following table shall be used to determine the maximum number of grinder pumps operating simultaneously daily in each zone.

Maximum Number of Grinder Pumps Operating Simultaneously Daily

Number of Grinder Pumps Connected (Each range represents a separate zone.)	Maximum Number of Grinder Pumps Operating Simultaneously Daily
1	**1**
2-3	**2**
4-9	**3**
10-18	**4**
19-30	**5**
31-50	**6**
51-80	**7**

510.04 Basic Design and Construction Requirements for Low-Pressure Systems

All grinder pump systems shall be designed and constructed in accordance, but limited to, the following:

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a) The maximum number of contiguous (or nearly contiguous) homes allowed with private grinder pumps shall be 80 homes. Public wastewater lift stations may be considered for larger developments.

b) All properties to be served by a particular common force main shall be included in the same section of the development and developed at the same time. Any future section requiring a common force main shall have a separate force main independent of any other common force main. Each individual grinder pump installation connected to a common force main shall be consistent with the overall system design approved by the manufacturer and Public Utilities Director.

c) No public force main branches shorter than 300' will be permitted. Homes or other buildings on short cul-de-sac streets or panhandle/ flag lots shall be served via parallel individual service laterals.

d) Where grinder pumps are required, each building or property that is (or could potentially be) owned by a different owner shall have a separate wet well tank, grinder pump, and force main/service lateral.

e) No individual/private force main discharging directly to a gravity sewer will be permitted longer than will allow for a complete turnover of the sewage in the force main at least four times per day at 150 gallons/day per residential home.

f) Single-family pipe requirements: All individual force mains and service laterals shall be 1-1/4" or 1-1/2" nominal diameter SDR 21 PVC, Schedule 40 PVC (200 psi) or HDPE pipe with a SDR rating of 11 or heavier and conform to iron pipe sizing (IPS) or copper tube sizing (CTS) Diameter (1-1/4" or 1-1/2") shall be determined during the design of each project/installation and shall be approved by the Public Utilities Director. Joints shall be rated for at least 200 psi. HDPE piping with a standard inside dimension ratio (SiDR) will not be approved.

g) Commercial and Multi-family Residential pipe requirements**:** All individual force mains and service laterals shall be sized according to the estimated average flows anticipated from each building or parcel, with a minimum size of 1-1/4" nominal diameter. Pipe diameter shall be approved by the Public Utilities Director. Piping smaller than 3" nominal shall be SDR 21 PVC, Schedule 40 PVC (200) psi or HDPE pipe with a

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SDR rating of 11 or heavier and conform to iron pipe sizing (IPS) or copper tube sizing (CTS). Piping 3" nominal diameter and larger shall be Ductile Iron Class 53 with ceramic epoxy Protecto 401 lining or approved equal. Joints shall be rated for at least 200 psi. HDPE piping with a standard inside dimension ratio (SiDR) will not be approved.

h) Detectable magnetic marking tape shall be installed in the ditch line one-foot (1') below the final surface grade for non-metallic pipe installed within the public right-of-way and easements. If horizontal direction drilling is the installation method for the force main piping, the contractor shall affix minimum 12 ga. tracer wire to the product pipe prior to the pipe being pulled in to the drilling path.

i) Private force mains that connect to a public gravity sewer shall connect via a wye fitting. Private force main connections to public manholes must be approved by the Public Utilities Director or his/her designee.

j) Private service laterals that connect to a common/public force main shall connect at a manufactured fitting. No direct taps or tapping saddles will be permitted on public force mains. No new service connections to existing force mains will be permitted-only those connections included in the original design. A stainless-steel curb stop and cast-iron stop box shall be installed inside the public right-of-way or easement on each service lateral and shall be located approximately 5 feet from the public force main. Curb stops shall be least 2 inches lower than the connection of the service lateral to the public force main. All curb stops shall be made of stainless steel, and all curb-stop-boxes shall be made of cast iron or ABS with a cast iron lid. The top of each curb stop box shall be set in a concrete slab 18"x18"x6" thick (or 18" circular x 6" thick) with the top of the slab and box flush with the top of the ground.

k) Each individual/private force main or service lateral shall have at least one check valve located at the pump, and an additional redundant check valve located at the curb-stop. Check valves and all other portions of the private force main or service lateral shall meet the pump manufacturers requirements and recommendations.

l) All public force mains shall be at least 2" nominal diameter.

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m) Private force mains shall be installed with a minimum of 4 feet ground cover. Common/public force mains shall be installed with a minimum of 4 feet and a maximum of 12 feet ground cover. A minimum of 10 feet horizontal clearance (for parallel installations) and 18 inches vertical clearance (at crossings) shall be maintained between all force mains/services laterals and water mains/services.

n) Whenever possible, common/public force mains should be installed with a continuous positive grade to the discharge into the gravity sewer. Approved air/vacuum release valves shall be installed anywhere where this is not possible and where localized high points exist or on long runs (greater than 2500 feet) with no clearly defined high point occur. Air/vacuum release valves shall be installed on upward-turned tees. Taps or tapping saddles are not allowed. The Engineer and contractor should also evaluate the need for air release valve(s) at high points on private force mains and service laterals.

o) Flushing connections shall be installed at the end of each common force main (farthest from the discharge point), at each junction of two common force main branches, and at intermediate points such that the maximum distance between flushing installations (or discharge point) is 1000 feet. The Engineer and contractor should also evaluate the need for flushing attachments on private force mains and laterals.

p) Public force mains shall discharge into a gravity sewer through a separate manhole with no up-stream gravity sewer connections. The force main shall be extended along the bottom of the manhole and approximately 10 feet into the gravity sewer at the sewer's invert. A flow channel and bench shall be formed in the manhole to allow any water or sewage to drain into the gravity sewer, but still allow access into the sewer for maintenance. No laterals may be connected into the gravity sewer within 12 feet of this manhole.

q) A hydrostatic pressure test at 150 psi for at least 2 hours shall be performed in accordance with the hydrostatic testing requirements of AWWA C600 on all force mains and service laterals. If the pressure drops more than 5 psi in 2 hours, or the leakage is greater than allowable as determined by the formula in AWWA C600, the test shall be considered failed. Common force mains shall be tested after all air release valves, flushing installations, and other appurtenances have been installed,

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including all service laterals installed to the curb stop. Private force mains and service laterals (on the pump side of the curb stop) shall be tested after the entire system is completely installed (except for the connection to the gravity sewer, when applicable).

r) The following requirements apply to installations connected to common force mains: All pumps shall be progressive cavity non-clogging, non-jamming grinder pumps capable of pumping 15 g.p.m. at 0 feet TDH, 9 g.p.m. at 138 feet TDH, and capable of operating at negative TDH without overloading the motor. The maximum design total dynamic head (TDH) for any pump shall be 138 feet (60 psi) with the maximum number of grinder pumps operating simultaneously daily (see article five). Grinder pump motors shall have built-in automatic reset overload protection. Grinder pumps shall be designed for the specific purpose of grinding and pumping domestic wastewater. Grinder pumps shall be suitable for operation under varying conditions in a system with multiple other grinder pumps. An anti-siphon valve and check valve shall be integral with the grinder pump. Level sensing control for grinder systems shall be non-fouling type with no moving parts in contact with the sewage. Each grinder pump system shall have a high-level audible and visual warning alarm to warn the building's occupants of a high wet well level. A battery backup system is recommended. Future replacement pumps must be the same type and meet the same operating conditions as the original pump.

s) Detectable marking tape shall meet the following requirements:

1) Minimum thickness of 5 mil, with a solid aluminum foil core. Construction is 2 mil clear film, reverse print laminated to aluminum foil to 2 mil clear film, making the film permanently printed.
2) Minimum width of 3 inches
3) Color coded green to signify Sewer or associated line.
4) Tensile strength of 35 lbs./in. (15,000 psi).
5) Elongation of 80 percent.
6) Adhesives with value of Morton 548 or higher.
7) Bottom layer with the value of virgin PE.
8) Top layer with the value of virgin PET.
9) Printability value of 45 dynes.

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t) Where future gravity service is reasonably possible (as determined by the Director of Public Utilities, or his/her designee) and there is unsewered up-stream property, a dry gravity sewer shall be installed from the most reasonable point at the downstream property line of the proposed development (for connection to the future trunk sewer) to the upstream boundary/boundaries of the development. This dry sewer shall be installed prior to acceptance of the grinder pump system by the City of Fairfield.

u) Whenever there is potential for installation of a future gravity sewer to serve the involved properties, each building utilizing a grinder pump system shall have a gravity sewer drain through the building's foundation to facilitate connection to the future sewer, whether the grinder pump is located inside or outside the foundation.

v) Where future gravity sewer service is reasonably possible, adequate platted right-of-way and/or easements shall be provided for future local gravity sewers. Each building's gravity sewer drain shall leave the foundation at a location that will facilitate connection to the future gravity sewer.

510.05 Operation and Maintenance

All individual grinder pump facilities and force mains serving only one home or property shall be privately owned and maintained by the property owner. All common force mains serving multiple properties will be publicly owned and maintained by the City of Fairfield.

The City of Fairfield will maintain the service lateral from the public force main to (and including) the curb-stop. The property owner will be responsible for the private service lateral or force main from the curb-stop the pump. The property owner shall maintain all check valves on the private service lateral and/or force main.

The property owner shall be responsible for operation, maintenance, and future replacement of the private grinder pump system. Maintenance of each grinder pump system shall be performed by a licensed contractor, which is certified and approved by the equipment manufacturer. Documentation of all maintenance shall be provided to the City of Fairfield's Public Utility Department upon request. Failure to adequately maintain the private pump system or provide the required documentation will cause for disconnection of sewer service by the City of Fairfield.

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510.06 Construction Plan Requirements

The following language shall be included on all construction drawings for developments that include any lots to be served by private grinder pump systems. Such plats shall clearly indicate which lots require grinder pumps, and appropriate utility easements.

a) Where grinder pumps are required, each building or property that is (or could potentially be) owned by a different owner shall have a separate wet well tank, grinder pump, and force main/service lateral.

b) Each individual grinder pump installation connected to a common force main shall be consistent with the overall system design approved by the pump manufacturer and the City of Fairfield's Director of Public Utilities Department, or his/her designee.

c) Each building utilizing a grinder pump system shall have a gravity sewer drain through the building's foundation at a location that will facilitate connection to a future gravity sewer, unless future gravity sewer service is not possible.

d) All individual grinder pumps facilities and force mains serving only one home or building shall be privately owned and maintained by the property owner. All common force mains serving multiple properties will be publicly owned and maintained by the City of Fairfield.

e) All individual force mains and service laterals shall be 1-1/4" or 1-1/2" nominal diameter SDR 21 PVC, Schedule 40 PVC (200 psi) or other approved material.

f) Detectable magnetic marking tape shall be installed in the ditch line one foot (1') below the final surface grade for non-magnetic pipe installed the public right-of-way and easements.

g) Private force mains that connect to a public gravity sewer shall connect via a "Wye" fitting. No private force main connections to public manholes will be allowed.

h) Private Service laterals that connect to a common/public force main shall connect at the original laterals installed with the public force mains. No new

service connections to existing force mains will be permitted-only those connections included in the original system design. All curb-stops shall be made of brass, and all curb-stop-boxes shall be made of cast iron. The curb-stop and curb-stop-box shall remain when the connection is made, and the elevation of the curb-stop shall not be changed. The top of each curb-stop-box shall be set in a concrete slab 18" x 18" x 6" thick (or circular x 6" thick) with the top of the slab and box flush with the top of the ground. The City of Fairfield will maintain the service lateral from the common force main to (and including) the curb-stop. The property will be responsible for the private service lateral from the curb-stop to the pump.

i) Each individual/private force main or service lateral shall have one check valve located at the pump, and an additional redundant check valve located at the curb-stop. The property owner shall maintain all check valves. Check valves and all other portions of the private force main or service lateral shall meet the pump manufacturer's requirements and recommendations.

j) No individual/private force main discharging directly to a gravity sewer will be permitted longer than will allow for the complete turnover of the sewage in the force main at least four times per day per day at 150 gallons/day per residential home.

k) The property owner shall be responsible for operation, maintenance, and future replacement of the private grinder pump system.

l) The annual maintenance of each grinder pump system shall be performed by a licensed and bonded plumber/contractor, which is certified and approved by the equipment manufacturer. Documentation of all maintenance of all pumping shall be provided by request to the City of Fairfield Director of Public Utilities, or his/her designee. Failure to adequately maintain the on-site pump system, or provide the required documentation will cause for disconnection of sewer by the Public Utilities Department.

m) The Engineer and plumber should evaluate the need for air release valve(s) and/or flushing attachments on private force mains and service laterals.

n) A hydrostatic pressure test of each private force main/service lateral shall be performed in accordance with the City of Fairfield requirements.

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o) The following requirements apply to installations connected to a common force main:

1) All pumps shall be progressive cavity non-clogging, non-jamming grinder pumps capable of pumping 15 g.p.m. at 0 feet TDH, 9 g.p.m. at 138 feet TDH, and capable of operating at negative TDH without overloading the motor.
2) The grinder pump motor shall be designated for the specific purpose of grinding and pumping domestic wastewater. Grinder pumps shall be suitable for operation under varying conditions in a system with multiple other grinder pumps.
3) An anti-siphon valve and check valve shall be integral with the grinder pump.
4) Level sensing control for the grinder pump systems shall be of a non-fouling type with no moving parts in contact with sewage.
5) Each grinder pump system shall have a high-level audible and visual warning alarm to warn the building's occupants of a high wet well level. A battery back-up system(s) is strongly recommended.
6) Grinder pump systems shall be an *Extreme Series* grinder pump system as manufactured by Environment One Corporation, or approved equal. Future replacement pumps must be the same type, and meet the same operating conditions as the original pump. **See the Force Main Grinder Pump Station Installation drawings on Page 37 of the Standard Construction Drawings.**

510.07 Deed Restrictions

The following language shall appear on the recorded deed and record plat for each property to be served by a private grinder pump system. The language shall be included on any subsequent deeds, certificates of transfer etc. until such time as the grinder pump system is eliminated and replaced by a different means of providing sanitary sewer to the property.

a) The individual force main(s) serving the building(s) on this property, both check valves and all other appurtenances that are a part of the force main, or are connected to it, are private and shall be owned and maintained by the property owner. The curb-stop, curb-stop-box, and force main between the curb-stop and public force main shall be owned and maintained by the City of Fairfield.

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b) The property owner shall be responsible for operation, maintenance, and future replacement of the grinder pump system. Maintenance of each grinder pump system shall be performed by a licensed and bonded plumber/contractor, which is certified and approved by the equipment manufacturer. Documentation of all maintenance shall be provided to the City of Fairfield's Public Utilities Department, 5350 Pleasant Avenue, Fairfield, Ohio 45014. Failure to adequately maintain the on-site pump system, or provide the required documentation will cause for disconnection of sewer service by the Public Utilities Department.

c) For installations connected to a common force main:

1) All pumps shall be progressive cavity non-clogging, non-jamming grinder pumps capable of pumping 15 g.p.m. at 0 feet Total Dynamic Head (TDH), 9 g.p.m. at 138 TDH and capable of operating at negative TDH without overloading the motor. Grinder pump motor shall have built-in, automatic reset overload protection. Grinder pumps shall be designated for the specific purpose of grinding and pumping domestic wastewater. Grinder pumps shall be suitable for operation under varying conditions in a system with multiple other grinder pumps. An anti-siphon valve and check valve shall be integral with the grinder pumps. Level sensing control for grinder pump systems shall be non-fouling type with no moving parts in contact with sewage. Each grinder pump system shall have a high-level audible and visual warning alarm to warn the building's occupants of a high wet well level. A battery back-up system is recommended. Future replacement pumps must be the same type and meet the same operating conditions as the original pump.

2) These conditions are to run with the land, and shall be binding upon the Owner(s) as well as the heirs, successors, administrators, and assigns of the Owner(s), until such time as the grinder pump system is eliminated and replaced by a different approved means of providing sanitary service to the property.

3) Invalidation of any condition herein by a judgment or court order shall in no way affect any of the other provisions, which shall remain in full force and effect.

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511.00 BUILDING PERMITS AND OCCUPANCY

Building permits in a new development (both major and minor Subdivisions) shall not be issued until the sewers serving the structure have been tested and approved. This prevents the unauthorized connection of a structure to a sewer thus preventing a test. A model home for sales display only, and not for immediate occupancy, may be built prior to construction of the sanitary sewers. The house shall not receive an occupancy permit issued until the sanitary sewers are tested and accepted by the City of Fairfield.

512.00 AS-BUILTS

Within thirty days after completion of construction work on any part of the wastewater system, the contractor shall provide a complete set of certified, reproducible as-built drawings to the Public Utilities Director or his/her designee, for all sewers constructed, including those constructed in subdivisions. These plans must be clearly marked “As-built” on every sheet with all sewer service lateral locations, manholes, inverts, and the distances verified by a post-construction survey made at the developer’s expense.

As-built plans shall be provided on reproducible sheets measuring 24 inches by 36 inches and sealed and signed by the engineer to certify that the “As-builts are per field conditions. Additionally, an AutoCAD (.dwg or .dxf) shall be submitted electronically.

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FIRE SERVICES – SECTION 600

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SECTION 600

FIRE SERVICES

601.00 FIRE HYDRANTS

601.01 Fire Hydrants

Fire hydrants shall conform to the "AWWA Standard for Dry-Barrel Fire Hydrants" AWWA C502 and subsequent revisions. Fire hydrants shall be connected only to water mains adequately sized to carry fire flows. The minimum size for a public fire main shall not be less than 8 inches. All fire hydrants and auxiliary valves shall be positively locked to the water main by restrained mechanical joints. The thread sizing on the 2 ½ inch hydrant nozzles shall be 3.187 x 7. All hydrants shall be provided with an integral 5" Storz fitting and cap with connecting cable. Hydrants shall have a dual rating of AWWA and FM-1510 approval. No chains connecting the 2 ½ inch caps to the hydrant or each other will be allowed.

Hydrants shall be permanently marked with the following information, which should be cast into the barrel.

a) Manufacturer's name or trademark.
b) Model or type designation.
c) Maximum rated working pressure.
d) Size of main valve opening.
e) Year of manufacture.
f) FM Approval mark.
g) The hydrant top shall the word "OPEN" and an arrow, showing the counterclockwise direction for opening.
h) The hydrant shall be a minimum rated working pressure of 250 psi.

All hydrants shall stand plumb and shall have their nozzles parallel with, or at right angles to the curb, with the pumper nozzle facing the curb. The horizontal centerline of the large outlet port shall be a minimum of 18 inches and a maximum of 30 inches above the final grade. In all cases the manufacturers recommended relative elevation of the break flange to the final grade shall be maintained. The barrel shall have a breakable safety section and/or bolts just above the ground line. Hydrants shall have a main valve opening of 5 ¼ inches; a 6 inch mechanical joint inlet to be suitable for setting in a trench 4 feet deep. Each hydrant must be equipped with an auxiliary valve with valve box. The valve shall be a compression type, opening against the pressure so the main valve remains closed if the barrel is broken off. The hydrant shall provide automatic drainage when the valve is closed. Hydrants shall be effectively blocked by the

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placement of concrete thrust-blocking, or approved mechanical anchor. **See the Fire Hydrant Installation drawings on Pages 17 and 18 of the Standard Construction Drawings.** All underground water service pipe systems shall be thoroughly flushed before connection to any fire suppression system. **Refer to the "Disinfection of Water Mains" section 411.01.**

601.02 Color of Hydrants

Fire hydrants shall be coated by the manufacturer as per the City of Fairfield requirements with industrial epoxy exterior grade paint. Public fire hydrants shall be painted OSHA safety yellow. Private fire hydrants shall be painted OSHA safety red.

601.03 Spacing

a) Travel distance is defined as the route taken by fire apparatus on any surface to which it can support the weight of a fire apparatus not to be less than 75,000 lbs.
b) Spacing of fire hydrants shall be 400' in public rights-of-way.
c) In residential zoned areas, hydrants must be within 800 feet travel distance to a building with a flow rate of at least 1000 gpm.
d) In commercial and industrial zoned areas, hydrants must be within 400 feet of travel distance to all areas of the building with a flow rate of at least 1000 gpm. If the building is equipped throughout with an approved sprinkler system, the distance may be increased to 600 feet.
e) The number of hydrants to be provided shall be based on the required fire flow which also will be based on building construction and occupancy use.
f) All dead-end water mains shall have a hydrant. If the potential exists for an extension of the dead-end water main, a main line tee, valve and auxiliary valve shall be installed.
g) All the above-mentioned requirements under hydrant spacing are subject to change by the authority having jurisdiction.

601.04 Location

Fire hydrants shall be located to provide complete accessibility, and minimize the possibility of damage from vehicles or injury to pedestrians. When placed behind a curb, the hydrant barrel shall be set so that the pumper, or hose nozzle cap will be a maximum of 5 feet from the curb area. No fire hydrants shall be installed closer than 2 feet from the curb, street, driveway, or other traffic edge or 5 feet from any driveway apron or cross street. No portion of the hydrant or nozzle cap shall cause an obstruction to a sidewalk, or pedestrian traffic. Fire hydrants that are connected in close proximity to the public main and within the public right of way or public easement shall be considered a public fire hydrant. Fire hydrants that are connected to a private main, or

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that are installed for the sole purpose of fire protection on private property shall be considered privately owned fire hydrants and labeled as such on any plans.

601.05 Fire Protection

The standard grading schedule of the American Insurance Association, the National Fire Protection Association Standards, and the ISO "*Guide for Determination of Needed Fire Flow*" should be followed in all cases for purposes of fire protection. Water mains that are not intended to carry fire flows, shall not be connected to fire hydrants.

Hydrants shall be provided in sufficient number and be located in a manner that will enable the needed fire flow to be delivered through hose lines to all exterior sides of any important structure. Hydrants shall conform to NFPA 24, or as directed by the City of Fairfield Fire Department.

601.06 Fire Line Vault

In all cases a fire line vault is preferred. However, when a structure is more than 200 feet from the public water main, a fire line vault is required. The vault shall be constructed of ODOT QC2 concrete for the accommodation of a DCDA, and shall conform to AWWA C510-92. All pipe and fittings for fire protection purposes shall comply with all applicable NFPA requirements. The pipe supplied from the public main to a point 10 feet beyond the vault shall be Ductile Iron class 53 and comply with Section 402.01 of this specification. Privately owned pipe materials supplied starting 10 feet beyond the vault must comply with all AWWA standards. If a non-metallic fire line is installed after the City's metering device, the fire line shall be buried with a continuous 12 ga tracer wire attached to the crown of the pipe. The tracer wire should be brought to grade in a valve box, meter pit or vault to allow for locating equipment connections. The vault shall have a sump pump or floor drain which must discharge at a point that provides positive drainage away from the vault. The access door to vault shall be an aluminum double hatch door Bilco JD-AL Series or Halliday H-W model. The size of the vault doors shall be determined by the vault proportions and approved by the Public Utilities Director. **See the Fire Line Meter Vault With Double Check Detector Assembly drawing on Page 23 of the Standard Construction Drawings.**

601.07 Double Check Detector Assembly (DCDA)

When it is necessary for any customer to have full line flow for fire protection purposes, there shall be installed in the line a device known as a "Double Check Detector Assembly". A metered by-pass shall be provided of sufficient size to carry normal usage without activating the assembly. The detector check valve shall be as manufactured by

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Ames, Watts or an approved equal. A full flow meter may be used as approved by the Director of Public Utilities or his/her designee. **See the Double Check Detector Assembly drawings on Pages 22 and 23 of the Standard Construction Drawings.**

601.08 Post Indicator Valve (PIV)

Connections to public water systems shall be controlled by post indicator valves of an approved type, and located not less than 40 feet from the protected building. The post indicator valves shall be placed where they will be readily accessible in case of fire. Post indicator valves shall be set so that the top of the post will be 36 inches above the final grade. Included with each PIV shall be a wrench and break away lock. Post indicator valve shall be properly protected against mechanical damage. Post indicator valves shall conform to NFPA 24.

601.09 Operating Test

Each hydrant and watch valve shall be fully opened and closed under system water pressure, and dry barrel hydrants checked for proper drainage. Where fire pumps are available, this shall be done with the pumps running. All testing shall comply with the most current version of NFPA requirements.

601.10 Fire Department Connections (FDC)

All required fire department connections or hose couplings shall be 5-inch Storz fittings and shall be placed within 100 feet of an accessible fire hydrant. All FDC's shall be red in color and 36 inches to their top elevation. Each FDC shall be clearly labeled with a 12" x 12" reflective sign, which is red in color with 2-inch white lettering. FDC's mounted to a building are not approved. The FDC and PIV shall be located in close proximity to each other as approved by the Fire Chief or his/her designee. **See the Double Check Detector Assembly drawings on Pages 22 and 23 of the Standard Construction Drawings.**

602.00 KNOX BOX DEVICE

All commercial buildings shall have a Knox Box device for providing Fire Department access. The placement of the Knox Box device shall be approved by the Fire Chief or his/her designee.

603.00 EXTERIOR DOOR IDENTIFICATION

To aid first responders during emergency situations, educational facilities and other large residential, commercial, or industrial facilities may be required to supply 6-inch

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letter/number identification on all exterior doors upon the request of the Fire Chief or his/her designee. Lettering will begin with the letter A on the street side of the building, then proceed to additional letters (B, C, D, etc.) on other sides of the building moving in a clockwise manner. Numbering will begin with the number 1 on the far-right side of any wall, then proceed to additional numbers (2, 3, 4, etc.) moving to the left. For example, the first door located on the far right of the street side of a building will be A1, then moving to the left will be A2, A3, etc. moving clockwise around the corner, the first door on the side of the building will be B1, then B2, B3, etc. **See the Exterior Door Identification Drawing on Page 41 of the Standard Construction Drawings.**

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APPENDIX

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APPENDIX A -WORK WITHIN THE PUBLIC RIGHT-OF-WAY

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Appendix A -Work Within the Public Right-of-Way

a) All work within the public right-of-way requires a permit to be approved by the Public Works Director or his/her designee.

b) A preconstruction meeting may be required prior to the commencement of construction activities. Any approval is contingent on conditions set forth by the City of Fairfield to the contractor during said preconstruction meeting.

c) The applicant of a right of way permit from the City of Fairfield expressly agrees to do all work subject to approval of the City Engineer/Public Works Department, in accordance with City Standards and in accordance with conditions and regulations herein. Applicant is required to comply with all maintenance of traffic requirements outlined in the Ohio Manual of Uniform Traffic Control Devices as well as any applicable Ohio Department of Transportation standards.

d) Plans must be filed with the City Engineer showing existing and proposed locations (dimensions) and elevations of ALL drainage structures, pipes, and ditches; utility mains, lines, structures, valves, and appurtenances; pavement and curb and gutter in the vicinity of and affecting issuance of this permit. Applicant shall strictly adhere to plans as submitted; any unapproved deviation from the approved drawings or standards will be sufficient cause to have work stopped or reconstructed at the expense of the permit applicant.

e) An inspection of any water, sewer, roadway pavement, driveway apron, or sidewalk work is required. The applicant is to call the Public Works Department at (513) 867-4200, 24 hours (not including weekends or holidays) in advance to schedule required inspection(s).

f) A copy of the permit is required on the job site at all times.

g) All excavations remaining open after sundown must be plated and/or appropriately barricaded for the safety of the public. All extra or surplus material and earth must be removed from the right of way within 24 hours after completion of work.

h) Traffic must be maintained at all times and under all conditions set forth by the Public Works Department unless otherwise approved by the City Engineer. Any pavement removed will be temporarily restored immediately, in accordance with City standards for paving repair, and permanently repaved within 10 days by the person, or persons making the opening. All repairs are subject to approval of the City Engineer.

i) In case of emergency where a previously unapproved road opening must be made, due discretion must be exercised. Application for an open road cut permit must be obtained at the earliest possible time after such opening is made.

j) Upon completion of work, As-built drawings must be filed with the City Engineer showing whatever changes were made from original plan.

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k) The applicant shall be responsible for any failure(s) of workmanship and/or materials for a period of 1 year from the date of completion of all work performed under this permit. Any violation of any of these prescribed conditions will be deemed sufficient cause to refuse further permits to the applicant, and all necessary repairs resulting from said violation(s) will be made by the City. The costs of the repairs will be charged to the permit applicant, and all further applications for permits will be refused until payment of these charges is received.

Horizontal Directional Drilling (HDD) Information:

The following regulations were designed to provide safeguards and standard practices to be utilized when performing horizontal directional drilling work within the City of Fairfield. These regulations are minimum requirements and are intended to supplement other local, state, or federal laws. These regulations shall also be applied to other methods of underground construction including boring, jacking, pushing, and tunneling.

1. PREPLANNING

a) Development of Drill Plan

The applicant/contractor shall develop a drill plan in sufficient detail (50 scale minimum) to identify the limits of work, roadways, topography, all existing underground utilities, and entry and exit points in plan and profile. Field investigation, including survey work and records research shall be performed, by the plan preparer, during plan preparation.

b) Investigation of Existing Utilities

As-built plans of existing utilities shall be reviewed for potential conflict. All underground utilities within the limits of the drill path shall be included on the drill plan and profile in sufficient detail to determine the drill depth and bend radii needed to avoid damage by the drilling operations. The applicant/contractor shall expose existing utilities, as necessary, to confirm conflict avoidance.

c) Permit Approval

1) The applicant/contractor shall not proceed with drilling operations in any portion of work until they have a City approved right-of-way permit (and, if applicable, an approved road cut permit). Where a combination of traditional trenching work and boring work is proposed, the applicant shall clearly delineate on the plans the construction method proposed for each portion of the work. The applicant/contractor shall submit drilling procedures to the City Engineer with each permit application, outlining the processes necessary to identify and mitigate potential problems. These problems include, but are not limited to:

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i. Directional boring into another utility

ii. Directional boring that strays off line or off grade

iii. Heaved pavement caused by the directional boring operation

2. PRECONSTRUCTION

a) Notification of Ohio Utilities Protection Service

The applicant/contractor shall contact the Ohio Utilities Protection Service in accordance with State Law for a location-marking request. Where extensive utility marking is requested, the applicant/contractor shall submit a copy of the proposed plans with the marking request. An on-site meeting with the applicant/contractor and the O.U.P.S. Utility Coordinator may be scheduled to expedite the process. The applicant/contractor shall not request locates for more of the project than can be constructed in a 48-hour period.

b) Marking of Proposed Drill Path

1) Regardless of the extent of the directional boring, the applicant/contractor shall mark with white paint, flags, stakes or a combination of these to indicate the intended drill path prior to the utility locator's arrival to the site.

2) After the intended drill path has been marked and prior to the arrival of the utility locator, the applicant/contractor shall confirm that the intended drill path is the same as that represented in the approved plan. Any changes to the proposed drill path from that shown on the approved plan will require an amended permit. Approval is required from the City prior to implementing any alignment or grade change.

c) Locate Verification

If there are known facilities in the proposed drill path, the applicant/contractor shall conduct a pre-construction meeting with the utility owner(s), at the site, prior to commencement of work. The applicant/contractor shall check for visible signs of utilities that may have been missed by the locators. If any obvious utilities are not located, or if there are problems with OUPS markings, the applicant/contractor shall contact the responsible agency prior to start of work.

3. DURING CONSTRUCTION

a) Site Walkover and Calibration of Equipment

1) Prior to construction, the applicant/contractor shall walk the limits of the proposed

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work with the City Engineer or designee – if required by the City – to evaluate potential construction conflicts. Conflicts identified during the walkover shall be resolved to the satisfaction of the City.

2) The applicant/contractor shall calibrate the transmitter and receiver of the bore head according to manufacturer's instructions prior to, and during, construction.

b) Expose Existing Utilities

1) Identify all utility lines in the area where the directional drilling will occur. When the drill path crosses an existing utility the applicant/contractor shall expose the utility by vacuum excavation or hand digging to verify the location and depth of the facility. Where applicable, the applicant/contractor shall leave open a window to the exposed facility so the bore head and back-reamer can be visually monitored.

i. Applicant/contractor is to be aware that the City **does not locate** any private water and sanitary sewer mains that are located on private property outside of the right of way.
ii. Applicant/contractor is to be aware that the City **does not locate** any sanitary sewer laterals in the right of way.
iii. Applicant/contractor is to be aware that the other jurisdictions besides Fairfield have buried public utilities within the City of Fairfield corporation limits, both within and outside of the right of way.

c) Minimum Clearances

1) When clearance from a utility is required to be maintained, the required clearance shall include both horizontal and vertical clearances from the nearest edge of the existing facility to the closest edge of the largest diameter back reamer to be used along the drill path.

i. Sewers, Waterlines, etc. – 5 feet Horizontally and 18 Inches Vertically

ii. Traffic Facilities and Electric/Gas Facilities, etc. – 5 Feet Horizontally and 18 Inches Vertically

iii. Additional Horizontal and Vertical clearances may be required for conduit sizes greater than 6 inches

2) When the drill path is parallel to and within 5 feet of an existing sewer, waterline, or electric duct bank, special approval from the City's Public Works Director or Public Utilities Director will be required. If this type of parallel installation is approved, the applicant/contractor shall expose by vacuum excavation or hand digging at reasonable intervals to confirm clearance to the adjacent utility, but not less than every 200 feet.

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d) Monitor Drilling Operations

The applicant/contractor shall monitor, at 10-foot intervals, the horizontal and vertical location of the drill head and back-reamer to confirm its conformance with the approved drill plan. The applicant/contractor shall not deviate from the approved drill plan. If the bore cannot be completed as per the approved drill plan the applicant/contractor shall stop operations until such time that the City can approve the new alignment.

e) Protection of Locate Markings

The applicant/contractor shall maintain, and protect the locate marks until they are no longer required for proper and safe execution of the drill plan.

f) Drilling Fluid Control

The applicant/contractor shall control the use of drilling fluids to prevent damage to adjacent utilities and pavement in accordance with the Horizontal Directional Drilling Good Practices Guidelines published by the HDD Consortium, current edition.

g) Emergency Contacts

The applicant/contractor shall provide an emergency contact list to the City prior to construction for all known utilities anticipated to be crossed during the drilling operations.

h) Damage to Underground Facilities

1) If an underground object is struck, the applicant/contractor shall stop the drilling process, pothole or otherwise expose to ascertain the situation before pulling back the bore head. In the event the drilling damages an existing facility the applicant/contractor shall immediately notify the City at (513) 867-4200. The applicant/contractor shall complete and submit to the City a written report explaining the events that led to the damaged facility within 24 hours of the damage. Repairs to the damaged City or other existing facility will be in accordance with Ohio Utilities Protection law and standard construction practices. Repair work shall be proposed to and approved by the City prior to performing repair work.

2) If the applicant/contractor is unable or unwilling to repair the damaged utility to the satisfaction of the owner, he/she shall be held liable for the damages caused to the City's infrastructure and the existing facilities of other utility companies.

4. POST-CONSTRUCTION

The applicant/contractor shall be responsible for televising sewer lines for a damage analysis if so requested by the City. This may include both public sewer main inspection and private sewer lateral inspections.

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Insurance Requirements for Work Within the Public Right-of-Way

Whenever work is performed in the right-of-way or on City-owned property, the contractor shall have insurance that conforms to the following:

a) *Insurance, Worker's Compensation* - The Contractor shall take out and maintain during the life of the contract, Worker's Compensation Insurance, as required by statute, for all of his employees employed at the site of the project, and in case any work is sublet, for all the subcontractor's employees not otherwise insured. In case any class of an employee, who is engaged in hazardous work at the site of the project, is not protected under the Worker's Compensation Statute, the Contractor shall provide adequate coverage for the protection of the employees not otherwise protected.

b) *Insurance, Public Liability* - The Contractor shall take out and maintain during the life of the contract, such Public Liability (Bodily Injury and Property Damage) Insurance as shall protect him and any subcontractor performing work at the site from claims for damages because of bodily injury, including accidental death and from claims for property damages which may arise from operations under the contract, whether such operations be by him or by any subcontractor, or by anyone directly or indirectly employed by either of them. Liability coverage is to be written on a comprehensive general liability policy and must include: premises-operations, manufacturers and contractors, owners, landlords and tenants; contractors protective; products-completed operations; contractual liability. General liability shall also include underground property damage by mechanical equipment. When blasting is done, coverage must be provided for the explosion hazard.

c) *Railroad Insurance* - Where work on railroad right-of way is involved, the Contractor shall also be covered by Railroad Property Liability Insurance with limits of liability as required by the railroad company on whose property the work is being performed. All comprehensive-automobile-general liability insurance policies shall include, as named insured, the Contractor, the Owner/Developer, and the City of Lebanon, Ohio.

d) *Minimum Insurance Limits* - The minimum amounts of insurance to be furnished by and for the general contractor and the subcontractors under this contract are:

    1) Worker's Compensation, OH Statutes Employers Liability: $100,000 limit of liability

    2) Comprehensive General Liability:

        i. Contracts less than $1,000,000.00: $2,000,000.00 minimum coverage

        ii. Contracts in excess of $1,000,000.00: $5,000,000.00 minimum coverage

    3) Comprehensive Automobile Liability: $1,000,000.00 combined single limit per occurrence

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e) *Railroad Protection Insurance* - (where work is to be executed within the railroad right-of-way) Loss of Life or Injury to Person - As required by Railroad Property Damage - As required by Railroad

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APPENDIX B - TRAFFIC IMPACT STUDIES

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Appendix B - Traffic Impact Studies

Traffic studies for new development and redevelopment within the City shall follow the procedures outlined by this document and must be approved by the City Engineer or his/her designee. Traffic access and impact studies are intended to determine the need for any improvements to the adjacent and nearby roadway system to maintain a satisfactory level of service and the appropriate access provisions for a proposed development.

The primary objectives of a traffic study are as follows:

- Provide a basis for assessing the transportation impacts of a new development or expansion of an existing development; identify the need for any improvements to the supporting roadway system to provide satisfactory levels of service; and, to address safety issues.
- Address relevant transportation issues associated with development proposals that may be of concern to neighboring residents, businesses, and property owners.
- Determine the appropriate location, spacing, and design of the access system for the proposed development in compliance with City standards.
- Evaluate the internal circulation and connectivity systems of the proposed development to provide safe and efficient internal traffic flow and access to/from the adjacent and nearby roadway system.
- Allow compliance with the most current edition of the City's Thoroughfare Plan (or other applicable thoroughfare plans).
- Provide a basis for improvement and funding discussions in conjunction with zoning, special permit, and subdivision plat approvals.

1. TRAFFIC STUDY GUIDELINES

The need for either a detailed traffic impact study or a limited traffic operations analysis will be identified when rezoning, variance, or plan approval petitions are filed (or discussed with public officials). The City Engineer may also identify the need for a traffic impact study or operations analysis in response to an access permit application.

a) Study Warrants for a Traffic Impact Study

A complete traffic impact study (TIS) will be required for any proposed development or redevelopment that meets one or more of the following criteria:

1) *Significantly-sized project*. A development meets this criterion if it generates more than 100 trip ends (i.e., two-way vehicle-trips) during any one hour of an average

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weekday. These trip ends shall be calculated using the latest edition of Trip Generation as published by the Institute of Transportation Engineers (or upon special studies of unique land-uses as approved by the reviewers).

2) *Modifications to roadways*. This criterion is met when the proposed development is expected by the reviewers to significantly impact a roadway segment, or roadway segments, identified in thoroughfare plans and/or improvement programs of the City, County, State, or other jurisdictions. This criterion is also met when access for the proposed development occurs on a public road that may be widened or improved in accordance with adopted thoroughfare plans.

3) *Nearby congestion*. A development meets this criterion if the proposed development is expected, in the opinion of City staff, to significantly impact surrounding roadways, intersections, or sets of intersections which are already operating at level of service "D" or worse during any hour (on a design day, or days, selected for analysis purposes). The level of service will be determined by an analysis prescribed in the current edition of the Highway Capacity Manual (Transportation Research Board) using data that reflects the current traffic conditions.

4) *High traffic impact area*. This criterion is met when, in the opinion of City staff, the proposed development is located in a high traffic impact area. Such reflects special sensitivity to traffic condition changes due to existing congestion, problematic circulation patterns, burgeoning traffic operations problems, or other traffic conditions of special concern. A traffic impact study will be requested for any proposed new development or modifications to existing development within a high traffic impact area.

b) Study Warrants for a Traffic Operations Analysis

A traffic operations analysis may be requested for petitions which do not meet the warrants for a detailed traffic impact study. A traffic operations analysis will be requested for any one of the following conditions:

1) Requests for a driveway (or driveway modification) on any public road.

2) Existing sight distance limitations or high accident experience adjacent to the subject site.

3) Modifications to a site plan for an existing development where the parking layout and/or internal circulation system could affect traffic operations on the external roadway system.

4) Requests or probable need for a new traffic signal to control driveways serving a proposed or existing development.

Examples of traffic operations analyses include studies of proposed driveway locations, resulting

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sight distances, driveway and intersection geometry and control, turn lane needs and design, accommodation of projected queuing conditions, accident experience and safety, and traffic signal warrant and progression analysis.

2. PRE-MEETING AND MEMORANDUM OF UNDERSTANDING

Prior to commencing the preparation of a traffic impact study, the preparer shall schedule a meeting with appropriate City staff. Other participants in this pre-meeting shall be representatives of other jurisdictions and agencies as deemed appropriate by City personnel. The participants at the meeting shall identify and agree upon the following issues and needs prior to the preparation of the TIS:

a) Study area
b) Study years
c) Development phasing, if applicable
d) Field data collection requirements
e) Acceptable data associated with traffic volumes, accident history, and signal operations
f) Peak traffic hours (analysis hours)
g) Trip generation, trip distribution, and assignment methods
h) Applicable planning documents (including the City's Thoroughfare Plan and Access Management Plan)
i) Other traffic impact studies prepared for developments in the study area
j) Utilization of travel demand models
k) Background traffic and growth factors
l) Acceptable levels of service (LOS)
m) Analyses methodology and software (capacity, signal warrants, etc.)
n) Cycle lengths at signalized intersections
o) Safety issues (sight distances, accident data, etc.)
p) Committed and planned roadway improvements and schedule
q) TIS submittal date

The preparer shall submit a Memorandum of Understanding (MOU) which details the assumptions and methodologies agreed upon regarding the items above – and the preparer shall request City staff concurrence with the contents of the MOU. The MOU shall be submitted to the City within one week subsequent to the pre-meeting. The MOU will be approved by City staff within one week of receipt – assuming that all items are properly addressed.

If not addressed in the MOU, the preparer shall make a separate submission regarding traffic growth rates, vehicle-trip generation rates, and directional distributions of site generated traffic to the City for concurrence and City staff will respond to the preparer on these items within one week of receipt.

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3. PREPARER QUALIFICATIONS

Traffic Impact Studies shall be prepared by professionals with training and experience in traffic engineering/transportation planning and under the supervision of a registered professional engineer in Ohio with training and experience in traffic engineering (operations and safety analysis experience). The preparer shall not be a member of the TIS review team; neither shall the preparer be related to a review team member nor hold a financial interest in the project under study. The final document shall be signed and stamped by a Professional Engineer registered in the State of Ohio.

4. STUDY GUIDELINES

a) Study Areas

Any complete transportation study analyzing off-site access needs and impacts will include at least all site access points and major intersections (signalized and unsignalized) adjacent to the site. Beyond this area, the review team will determine any additional area to be included based on local or site-specific deficiencies, development size, traffic conditions, or local policy potentially affected by the proposed development. The study area will also encompass vacant parcels of land believed to impact the intersections being analyzed so as to analyze the proposed project in the context of other previously approved or anticipated developments in the surrounding area. Generally, the study area must be large enough to encompass the critical intersections to be analyzed. In high traffic impact areas, the study area may include the entire zone in order to capture the cumulative impact of future development within the area.

The following shall be included in the study area conditions section of the report:

1) Study area boundaries

2) Study area land-uses (existing and anticipated future development)

3) Site accessibility (existing and future roadway system; document basic features to include jurisdiction, functional classification, pavement widths, lane usages, traffic control devices, speed limits, etc.)

4) TIS intersections (defined in the Memorandum of Understanding):
    i. Lane usages and traffic control devices
    ii. Sight distances (compare existing distances with established criteria)
    iii. Accident experience (if requested)

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b) Study Years

Beyond the assessment of current conditions, traffic impact studies are to address conditions in the anticipated build-out year of the proposed development and the design year – which is 20 years beyond the anticipated build-out year. Alternate time frames for smaller developments may be considered on a case by case basis. Some general guidelines are as follows:

1) All the study intersections shall be analyzed with respect to existing conditions.

2) For site access points (and immediately adjacent intersections as appropriate), analyses shall be performed for both build-out and design year conditions. Such driveways and intersections shall be configured to meet design year requirements. Analyses of build-out conditions shall define what elements of the long-term configuration need to be made to yield acceptable conditions in the build-out year.

3) For all other study intersections, analyses shall be performed (with and without the proposed development) for the build-out year. The impacts associated with site generated traffic must be appropriately mitigated at these intersections.

4) If the proposed development is to be implemented in phases, it may be appropriate to analyze each major phase (e.g., initial phase, an intermediate phase, and full project build-out) in order to define the potential for staging defined roadway improvements/modifications.

c) Study Days and Hours

1) For each defined horizon year, specific time periods are to be analyzed. In most cases, only analyses of weekday street peak hours will be required. However, land-use classifications which experience their highest trip generation levels during periods other than street peak hours may require analyses for such periods to determine proper site access and turn lane storage requirements. Examples of land-use classifications which typically have substantially higher site trip generation peaks at times other than weekday street peak hours are: shopping centers, discount stores, recreational uses (e.g., theaters, stadiums, and arenas), restaurants, schools, churches, and garden centers.

2) The analysis time period (and condition) shall be discussed and designated by the reviewers at the initial meeting. The objective is to designate the design day(s) and time period(s) so as to cause evaluation of conditions during the design hour or design hours. The selection of the proper design day and hour is particularly important for a development which exhibits significant seasonal variations in trip generation (such as shopping centers). Special consideration must also be given to a development located in a zone that experiences (or will experience) significant seasonal variations in traffic volumes due to unique land-uses.

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3) The design hour(s) to be used in a TIS will be discussed and designated by the reviewers at the initial meeting. At a minimum, all studies must include assessments of conditions during both the AM and PM peak hours (unless otherwise directed by City staff).

d) Traffic Counts

1) In areas without current traffic counts, unless otherwise approved, traffic counts shall be conducted for a minimum of 3 days.

2) For areas with current traffic counts, counts may be taken for a minimum of 1 day. These counts will be compared with traffic counts on file. If the counts are comparable, the newly collected counts will be considered adequate for the study. If the counts are not comparable, the developer and the City shall hold discussions to determine the source of the difference and whether new counts should be considered, or what existing counts should be used for the study.

3) The City may require longer traffic count timeframes to account for unique circumstances. This will be determined on a case by case basis.

e) Traffic Volume Projections

The total anticipated transportation infrastructure requirements in the study horizon year(s) depend on traffic projections and are needed so that the City can accurately evaluate implications associated with the applicant's request for development approval. However, the impacts and infrastructure needs will be assessed separately for the baseline condition (horizon year development excluding site) and total development (horizon year development including site).

1) Non-Site Traffic

i. Non-Site (background) traffic volumes are composed of existing volumes, accepted general growth of traffic, and traffic generated by previously approved new developments in the study area.

ii. *Non-Site Development within Study Area*. The impacts of the anticipated non-site development shall be assessed to aid both the City and the applicant in the determination of sources of transportation infrastructure needs. All significant developments within the study area that have been approved or are likely to occur by the specific horizon years shall be identified and incorporated into the study. The land-use type and magnitude of the probable future developments in the horizon years shall be identified in conversations with staff of the City and other relevant public agencies.

iii. *Non-Site Development Outside Study Area*. In some cases, the City may request the applicant to specifically consider and include traffic generated by large developments located outside the defined study area. In such cases, a

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TIS prepared for the identified development will be provided to the applicant by the City to permit the inclusion of relevant traffic volumes within the subject TIS. The applicant will not be required to undertake vehicle-trip generation and trip distribution for developments outside the study area.

2) Site Traffic

i. *Site Development*. Development proposed to be located on the site under study shall be categorized by specific land-use type consistent with classifications contained in the latest edition of Trip Generation (Institute of Transportation Engineers). The proposed number of development (building) units (e.g., gross square feet of building area, dwelling units, hotel rooms, etc.) shall be provided. Land area is insufficient to provide a basis for analysis.

ii. If the proposed land-use or density is inconsistent with the current land-use plan, comparison of the proposed land-use and the land-use plan recommendation shall be made using classifications contained in the Trip Generation report.

iii. Trips generated by the proposed development shall be calculated using the most current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. Methodologies contained in the ITE Trip Generation Handbook shall be used for internal trips and pass-by trips calculations.

iv. Distribution and assignment of site traffic shall be based on engineering judgment and the method shall be pre-approved by the City. The directions from which traffic will access the site will depend on various factors, including:

- Type of proposed development and the area from which it will attract traffic,
- Size of proposed development,
- Competing developments (if applicable),
- Surrounding land uses and population, and
- Conditions on surrounding roadway system.

3) Pass-By Trips

i. Pass-by trips will be permitted for retail/commercial developments.

ii. Pass-by trips shall be in accordance with ITE Trip Generation guidelines.

f) <u>Capacity Analysis</u>

The standard criterion used to define quality of traffic flow is "level of service" (LOS). This is a qualitative assessment of factors such as speed, volume, geometry, delays, and ease of

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maneuvering. All analysis techniques specify the quality of operations as a letter - with 'A' representing the best operating condition and 'F' representing the worst. Refer to the Highway Capacity Manual for LOS criteria.

The minimum acceptable design level of service (LOS) in the City is 'C'. At intersections, analyses should show an overall LOS of 'C' with no individual movement operating at less than 'D' to be acceptable. Where unacceptable levels of service are calculated for background or "no-build" conditions, the applicant is responsible for only maintaining the same level of service when site traffic is added to the roadway element.

1) Methodology

i. The use of HCS software is acceptable for capacity analyses.

ii. In general, a Peak Hour Factor (PHF) of 0.90 shall be used for horizon year analyses. (A different PHF may be more appropriate for certain land uses (e.g., a school); such conditions will be discussed at the initial meeting.)

iii. Capacity and level of service calculations shall be performed for each site drive intersection for build-out year and design year conditions. Site driveway intersections shall be configured for design year conditions.

iv. Capacity and level of service calculations shall be performed for all other study intersections for:

A. Existing conditions (i.e., current volumes on existing roadway system).

B. Build-out year 'No-build' (non-site) traffic volumes on existing (or planned and programmed) roadway system.

- If improvements/modifications to the existing roadway system are planned and programmed, City staff will provide this information to the applicant and the improved roadway system will be used as a base for testing horizon year traffic conditions – as appropriate.
- If roadway improvements or modifications beyond those formally planned or programmed are assumed in the 'no-build' analysis, then these improvements or modifications will be considered to be the responsibility of the applicant. If this is not the case, then the rationale for considering such improvements must be clearly described.

C. Build-out year 'Build' (i.e., non-site plus site) traffic volumes on existing (or planned and programmed) roadway system.

D. Build-out year 'Build' traffic volumes on improved/modified roadway

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system that mitigates the traffic impacts of the proposed development.

- Produce a table for each intersection, study period, and study horizon year listing the level of service and delay (or v/c ratio) by (1) individual movement, and (2) overall intersection for: Existing conditions, No-Build conditions, Build conditions on existing roadway system, and Build conditions on proposed roadway system.

2) Mitigation

Recommendations shall be made in the TIS for the site access points and external roadway improvements (such as additional through lanes, turn lanes, and traffic control devices) necessitated as a result of the proposed development. The traffic impacts of the proposed/planned development must be properly mitigated. Suggested improvements/modifications must be practical and acceptable to the appropriate agency/jurisdiction. A scaled concept sketch or (at least a schematic figure) shall be provided illustrating the improvements/modifications that properly mitigate the traffic impacts of the proposed development.

g) <u>Turn Lane Criteria</u>

1) Turn lanes at signalized intersections (existing or warranted upon on build-out day) and at off-site unsignalized intersections shall be provided based on capacity analyses (as part of mitigation).

2) Left turn lanes shall be provided at site access points under the following conditions:

   i. On major and minor arterial roadways with speed limits greater than 40 mph, or
   ii. On major and minor collector roadways with speed limits greater than 40 mph and more than 10 left turning vehicles during the peak hour of the development, or
   iii. Per graphs 401-5aE, 401-5bE and 401-5cE, which are the left turn lane warrants contained in the ODOT Location and Design Manual Volume I. (These are Graphs 1, 2, and 3 in the ODOT State Highway Access Management Manual.) Note that the warrants apply only to the free flow approach of the unsignalized intersection. Turn lanes on the minor approach (under stop-sign control) shall be provided based on capacity analyses.

3) Right turn lanes shall be provided at site access points per graphs 401-6aE, 401-6bE, 401-6cE and 401-6dE, which are the right turn lane warrants contained in ODOT Location and Design Manual Volume I. (These are Graphs 4, 5, 6 and 7 in the ODOT State Highway Access Management Manual.)

4) Left or right turn lanes may also be required when deemed necessary for safety

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purposes by the City Engineer. The length of left and right turn lanes shall be based on the criteria contained in the ODOT Location and Design Manual Volume I Section 401-9E and 401-10E or, where appropriate, on the results of queuing analyses associated with the capacity calculations. The length of turn lanes shall be based on a design speed five miles per hour above the posted speed limit. For roadways with an unposted speed limit, a design speed of 55 MPH shall be used.

h) Traffic Signal Warrant Criteria

Warrant analyses for the installation of a traffic signal shall be required if a signal is recommended as a mitigating measure. Signal warrants, as contained in the latest edition of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD), shall be used for any formal request associated with the installation of a traffic signal. In general, if any one or more of the eight warrants as found in the OMUTCD is met, a traffic signal may be considered. Signal warrant analyses may be conducted using projected traffic volumes to identify the potential need for the installation of traffic signals. However, traffic signals will not be installed unless: (1) the subject intersection is unquestionably projected to meet warrants on build-out day of the development, or (2) actual counts at the intersection meet warrant thresholds

Any intersection that meets signal warrant thresholds must also be evaluated in terms of location and spacing based on the standards noted in the City's Access Management Regulations or in the ODOT State Access Management Manual (if applicable) for the access category assigned by the City's Thoroughfare Plan.

i) Site Access, Circulation, Parking and Roadway Plans

The following shall also be addressed in the TIS:

1) On-site parking needs.
2) Ease of internal circulation.
3) On-site queuing provisions.
4) On-site traffic operations and control (as they may affect traffic operations on the external roadway system).
5) Design of site driveways to include pavement widths, lane usages, proposed median widths, traffic control devices, etc.

Plans showing site access and any roadway improvements/modifications shall be submitted with all requested traffic impact studies and/or traffic operations analyses. These plans shall be to a practical scale.

The site access and roadway plan(s) shall be of sufficient detail to show:

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1) Location and spacing of all site access points and driveways (including relationships to other nearby roadways, intersections, and driveways),
2) External roadway improvements/modifications,
3) Lane configurations and control,
4) Queuing and vehicle storage distances,
5) Spacing of traffic signals to permit proper traffic progression on the adjacent roadway system,
6) Sight distances,
7) Adequate pedestrian, bicycle, and public transit provisions (if applicable),
8) Sufficient emergency and service/delivery access, and
9) Proper on-site circulation and parking layout so as not to affect traffic flow and operations on the external street system.

5. SUBMITTAL REQUIREMENTS

All traffic impact studies and traffic operations analyses must be documented in a report. The results of traffic operations analyses can be summarized in a memorandum type report – while the results of traffic impact studies must be submitted in standard report formats. Such traffic impact reports shall be complete and concise. Two copies of the report shall be submitted to the City for review.

6. PUBLIC RECORD

All submitted documents, including both reports and data, become public record upon submittal. Information contained in these submittals may be used by agency staff or other study preparers in subsequent studies. The original sources of data and information shall be cited when taken from prior submittals.

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APPENDIX C - SMALL CELL INFRASTRUCTURE WITHIN THE RIGHT-OF-WAY

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Appendix C - Small Cell Infrastructure within the Right-of-Way

Small cell infrastructure within the public right-of-way requires a permit to be approved by the Public Works Director or his/her designee.

1. PURPOSE

The purpose of these guidelines is to establish general procedures and standards, consistent with all applicable federal and state laws, for the siting, construction, installation, collocation, modification, relocation, operation, and removal of Small Cell Facilities and Wireless Support Structures within the City's right-of-way. The goals of these guidelines are to:

a) Provide standards, technical criteria, and details for Small Cell Facilities and Wireless Support Structures in the City's right-of-way to be uniformly applied to all applicants and owners of Small Cell Facilities or support structures for such facilities.

b) Enhance the ability of wireless communications carriers to deploy small cell wireless technology in the City quickly, effectively, and efficiently so that residents, businesses, and visitors benefit from ubiquitous and robust wireless service availability.

c) Preserve the character of the City's neighborhoods and corridors.

d) Ensure that Small Cell Facilities and Wireless Support Structures conform with all applicable health and safety regulations and will blend into their environment to the greatest extent possible.

e) Comply with, and not conflict with or preempt, all applicable state and federal laws.

2. DEFINITIONS

a) *Abandoned* means Small Cell Facilities or Wireless Support Structures that are unused for a period of three hundred sixty-five days without the Operator otherwise notifying the City and receiving the City's approval.

b) *Antenna* means communications equipment that transmits or receives radio frequency signals in the provision of wireless service.

c) *Collocation or Collocate* means to install, mount, maintain, modify, operate, or replace wireless facilities on a Wireless Support Structure.

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d) *Decorative Pole* means a pole, arch, or structure other than a street light pole placed in the right-of-way specifically designed and placed for aesthetic purposes and on which no appurtenances or attachments have been placed except for any of the following: (a) electric lighting; (b) specially designed informational or directional signage; (c) temporary holiday or special event attachments.

e) *Operator* means a wireless service provider, cable operator, or a video service provider that operates a Small Cell Facility and provides wireless service. *Operator* includes a wireless service provider, cable operator, or a video service provider that provides information services as defined in the "Telecommunications Act of 1996," 110 Stat. 59, 47 U.S.C. 153(2), and services that are fixed in nature or use unlicensed spectrum.

f) *Permittee* means the owner and/or operator issued a permit pursuant to these guidelines.

g) *Right-of-Way* means the surface of, and the space within, through, on, across, above, or below, any public street, public road, public highway, public lane, public path, public alley, public sidewalk, public drive, public easement, and any other land dedicated or otherwise designated for a compatible public use, which is owned or controlled by the City of Fairfield.

h) *Right of Way Permit ("Permit")* means the non-exclusive grant of authority issued by the City of Fairfield to install a Small Cell Facility and/or a Wireless Support Structure in a portion of the right-of-way in accordance with these guidelines.

i) *Small Cell Facility* means a wireless facility that meets both of the following requirements:

   1) Each antenna is located inside an enclosure of not more than six cubic feet in volume or, in the case of an antenna that has exposed elements, the antenna and all of its exposed elements could fit within an enclosure of not more than six cubic feet in volume.

   2) All other wireless equipment associated with the facility is cumulatively not more than 28 cubic feet in volume. The calculation of equipment volume shall not include electric meters, concealment elements, telecommunications demarcation boxes, grounding equipment, power transfer switches, cut-off switches, and vertical cable runs for the connection of power and other services.

j) *Utility Pole* means a structure that is designed for, or used for the purpose of, carrying lines, cables, or wires for electric or telecommunications service. "Utility Pole" excludes street signs and decorative poles.

k) *Wireless Support Structure* means a pole, such as a monopole, either guyed or self-

supporting, street light pole, traffic signal pole, a 15 foot or taller sign pole, or Utility Pole capable of supporting Small Cell Facilities. *Wireless Support Structure* excludes a utility pole or other facility owned or operated by an electric utility.

3. REQUIREMENT TO COMPLY

Placement, modification, operation, relocation, and removal of a Small Cell Facility and/or Wireless Support Structure shall comply with these design guidelines of the City of Fairfield's Codified Ordinances at the time the permit for installation, modification, relocation, or removal is approved and as amended from time to time.

4. APPLICATION

Materials

Prior to installation, modification, relocation, or removal of a Small Cell Facility, relocation or removal of an existing Wireless Support Structure, installation of a new Wireless Support Structure, or collocation on an existing Wireless Support Structure in the right-of-way, the operator shall apply to the City and receive a Right-of-Way Permit for Micro Wireless from the City.

The following items must be included in order for the application to be considered complete:

a) General Requirements for Right-of-Way Permit Applications for a Small Cell Facility and/or Wireless Support Structure in the Right-of-Way, excluding applications for removal:

Contact Information: Applicant must provide contact information, including the name of the company seeking the permit and the name of a designated point of contact along with his/her mailing address, email address and phone number. The operator is responsible for providing updated contact information to the City when the contact information changes from that which was included in the application. For the purposes of submitting an application under this section, "Operator" also includes any person that, at the time of filing the application, provides the City the person's written authorization to perform the specific work for which an application has been submitted on behalf of an operator.

Consolidated Applications: An applicant seeking to construct, modify, collocate or replace more than one small cell facility or more than one wireless support structure within the City may file a consolidated application for up to thirty (30) small cell facility requests or up to thirty (30) wireless support structure requests provided the requests grouped on a consolidated application only address substantially the same type of small cell facilities or substantially the same type of

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wireless support structures. (Note: The City may treat each request individually during application review and processing when issuing a determination.)

Aerial Map: Applicant must include an aerial map showing the location of the proposed or existing support structure to which the Small Cell Facility is proposed to be attached, and a street view image.

Full Description of Number and Dimensions of Facilities and/or Structures to be Installed: Applicant must include a full description of the number and dimensions of all Small Cell Facilities proposed to be installed and the Wireless Support Structure, either new or existing, to be utilized for each Small Cell Facility.

Site and Other Plans and Structural Calculations: Applicant must include fully dimensioned site plans, elevation drawings and structural calculations prepared, sealed, stamped, and signed by a Professional Engineer licensed and registered by the State of Ohio. Drawings must depict any existing Small Cell Facilities with all existing transmission equipment and other improvements, the proposed facility with all proposed transmission equipment and other improvements and the legal boundaries of the existing right-of-way, and any associated access and utility easements.

Fully dimensioned site plans shall indicate the spacing from existing curb, driveways, sidewalks, light poles, and any other poles or appurtenances. A traffic control plan and/or other plans may also be required based on the proposed scope of work.

Photo Simulations: Applicant must include photo simulations from at least two reasonable line-of-site locations in the vicinity of the proposed project site. Photo simulations must be included with the site plans on a separate sheet.

Photo simulations must include cabling/conduit, the RF warning and node ID stickers and equipment offset from the pole. Ensure photo simulations accurately show smaller equipment items such as duplexers, ground buss bars, PCX, or J-Boxes.

Upon request applicant shall provide photographs, if any, of other locations utilizing the same or substantially similar Small Cell Facilities and/or Wireless Support Structures.

Equipment Specifications: For all equipment depicted on the plans, the applicant must include (1) the manufacturer's name and model number; (2) physical dimensions, including without limitation, height, width, depth and weight with mounts and other necessary hardware; (3) photographs and/or renderings to scale of all equipment depicted in the plans; and (4) the ambient noise level generated from the equipment, if any.

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b) Small Cell Facility Applications

Size Limits: Applicant must include scaled, dimensioned drawings or pictures with calculations to show strict conformity to the size limitations for a Small Cell Facility.

Confirmation of Compliance with State and Federal Environmental Regulations: Applicant shall certify that the proposed Small Cell Facility and/or new Wireless Support Structure fully comply with all State and federal environmental regulations.

RF Compliance Audit: Applicant must submit a sworn affidavit prepared and signed by a licensed RF engineer with knowledge about the proposed project that affirms the proposed project will be compliant with all applicable governmental regulations in connection with human exposure to radiofrequency emissions.

Electrical Service: Operator shall be responsible for obtaining any required electrical power service to the Small Cell Facility. Operator's electrical supply shall be separately metered from the City. Applicant must provide sealed engineered drawings for conduit size, circuit size, calculations for amp, distances running, etc. Applicant must obtain the appropriate Permits from the Building Department prior to installation of the Small Cell Facility.

c) Applications for New Wireless Support Structure

Distance Analysis: Applicant must provide an analysis showing that the proposed new Wireless Support Structure is spaced at least 250 feet from a pole supporting a Small Cell Facility, unless otherwise approved by the City in writing.

Size Limits: Applicant must provide scaled dimensional drawings with calculations to show strict conformity to the size and maximum height limitations as set forth in these guidelines.

d) Applications for Attachment to a Non-City-owned Wireless Support Structure

Owner's Authorization: Applicant must submit evidence sufficient to show that either (1) Applicant owns the proposed support structure; or (2) Applicant has obtained the owner's authorization to file the application.

e) Applications for Removal of a Small Cell Facility and/or a Wireless Support Structure

Contact Information: Applicant must provide contact information which includes the name of company seeking the Permit and the name of a designated point of contact along with

his/her mailing address, email address and phone number. Operator is responsible for providing updated contact information to the City when the contact information changes from that which was included in the application.

Proof of Agent Designation (if applicable): If the Applicant is serving as an agent for an Operator, the Applicant must provide written documentation of the agent designation signed by the Operator.

Consolidated Applications: An Applicant seeking to remove more than one Small Cell Facility or more than one Wireless Support Structure within the City may file a consolidated application for up to 5 Small Cell Facility requests or up to 5 Wireless Support Structure requests provided the requests grouped on a consolidated application only address substantially the same type of Small Cell Facilities or substantially the same type of Wireless Support Structures. (Note: The City may treat each request individually during application review and processing and when issuing a determination.)

Map: Applicant must include an aerial map showing the location of the proposed removal and a street view image.

Full Description of Number and Dimensions of Facilities and/or Structures to be Removed: Applicant must include a full description of the number and dimensions of all Small Cell Facilities and/or the support structure proposed to be removed.

Full Description of Restoration of the Right of Way: Applicant must include a full description of the steps to be involved in the removal and the actions that will be taken to restore the Right of Way.

Operator shall repair any damage to the right-of-way, any facilities located within the right-of-way, and/or the property of any third party resulting from operator's installation activities (or any other of operator's activities hereunder) within 10 calendar days following the date of such installation, at operator's sole cost and expense. Restoration of the right-of-way and such property must be to substantially the same, or better, condition as it was immediately before the date operator was granted a permit for the applicable location, or did the work at such location (even if operator did not first obtain a permit). This includes restoration or replacement of any damaged trees, shrubs, or other vegetation. Such repair, restoration, and replacement shall be subject to the sole, reasonable approval of the City.

Application Submittal Procedures

All applications should be submitted to the Department of Public Works with the

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application fee and required documents. The Department may establish regular hours in which applications may be submitted, but will generally receive applications Monday through Friday between 8:00 a.m. and 5:00 p.m., excluding holidays and subject to City personnel availability. The City will review all applications for completeness upon receipt. Applications may be rejected as incomplete upon discovery of deficiencies in the application.

Application Fee

The applicant shall submit the application fee of $250 per small cell facility. For the purposes of fee calculations a single small cell facility can be a single small cell antenna (and appurtenances), a single support structure, or a single support structure installed, modified, relocated or removed in conjunction with an antenna (and appurtenances) attached to the support structure. Fees for consolidated applications apply to each location and are cumulative. Additional building/electric permit fees may be applicable.

Timeline for Review

The City will complete its review of each duly submitted application and provide a determination within 90 days for an application to collocate, replace, or modify a Small Cell Facility or 120 days for an application to construct, modify, or replace a Wireless Support Structure associated with a Small Cell Facility.

Incomplete Applications

If the City determines during review that the application is incomplete, the City will notify the applicant and suspend further review until the missing items are provided. Consistent with state and federal requirements, the City will pause the review timeline for incomplete applications. If the City determines the application is still incomplete after receipt of additional application materials, the City will pause the timeline again until the application is deemed complete.

5. LOCATIONS OF SMALL CELL FACILITIES, RELATED GROUND EQUIPMENT, AND WIRELESS SUPPORT STRUCTURES

Most Preferable Locations

The following are the most preferred areas for new Small Cell Facilities.

a) *Industrial Areas*, if not adjacent to a municipal park or residential area.

b) *Regional Thoroughfares Rights of Way Areas* if not adjacent to a municipal park or

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residential area.

c) *Retail and Commercial Areas* if not adjacent to a municipal park or residential area.

Collocation Preference

It is the City's strong preference that whenever an applicant proposes to place a new Wireless Support Structure with a Small Cell Facility within 250 feet from an existing Wireless Support Structure the applicant either collocate with the existing facility or demonstrate that a collocation is either not technically feasible or space on the existing facility is not potentially available.

Least Preferable Locations

The following are the least preferred areas for new Small Cell Facilities.

a) *Residential Areas*
b) Parks
c) *Design Review Districts*

Order of Preference for Wireless Support Structures

The following list indicates the order of preference for Wireless Support Structures for Small Cell Facilities.

a) *Existing Utility Poles:* It is the City's preference that Small Cell Facilities be installed on existing Utility Poles (electric or telephone) or lashed onto existing telephone or electrical lines between existing Utility Poles.

b) *New Poles:* If existing poles have proven to be unavailable, the City prefers the installation of a new pole to serve as a Wireless Support Structure.

6. CONSIDERATION OF ALTERNATE LOCATIONS

The City reserves the right to propose an alternate Wireless Support Structure to the one proposed in the application and/or to propose an alternate location for a new Wireless Support Structure within one hundred feet of the proposed location or within a distance that is equivalent to the width of the right-of-way in or on which the new Wireless Support Structure is proposed, whichever is greater, which the operator shall use if it has the right to use the alternate location on reasonable terms and conditions and the alternate location does not impose technical limits or additional costs.

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7. GUIDELINES ON PLACEMENT

Generally, an applicant shall construct and maintain Small Cell Facilities and Wireless Support Structures in a manner that does not (1) obstruct, impede, or hinder the usual travel or public safety on a right-of-way; (2) obstruct the legal use of a right-of-way by other utility providers; (3) violate nondiscriminatory applicable codes; (4) violate or conflict with the City's Codified Ordinances or these design guidelines; and (5) violate the federal Americans with Disabilities Act.

The City desires to promote cleanly organized and streamlined facilities using the smallest and least intrusive means available to provide wireless services to the community. Generally, a Small Cell Facility and/or Wireless Support Structure shall match and be consistent with the materials and finish of the adjacent municipal poles of the surrounding area adjacent to their location. In the absence of adjacent municipal poles, the Wireless Support Structure shall match the materials and finish of the adjacent utility poles.

Antennas on Existing or Replaced Utility Poles

The antenna(s) associated with collocation of a Small Cell Facility on existing or replaced utility poles must have concealed cable connections, antenna mount, and other hardware. The maximum dimensions for antennas shall not be more than 6 cubic feet in volume, including any enclosure for the antenna.

Right-of-Way

Small Cell Facilities and Wireless Support Structures and related equipment shall be placed, as much as possible, in line with other utility features and in a location that minimizes any obstruction, impediment, or hindrance to the usual travel or public safety on a right-of-way.

Height above Ground

a) *Small Cell Facilities:* Small Cell Facilities shall be installed at least 8 feet above the ground. If a Small Cell Facility attachment is projecting toward the street, for the safety and protection of the public and vehicular traffic, the attachment shall be installed no less than 16 feet above the ground.

b) *New Wireless Support Structures:* In areas where there are no Wireless Support Structures or utility poles taller than 30 feet in height above ground level and the maximum allowable height for building construction in the underlying zoning district is 35 feet in height above ground level or less, the overall height of a new Wireless Support Structure and any collocated antennas shall not be more than 35

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feet in height above ground level. This applies to zoning districts A-1, B-1, C-1, C-4, and R.

In all other areas, the overall height of a new Wireless Support Structure and any collocated antennas shall not be more than 40 feet in height above ground level. This applies to zoning districts C-2, C-3/3A, D-1, M-1, M-2, SE, and ST.

c) *Existing Wireless Support Structures:* For an existing Wireless Support Structure, the antenna and any associated shroud or concealment material are permitted to be collocated at the top of the existing Wireless Support Structure and shall not increase the height of the existing Wireless Support Structure by more than 5 feet (one-time increase).

Protrusion

No protrusions from the outer circumference of the existing structure or pole shall be more than 1 foot. The pole and all attachments to the pole that are projecting, or any equipment or appurtenance mounted on the ground, shall comply with Americans with Disabilities Act and shall not obstruct an existing or planned sidewalk or walkway.

Location of Equipment - General

Small Cell Facilities and related equipment shall not impede pedestrian or vehicular traffic in the right-of-way. If any Small Cell Facility or Wireless Support Structure is installed in a location that is not in accordance with the plans approved by the Department of Public Works, impedes pedestrian or vehicular traffic and/or or does not comply or otherwise renders the right-of-way non-compliant with applicable laws, including the Americans with Disabilities Act, then the operator shall promptly remove the Small Cell Facilities and/or Wireless Support Structure. If the operator does not complete removal within 30 days of notice, the City will remove it and bill the operator for the actual and direct cost of the removal.

The applicant is required to incorporate ambient noise suppression measures and/or required to place the equipment in locations less likely to impact adjacent residences or businesses to ensure compliance with all applicable noise regulations.

a) *Utility Lines:* Service lines must be undergrounded whenever feasible to avoid additional overhead lines. For metal poles, undergrounded cables and wires must transition directly into the pole base without any external junction box.

b) *Spools and Coils:* To reduce clutter and deter vandalism, excess fiber optic or coaxial cables for Small Cell Facilities shall not be spooled, coiled or otherwise

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stored on the pole except within the approved enclosure such as a cage or cabinet.

c) *Above-Ground Conduit:* On wood poles, all above-ground wires, cables and connections shall be encased in the smallest section or smallest diameter PVC channel, conduit, u-guard, or shroud feasible, with a maximum dimension of a 4-inch diameter. Such conduit shall be finished in zinc, aluminum or stainless steel, or colored to match those metal finishes.

Location of Ground Mounted Equipment

Ground equipment should be minimal and as unobtrusive as possible. It should be placed to minimize any obstruction, impediment, or hindrance to the usual travel or public safety on a right-of-way, maximize the line of sight required to add to safe travel of vehicular and pedestrian traffic, maximize that line of sight at street comers and intersections, and minimize hazards at those locations. The City may deny a request that negatively impacts vehicular and/or pedestrian safety.

The equipment shroud or cabinet must contain all the equipment associated with the facility other than the antenna. All cables and conduits associated with the equipment must be concealed from view, routed directly through the metal pole (with the exception of wood power poles), and undergrounded between the pole and the ground-mounted cabinet.

Location of Pole Mounted Equipment

All pole mounted equipment must be installed as flush to the pole as possible, using stainless steel banding straps. When the straps are attached to a metal pole, they must match the color of the pole. Through-bolting or use of lag bolts is prohibited. All pole mounted equipment shall be located as close together as possible and if possible, on the same side of the pole.

When pole mounted equipment is either permitted or required, all equipment other than the antenna(s), electric meter, and disconnect switch must be concealed within an equipment cage. The equipment cabinet may not extend more than 12 inches from the face of the pole. The equipment cabinet must be non-reflective, colored to match the existing pole if attached to a metal pole, and in the color of brushed aluminum if attached to a wood pole. Equipment cabinets should be mounted as flush to the pole as possible. Any standoff mount for the equipment cabinet may not exceed 4 inches.

a) *Electric Meter:* The City strongly encourages site operators to use flat-rate electric service when it would eliminate the need for a meter. When a meter is necessary, site operators shall use the smallest and least intrusive electric meter available. Whenever permitted by the electric service provider, the electric meter base should

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be painted to match the pole.

b) *Telephone/Fiber Optic Utilities:* Cabinets for telephone and/or fiber optic utilities may not extend more than 12 inches from the face of the pole, and must be painted, wrapped, or otherwise colored to match the pole. Microwave or other wireless backhaul is discouraged when it would involve a separate and unconcealed antenna.

Undergrounded Equipment Vaults

Equipment in an environmentally controlled underground vault may be required in some areas.

New Wireless Support Structures

a) *Spacing:* The City strongly discourages more than one new Wireless Support Structure per block and will not approve more than one per 250 feet on each side of the street to minimize the hazard of poles adjacent to roadways and to minimize visual clutter and distractions to vehicular traffic. An exemption may be granted if the applicant can demonstrate that this restriction will have the effect of preventing wireless service to the location. Wireless Support Structures shall be spaced apart from Utility Poles or Wireless Support Structures supporting Small Cell Facilities at the same spacing between Utility Poles in the immediate proximity.

If multiple requests are received to install two or more poles that would violate the spacing requirement or to collocate two or more Small Cell Facilities on the same Wireless Support Structure, priority will be given to the first request received that meets these guidelines.

b) *Alignment with Other Poles:* The centerline of any new Wireless Support Structure must be aligned, as much as possible, with the centerlines of existing poles on the same street segment, but only if the new structure's height does not conflict with overhead power utility lines and facilities.

c) *General Restrictions on New Wood Poles:* In all locations, the City reserves the right to require a metal pole rather than a wood pole based on the build and/or natural environmental character of the proposed site location.

d) *Wood Pole Footings and Foundations:* All new wood poles must be direct buried to a depth determined, stamped, sealed, and signed by a professional engineer licensed and registered by the State, and subject to the City's review and approval.

e) *Metal Pole Footings and Foundations:* All new metal poles must be supported with a reinforced concrete pier. The design including the pier, footings, and anchor bolts shall be stamped, sealed, and signed by a professional engineer licensed and

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registered by the State, and subject to the City's review and approval. All anchor bolts must be concealed from public view with an appropriate pole boot or cover subject to the City's prior approval.

f) *Metal Pole Material:* All metal poles must be constructed from hot-dip galvanized steel or other corrosion-resistant materials approved by the City and finished in accordance with these guidelines to avoid rust stains on adjacent sidewalks, buildings, or other improvements.

g) *Metal Pole Finish:* Metal poles must be painted in accordance with industry and manufacturer guidelines. The Applicant may select a paint or powder coat system in compliance with ATSM standards.

h) *Lighting, Planters, Flags, and Banners:* The City may require the applicant to install functional streetlights and/or brackets to hold hanging flower planters, flags and/or banners when technically feasible and the City determines that such additions will enhance the overall appearance and usefulness of the proposed facility. The City, without further notice to any party, may install hanging flower planters, flags and/or banners utilizing the brackets described in this paragraph.

8. UNDERGROUNDING REQUIREMENTS

The City may request to install structures and facilities in the right-of-way in an area where the City has required or has designated all structures and facilities except those owned by the City to be placed underground or elsewhere in the right-of-way or a utility easement. These areas are easily identifiable as those locations where electric has been placed underground; however, if an applicant is uncertain as to whether such facilities have been placed underground in the area, the applicant should contact the City for clarification before apply for or installing any Wireless Support Structures and/or Small Cell Facilities in the area. The applicant may request a waiver if the operator is unable to achieve its service objective using a location in the right-of-way where the prohibition does not apply, in a utility easement the operator has the right to access, or in or on other suitable locations or structures made available by the City at reasonable rates, fees, and terms.

9. AESTHETIC REQUIREMENTS

Concealment

a) *New Wireless Support Structures:* It is the City's preference that all new Wireless Support Structures be as unobtrusive as practicable and fit the character of the surrounding development.

b) *Small Cell Facilities:* Small Cell Facilities shall be concealed or enclosed, utilizing

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stealth and/or other concealment techniques, to the fullest extent possible in an equipment box, cabinet, or other unit that may include ventilation openings. Unless approved by the City in writing, there shall be no external cables and wires hanging off a pole. The approved Small Cell Facility cable or wiring shall be sheathed or enclosed in conduit, so that wires are protected and not visible and/or visually minimized to the extent possible.

c) *Equipment Enclosures:* Equipment enclosures, including electric meters, shall be as small as possible. Ground-mounted equipment shall incorporate concealment elements into the proposed design. Concealment may include, but shall not be limited to, landscaping, strategic placement in less obtrusive locations, etc.

d) *Landscaping:* Landscape screening may be required and maintained around ground-mounted equipment enclosures. The planting quantity and size should be such that 100% screening is achieved within two years of installation. The City may grant an exemption from this landscaping requirement based on the characteristics of the specific location for the equipment enclosure. Tree "topping" or the improper pruning of trees is prohibited. Any proposed pruning or removal of trees, shrubs or other landscaping already existing in the right-of-way must be noted in the application and must be approved by the City.

When underground vaults are proposed, they shall be located to minimize disruption to the placement of street trees. Adequate planting depth shall be provided between the top of the vault and the finished grade to allow plants to grow in a healthy condition.

Allowed Colors

All colors shall match the background of any Wireless Support Structure that the facilities are located upon. In the case of existing wood poles, finishes of conduit shall be zinc, aluminum or stainless steel, or colored to match those metal finishes and equipment cabinets shall be the color of brushed aluminum. Ground mounted equipment cabinets shall be the color of brushed aluminum, or such other color that matches the subject Wireless Support Structure and Wireless Facilities, as may be requested by the City.

Signage/Lights/Logos/Decals/Cooling Fans

a) *Signage:* Operator shall post its name, location identifying information and emergency telephone number in an area on the Small Cell Facility at eye level that is visible to the public. Signage required under this section shall not exceed 4" x 6", unless otherwise required by law (e.g. RF ground notification signs) or the City. If no cabinet exists, signage shall be placed on the base of the pole.

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b) *Lights:* New Small Cell Facilities and Wireless Support Structures shall not be illuminated, except in accordance with state or federal regulations, or unless illumination is integral to the camouflaging strategy such as design intended to look like a street light pole.

c) *Logos/Decals:* Operator shall remove or paint over unnecessary equipment manufacturer decals. New Small Cell Facilities and Wireless Support Structures shall not include advertisements and may only display information required by a federal, state or local agency. Operators shall also utilize the smallest and lowest visibility radio-frequency (RF) warning sticker required by government or electric utility regulations and place the RF sticker as close to the antenna as possible.

d) *Cooling Fans:* In residential areas, use a passive cooling system. In the event that a fan is absolutely necessary, use a cooling fan with a low noise profile.

10. INSTALLATION AND INSPECTION

a) *Completion within 180 days:* The collocation or construction of a new Wireless Support Structure for which a permit is granted shall be completed within 180 days after issuance of the permit unless the City and the applicant mutually agree to extend this period. The City will agree to an extension if the delay is caused by (a) make-ready work for a City-owned facility or (b) the lack of commercial power availability at the site, provided that the operator has made a timely request within 60 days after the issuance of the permit for commercial power. The additional time to complete installation may not exceed 365 days after the issuance of the permit.

b) *Procedure for Request for Extension of Time:* In situations when completion will not occur within 180 days after issuance of the permit, the applicant may request an extension of time. Such extension request will include the length of time being requested and the reason for the delay. The extension must be filed with the Department of Public Works.

Existing Infrastructure - Restoration Requirements

The permittee and/or its subcontractors shall leave the streets, alleys and other public places where work is done in as good or better condition or repair as they were before such work was commenced and to the reasonable satisfaction of the City.

11. INTERFERENCE WITH OPERATIONS

No Liability

The City shall not be liable to the operator by reason of inconvenience, annoyance, or injury to the Small Cell Facilities, Wireless Support Structures, and related ground or pole mounted

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equipment or activities conducted by the operator therefrom, arising from the necessity of repairing any portion of the right-of-way, or from the making of any necessary alteration or improvements, in or to, any portion of the right-of-way, or in, or to, City's fixtures, appurtenances, or equipment.

12. REQUIREMENTS FOR REMOVAL, REPLACEMENT, MAINTENANCE, AND REPAIR

Removal or Relocation Required for City Project

Operator shall remove and relocate the permitted Small Cell Facility and/or Wireless Support Structure at the operator's sole expense to accommodate construction of a public improvement project by the City.

If operator fails to remove or relocate the Small Cell Facility and/or Wireless Support Structure or portion thereof as requested by the City within 120 days of the City's notice, then the City shall be entitled to remove the Small Cell Facility and/or Wireless Support Structure, or portion thereof at operator's sole cost and expense, without further notice to operator.

Operator shall, within 30 days following issuance of invoice for the same, reimburse the City for its reasonable expenses incurred in the removal (including, without limitation, overhead and storage expenses) of the Small Cell Facilities and/or Wireless Support Structure, or portion thereof.

Removal Required by City for Safety and Imminent Danger Reasons

Operator shall, at its sole cost and expense, promptly disconnect, remove, or relocate the applicable Small Cell Facility and/or Wireless Support Structure within the time frame and in the manner required by the City if the City reasonably determines that the disconnection, removal, or relocation of any part of a Small Cell Facility and/or Wireless Support Structure (a) is necessary to protect the public health, safety, welfare, or City property, or (b) operator fails to obtain all applicable licenses, permits, and certifications required by law for its Small Cell Facility and/or Wireless Support Structure.

If the Public Works Director reasonably determines that there is imminent danger to the public, then the City may immediately disconnect, remove, or relocate the applicable Small Cell Facility and/or Wireless Support Structure at the Operator's sole cost and expense.

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Removal/Abandonment of Facilities

Operator shall remove a Small Cell Facility and/or Wireless Support Structure when such facilities are abandoned regardless of whether or not it receives notice from the City. Unless the City sends notice that removal must be completed immediately to protect public health, safety, and welfare, the removal must be completed within the earlier of 60 days of the Small Cell Facility and/or Wireless Support Structure being abandoned, or within 60 days of receipt of written notice from the City. When operator abandons permanent structures in the right-of-way, the operator shall notify the City in writing of such abandonment and shall file with the City the location and description of each Small Cell Facility and/or Wireless Support Structure abandoned. Prior to removal, operator must make application to the City and receive approval for such removal.

Operator must obtain a right-of-way permit for the removal. The City may require the operator to complete additional remedial measures necessary for public safety and the integrity of the right-of-way.

The City may, at its option, allow a Small Cell Facility and/ or Wireless Support Structure to remain in the right-of-way and coordinate with the operator to transfer ownership of such Small Cell Facility and/ or Wireless Support Structure to the City, instead of requiring the operator to remove such Small Cell Facility and/or Wireless Support Structure.

Restoration

Operator shall repair any damage to the right-of-way, any facilities located within the right-of-way, and/or the property of any third party resulting from operator's removal or relocation activities (or any other of operator's activities hereunder) within 10 calendar days following the date of such removal or relocation, at operator's sole cost and expense. Restoration of the right-of-way and such property must be to substantially the same, or better, condition as it was immediately before the date operator was granted a permit for the applicable location, or did the work at such location (even if operator did not first obtain a permit). This includes restoration or replacement of any damaged trees, shrubs, or other vegetation. Such repair, restoration, and replacement shall be subject to the sole, reasonable approval of the City.

13. GENERAL PROVISIONS

As-Built Maps and Records

Operator shall maintain accurate maps and other appropriate records of its Small Cell Facilities and Wireless Support Structures as they are actually constructed in the right-

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of-way or any other City-owned property. Operator shall maintain a list of its Small Cell Facilities and Wireless Support Structures and provide the City an inventory of locations within 10 days of installation. The inventory shall include GIS coordinates (NAD 83, Ohio State Planes, South Zone, US feet), date of installation, type of Wireless Support Structure used for installation, Wireless Support Structure owner and description/type of installation for each Small Cell Facility and Wireless Support Structure. Operator will provide additional maps to the City upon request.

Upon City's written request, operator shall provide a cumulative inventory within 30 days of the City's request. Concerning Small Cell Facilities and Wireless Support Structures that become inactive, the inventory shall include the same information as active installations in addition to the date the Small Cell Facility and/or Wireless Support Structure was deactivated and the date the Small Cell Facility and/or Wireless Support Structure was removed from the right-of-way. The City may compare the inventory to its records to identify any discrepancies.

Generally Applicable Health and Safety Regulations

All Small Cell Facilities and Wireless Support Structures shall be designed, constructed, operated, and maintained in compliance with all generally applicable health and safety regulations, including without limitation all applicable federal, state, and local regulations for human exposure to RF emissions.

Tree Maintenance

Operator, its contractors, and agents shall obtain written permission from the City before trimming trees in the right-of-way hanging over its Small Cell Facility and/or Wireless Support Structure to prevent branches of such trees from contacting attached Small Cell Facility. When trimming such trees on private property, the operator, its contractors, and agents shall notify the City and obtain written permission from the property owner. When directed by the City, operator shall trim under the supervision and direction of the City. The City shall not be liable for any damages, injuries, or claims arising from operator's actions under this section.

Minor Technical Exceptions

The City recognizes that in some circumstances strict compliance with these guidelines may result in undesirable aesthetic outcomes and that minor deviations should be granted when the need for such deviation arises from circumstances outside the applicant's control.

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Waivers if Requirements have the Effect of Prohibiting the Provision of Wireless Service to a Location

In the event that any applicant asserts that strict-compliance with any provision in these design guidelines, as applied to a specific proposed Small Cell Facility, would effectively prohibit the provision of personal wireless services, the City may grant a limited exemption from strict compliance.

Graffiti Abatement

As soon as practical, but not later than 14 calendar days from the date operator receives notice thereof, operator shall remove all graffiti on any of its small cell facilities and/or wireless support structures located in the right of way. The City may agree to an extension of time for abatement when necessitate by the need to order replacement equipment when such equipment is ordered in a timely manner.

If the operator fails to comply with the notice, the City Manager shall thereupon cause the graffiti to be removed, and for such purpose may employ the necessary labor to carry out the provisions of this section. Costs incurred by the City for removing such graffiti shall be entered upon the tax duplicate and shall be a lien upon such lands and property.

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STANDARD CONSTRUCTION DRAWINGS

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8	Item 452 Non-Reinforced Concrete Pavement Drive Apron
9	Item 608 Concrete Sidewalk
10	Full Depth Asphalt Concrete Pavement
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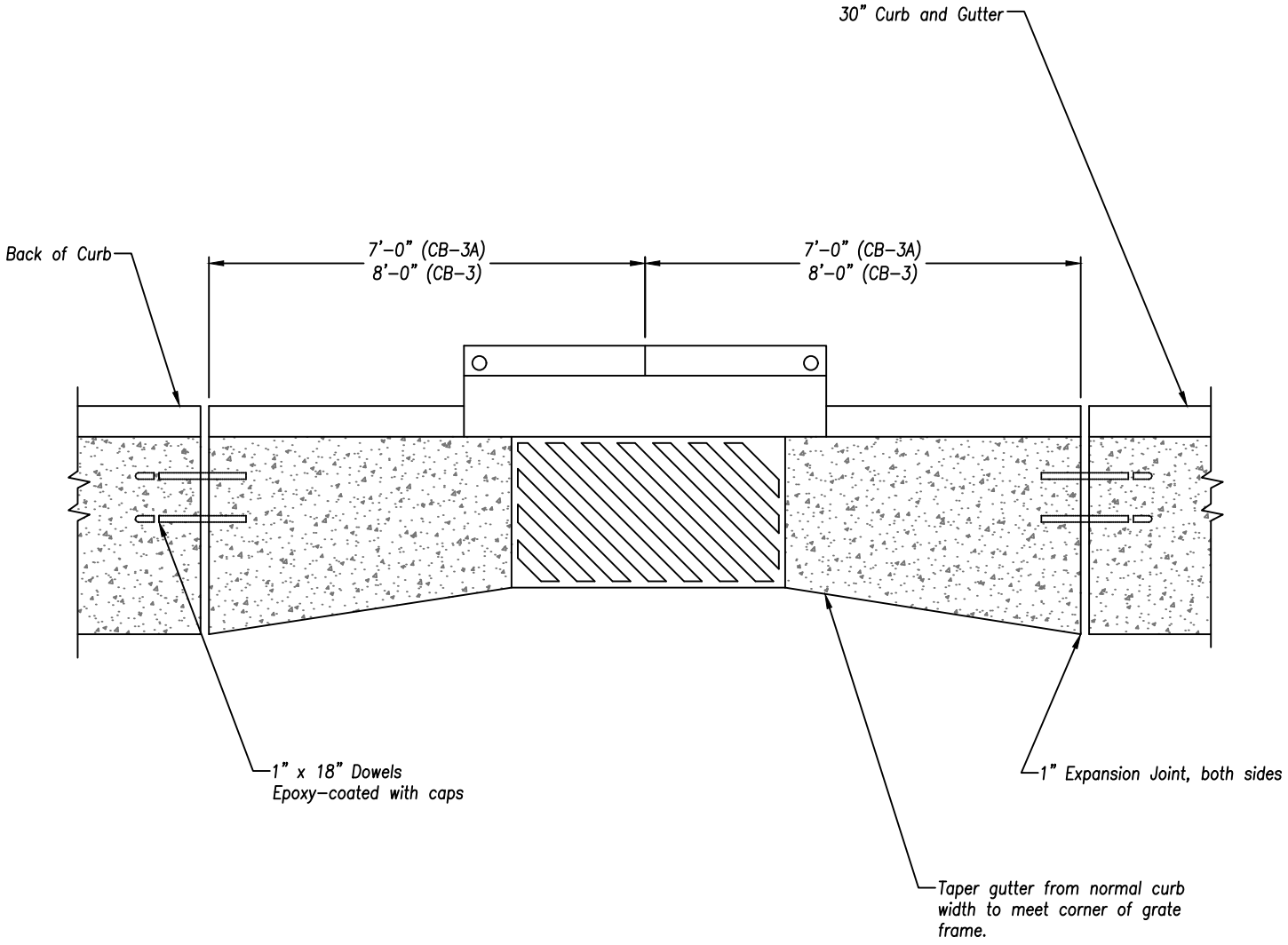
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Modified Type 3 & Type 3A Catch Basins

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-001.DWG



Notes:
1. Vane grates must be used at slopes greater than 2%.
2. All grates must be bicycle-safe.

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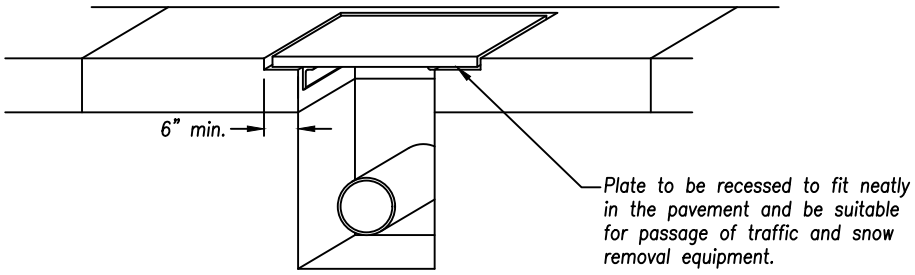
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

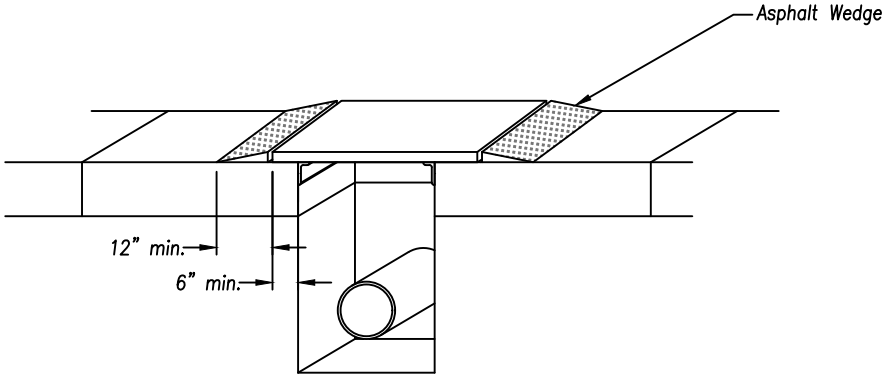
Trench Plate Detail

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-002.DWG



Higher Speed / Volume Applications

45 MPH or Greater
Greater Than 6000 ADT



Lower Speed / Volume Applications

40 MPH or Less
6000 ADT or Less

Notes:

1. For trenches excavated within City roads, trenches shall be plated in accordance with this standard drawing. The intent of the drawing is to provide the availability of all traffic lanes, expecially during peak traffic periods.
2. Excavation must be backfilled to the bottom of the plate if left unattended for over 4 hours.
3. City reserves the right to require recessed plates during winter months.

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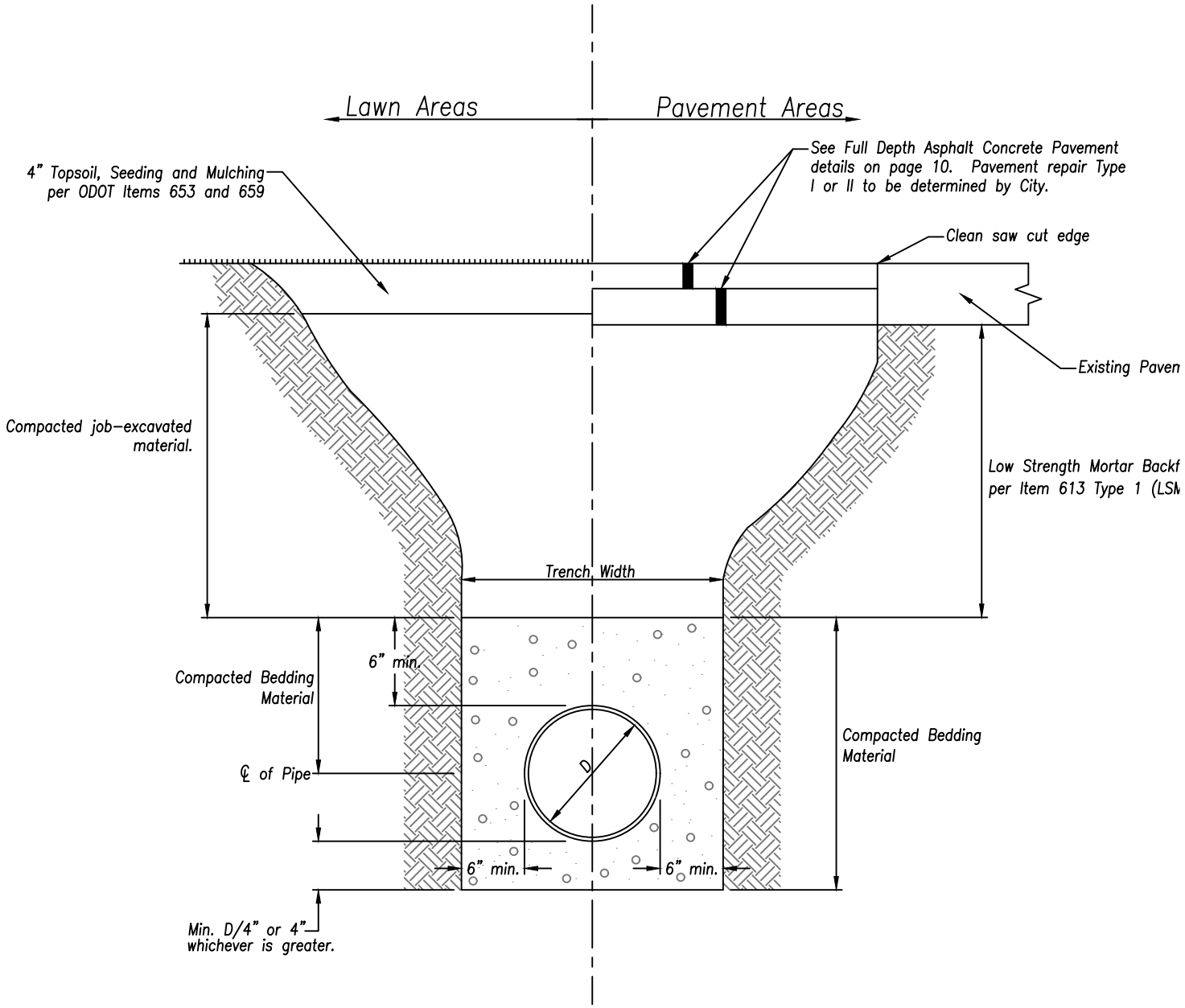
Trench Detail

DATE: 05/29/2020	SCALE: NONE	FILE: 2020-003.DWG



Notes:

1. Acceptable bedding material by application:
   - 1.1. Storm and Sanitary Sewer: 8's, 9's, or washed 57's
   - 1.2. Water Main: 8's or 9's
2. Other bedding not listed here are considered non-standard and must be approved in writing prior to use.
3. For new construction; Trench to be backfilled with granular backfill to street subgrade within roadway limits. Granular backfill to be compacted to 90% of maximum density in 8" maximum lifts.
4. Trench to be backfilled with low strength mortar backfill to street subgrade within existing street limits.
5. Additional bedding over the pipe may be required due to site soil conditions.
6. Bed pipe in specified granular bedding material. To be hand tamped over pipe.
7. Under existing sewers, water lines, gas lines, telephone cable, and electrical conduits, backfill with granular bedding material to the spring line of the existing utility lines.
8. Water main shall be installed in a separate trench from the sanitary sewer and will be a minimum of 10' measured horizontally, from outside diameter to outside diameter. If this cannot be achieved, it may be permitted to place the water in a separate trench or on an undisturbed earth shelf located on one side and at an elevation so that bottom of the water main is at least 18" above the top of the sewer.

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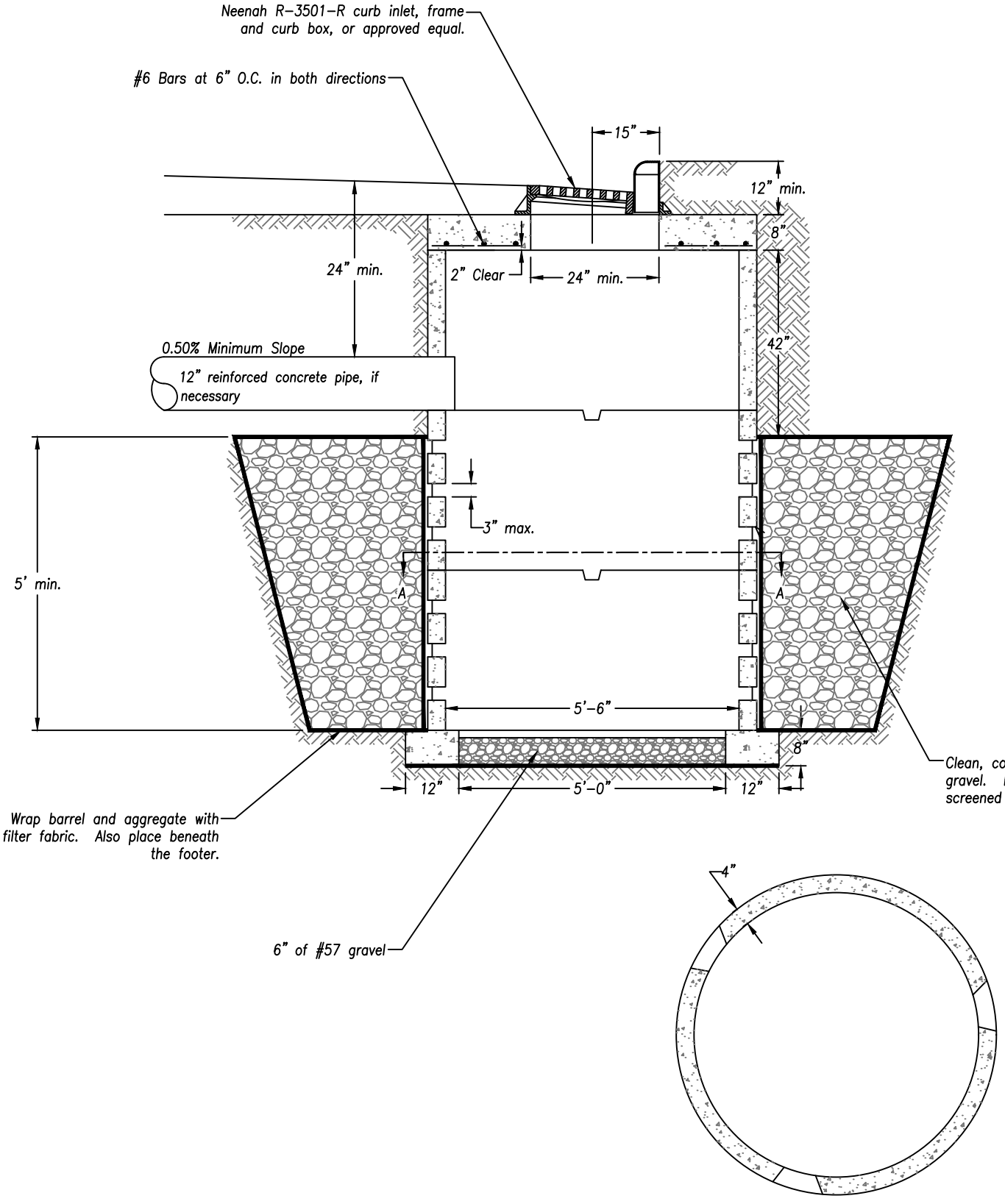
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Standard Pre-Cast Concrete Drywell

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-004.DWG



SECTION A-A

Notes:

1. If drywell does not reach gravel substrate, under cut until existing gravel substrate is reached. If no gravel is reached, backfill below drywell with washed gravel. Depth to be determined by Geotechnical Engineer.
2. 24" hole in top slab to be offset to allow for adjustments.
3. All construction debris, mortar, etc. shall be removed from the bottom of drywell.
4. Placement and compaction requirements as per ODOT Item 611.06.

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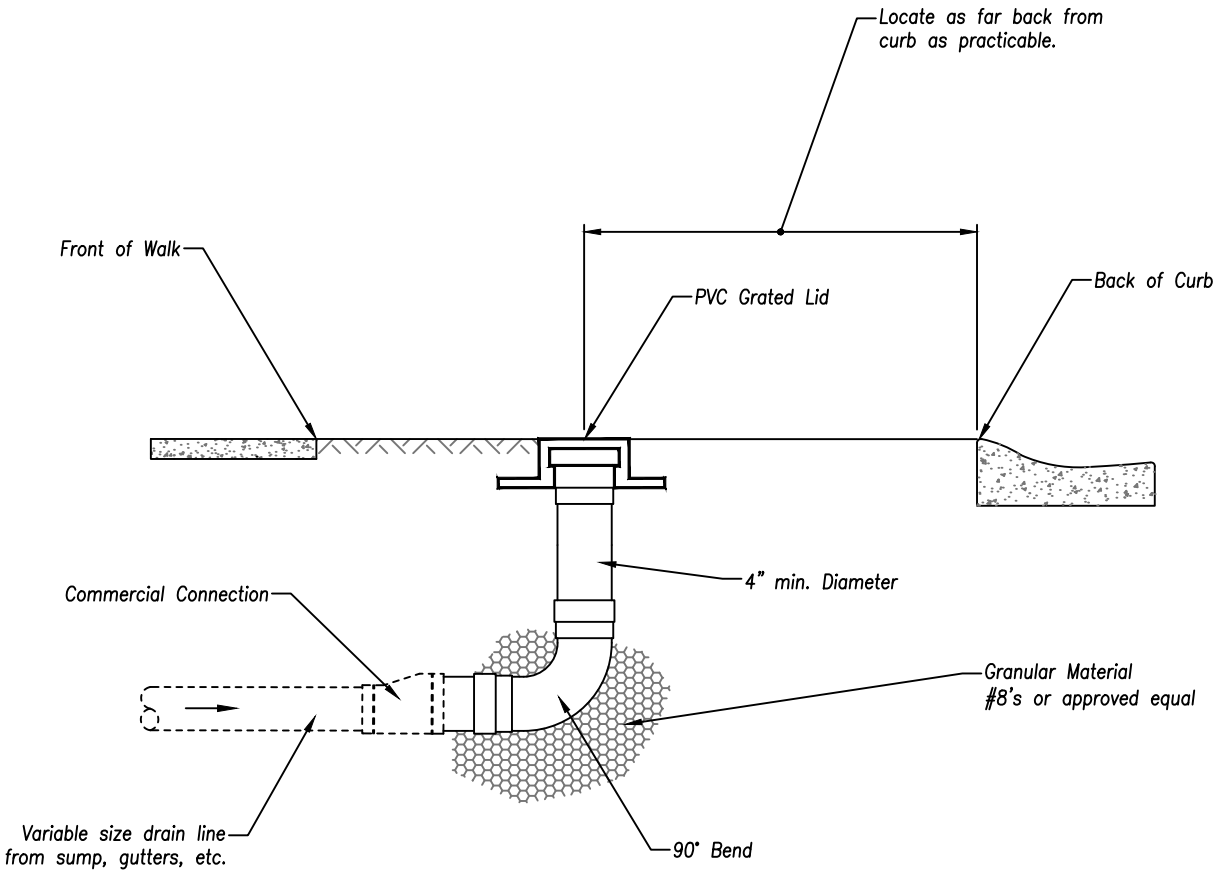
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Sump or Downspout Drain

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-005.DWG



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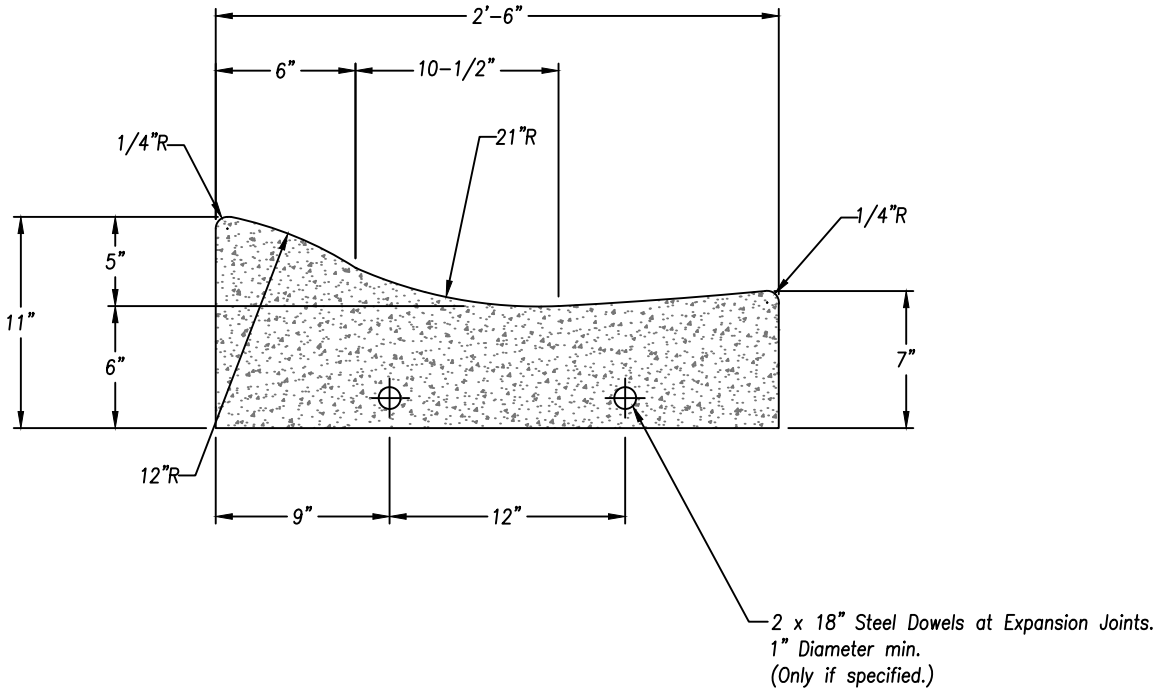
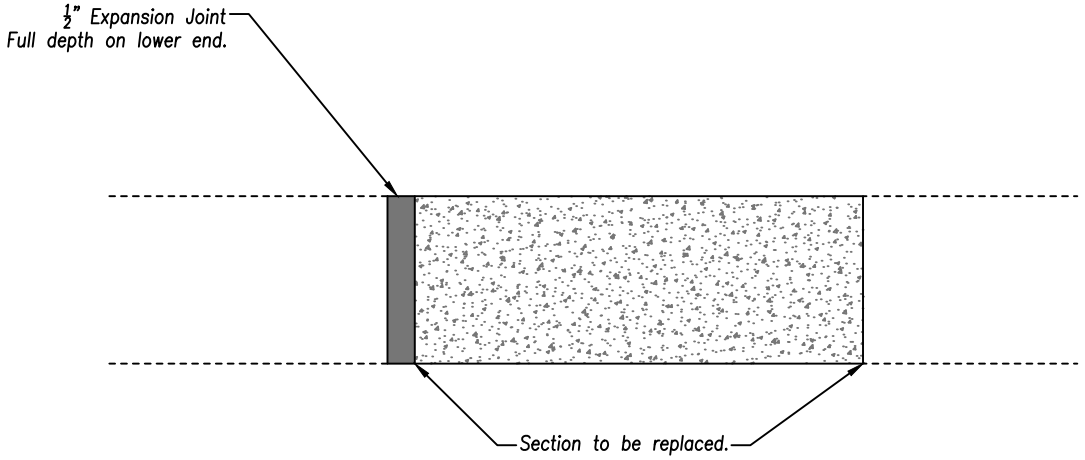
Fairfield Roll-Type Curb and Gutter

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-006.DWG





Notes:
1. Construct ramps to meet required slopes and existing conditions.
2. Curb sections must be removed to the nearest joint if joint is less than four feet away.

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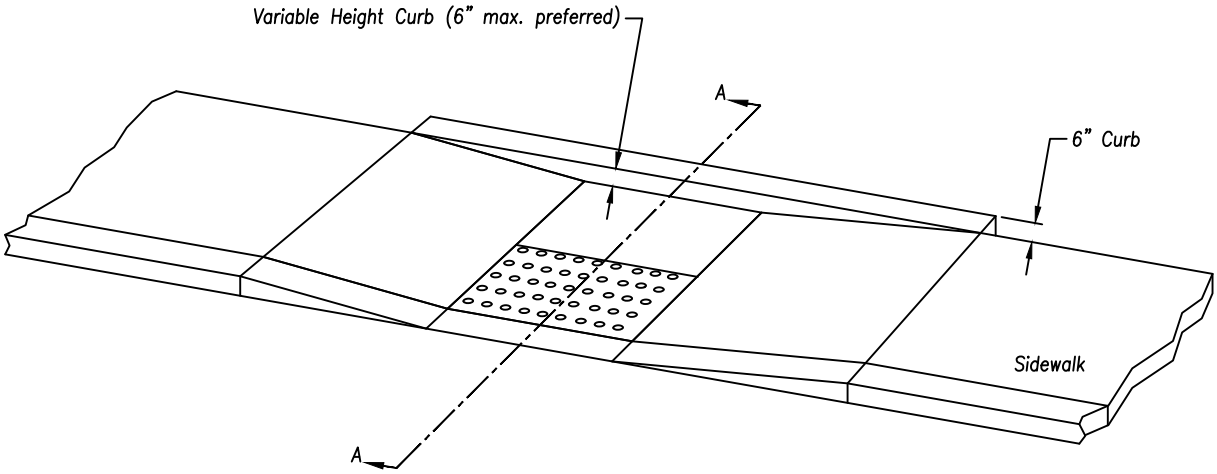
FAIRFIELD OHIO

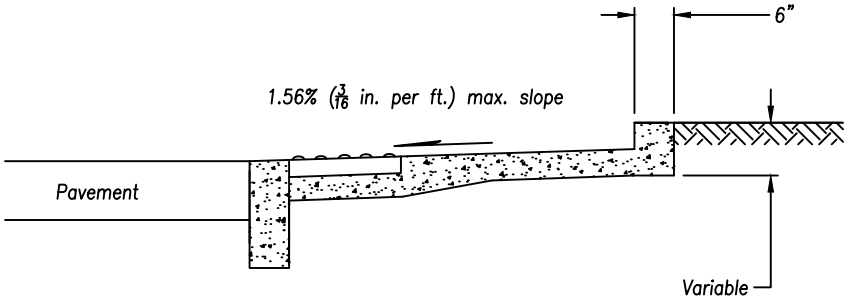
STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Modified Type 6 "Lawn" Curb, As Per Plan

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-007.DWG





SECTION A-A

Notes:
1. For curb ramp design, see the following standards:
   1.1. ODOT Standard Construction Drawings BP 7.1 & 7.2
   1.2. 2009 American National Standards Institute (ANSI) 117.1
   1.3. Public Right of Way Accessibility Guidelines (PROWAG)

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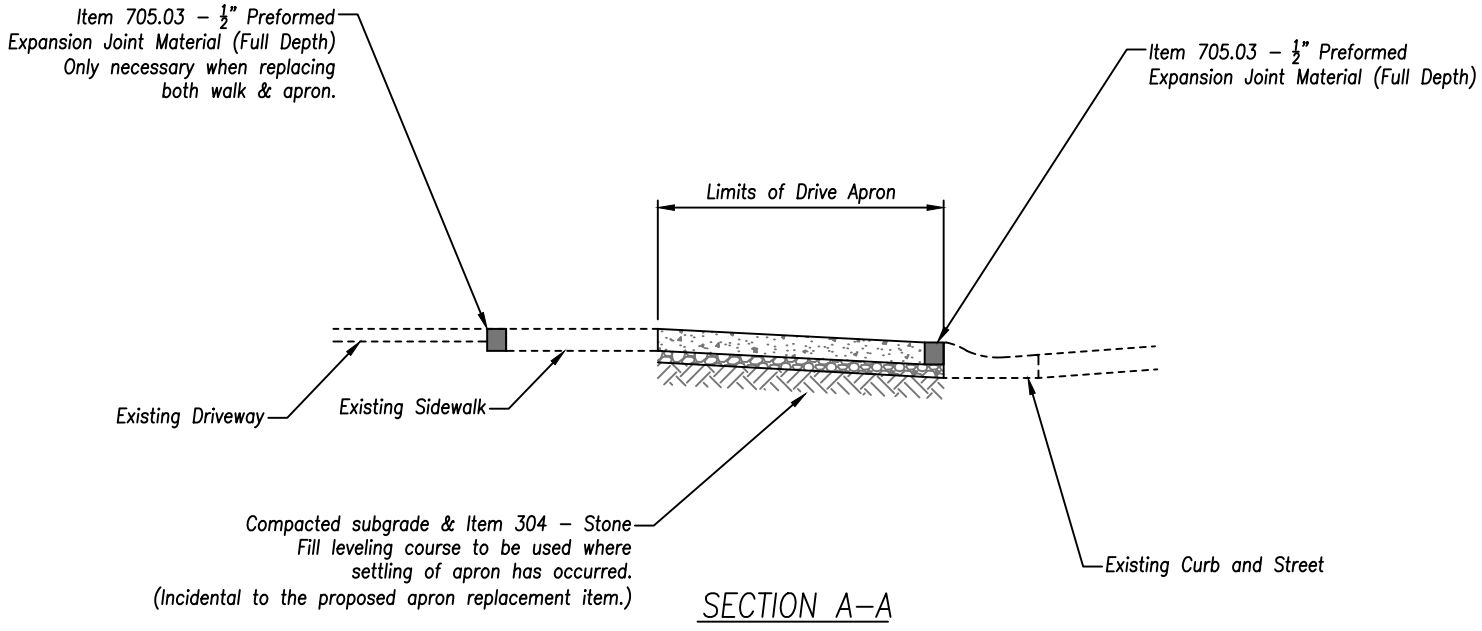
FAIRFIELD OHIO

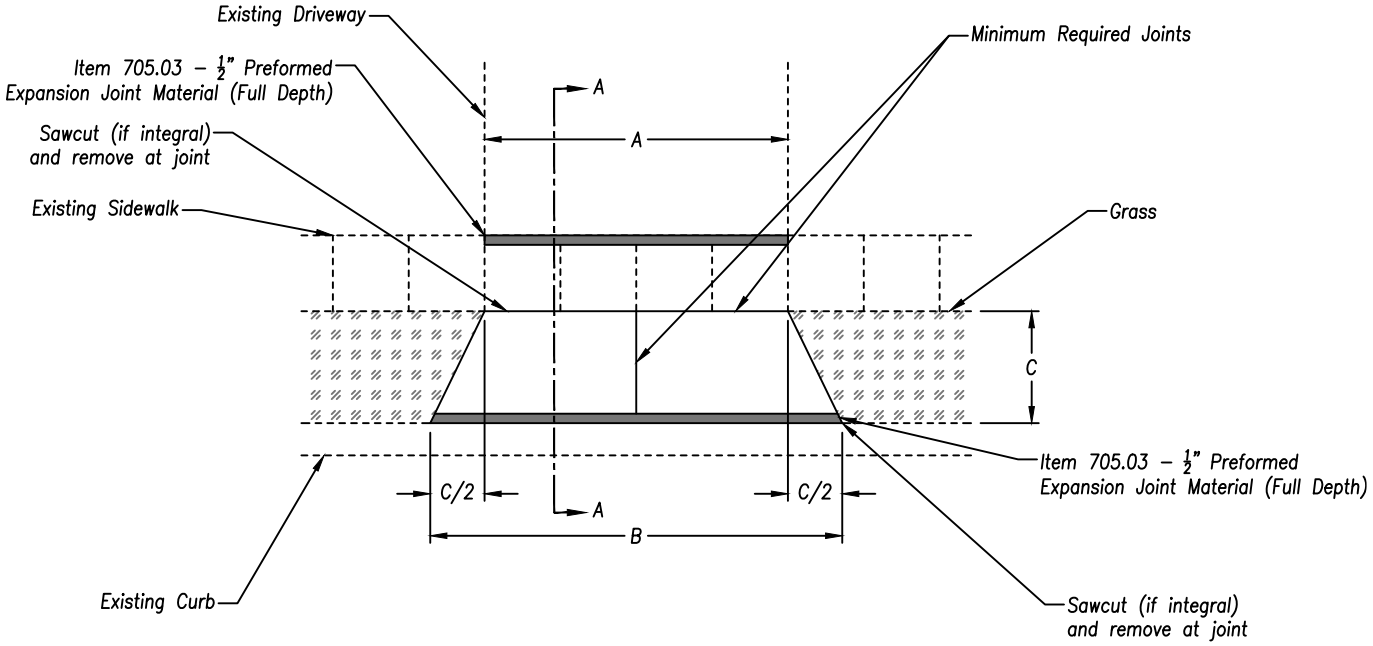
STANDARD CONSTRUCTION DRAWINGS

Item 452 Non-Reinforced Concrete Pavement Drive Apron

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-008.DWG



SECTION A–A



Notes:

1. The driveway shall be replaced in its existing size. No apron shall be wider at the back of curb than the sum of the driveway width at the face of sidewalk plus the width of the grass strip between the curb and the sidewalk (B = A + C).
2. Drive widths (A) are regulated by Section 300 of this manual.
3. All disturbed yard areas shall be restored to grade, seeded, and mulched before the work is approved for payment and shall be incidental to Item 452 – Non– Reinforced Concrete Pavement.
4. The finish applied to the concrete aprons shall be a light broom finish unless the resident requests a hand finish. All joints and outside edges may be tooled with an edger or joint tool after brooming or hand finishing to match adjacent concrete, as approved by the City.
5. The new apron shall meet the sidewalk and curb at existing elevations.
6. Concrete to be ODOT Class C. Minimum thickness are determined by use as follows:
   - 6.1. Residential Aprons: 7 inches
   - 6.2. Commercial Aprons: 9" inches

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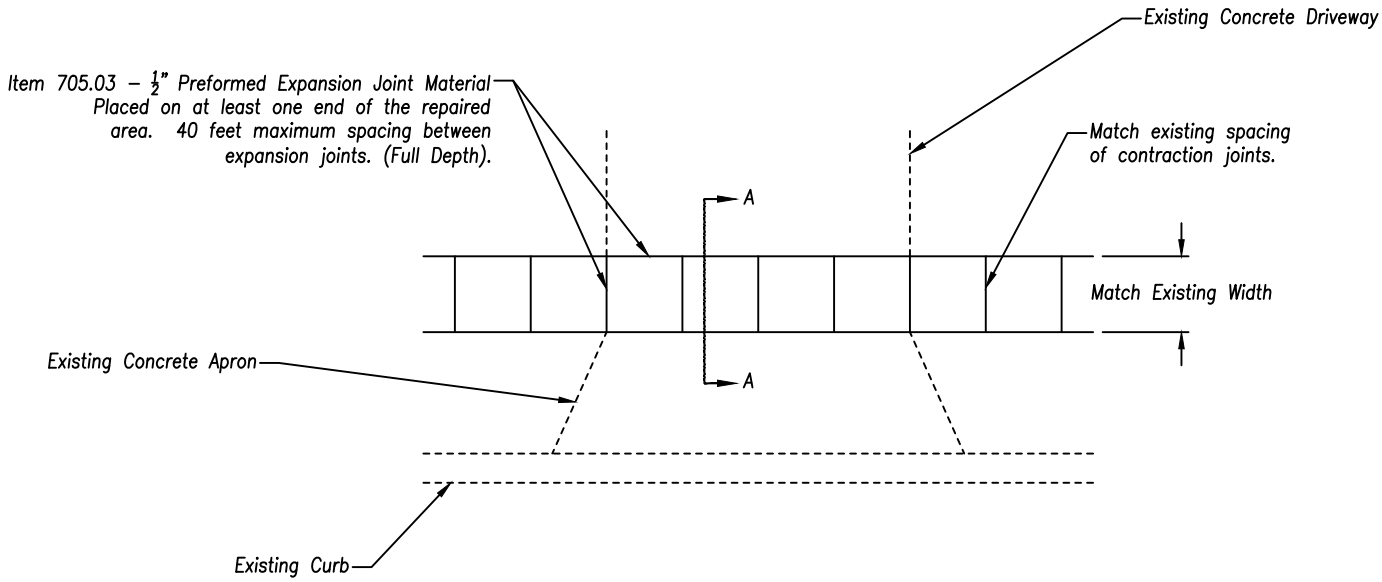
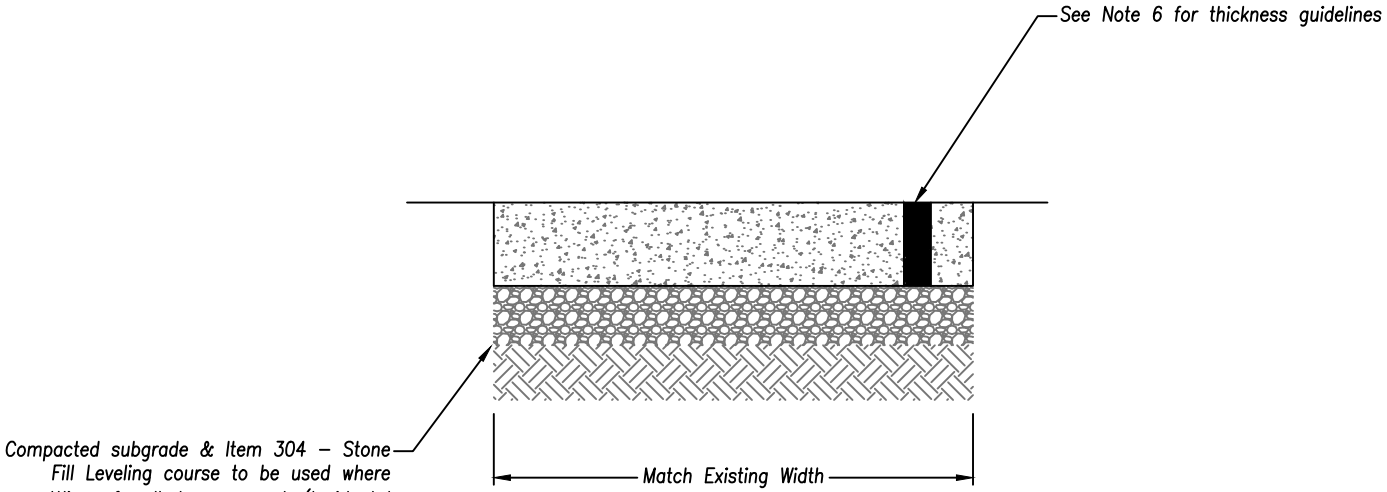
Item 608 Concrete Sidewalk

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-009.DWG





SECTION A–A

Notes:

1. The City shall mark in the field the walk to be replaced. Replacement walk shall match the line and grade of the existing walk and the joint pattern shall be maintained.
2. Item 705.03 – ½" Preformed Expansion Joint Material shall be placed on at least one end of the repaired area.
3. All repairs are to be made to the nearest joint.
4. The cost to repair any damage to adjacent walk or driveway by the contractor shall be incurred by the contractor.
4. The finish applied to the concrete walks shall be a light broom finish unless the resident requests a hand finish. All joints and outside edges may be tooled with an edger or joint tool after brooming or hand finishing to match adjacent concrete, as approved by the City.
6. Concrete to be ODOT Class C. Minimum thickness are determined by use as follows:
   - 6.1. Standard Walk: 4 inches, or match existing, whichever is greater.
   - 6.2. Walk through Residential Aprons: 7 inches
   - 6.3. Walk through Commercial Aprons: 9" inches
7. All disturbed yard areas shall be restored to grade, seeded, and mulched beofr ethe work is approved for payment and shall be incidental to Item 608 – Sidewalk, Remove and Replace.
8. Sidewalk in all new developments and redevelopments shall be 5 feet wide.

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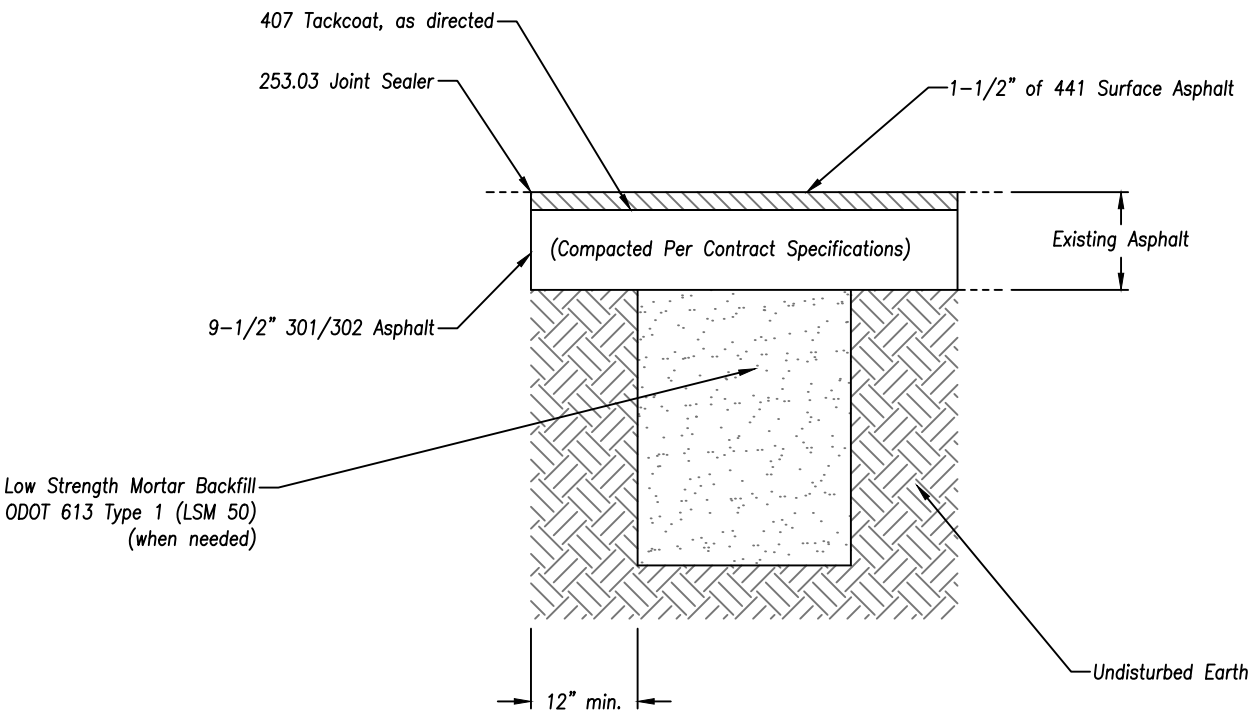
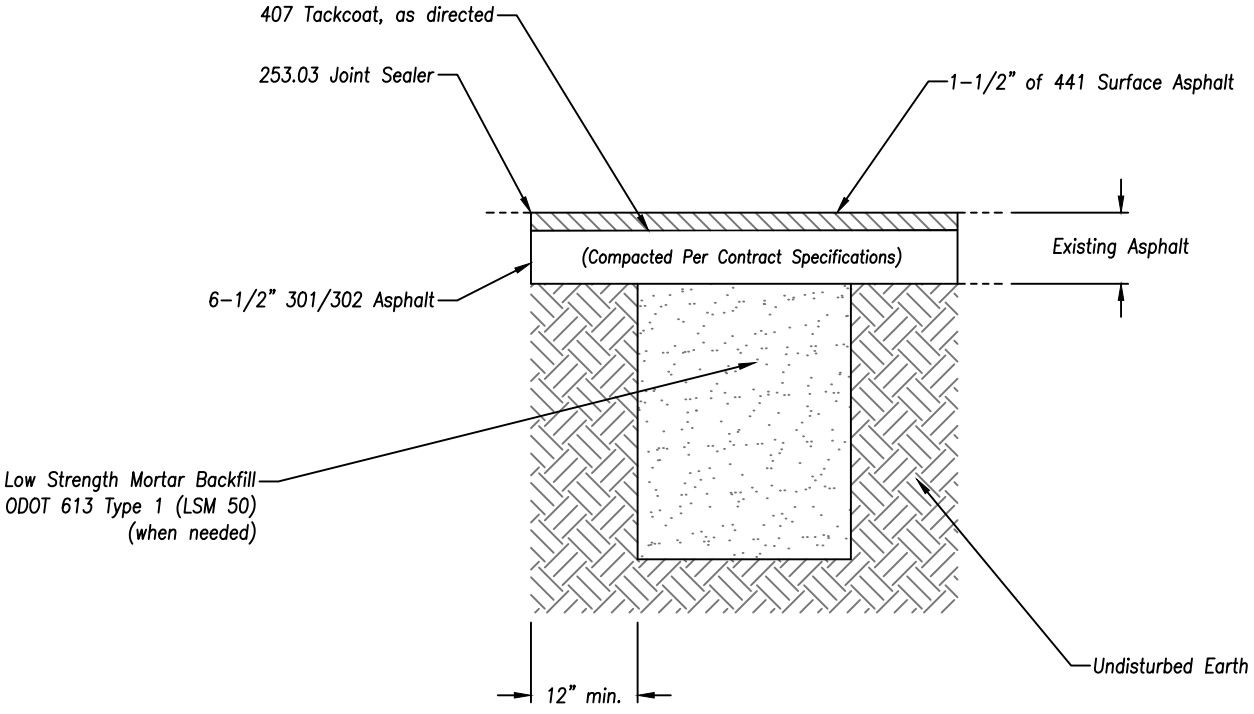
Full Depth Asphalt Concrete Pavement

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-010.DWG



Type II – 11" Repair



Type I – 8" Repair

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

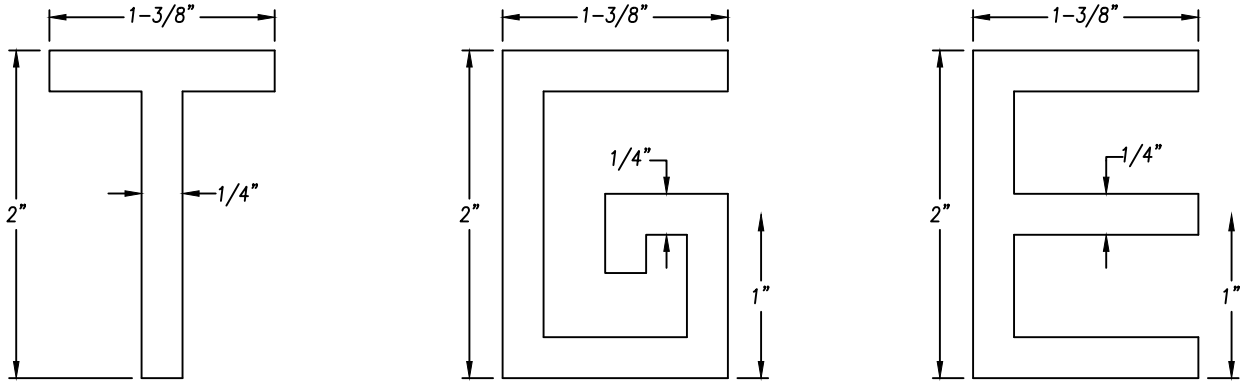
FAIRFIELD OHIO

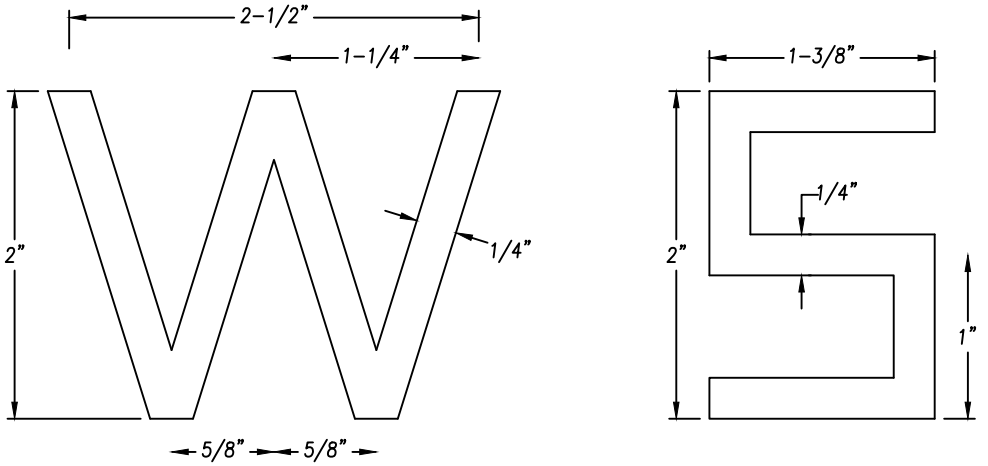
STANDARD CONSTRUCTION DRAWINGS

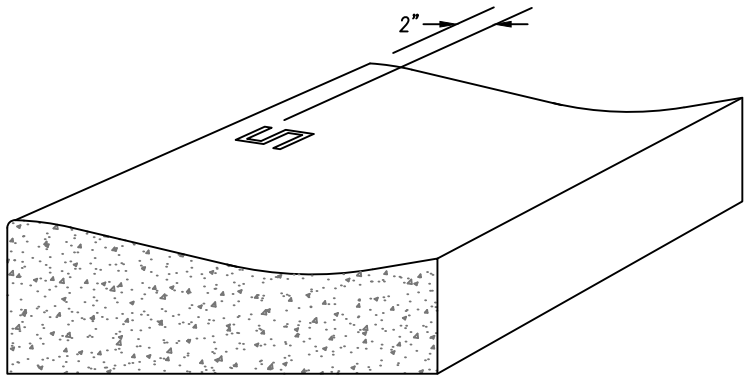
10.B.1.a

Utility Service Location Designation

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-011.DWG







Notes:

1. Letters to be impressed directly into the fresh concrete a depth of 1/2" directly above the point where services come across the curb.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

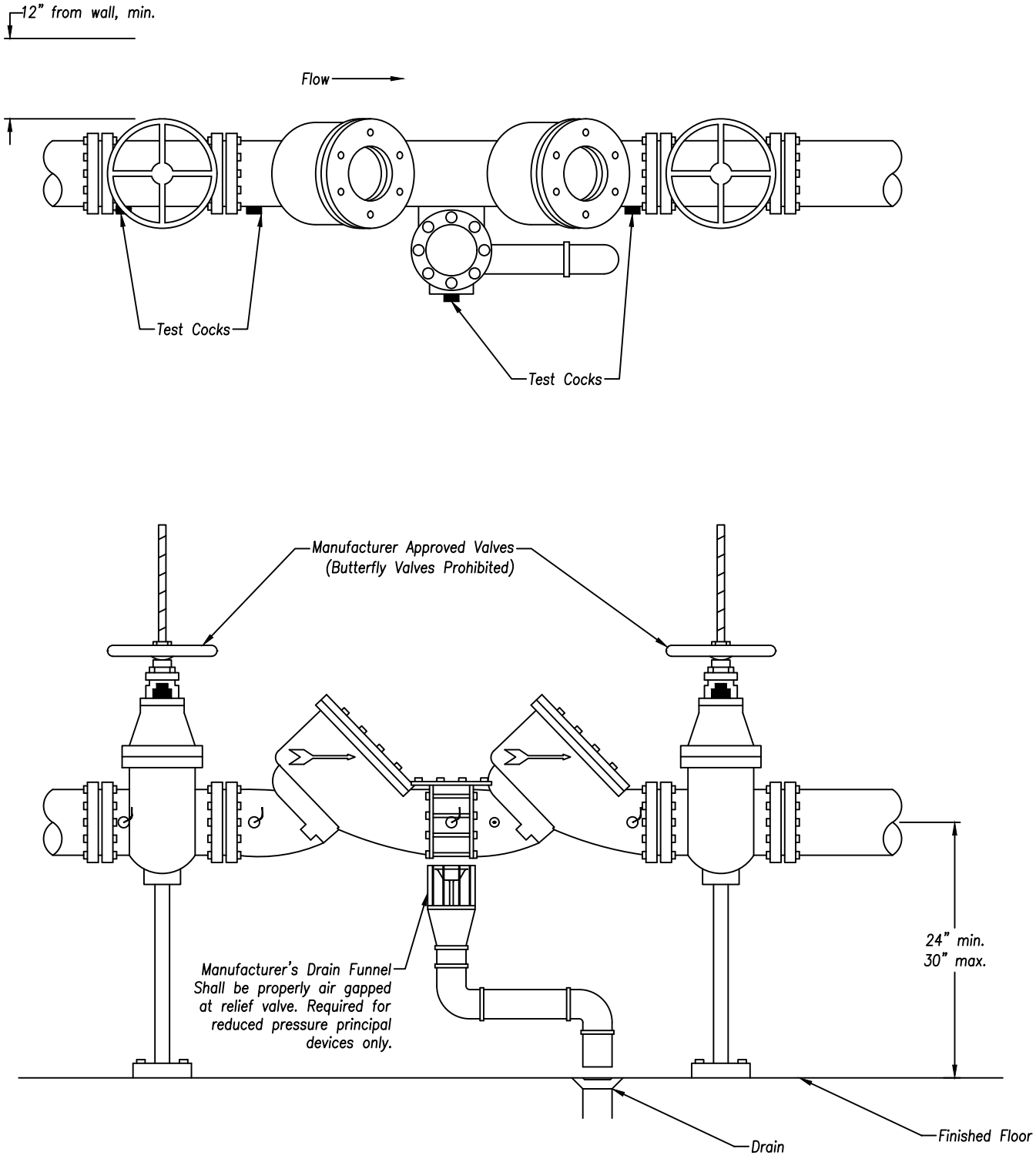
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Backflow Preventer General Setting

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-012.DWG



Notes:
1. Backflow preventer shall always be installed downstream of meter.
2. Connection(s) to water line between meter and backflow preventer are prohibited.
3. Assembly to be mounted inside building or heated enclosure.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

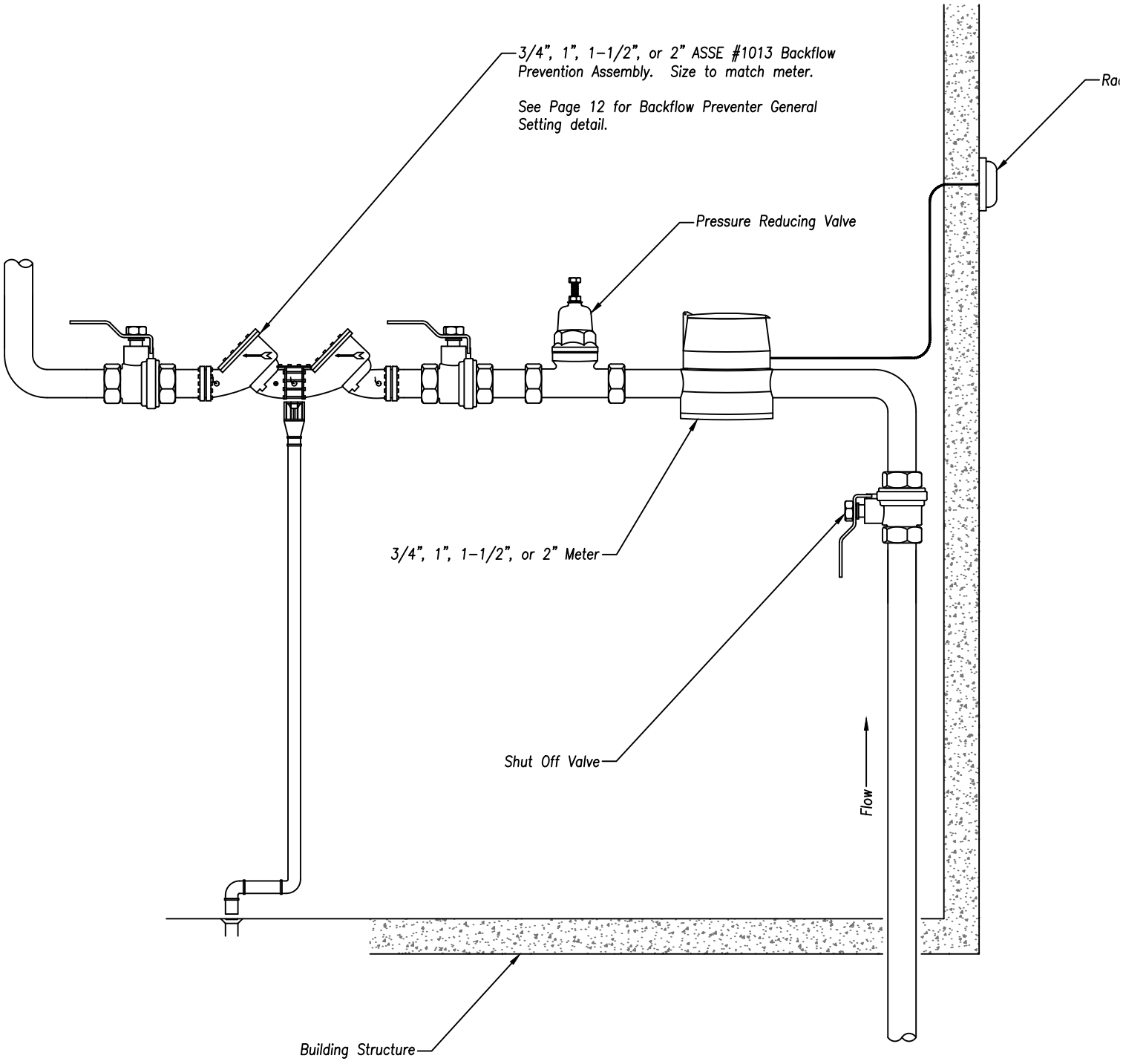
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Indoor Meter - Commercial Meter & BFP

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-013.DWG



Notes:
1. See page 14 for commercial meters located outside of the building.
2. City of Fairfield Public Utilities-provided radio transmitter shall be installed outside of the building.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

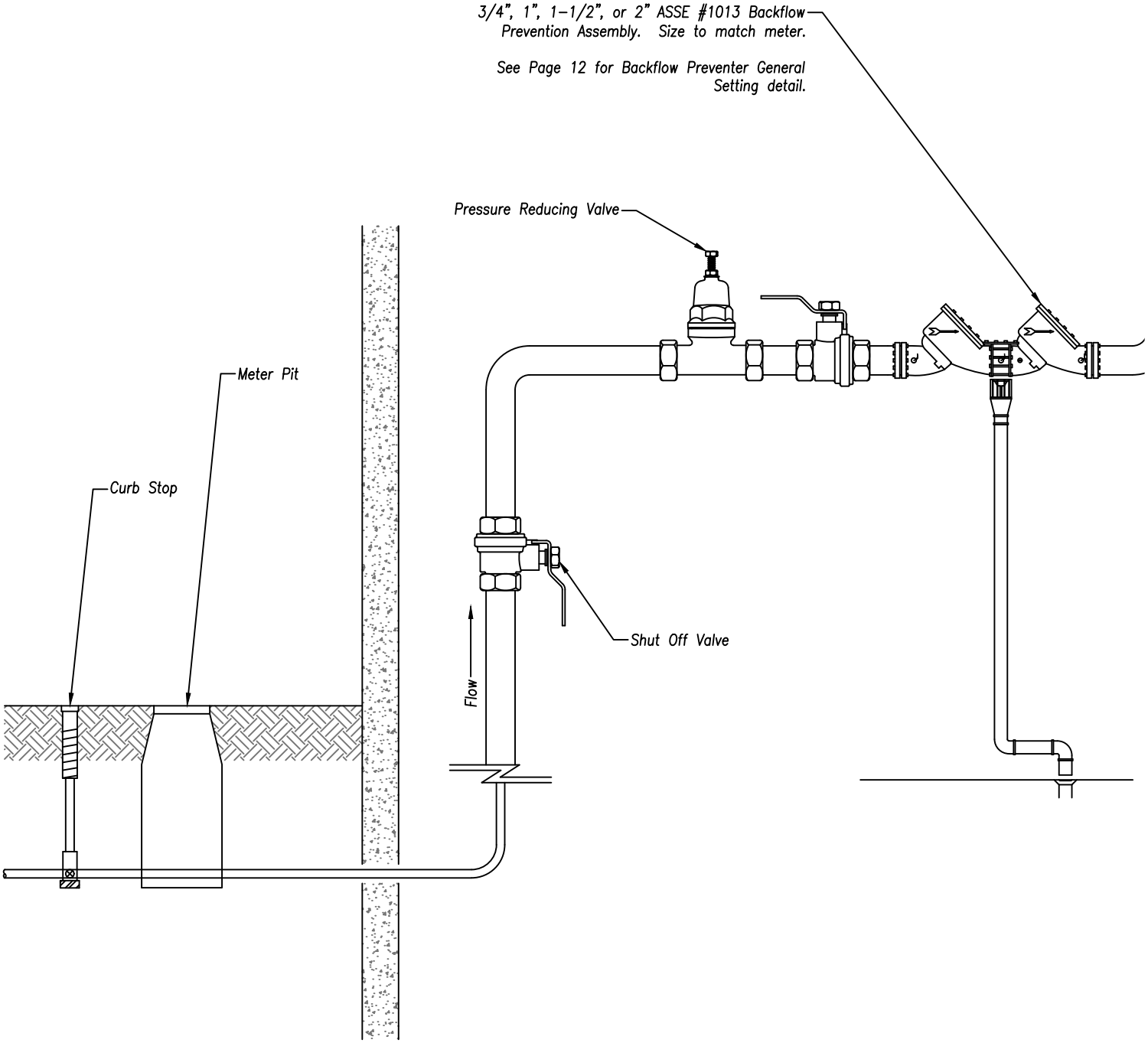
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Outdoor Meter - Commercial Meter & BFP

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-014.DWG

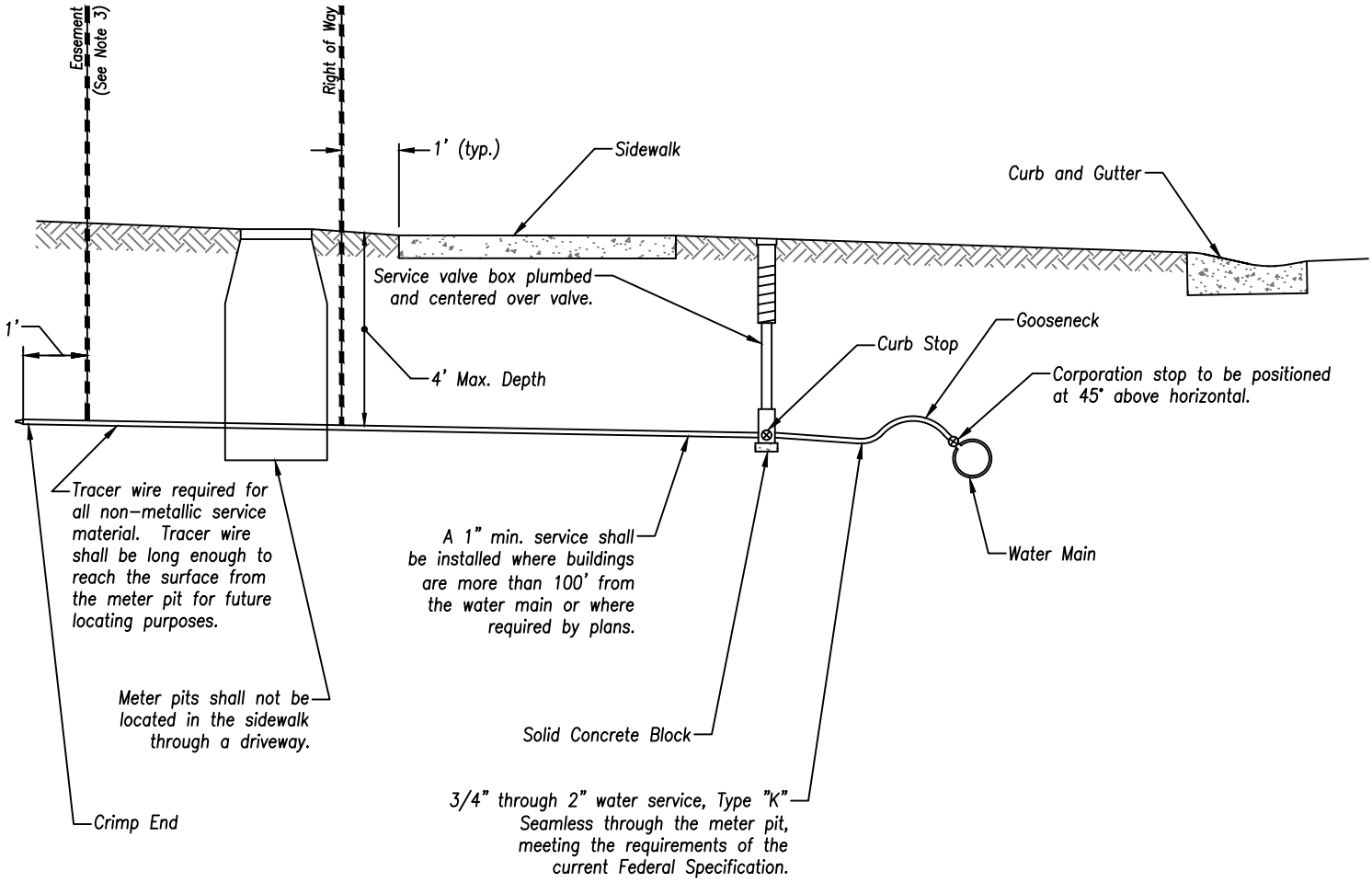


Notes:
1. See page 13 for commercial meters located inside of the building.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Water Service Installation

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-015.DWG



Notes:

1. Water service line shall not be buried in the same trench as other utilities. When the service parallels a sewer line, maintain as much separation as practical, 10' preferred.
2. Service box shall be plumbed & centered over curb stop.
3. If a utility easement exists behind the right-of-way line, the service line shall be extended to 1' behind the easement & the end crimped.
4. Water service shall be bedded with sand.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

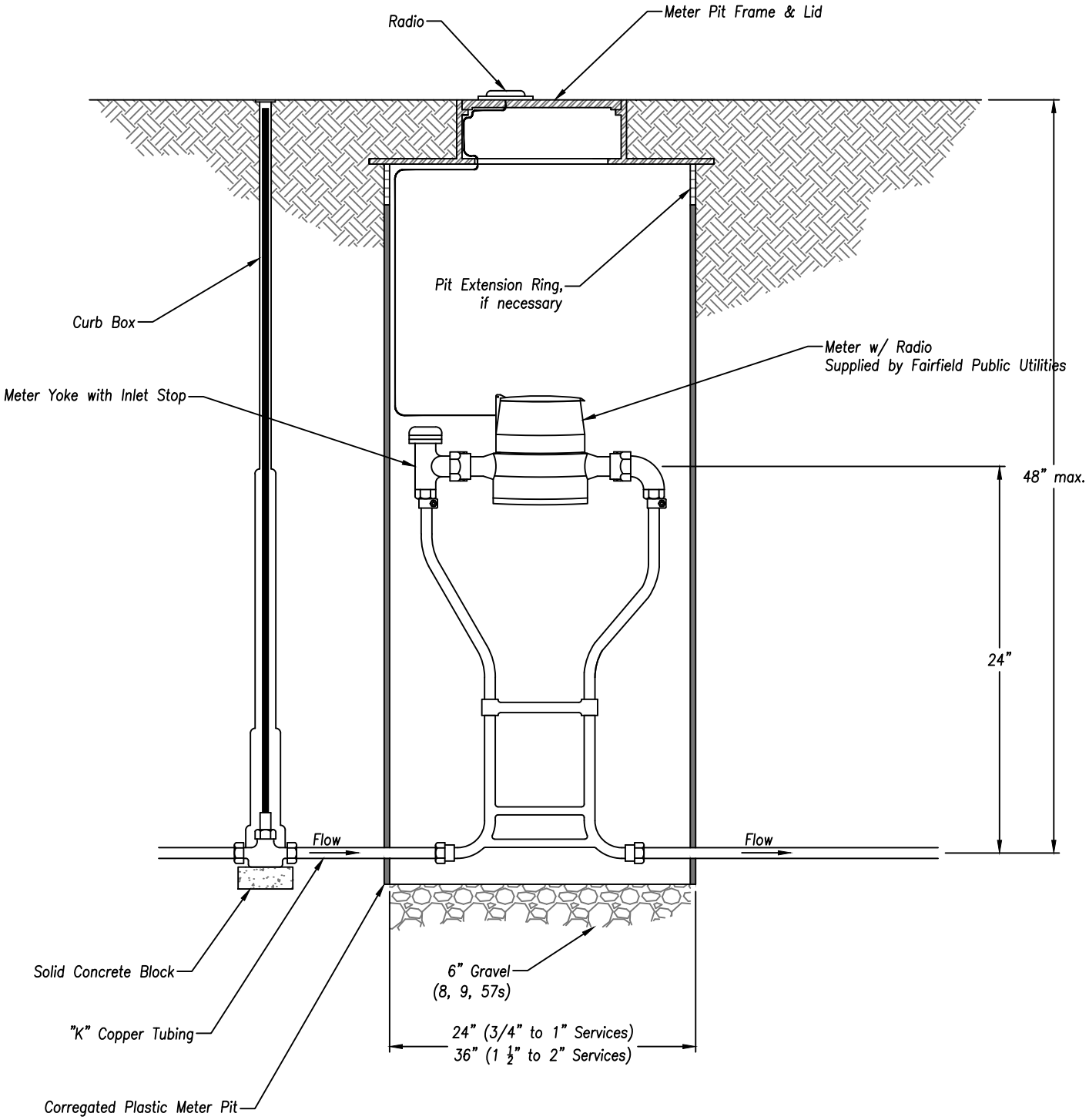
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Residential Meter Pit

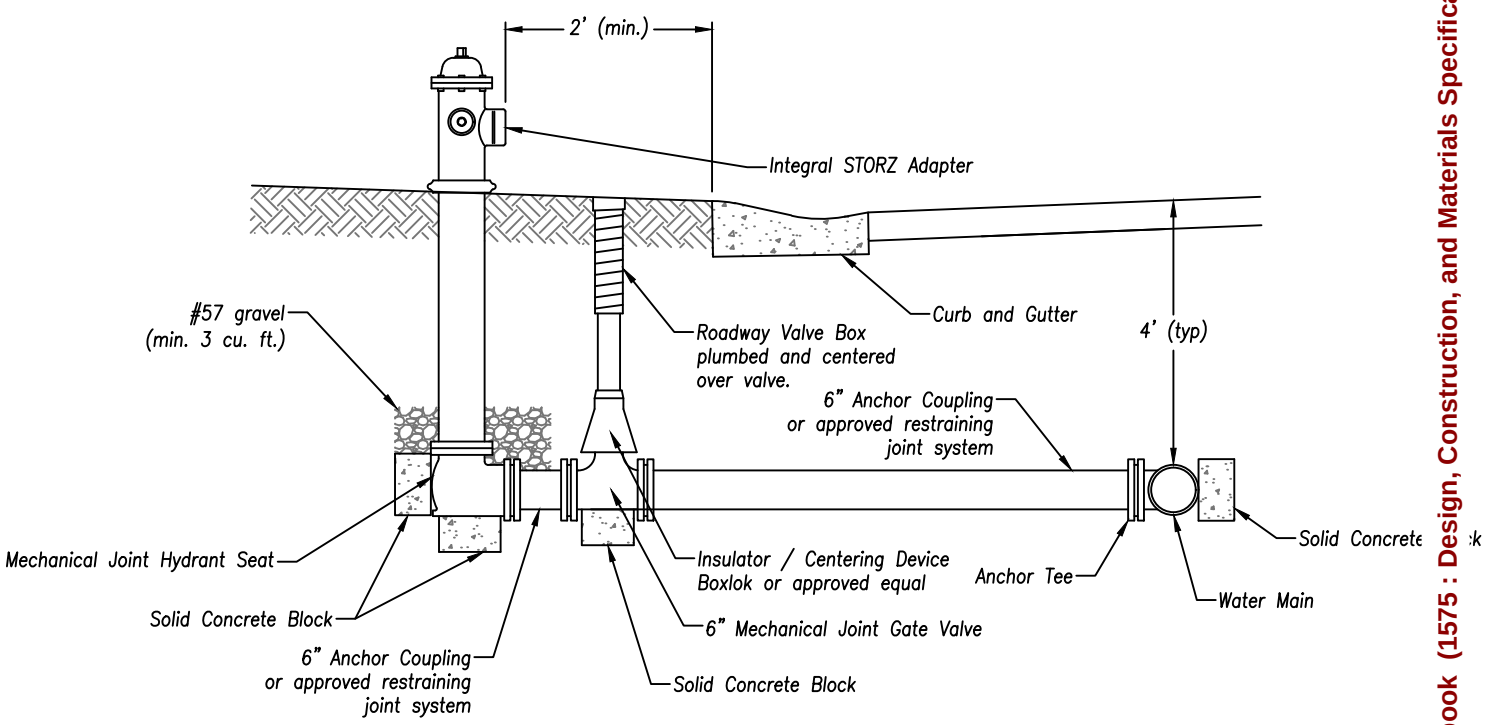
DATE: 05/04/2020	SCALE: NONE	FILE: 2020-016.DWG



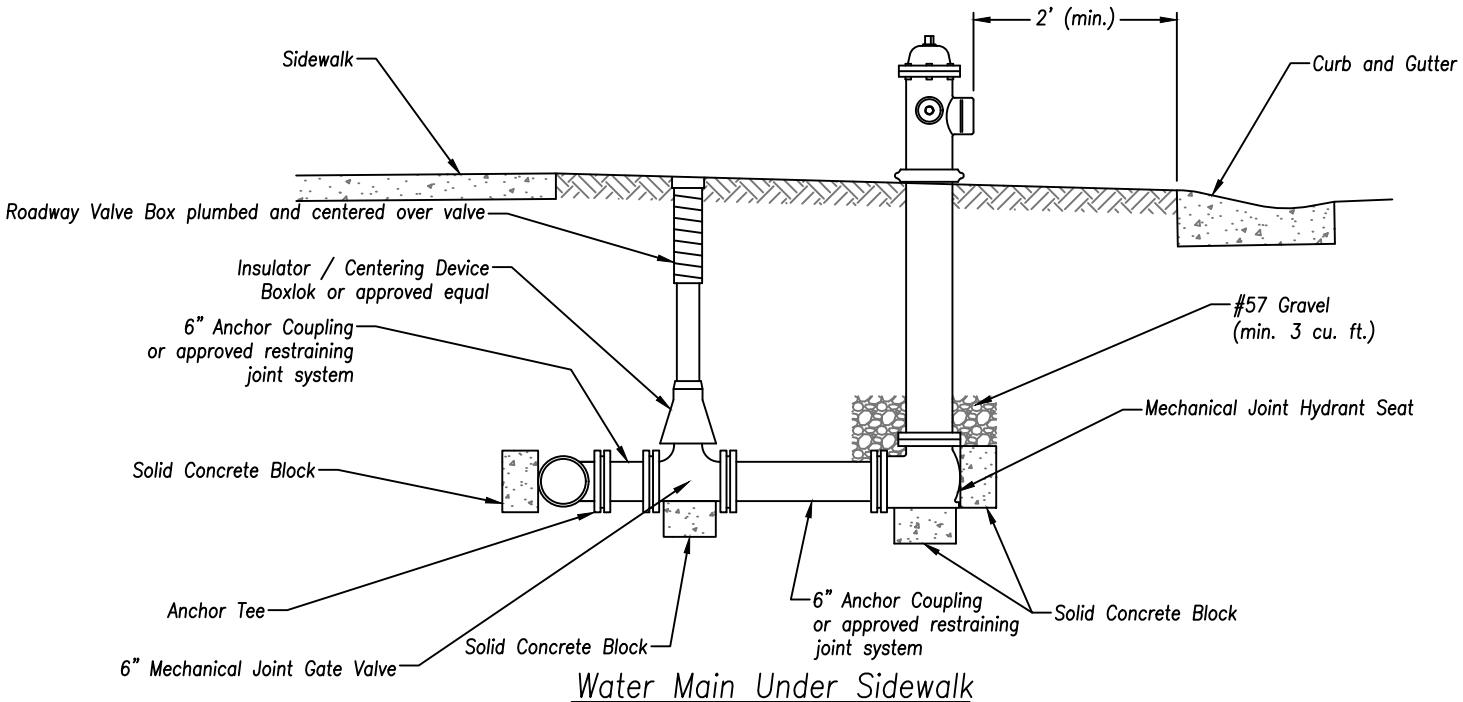
Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Fire Hydrant Installation (Page 1/2)

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-017.DWG



Water Main Under Street Pavement



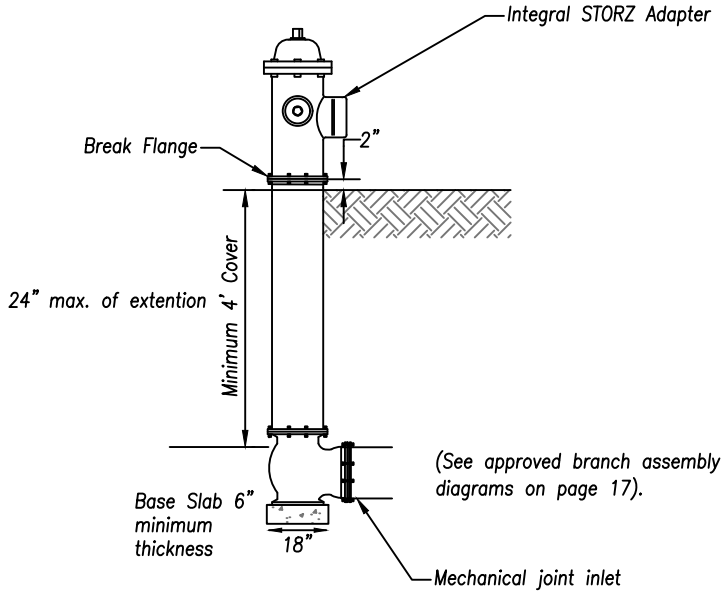
Water Main Under Sidewalk

Notes:
1. Fire hydrant shall be AWWA C502 and FM-1510 approved.
2. Polyethylene wrap all ductile iron joints and fittings, up to and including hydrant shoe flange.
3. All joints to be installed with an approved restraining joint system.

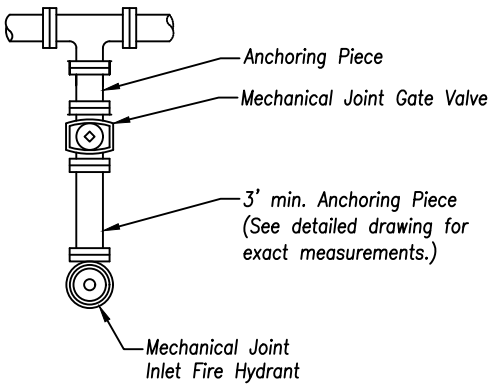
Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Fire Hydrant Installation (Page 2/2)

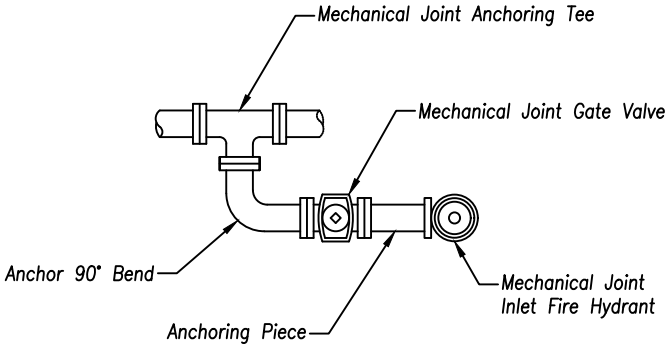
DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-018.DWG



Fire Hydrant Profile View



Type "A" Hydrant



Type "B" Hydrant

Fire Hydrant Details

Dia. – Main Valve Opening	5-1/4 Inches W/ Bronze Seat
Dia. – Pumper Connection	5 Inches Storz Integral
Dia. – Hose Connection	2-1/2 Inches
Fairfield Thread Type	3.187 X 7
Shape – Caps & Operating Nut	Pentagon W/ Weathershield And One Piece Bronze Operating Nut
Dimensions – Operating Nut	1-1/2 Inches
Direction Of Closing	Right (clockwise)
Color To Be Painted (public)	Osha Safety Yellow
Color To Be Painted (private)	Osha Safety Red
Specific Model Or Models Required	Mueller A423, American Darling B-84-b, Ol Kennedy K-81-a

1. All main line pipe and fittings shall consist of Class 53 ductile iron pipe and fittin C151 and C153 with polyethylene wrap for hydrant branch, barrel, and fittings.
2. Private hydrants connected directly to a public main shall meet public standards.

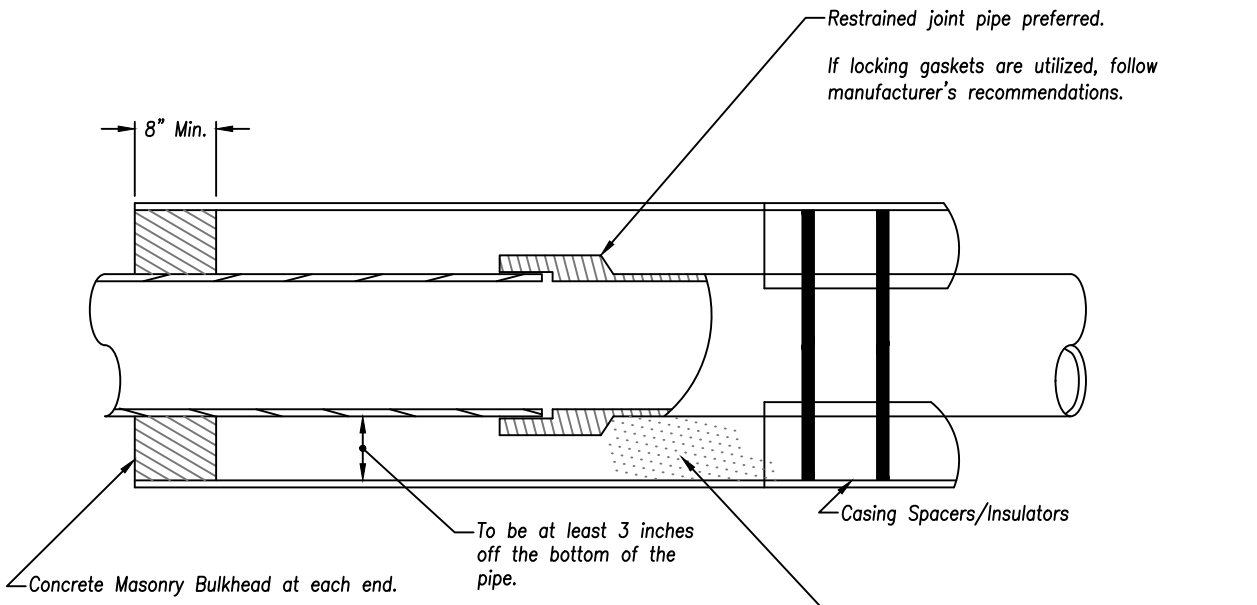
Notes:

1. In non-curbed areas, the distance from the centerline of the water main to the centerline of the fire hydrant shall be shown in the fire hydrant notes on the detailed drawings.
2. Excavation around fire hydrant shall be backfilled completely with ¾" gravel course, free of sand, to within 1' of the finished surface of the ground.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Casing Pipes

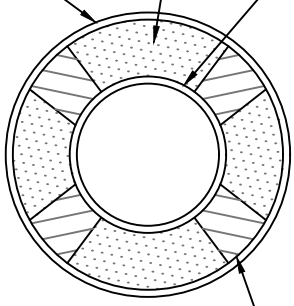
DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-019.DWG



Annular space to be left clear unless otherwise directed by the City. Method or material to be used will be determined on a case by case basis.

The I.D. of the steel casing pipe shall be at least 6 inches larger than the largest O.D. of any joint appendage (including restrained mechanical joints for ductile iron pipe).

Unless otherwise specified or shown on the drawings, wall thickness shall comply with the chart shown on this page.



Manufactured polyethylene or stainless steel casing spacers/insulators placed at the carrier pipe manufacturer's recommended spacing.

Required Casing Pipe Sizes and Wall Thicknesses for Railroad Crossings*

Nominal Diameter (inches)	Actual O.D. (inches)	When Coated Or Cathodically Protected (inches)	When Not Coated Or Cathodically Protected (inches)
8"	8 3/8"	.312	.312
10"	10 3/4"	.312	.312
12"	12 3/4"	.312	.312
14"	14"	.312	.312
16"	16"	.312	.312
18"	18"	.312	.312
20" & 22"	20" & 22"	.312	.344
24"	24"	.312	.375

*Based on E80 loadings with a minimum cover of 4'-6".

Steel casing pipe shall have a steel yield strength of 35,000 PSI and meet ASTM A139 Grade B requirements.

No hydrotest required.

Chart based on recommendations of the American Railway Engineering Association.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

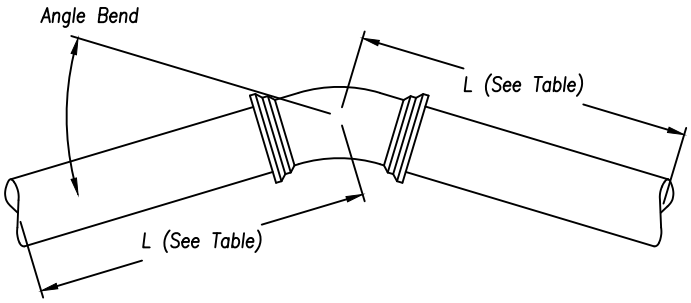
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Restrained Joint Lengths

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-020.DWG



Required Restraint Lengths, L								
		Diameter of Watermain						
		6"	8"	10"	12"	14"	16"	Larger Than 16"
Angle Bend	11-1/4°	6'	8'	9'	11'	13'	14'	By Design
	22-1/2°	11'	15'	18'	22'	25'	28'	
	45°	23'	31'	37'	44'	51'	58'	
	Tee, 90°	28'	37'	47'	66'	77'	90'	

Notes:
1. Fitting must be restrained in all cases.
2. Restraining joint systems are acceptable when designed in accordance with "Thrust Restraint Design for Ductile Iron Pipe", published by the Ductile Iron Pipe Research Association (DIPRA). Restraining glands, manufactured of ductile iron conforming to ASTM A536-84 specifications, or locking gaskets such as Field Lok, or equal, may be used.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

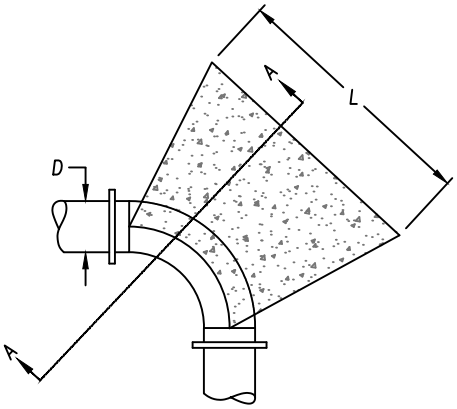
FAIRFIELD OHIO

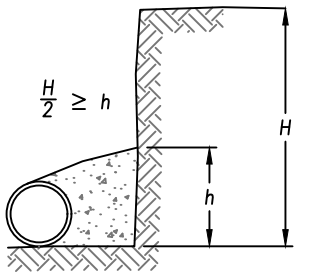
STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Thrust Blocking

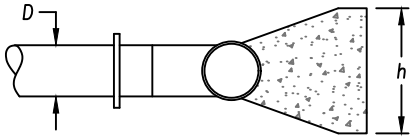
DATE: 06/01/2020 | SCALE: NONE | FILE: 2020-021.DWG

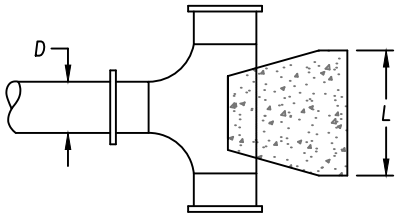




SECTION A–A

Thrust Block at Elbow





Thrust Block at Tees

Notes:

1. Bearing depth (h) shall be determined from bearing area required (see table). Bearing length (L) will be 1' minimum.
2. The surface of the bearing area shall be smooth undisturbed earth.
3. ODOT Class C Concrete shall be used for all blocking.
4. Height of blocking to be less than or equal to 1/2 of the depth of the trench. See Section A–A.
5. Concrete anchor blocking will be permitted for work on existing mains. New watermain installation must be restrained by restraining joint systems or locking gaskets such as FieldLok, or equal, provided that sufficient length for mechanical restraint is available.

Minimum Bearing Area Required, h x L (sq. ft.)

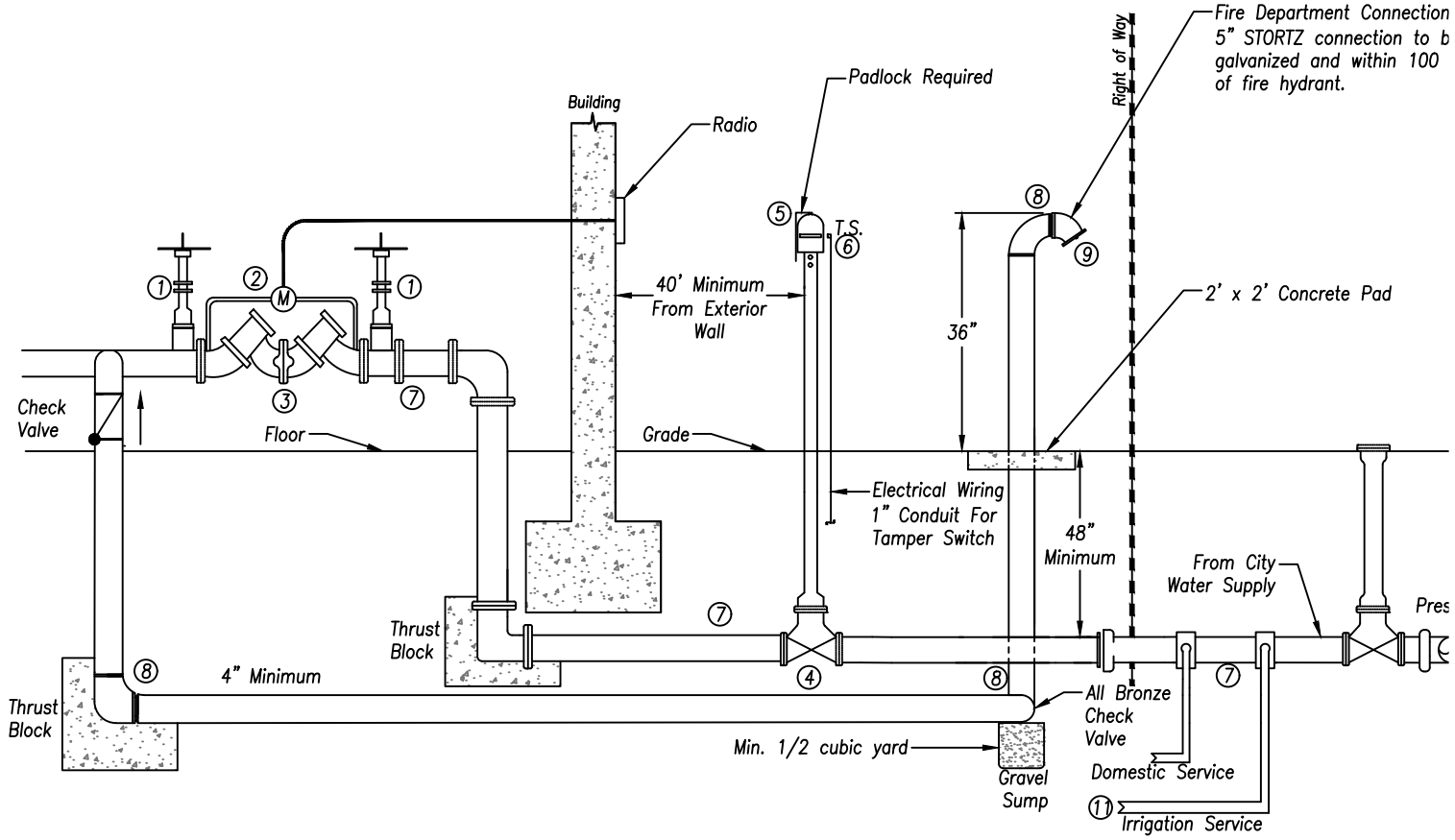
	Horizontal Bends				
Dia., D	11 1/4°	22 1/2°	45°	90°	Tee or Dead E
4"	1	1	1	2	2
6"	1	2	3	4	3
8"	1	2	4	7	5
10"	2	3	6	11	8
12"	2	4	8	15	11
16"	4	7	14	26	18

Areas tabulated are for single fittings and bearing pressure of 2000 lb/sf. When more than one fitting is used, the bearing area should be increased

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Interior Fire Line Double Check Detector Assembly

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-022.DWG



Valve Legend:

1. Valve, O.S.&Y.
2. Bypass Line w/ Meter, Radio, and Double Check Backflow Preventer
3. Reduced Pressure Double Check Detector Assembly (meets or exceeds ASSE 1047, AWWA C511-92)
4. Flanged NRS Resilient Wedge Indicator Post Gate Valve (meets or exceeds AWWA C509 and C515)
5. Post Indicator Valve
6. Potter Tamper Switch M PCVS-2, Two Sets of Contacts, 120V
7. Class 53 Ductile Iron Piping and Fittings From Main to Detector Check
8. 4" Galvanized 90° Elbow
9. 4"x5" STORTZ Connection with 30° Turndown and Blind Flange
10. Pressure Tap meeting City of Fairfield Specifications
11. Valved and Metered Domestic / Irrigation Service with Curb Box. Backflow preventers required for domestic and irrigation lines.

M. Water Meter

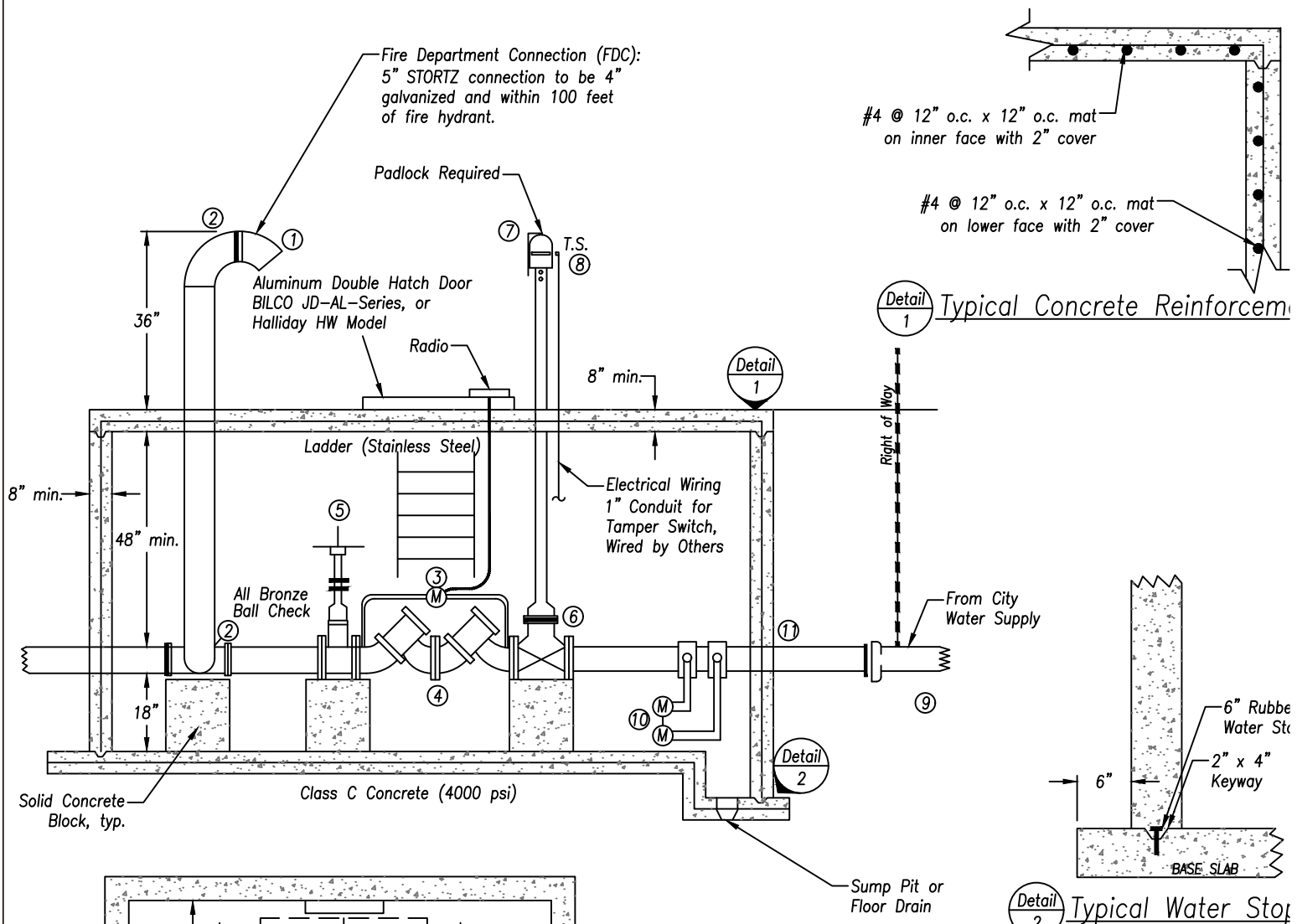
Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

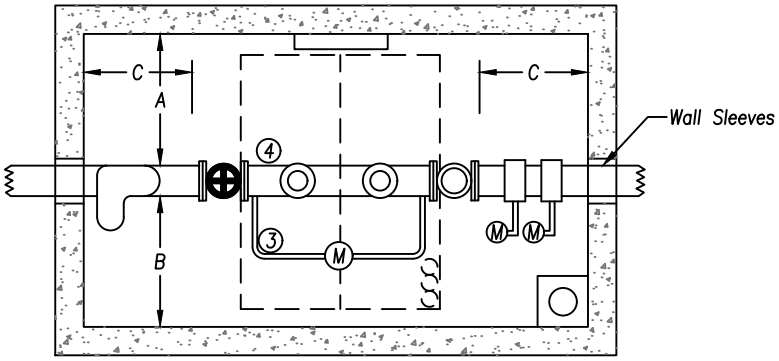
Fire Line Meter Vault with Double Check Detector Assembly

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-023.DWG



Detail 1 Typical Concrete Reinforcem

Detail 2 Typical Water Stop



Precast pit to be approved by Director of Public Utilities

Minimum Clearances for Detecto Check Installation

Meter Size	A	B	C	Door S
4" X 1"	41-1/2"	41-1/4"	25"	48" X
6" X 1"	45"	45"	28"	48" X
8" X 1"	48-3/4"	49-1/4"	30"	48" X
10" X 1"	54"	50"	34"	48" X
10" X 12" X 1"	58"	50"	36"	48" X

Clearances for Fire Pit Meter

Meter Size	A	B	C	Door S
2"	37"	28"	21"	36" X
3"	38"	29"	23"	36" X
4"	39"	30"	25"	36" X
5"	43"	30"	28"	60" X 60"
6"	36"	36"	30"	60" X 60"

Valve Legend:

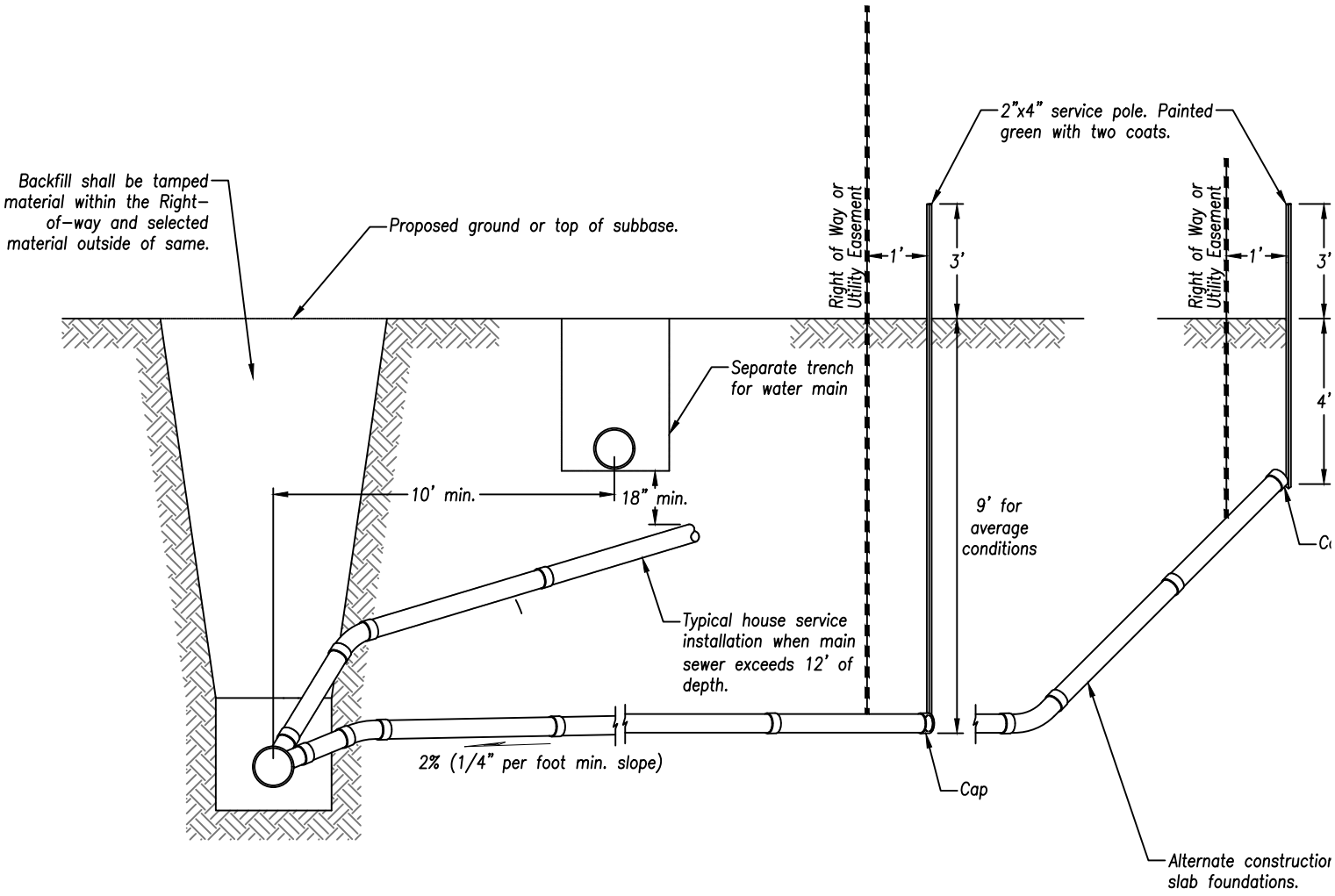
1. 4" X 5" STORTZ Connection with 30° Turndown and Blind Flange
2. 4" Galvanized 90° Elbow
3. Bypass Line with Meter, Radio, and Double Check Backflow Preventer
4. Double Check Detector Assembly (meets or exceeds ASSE 1048 AWWA C510-97)
5. Valve, O.S.&Y.
6. Flanged Resilient Wedge Indicator Post Gate Valve (meets or exceeds AWWA C509 and C515)
7. Indicator Post
8. Potter Tamper Switch M PCVS-2, Two Sets of Contacts, 120V
9. Pressure Tap to City of Fairfield Specifications
10. Valved and Metered Domestic / Irrigation Services
11. Class 53 Ductile Iron Pipe and Fittings (meets or exceeds AWWA C151 AND C153). Domestic and Irrigation Backflow Preventers are Required.

M Water Meter

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Service Line Details

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-024.DWG



Notes:

1. Service line minimum depth of cover will be 36". Written permission will be required for coverage of less than 36".
2. Service line to be perpendicular to main sewer unless approved otherwise.
3. Services shall be located at points approved by the City. At each capped service line there shall be placed a service pole painted green. No services will be accepted unless they are reported by the contractor.
4. Service shall be constructed at 2% (1/4" per foot) minimum slope.
5. If a utility easement exists behind the Right-of-Way line, the service line shall be constructed across the easement. Otherwise, it shall be constructed to 1 foot behind the Right-of-Way line.
6. All excavation, sheeting, shoring, and bracing shall comply with all applicable OSHA standards.
7. Provide 3' of separation between lowest level served by gravity and crown of main sewer line at connection.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

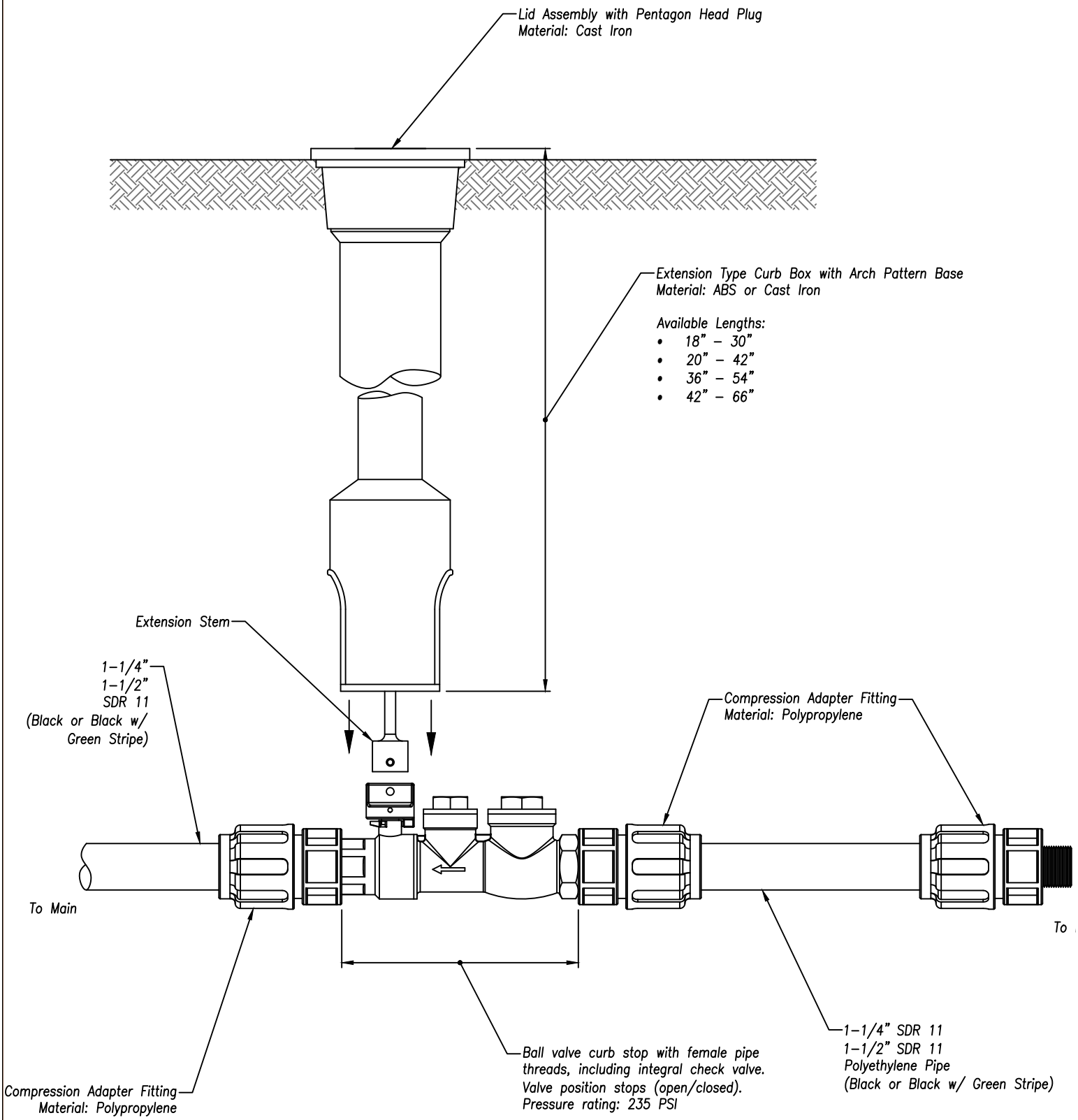
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Force Main HDPE Lateral Assembly with Stainless Steel Curb Stop (1-1/4" & 1-1/2")

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-025.DWG



Notes:
1. To assemble, apply a double layer of teflon tape and a layer of pipe dope to the threads on the plastic fittings and install per the manufacturer's instructions.
2. Assembly to be pressure tested.
3. Assembly is to be used with SDR11 HDPE pipe.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

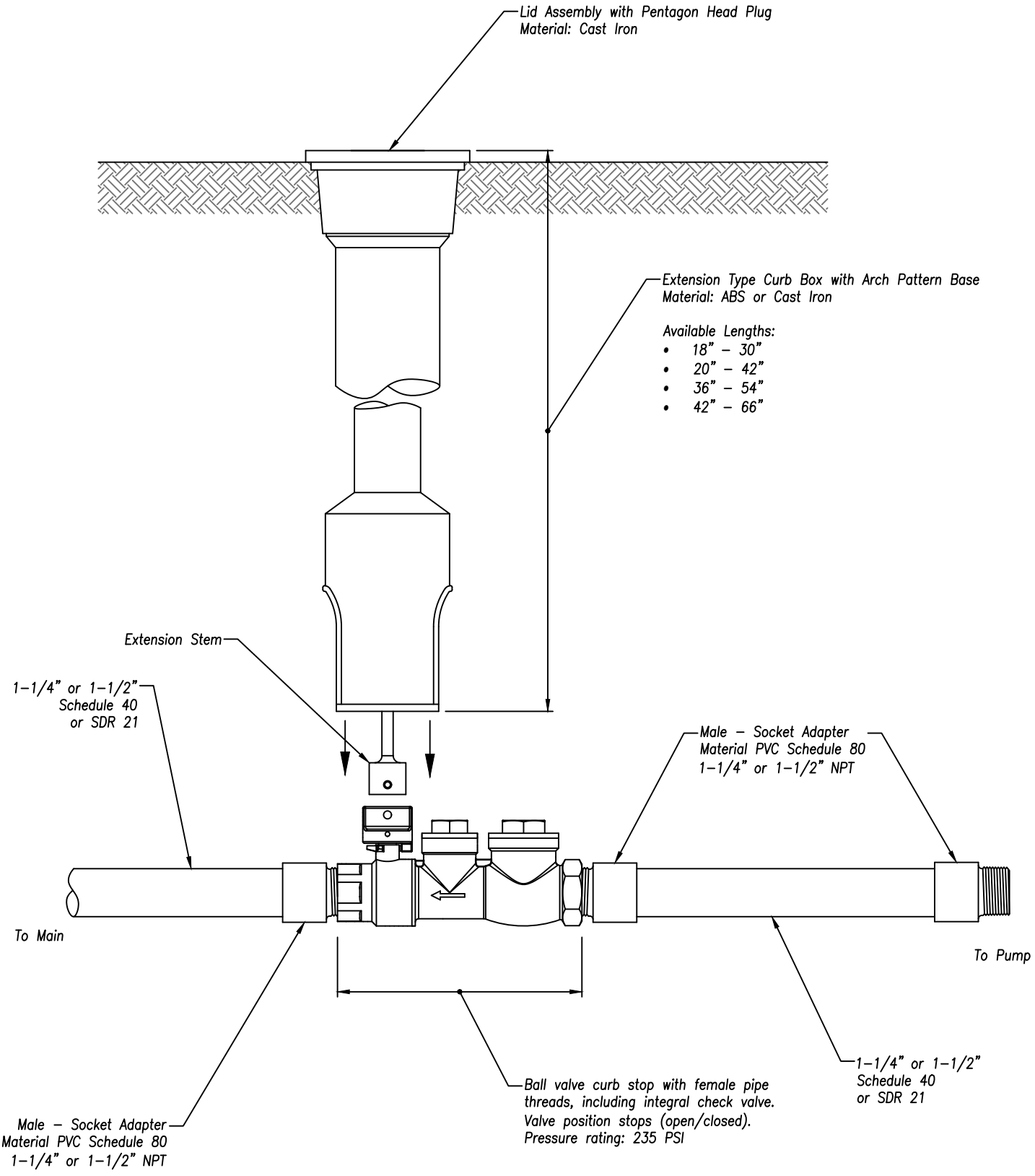
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Force Main PVC Lateral Assembly with Stainless Steel Curb Stop (1-1/4" & 1-1/2")

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-026.DWG



Notes:
1. To assemble, apply a double layer of teflon tape and a layer of pipe dope to the threads on the plastic fittings and install per the manufacturer's instructions.
2. Assembly to be pressure tested.
3. Assembly is to be used with PVC pipe. PVC shall be Schedule 40 or SDR-21 w/ Schedule 80 fittings.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

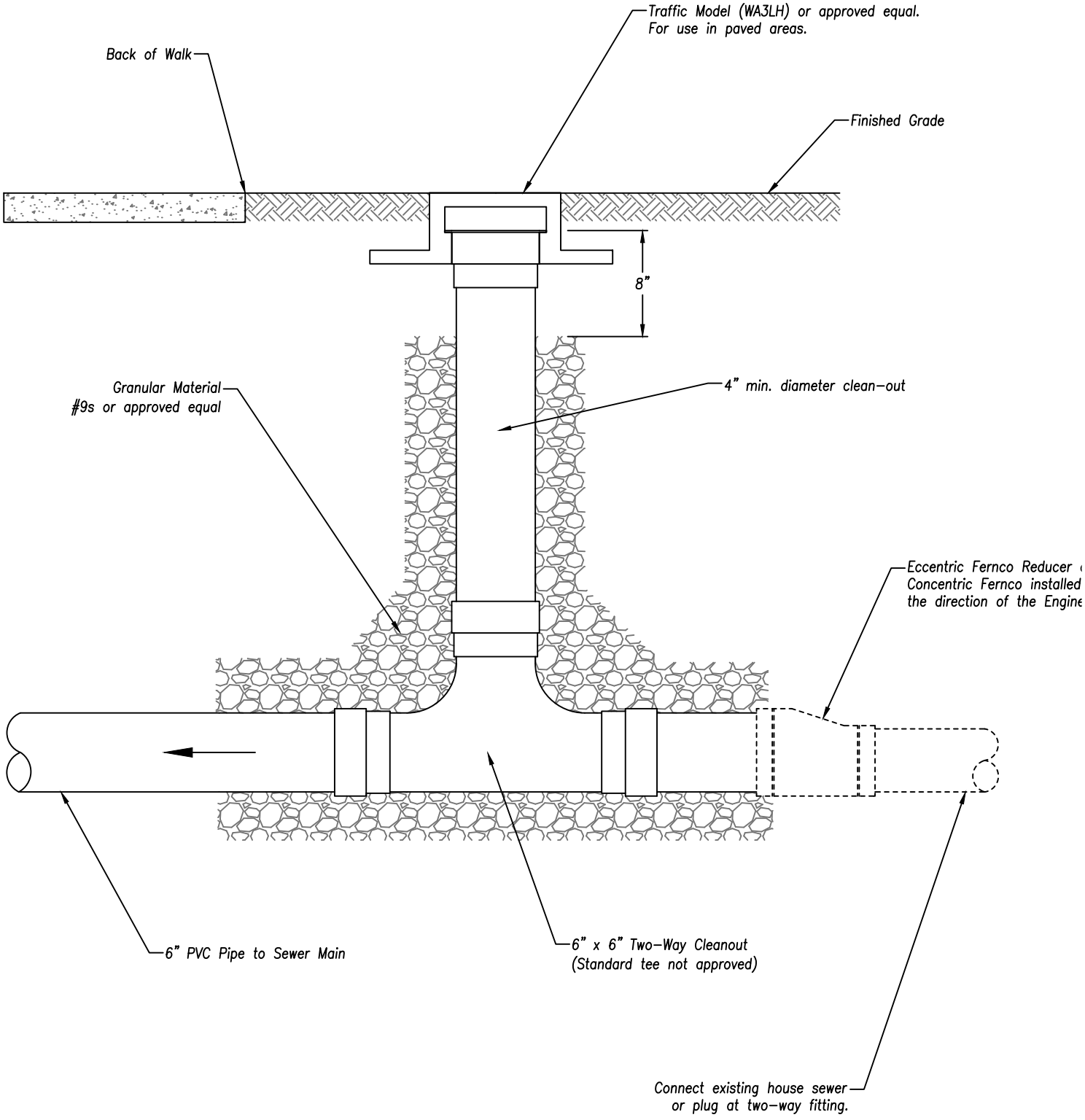
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Two-Way Clean Out
(For Sanitary and Storm Applications)

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-027.DWG

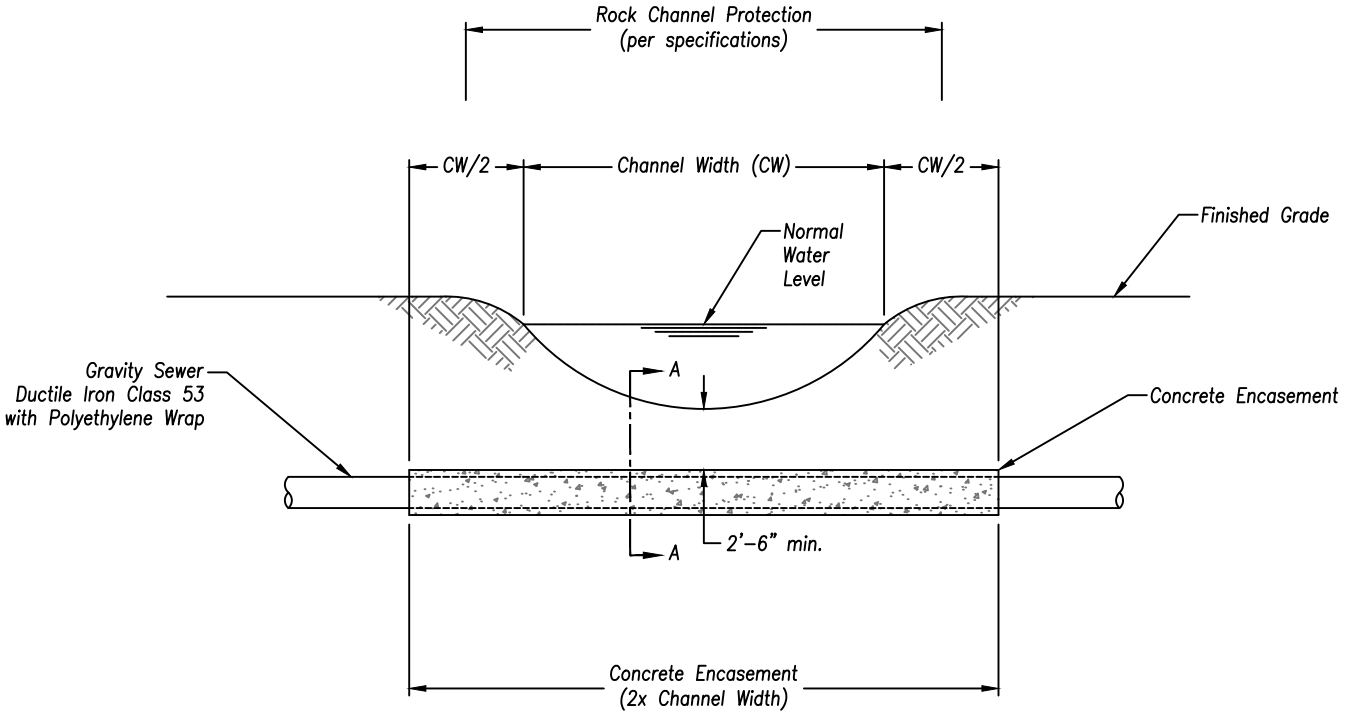


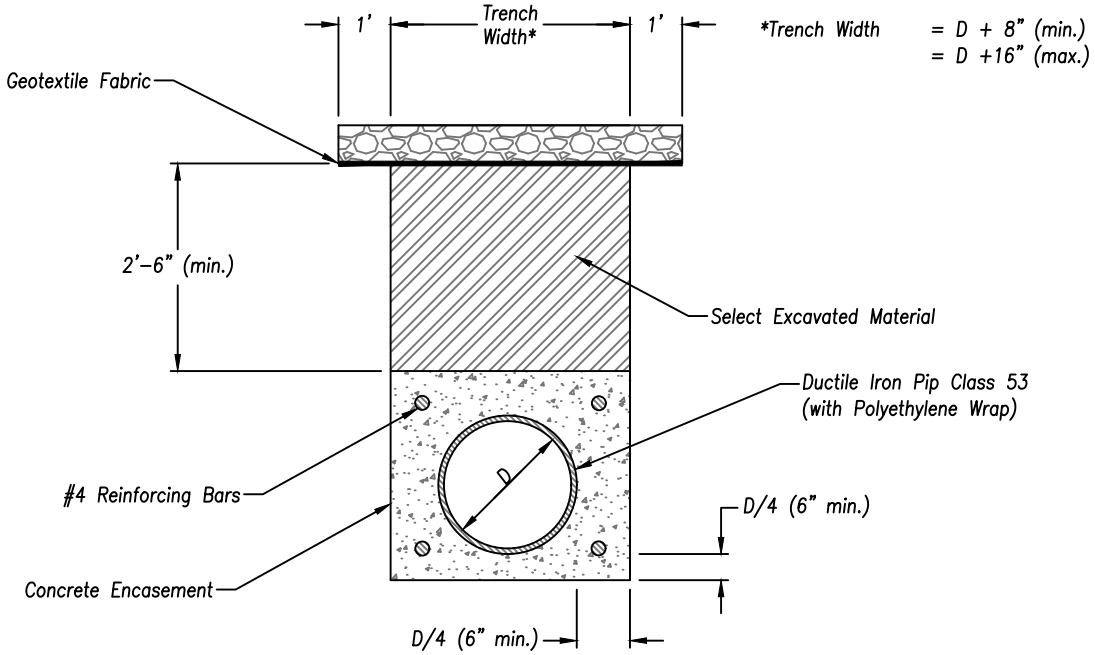
Notes:
1. Directional clean-outs may still be allowed in select circumstances with the approval of the City.
2. Final cleanout cap elevation adjust to finished grade and restoration completed within 90 days of installation.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Gravity Sewer Creek Crossing

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-028.DWG





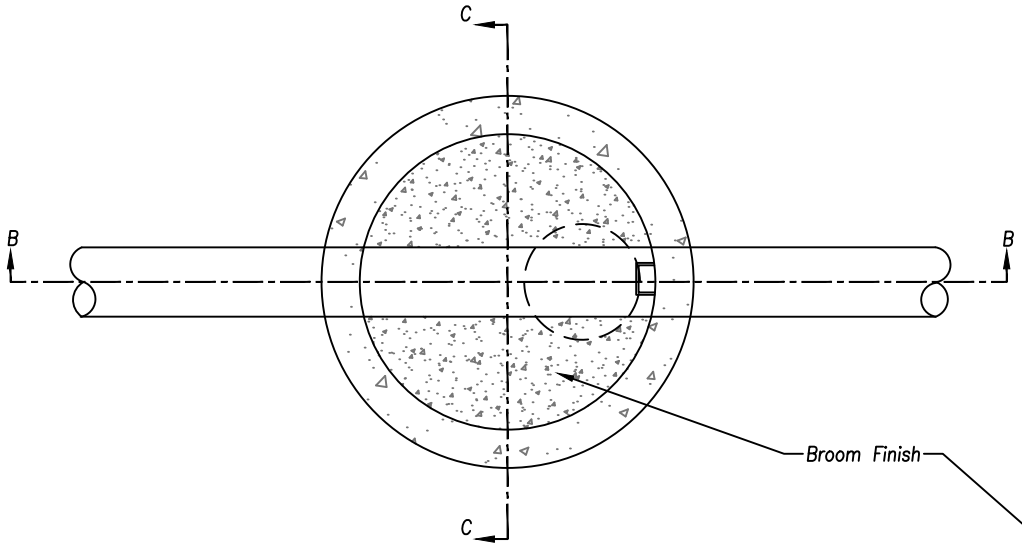
SECTION A-A

Notes:
1. Manholes shall not be installed within the limits of the concrete encasement or the stream banks.
2. Minimum depth of cover for concrete encasement will be reviewed on a case by case basis. Greater depth of cover may be required fo higher velocity streams. Final determination on debth of cover required is to be made by the Director of Public Utilities.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

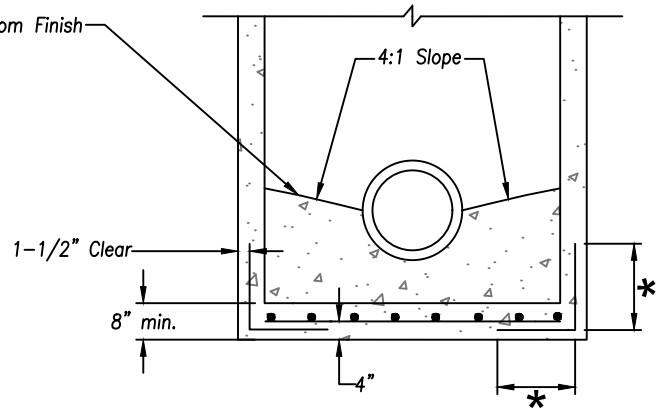
Standard Manhole (Page 1/2)

DATE: 05/15/2020 | SCALE: NONE | FILE: 2020-029.DWG



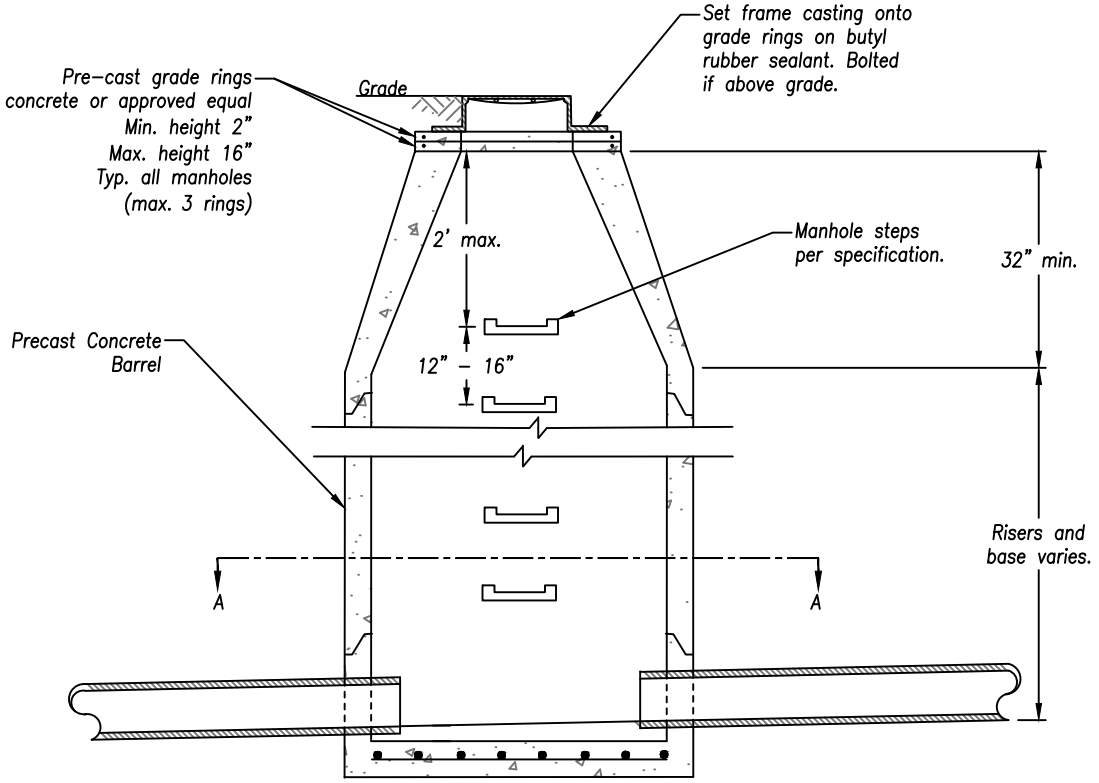
SECTION A – A

Steel Reinforcement Cross-sectional Area, A_s	
MH Depth (feet)	A_s (in^2/ft)
0' – 10'	0.17
11' – 20'	0.22
21' – 30'	0.27
31' – 40'	0.32



SECTION C – C

*30 x Bo
(12" mi



SECTION B – B

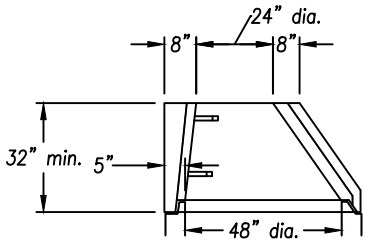
Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Standard Manhole (Page 2/2)

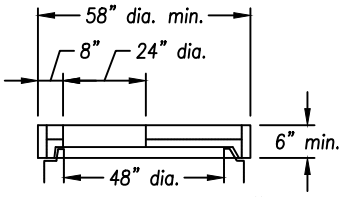
DATE: 05/15/2020 | SCALE: NONE | FILE: 2020-030.DWG

Min. Base Slab Thickness, BT	
Depth (feet)	BT (inches)
0' – 15'	8"
15.1' – 20'	10"
20.1' – 25'	12"
25.1' – 30'	14"

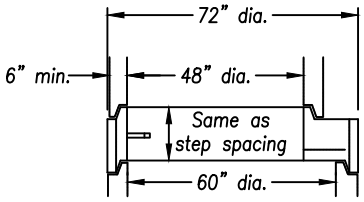
Wall Thickness, T	
MH Dia. (feet)	T (inches)
4'	5"
5'	6"
6'	7"



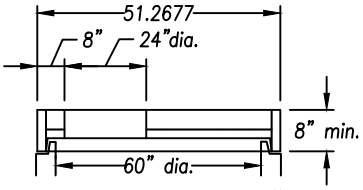
Eccentric Cone Top



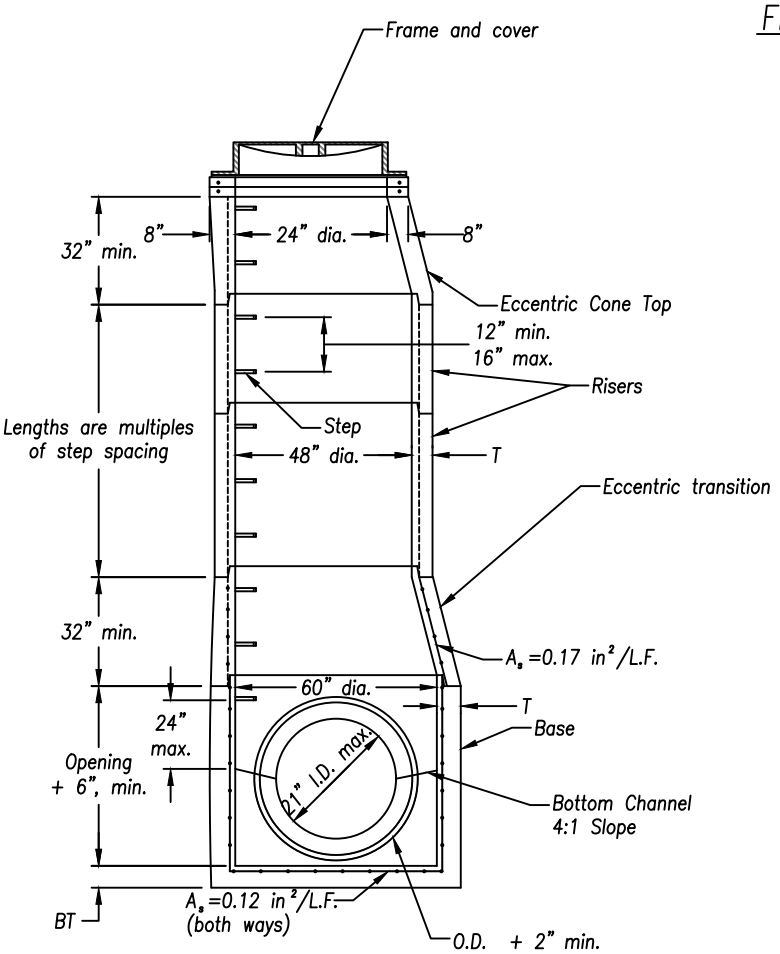
Flat Slab Top, 58" min.



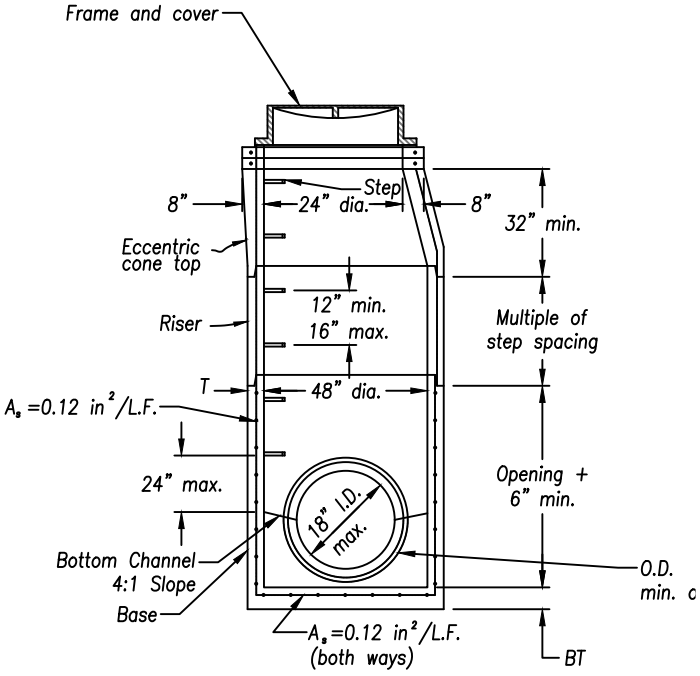
Flat Slab Transition



Flat Slab Top, 72" min.



60" Precast Base, 21" and Smaller Pipe



48" Precast Base, 18" and Smaller

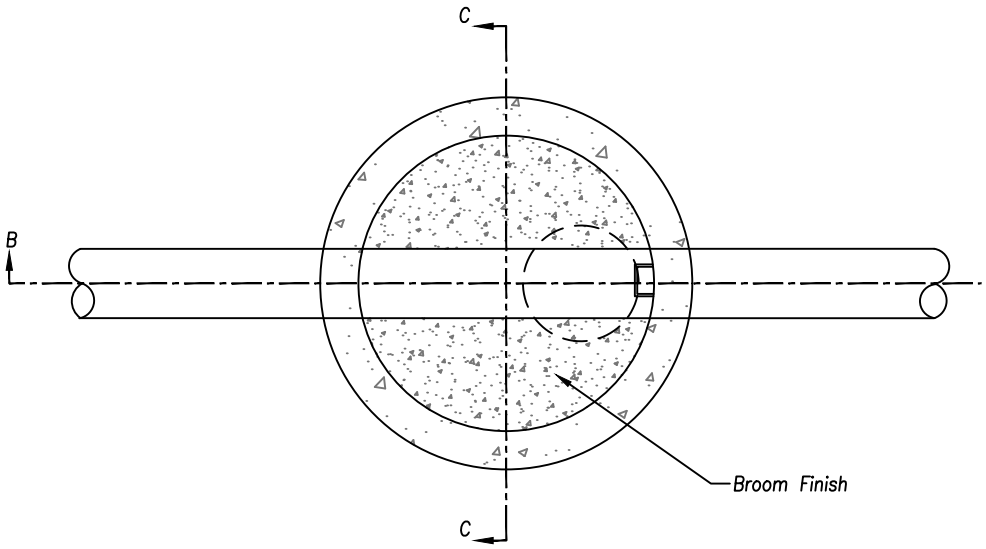
Notes:
1. Manholes shall be pre-cast concrete. Pre-cast manhole sections and joints between sections to conform to current applicable ASTM standards.
2. Pre-cast bases are required. Cast in place bases are allowed only on existing sewer mains when approved by the City's Public Utilities Director.
3. Joint seal between pre-cast sections on sanitary sewers will be resilient and flexible gasket joints per ODOT's most current specification.
4. Precast manhole base for pipe larger than 21" requires a submittal drawing and approval by the Public Utilities Director.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

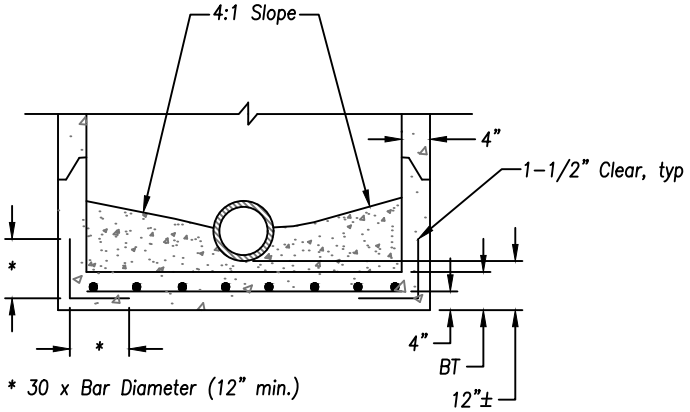
Standard Control Manhole

DATE: 05/15/2020 | SCALE: NONE | FILE: 2020-031.DWG

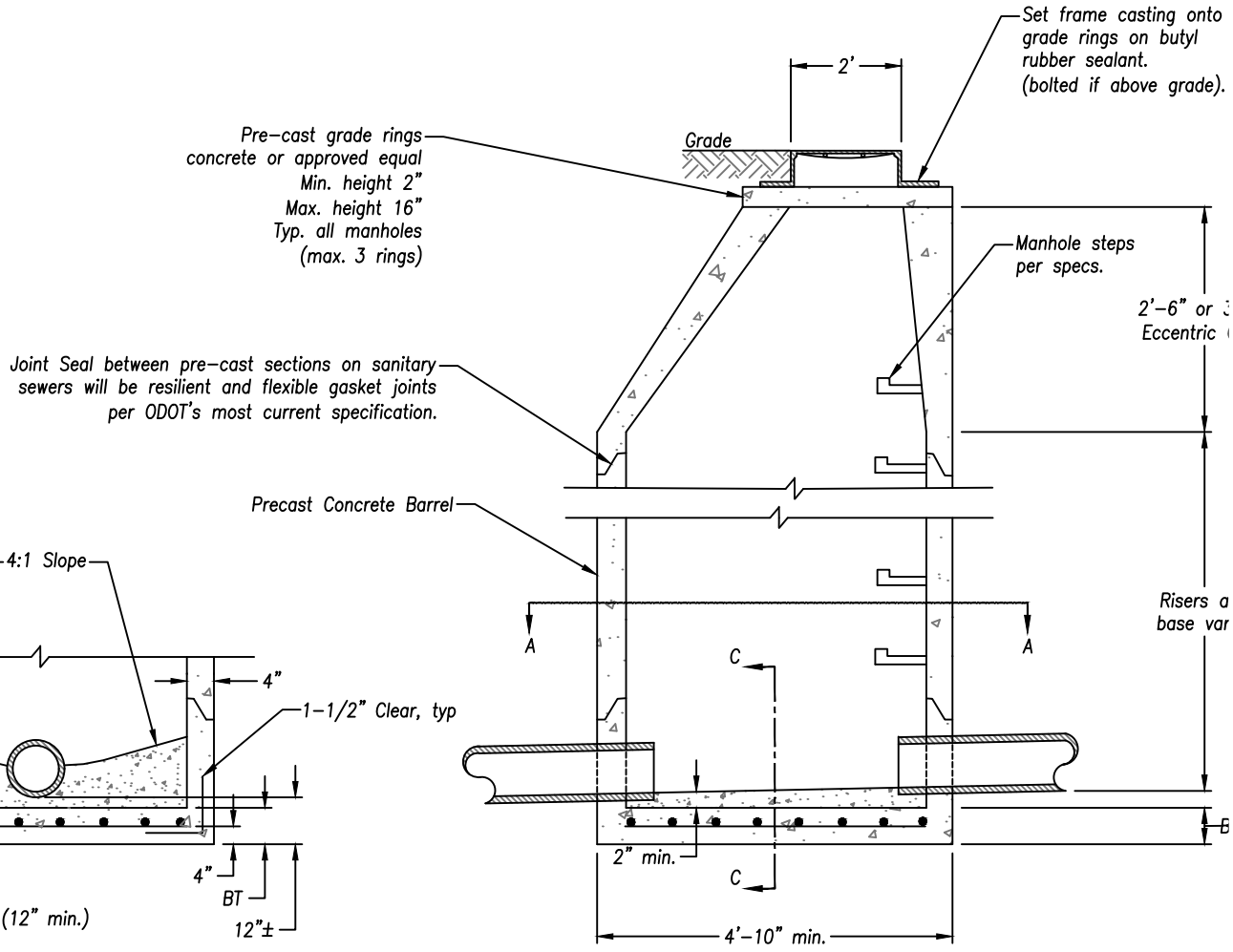
Min. Base Slab Thickness, BT	
Depth (feet)	BT (inches)
0' – 15'	8"
15.1' – 20'	10"
20.1' – 25'	12"
25.1' – 30'	14"



SECTION A – A



SECTION C – C



SECTION B – B

Note:

1. Control Manhole placement shall be designed per section 506.06 and approved by the Public Utilities Director and/or their designee.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

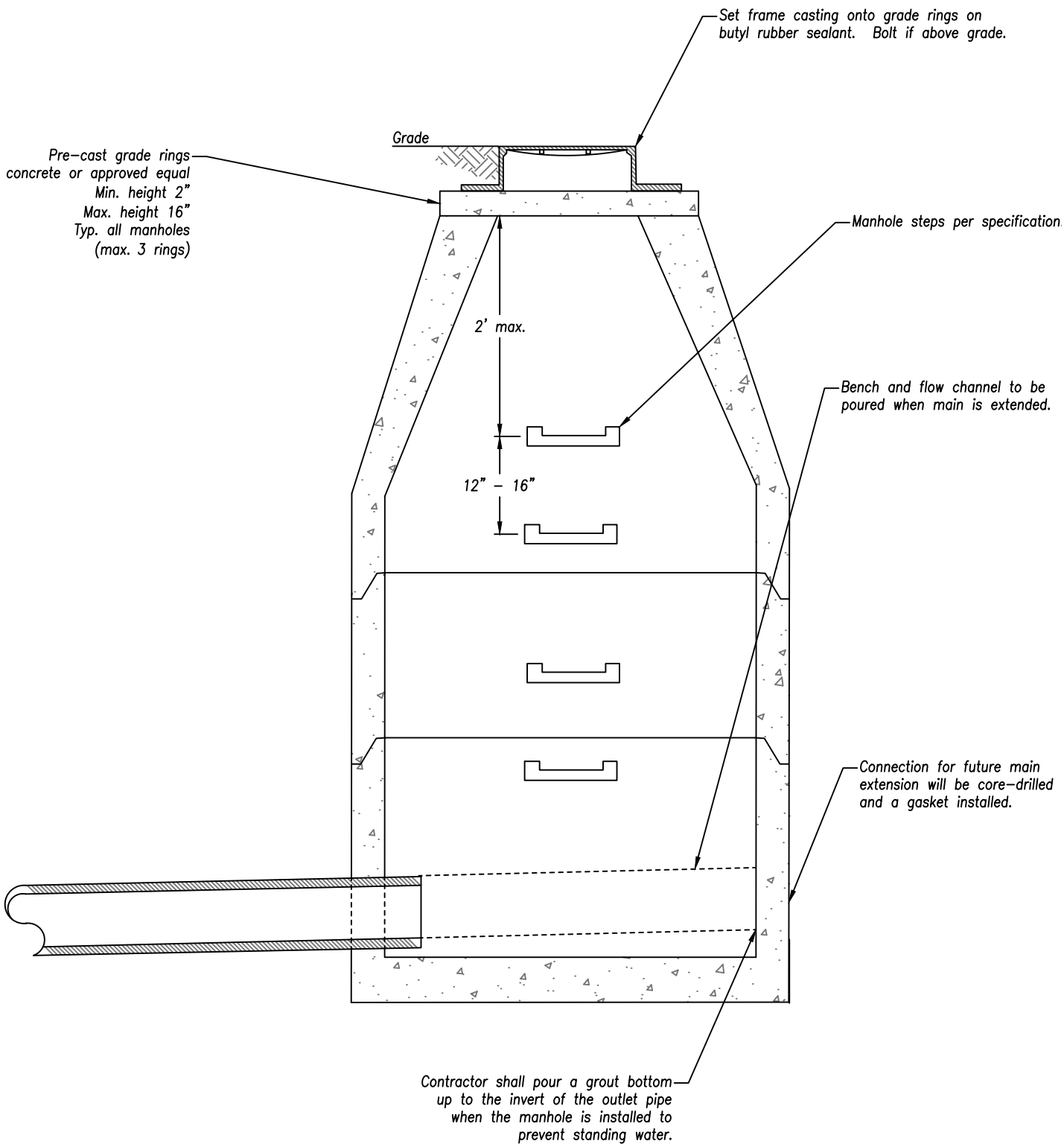
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Dead End Manhole

DATE: 05/15/2020	SCALE: NONE	FILE: 2020-032.DWG



Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

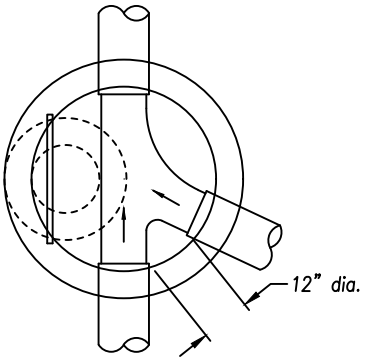
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

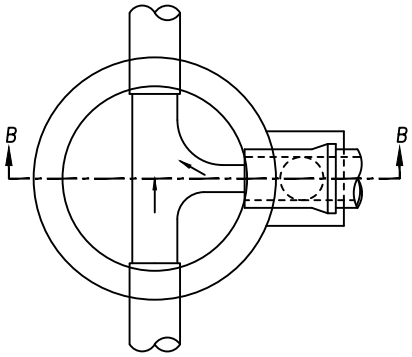
Drop Manhole

DATE: 05/15/2020 | SCALE: NONE | FILE: 2020-033.DWG

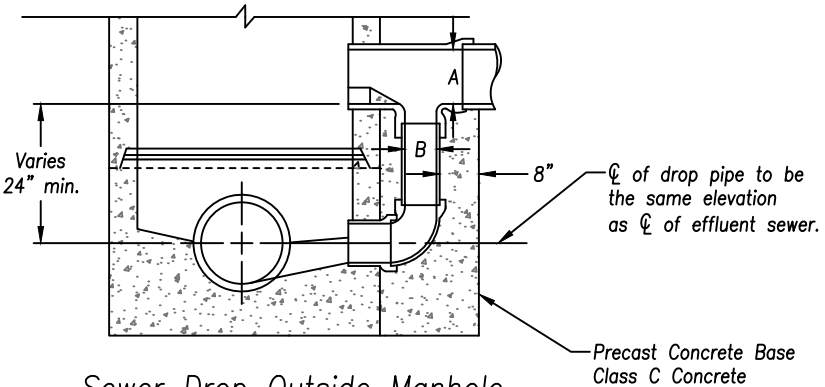


Plan–Standard Type A

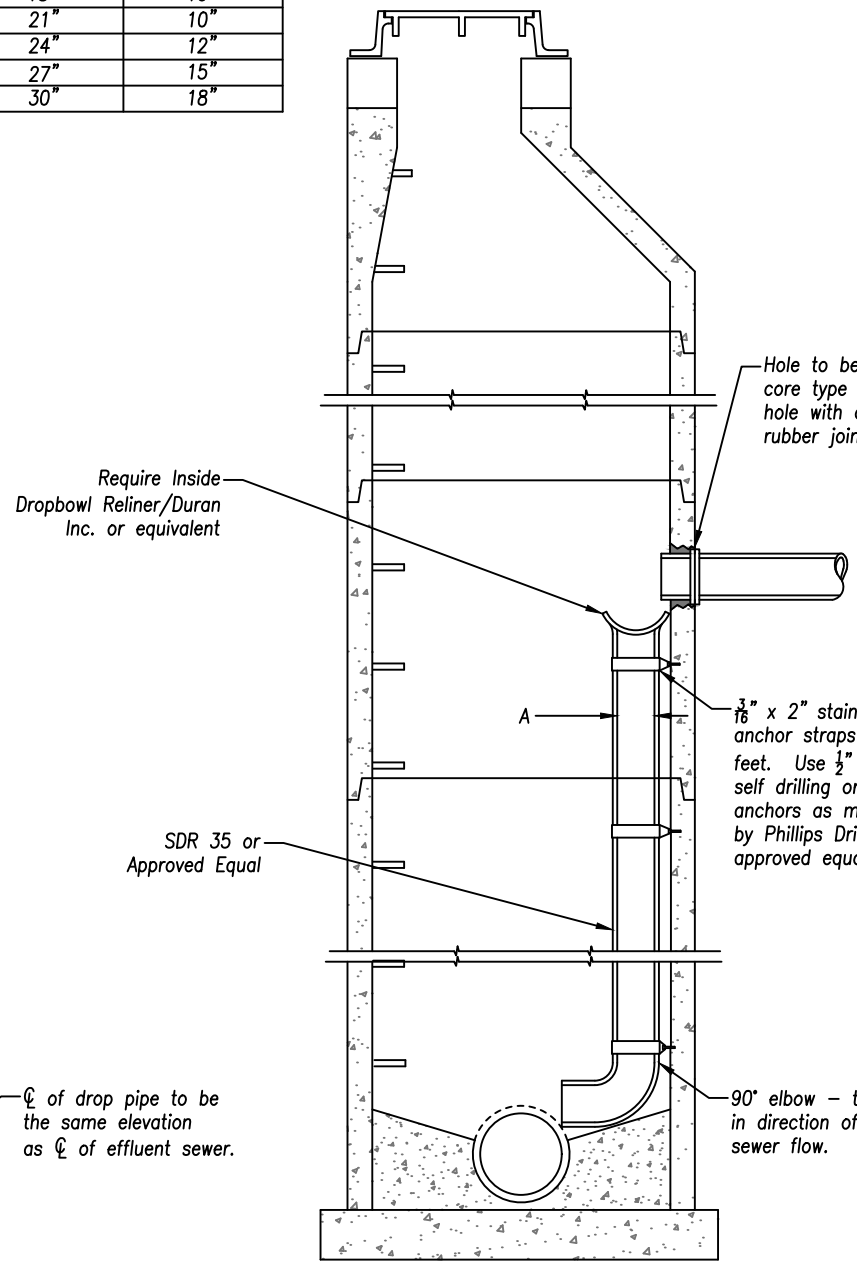
Table of Dimensions	
A (inches)	B (inches)
6"	6"
8"	6"
10"	6"
12"	8"
15"	8"
18"	10"
21"	10"
24"	12"
27"	15"
30"	18"



Plan–Standard Type B



Sewer Drop Outside Manhole



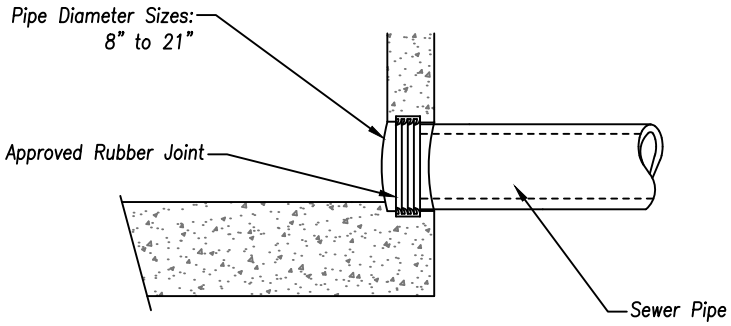
Sewer Drop Inside Manhole

Notes:
1. Inside drop assembly must be approved in writing by the City's Public Utilities Director.
2. Pre–cast concrete risers sealed in place with butyl rubber sealant.

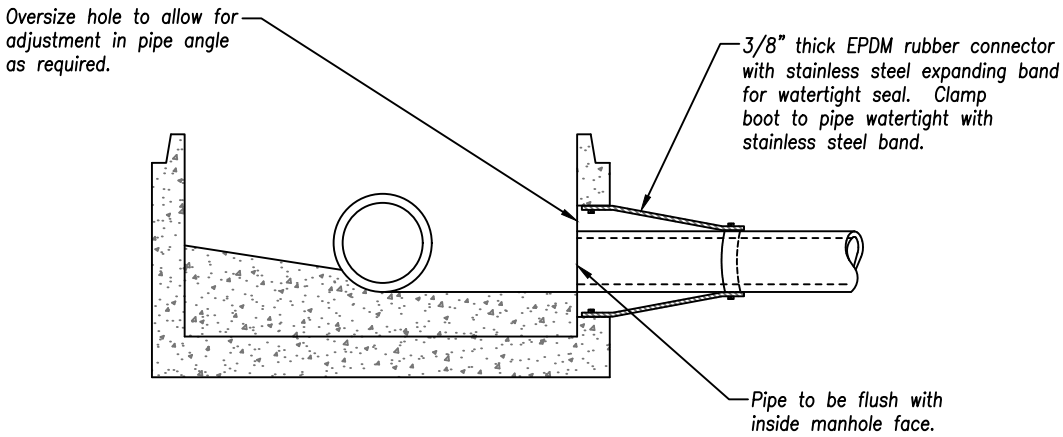
Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Pipe Connections

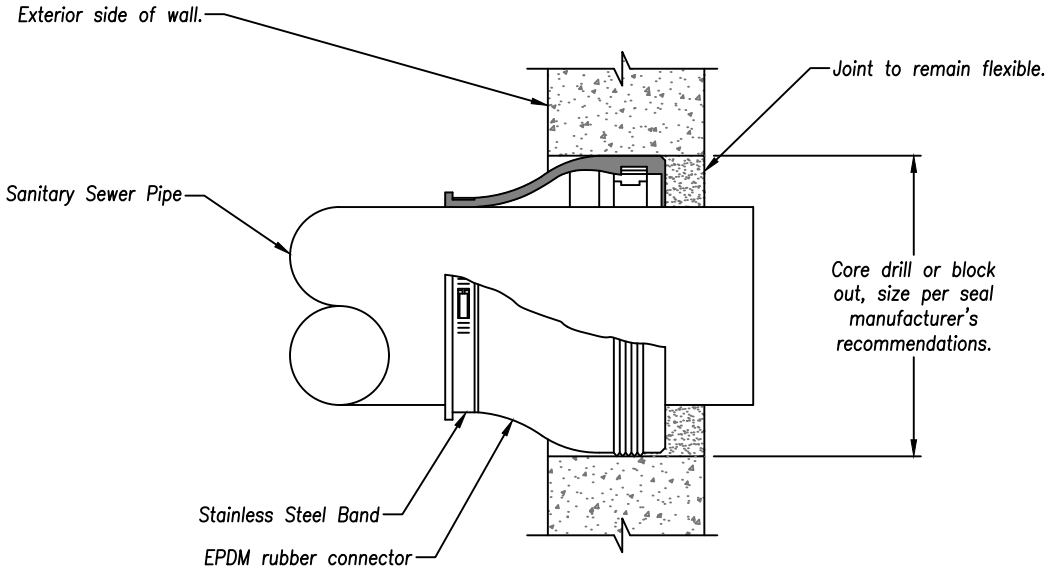
DATE: 05/15/2020 | SCALE: NONE | FILE: 2020-034.DWG



Alternate #1 – New Construction



Alternate #2 – New Construction



Alternate #3 – Existing Manhole

Notes:
1. Wall penetrations shall be located within a riser section and not a wall joint.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

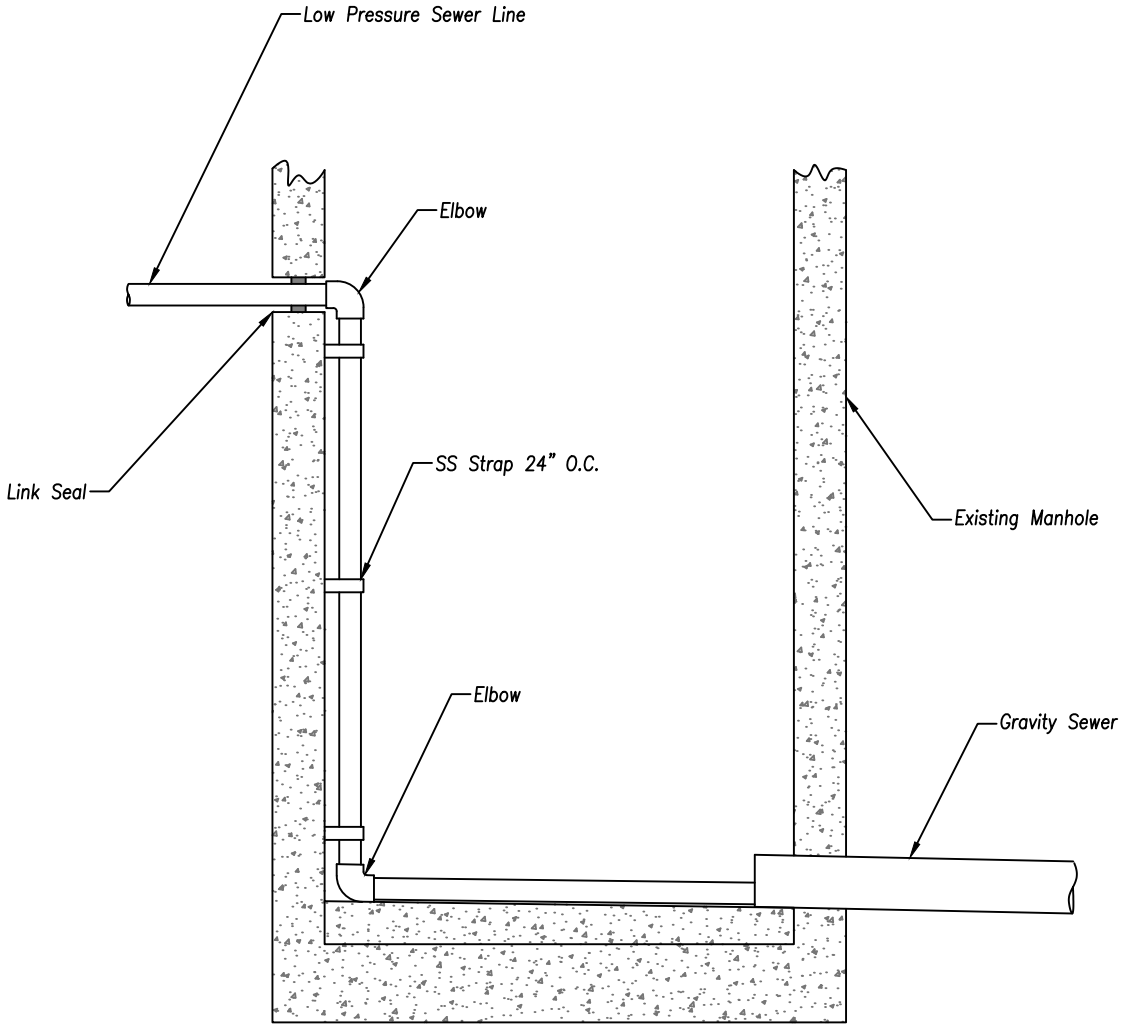
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Force Main Drop Connection in Existing Manholes

DATE: 05/04/2020 | SCALE: NONE | FILE: 2020-035.DWG



Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

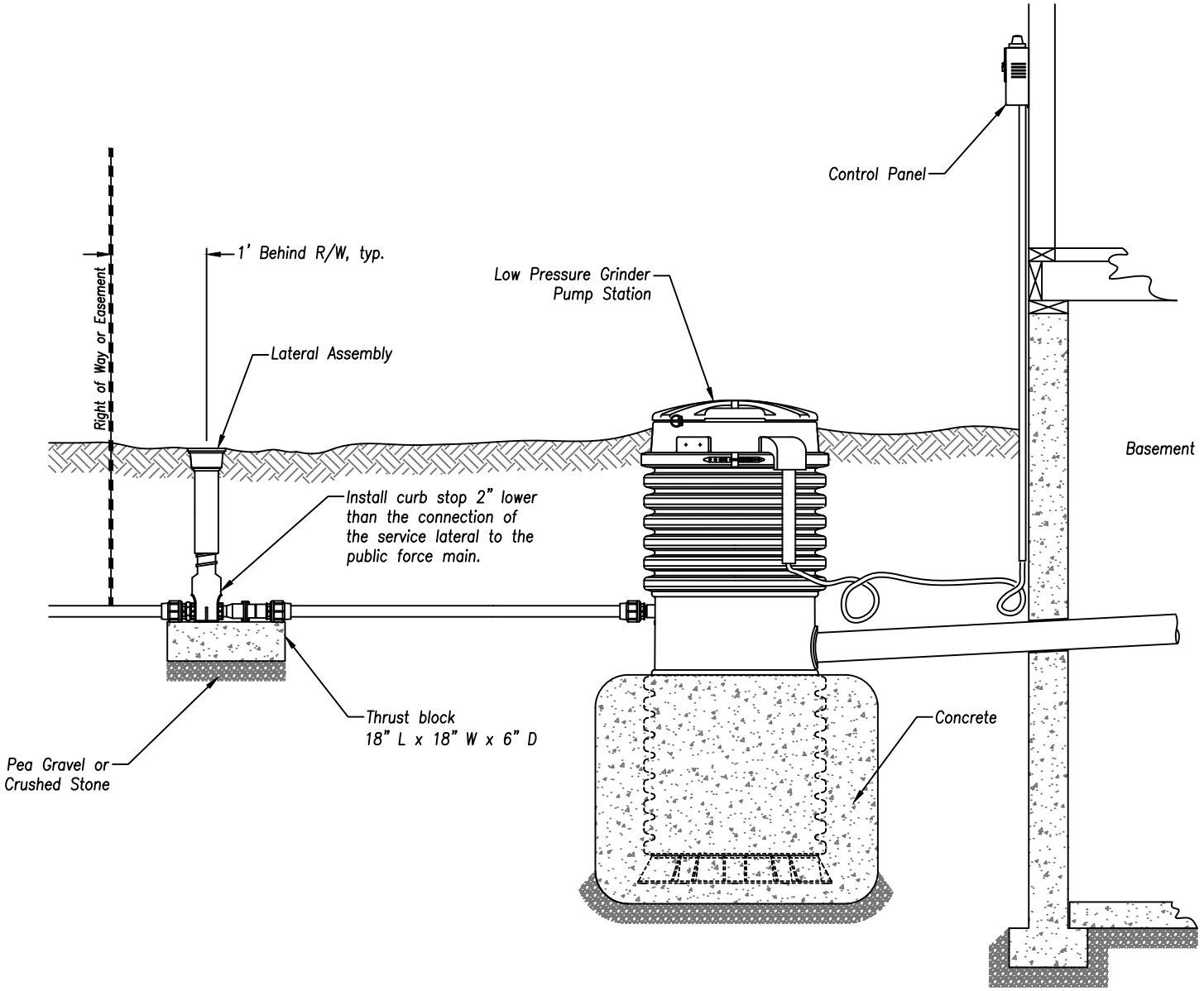
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Force Main Lateral Installation

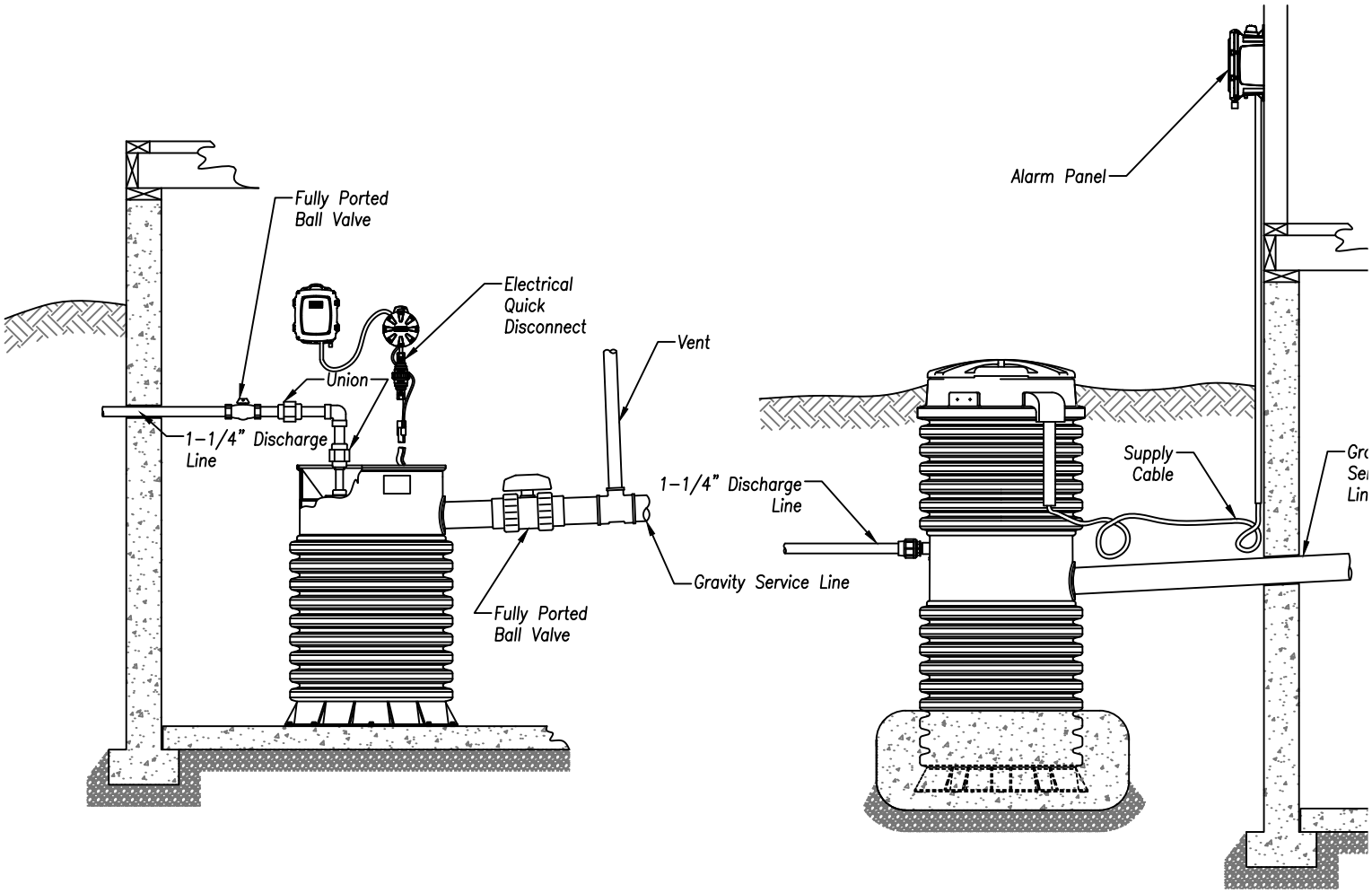
DATE: 05/04/2020	SCALE: NONE	FILE: 2020-036.DWG



Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Force Main Grinder Pump Station Installation

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-037.DWG



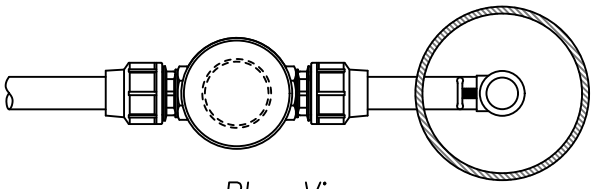
Interior Installation

Exterior Installation

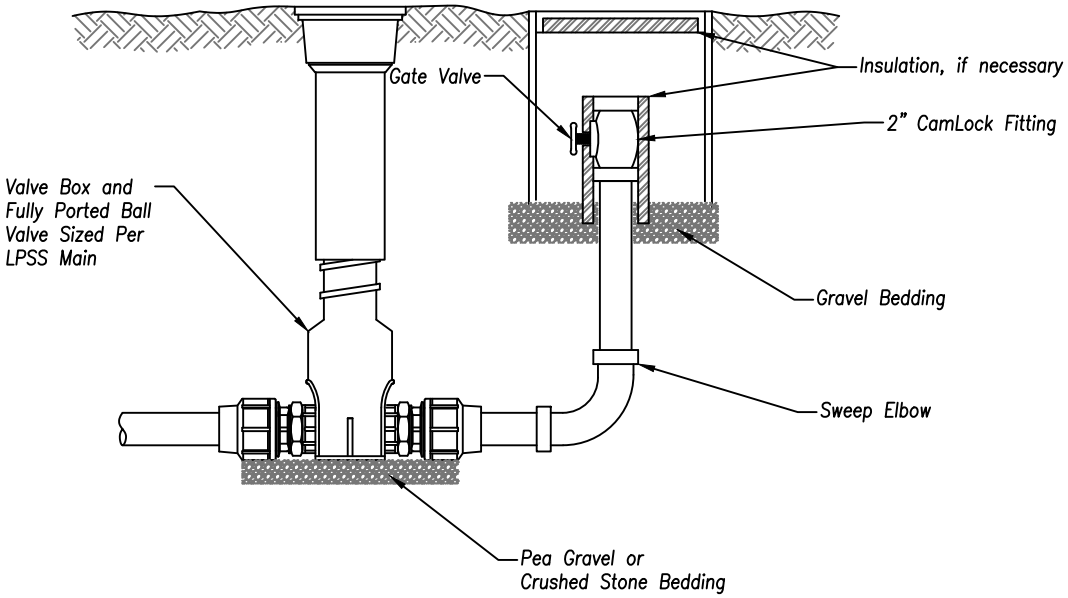
Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

Force Main Terminal Flushing Connection

DATE: 05/04/2020	SCALE: NONE	FILE: 2020-038.DWG



Plan View



Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

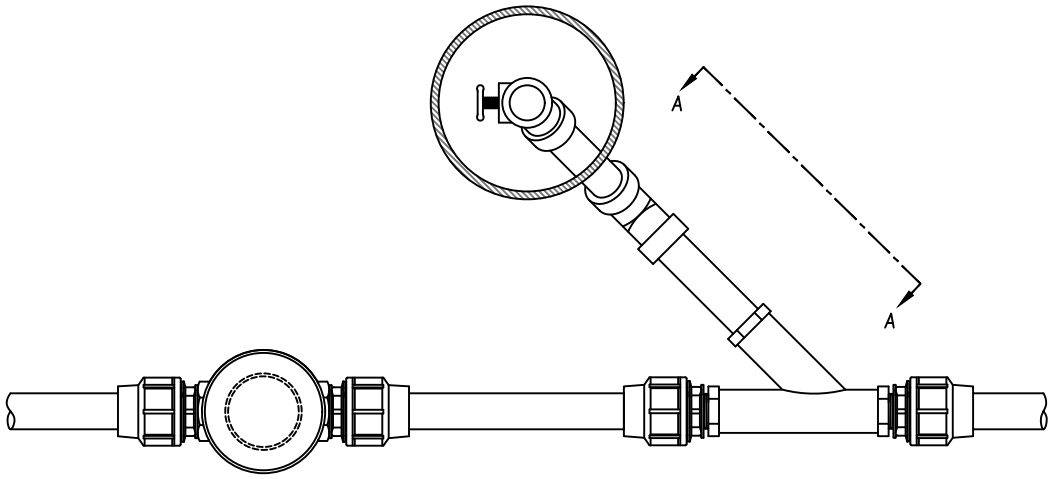
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

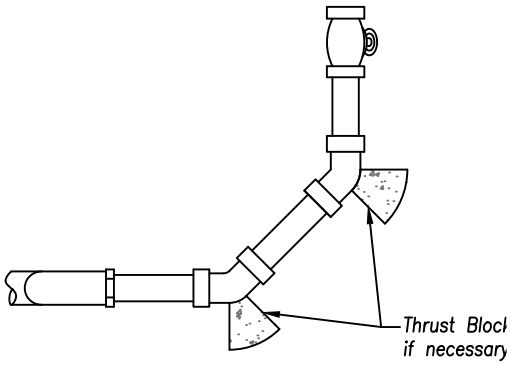
10.B.1.a

Force Main Flushing Connection on LPSS Main

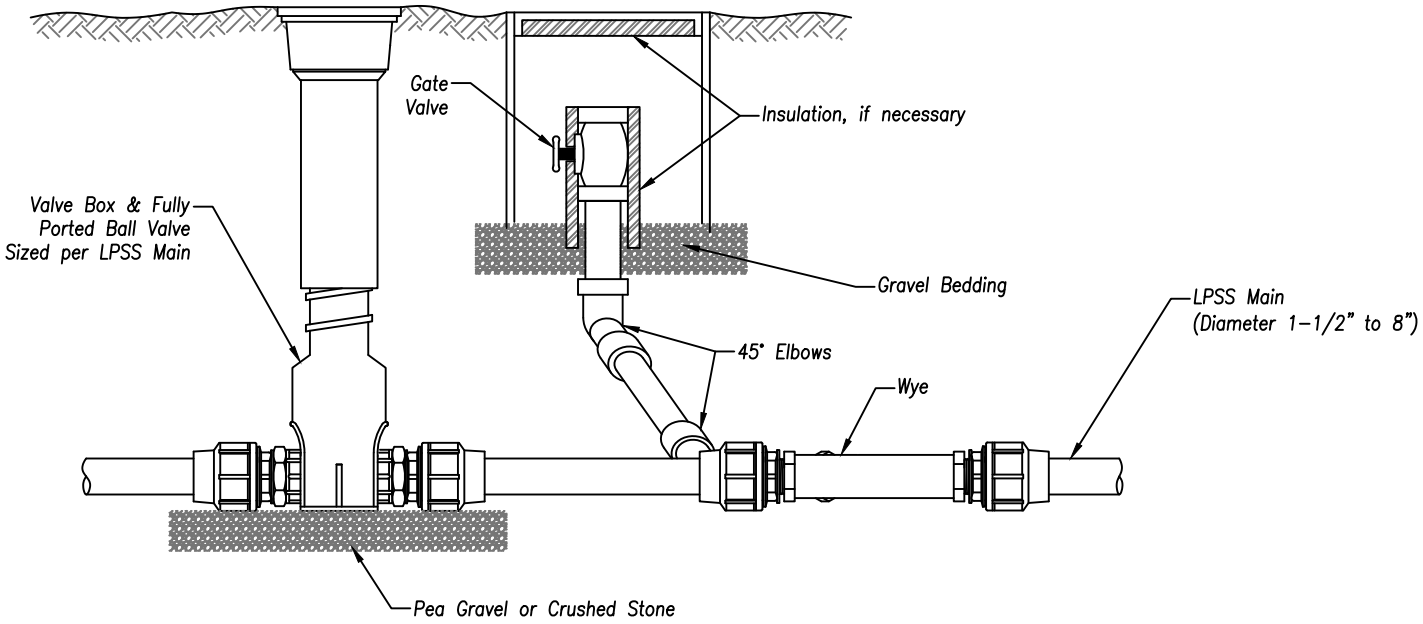
DATE: 05/08/2020	SCALE: NONE	FILE: 2020-039.DWG



Plan View



SECTION A – A



Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

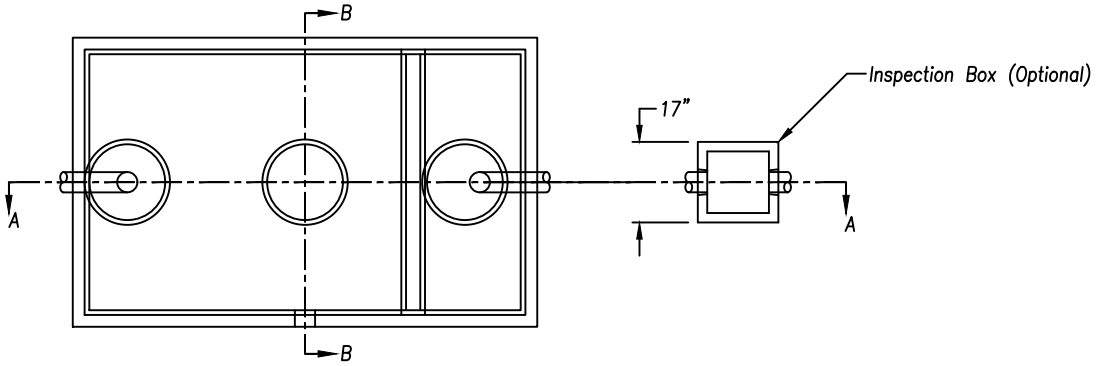
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

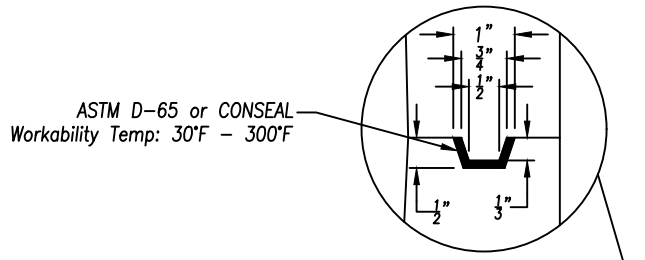
10.B.1.a

Grease Interceptor - Oil/Water Separator (Baffled)

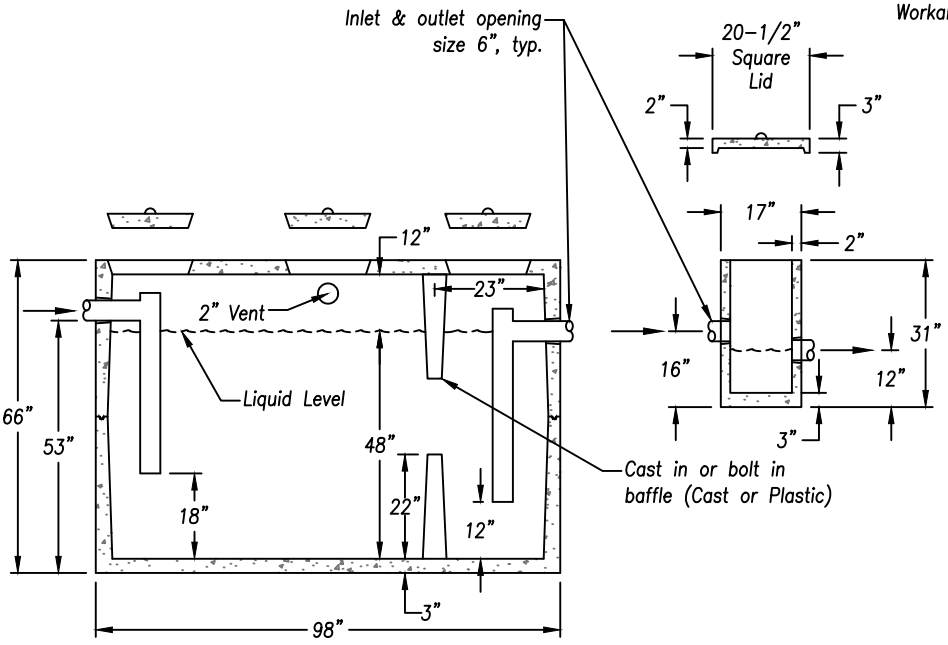
DATE: 05/04/2020	SCALE: NONE	FILE: 2020-040.DWG



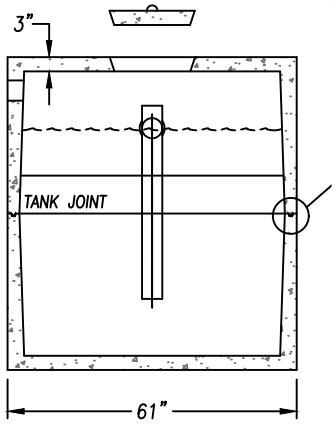
Plan View



Joint Detail



SECTION A-A



SECTION B-B

Notes:

1. Access manholes with a minimum diameter of 24" shall be provided over each grease interceptor chamber. The access manhole shall extend at least to finished grade and be designed and maintained to prevent water inflow or infiltration. The manholes shall be readily removable covers to facilitate inspection, grease removal, and wastewater sampling activities.
2. Provide a minimum of two manholes.
3. Grease interceptor shall have a capacity of at least 1000 gallons.
4. Piping by others. 4" PVC Schedule 40 or as directed by the Public Utilities Director.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

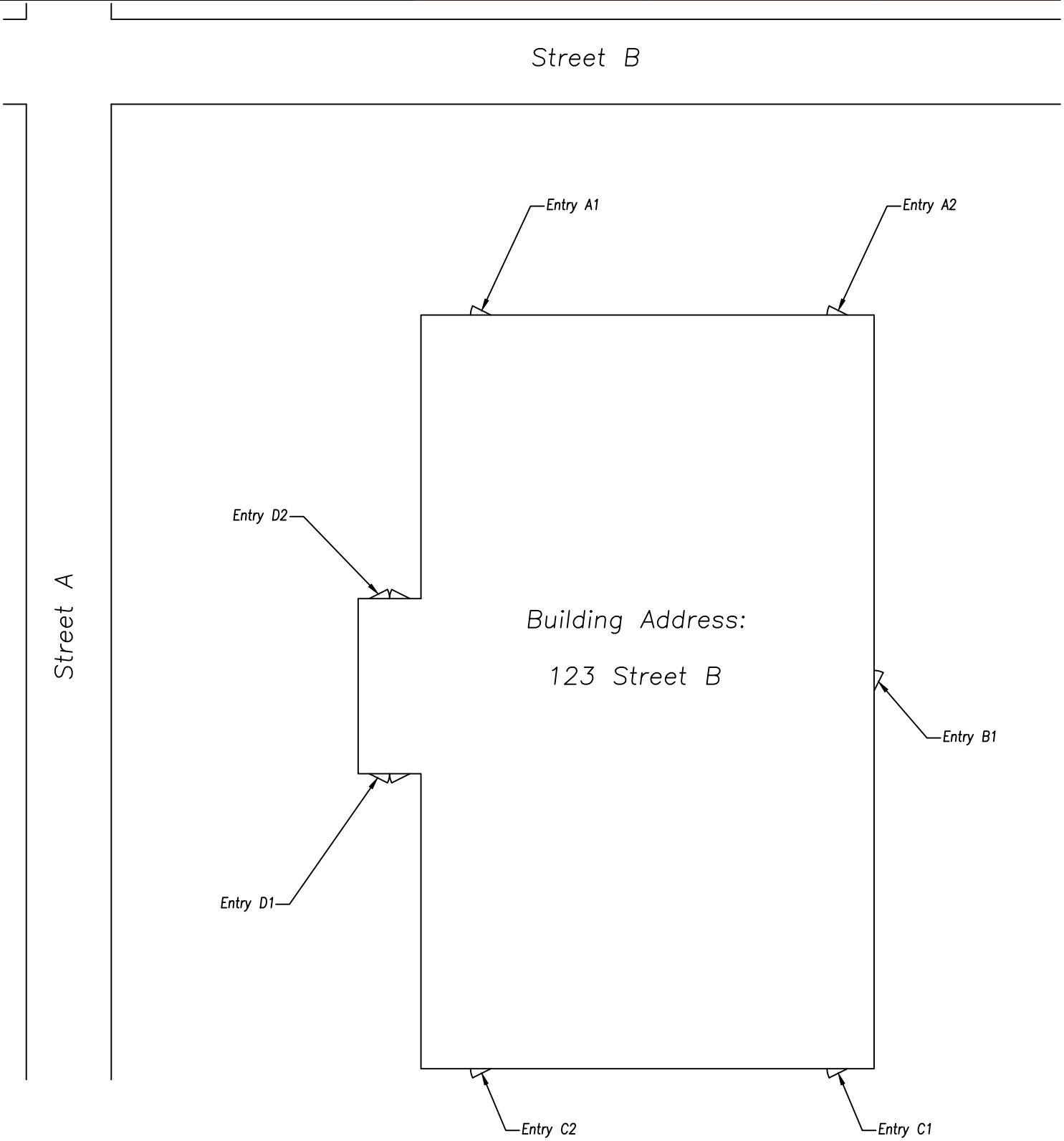
FAIRFIELD OHIO

STANDARD CONSTRUCTION DRAWINGS

10.B.1.a

Exterior Door Identification

DATE: 05/13/2020	SCALE: NONE	FILE: 2020-041.DWG



Notes:

1. Exterior door identification may be requested or required by Fairfield Police or Fire Departments.
2. All exterior doors (personnel, overhead, etc.) shall receive a unique alpha-numeric designation. The alphabetic character signifies the side of the building while the numeric character signifies the door number.
3. The "A" side of the building shall be the side that faces the street matching the building address. "B", "C", and "D" sides of the building shall be named sequentially in a clockwise manner. Door numbering on any given side shall increase in a clockwise direction.
4. Characters labeling each door are recommended to be 6" or greater.

Attachment: 2020 Design, Construction, and Materials Specification Handbook (1575 : Design, Construction, and Materials Specification

ORDINANCE NO. _____

ORDINANCE TO AMEND SECTION 1113.01 OF ORDINANCE NO. 166-84, THE CODIFIED ORDINANCES OF FAIRFIELD, OHIO, TO ADOPT AN AMENDED DESIGN, CONSTRUCTION AND MATERIALS SPECIFICATION HANDBOOK, 2020 SIXTH EDITION.

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. Section 1113.01 of Ordinance No. 166-84, The Codified Ordinances of Fairfield, Ohio, is hereby amended to read as follows:

1113.01 DESIGN CONSTRUCTION AND MATERIAL SPECIFICATION HANDBOOK.
All construction shall be done in compliance with the "Design Construction and Material Specification Handbook" **2020 SIXTH EDITION, WHICH IS HEREBY ADOPTED AND INCORPORATED HEREIN BY REFERENCE. A COPY OF THE 2020 SIXTH EDITION HANDBOOK IS ON FILE IN THE OFFICE OF THE CLERK OF COUNCIL.**

Section 2. This Ordinance shall take effect at the earliest period allowed by law.

Passed _____ _____
Mayor's Approval

Posted _____

First Reading _____ Rules Suspended _____

Second Reading _____

Third Reading _____

ATTEST:

_____
Clerk of Council

This is to certify that this Ordinance has been duly published by posting and summary publication as provided by Charter.

_____
Clerk of Council

Active Clients\City of Fairfield\Ordinances\2020\Design Construction and Materials-Ord

Attachment: Design Construction and Maintenance-Ord (1575 : Design, Construction, and Materials Specification Handbook)

FAIRFIELD

THE FIELD IS OPEN

DEPARTMENTAL CORRESPONDENCE

To: Mayor Miller and City Councilmembers
From: Scott Lepsky, Planning Commission Chairman
Subject: Planning Commission Recommendations
Date: 8/26/2020

Please be advised that at the Planning Commission meeting held on Wednesday, August 26, 2020, the Planning Commission voted 6-0 in favor of recommending approval of the updates to the Design, Construction, and Materials Specification Handbook. The draft handbook may be viewed online here: 2020 Construction Handbook Draft.

cc: Mark Wendling, City Manager
Alisha Wilson, Clerk of Council
Steve Wolterman, Law Department
John Clemmons, Law Director

Attachment: Signed Construction Handbook 8.26.20 (1575 : Design, Construction, and Materials Specification Handbook)

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Ben Mann,
Submitting Department: Public Works

Subject:
Palomino Estates (Palomino Court) Public Acceptance

Legislation Title:
Ordinance to authorize the release of the maintenance bond and accept the public improvements for the Palomino Estates Subdivision.

Recommendation:
It is recommended that City Council authorize and direct preparation of legislation accepting these public improvements.

Background/Synopsis:

This project to create a public street located on the west side of McCormick Lane (just south of where Symmes Road ends into the City's soccer fields) was developed by the Bown Enterprises as Palomino Estates. This is a nine-lot subdivision with one lot remaining for development.

This project involved the construction of approximately 600 feet of new road ending in a cul-de-sac. Included in this work was asphalt pavement with an aggregate base, curb and gutter, storm sewer, sanitary sewer, waterline, and sidewalk. This project was inspected by the Public Works Department and the Public Utilities Department to make sure that any previously noted deficiencies have been addressed. The developer has completed all items except street trees for which payment has been submitted to the City as required by City ordinance. The street trees will be planted by Public Works this fall. The dedication plat for this street was approved and accepted by Planning Commission in 2011.

Financial Impact:

None.

Emergency Provision Explanation:

Not requested.

Rule Suspension Requested:
No

Emergency Provision Needed:

No

Attachments:
1. Palomino Estates Plat
2. Palomino Estates-Ord

OR 8378 PG 1951

The undersigned, being the owner of 9.867 acres in part of Lot #226 as known and designated on the list of lots in the City of Fairfield and situated in Section 4, Town 1, Range 2, Butler County Ohio, do hereby assent to and adopt the accompanying plat of of subdivision to be known as "PALOMINO ESTATES" and do hereby dedicate to the public forever, in accordance with the laws in such cases made and provided, in the streets and roadways as shown on said plat, and declare the same to be free and unencumbered.

The Title acquired by Official Record 7135, Page 485 & Official Record 1729, Page 393

Utility easements are provided on this plat and designated as such. The easement area of each lot shall be maintained continuously by the owner of the lot. Within these easements, no structure, planting or other material shall be placed or permitted to remain which may obstruct, retard or change the direction of the flow of the water through the drainage channel in the easement. No improvements or impediment of any kind shall be made on said utility easement which will interfere with access to the said utility. The City of Fairfield and/or the Utility Company shall not be responsible to any present or future owner(s) of said lot for any damages on said easement to sod, shrubbery, or other improvements, natural or artificial, by reason of entry for purposes of constructing, maintaining, replacing or repairing the utility. The erection or placement of any structure and planting or placement of any trees on said utility easement shall be prohibited.

The above easements are also provided for other uses as designated and shall be used for the construction of storm water drains, open channels, public and private sewers, pipelines for the supplying of water, cable television and for any other public or quasi public utility or function, conducted, maintained or performed by ordinary methods beneath or above the surface of the ground together with the right of ingress and egress over and across lots to and from said easements.

Any lot transferred shall have a minimum width and area substantially the same as shown on the accompanying plat and only one principal building will be permitted on any such lot.

Any future splitting of any lot that results in an additional building site being created shall be by Replat only.

Private driveways, parking lots and other paved areas or structures should not be constructed over private water or sewer service lines within the public road right-of-way or within easement areas for the public utilities. Should this occur, the property owner will be held responsible for the protection and repair of and providing access to any curb stops, meter pits, manholes, cleanouts, etc. installed in conjunction with these private service lines and for any damage or restoration of the paved surfaces or structures that may result from the future operation, maintenance, repair or replacement of said service lines and appurtenances.

The City of Fairfield does not accept any responsibility for the relocation, repair or replacement of any other utility installed within five (5) feet of the centerline of any sanitary sewer main or water main.

All lots shown hereon shall be served by public sanitary sewers and water.

Easements outside the platted area will become null and void when said area is platted.

All sanitary sewers shown on this plat shall be subject to the same charges and same rates as required for the citywide system.

Typical five (5) foot drainage easement to be provided on both sides of every lot line, inside the platted area, not presently labeled with an easement.

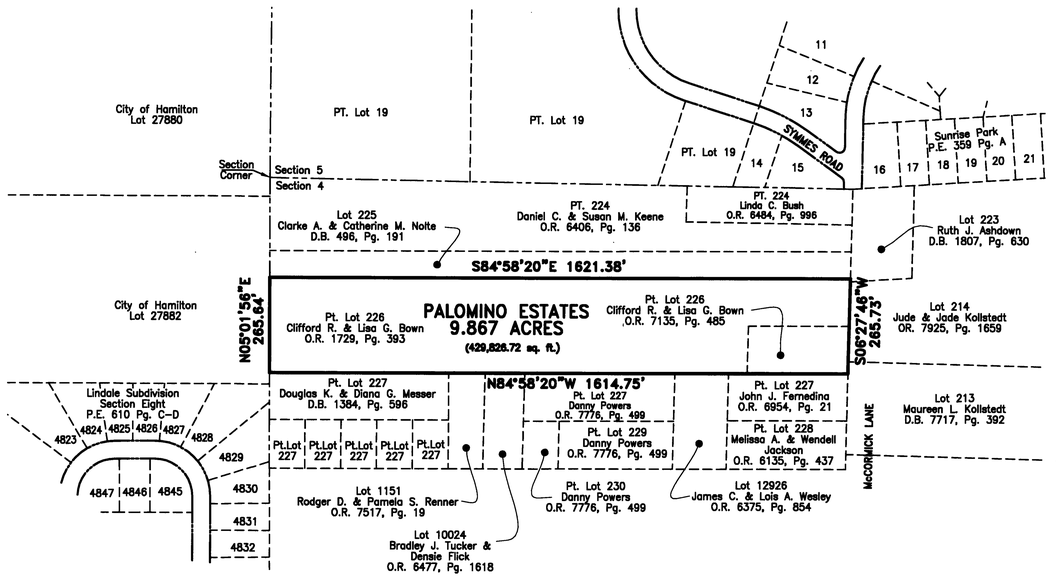
All public improvements included as part of this subdivision shall be constructed and designed in accordance with the current requirements of the Design, Construction and Material Specification Handbook for Fairfield, Ohio and all other applicable ordinances by the City of Fairfield.

The streets shall be constructed within one year from the date the plat is approved by the Planning Commission of the City of Fairfield and shall be maintained and kept in repair for one year from the date the constructed streets are approved by the City Council.

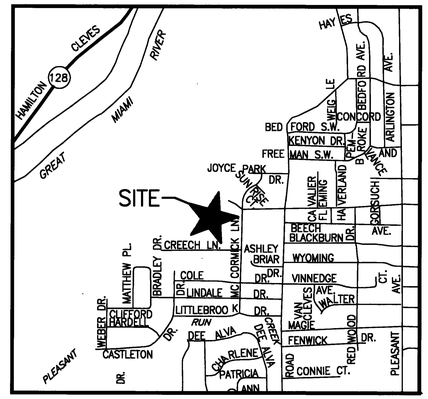
The lots are numbered from 13917 to 13925 inclusive and shall be subject to the protective covenants and restrictive provisions as set forth in Official Records _____, Page _____ of the Butler County, Ohio records.

Roof drains, foundation drains, and other clean water connections to the sanitary sewer system are prohibited.

Image ID: 0000078643A5 Type: OFF
Recorded: 10/21/2011 at 03:07:53 PM
Fee Amt: $172.80 Page 1 of 2
Workflow# 0000111186-0001
Butler County, Ohio
Dan Crank COUNTY RECORDER
File# 2011-00042367
BK 8378 PG 1951



PROPERTY MAP



VICINITY MAP

NOT TO SCALE

BENCHMARK

Mag Nail at the Edge
of Pavement of McCormick Lane
Elevation=577.18'

NOTES:

1. Basis of Bearings: State Plane Coordinate System (NAD 1983), Ohio South Zone 3402

2. References: Plat Envelope 601, Page A
Plat Envelope 610, Page C-D
Survey Volume 44, Page 67
Survey Volume 1, Page 206
Survey Volume 21, Page 181
Survey Volume 6, Page 74
Survey Volume 4, Page 28
Survey Volume 18, Page 196
Survey Volume 37, Page 11

3. Lines of occupation where they exist generally agree with boundary lines unless otherwise shown on plat.

4. All monumentation is in good condition unless otherwise shown.

OWNERS

Cliff Bown
CLIFF BOWN

Lisa Bown
LISA BOWN

In witness whereof, we have unto set our hand on this 30 day of September A.D., 2011.

Owner
Bown Enterprises, Inc.
Cliff Bown President
Cliff Bown, President

STATE OF OHIO S.S.

The foregoing instrument was acknowledged before me this 30 of September AD., 2011 by Cliff Bown, on there behalf.

Jennifer L Koval
Notary Public, State of Ohio
8-23-12
My Commission Expires

JENNIFER L. KOVAL
Notary Public, State of Ohio
My Commission Expires Aug 23, 2012

In witness whereof, we have unto set our hand on this _____ day of _____ A.D., 20____.

Approved by the planning Commission of the City of Fairfield, Ohio, this 14TH day of July A.D., 2012.

by: Terry L. Dulby | TB
President

Entered for Transfer October 21 A.D., 2011.
Transferred October 21 A.D., 2011.

Roger Reynolds by: Rachel Sanders
Auditor, Butler County, Ohio Deputy

Filed for Record October 21, 2011 at 3:07 P.M.
Recorded October 21, 2011 Pages 2
Plat Envelope 8378 Pages 1951-1952

Danny N Crank by: Lisa Hyatt
Recorder, Butler County, Ohio Deputy

File 2011-00042367 Fee $ 172.80

OWNER/ DEVELOPER
CLIFF AND LISA BOWN
890 ABBOTT DRIVE
FAIRFIELD, OH 45014
(513) 309-4475

ENGINEERS/ SURVEYORS
BAYER BECKER
6900 TYLERSVILLE ROAD
SUITE A
MASON, OHIO 45040
PH: 513-336-6600
FAX: 513-336-9365

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Item | Revision Description | Date | Drwn | Chk:

N

0 200' 400'
SCALE 1" = 200'

PALOMINO ESTATES
PART LOT #226 AND LOT #226
SECTION 4, TOWN 1, RANGE 2
CITY OF FAIRFIELD
BUTLER COUNTY, OHIO
RECORD PLAT

bayer becker
engineers • architects • planners
landscape architects • surveyors
www.bayerbecker.com
6900 Tylersville Rd., Suite "A"
Mason, OH 45040 - 513.336.6600

Drawing: RP03059
Drawn by: B.B.
Checked By: J.O.L.
Issue Date: 04/26/10
Sheet: 1/2

Plot time: May 17, 2010 - 1:48pm
Drawing name: J:\2003\03059\RP03059.dwg - Layout Tab: Sheet 1

OR 8378 PG 1952

Image ID: 000007954346 Type: OFF
Page 2 of 2
File# 2011-00042367
BK 8378 PG 1952

I hereby state to the best of my knowledge, information and belief that the accompanying plat is the correct return of a survey made under my direction for "PALOMINO ESTATES", monuments will be set and the subdivision Ordinance No. 122–87 of the City of Fairfield, Butler County, Ohio has been complied with to the best of my knowledge.

5-19-10

Jeffrey O. Lambert, P.S.
Registered Surveyor #7568 in Ohio

STATE OF OHIO
JEFFREY O. LAMBERT
7568
REGISTERED
PROFESSIONAL SURVEYOR

LEGEND

- *Proposed Spike*
- *Proposed Mag Nail*
- *Proposed 1" Iron Pin*
- *Proposed 5/8" Iron Pin*
- *Found 1/2" Iron Pin*
- *Found 5/8" Iron Pin*
- *Found 2"X2" Concrete Monument*
- *E. Easement*
- *Dr.E. Drainage Easement*
- *B.L. Building line*
- *U.&Dr.E. Utility and Drainage Easement*
- *U.E. Utility Easement*
- *100 YR.DR.RT. 100 Year Drainage Route*
- *M.O.E. Minimum Opening Elevation*
- *M.F.O.E. Minimum Front Opening Elevation*
- *M.R.O.E. Minimum Rear Opening Elevation*

NOTES:

TOTAL CENTERLINE LENGTH FOR PALOMINO COURT = 600.00 L.F.
TOTAL CENTERLINE LENGTH FOR McCORMICK LANE = 265.73 L.F.

TOTAL AREA OF LOTS = 8.860 ACRES
TOTAL RIGHT–OF–WAY TO BE DEDICATED = 1.007 ACRES
TOTAL AREA OF SUBDIVISION = 9.867 ACRES

Lot 225
Clarke A. & Catherine M. Nolte
D.B. 496, Pg. 191

S84°58'20"E 1621.38'
539.96'

Section Line

N05°01'56"E 265.64'
265.64'

City of Hamilton
Lot 27882

13925
4.529 Ac.

Match Line (See Below)

482.44'
N84°58'20"W
1614.75'

4828
Lindale Subdivision
Section Eight
P.E. 610 Pg. C–D

Section 10
Section 4

Pt. Lot 227
Douglas K. & Diana G. Messer
D.B. 1384, Pg. 596

PT. 224
Daniel C. & Susan M. Keene
O.R. 6406, Pg. 136

Lot 225
Clarke A. & Catherine M. Nolte
D.B. 496, Pg. 191

Lot 223
Ruth J. Ashdown
D.B. 1807, Pg. 630

S84°58'20"E 1621.38'
539.96' 8.56' 145.21' 145.21' 211.55' 104.50' 100.00' 100.00' 100.00' 138.94' 36.01'

Match Line (See Above)

Flood Zone Boundary
N69°06'41"E 65.14'
N06°18'26"E 231.34'

FLOOD ZONE "A"

30'U.&Dr.E.
10'U.&Dr.E.
N41°26'50"W 327.85'
100 YR.DR.RT.

M.R.O.E. =573.0
M.F.O.E. =575.9

Flood Zone Boundary
N41°26'50"W 269.37'

FLOOD ZONE "B"

M.R.O.E. =573.0
13923
0.596 Ac.

M.R.O.E. =573.0
13922
0.459 Ac.

N41°26'50"W (NR) 225.25'

B.L. 100.00'
71.40'
60.97'
50.39'
41.15'
47.20'
87.12'
N84°58'20"W (NR) 87.22'
N84°58'20"W (NR) 195.28'
100 YR.DR.RT.
10'U.&Dr.E.
15'U.E.
41.49'
51.67'

13924
0.813 Ac.

M.F.O.E. =575.9
M.R.O.E. =573.0
13925
4.529 Ac.

N05°01'40"E (NR) 157.41'
N05°01'40"E 200.00'
40'B.L.
29.76' R=35' 40.12'
R=50'
N05°01'40"E 25.00'
25'U.E.
53.23'

M.F.O.E. =576.2
M.R.O.E. =574.0
13921
0.461 Ac.

M.F.O.E. =576.2
M.R.O.E. =574.0
13920
0.459 Ac.

M.O.E. =575.0
13919
0.459 Ac.

M.O.E. =576.0
13918
0.459 Ac.

13917
0.625 Ac.

18'U.E.
185.43'
R=15' 23.19'
McCORMICK LANE
S06°27'46"W 265.73'
225.07'
36' R/W

20'U.E.
15'U.E.
119.30'

PALOMINO COURT
N84°58'20"W 600.00'
50' R/W
R=15' 24.20'
36.01'
24.96'

482.44'
N84°58'20"W 1614.75'
864.35' (B.L.)
1578.74'
U.&Dr.E.
547.98'

Lot 214
Jude & Jade Kollstedt
OR. 7925, Pg. 1659

Lot 213
Maureen L. Kollstedt
D.B. 7717, Pg. 392

Pt. Lot 227
Douglas K. & Diana G. Messer
D.B. 1384, Pg. 596

Lot 1151
Rodger D. & Pamela S. Renner
O.R. 7517, Pg. 19

Lot 10024
Bradley J. Tucker & Denise Flick
O.R. 6477, Pg. 1618

Pt. Lot 227
Danny Powers
O.R. 7776, Pg. 499

Lot 12926
James C. & Lois A. Wesley
O.R. 6375, Pg. 854

Pt. Lot 227
John J. Fernedina
O.R. 6954, Pg. 21

N

0 50' 100'
SCALE 1" = 50'

Item	Revision Description	Date	Drwn:	Chk:

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PALOMINO ESTATES

PART LOT #226 AND LOT #226
SECTION 4, TOWN 1, RANGE 2
CITY OF FAIRFIELD
BUTLER COUNTY, OHIO

RECORD PLAT

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engineers • architects • planners
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6900 Tylersville Rd., Suite "A"
Mason, OH 45040 • 513.336.6600

Drawing: RP03059
Drawn by: B.B.
Checked By: J.O.L.
Issue Date: 04/26/10
Sheet: 2/2

Plot time: May 17, 2010 – 1:47pm
Drawing name: J:\2003\03059\RP03059.dwg – Layout Tab: Sheet 2

ORDINANCE NO. _____

ORDINANCE TO AUTHORIZE THE RELEASE OF THE MAINTENANCE BOND AND ACCEPT THE PUBLIC IMPROVEMENTS FOR PALOMINO ESTATES SUBDIVISION.

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. The maintenance bond for Palomino Estates subdivision is hereby released and the City Manager is hereby authorized to take the necessary steps to cancel the same.

Section 2. The Council of the City of Fairfield, Ohio does by this ordinance accept the public improvements for Palomino Estates subdivision.

Section 3. This ordinance shall take effect at the earliest period allowed by law.

Passed _____ _____
Mayor's Approval

Posted _____

First Reading _____ Rules Suspended _____

Second Reading _____

Third Reading _____

ATTEST:

_____
Clerk of Council

This is to certify that this Ordinance has been duly published by posting and summary publication as provided by Charter.

_____
Clerk of Council

Active Clients\City of Fairfield\Ordinances\2020\Palomino Estates-Ord

Attachment: Palomino Estates-Ord [Revision 1] (1598 : Palomino Estates (Palomino Court) Public Acceptance)

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Ben Mann,
Submitting Department: Public Works

Subject:
Electric Vehicle Charging Station Grant Application

Legislation Title:
Ordinance to authorize the City Manager to execute the Electric Vehicle Charging Station Grant Application and Agreement with the Ohio Environmental Protection Agency (OEPA) for the Fairfield Community Arts Center and declaring an emergency.

Recommendation:
It is recommended that City Council authorize the preparation of legislation, with rules suspension and emergency provision, authorizing the City Manager to execute and file the application for financial assistance, and enter into an agreement for a grant to fund the majority portion of the Electric Vehicle (EV) Charging Station Grant Application through the Ohio Environmental Protection Agency (OEPA) for the Fairfield Community Arts Center.

Staff believes the grant has merit and that the installation will help keep the City in touch with developing technologies. The addition of EV charging have the potential to provide support to our local businesses.

Background/Synopsis:

It is necessary for City Council to authorize the City Manager to execute an OEPA grant application for financial assistance.

The City of Fairfield is working towards submitting a grant application for the installation of Electric Vehicle (EV) Charging Stations within the City. If approved, the application will be for one dual charging station at the Community Arts Center within the existing parking lot along Wessel Drive.

This location was selected as it well meets the criteria for which the application will be scored. It is a well-lit, safe location near the heavily travelled Pleasant Avenue (US 127). It is on City property which makes the installation 100% eligible for funding.

The plan at the Community Arts Center is to draw electricity from the building's electrical panel rather than a new dedicated service in order to minimize costs. The Level 2 Dual Port Charger will dispense relatively low amounts of power as well which will keep monthly electric costs to the City low.

This project falls in line with the goals of the Fairfield Forward Comprehensive Plan to promote

environmental sustainability. The plan specifically mentions investigating electric vehicle charging stations.

Financial Impact:

No immediate financial impact.

Emergency Provision Explanation:

The final applications are soon to be considered, therefore a suspension of the rules and emergency provisions are being requested.

Rule Suspension Requested:
Yes

Emergency Provision Needed:
Yes

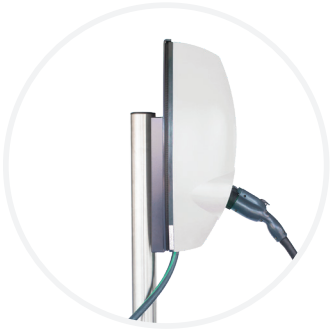
Attachments:
1. CAC EV Charging Site Schematic
2. EV Box - Product Spec
3. Electric Vehicle Charging Station-Ord

Attachment: CAC EV Charging Site Schematic (1616 : Electric Vehicle Charging Station Grant Application)

BusinessLine

business charging solution (networked)

Up to 7.4 kW
OCPP 1.6+ compliant
ENERGY STAR® certified
Durable, low maintenance
Work within your circuit capacity to reduce installation costs
Divide energy evenly between all active sessions with Dynamic Load Balancing
Manage users, control pricing, and collect revenue remotely
Operate multiple charging stations easily and cost-effectively
Reduce consumption during high energy demand times with Smart Scheduling
Participate in Demand Response utility events to avoid peak demand charges
Monitor and settle your charging costs remotely
Initiate charging sessions with either RFID access or mobile app



evbox.us

Attachment: EV Box - Product Spec (1616 : Electric Vehicle Charging Station Grant Application)

Technical features

Charging capacity per connector	Up to 7.4 kW
Connector type	SAE J1772™
Number of connectors	1 or 2
Certification	UL, cUL, CE, ENERGY STAR®
Power output	208V–240V, single phase 32A
Temperature range (°F)	-22°F to +130°F (UL certified for -22°F to +104°F)
Temperature range (°C)	-30°C to +55°C (UL certified for -30°C to +40°C)
Humidity (non-regulating)	Max. 95%
Authorization	Keyfob / RFID card / Mobile app
Status indication	LED ring
Communication	GPS / GSM / UMTS / GPRS modem / Controller with RFID reader
Communication protocol	OCPP 1.2, 1.5, 1.6S and 1.6J
Payment	Via service provider

Physical features

Designed according to	IEC 61851-1 (2010), EC 61851-22 (2002)
Protection	NEMA-3R
Installation standards	EN 1010, IEC 61851-1 (2010), IEC 61851-22 (2002), IEC 60364-4-41 (2007), EN 62196-1 (2003), EN 60335-1 (2012), AC (2014)
Housing	Polycarbonate
Dimensions (in)	10 x 8 x 24 in (L x W x H) BusinessLine Single 10 x 16 x 24 in (L x W x H) BusinessLine Double
Dimension (mm)	255 x 205 x 600 mm (L x W x H) BusinessLine Single 255 x 410 x 600 mm (L x W x H) BusinessLine Double
Weight (lbs)	35 lbs (max.) BusinessLine Single 60 lbs (max.) BusinessLine Double
Weight (kg)	16 kg (max.) BusinessLine Single 28 kg (max.) BusinessLine Double
Mounting	Wall / Pole / Retractor system (for two ports on a retractor, choose two BusinessLine Single units)
Standard colors	White (RAL 9016), Dark grey (RAL 7016), Blue (RAL 5017)
Cable (ft)	18 or 25 foot cable (SAE J1772)
Cable (m)	6 or 8 meter cable (SAE J1772)

Who we are

We are the industry leader in EV charging stations, with over 60,000 installed in over 45 countries. EVBox provides the most reliable EV stations and network services for every location — from homes to businesses and highways.

What we offer

Our charging stations come with a wide array of energy management solutions. Smart Charging features like peak shaving and load balancing ensure your energy is used in the most efficient and cost-effective way possible.

How we are different

We believe you should be free to offer charging your way. Thanks to interoperability, you can choose between our multiple network options, or start un-networked and upgrade later — 100% future-proof.

Why we do it

Our goal is to advance electric mobility by giving EV drivers a place to charge — wherever they are. Transportation accounts for over 25% of global CO2 emissions, which is why we need to make the transition to EV a seamless one.

we are EVBOX

60,000+	700+	45+	36M+
charging points worldwide	fast charging points worldwide	countries equipped	kWh charged

The present document is drawn up by way of information only and does not constitute an offer binding upon EVBox. EVBox has compiled the contents of this document to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications and performance data contain average values within existing specification tolerances and are subject to change without prior notice. Prior to ordering, always contact EVBox for the latest information and specification. EVBox explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this document.
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Attachment: EV Box - Product Spec (1616 : Electric Vehicle Charging Station Grant Application)

ORDINANCE NO. _____

ORDINANCE TO AUTHORIZE THE CITY MANAGER TO EXECUTE THE ELECTRIC VEHICLE CHARGING STATION GRANT APPLICATION AND AGREEMENT WITH THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OPEA) FOR THE FAIRFIELD COMMUNITY ARTS CENTER AND DECLARING AN EMERGENCY.

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. The City Manager is hereby authorized to execute the Electric Vehicle Charging Station Grant Application and Agreement with the Ohio Environmental Protection Agency (OEPA) for the Fairfield Community Arts Center in accordance with the application and agreement on file in the office of the City Manager.

Section 2. This Ordinance is hereby declared to be an emergency measure necessary for the urgent benefit and protection of the City and its inhabitants for the reason that final applications are to be considered soon by the OEPA; wherefore, this ordinance shall take effect immediately upon its passage.

Passed _____ _____
Mayor's Approval

Posted _____

First Reading _____ Rules Suspended _____

Second Reading _____ Emergency _____

Third Reading _____

ATTEST:

_____
Clerk of Council

This is to certify that this Ordinance has been duly published by posting and summary publication as provided by Charter.

_____
Clerk of Council

Active Clients\City of Fairfield\Ordinances\2020\Electric Vehicle Charging Station-Ord

Attachment: Electric Vehicle Charging Station-Ord (1616 : Electric Vehicle Charging Station Grant Application)

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Ben Mann,
Submitting Department: Public Works

Subject:
Ohio Department of Transportation (ODOT) Safety Grant Application for Route 4/Seward Intersection

Legislation Title:
Ordinance to authorize the City Manager to execute and file the application for financial assistance and enter into an agreement with ODOT for a grant to fund a major portion of the Route 4/Seward Road Improvement Project and declaring an emergency.

Recommendation:
It is recommended that City Council authorize the preparation of legislation, with rules suspension and emergency provision, authorizing the City Manager to execute and file the application for financial assistance, and (if successful) enter into an agreement with ODOT for a grant to fund a major portion of the Route 4/Seward Road Improvement Project.

Background/Synopsis:

It is necessary for City Council to authorize the City Manager to execute a grant application with ODOT for financial assistance for the Route 4 & Seward Road Improvement Project. The project would include some work on Route 4 and significant work along Seward Road between Route 4 and Fairfield Business Drive. Work on Route 4 will include lengthening the southbound right turn lane onto Seward (in front of the Arby's). Work on Seward Road would include widening to allow a dedicated double left onto southbound Route 4 and access management of existing drive openings. There would be significant right of way impacts to the southeast corner property which is currently vacant.

The intersection of Route 4 and Seward is a top priority intersection in the City in terms for reducing accidents and resultant injuries. This project will address capacity and safety issues by making a significant change to lane utilization as well as overall improvements to the traffic signal.

This project will also help facilitate future development on Seward Road and mitigate impacts from resultant increases in traffic (particularly truck traffic).

Staff began looking at this with our consultant (Choice One) early in the year and after preliminary discussion with ODOT District 8, we believe this project is worthy of consideration by ODOT's review committee.

23.4% of crashes between 2017-2019 were injury related. There were 64 total accidents in those three years.

Pedestrian improvements will be made as part of this project in conformance with the recently developed Fairfield Connects plan.

If approved, ODOT would be funding approximately 90% of eligible costs and the City's portion (as well as contingency) would be approximately $563,783. The estimated total cost of engineering, construction, and right-of-way for this project is $3,100,806.

If awarded, engineering would commence in 2021, right of way would be purchased in 2022-2023, and construction would likely begin in 2024.

Attached are a vicinity map, crash data, and a concept plan for the improvements.

Financial Impact:

No immediate financial impact.

Emergency Provision Explanation:

The final application is due September 24, therefore a suspension of the rules and emergency provisions are being requested.

Rule Suspension Requested:
Yes

Emergency Provision Needed:
Yes

Attachments:
1. BUT-SR4-1.40 Safety Study Council Letter Attachments
2. ODOT-Ord

BUT-SR4-1.40 Project Location

Attachment: BUT-SR4-1.40 Safety Study Council Letter Attachments (1622 : Ohio Department of

2. Crash Data

Crash Data Summaries

Crash reports from January 1, 2017, through December 31, 2019, were obtained from the ODOT's Transportation Information Mapping System (TIMS). During this three-year span, 64 crashes occurred within the study area as follows in Table 2.

Table 2 – Crashes by Year

Year	Number of Crashes
2017	23
2018	18
2019	23
Total	**64**

Of the total crashes, 23% (fifteen) resulted in injury. The most prominent type of crashes were rear end with 33% (twenty-one), followed by 27% (seventeen) angle crashes, 17% (eleven) sideswipe passing crashes, and 16% (ten) left turn crashes. The highest number of crashes occurred on Fridays with 25% (sixteen), followed by Tuesdays and Mondays with 19% (twelve). Most of the crashes occurred in daylight (83%) and with dry conditions (78%).

After reviewing the crash data for this study area, the following observations and trends were compiled:

- Contributing factor for 25% (sixteen) of the crashes was following too closely.
- Contributing factor for 23% (fifteen) of the crashes was failure to yield.

Most crashes occurred during the day on dry pavement under no adverse weather conditions, so weather, pavement condition, and lighting do not appear to be a factor in the crashes. The crashes peaked during the hours between 11:00AM to 5:00PM. Figure 3 (page 8) illustrates the Collision Diagram.

A review of crash data yielded a total of 64 crashes within the study limits during a three-year period between 2017 and 2019. The following crash types and conditions are overrepresented at the study location compared to the statewide averages for signalized urban four-leg intersection locations.

Table 3 – Safety Issues

	Study Location	Statewide Averages
Angle Crashes	26.6%	12.9%
Sideswipe-Passing Crashes	17.2%	10.8%
Pedestrian Injury Crashes	6.7%	4.5%
Total Crashes	**64**	**-**

Attachment: BUT-SR4-1.40 Safety Study Council Letter Attachments (1622 : Ohio Department of Transportation (ODOT) Safety Grant

Detailed crash data and related graphs are included in Appendix A; however, an overview is shown on below is Figure 2. The crash reports are available upon request.

Figure 2: Crash Overview

CRASH_SEVERITY	Number	%
Injury Crash	15	23.4%
Property Damage Crash	49	76.6%
Grand Total	64	100.0%

DAY_OF_WEEK	Number	%
Friday	16	25.0%
Tuesday	12	18.8%
Monday	12	18.8%
Thursday	9	14.1%
Wednesday	7	10.9%
Saturday	6	9.4%
Sunday	2	3.1%
Grand Total	64	100.0%

HOUR_OF_DAY	Number	%
5	1	1.6%
6	2	3.1%
7	3	4.7%
8	2	3.1%
9	2	3.1%
10	3	4.7%
11	7	10.9%
12	5	7.8%
13	7	10.9%
14	5	7.8%
15	5	7.8%
16	7	10.9%
17	5	7.8%
18	2	3.1%
19	2	3.1%
20	2	3.1%
21	3	4.7%
22	1	1.6%
Grand Total	64	100.0%

ROAD_CONDITION	Number	%
Dry	50	78.1%
Wet	14	21.9%
Grand Total	64	100.0%

TYPE_OF_CRASH	Number	%
Rear End	21	32.8%
Angle	17	26.6%
Sideswipe - Passing	11	17.2%
Left Turn	10	15.6%
Backing	2	3.1%
Other Non-Collision	1	1.6%
Head On	1	1.6%
Pedestrian	1	1.6%
Grand Total	64	100.0%

TRAFFIC_CRASH_YEAR	Number	%
2017	23	35.9%
2018	18	28.1%
2019	23	35.9%
Grand Total	64	100.0%

CONTRIBUTING_FACTOR1	Number	%
Following too Close / ACDA	16	25.0%
Failure to Yield	15	23.4%
Other Improper Action	10	15.6%
Improper Lane Change	8	12.5%
Ran Red Light	5	7.8%
Improper Backing	2	3.1%
Left of Center	2	3.1%
Improper Turn	2	3.1%
Swerving to Avoid	1	1.6%
Improper Start From a Parked Position	1	1.6%
Improper Passing	1	1.6%
None	1	1.6%
Grand Total	64	100.0%

LIGHT_CONDITION	Number	%
Daylight	53	82.8%
Dark - Lighted Roadway	6	9.4%
Dawn/Dusk	2	3.1%
Other / Unknown	2	3.1%
Dark - Unknown Roadway Lighting	1	1.6%
Grand Total	64	100.0%

DIRECTION_FROM1	Number	%
South	20	31.3%
North	15	23.4%
West	12	18.8%
East	6	9.4%
Northwest	5	7.8%
Southeast	4	6.3%
Northeast	2	3.1%
Grand Total	64	100.0%

CRASH_MONTH_NBR	Number	%
1	4	6.3%
2	4	6.3%
3	8	12.5%
4	6	9.4%
5	5	7.8%
6	4	6.3%
7	6	9.4%
8	2	3.1%
9	6	9.4%
10	10	15.6%
11	7	10.9%
12	2	3.1%
Grand Total	64	100.0%

Attachment: BUT-SR4-1.40 Safety Study Council Letter Attachments (1622 : Ohio Department of Transportation (ODOT) Safety Grant

SCALE IN FEET
0 25 50 100

SEWARD ROAD
STATE ROUTE 4
SOSSNA DRIVE
FAIRFIELD BUSINESS CENTER

R/W
PROP. RETAINING WALL
PROP. CROSS ACCESS
CLOSE PRIVATE DRIVE
PROP. CROSS ACCESS
PROP. PRIVATE DRIVE
Ex. CULVERT
CLOSE PRIVATE DRIVE
PROP. GUARDRAIL
R/W
Ex. SIGNAL POLE (TBR)
DEMOLISH Ex. BUILDING
Ex. CULVERT
APPRX. Ex. HOTEL DRIVE
40'–10" PIPE
626 SF CONCRETE
R/W

ChoiceOne Engineering

SIDNEY, OHIO 937.497.0200
LOVELAND, OHIO 513.239.8554

SR □ S□□ □RD RO□D □M□RO□□M□□TS
C□T□ OF F□□RF□□LD

REVISIONS:

FILE NAME
CONCEPT
DRAWN BY
ADG
CHECKED BY
MKG
PROJECT NO.
BUTFAI190
DATE
2–17–20
SHEET NUMBER

Attachment: BUT-SR4-1.40 Safety Study Council Letter Attachments (1622 : Ohio Department of Transportation (ODOT) Safety Grant

ORDINANCE NO. _____

ORDINANCE TO AUTHORIZE THE CITY MANAGER TO EXECUTE AND FILE THE APPLICATION FOR FINANCIAL ASSISTANCE AND ENTER INTO AN AGREEMENT WITH ODOT FOR A GRANT TO FUND A MAJOR PORTION OF THE ROUTE 4/SEWARD ROAD IMPROVEMENT PROJECT AND DECLARING AN EMERGENCY.

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. The City Manager is hereby authorized to execute and file the application for financial assistance and enter into an agreement with ODOT for a grant to fund a major portion of the Route 4/Seward Road Improvement Project in accordance with the application and agreement on file in the office of the City Manager.

Section 2. This Ordinance is hereby declared to be an emergency measure necessary for the urgent benefit and protection of the City and its inhabitants for the reason that the final application is due September 24, 2020; wherefore, this ordinance shall take effect immediately upon its passage.

Passed _____ _____
Mayor's Approval

Posted _____

First Reading _____ Rules Suspended _____

Second Reading _____ Emergency _____

Third Reading _____

ATTEST:

_____
Clerk of Council

This is to certify that this Ordinance has been duly published by posting and summary publication as provided by Charter.

_____
Clerk of Council

Active Clients\City of Fairfield\Ordinances\2020\ODOT-Ord

Attachment: ODOT-Ord (1622 : Ohio Department of Transportation (ODOT) Safety Grant Application for Route 4/Seward Intersection)

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Adam Sackenheim,
Submitting Department: Public Utilities

Subject:
Contract with Ferguson Waterworks for water meters and an automated meter reading system

Legislation Title:
Ordinance to authorize the City Manager to enter into a contract with Ferguson Waterworks for water meters and an automated meter reading system, and declaring an emergency.

Recommendation:
It is recommended that City Council authorize the City Manager to enter into a contract with Ferguson Waterworks and appropriate funding in the amount of $250,000.00 for the procurement of water meters and an advanced automated meter reading system. Rules suspension is requested in order to expedite the project.

Background/Synopsis:

The City's Public Utilities Department currently reads about 14,000 water meters each month. Most of these meters are read via "touch-read" technology – which requires a meter reader to physically touch each home or business to collect the usage information. Reading meters in this fashion requires a significant amount of labor and resources. In conjunction with plans to replace most of these water meters in the next few years due to age and end of useful life expectancy, the City also desires to install a City-wide automated meter-reading system. An automated system will allow meter readings to be collected via a radio transmission system that collects all data on a daily basis and imports the data into a metering software program. The software program is used to generate bills and provide data to customers on real-time issues such as leaks.

This capital project includes the upgrade and replacement of 546 water meters in the City's meter-reading route known as 'route 113'. This project also includes the installation and set-up of an automated meter-reading system, as well as billing integration and staff training. This project will serve as a proof of concept / demonstration project to verify the selected metering system functions properly and achieves all City objectives.

Public Utilities staff selected route 113 for this demonstration project because it is one of the City's largest meter-reading routes in both number of customers and geographical area, and the most critical in terms of total metered sales. Route 113 is comprised mainly of commercial and industrial utility customers located in the Seward Road / Port Union Road / Symmes Road area. Staff believes that if this proof of concept project is successful for route 113, then scaling out the same hardware and technology to the rest of the system will be readily achievable. A map showing

route 113 is attached for Council review.

City staff has examined many automated metering system options and manufacturers, and has determined that the Master Meter option is the most appropriate for application in Fairfield. This option includes Master Meter's:

- Allegro AMI (advanced metering infrastructure) Network,
- Harmony Enterprise software for meter data management,
- Multi-jet water meters with integrated end-point transmitters for smaller users, and
- 'Octave' ultra-sonic water meters for large commercial users.

Technical data on these Master Meter components / systems is attached for Council review.

Technical support for utilizing this option in Fairfield includes but is not limited to the following:

- Master Meter meters have built-in end-point transmitters (UTG – under the glass) which eliminate the need for wires and radio transmitter devices on/through building walls and structures; Master Meter's UTG technology is only one of its kind on the market;
- Master Meter built-in end-points perform most effectively in "inside meter sets" – and 85% of meters in Fairfield are inside sets (as opposed to exterior "pit" settings);
- Master Meter's AMI system utilizes a fixed base platform with FCC-licensed radio frequencies to collect and transmit data without the need for costly cellular service and/or internet-WIFI service;
- Master Meter's software technology is simple and reliable;
- Fairfield's Water Division has been utilizing Master Meter's ultra-sonic 'Octave' water meters for commercial metering applications over the past several years, with great results in terms of meter accuracy and technical support (provided by Master Meter and Ferguson Waterworks); and
- Master Meter's option is cost-effective compared to several other options evaluated by City staff; and the pricing of the Master Meter option is in line with other municipal utility contracts for similar systems, including one for Defiance Ohio (2019).

A proposal for the project package is attached for review, as well as a Sole Source Letter from Master Meter validating that Ferguson Waterworks is the sole authorized distributor of Master Meter equipment in Ohio. Public Utilities staff will install the new meters, and Master Meter / Ferguson technicians will install the AMI base-station and related infrastructure. Master Meter / Ferguson will provide and set up the meter data management software, and also perform staff training and billing integration.

Financial Impact:

A contractual appropriation is requested for Ferguson Waterworks in the amount of $250,000.00. Any additional project costs will be absorbed via utility operating budgets.

Funding for this project is included in the approved 2020-2024 Capital Improvement Program (CIP), under 0WT17 – 'Automated Meter Reading (AMR)', and 0WW14 – 'Automatic Meter

Reading (AMR)'.Replace Major Process Equipment'. Funding sources are the Water Surplus Fund and the Sewer Replacement and Improvement Fund.

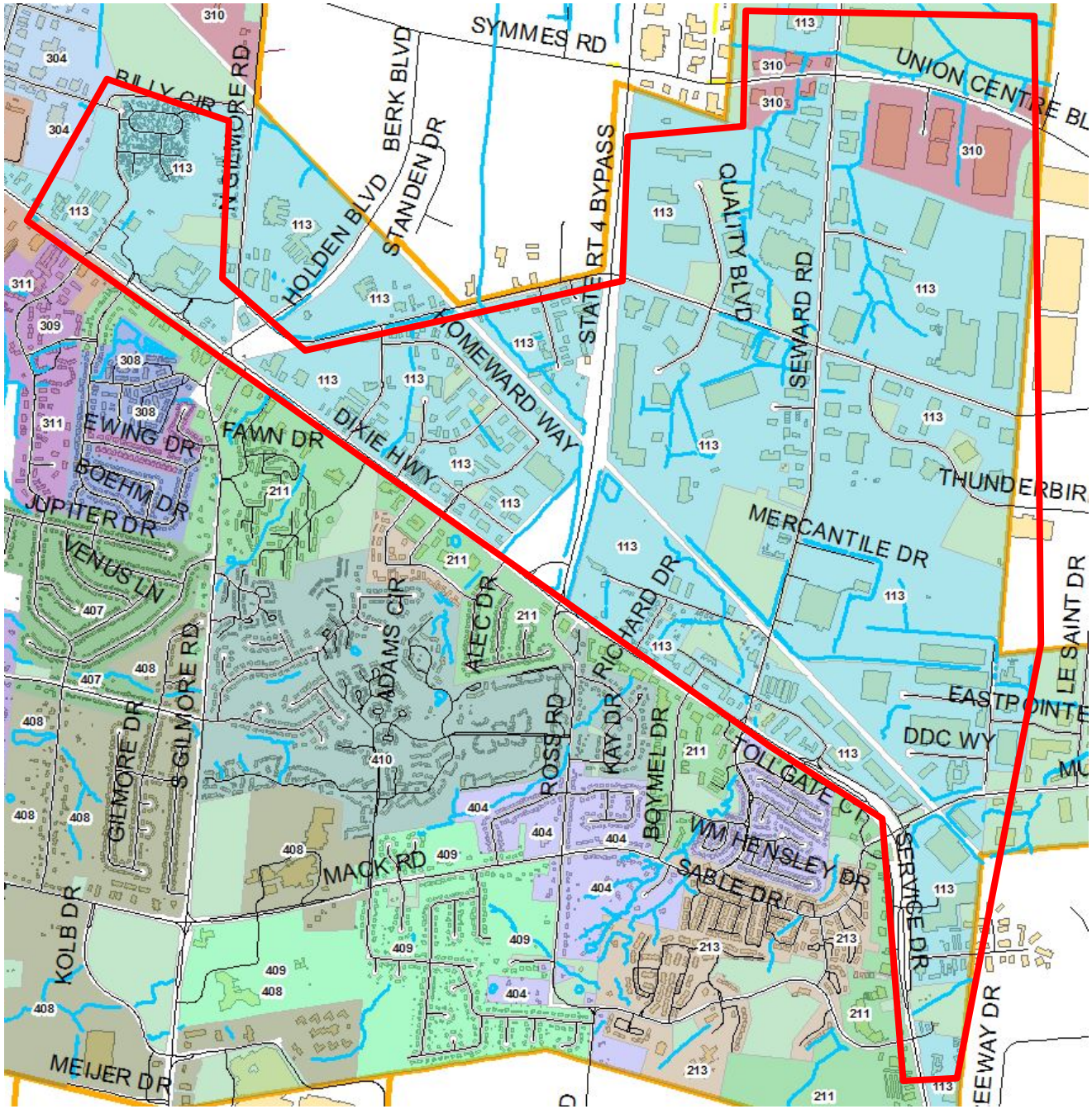
Emergency Provision Explanation:

Emergency provision is required to ensure that the City of Fairfield can accurately measure all water usage in the City's most critical commercial water zone – so that utility revenues can be sustained and so that said revenues can be used to continue to implement critical infrastructure improvement projects. Emergency provision is furthermore required so that the appropriate hardware and software and technology can be procured for this proof of concept demonstration project, and to ensure future systems compatibility. This is a time-sensitive project as the City wishes to implement a system-wide automated metering program within the next few years.

Rule Suspension Requested:
Yes

Emergency Provision Needed:
Yes

Attachments:
1. 113 route image
2. Master-Meter-BLMJ-Residential-Multi-jet-Product-Sheet-v0511.20F
3. Octave-Ultrasonic-CI-Meter-Product-Sheet-v040920f
4. Allegro-Base-Station-and-Repeaters
5. harmony_brochure_v08_01-1
6. Fairfield AMI Proposal 8.17.20
7. MM-Ferguson-SoleDistributorLetter-FairfieldOH
8. Ferguson Waterworks-Ord



Attachment: 113 route image (1614 : Contract with Ferguson Waterworks for water meters

BOTTOM LOAD MULTI-JET METERS

Master Meter's Multi-Jet meter exceeds the AWWA C708 standard. With sensitivity to measure water flowing as low as 1/8 gallon per minute and accuracy unaffected by common particulates and build-up that would freeze other types, you can count on our Multi-Jet technology.

Technical Specifications:

AWWA Standard -Meets or exceeds all sections of AWWA Standard C-708, most recent revision. Compliant with SDWA, NSF ANSI 372 and NSF ANSI 61 standards.

Register - Standard Direct Read, DIALOG® 3G AMR System registers, AccuLinx Encoder, and IP 68 Electrical Output registers available. Together, an integrated and migratable technology environment is attained; direct, proximity (touch), mobile AMR, and Fixed Network AMI.

Register Sealing - Direct Read and DIALOG registers are permanently sealed with a scratch resistant glass lens, stainless steel base and wrap-around gasket to prevent intrusion of dirt or moisture.

Features & Benefits:

- Rugged basket strainer built from advanced polymer materials for superior wear mitigation.
- Proprietary design produces smooth, laminar flow profile for improved accuracy
- Award-winning DIALOG 3G register design houses all vital components - encoder, RF transmitter, battery and antennae - safely within the register's stainless steel and tempered glass enclosure. Free of external wires, components and connections - the #1 cause of field related issues on competitive designs.
- Assures compliance with the Safe Drinking Water Act (SDWA).
- Measures with only one moving part that is hydro-dynamically balanced on a sapphire bearing to preserve accuracy and promote a positive bottom line.
- Exceptional performance in passing entrained solids and operating in environments with high mineral content.
- Clean, elegant measurement design is highly sensitive to leaks and low flow while limiting wear for excellent revenue protection.

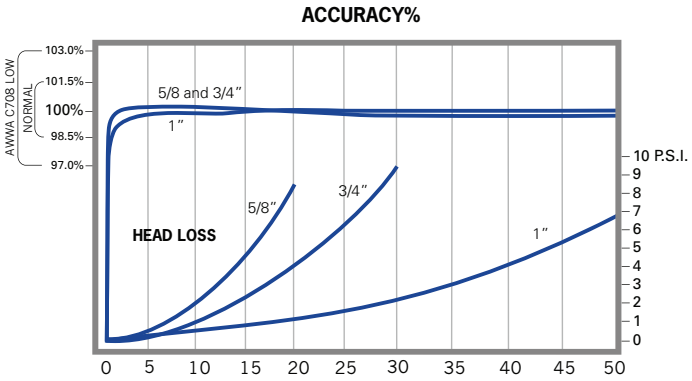
Attachment: Master-Meter-BLMJ-Residential-Multi-jet-Product-Sheet-v0511.20F (1614 : Contract with Ferguson Waterworks for water meters

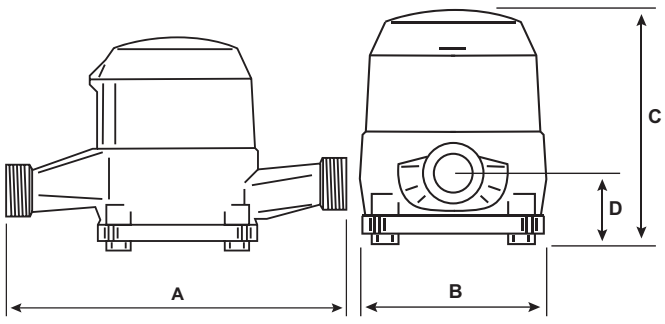
Technical Specs (Cont'd):

- **Register Unit** - Registration available in U.S. gallons, cubic feet or cubic meters.
- **Test Circle** - Large center sweep hand with one hundred (100) clearly marked gradations on the periphery of the dial face (available on Direct Read and DIALOG 3G registers).
- **Design/Operation** - Velocity-type flow measurement. Water that is evenly distributed by multiple converging inlet ports flows past an impeller in the measuring chamber, creating an impeller velocity directly proportional to water flow rate. The meter's register integrates that velocity into totalized flow. An inherent advantage for this design is unparalleled wear mitigation leading to sustained revenues. The register assembly is removable under line pressure permitting seamless, simplified upgrades in reading technology.
- **Strainer** - A rugged, 360-degree advance polymer basket strainer protects the critical measuring element from damage. The unique strainer design smoothes the flow of water entering into the meter creating a laminar flow that is gentle on the meter's internal components. Tough materials operating in a smooth, balanced environment enable the meters to perform more accurately over time. Utilities' investments last longer while capturing more revenue.
- **Measuring Chamber** - The measuring chamber housing and measurement element are built with an advanced synthetic polymer. Measurement surfaces are not wear surfaces, providing sustained accuracy despite the presence of entrained solids in the water. A long life, synthetic sapphire bearing serves as a wear surface with radially balanced water flows. The chamber housing is constructed in two parts to allow access to the impeller. Bottom plates available in Bronze, Cast Iron (CI) or Engineered Plastic.

METER OPERATING CHARACTERISTIC/DIMENSION	*5/8"*	*3/4" x 7-1/2"*	*3/4" x 9"*	*3/4" x 9" x 1"*	*1"*
Flow Rating (gpm)	**20**	**30**	**30**	**30**	**50**
Continuous Flow (gpm)	**15**	**20**	**20**	**20**	**30**
Normal Flow Range (gpm) Accuracy 98.5% - 101.5%	**1-20**	**2-30**	**2-30**	**2-30**	**3-50**
Low Flow (gpm) Accuracy 97% - 103%	**1/4**	**1/2**	**1/2**	**1/2**	**3/4**
Maximum Working Pressure (psi)	**150**	**150**	**150**	**150**	**150**
Maximum Working Temperature (F)	**120**	**120**	**120**	**120**	**120**
Length (A below)	**7-1/2"**	**7-1/2"**	**9"**	**9"**	**10-3/4"**
Width (B below)	**3-5/8"**	**3-5/8"**	**3-5/8"**	**3-5/8"**	**4"**
Height, standard register with lid (C below)	**5"**	**5"**	**5"**	**5"**	**5-1/4"**
Height, bottom to center line (D below)	**1-1/2"**	**1-1/2"**	**1-1/2"**	**1-1/2"**	**1-3/4"**
Weight (lbs)	**3.95**	**4.0**	**4.1**	**4.6**	**5.25**
Packed To Carton	**6**	**6**	**6**	**4**	**4**
Carton Weight (lbs)	**25.1**	**25.4**	**26**	**19.8**	**22.4**

Accuracy and Head Loss Chart





v0511.20F

Attachment: Master-Meter-BLMJ-Residential-Multi-jet-Product-Sheet-v0511.20F (1614 : Contract with Ferguson Waterworks for water meters

OCTAVE® ULTRASONIC METER

Available in sizes 1.5", 2", 3", 4", 6", 8", 10", and 12"

Octave brings the latest in ultrasonic metering technology to Commercial/Industrial (C&I) water meters and puts precise measurement where the real flows exist. An excellent alternative to mechanical compound, single-jet, floating ball, fire-service type and turbine meters, Octave excels at maintaining sustained accuracy for the life of the meter while providing smart AMR capabilities.

Technical Specifications:

Working Pressure - 175 PSI

Liquid Temperature - 33° - 122 °F

Metrological Characteristics - Meets ANSI/AWWA Standards C715-18, C750-19, ISO 4064 rev. 2014

Configuration - Compact-Display built into unit

Power Source - 2 x D Size Lithium Thionyl Chloride batteries - 10 year warranted life time

Environmental Protection - NEMA 6P+ (IP68+), Ambient operation temp. -13 °F / +131 °F for the display

Display Units - Multi line 12 digit LCD (Programmable USG, Cubic Feet, Cubic Meters, Acre Feet for volume and GPM, Lt/s, or M³/h for rate of flow)

Output - Programmable Encoder, Pulse, 4-20, or Modbus; Optional dual output available in encoder + pulse

Features & Benefits:

- Grade 316 Stainless Steel (2"-8") or Epoxy Coated Ductile Iron (10"-12") body design provides full compliance with ANSI/NSF 372 (AB1953 or NSF61G).
- No moving parts. Minimal flow intrusion. Enduring accuracy.
- Easy to install Floating Flanges on 2"-8" and Integrated Flanges on 10"-12".
- No required strainer.
- Wide beam ultrasonic measurement sensors for high accuracy and reliable operation.
- Industry standard communication protocol for integration with most third-party AMR/AMI systems.
- Active leak, burst, reverse flow, empty pipe, measurement failure, and low battery. LCD also displays rate of flow and water temperature.
- Ruggedized NEMA 6P/IP-68+ construction; fully submersible design.
- Designed to meet standards for both North American and International C&I water meters.
- Optional flow measurements; Forward Only, Net Volume or Alternating Display (Forward and Reverse Consumption displayed separately).

Attachment: Octave-Ultrasonic-CI-Meter-Product-Sheet-v040920f (1614 : Contract with Ferguson Waterworks for water meters and an

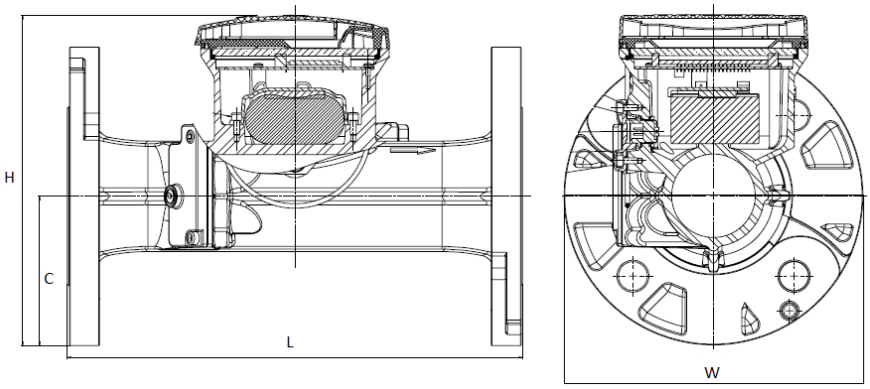
Performance Data & Dimensions

Octave Operating Characteristics and Dimensions	1.5"x13" (40 mm)	2"x10" (50 mm)	2"x15.25" (50 mm)	2"x17" (50 mm)
Safe Maximum Operating Capacity	250 GPM (57 m^3/h)	250 GPM (57 m^3/h)	250 GPM (57 m^3/h)	250 GPM (57 m^3/h)
Normal Operating Range (98.5% - 101.5% Accuracy) *	0.50 – 250 GPM (0.11 – 57 m^3/h)	0.50 – 250 GPM (0.11 – 57 m^3/h)	0.50 – 250 GPM (0.11 – 57 m^3/h)	0.50 – 250 GPM (0.11 – 57 m^3/h)
Extended Low Flow (97% - 103% Accuracy)	0.25 GPM (0.06 m^3/h)	0.25 GPM (0.06 m^3/h)	0.25 GPM (0.06 m^3/h)	0.25 GPM (0.06 m^3/h)
Length	13" (330 mm)	10" (250 mm)	15.25" (390 mm)	17" (432 mm)
Width	5-3/4" (146 mm)	5-3/4" (146 mm)	5-3/4" (146 mm)	5-3/4" (146 mm)
Height	6-3/4" (172 mm)	6-3/4" (172 mm)	6-3/4" (172 mm)	6-3/4" (172 mm)
Height from Center Pipe	2-1/8" (54 mm)	2-1/8" (54 mm)	2-1/8" (54 mm)	2-1/8" (54 mm)
Weight	20 lbs (9 kg)	15 lbs (7 kg)	22 lbs (10 kg)	24 lbs (11 kg)

* In the water temperature of 45° to 85° F (7° to 30° C), meter consumption is accurately measured at:
- +/- 1.5% in the Normal Operating Range
- +/- 5% in the Extended Low Flow

Octave Operating Characteristics and Dimensions	3" (80 mm)	4" (100 mm)	6" (150 mm)	8" (200 mm)	10" (250 mm)	12" (300 mm)
Safe Maximum Operating Capacity	500 GPM (114 m^3/h)	1,000 GPM (227 m^3/h)	1,600 GPM (363 m^3/h)	2,800 GPM (636 m^3/h)	5,500 GPM (1,250 m^3/h)	5,500 GPM (1,250 m^3/h)
Normal Operating Range (98.5% - 101.5% Accuracy) *	1 – 500 GPM (0.23 – 114 m3/h)	1.5 – 1,000 GPM (0.34 – 227 m^3/h)	3 – 1,600 GPM (0.68 – 363 m^3/h)	5 – 2,800 GPM (1.5 – 636 m^3/h)	14 – 5,500 GPM (3.2 – 1,250 m^3/h)	14 – 5,500 GPM (3.2 – 1,250 m^3/h)
Extended Low Flow (97% - 103% Accuracy)	0.5 GPM (0.11 m^3/h)	0.75 GPM (0.17 m^3/h)	2 GPM (0.45 m^3/h)	4 GPM (0.9 m3/h)	8 GPM (1.8 m3/h)	8 GPM (1.8 m3/h)
Length	12" (305 mm)	14" (356 mm)	18" (457 mm)	20" (508 mm)	17-3/4" (451 mm)	19-3/4" (502 mm)
Width	7-1/2" (190 mm)	9" (229 mm)	11" (280 mm)	13-1/2" (343 mm)	16" (406 mm)	19-3/4" (502 mm)
Height	8-1/2" (216 mm)	9-7/8" (250 mm)	10-7/8" (276 mm)	12-7/8" (327 mm)	16-1/2" (419 mm)	19-3/4" (502 mm)
Height from Center Pipe	3-1/2" (90 mm)	4-1/2" (115 mm)	5-1/8" (130 mm)	6-3/8" (162 mm)	8" (203 mm)	9-7/8" (251 mm)
Weight	23 lbs (10.5 kg)	35 lbs (16 kg)	51 lbs (23 kg)	78 lbs (35 kg)	150 lbs (68 kg)	210 lbs (96 kg)

* In the water temperature of 45° to 85° F (7° to 30° C), meter consumption is accurately measured at:
- +/- 1.5% in the Normal Operating Range
- +/- 5% in the Extended Low Flow



NOTE — For Performance charts please see **Engineering Document - Octave | Version 10.17**

v0409.20F

Attachment: Octave-Ultrasonic-CI-Meter-Product-Sheet-v040920f (1614 : Contract with Ferguson Waterworks for water meters and an

Attachment: Allegro-Base-Station-and-Repeaters (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

MASTER METER

allegro™

BASE STATION AND REPEATER

AMI 2-Way Fixed Network

The Allegro Advanced Metering Infrastructure (AMI) Network is comprised of a long range radio base station, peripheral repeaters to extend range into low population geographies, and individual meter endpoint transceivers.

Master Meter's Allegro AMI system is a robust RF communication network that interfaces between a water utility and their residential and business customers. The tower based system operates in the licensed 450MHz – 470MHz frequency spectrum offering superior reliability and extensive geographic reach.

The plug-and-play nature of the system means that installation is easy and intuitive as the Endpoints and repeaters will automatically match the base station's pre-programmed frequency pairs and with the backhaul connected via cellular network, interval data will be transmitted along a reliable and stable path.

The 2-way system offers a rich set of security features and is end-to-end upgradable. Also, the proprietary RF protocol incorporates a time-synced system to alleviate network RF collision while providing time-stamped data. The result is the most effective and dependable AMI network available.

Intelligent Interface

The Allegro platform is an intelligent interface to the myriad of systems that utility managers operate today. A comprehensive set of data is collected from the endpoint and transmitted back to the backhaul destination for integration into Customer Information Systems (CIS), Supervisory Control and Data Acquisition Systems (SCADA), Geographic Information Systems (GIS), Enterprise Billing Systems, and various Customer Relationship Management (CRM) software suites. The result is an intelligent water system with actionable high-resolution data analytics capable of supporting any operational need.

Features and Benefits

- Two-way communications
- Time-Synchronized readings
- Multiple backhaul options
- Over-the-air programming / remote firmware updates
- Extensive geographic reach
- End-to-End security
- 15 minute usage / consumption data
- Highest system reliability
- Low RF interference
- Data and events are time stamped
- FCC Compliance
- Highest Tx/Rx link budget
- AMR to AMI Migratable
- Extended lifetime
- Data Storage for redundant transmissions
- UPS Battery Backup
- NEMA weatherproof enclosure options

▸ IMPROVED CUSTOMER SERVICE

Customer perception is increasingly a topic of concern for water utilities. The combination of todays most advanced AMI system and a powerful MDM software suite results in:

- On demand reads
- Improve billing accuracy
- Interactive customer budgeting
- The ability to forecast consumption
- Immediate tamper and theft detection
- Leak Alerts
- Informed rate-based programs
- Customer incentive programs

▸ SUPERVISORY CONTROL

The Allegro system not only provides end-to-end visibility for the water utility, but it also provides multiple dimensions of systems integration to responsibly manage assets and infrastructure from a single interface.

Allegro offers:

- Remote system monitoring
- Priority alarm support
- Self diagnostics
- Remote firmware upgrades
- IP-addressable infrastructure

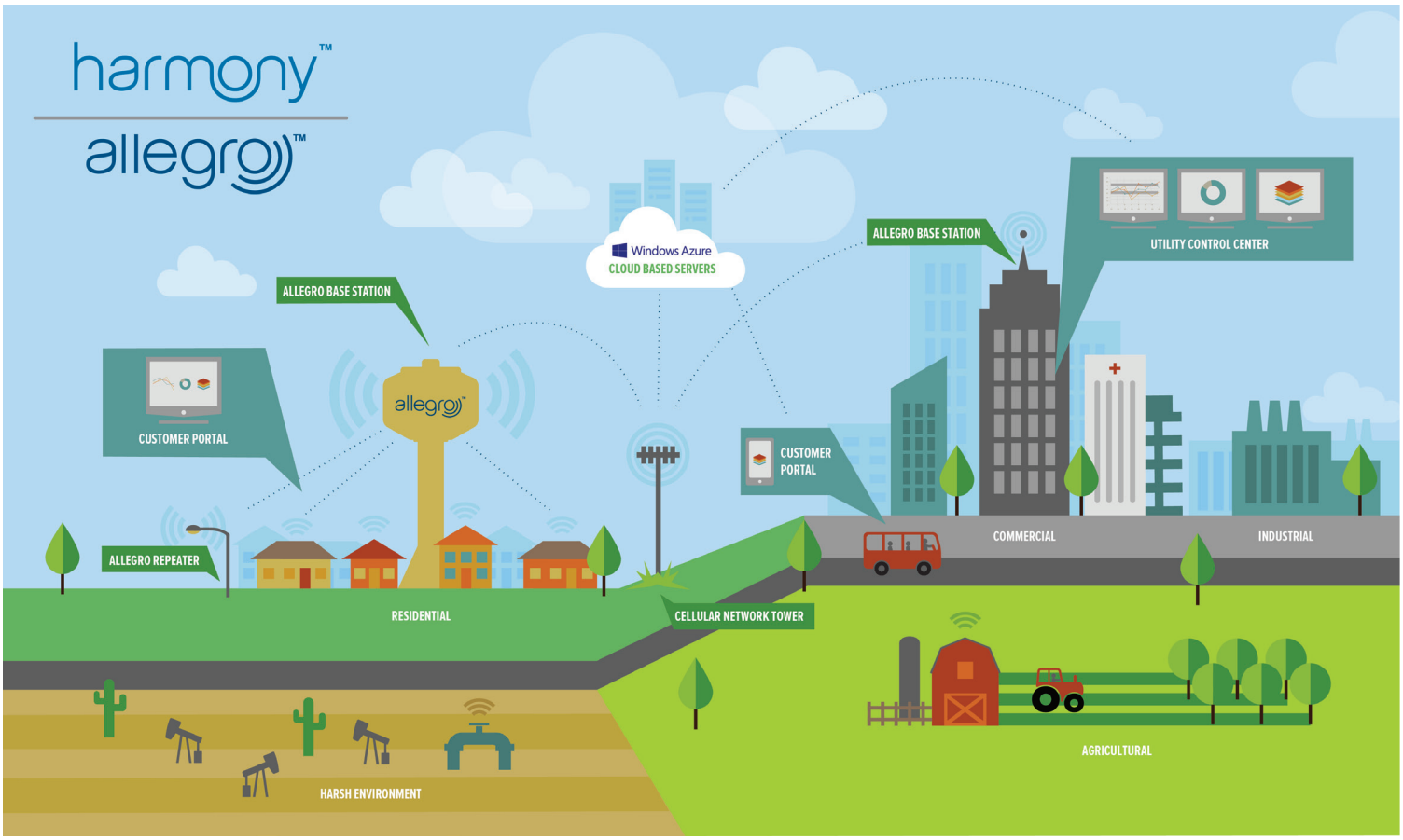
Attachment: Allegro-Base-Station-and-Repeaters (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

Attachment: Allegro-Base-Station-and-Repeaters (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

Architecture

The simplicity found in nature inspired the overarching architectural design for Allegro and Harmony. Maximizing Allegro's RF footprint through efficient use and design of network components, while synchronizing communication between endpoint and collector result in today's most cost-effective AMI system available. Together, Allegro and Harmony allow the utility to analyze, manage, and precisely account for system-wide water consumption, and at the same time empower the rate payer to responsibly and confidently make informed decisions about their personal usage.

AMI is evolving, and Allegro and Harmony is the next big thing.



Contact Us

Master Meter, Inc
101 Regency Parkway
Mansfield, TX 76063

Phone: 800.765.6518
Fax: 817.842.8100
innovate@mastermeter.com

Moving at The Speed of Technology

Master Meter is intent on driving new and innovative ways to manage the vast amount of data flooding into Smart Cities and Utilities. We're a high-service solutions provider specializing in advanced metering, data delivery, and Utility Intelligence (UI) software and our portfolio of new and innovative technology continues to grow in support of a dynamic and rapidly changing global water market. Mindful of a tight and very finite water supply, Master Meter is here to support your conservation efforts, ensuring ample supply for generations to come. Join us.

Specifications

Physical Characteristics		Base Station	Repeater
Dimensions	Height x Width x Depth (in)	35.43" x 43.31" x 11.81	7.87" x 5.91" x 2.36"
Weight		209.44 lbs.	3.31 lbs.
Mounting	Mounting Options	Cabinet or Rack Mount	Pole Mount
Environment		**Base Station**	**Repeater**
Temperature	Operating Temperature	-14° F to 122° F	-14° F to 122° F
Humidity	Maximum Humidity at 65° C	95%	95%
Radio		**Base Station**	**Repeater**
Frequency Band	Licensed Spectrum	450-470MHz	450-470MHz
Rx Sensitivity	Receiver Sensitivity	-120dBm	-120dBm
Tx Output Strength	Transmitter Output Power	45dBm	34dBm
Bandwidth	Channel Bandwidth	6KHz	-
Backhaul Options (WAN)		**Base Station**	**Repeater**
WAN	3G Cellular	Yes	-
Capacity		**Base Station**	**Repeater**
Endpoints	Number of Endpoints Served	50000	1000
Repeaters	Number of Repeaters Served	100	-
Capacity of Read Storage	At 10K Endpoints, 1 Hour Reads	30 Days	-
Power		**Base Station**	**Repeater**
Consumption	Power Consumption	1.5KW	2A
Source Voltage	Input Voltage	110VAC - 240VAC	3.6V
Surge Protection	Cabinet Surge Protection	Internal	Internal
Regulations		**Base Station**	**Repeater**
Cellular Modem	PTCRB, Carrier specific:	AT&T, Sprint, Verizon, Bell Mobility, Telus, Jasper, Vodaphone	-
	FCC Certified	Yes	Yes
	UL, Industry Canada, CE	Yes	-

Attachment: Allegro-Base-Station-and-Repeaters (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

MASTER METER

harmony™

METER DATA MANAGEMENT + DATA ACQUISITION SOFTWARE

Attachment: harmony_brochure_v08_01-1 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

harmony™

METER DATA MANAGEMENT + DATA ACQUISITION SOFTWARE

Harmony Enterprise™ Suite is an open platform, designed to be compatible with nearly every AMI Network on the market today. Its integrated Google® Mapping Tools and advanced Meter Data Management (MDM) features provide an exceptional environment for managing, reporting, and analyzing advanced metering infrastructure and mobile data acquisition systems. Leveraging the Microsoft® Azure™ cloud, Harmony delivers super-fast performance bringing the Internet of Things (IoT) into any sized water utility. Additionally, Harmony is compatible with nearly every billing system on the market and can provide added value and analytics to most Customer Information Systems (CIS), in addition to a wide variety of Asset Management and GIS Software.

Attachment: harmony_brochure_v08_01-1 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

HARMONY ENTERPRISE™ SUITE

METER DATA MANAGEMENT + ANALYTICS

ENGAGING DATA PRESENTMENT

Review system consumption and make sense of it with a wide array of chart and map views. Harmony's Dashboard Overview is "Widget" based for easy customization and graphical display. Analyze system-wide consumption relative to precipitation to better understand environmental impacts on demand and utilize Harmony's "Consumption Cluster" mapping tool for a graphical model of high-and-low consumption regions.

VISIBILITY SNAPSHOT

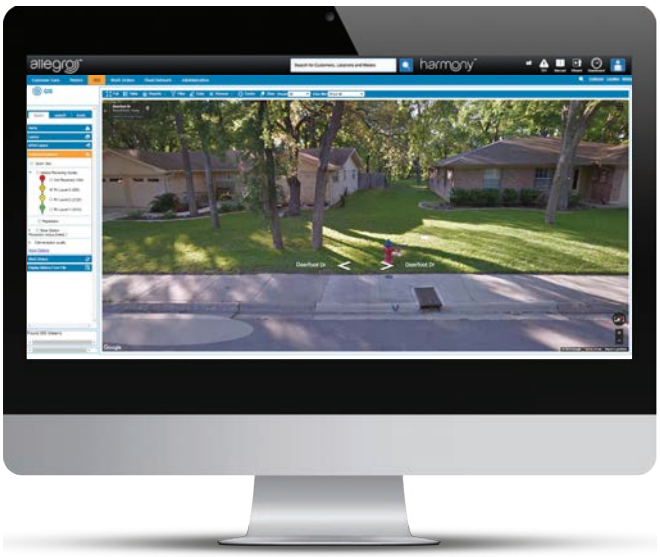
- Simple, scalable AMR > AMI technology migration
- Dynamic 2-way communication with endpoints and field assets
- Scalable, Microsoft Azure™ Cloud hosted software supports any account size
- Harmony supports wide array of 3rd party data integration
- Cross platform SaaS works seamlessly with Windows and Apple environments

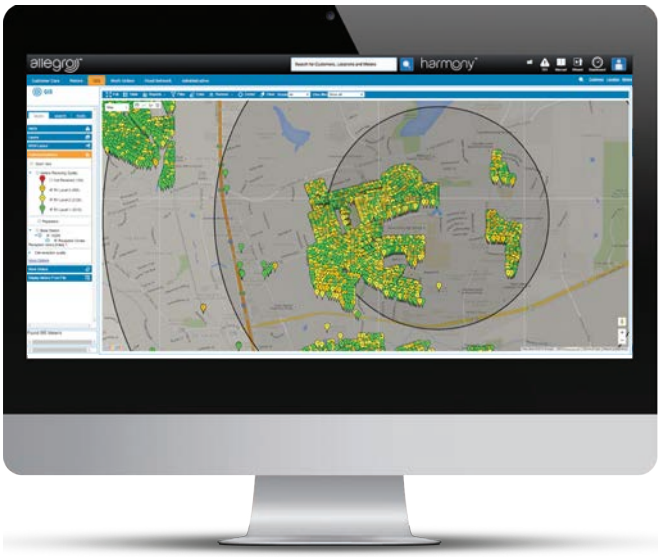
GOOGLE INTEGRATION

Harness the power of Google Maps in Harmony's GIS Module. Mapping tools include: Elevation Measurement, Terrain Elevation Chart, Distance Measurement, and Geo-coordinate Display. Google Streetview™ is also included to provide quick inspection of a service location prior to a truck roll and can also be used as an integrated window on the GIS Map. Create District Metered Zones (DMZ) in a few simple clicks with Harmony's "Polygons" to easily measure water loss.

24/7 MONITORING

With Harmony, both water loss and network performance is monitored in real time. Receive immediate notification of leak alerts and other forms of tamper. Leverage your AMI networks true two-way communication capabilities with On Demand Reads and Data Logging directly from Harmony. Quickly scroll and zoom through the network to view RF performance and health to preemptively manage issues before they become serious.





Attachment: harmony_brochure_v08_01-1 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

HARMONY MOBILE™ SOFTWARE

DATA ACQUISITION

HARMONY'S FLEXIBLE DATA MANAGEMENT

Harmony's broad interoperability allows integration between fixed network data and alerts and drive-by route data. The GPS-based Mapping software means that vehicles and personnel are always connected for asset management and inventory controls. Leverage the Microsoft® Azure™ Cloud Platform for seamless remote communication between Harmony Enterprise Platform and Harmony Mobile™.

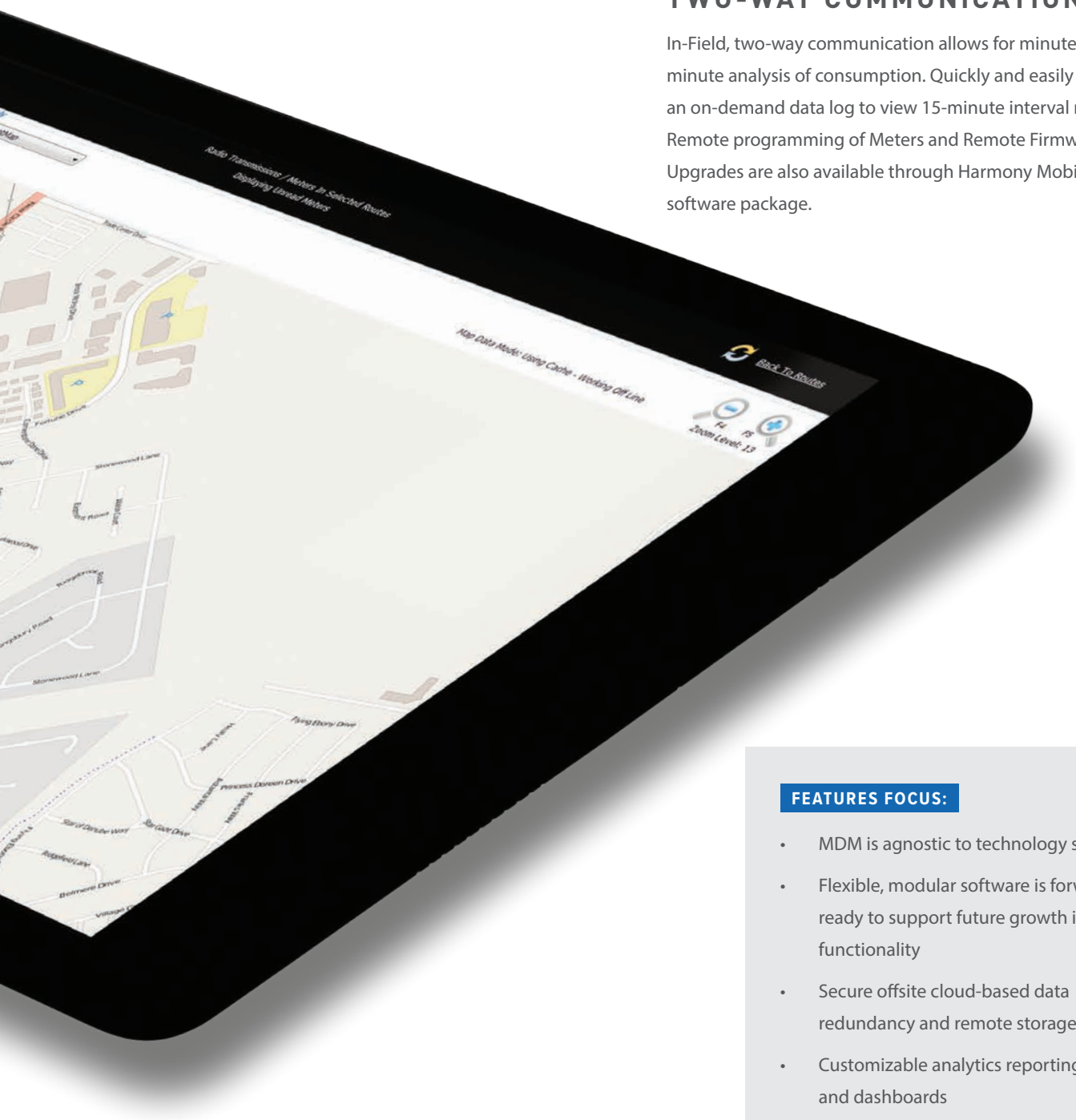
Attachment: harmony_brochure_v08_01-1 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

REVENUE IMPACT ALERTS™

Leak Alerts and Flow Monitoring assist in reclaiming lost revenue from unaccounted for water and right-sizing of meters. In addition, notifications for theft and tamper are relayed back to the Cloud for analysis and actions. Inactive meters are also identified and queued for inspection.

TWO-WAY COMMUNICATIONS

In-Field, two-way communication allows for minute-by-minute analysis of consumption. Quickly and easily request an on-demand data log to view 15-minute interval reads. Remote programming of Meters and Remote Firmware Upgrades are also available through Harmony Mobile's software package.



FEATURES FOCUS:

- MDM is agnostic to technology source
- Flexible, modular software is forward-ready to support future growth in functionality
- Secure offsite cloud-based data redundancy and remote storage
- Customizable analytics reporting and dashboards

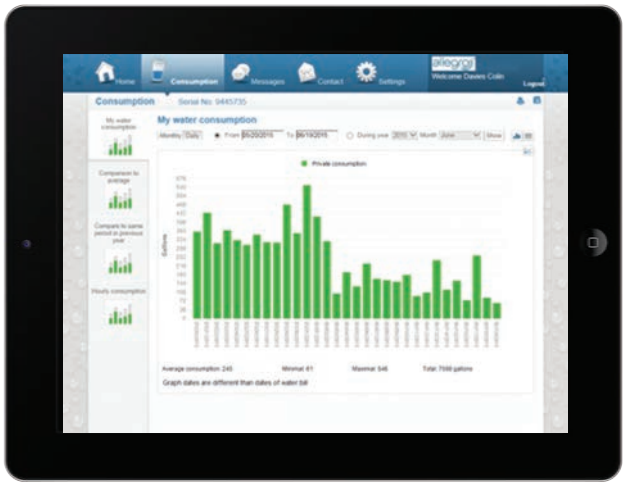
Attachment: harmony_brochure_v08_01-1 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

MY WATER ADVISOR™

CUSTOMER ENGAGEMENT SUITE

WEB PORTAL + SMART PHONE APPS

Place the power of Harmony in the hands of the rate payer, with the My Water Advisor™ customer engagement suite. The online portal allows for convenient access to up-to-date hourly usage data. The chart view allows for daily, monthly, and yearly review of water usage and also shows a comparison to the user's peers for real accountability. This full-featured water portal allows the user to set up alerts for on premises leak detection, over-budget notifications, and also to set vacation periods to be notified of unauthorized usage.



Available in both iOS and Android, the My Water Advisor™ mobile app puts the power of the online portal in the rate payers hands allowing for simple management of their usage via a smart phone.

Attachment: harmony_brochure_v08_01-1 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

Attachment: harmony_brochure_v08_01-1 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

MOVING AT THE SPEED OF TECHNOLOGY™

Master Meter is a high-service solutions provider specializing in advanced digital water metering, data delivery, and Utility Intelligence (UI) software. Master Meter's portfolio of new and innovative smart water technologies continues to expand in support of today's dynamic water utility business environment, and the water department's rapidly evolving role within a Smart City strategic plan.

Attachment: harmony_brochure_v08_01-1 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

MASTER METER

MASTERMETER.COM
101 Regency Parkway, Mansfield, Tx 76063
Toll Free - 800.765.6518 | E-mail - info@mastermeter.com

FERGUSON WATERWORKS

Quotation

Date: 8-17-2020

Customer:		**End User:**	
Company:	Ferguson Waterworks	Job/Utility:	City of Fairfield, OH
Attention:	Adam Sackenheim		Pilot Project / Promo Offer
Address:	5021 Groh Ln.		

Meter / Register Brass Multi-Jet Residential / Commercial:

PRODUCT DESCRIPTION	QTY	UNIT PRICE	AMOUNT
5/8x3/4 BLMJ – Multi-jet w/ Allegro UTG Register Standard Pricing-$262.00 EA—SAVINGS of $3,542.00	253	$248.00	$62,744.00
1” BLMJ – Multi-jet w/ Allegro UTG Register	178 ~~151~~	$356.00	$63,368.00
1-1/2” BLMJ –Multi-jet w/ Allegro UTG Register	52	$618.00	$32,136.00
2” BLMJ – Multi-jet w/ Allegro UTG Register	38	$800.00	$30,400.00
		TOTAL	**$188,648.00**

Octave Ultrasonic Commercial Meters:

PRODUCT DESCRIPTION	QTY	UNIT PRICE	AMOUNT
2” x 17” Octave Polymer w/ Floating Flanges and Pit Module	6	$1,450.00	$8,700.00
3” SS Octave w/ Floating Flanges and Pit Module	3	$3,049.00	$9,147.00
4” SS Octave w/ Floating Flanges and Pit Module	5	$4,001.00	$20,005.00
6” SS Octave w/ Floating Flanges and Pit Module	4	$6,564.00	$26,256.00
Allegro Pit Mount w/ External Antenna 2-pcs	7	$309.00	$2,163.00
		TOTAL	**$ 65,271.00**

Pilot Program:

PRODUCT DESCRIPTION	QTY	UNIT PRICE	AMOUNT
Pilot Program: Including Base Station / Repeaters w/ Install 2- Day Training / Billing Integration / FCC License	1	$50,500.00	$50,500.00
		TOTAL	**$50,500.00**

Promo offer if Purchased by Sept 15, 2020:

PRODUCT DESCRIPTION	QTY	UNIT PRICE	AMOUNT
Pilot Program: Including Base Station /Repeaters / Install 2- Day Training / Billing Integration / FCC License	1	$50,500.00	~~$50,500.00~~
		TOTAL SAVINGS	**$50,500.00**

Project Total w/ Promotional offer:

TOTAL	**$253,919.00**

3845 Groveport Rd
Columbus, OH. 4320
www.Ferguson.com

Attachment: Fairfield AMI Proposal 8.17.20 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

**** 2” SS Octave Lay length Options**:**

PRODUCT DESCRIPTION	QTY	UNIT PRICE	AMOUNT
2” x 10” SS Octave w/ Floating Flanges and Pit Module	1	$1,979.00	$1,979.00
2” x 13” SS Octave w/ Floating Flanges and Pit Module	1	$2,014.00	$2,014.00
2” x 15-1/4”” SS Octave w/ Floating Flanges and Pit Module	1	$2,139.00	$2,139.00
		TOTAL	TBD

Attachment: Fairfield AMI Proposal 8.17.20 (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading

3845 Groveport Rd
Columbus, OH. 4320
www.Ferguson.com

August 31, 2020

City of Fairfield, OH
Attn: Adam Sackenheim
5021 Groh Lane
Fairfield, OH 45014

Ref: Exclusive Distribution

Mr. Sackenheim:

Ferguson Waterworks is currently Master Meter's exclusive distributor in the state of Ohio. All pricing, inquiries and sales opportunities of Master Meter products must be handled through Ferguson Waterworks.

Ferguson Waterworks was selected as our exclusive distributor due to their location and willingness to maintain inventory, which allows them to better service Master Meter customers in that area. They have made a commitment to stocking products for the various customers in the area and to providing ongoing support and the sales effort needed to grow our business.

Exclusive agreements are very common in our industry today due to the complexity of products being sold. The knowledge needed to properly support a product line such as water meters and electronics is essential to servicing our customers. Working exclusively with one distributor in an area makes it easier to properly track the movement of product and is critical to our ability to respond when a problem occurs.

Please feel free to contact me if you should have any questions. Master Meter and Ferguson Waterworks look forward to having the opportunity to work with you and thank you for your business.

Respectfully,

Brandon Foster
Vice President of Sales – Eastern Region
Master Meter Inc.
bfoster@mastermeter.com
Office (817) 842-8108
Cell (706) 594-5763

cc: Mike Phillips, RSM
Brandon Pontious, Ferguson Waterworks

Attachment: MM-Ferguson-SoleDistributorLetter-FairfieldOH (1614 : Contract with Ferguson Waterworks for water meters and an automated

ORDINANCE NO. _____

ORDINANCE TO AUTHORIZE THE CITY MANAGER TO ENTER INTO A CONTRACT WITH FERGUSON WATERWORKS FOR WATER METERS AND AN AUTOMATED METER READING SYSTEM AND DECLARING AN EMERGENCY.

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. The City Manager is hereby authorized to enter into a contract with Ferguson Waterworks for water meters and an automated meter reading system in accordance with the proposal on file in the office of the City Manager. This contract is authorized as an emergency without competitive bidding due to the critical need to procure the new water meters and automated meter reading system as soon as possible.

Section 2. This Ordinance is hereby declared to be an emergency measure necessary for the urgent benefit and protection of the City and its inhabitants for the reason that the new hardware and software technology can be procured as soon as possible to accurately measure water usage in the City's most critical commercial water zone; wherefore, this ordinance shall take effect immediately upon its passage.

Passed _____ _____
Mayor's Approval

Posted _____

First Reading _____ Rules Suspended _____

Second Reading _____ Emergency _____

Third Reading _____

ATTEST:

_____
Clerk of Council

This is to certify that this Ordinance has been duly published by posting and summary publication as provided by Charter.

_____
Clerk of Council

Active Clients\City of Fairfield\Ordinances\2020\Ferguson Waterworks-Ord

Attachment: Ferguson Waterworks-Ord (1614 : Contract with Ferguson Waterworks for water meters and an automated meter reading system)

City Council Resolution
Regular Meeting - September 14, 2020

Submitted by: Scott Timmer, Director of Finance
Submitting Department: Finance

Subject:
Resolution Accepting the Amounts and Rates as Determined by the Butler County Budget Commission
Legislation Title:
Resolution Accepting the Amounts and Rates as Determined by the Budget Commission and authorizing the necessary tax levies and certifying them to the County Auditor.

Recommendation:
The resolution would authorize the necessary tax levies to be collected for tax year 2020 collected during budget year 2021 to the Butler County Auditor.

Background/Synopsis:
It is necessary for City Council to pass a resolution accepting the amounts and rates as determined by the Butler County Budget Commission.

It is recommended that City Council authorize and direct the preparation of a resolution, with rules suspension, accepting the amounts and rates as determined by the Butler County Auditor.

Financial Impact:
The Butler County Budget Commission has estimated the tax collections that the City will receive for tax year 2020 collected during budget year 2021. These are conservative estimates as the total assessed valuation will not be available until later this year. The General Fund currently has 1.29 mills which is estimated to generate $1,328,000 for 2020 compared to $1,330,000 for 2019. The Fire/EMS Levy fund currently has 7.15 mills which is estimated to generate $6,630,000 for 2020 compared to $6,570,000 for 2019.

The resolution would authorize the necessary tax levies to be collected for tax year 2020 collected during budget year 2021 to the Butler County Auditor.

Emergency Provision Explanation:
N/A

Rule Suspension Requested:
Yes

Emergency Provision Needed:
No

Attachments:
1. 2021 Amounts and Rates13

RESOLUTION ACCEPTING THE AMOUNTS AND RATES AS DETERMINED BY THE BUDGET COMMISSION AND AUTHORIZING THE NECESSARY TAX LEVIES AND CERTIFYING THEM TO THE COUNTY AUDITOR

(CITY COUNCIL)

Rev. Code, Secs. 5705.34, 5705.35

The Council of the City of **FAIRFIELD**, Butler County, Ohio, met in _____ (regular or special) session on the _____ day of _____, 20_____, at the office of _____

_____ with the following members present:

_____

_____

_____

_____

_____

_____

_____

_____ moved the adoption of the following Resolution:

WHEREAS, This Council in accordance with the provisions of law has previously adopted a Tax Budget for the next succeeding fiscal year commencing January 1, 2021; and

WHEREAS, the Budget Commission of Butler County, Ohio has certified its action thereon to the City Council together with an estimate by the County Auditor of the rate of each tax necessary to be levied by this Council, and what part thereof is without, and what part within the ten mill tax limitation; therefore be it

RESOLVED, By the Council of the **CITY OF FAIRFIELD**, Butler County, Ohio, that the amounts and rates, as determined by the Budget Commission in its certification, be and the same are hereby accepted; and be it further

RESOLVED, That there be and is hereby levied on the tax duplicate of said City the rate of each tax necessary to be levied within and without the ten mill limitation as follows:

Attachment: 2021 Amounts and Rates13 (1617 : Resolution Accepting the Amounts and Rates as Determined by the Butler County Budget

SCHEDULE A

SUMMARY OF AMOUNTS REQUIRED FROM GENERAL PROPERTY TAX APPROVED BY BUDGET COMMISSION, AND COUNTY AUDITOR'S ESTIMATED TAX RATES

FUND	AMOUNT APPROVED BY BUDGET COMMISSION INSIDE 10 MILL LIMITATION	AMOUNT TO BE DERIVED FROM LEVIES OUTSIDE 10 MILL LIMITATION	COUNTY AUDITOR'S ESTIMATE OF TAX RATE TO BE LEVIED	
			INSIDE 10 MILL LIMIT	OUTSIDE 10 MILL LIMIT
GENERAL FUND	1,020,000.00		0.99	
POLICE PENSION	308,000.00		0.30	
PARK FUND				
RECREATION FUND				
PARAMEDICS				
FIRE/EMS		6,630,000.00		7.15
TOTAL	1,328,000.00	6,630,000.00	1.29	7.15

Attachment: 2021 Amounts and Rates13 (1617 : Resolution Accepting the Amounts and Rates as Determined by the Butler County Budget

SCHEDULE B

LEVIES OUTSIDE 10 MILL LIMITATION, EXCLUSIVE OF DEBT LEVIES

FUND		COUNTY AUDITOR'S ESTIMATE OF YIELD OF LEVY (Carry to Schedule A)		MAXIMUM RATE AUTHORIZED TO BE LEVIED
GENERAL FUND:				
Current expense levy authorized by voters on ,20 not to exceed years.				
Current expense levy authorized by voters on ,20 not to exceed years.				
Current expense levy authorized by voters on ,20 not to exceed years.				
Current expense levy authorized by voters on ,20 not to exceed years.				
TOTAL GENERAL FUND OUTSIDE 10 MILL LIMITATION		0.00		0.00
SPECIAL LEVY FUNDS:				
Levy authorized 03/19,1996 Terminated by Resolution 09-00 not to exceed 5 years. 91-N, 96-R (EMS 96/2000)				0.00
Levy authorized by voters on 03/07 ,2000 not to exceed IND years. 83-N (FIRE) 2000 REI		4,190,000.00		4.65
Levy authorized by voters on ,2016 not to exceed years.	(FIRE) CONT	2,440,000.00		2.50
Levy authorized by voters on ,20 not to exceed years.				
Levy authorized by voters on ,20 not to exceed years.				
Levy authorized by voters on ,20 not to exceed years.				
Levy authorized by voters on ,20 not to exceed years.				
Levy authorized by voters on ,20 not to exceed years.				
Levy authorized by voters on ,20 not to exceed years.				

Attachment: 2021 Amounts and Rates13 (1617 : Resolution Accepting the Amounts and Rates as Determined by the Butler County Budget

and be it further

RESOLVED, That the Clerk of this Council be, and he/she is hereby directed to certify a copy of this Resolution to the County Auditor of said County.

_____ seconded the Resolution and the roll being called upon its adoption the vote resulted as follows:

_____,_____

_____,_____

_____,_____

_____,_____

_____,_____

_____,_____

_____,_____

Adopted the _____ day of _____, 20____.

_____ _____ _____
PRESIDENT OF COUNCIL

_____
CLERK OF COUNCIL

Attachment: 2021 Amounts and Rates13 (1617 : Resolution Accepting the Amounts and Rates as Determined by the Butler County Budget

CERTIFICATE OF COPY

ORIGINAL ON FILE

The State of Ohio, Butler County, ss.

I,_____, Clerk of the Council of the City of _____, within and for said County, and in whose custody the Files and Records of said Council are required by the Laws of the State of Ohio to be kept, do hereby certify that the foregoing is taken and copied from the original _____

_____

_____

now on file, that the foregoing has been compared by me with said original document, and that the same is a true and correct copy thereof.

WITNESS my signature, this _____ day of _____, 20_____

_____
CLERK OF COUNCIL

NOTE: A copy of this Resolution must be certified to the County Auditor before the first day of October in each year, or at such later date as may be approved by the Board of Tax Appeals.

RESOLUTION ACCEPTING THE AMOUNTS AND RATES AS DETERMINED BY THE BUDGET COMMISSION AND AUTHORIZING THE NECESSARY TAX LEVIES AND CERTIFYING THEM TO THE COUNTY AUDITOR. (CITY COUNCIL)

ADOPTED_____,20_____ FILED_____ 20,_____

_____
CLERK OF COUNCIL

_____
COUNTY AUDITOR

_____
DEPUTY AUDITOR

Attachment: 2021 Amounts and Rates13 (1617 : Resolution Accepting the Amounts and Rates as Determined by the Butler County Budget

CITY OF FAIRFIELD		Divide by 1,000	effective rate	collection estimate C x D	2020 Estimate	Collected CY 2019
General Fund						
RES/AGR VALUATION	607,401,830	607,402	0.700000	425,181		
OTHER	377,400,270	377,400	0.700000	264,180		
P.U. & TANGIBLE	49,484,530	49,485	0.700000	34,639		
	1,034,286,630			724,001	724,001	
General						
RES/AGR VALUATION	607,401,830	607,402	0.290000	176,147		
OTHER	377,400,270	377,400	0.290000	109,446		
P.U. & TANGIBLE	49,484,530	49,485	0.290000	14,351		
	1,034,286,630			299,943	1,023,944	1,034,(
Police						
RES/AGR VALUATION	607,401,830	607,402	0.300000	182,221		
OTHER	377,400,270	377,400	0.300000	113,220		
P.U. & TANGIBLE	49,484,530	49,485	0.300000	14,845		
	1,034,286,630			310,286	310,286	313,(
Fire/EMS						
RES/AGR VALUATION	607,401,830	607,402	3.852790	2,340,192		
OTHER	377,400,270	377,400	4.324932	1,632,231		
P.U. & TANGIBLE	49,484,530	49,485	4.650000	230,103		
	1,034,286,630			4,202,525	4,202,525	
Fire/EMS						
RES/AGR VALUATION	607,401,830	607,402	2.354242	1,429,971		
OTHER	377,400,270	377,400	2.376157	896,762		
P.U. & TANGIBLE	49,484,530	49,485	2.500000	123,711		
	1,034,286,630			2,450,445	6,652,970	6,652,(
					7,987,200	8,000,(
	RES/AGR VALUATION		7.497032			
	OTHER		7.991089			
	P.U. & TANGIBLE		8.440000			

Attachment: 2021 Amounts and Rates13 (1617 : Resolution Accepting the Amounts and Rates as Determined by the Butler County Budget

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Alisha Wilson, Clerk
Submitting Department: Clerk

Subject:
Contractual Appropriations

Legislation Title:
Ordinance to amend Ordinance No. 119-19 entitled "An Ordinance to make estimated appropriations for the expenses and other expenditures of the City of Fairfield, Ohio, during a period beginning January 1, 2020, and ending December 31, 2020."

Recommendation:
It is recommended that City Council suspend the rules requiring a second and third reading of this Ordinance and adopt the appropriations listed above.

Background/Synopsis: Please refer to specific Council Communications for full description of these items.

$250,000 for water meters and advanced automated meter reading system.

Financial Impact: $250,000.00 from noted funding source.

Rule Suspension Requested:
Yes

Emergency Provision Needed:
No

Attachments:
1. Contractual 9-14-Ord

ORDINANCE NO. _____

ORDINANCE TO AMEND ORDINANCE NO. 119-19 ENTITLED "AN ORDINANCE TO MAKE ESTIMATED APPROPRIATIONS FOR THE EXPENSES AND OTHER EXPENDITURES OF THE CITY OF FAIRFIELD, OHIO, DURING A PERIOD BEGINNING JANUARY 1, 2020, AND ENDING DECEMBER 31, 2020."

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. Ordinance No. 119-19, the 2020 Appropriation Ordinance, is hereby amended in the following respects:

From:	**Unappropriated Water Surplus Fund**	**$125,000**
To:	60516025-252000 Improvements Other Than Building *(Automatic Meter Reading (AMR) 0WT17)*	$125,000
From:	**Unappropriated Sewer Replacement & Improvement Fund**	**$125,000**
To:	62316025-252000 Improvements Other Than Building *(Automatic Meter Reading (AMR) 0WW14)*	$125,000

Section 2. This Ordinance shall take effect at the earliest period allowed by law.

Passed _____ _____
Mayor's Approval

Posted _____

First Reading _____ Rules Suspended _____

Second Reading _____

Third Reading _____

ATTEST:

_____
Clerk of Council

Attachment: Contractual 9-14-Ord (1620 : Contractual Appropriations)

This is to certify that this Ordinance has been duly published by posting and summary publication as provided by Charter.

Clerk of Council

Active Clients\City of Fairfield\Ordinances\2020\Contractual 9-14-Ord

Attachment: Contractual 9-14-Ord (1620 : Contractual Appropriations)

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Alisha Wilson, Clerk
Submitting Department: Clerk

Subject:
Non-Contractual Appropriations

Legislation Title:
Ordinance to amend Ordinance No. 119-19 entitled "An Ordinance to make estimated appropriations for the expenses and other expenditures of the City of Fairfield, Ohio, during a period beginning January 1, 2020, and ending December 31, 2020."

Recommendation:
It is recommended that City Council suspend the rules requiring a second and third reading of this Ordinance and adopt the appropriations listed above.

Background/Synopsis: Please refer to specific Council Communications for full description of these items.

$32,985 for golf course maintenance and improvements;
$37,500 for IT-Video surveillance archivers;
$10,000 for cameras for Central Traffic System;
$14,500 for High Service Pump 6 Rebuild;
$44,931 for Energy Management Software upgrade;
$19,000 for clarifier walkway repairs;
$27,000 for raw water well 8 pump;
$15,000 for miscellaneous traffic signal upgrades/spare parts;
$10,720 for permanent radar signs for two school zones;
$8,800 for Turblex Blower service at Wastewater Treatment Plant;
$42,650 for Network Infrastructure (multiple vendors)

Financial Impact: $263,086.00 from noted funding source.

Rule Suspension Requested:
Yes

Emergency Provision Needed:
No

Attachments:
1. NonContractuals.091420
2. Non Contractual 9-14-ORd

City Council Information Item
Regular Meeting - September 14, 2020

Submitted by: Brad Williams,
Submitting Department: Parks

Subject:
Golf Course Maintenance and Improvements

Legislation Title:
Golf Course Maintenance and Improvements

BACKGROUND/SYNOPSIS: The appropriation of funds for Golf Course Maintenance and Improvements is an annual expenditure that is funded under the Capital Improvement Program (CIP) listed as 0RC02. The funds are needed to renovate South Trace #2 Tee Complex. This project includes stripping tee surface, excavation, removal of invasive root mass, regrading, drainage, irrigation and installation of tee/rough sod across entire tee complex. Only two golf course construction companies were located and provided quotes for his specialized renovation. See attached quotes. Golf Construction Associates, Inc. is the lowest and best quote.

The current tee box has been suffering from an invasive hedgerow of Honeysuckle which is about 20 feet away from the tee box near the property fence. This invasive plant negatively affects its competition with a root system that steals valuable nutrients/water from the tee box and surrounding rough but also has allelopathic properties which means it gives off chemicals that are toxic to surrounding plants. The extensive root mass is about 6 – 8 inches thick and extends across the entirety of the tee box. The Honeysuckle plant and associated invasive root mass doesn't show its parasitic qualities until the season gets hotter (mid-summer) and plants start to have to compete for readily available nutrients/water. Aside from the Honeysuckle issue the back of the tee is oddly undulated/shaped and has a poor soil structure from old landscape beds and trees that have been removed. The left side of the tee complex has many Honeysuckle stumps from removal of the invasive Honeysuckle plants. The front of the tee complex is also very steep and difficult to keep safely maintained well enough as to not hinder play.

RECOMMENDATION: It is recommended that City Council authorize and direct the preparation of legislation authorizing an appropriation of funding in the amount of $32,985 for the projects to be completed during the 2020 season

FINANCIAL IMPACT: An appropriation of $32,985 will be needed to complete the requested projects.

EMERGENCY PROVISION EXPLANATION: It is recommended that City Council authorize an appropriation of funding for all necessary projects to be completed during the 2020 season.

Attachments:

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

1. 2TeeQuote
2. Fairfield Grrens Tee Box Proposal

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

GOLF Construction Associates Inc.

January 16, 2020

City of Fairfield Parks and Recreation
2605 Augusta Boulevard
Fairfield, OH 45014

ATTN: Mr. Derek Baxter

RE: #2 Tee Fairfield Greens South Trace

Scope of Work: Tee Top - 2700 Square Feet

1. Lower existing tee surface an estimated 10 inches. Existing earthwork to be dispersed left and to the tee front. Any excess material to be hauled to a "on-site" dump area.
   Note: Remove existing root mass.

2. Tee subgrade to include 4 inch perforated drainage, exiting to the front of teeing area.

3. Install (2) sprinkler heads, (1) valve, (1) quick coupler valve, all piping, wiring, etc.
   Note: Golf course to supply all necessary materials.

4. Supply, load, haul, and install a 7-2-1 Rootzone mix, supplied by Arms Trucking, to an estimated consistent depth of 10 inches. Rootzone to be laser graded.

5. Supply and install BentGrass sod on tee top and 90/10 turf type tall fescue/bluegrass blend sod around disturbed tee surrounds.
   Note: Golf course maintenance crew to provide all watering, grow-in, mowing, and maintenance following sod installation.

24844 S.R. 1 Guilford, IN 47022 Phone: (812) 487-2805 Fax: (812) 487-2806 Cell: (513) 235-0658

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Fairfield Greens South Trace
#2 Tee Project - 2700 square feet

Materials - Estimate

1. ADS N-12 4 inch drainage pipe/gravel	120 lf
2. 70/20/10/ Rootzone Mix - Arms Trucking	140 tons
3. Bentgrass Sod - L-93/007 - Boyd Turf, Inc.	3000 sf
4. Turf Type Tall Fescue Sod - Green Prairie Turf,Inc.	5500 sf
5. Irrigation - materials by owner	

Material Costs:		$15,700.00
1. Earthworks/Tee Construction		$17,285.00
A. Equipment & Labor	$15,785.00	
B. Mobilization	1,500.00	
Total Quotation Amount:		$32,985.00

Thank you for this opportunity to quote your #2 Tee Fairfield Greens South Trace Project. Should you have any questions, please call my cell.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

TOPPshape
ENTERPRISES INC.
GOLF COURSE CONSTRUCTION
Call Tom Topp at 937.470.5868

January 23, 2020

Derek,

I want to say thank you again for contacting me for your tee box project. Myself and my father would be thrilled to get the opportunity to work with you and your club. The following proposal is for the construction of a new tee at Fairfield Greens to commence between April-June. Topp Shape is to buy all materials with the exception of irrigation.

- Tee to subgrade- $13,500.00

- Drainage (120' of 4" N-12 with gravel)- $ 2,375.00

- Irrigation- $3,000.00

- 140 tons of 4-2-1 installed and laser leveled at a depth of 10"- $9,721.00

- Bentgrass sod install- $4,000.00

-- Turf Type Tall Fescue install- $6,600.00

- Mobilization- $3,500.00

Total: $42,696.00

Respectfully,

Tyler J. Topp
Project Manager
Topp Shape Enterprises Incorporated

5017 Ackerman Blvd. • Kettering, Ohio 45429 • 937.436.1449 • Fax. 937.436.1254 • www.toppsha

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

City Council Information Item
Regular Meeting - September 14, 2020

Submitted by: Lance Kennedy,
Submitting Department: City Manager's Office

Subject:
IT - Video Surveillance Archivers

Legislation Title:
Information Technology - Video Surveillance Equipment Appropriation in the amount of $37,500 is being requested to purchase and replace equipment: Video Surveillance System Archivers

Background/Synopsis:
Scheduled replacement of information technology hardware is planned for and was approved of in the 2020 - 2024 Capital Improvement Program under project 0CM05. This project has been classified as a *MAJOR* priority which is necessary for maintaining current service delivery. Ohio State bid pricing is used when state bid pricing is the lower cost option.

The City replaces computing and communications equipment on an anticipated schedule to maintain systems that are compatible with, and capable of efficiently operating the software, systems and platforms required by City employees. The replacement of the city's current camera surveillance archival servers has become necessary to replace hardware that is outside of warranty and operating on software versions that are no longer supported.

Financial Impact:
An appropriation in the amount of **$37,500** is being requested for the upgrade and/or replacement of camera surveillance archival servers for the continued operation of the city's video security surveillance systems. Funding for these efforts was included in the 2020-2024 Capital Improvement Program (CIP) under project **0CM05** 'Camera Surveillance System'.

Emergency Provision Explanation:
An emergency provision is necessary without competitive bidding in order to avoid unnecessary renewal fees for the existing obsolete equipment and so that purchases and replacements can be made immediately.

Attachments:

1. Digital Visions quote for hardware and installation of replacement video surveillance system.

Attachments:
1. 1 - 2020-08 Genetec Upgrade Quote_City of Fairfield_316

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Quote

Quote Number: 316
Quote Name: Genetec Server Upgrades Rev.

Payment Terms: Due upon receipt
Expiration Date: 09/17/2020

Quote Prepared For

Lance Kennedy
City of Fairfield
701 Wessel Dr.
Fairfield, OH 45014
Phone:(513) 896-8109
lkennedy@fairfield-city.org

Quote Prepared By

Dylan Fager
Digital Visions
2951 E. Kemper Rd.
Cincinnati, OH 45241
United States
Phone:513-671-3660

dfager@digitalvisionsllc.com

Item#	Quantity	Item	Unit Price	Extended Price
One-Time Items				
1)	1	SV-1011E-R8-D256-208 DATA CENTER GENETEC DIRECTORY SERVER Streamvault™ 1000E Appliance - 2U 8-Bay Streamvault Directory Server (1) Xeon Silver 4208 16GB RAM (2) 256GB 2.5" SSD (4) 1GbE RJ45 Ports (2) 1100W PSU Windows 10 Enterprise 5YR NBD KYHD Warranty, Genetec™ Security Center pre-installed. License sold separately.	$6,799.08	$6,799.08
2)	2	SV-1011E-R8-12T-4-208 DATA CENTER GENETEC ARCHIVER SEVER Streamvault™ 1000E series - 2U 8-Bay Streamvault™ Appliance 12TB (1) Xeon Silver 4208 16GB RAM (2) 256GB 2.5" SSD (3) 4TB SATA HDD (4) 1GbE RJ45 Ports (2) 1100W PSU Windows 10 Enterprise, Supports Data RAID 0, 1, 5, 6, 10, 5YR NBD KYHD Warranty. Genetec™ Security Center pre-installed. License sold separately.	$8,249.66	$16,499.32
3)	1	SV-1011E-R2-4T-4-224 SOUTH TRACE Streamvault™ 1000E series: 1U 2-Bay Streamvault™ Appliance Xeon E-2224G 16GB RAM (1) 256GB M.2 SSD (1) 4TB SATA Windows 10 Enterprise (1) 550W PSU 5YR NBD KYHD Warranty. Genetec™ Security Center pre-installed. License sold separately.	$3,724.48	$3,724.48
4)	1	SV-1011E-R2-12T-12-224 NORTH TRACE & AQUATIC CENTER Streamvault™ 1000E series: 1U 2-Bay Streamvault™ Appliance Xeon E-2224G 16GB RAM (1) 256GB M.2 SSD (1) 12TB SATA Windows 10 Enterprise (1) 550W PSU 5YR NBD KYHD Warranty. Genetec™ Security Center pre-installed. License sold separately.	$4,329.27	$4,329.27
5)	1	Technician Installation of all servers. Upgrade Genetec to current version and configure Genetec Security Center Software on all new servers. Customer responsible for Genetec Security Desk client software upgrades.	$6,080.00	$6,080.00
			One-Time Total	**$37,432.15**

Interest Charges on Past Due Accounts and Collection Costs Overdue amounts shall be subject to a monthly finance charge. In addition, customer shall reimburse all costs and expenses for attorney's fees incurred in collecting any amounts past due. Additional training or Professional Services can be provided at our standard rates.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Item#	Quantity	Item	Unit Price	Extended Price
			Subtotal	**$37,432.15**
			Total Taxes	**$0.00**
			Total	**$37,432.15**

Authorizing Signature _____

Date _____

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Interest Charges on Past Due Accounts and Collection Costs Overdue amounts shall be subject to a monthly finance charge. In addition, customer shall reimburse all costs and expenses for attorney's fees incurred in collecting any amounts past due. Additional training or Professional Services can be provided at our standard rates.

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Ben Mann,
Submitting Department: Public Works

Subject:
Cameras for Central Traffic System

Legislation Title:
Appropriation of funding for CCTV (Closed Circuit Television) Cameras for Central Traffic System

Recommendation:
It is recommended that City Council authorize an appropriation as describe in the Financial Impact section for the purchase of cameras by Public Works through purchase orders.

Background/Synopsis:

This is for the purchase of replacement CCTV cameras for the City's Central Traffic System. Both Public Works and Police/Fire Dispatchers have the ability to monitor these cameras.

The existing cameras were originally installed at select signalized intersections with a federal grant project aimed at upgrading the City's traffic system in 2010.

These cameras have exceeded their useful life expectancy of 5-7 years and many have been replaced already with higher definition cameras. Some cameras have been added to better assist the City's Dispatch Center, including seven additional cameras with the 2019 ITS Phase 2 project.

This project is programmed in the current 2020-2024 Capital Improvements Program as 0PW15.

Financial Impact:

Total of $10,000.00 ($5,000.00 from the Law Enforcement Fund and $5,000.00 from the County Motor Vehicle Fund).

Emergency Provision Explanation:

None requested.

Rule Suspension Requested:
No

Emergency Provision Needed:
No

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Attachments:
1. Traffic Signal PTZ Map

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

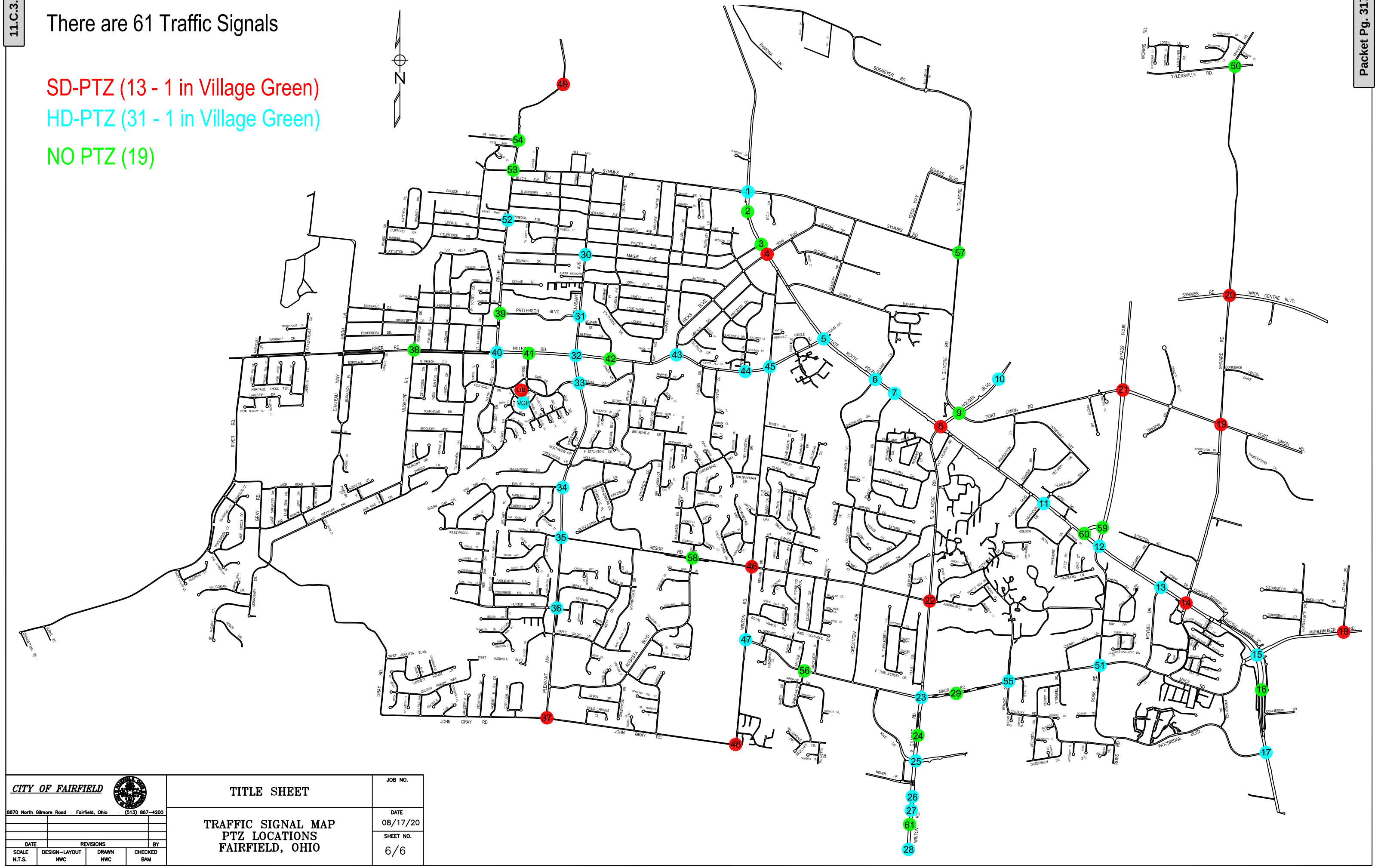
Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

There are 61 Traffic Signals

SD-PTZ (13 - 1 in Village Green)

HD-PTZ (31 - 1 in Village Green)

NO PTZ (19)


N
SYMMES RD.
BOBMEYER RD.
RAMONA LN.
BOHLKE BLVD.
N. GILMORE RD.
TESSA WAY
VETERAN DR.
FACTORY DR.
DONALD DR.
BUSWAY LN.
ROCKS BLVD.
ANTOICH DR.
MAGIE AVE.
WALTER AVE.
VINNEDGE AVE.
WYOMING AVE.
BEECH AVE.
BLACKBURN AVE.
CREECH LN.
COLE DR.
LINDALE DR.
CLIFFORD DR.
LITTLEBROOK DR.
CASTLETON DR.
MATTHEW PL.
HARLEY DR.
MYERS DR.
HARDELL DR.
HEE ALVA DR.
FENWICK DR.
CONNIE CT.
ROBIN MEADOWS CT.
RIVER RD.
PATTERSON BLVD.
NILLER RD.
FAIRHAVEN AVE.
WEAVER ST.
ALENNA DR.
SUNNYSIDE AVE.
MURRAY AVE.
SANDO DR.
SOUTHWIND DR.
LOUISE AVE.
HAZELRIG AVE.
BRICE DR.
SCHERING RD.
MISSISSIPPI DR.
PONDEROSA DR.
CO-ATRICIAL CT.
FAIRDALE DR.
FOXHUNTDALE DR.
CHERRY LN.
COSHOCTON DR.
HESTERS DR.
SUSANNAH DR.
ROTONDA DR.
HANNAH DR.
ST. LAWRENCE DR.
DONNA DR.
PATRICIA DR.
CHERYL DR.
DEBRA DR.
DEBORAH DR.
CHRISTINE DR.
EVALIE DR.
MARLENE DR.
ANDREA DR.
ANDREW DR.
ANTHONY DR.
WAYNE AVE.
GILSON AVE.
SHERIDAN AVE.
SHERWOOD DR.
BLAKE DR.
GAIL LN.
MICHAEL DR.
ROSS DR.
ROSS CT.
ROSS PL.
ROSS LN.
HOLLY DR.
HOLLY CT.
HOLLY LN.
HOLLY HILL DR.
HOLLY HILL CT.
HOLLY HILL LN.
HOLLY HILL PL.
HOLLY HILL CIR.
HOLLY HILL TER.
HOLLY HILL WAY
HOLLY HILL CT.
HOLLY HILL DR

City Council Information Item
Regular Meeting - September 14, 2020

Submitted by: Jason Hunold,
Submitting Department: Public Utilities

Subject:
High Service Pump 6 Rebuild

Legislation Title:
High Service Pump 6 Rebuild

Background/Synopsis:

In 2019, the City's Water Division performed flow testing on the Water Treatment Plants High Service Pumps in order to determine the efficiency of the pumps. When flow testing was completed, it was recommended High Service Pump #6 was in need of reconditioning in order to optimize operation.

The City utilizes five (5) High Service pumps at the Water Treatment Plant and all five (5) are necessary to provide the operational redundancy expected by our customers and required by Ohio EPA. The Water Division proposes to utilize Moody's of Dayton Inc. to rebuild High Service Pump #6; proposal is attached for review.

Financial Impact:

An appropriation in the amount of $14,500.00 is being requested to rebuild the Water Divisions High Service Pump #6. Funding for this project was included in the 2020-2024 Capital Improvement Program (CIP) under project 0WT04, Pump Overhaul/Replacement Program. The funding source is the Water Surplus Fund.

Attachments:
1. Fairfield HSP 6 Pump Repairs 2020

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

MOODY'S of Dayton, Inc.

4359 INFIRMARY ROAD
MIAMISBURG, OHIO 45342-1231
PHONE AC 937-859-4482
FAX AC 937-859-4522
www.moodysofdayton.com

August 18, 2020

City of Fairfield, Ohio
Public Utilities Department
5021 Groh Lane
Fairfield, Ohio 45014

Attn: Jason Hunold

Subject: High Service Pump # 6 Repairs

Moody's of Dayton is privileged to quote the cost for the repairs needed for High Service Pump # 6:

- Travel pull pump, transport for repair
- Tear down pump, make recommended repair parts list
- Clean motor and install new bearings
- Rebuild stuffing box
- Reassemble pump and paint
- Machine bowls and install new wear rings, machine new top special headshaft, rebrush pump bowls
- Wear ring and bushing materials
- Travel reinstall pump

TOTAL COST $ 12,549.00

If you have any questions, please do not hesitate to call; we look forward to hearing from you and can proceed on repairs upon your approval.

Thank you for the opportunity to serve the City of Fairfield.

Sincerely,

Michael Spicer
Vice President

ACCEPTED BY:_____ DATE:_____

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Brian Rose,
Submitting Department: Public Works

Subject:
Energy Management Software Upgrade

Legislation Title:
Johnson Controls Building Automation and Energy Management Software Upgrade

Recommendation:
It is recommended that the City Council authorize and direct the preparation of legislation authorizing the appropriation of funding in the amount of $44,931 from the Capital Improvement Fund for for this project.

Background/Synopsis:
The City's Information Technology Department is currently upgrading all computers to Windows 10 due to Microsoft's announcement that they will no longer support Windows 7.This request will upgrade the City wide Building Automation System (BAS) to a platform that is compatible with Windows 10. The current BAS system is a Johnson Controls Metasys system which facilitates substantial energy savings City wide each year and its current platform will not work on the Windows 10 format. This system controls the HVAC, lighting, security, critical system monitoring, and energy management throughout the City in the Municipal Building, Annex Building, Justice Center, Community Arts Center, Public Works, Water Annex, and the Water Plant (installing this year). This request will replace (4) NAE controllers and upgrade (8) NCE controllers complete with a new Windows 10 front end system and all associated graphics and programming tools needed for future use.

This upgrade is being purchased through Johnson Controls Inc., listed under State of Ohio contract #RS903618 and Index GPC032 authorizing the use by Municipal Corporations.

Financial Impact:

$44,931 ($40,631 + $4,300 for contingencies and facility needs) from the capital improvement fund.
This project is listed in the 2020 CIP as #0FC02 Energy Management Upgrade ($45,000)

Emergency Provision Explanation:
N/A

Rule Suspension Requested:

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

No

Emergency Provision Needed:
No

Attachments:
1. JCI Upgrade

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Proposal

Cincinnati Branch
9685 Cincinnati-Dayton Rd
West Chester, OH, 45069
513-489-0950

TO: City Of Fairfield
5353 Pleasant Ave
Fairfield, OH, 45014

Date: August 14, 2020
Project: City Of Fairfield – Metasys Server Upgrade

Proposal Ref: DB20-46

We propose to furnish the material and/or perform the scope of work described below for the net price of: **$40,631.00**

FORTY THOUSAND SIX HUNDRED THIRTY ONE AND 00/100 DOLLARS

Proposal Scope of Work

Johnson Controls will furnish and install the following equipment. All new network devices will be tied in to existing Ethernet network. Network addresses and connectivity shall be reused from existing equipment. Field controllers, sensors, and points are existing and shall be reused. This project will include:

DDC Server: ADS

• JCI will furnish MS-ADS server. Server shall be programmed and licensed by JCI. Server computer hardware provided by JCI. Hardware shall be Dell Optiplex class computer.
• JCI will furnish Metasys user interface graphics to server. Metasys user interface graphics shall be available for user log-on and shall be representative of mechanical systems. Customer shall provide floor-plan drawings for creation of a floor plan graphic. Existing graphics shall be converted to UI graphics interface.
• JCI will provide programming of alarms and email alerts for the new server. Alarms shall be provided for common equipment being monitored by the BAS system. **Email alerts shall be provided as allowed by customer network.**
• JCI will provide programming of historical trending data for the new server. Historical trending data shall be provided for common equipment being monitored by the BAS system. Data shall be accessible to the user, through the BAS system.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

DDC System: NAE-1 Replacement (Community Arts Center)
• JCI will furnish MS-NAE5510-3 network automation engine. New network automation engine shall be a direct replacement for NAE-1 Located at the Fairfield community arts center. New NAE shall be provided with additional internal memory for use with upgraded Metasys system.
• JCI will provide programming of new NAE automation engine for new Metasys software. New Metasys software shall be installed on NAE to provide additional user features and performance.
• JCI will download programming of controller and point mapping. Controller and point mapping shall include existing controllers and points only. No new controller or point data will be included. Data shall be accessible to the user, through the BAS system.

DDC System: NAE-3 Replacement (Municipal Building)
• JCI will furnish MS-NAE5510-3 network automation engine. New network automation engine shall be a direct replacement for NAE-3 Located at the Fairfield Municipal building. New NAE shall be provided with additional internal memory for use with upgraded Metasys system.
• JCI will provide programming of new NAE automation engine for new Metasys software. New Metasys software shall be installed on NAE to provide additional user features and performance.
• JCI will download programming of controller and point mapping. Controller and point mapping shall include existing controllers and points only. No new controller or point data will be included. Data shall be accessible to the user, through the BAS system.

DDC System: NAE Replacement (Spare)
• JCI will furnish MS-NAE5510-3 network automation engine. New network automation engine shall be a direct replacement for the spare NAE. New NAE shall be provided with additional internal memory for use with upgraded Metasys system.
• JCI will provide programming of new NAE automation engine for new Metasys software. New Metasys software shall be installed on NAE to provide additional user features and performance. New NAE will be set up and ready for download.

DDC System: NAE-2 Upgrade (Justice Center)
• JCI will upgrade existing MS-NAE5510-2 located at the justice center. NAE firmware shall be flashed to the latest version of Metasys.
• JCI will provide programming of existing NAE automation engine for new Metasys software. New Metasys software shall be installed on NAE to provide additional user features and performance.
• JCI will download programming of controller and point mapping. Controller and point mapping shall include existing controllers and points only. No new controller or point data will be included. Data shall be accessible to the user, through the BAS system.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

DDC System: NCE Upgrades (Typical of 8)

• JCI will upgrade existing MS-NCE25xx located at the justice center. NCE firmware shall be flashed to the latest version of Metasys.

• JCI will provide programming of existing NCE network engine for new Metasys software. New Metasys software shall be installed on NCE to provide additional user features and performance.

• JCI will download programming of controller and point mapping. Controller and point mapping shall include existing controllers and points only. No new controller or point data will be included. Data shall be accessible to the user, through the BAS system.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Itemized Information

State contract# **RS903618**
State contract index# **GPC032**

Labor and Trip Charge: **$7,987.20**
48hrs @ $166.40 + 5 Trips

MS-ADS05U-6 Software: **$5,896.80**
ADS server software. Software licenses are included. ADS is Metasys release version 10.1.

TL-SCT-6 Software: **$90.00**
SCT software. Software licenses are included. SCT is Metasys release version 10.1.

TL-CCT-6 Software: **$90.00**
CCT programming software. Software licenses are included. CCT is Metasys release version 10.2.

MS-EXPORT-6 Software: **$90.00**
Export Utility software. Software licenses are included. CCT is Metasys release version 10.2.

Dell Optiplex W/Monitor: **$2,215.00**
Dell Optiplex desktop class machine with monitor, wireless keyboard and wireless mouse. Server is pre-configured for operation of Metasys server software. Server includes:

- Windows 10 64-bit
- Intel i5 processor
- 16GB DDR RAM
- 500GB Hard Disk Drive
- DVD R/W Disk Drive

MS-NAE55 Controller: **$18,777.00**
MS-NAE5510-3 3 @ $6,259.00 (After Core)
NAE supervisory controller with additional memory for updated software.

Metasys User Interface software: **$5,485.00**
User interface software allows user log on through the use of a direct web browser (such as internet explorer or google chrome). It is a space-based graphical application that pares equipment with spaces and other equipment and allows users to view associated equipment for troubleshooting efficiency.

Total = **$40,631.00**

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Common Inclusions (This proposal includes):

• JCI will provide required technical time to program, startup and commission new JCI equipment, per Scope.
• JCI will provide all programming and startup of new JCI control devices.
• JCI will provide and install new equipment and software as specified above.
• Addendum A will address any T&C's not covered in in State of Ohio's T&C's

Common Exclusions (This proposal DOES NOT include):

• Any work not listed above.
• Commissioning with agent or engineer.
• Demolition of any existing controls, other than those specifically listed above.
• Field devices (including actuators, relays, and sensors) and are not included.
• Proposal is based upon straight time. Overtime Labor is excluded.
• Taxes are excluded.

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Terms and conditions as stated in Ohio State Term Contracting document reference:
Standardt_crev010118

See Terms and Conditions below:

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I. GLOSSARY – The following definitions are applicable to all components of the Contract:

A. Acceptance: Approval and retention by the Ordering Agency of any products, supplies, services or other Deliverables, delivered to fulfill Contract requirements.

B. Contracting Agency: The agency with which the Contractor enters into the Contract and that has the authority to enforce the Terms and Conditions of this Contract. The Contracting Agency may also be the Ordering Agency.

C. Default: The omission or failure to perform any obligation under this Contract.

D. Deliverable: Any Contractor-provided products, supplies, services or work product described in the specifications of the Contract.

E. Ordering Agency: The entity, including State agencies and State of Ohio Cooperative Purchasing members authorized under Section 125.04 of the Ohio Revised Code, that purchases and accepts the products, supplies, services or other Deliverables under this Contract and that is responsible for payment. The Ordering Agency may also be the Contracting Agency.

F. State: The State of Ohio.

G. Time and Materials Contract: A Contract in which Contractor is paid (1) an hourly rate for labor actually performed and (2) if applicable and with prior approval by the Ordering Agency, for the cost of the materials or supplies actually used by the Contractor. Such rates and costs shall be established through Contractor's submission of a price sheet, written quote, estimate, or invoice, as approved by the State. Hourly rates may include wages, overhead, general and administrative expenses, and reasonable profit. Materials or supplies may include the Contractor's direct and indirect costs attributable to the work performed.

II. REGULATORY CONTRACT REQUIREMENTS

A. ANTITRUST. The State and the Contractor recognize that, in actual economic practice, overcharges resulting from antitrust violations are usually borne by the State. The Contractor therefore assigns to the State all state and federal antitrust claims and causes of action that the Contractor has or acquires relating to the goods and services acquired under this Contract.

B. APPROPRIATION OF FUNDS. The State's funds are contingent upon the availability of lawful appropriations by the Ohio General Assembly. If the General Assembly fails at any time to continue funding for the payments or any other obligations due by the State under this Contract, the State will be released from its obligations on the date funding expires. If appropriations are approved, the State may continue this Contract past the current biennium by issuing written notice of continuation to the Contractor. Any obligations of the State are subject to Section 126.07 of the Ohio Revised Code.

C. CAMPAIGN CONTRIBUTIONS. Unless this Contract was solicited by competitive bid pursuant to Section 125.07 of the Ohio Revised Code, Contractor hereby certifies that all applicable parties are in full compliance with Section 3517.13 of the Ohio Revised Code.

D. COMPLIANCE WITH LAW. The Contractor must comply throughout the duration of the Contract with all applicable federal, state, local laws and Executive Orders while performing under this Contract.

E. CONFLICT OF INTEREST/ETHICS. Contractor represents, warrants and certifies that it and its employees engaged in the administration or performance of this Contract are knowledgeable of and understand the Ohio Ethics and Conflict of Interest laws including but not limited to Chapter 102 and Sections 2921.42 and 2921.43 of the Ohio Revised Code. Contractor further represents, warrants, and certifies that neither Contractor nor any of its employees will do any act that is inconsistent with such laws.

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F. CONTRACTOR'S WARRANTY AGAINST AN UNRESOLVED FINDING FOR RECOVERY. The Contractor warrants that the Contractor is not subject to an unresolved finding for recovery pursuant

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to Section 9.24 of the Ohio Revised Code. If the warranty is false on the date the parties signed this Contract, the Contract is void *ab initio* and the Contractor shall immediately repay any funds paid under this Contract.

G. DEBARMENT. Contractor represents and warrants that it is not debarred from consideration for contract awards by any governmental agency. If this representation and warranty is found to be false, this Contract is void *ab initio* and the Contractor shall immediately repay any funds paid under this Contract.

H. DRUG FREE WORKPLACE. The Contractor agrees to comply with all applicable state and federal laws regarding drug-free workplace and shall make a good faith effort to ensure that all Contractor employees, while working on State property, will not purchase, transfer, use or possess illegal drugs or alcohol or abuse prescription drugs in any way.

I. EQUAL EMPLOYMENT OPPORTUNITY. The Contractor will comply with all state and federal laws regarding equal employment opportunity and fair labor and employment practices, including Section 125.111 of the Ohio Revised Code and all related Executive Orders.

Before a Contract can be awarded or renewed, an Affirmative Action Plan must be submitted to and approved by the Ohio Department of Administrative Services, Equal Opportunity Division.

J. EXPENDITURE OF PUBLIC FUNDS ON OFFSHORE SERVICES. The Contractor affirms it understands Executive Order 2011-12K and shall abide by those requirements in the performance of the Contract. Notwithstanding any other terms of this Contract, the State reserves the right to recover any funds paid for services the Contractor performs outside of the United States for which it did not receive a waiver. The State does not waive any other rights and remedies provided the State in the Contract.

The Contractor must complete the Contractor/Subcontractor Affirmation and Disclosure form to abide with Executive Order 2011-12K affirming no services of the Contractor or its subcontractors under this Contract will be performed outside the United States. During the performance of this Contract, the Contractor must not change the location(s) of the country where the services are performed, change the location(s) of the country where the data is maintained, or made available unless a duly signed waiver from the State has been attained to perform the services outside the United States.

K. GOVERNING LAW. This Contract shall be governed by the laws of the State of Ohio, and the venue for any disputes will be exclusively with the appropriate court in Franklin County, Ohio.

L. INDEPENDENT CONTRACTOR ACKNOWLEDGEMENT. It is fully understood and agreed that Contractor is an independent contractor and is not an agent, servant, or employee of the State. Contractor declares that it is engaged as an independent business and has complied with all applicable federal, state, and local laws regarding business permits and licenses of any kind, including but not limited to any insurance coverage, workers' compensation, or unemployment compensation that is required in the normal course of business and will assume all responsibility for any federal, state, municipal or other tax liabilities. Additionally, Contractor understands that as an independent contractor, it is not a public employee and is not entitled to contributions from the State to any public employee retirement system.

Contractor acknowledges and agrees any individual providing personal services under this Contract is not a public employee for purposes of Chapter 145 of the Ohio Revised Code. Unless Contractor is a "business entity" as that term is defined in Section 145.037 of the Ohio Revised Code ("an entity with five or more employees that is a corporation, association, firm, limited liability company, partnership, sole proprietorship, or other entity engaged in business") Contractor shall have any individual performing services under the Contract complete and submit to the Ordering Agency the Independent Contractor/Worker Acknowledgement form.

Contractor's failure to complete and submit the Independent Contractor/Worker Acknowledgement prior to commencement of the work, service or deliverable, provided under this Contract, shall serve as Contractor's certification that Contractor is a "Business entity" as the term is defined in Section 145.037 of the Ohio Revised Code.

M. REGISTRATION WITH THE SECRETARY OF STATE. Contractor certifies that it is either:

1. A company that is properly registered with the Ohio Secretary of State; or

2. A foreign corporation, not incorporated under the laws of the State of Ohio, but is registered with

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the Ohio Secretary of State pursuant to Sections 1703.01 to 1703.31 of the Ohio Revised Code, as applicable; or
3. Exempt from registration requirements of the Ohio Secretary of State.
N. TAXES. Pursuant to Section 5739.02 of the Ohio Revised Code, the State is exempt from sales tax.
O. TRADE. Pursuant to Section 9.76(B) of the Ohio Revised Code, Contractor warrants that Contractor is not boycotting any jurisdiction with whom the State of Ohio can enjoy open trade, including Israel, and will not do so during the Contract period.
The State of Ohio does not acquire supplies or services that cannot be imported lawfully into the United States. The Contractor certifies that it, its subcontractors, and any agent of the Contractor or its subcontractors, acquire any supplies or services in accordance with all trade control laws, regulations or orders of the United States, including the prohibited source regulations set forth in subpart 25.7, Prohibited Sources, of the Federal Acquisition Regulation and any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control. A list of those sanctions by country can be found at https://www.treasury.gov/resourcecenter/sanctions/Programs/Pages/Programs.aspx. These sanctions generally preclude acquiring any supplies or services that originate from sources within, or that were located in or transported from or through Cuba, Iran, Libya, North Korea, Syria, or the Crimea region of Ukraine.
P. TRAVEL. Any travel that the Contractor requires to perform its obligations under this Contract will be at the Contractor's expense. The State will pay for any additional travel that it requests only with prior written approval. The State will pay for all additional travel expenses that it requests in accordance with Section 126.31 of the Ohio Revised Code and Rule 126-1-02 of the Ohio Administrative Code.
Q. USE OF MBE AND EDGE VENDORS. Section 125.081 of the Ohio Revised Code requires State agencies to set-aside purchases for Minority Business Enterprises (MBE) and Executive Order 2008-13S encourages use of Encouraging Diversity, Growth and Equity (EDGE) businesses. Therefore, the State encourages the Contractor to purchase goods and services from Ohio certified MBE and EDGE vendors.
III. CONTRACT CONSTRUCTION
A. TERM OF CONTRACT. The effective date of the Contract is the effective date stated in the Contract or the date the Contract is fully executed, whichever is later. The Contract will remain in effect until the earliest of: (1) the ending date stated in the Contract; (2) the Contract is fully performed by both parties; (3) the Contract is canceled or terminated; or (4) the Contract expires at the end of a biennium unless continued by the State.
This Contract may be renewed upon satisfactory performance of activities hereunder, appropriation of funds by the Ohio General Assembly, and at the sole discretion of the State. The State will issue a notice to the Contractor if the State decides to renew this Contract. The Contractor shall not obligate resources in anticipation of a renewal until notice is provided.

B. CONTRACT AMENDMENTS / WAIVER.
1. AMENDMENTS. No change to any provision of this Contract will be effective unless it is in writing and signed by both parties. Notwithstanding the foregoing, the State may reduce nonmaterial changes to writing and provide notice to the Contractor.
2. WAIVER. The failure of either party at any time to demand strict performance by the other party of any of the terms of this Contract will not be a waiver of those terms or to any other terms of this Contract. Waivers must be in writing to be effective, and either party may at any later time demand strict performance.
C. ASSIGNMENT / DELEGATION. The Contractor must not assign any of its rights nor delegate any of its duties under this Contract without written consent of the State. Any assignment or delegation not consented to may be deemed void by the State.
D. BINDING EFFECT. Subject to the limitations on assignment provided elsewhere in this Contract, this Contract will be binding upon and inure to the benefit of the respective successors and assigns of the State and the Contractor.
E. LANGUAGE CONSTRUCTION. This Contract will be construed in accordance with the plain meaning of its language and neither for nor against the drafting party.

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F. DAYS. When this Contract refers to days, it means calendar days, unless it expressly provides otherwise.
G. HEADINGS. The headings in this Contract are for convenience only and will not affect the interpretation of any of the Contract terms and conditions.
H. INJUNCTIVE RELIEF. Nothing in this Contract is intended to limit the State's right to injunctive relief if such is necessary to protect its interests or to keep it whole.
I. NOTICES. For any notice under this Contract to be effective the notice must be made in writing and delivered to the appropriate contact provided in the Contract.
J. ORDER OF PRIORITY. Unless otherwise stated elsewhere in this Contract, the Special Terms and Conditions will take precedence over the Standard Terms and Conditions. If there is any inconsistency or conflict between this Contract and any provision incorporated by reference by the Contractor, this Contract will prevail.
K. PUBLICITY. The Contractor shall not do the following without prior, written consent from the State:
1. Advertise that the Contractor is doing business with the State; or
2. Use this Contract as a marketing or sales tool.
L. SEVERABILITY. If any provision of the Contract or the application of any provision is held by a court to be contrary to law, the remaining provisions of the Contract will remain in full force and effect.
M. SUBCONTRACTING. The State recognizes that it may be necessary for the Contractor to use a subcontractor to perform a portion of the work under the Contract. In those circumstances, the Contractor shall submit a list identifying the Contractor's subcontractors. The Contractor may not enter into subcontracts related to the Contract after award without written approval from the State. If any change occurs during the term of the Contract, that requires a change to identified subcontractors, the Contractor shall amend its list of subcontractors and request written approval from the State. The State reserves the right to reject any subcontractor submitted by the Contractor. All subcontracts will be at the sole expense of the Contractor and the Contractor will be solely responsible for payment of its subcontractors. The Contractor assumes responsibility for all subcontracting and third-party manufacturer work performed under the Contract. In addition, all subcontractors agree to be bound by all of the Terms and Conditions and specifications of the Contract. The Contractor will be the sole point of contact with regard to all contractual matters.

N. SURVIVORSHIP. All sections herein relating to payment, confidentiality, license and ownership, indemnification, maintenance, publicity, warranties and limitations on damages shall survive the termination of this Contract.
IV. ORDER AND PAYMENT PROVISIONS
A. CERTIFICATION OF FUNDS/PURCHASE ORDER REQUIREMENTS. None of the duties or obligations in this Contract are binding on the State, and the Contractor will not begin performance on this Contract, until all of the following conditions are met:
1. All statutory provisions under the Ohio Revised Code have been met.
2. All necessary funds are made available by the appropriate Ordering Agency.
3. If applicable, an official State of Ohio Purchase Order (P.O.) has been issued from the appropriate Ordering Agency.
4. If required, the Controlling Board of Ohio has approved the purchase in accordance with Section 127.16 of the Ohio Revised Code.
B. CONTRACT ORDERS. Ordering Agencies will order supplies or services under this Contract from the Contractor directly. The Contractor may receive orders made by Ordering Agencies by telephone, facsimile, electronically, in person, payment card (if applicable) or purchase order from authorized employees of the Ordering Agency. Neither the Ordering Agency nor the Contracting Agency will be responsible for orders placed by unauthorized employees.
C. INVOICE REQUIREMENTS. The Contractor or dealer, authorized to submit invoices, must submit an original invoice to the office designated in the purchase order. The Contractor will only be compensated for the Deliverables accepted by the State. To be a proper invoice, the invoice must include the following:
1. The purchase order number authorizing the delivery of supplies or services;
2. State of Ohio Contract Number (if applicable);

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3. Agency Name;
4. Agency Billing Address;
5. Delivery location of supplies or services;
6. Contractor Name;
7. Contractor Address;
8. Contractor's Unique Invoice Number;
9. Date that services were provided or that supplies were delivered;
10. Itemization of supplies or services provided, including cost;
11. For leases, the invoice must also include the payment number (e.g., 1 of 36);
12. For time and material Contracts, the invoice must reflect labor hours actually worked and, if applicable, supplies used; and;
13. Clear statement of total payment expected.

D. PAYMENT DUE DATE AND PROCESS. Unless otherwise stated in this Contract and in accordance with Section 126.30 of the Ohio Revised Code payments under this Contract will be due on the 30th calendar day after the date of actual receipt of a proper invoice in the office designated to receive the invoice. The date payment is issued by the State will be considered the date payment is made. Payment of an invoice by the State will not prejudice the State's right to object to or question that or any other invoice or matter in relation thereto. The State's preferred method of payment is by electronic funds transfer. However, the Ordering Agency may also make payment by State of Ohio payment card or by warrant issued by the Auditor of State. At the time of Contract award, Contractor must be able to accept all forms of payment from the State and Ordering Agency.

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V. LIABILITY PROVISIONS

A. GENERAL REPRESENTATIONS AND WARRANTIES. The Contractor warrants that:
1. The recommendations, guidance, and performance of the Contractor under this Contract will be in accordance with the industry's professional standards, the requirements of this Contract and without any material defect.
2. No Deliverable will infringe on the intellectual property rights of any third party.
3. All warranties are in accordance with the Contractor's standard business practices.
4. The Deliverables are merchantable and fit for the particular purpose described in this Contract and will perform substantially in accordance with its user manuals, technical materials, and related writings.
5. The Deliverables comply with all governmental, environmental and safety standards.
6. The Contractor has the right to enter into this Contract.
7. The Contractor has not entered into any other contracts or employment relationships that restrict the Contractor's ability to perform under this Contract.
8. The Contractor will observe and abide by all applicable laws and regulations, including those of the State regarding conduct on any premises under the State's control.
9. The Contractor has good and marketable title to any Deliverable delivered under this Contract for which title passes to the State.
10. The Contractor has the right and ability to grant the license granted in any Deliverable for which title does not pass to the State.

If any work of the Contractor or any Deliverable fails to comply with these warranties, and the Contractor is so notified in writing, the Contractor will correct such failure in a commercially reasonable time or as specified in the Contract. If the Contractor fails to comply, the Contractor will refund the amount paid for the Deliverable. The Contractor will also indemnify the State for any direct damages and claims by third parties based on breach of these warranties.
Any other express warranties offered by the Contractor shall be a minimum of one year or the Contractor's standard warranty whichever is longer.

B. INDEMNITY. The Contractor must indemnify the State for any and all claims, damages, lawsuits, costs, judgments, expenses, and any other liabilities including, but not limited to, bodily injury to any person (including injury resulting in death) or damage to property, that may arise out of, or are related to, the Contractor's performance under this Contract, providing such is due to the negligence or other tortious conduct of the Contractor, the Contractor's employees, agents, or subcontractors.

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The Contractor must also indemnify the State against any claim of infringement of a copyright, patent, trade secret, or similar intellectual property right based on the State's proper use of any Deliverable under this Contract. This obligation of indemnification will not apply where the State has modified or misused the Deliverable and the claim of infringement is based on the modification or misuse. If a successful claim of infringement is made, or if the Contractor reasonably believes that an infringement claim that is pending may actually succeed, the Contractor must take one (1) of the following four (4) actions:

1. Modify the Deliverable so that the Deliverable is no longer infringing;
2. Replace the Deliverable with an equivalent or better item;
3. Acquire the right for the State to use the infringing Deliverable as intended; or
4. Remove the infringing Deliverable and refund the fee the State paid for such Deliverable and any other affected Deliverable.

The State agrees to give the Contractor notice of any such claim as soon as reasonably practicable and to give the Contractor the authority to settle or otherwise defend any such claim upon consultation with and approval by the Office of the Ohio Attorney General.

C. WORKERS' COMPENSATION. The Contractor will maintain workers' compensation insurance, as required by Ohio law or the laws of any other state where work under this Contract will be done. The Contractor will also maintain employer's liability insurance with at least a $1,000,000.00 limit.

D. AUTOMOBILE AND GENERAL LIABILITY INSURANCE. During the term of the Contract and any renewal thereto, the Contractor, and any agent of the Contractor, at its sole cost and expense shall maintain a policy of Automobile Liability Insurance in accordance with the State and Federal laws, unless otherwise stated. In addition, Contractor shall carry Commercial General Liability Insurance coverage with a $1,000,000 annual aggregate and a $500,000 per occurrence limit for bodily injury, personal injury, wrongful death and property damage. The defense cost shall be outside the policy limits. Such policy shall designate the State of Ohio as an Additional Insured, as its interest may appear. The policy shall also be endorsed to include a blanket waiver of subrogation and a statement that the Contractor's commercial general liability insurance shall be primary over any other coverage. Umbrella/excess liability insurance may be used to meet the required limits and the coverage must follow form. The State reserves the right to approve all policy deductibles and levels of self-insured retention-captive insurance programs and may require the Contractor to have their policy(ies) endorsed to reflect per project / per location general aggregate limits.

Failure to submit the insurance certificates may result in the Contractor being deemed not responsive. Said certificates shall contain a clause or endorsement providing thirty (30) days prior written notice of cancellation, non-renewal or decrease in coverage will be given to the State. Failure of the Contractor to maintain this coverage for the duration of the Contract, and any renewals thereto, may be considered as a default. All insuring companies shall have and maintain at least an A- (Excellent) rating from A.M. Best, unless otherwise approved in writing by the State.

E. LIMITATION OF LIABILITY. Notwithstanding any limitation provisions contained in the documents and materials incorporated by reference into this Contract, the parties agree as follows:

1. Neither party will be liable for any indirect, incidental or consequential loss or damage of any kind including but not limited to lost profits, even if the parties have been advised, knew, or should have known of the possibility of damages.
2. The Contractor further agrees that the Contractor shall be liable for all direct damages due to the fault or negligence of the Contractor.

F. PRODUCT RECALL. In the event product delivered has been recalled, seized, or embargoed and/or has been determined to be misbranded, adulterated, or in the case of consumable product, found to be unfit for human consumption by the packer, processor, manufacturer or by any state or federal regulatory agency, the Contractor shall notify the Contracting Agency and all Ordering Agencies within two business days after notice has been given. The Contractor shall, at the option of the Ordering Agency, either reimburse the purchase price or provide an equivalent replacement product at no additional cost. The Contractor shall be responsible for removal and/or replacement of the affected product within a reasonable time as determined by the Ordering Agency. At the option of the Ordering Agency, the Contractor may be required to reimburse storage and handling fees to be

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calculated from time of delivery and acceptance to actual removal. The Contractor will bear all costs associated with the removal and proper disposal of the affected product. Failure to reimburse the purchase price or provide equivalent replacement product will be considered a default.

VI. PERFORMANCE AND COMPLIANCE

A. AUDITS. The Contractor must keep all financial records in a manner consistent with Generally Accepted Accounting Principles (GAAP) or equivalent accounting principles. Additionally, the Contractor must keep separate business records for this project, including records of disbursements and obligations incurred that must be supported by Contracts, invoices, vouchers and other data as appropriate.

During the period covered by this Contract and until the expiration of three (3) years after final payment under this Contract, the Contractor agrees to provide the State, or any authorized representatives providing financial support to the work undertaken hereunder, with access to and the right to examine any books, documents, papers and records of the Contractor involving transactions related to this Contract.

The Contractor must, for each subcontract in excess of $2,500, require its subcontractors to agree to the same provisions of this Section. The Contractor may not artificially divide Contracts with its subcontractors to avoid requiring subcontractors to agree to this provision. This provision does not apply to Contracts where federal funds are used and the federal government requires audits of all subcontracts regardless of the amount of the Contract.

The Contractor must provide access to the requested records no later than five (5) business days after the request by the State, the State's designee or any party with audit rights. If an audit reveals any material deviation from the Contract requirements, any misrepresentations, or overcharge to the State or any other provider of funds for the Contract, the State or other party will be entitled to recover damages as well as the cost of the audit.

B. F.O.B. DESTINATION/ACCEPTANCE. The Contractor must provide Deliverables under this Contract F.O.B. Destination. The place of destination will be specified by the Ordering Agency on the agency's purchase order or other ordering document. Cost of the freight must be borne and paid by the Contractor unless otherwise stated.

All risk of loss, regardless of the cause, will remain with the Contractor until title to the Deliverable passes to the State. Unless otherwise provided in this Contract, the State will determine whether the Contractor provided each Deliverable required in this Contract and has fully met all work requirements of this Contract. Title to any Deliverables will pass to the State on Acceptance of the Deliverable.

C. RETURNED GOODS. When the use of this Contract involves the purchase of goods, the following applies:

1. Returned goods, when due to Contractor error (i.e. over-shipment, defective merchandise, unapproved substitution, etc.), shall be returned to the Contractor at the Contractor's expense. The Contractor shall make arrangements to remove the returned goods from the ordering agency premises within seven (7) calendar days after notification. The Contractor shall not apply any restocking or other charges to the ordering agency. At the option of the ordering agency, replacement items may be accepted and will be shipped within seven (7) calendar days of notification. Failure of the Contractor to arrange for return of the items within the specified time will result in the items being deemed as abandoned property and the ordering agency will dispose of accordingly.

2. For orders of custom manufactured items, the Contractor must provide a production sample of the item to the ordering agency for acceptance. The production sample must be identical to the item to be provided. The ordering agency will provide written acceptance of the item prior to the Contractor continuing with production. Once delivery and acceptance has been completed and the ordering agency determines for any reason that any remaining quantities will not be used, the agency may request the return of the custom manufactured items. Acceptance of the return of custom manufactured items will be at the option of the Contractor. Failure of the Contractor to provide a production sample and obtain written approval from the ordering agency will result in the Contractor bearing all responsibility and costs associated with the return

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of these goods.
3. Returned goods of regular catalog stock merchandise, when due to agency error (i.e. over purchase, discontinued use, inventory reduction, etc.) will be accepted by the Contractor if notice is given by the agency within six (6) months of delivery and acceptance. All items to be returned must be unused and in their original containers and in suitable condition for resale. Return of regular stock catalog merchandise, when delivery and acceptance exceed six (6) months will be at the option of the Contractor.
D. CUSTOM DELIVERABLES. All custom work done by the Contractor and covered by this Contract will belong to the State with all rights, title, and interest in all intellectual property that comes into existence through the Contractor's work under this Contract being assigned to the State. Additionally, the Contractor waives any shop rights, author rights, and similar retained interests in any such custom developed materials. The Contractor must provide the State with all assistance reasonably needed to vest such rights of ownership in the State. However, the Contractor will retain ownership of all tools, methods, techniques, standards, and other development procedures, as well as generic and

preexisting shells, subroutines, and similar material incorporated in any custom Deliverable ("Preexisting Materials").
The Contractor grants the State a worldwide, non-exclusive, royalty-free, perpetual license to use, modify, sell, and otherwise distribute all Pre-existing Materials that are incorporated in any customdeveloped Deliverable. The Contractor may not include in any custom Deliverable any intellectual property unless such has been created under this Contract or qualifies as Pre-existing Material. If the Contractor wants to incorporate any Pre-existing Materials in a custom Deliverable, the Contractor must disclose that desire to the State and obtain written approval from the State for doing so in advance. On the request of the Contractor, the State will incorporate any proprietary notice that Contractor may reasonably want for any Pre-existing Materials included in a custom Deliverable in all copies the State makes of that Deliverable. Subject to the limitations and obligations of the State with respect to Pre-existing Materials, the State may make all custom Deliverables available to the general public without any proprietary notices of any kind.
E. FORCE MAJEURE (EXCUSABLE DELAY). Neither party will be liable for any delay in its performance that arises from causes beyond its or its subcontractor's control and without its or its subcontractor's negligence or fault. For purposes of this Section, the term "force majeure event" includes without limitation, the following: Acts of God, such as pestilence, lightning, earthquakes, fires, storms, hurricanes, tornadoes, floods, washouts, droughts, severe weather. Additional circumstances and events include epidemics, explosions, restraining of government and people, war, strikes, and other similar events or causes.
If the State or the Contractor cannot perform any part of its obligations under this Contract because of force majeure, that party is excused from those obligations, to the extent that performance is prevented by the force majeure event and that party took all commercially reasonable steps to mitigate or avoid the effects of the force majeure event. If there is only a delay in performance, such delay may extend only for that time lost because of the force majeure event. At any time a party is unable to perform those above-referenced obligations, it must also do the following:
1. Promptly notify the other party, in writing, of any material delay in performance due to a specified force majeure event;
2. Provide detailed information of the force majeure event;
3. Provide a proposed revised performance date to make up for performance delays due to the force majeure event. When applicable, the revised schedule must provide for performance time not to exceed the time lost as a result of the force majeure event.
F. CONTRACT PERFORMANCE MANAGEMENT. The Contracting and Ordering Agencies are responsible for administering and monitoring the Contractor's compliance and performance on this Contract. Therefore, the Contractor must respond to complaints about performance of the obligations in this Contract to such entities in a timely manner. If the Contractor fails to perform any one of its obligations under this Contract, it will be in default.
If the Contractor fails to satisfactorily correct the performance or compliance issue within the time designated by the Agency, the Contracting Agency may employ all available options and remedies,

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including termination of the Contract if necessary to resolve the Contractor's continued nonperformance or noncompliance.

G. QUALITY ASSURANCE. At the option of the Contracting or Ordering Agency samples may be taken from deliveries made and submitted for laboratory tests. The Ordering Agency will bear the cost of testing when samples are found to be in compliance with the Contract. If samples do not conform to the Contract, Contractor will bear the costs of testing and the terms and conditions of the Suspension/Termination provision of this Contract will be applied.

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H. CONTRACT REMEDIES.

1. Actual Damages. The Contractor is liable to the State for all actual and direct damages caused by the Contractor's default. The State may self-perform or buy substitute Deliverables from a third party for those that were to be provided by the Contractor. The State may recover the costs associated with acquiring substitute Deliverables, less any expenses or costs avoided by the Contractor's default.

2. Liquidated Damages. If actual and direct damages are uncertain or difficult to determine, the State may recover liquidated damages. Unless otherwise specified, liquidated damages will be in the amount of 1% of the value of the order, Deliverable, or milestone that are the subject of the default, for every day that the default is not cured by the Contractor.

3. Deduction of Damages from Contract Price. The State may withhold payment and deduct all or any part of the damages resulting from the Contractor's default from any part of the Contractor's compensation still due on the Contract.

I. SUSPENSION/TERMINATION. In the event of suspension or termination the State will issue a notice. Any notice of suspension or termination, in full or in part, will be effective as specified in the notice. The Contractor must immediately cease all work, refuse any additional orders, and take all steps necessary to minimize the costs the Contractor will incur related to this Contract as directed by the notice. Suspension, termination or expiration of this Contract will not limit the Contractor's continuing obligations with respect to Deliverables that the State paid for or limit the State's rights in such.

At the State's request, the Contractor must immediately prepare a final report and deliver such report to the State. The report must detail the work completed and/or the orders received and not processed prior to the time of notice. If applicable, the report must include the percentage of the Project's completion, estimated time for delivery of all orders received but not processed, any costs incurred by the Contractor in doing the Project to date, and any Deliverables completed or partially completed but not delivered to the State at the time of notice. Based on the State's approval of the final report and as directed, the Contractor must deliver work, whether completed or not, to the State. Any delivered work will be subject to approval by the State. The Contractor may be entitled to payment for any Deliverables that have been delivered and accepted at a pro-rated amount based on the compensation structure of this Contract.

1. Contract Suspension.

a. Suspension for Cause. If the Contractor fails to perform any one of the Contractor's obligations under this Contract, the Contractor will be in default and the State may suspend rather than terminate this Contract. In the case of suspension for default, the State will be entitled to all remedies available under this Contract.

b. Suspension for Convenience. In the case of a suspension for the State's convenience, the amount of compensation due to the Contractor for work performed before the suspension will be determined in the same manner as provided in Section I.2.a. for termination for the State's convenience or the Contractor may be entitled to compensation for work performed before the suspension.

The notice of suspension whether, with or without cause, will be effective immediately, on the Contractor's receipt of the notice.

2. Contract Termination.

a. Termination for Convenience. The State may terminate this Contract, or an Ordering Agency may terminate an Order, for its convenience after issuing written notice to the Contractor. The Contractor will be entitled to the pro-rated contract price for any Deliverable

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

or portion of a Deliverable that the Contractor has delivered and the State has accepted before the termination. Total payments will not exceed the amount payable to the Contractor as if the Contract had been fully performed. This will be the Contractor's exclusive remedy in the case of termination for convenience and is available to the Contractor only after the Contractor has submitted a proper invoice.

b. Termination for Cause. If the Contractor fails to perform any of its obligations under this Contract, the Contractor will be in default and the State may terminate this Contract in accordance with this Section. Termination for cause includes but is not limited to:

1) Termination for Persistent Default. The State may terminate this Contract for defaults that are cured, but are persistent. "Persistent" means three or more defaults. After the State has notified the Contractor of its third default, the State may terminate this Contract without providing the Contractor with an opportunity to cure. The three defaults are not required to be related to each other in any way.

2) Termination for Endangered Performance. The State may terminate this Contract if the State determines that the performance of the Contract is endangered through no fault of the State.

3) Termination for Financial Instability. The State may terminate this Contract if the Contractor fails to timely pay its subcontractors, files a petition in bankruptcy or similar action, or the State finds other evidence of the Contractor's financial instability.

4) Termination for Delinquency, Violation of Law. The State may terminate this Contract if the State determines that the Contractor is delinquent in its payment of federal, state or local obligations including but not limited to taxes, workers' compensation insurance premiums, unemployment compensation contributions, child support, court costs or any other obligation owed to a State agency or political subdivision. The State also may terminate this Contract if the State determines that the Contractor has violated any law during the performance of this Contract.

5) Termination for Subcontractor Default. The State may terminate this Contract for the default caused by the Contractor's subcontractors. Any claims of its subcontractors due to suspension or termination will be the sole responsibility of the Contractor.

6) Termination for Failure to Retain Certification, License, and Permits. The State may immediately terminate the Contract if Contractor fails to obtain and maintain all official permits, approvals, licenses, certifications, and similar authorizations required by this Contract or by any local, state, or federal law throughout the duration of this Contract.

J. TIME IS OF THE ESSENCE. Time is of the essence in this Contract. The Contractor must deliver Deliverables and meet milestones as required by the Contract or coordinate an acceptable date and time for delivery with the Ordering Agency. If the Contractor is not able to or does not provide the Deliverables to the Ordering Agency or meet milestones by the date and time set forth in the Contract or agreed upon by the parties, the State may obtain any remedy as described herein or any other remedy at law.

K. ePROCUREMENT. The State plans to establish an eProcurement System which, in part, will provide certain electronic catalog hosting and contract management services to enable Ordering Agencies to access an online site to procure goods and services. It is the expectation that the Contractor will cooperate with the State if this Contract is identified to be a part of the eProcurement System.

VII. DATA AND INFORMATION CONTROL

A. CONFIDENTIALITY. The Contractor may learn of information, documents, data, records, or other material that is confidential in the performance of this Contract. The Contractor may not disclose any information obtained by the Contractor as a result of this Contract, without the written permission of the State. The Contractor must assume that all State information, documents, data, source codes, software, models, know-how, trade secrets, or other material is confidential. In addition, the Contractor may not disclose any documents or records excluded by Ohio law from public records disclosure requirements.

The Contractor's obligation to maintain the confidentiality of the information will not apply where the

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

information:
1. Was already in the Contractor's possession before disclosure by the State, and the information was received by the Contractor without the obligation of confidence;
2. Is independently developed by the Contractor;
3. Is or becomes publicly available without breach of this Contract except as provided in the next full paragraph;

4. Is rightfully received by the Contractor from a third party without an obligation of confidence;
5. Is disclosed by the Contractor with the written consent of the State; or
6. Is released in accordance with a valid order of a court or governmental agency, provided that the Contractor:
a. Notifies the State of such order immediately upon receipt of the order; and
b. Makes a reasonable effort to obtain a protective order from the issuing court or agency limiting disclosure and use of the confidential information solely for the purposes intended to be serviced by the original order of production.
Although some sensitive personal information, such as medical records, addresses, telephone numbers, and social security numbers may be publicly available through other sources, the Contractor shall not disclose or use such information in any manner except as expressly authorized in this Contract. Therefore, notwithstanding item 3 above, the Contractor does have an obligation to maintain the confidentiality of such sensitive personal information.
The Contractor must return all originals of any information provided by the State and destroy any copies the Contractor has made on termination or expiration of this Contract.
The Contractor will be liable for the disclosure of any confidential information. The parties agree that the disclosure of confidential information of the State may cause the State irreparable damage for which remedies other than injunctive relief may be inadequate, and the Contractor agrees that in the event of a breach of the obligations hereunder, the State shall be entitled to temporary and permanent injunctive relief to enforce this provision without the necessity of proving actual damages. This provision shall not, however, diminish or alter any right to claim and recover damages.
B. PUBLIC RECORDS AND RETENTION OF DOCUMENTS AND INFORMATION. The Contractor acknowledges, in accordance with Section 149.43 of the Ohio Revised Code, that this Contract, as well as any information, Deliverables, records, reports, and financial records related to this Contract are presumptively deemed public records. The Contractor understands that these records will be made freely available to the public unless the State determines that, pursuant to state or federal law, such materials are confidential or otherwise exempt from disclosure. The Contractor must comply with any direction from the State or an Ordering Agency to preserve and/or provide documents and information, in both electronic and paper form, and to suspend any scheduled destruction of such documents and information.
C. SECURITY & SAFETY RULES. When using or possessing State data or accessing State networks and systems, the Contractor, its employees, subcontractors and agents must comply with all applicable State rules, policies, and regulations regarding State-provided IT resources, data security and integrity. When on any property owned or controlled by the State, the Contractor must comply with all security and safety rules, regulations, and policies applicable to people on those premises.
D. USAGE REPORTS. At no cost to the State and in addition to other reports required by the Contract, the Contractor shall be required to provide quarterly, bi-annual or annual usage reports as requested by all Contracting Agencies and Co-operative Purchasing Program members. The report may include customer name, date of purchase, item description, quantity, dollar value, aggregate sales to date for each customer and other such information. Electronic media is the preferred method for these reports. Failure to provide the requested reports may be deemed as an event of default.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Addendum A

By accepting this proposal, Purchaser agrees to be bound by the following terms and conditions:

1. SCOPE OF WORK. This proposal is based upon the use of straight time labor only. Plastering, patching and painting are excluded. "In-line" duct and piping devices, including, but not limited to, valves, dampers, humidifiers, wells, taps, flow meters, orifices, etc., if required hereunder to be furnished by Johnson Controls, Inc. (hereinafter referred to as JCI), shall be distributed and installed by others under JCI's supervision but at no additional cost to JCI. Purchaser agrees to provide JCI with required field utilities (electricity, toilets, drinking water, project hoist, elevator service, etc.) without charge. JCI agrees to keep the job site clean of debris arising out of its own operations. Purchaser shall not back charge JCI for any costs or expenses without JCI's written consent unless specifically noted in the statement of the scope of work or services undertaken by JCI under this agreement, JCI's obligations under this agreement expressly exclude any work or service of any nature associated or connected with the identification, abatement, clean up, control, removal, or disposal of environment Hazards or dangerous substances, to include but not be limited to asbestos or PCSs, discovered in or on the premises. Any language or provision of the agreement elsewhere contained which may authorize or empower the Purchaser to change, modify, or alter the scope of work or services to be performed by JCI shall not operate to compel JCI to perform any work relating to Hazards without JCI's express written consent.

2. INVOICING && PAYMENTS. JCI may invoice Purchaser monthly for all materials delivered to the job site or to an off-site storage facility and for all work performed on-site and off-site. Ten percent (10%) of the contract price is for engineering, drafting and other mobilization costs incurred prior to installation. This 10% shall be included in JCI's initial invoice. Purchaser agrees to pay JCI the amount invoiced upon receipt of the invoice. Waivers of lien will be furnished upon request as the work progresses to the extent payments are received. If JCI's invoice is not paid within 30 days of its issuance, it is delinquent.

3. MATERIALS. If the materials or equipment included in this proposal become temporarily or permanently unavailable for reasons beyond the control and without the fault of JCI, then in the case of such temporary unavailability, the time for performance of the work shall be extended to the extent thereof, and in the case of permanent unavailability, JCI shall (a) be excused from furnishing said materials or equipment, and (b) be reimbursed for the difference between the cost of the materials or equipment permanently unavailable and the cost of a reasonably available substitute therefore.

4. WARRANTY. JCI warrants that the equipment manufactured by it shall be free from defects in material and workmanship arising from normal usage for a period of ninety (90) days from delivery of said equipment, or if installed by JCI, for a period of ninety (90) days from installation. JCI warrants that for equipment furnished and/or installed but not manufactured by JCI, JCI will extend the same warranty terms and conditions which JCI receives from the manufacturer of said equipment. For equipment installed by JCI, if Purchaser provides written notice to JCI of any such defect within thirty (30) days after the appearance or discovery of such defect, JCI shall, at its option, repair or replace the defective equipment. For equipment not installed by JCI, if Purchaser returns the defective equipment to JCI within thirty (30) days after appearance or discovery of such defect, JCI shall, at its option, repair or replace the defective equipment and return said equipment to Purchaser. All transportation charges incurred in connection with the warranty for equipment not installed by JCI shall be borne by Purchaser. These warranties do not extend to any equipment which has been repaired by others, abused, altered or misused, or which has not been properly and reasonably maintained. THESE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THOSE OF MERCHANTABILITY AND FITNESS FOR A SPECIFIC PURPOSE

5. LIABILITY. JCI shall not be liable for any special, indirect or consequential damages arising in any manner from the equipment or material furnished or the work performed pursuant to this agreement.

6. TAXES. The price of this proposal does not include duties, sales, use, excise, or other similar taxes, unless required by federal, state or local law. In addition to the stated price, purchaser shall pay all taxes not legally required to be paid by JCI or, alternatively, shall provide JCI with acceptable tax exemption certificates. JCI shall provide Purchaser with any tax payment certificate upon request and after completion and acceptance of the work.

7. DELAYS. JCI shall not be liable for any delay in the performance of the work resulting from or attributed to acts or circumstances beyond JCI's control, including, but not limited to, acts of God, fire, riots, labor disputes, conditions of the premises, acts or omissions of the Purchaser, Owner or other Contractors or delays caused by suppliers or subcontractors of JCI, etc.

8. COMPLIANCE WITH LAWS. JCI shall comply with all applicable federal, state and local laws and regulations and shall obtain all temporary licenses and permits required for the prosecution of the work. Licenses and permits of a permanent nature shall be procured and paid for by the Purchaser.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

9. DISPUTES. All disputes involving more than $15,000 shall be resolved by arbitration in accordance with the rules of the American Arbitration Association. The prevailing party shall recover all legal costs and attorney's fees incurred as a result. Nothing here shall limit any rights under construction lien laws.

10. INSURANCE. Insurance coverage in excess of JCI's standard limits will be furnished when requested and required. No credit will be given or premium paid by JCI for insurance afforded by others.

11. INDEMNITY. The Parties hereto agree to indemnify each other from any and all liabilities, claims, expenses, losses or damages, including attorneys' fees, which may arise in connection with the execution of the work herein specified and which are caused, in whole or in part, by the negligent act or omission of the Indemnifying Party.

12. OCCUPATIONAL SAFETY AND HEALTH. The Parties hereto agree to notify each other immediately upon becoming aware of an inspection under, or any alleged violation of, the Occupational Safety and Health Act relating in any way to the project or project site.

13. ENTIRE AGREEMENT. This proposal, upon acceptance, shall constitute the entire agreement between the parties and supersedes any prior representations or understandings.

14. ENTIRE AGREEMENT. This proposal, upon acceptance, shall constitute the entire agreement between the parties and supersedes any prior representations or understandings.

15. CHANGES. No change or modification of any of the terms and conditions stated herein shall be binding upon Johnson unless accepted by Johnson in writing.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

City Council Information Item
Regular Meeting - September 14, 2020

Submitted by: Jason Hunold,
Submitting Department: Public Utilities

Subject:
Clarifier Walkway Repairs

Legislation Title:
Clarifier Walkway Repairs

Background/Synopsis:

The requested appropriation is for clarifier walkway repairs at the City's Water Treatment Plant. The walkway, which connects the outside clarifier tanks to the filtration building, serves as a main thoroughfare for plant operators during facility checks, and also for the public during plant tours. The concrete walkway has deteriorated in recent years and is in need of repair. Water Division staff recommends the repairs be completed by American Façade Restoration (base bid option) which is the vendor who provided the lowest and best proposal. Proposals are attached for review.

Financial Impact:

An appropriation in the amount of $19,000.00 is being requested for clarifier walkway repairs at the City's Water Treatment Plant. Funding for this project was included in the 2020-2024 Capital Improvement Program (CIP) under project 0WT25, Walkway Improvements. Additional funding, as needed, will be redirected from 0WT15, Building Improvements. The funding source is the Water Surplus Fund.

Attachments:
1. WTP clarifier walkway rehab American Facade 06012020
2. WTP clarifier walk rehab Houston Brothers 08192020

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

American
Facade Restoration, LLC
2395 Alexandria Pike
Southgate, KY 41071
Phone: (859) 572-9200 – Fax: (859) 572-9210

January 14, 2020

The Garland Company
Attn: Dennis Lee
3800 East 91st Street
Cleveland, OH 44105

RE: Fairfield Water Treatment Plant

Dennis,

Thank you for the opportunity to provide a bid for the above referenced project. American Facade Restoration, LLC proposes to furnish all labor, tools, equipment, and insurance to perform the following.

Base Bid - Scope of Work: Walk way (A)

- **Mobilization / Demobilization**
- **Install Strong man netting to protect water**
- **Provide all safety, barricades per OSHA regulations**
- **Provide all Ground, pedestrian protection**
- **Provide all materials, labor & equipment to perform the following**
- **All AFR Employees have been trained in Silica Awareness, trained on all Silica equipment, have a medical evaluation, Fit tested for full face respirators**
- **All Chipping & grinding will be performed following new OSHA guidelines of silica all work will be performed using Hepavacs, wet cutting.**
- **Sound & demo 50 LF of concrete curb**
- **Clean all reinforcing steel & coat**
- **Install forms & pour 50 LF of curb using Mapie 15 FP**
- **Remove forms**
- **Pressure wash underside of walkway & face**
- **Shot blast walkway**
- **Caulk entire perimeter using Garland Greenlock XL**
- **Install Garland Durawalk Traffic System**
- **Waterproof face of walkway walls & underside using Garland Seal A Pore**
- **Final Cleanup**

Note: One Photo Showing work area and scope

American Facade Restoration Price to Perform Work - $18,990.00

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Alternate Bid - Scope of Work: Walk way (B)

- **Mobilization / Demobilization**
- **Install Strong man netting to protect water**
- **Provide all safety, barricades per OSHA regulations**
- **Provide all Ground, pedestrian protection**
- **Provide all materials, labor & equipment to perform the following**
- **All AFR Employees have been trained in Silica Awareness, trained on all Silica equipment, have a medical evaluation, Fit tested for full face respirators**
- **All Chipping & grinding will be performed following new OSHA guidelines of silica all work will be performed using Hepavacs, wet cutting.**
- **Resurface 50 LF of concrete curb**
- **Shot blast walkway**
- **Caulk entire perimeter using Garland Greenlock XL**
- **Install Garland Durawalk Traffic System**
- **Final Cleanup**

Note: One Photo Showing work area and scope

American Facade Restoration Price to Perform Work - $14,750.00

We do not include taxes, engineering, permits, design, testing, electrical, piping, hazard material abatement, performance bond, premium time, Saturday, Sunday or holiday work unless otherwise specified on the face of this document.

This quotation will remain firm for thirty (30) days, unless extended in writing by American Facade Restoration.

We wish to thank you for the opportunity to submit this proposal. If any other information is required, or if you have any questions, please do not hesitate to call me.

Sincerely
Eddie Baas
Project Manager

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Houston Bros. Inc.

2185
Central
Parkway
Cincinnati,
Ohio 45214
513 / 721-3088
Fax: 513 / 721-1723

August 19, 2020

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105

Attention: Mr. Dennis Lee

e-mail: dlee@garlandind.com

Job Location
Fairfield Water Treatment Plant
5021 Groh Lane
Fairfield, Ohio 45014

Re: Bid per attached scope of work for
concrete repairs and coating

Dear Mr. Lee:

We propose to furnish all labor, material, tools and equipment necessary to complete the above work as follows:

Base Bid – Section A

QUOTATION: FOR THE SUM OF FIFTY-NINE THOUSAND FOUR HUNDRED FORTY DOLLARS ($59,400.00)

Alternate Bid – Section B

QUOTATION ADD: FOR THE SUM OF FORTY-EIGHT THOUSAND SIX HUNDRED DOLLARS ($48,600.00)

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

We shall furnish certificates of premium payments for workers compensation, liability and property damage insurance upon request.

All work shall be executed in a first class manner by skilled mechanics who are thoroughly experienced in this particular type of work.

We shall remove all necessary equipment and rubbish from time to time and upon completion of the work, leave the premises in a neat and clean condition.

Thank you for giving this your attention.

Yours truly,

Accepted by

HOUSTON BROTHERS WATERPROOFING, INC.

_____

Jeff Garnett

Date_____

JG/es

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

City Council Information Item
Regular Meeting - September 14, 2020

Submitted by: Jason Hunold,
Submitting Department: Public Utilities

Subject:
Raw Water Well 8 Pump

Legislation Title:
Raw Water Well 8 Pump

Background/Synopsis:

Fairfield's Water Division pumps, treats and distributes about 5.5 million gallons of drinking water each day. Fairfield utilizes six raw water / ground water production wells to supply water to its Water Treatment Plant. The pump for Raw Water Well #8 has failed and is in need of immediate emergency repair.

The Water Division proposes to utilize Moody's of Dayton, Inc. for the emergency repair of the Raw Water Well #8 pump. A proposal is attached for review.

Rules suspension is requested in order to expedite the work.

Financial Impact:

An appropriation in the amount of $27,000.00 is being requested for the emergency repair of the Raw Water Well #8 pump. Funding for this project was included in the 2020-2024 Capital Improvemt Program (CIP) under project 0WT01, Maintain Raw Water Production Wells. Additional funding, as needed, will be redirected from 0WT04, Pump Overhaul/Replacement Program. The funding source is the Water Surplus Fund.

Emergency Provision Explanation:

Emergency provision is needed due to the critical and time-sensitive nature of this water pumping equipment, and the regulatory and operational need for water system redundancy.

Attachments:
1. Fairfield Well 8 2020 Repairs

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

MOODY'S of Dayton, Inc.

4359 INFIRMARY ROAD
MIAMISBURG, OHIO 45342-1231
PHONE AC 937-859-4482
FAX AC 937-859-4522
www.moodysofdayton.com

August 25, 2020

City of Fairfield
5021 Groh Lane
Fairfield, OH 45014

Subject: Well 8 Repairs

Attention: Mr. Jason Hunold

The motor required guide bearing replacement and regular service. The pump needed to be rebuilt, a new impeller is needed. The column needed to be pressure washed and the shafts needed straightened and three needed replaced. Three new pieces of column pipe are needed as their faces are thin and show thin spots behind the threads (quoting all new as requested).

Following are the costs to repair the pump, motor, and column assembly:

1	Ls	Motor repair…….……..…	$ 2,814.00
1	Ea	Pump rebuild including wear rings, bushings, fasteners, etc., as required..…...	$ 3,637.00
1	Ea	Repair discharge head assembly..……...	$ 985.00
10	Ea	10 ft column pipe replacement @ $1,000.00/Ea..…..	$10,000.00
3	Ea	10 ft ss shafting replacement @ $750.00/Ea..…..	$ 2,250.00
2	Ea	5 ft ss shafting replacement @ $450.00/Ea..…..	$ 900.00
30	Hrs	Clean columns and shafts, straighten shafts, etc @ $85.00/hr..……...	$ 2,550.00
1	Ls	Re-installation and flow testing……..	$ 3,000.00
		TOTAL REPAIR COST	$26,136.00

Thank you for the opportunity to serve the City of Fairfield.

Respectfully,

Michael Spicer
Vice President/Geologist

ACCEPTED BY:_____ DATE:_____

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Ben Mann,
Submitting Department: Public Works

Subject:
Miscellaneous Traffic Signal Upgrades / Spare Parts

Legislation Title:
Miscellaneous Traffic Signal Upgrades / Spare Parts

Recommendation:
It is recommended that City Council authorize an appropriation of $15,000.00 from the County Motor Vehicle Fund for miscellaneous traffic signal upgrades and spare parts.

Background/Synopsis:

This project is to complete small improvements that are beyond signal maintenance, but not large enough to necessarily be their own projects. Many of these smaller type projects are the result of maintenance observation and should be addressed as expediently as possible.

This project is in the proposed Capital Improvements Program and is included in the 2020-2024 CIP as 0PW02. Staff will procure multiple quotes for larger projects and when it is in the City's best interests.

This work will be to make minor miscellaneous upgrades such as reconfiguring signs and signals in accordance with safety study recommendations. This project will also include the purchase of spare parts including traffic cameras, pre-emption microphones and pedestrian signal equipment.

With the upgrades that have been made to the Central Traffic System over the years, there is a uniformity of many of the items at the signal and in the traffic control cabinets. It is often more practical to buy and maintain just one type of equipment that is interchangeable City-wide.

Financial Impact:

$15,000.00 from the County Motor Vehicle Fund.

Emergency Provision Explanation:

None requested.

Rule Suspension Requested:
No

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Emergency Provision Needed:
No

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

City Council Ordinance
Regular Meeting - September 14, 2020

Submitted by: Ben Mann,
Submitting Department: Public Works

Subject:
Permanent Radar Signs for Two School Zones

Legislation Title:
Appropriation of funding for Permanent Radar Signs (Holden Boulevard for the High School and Nilles Road for Creekside)

Recommendation:
It is recommended that City Council authorize an appropriation of $10,720.00 from the County Motor Vehicle Fund for the purchase of equipment from A&A Safety.

Background/Synopsis:

This is for the purchase of new permanent mount radar activated speed signs to be placed next to the school flashers. The intent is that they would be to have these operate during school times to warn drivers of their speed.

We have portable, battery operated radar signs that we place throughout the City temporarily. These signs would be permanently wired to the electric controlling the school flashers at these two locations. Staff is requesting funding for four signs at this. These locations were chosen based on input from the Police Department which indicated that these were two areas prone to speeding. They are also mounted above the road which should make the radar indication highly visible.

Only one quote was procured for this project because the other vendor we have historically used did not have equipment compatible with our existing infrastructure and we would have had to replace some of our existing equipment in order to use their product.

This project is programmed in the current 2020-2024 Capital Improvements Program as 0PW42.

Financial Impact:

Total of $10,720.00 from the County Motor Vehicle Fund.

Emergency Provision Explanation:

None required.

Rule Suspension Requested:
No

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Emergency Provision Needed:
No

Attachments:
1. Holden Blvd Radar Signs
2. Nilles Rd Radar Signs
3. Radar Signs for School Zones Quote 14479

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

N

Holden Blvd School Zone Radar Signs

1 in = 523 ft

FAIRFIELD

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

N

Nilles Rd School Zone Radar Signs

1 in = 236 ft

FAIRFIELD

QUOTE

QUOTE NO
14479

1126 Ferris Road, Amelia, OH 45102 Phone: (513) 943-6100 Fax: (513) 943-6106
4080 Industrial Lane, Beavercreek, OH 45430 Phone: (937) 912-9590 Fax: (937) 912-9593
16000 Miles Road, Cleveland, OH 44128 Phone: (216) 283-8040 Fax: (216) 283-8041

TO: Nick Castelinni
City of Fairfield
5350 Pleasant Avenue
Fairfield, OH 45014-3597
(513) 867-4228
ncastelinni@fairfield-city.org

QUOTE DATE	VALID THRU	FOR	PAGE
1/15/2020	2/13/2020	Radarsign- DJH	1

ITEM NO	QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED
006-3001	4ea	Radarsign TC-600A AC Powered Radar Speed Sign -13" Full Matrix LED Display -SLOW DOWN & TOO FAST Alert Messages -28" x 33" YOUR SPEED Faceplate -Stainless Steel Pole Mount Hardware -Bashplate -WiFi Connection -2 Year Warranty - With Relay Switch	2,495.00ea	9,980.00*
	4	Relay Switch	95.00	380.00*
006-3009	4ea	Radarsign AA061 Simulated Camera Flash/White Strobe (TC-600 Models Only)	90.00ea	360.00*

TOTAL AMOUNT 10,720.00

FOB - Delivered
Quotation valid for 30 days.

If you have any questions please contact me via cell or email.

Thank you,

Dean Berry
C: 513-276-0532
Email: deanb@aasafetyinc.com

* means item is non-taxable

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

City Council Information Item
Regular Meeting - September 14, 2020

Submitted by: Adam Sackenheim,
Submitting Department: Public Utilities

Subject:
Turblex Blower Service - Wastewater Treatment Plant

Legislation Title:
Turblex Blower Service - Wastewater Treatment Plant

Background/Synopsis:

The Turblex Blower is a critical piece of equipment at the City's Wastewater Treatment Plant; the device supplies dissolved oxygen for the Activated Sludge Treatment Process. The 36,000 Hour Service is a necessary preventative maintenance task which ensures the longevity of this critical piece of equipment. This task was performed this summer by Lone Star Blower per the attached proposal. Project funding was approved by Council on 5/11/2020.

This request is for additional appropriations to cover the extra costs associated with the blower service, including labor and coatings. The additional costs were related to unanticipated but critical repairs that were not identified until after the equipment was disassembled.

Financial Impact:

An appropriation in the amount of $8,800.00 is being requested for additional costs associated with preventative maintenance services for the Wastewater Division's Turblex Blower.

Funding for this project is included in the approved 2020-2024 Capital Improvement Program under project number 0WW19, Turblex Blower Service. The funding source is the Sewer Surplus Fund.

Attachments:
1. Fairfield WWTP KA10SV-GL210 Class 2 Service S-QUO1514
2. FW_ Class 2 Service additional work

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

CLASS 2 GEARED TURBO
FIELD SERVICE PROPOSAL

ATTN:	Jason Hunold	OFFER NO.:	S-QUO1514
OWNER:	Fairfield WWTP	REPRESENTATIVE:	Pelton
DATE:	10/18/2019		
EQUIPMENT:	KA10SV-GL210 SN# 5951		

SUPPLIER: LONE STAR BLOWER

LONE STAR BLOWER
By: Colleen LeGrand

8883 West Monroe Road
Houston, Texas 77061

TEL: 832-532-3112
FAX: 832-532-3115

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

2.0 OEM CLASS 2 INSPECTION / 36,000 HOURS

- Inspect for general condition of unit
- Identify any known issues from operators.
- Inspect and replace inlet filter if necessary
- Inspect and replace oil filter if necessary
- Check lube oil level, take sample and change as required
- Inspect inlet silencer
- Dismantle compressor air-end shroud
- Dismantle compressor air-end
- Inspect and clean variable vane system
- Check vane geometry
- Inspect and clean inlet guide vane system
- Inspect control arm of variable vane systems (inlet and or discharge)
- Check axial clearance between impeller and contour ring - adjust if required
- Remove gearbox inspection covers for visual observation of internal condition
- Check axial movement on high speed shaft
- Inspect ball bearings (GK units only): quoted if replacement is required
- Verify Check Valve operation
- Check coupling condition and do re-alignment and tightening torques of all bolts
- Inspect and tighten all mechanical and electrical connections
- Make start/stop of the blower to check running conditions
- Check for oil leaks
- Clean and test surge switch
- Verify all 4-20 mA current loops are operating properly
- Dismantle gearbox
- Inspect gearwheels, bearings, seals and check clearances
- Replace roller/ball bearings (GC series gearbox only)
- Replace slow shaft ball bearings (GK series gearbox only)
- Replace flexible seals (O-rings)
- Inspect electric motor, oil pump, oil cooler, coupling, and valves
- Check axial movement on high and low-speed shafts
- Prepare overhaul report for the blower

- **<u>Additional Services Included by Lone Star above OEM recommendation</u>**
  - Lone Star sends 2 technicians to site. (1) Senior and (1) Helper: No need for site assistance during service.
  - Full Vibration Analysis of Blower and Motor prior to service to baseline unit.
  - Full Vibration Analysis after service to verify satisfactory operation.
  - Documentation and verification of oil gap for bearing tolerance and wear assessment.
  - Verification check of all sensors reading accurate values or positional feedback to the PLC. (Verify readings on PLC and actual conditions). This includes all instruments, actuators, limit switches, pumps, fans etc. This is done to verify all alarm and trip functions are operating properly and accurately.
  - Observe blower in automatic operation with sequencing or processing.
  - Check motor running conditions and grease or oil bearing if required.
  - Assess if gearbox should be Class 2 inspected from preliminary vibration analysis and temperature evaluation from Class 1. (Class 2 may not be needed at 36,000 and should be done on an as needed basis)
  - A Lone Star Blower Oil Sample Kit is included in the Class 2 Service. The oil sample will be collected and sent in for analysis. This will provide valuable information on the internal works and wear of the blower.
  - Detailed Report including total overhaul health of the blower system. Detailed run data and system operation. ***See Sample Report.***

** Local environmental regulations may prevent the technicians from starting up or running the blowers in the afternoon due to energy cost etc.- if this applies to your site this may affect the start-up schedule and may extend the trip incurring cost for per diem and actual labor costs.**

Lone Star Blower is your ONE solution for Blower Systems

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Class 2 Labor Estimation:

KA10SV-GL210 (1 blower 4 days)

*Dates are estimated -Labor will be billed according to actual hours worked.

Labor estimation:

(8 hr work day):	$10,000.00

Additional Cost:

Mobilization/Demobilization:	$ 6,209.00
Travel Per Diem ($740.00* per day)	$ 3,330.00

*Covers Hotel, Meals, Rental Car for 2 workers

Replacement Parts (*based on requirement)	$ 1,020.00

*O-Rings, Turbo Cleaning Kit, Oil Sample Kit

Flight Cost + 15% (*subject to change)	$ 2,600.00

*Flight is estimated based on current rate actual flight cost will be billed.

Class 2 Estimated Service Total:	$23,129.00

Comment:

*All pricing is subject to change. Actual time, materials, and travel will be billed accordingly to the attached labor rate sheet /actual cost. PM Proposal pricing assumes time required to complete the described tasks. Any additional parts requirements outside of the attached scope will be quoted separately.

Site Conditions:

The blower room must be clean and accessible. Lifting cranes and/or tools for lifting must be accessible. Sound enclosures will be removed prior to working on equipment. Special tools shipped with the equipment must be available for use. Any ordered spare parts must be available at the site for use.

Technician will need to take a baseline vibration snapshot before servicing the unit- please do not lock out until the technician has completed this step

Line Item Parts:

Oil Sample Kit

Additional Samples	$84.85

Synthetic Oil Upgrade (extends life 2.5 times that of Petroleum)

55 Drum SO-32/46	$2,419.00
5 Gallon Pail SO-32/46	$241.93

Optional Preventative Maintenance Agreements:

PM agreements on multiyear contracts receive discounted labor and parts pricing from the attached.

Lone Star Blower is your ONE solution for Blower Systems

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Lone Star Blower

Starlube® Synthetic Lubricants

***Starlube*® Synthetic Lubricants are specifically designed to ensure maximum reliability and superior performance for geared and multistage turbo technologies.**

Proper maintenance coupled with using prescribed lubricants is crucial to protecting your investment and the long-term reliability of your equipment. As a blower manufacturer, we can recommend the proper lubricants to use in any application or environment.

Geared Turbo Synthetic Oil

SO-INFINITY Offers up to 40,000 hours of maximum protection. A true Group V PAG synthetic oil, there is nothing better to last longer, run cooler, and protect against any possible varnishing.

SO-32 A Group III synthetic oil offering protection twice as long any as petroleum base lubricants and can upgrade your current installation.

Multistage Turbo Synthetic Oil and Grease

SO-46 A Group III synthetic oil for standard applications with superior rust and anti-oxidation properties combined with a great emulsifier of any condensation.

SO-150 Similar to **SO-46**, but for higher temperature applications.

SG-100 Synthetic grease offers extreme anti-corrosion and anti-oxidant characteristics to enhance its performance at higher speeds, heavy loads and at high temperatures.

Choose our **FO-100** oil and **FG-100** grease for applications with food grade requirements.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Lone Star Blower

Starlube® Synthetic Lubricants

Starlube® Turbo Oil	Multistage Turbo			Geared Turbo		*Starlube*® Grease	Multistage Turbo	
	SO-46	SO-150	FO-100	SO-32	SO-INFI		SG-100	FG-100
Standard Run Hours*	8000	8000	6000	16000	40000	Standard Run Hours*	8000	6000
Sythetic Group Type	3 SH	3 SH	3 SH	3 SH	5 PAG	NLGI Grade ASTM D217	2	2
Color, Visual	Red	Purple	White	Blue	Gold	Color, Visual	Blue	White
Viscosity cSt@ 40°C ASTM D445	46	150	100	32	25	Thickener Type Complex	Lithium	Aluminium
Viscosity index ASTM D2270	129	127	128	129	165	Penetration 25°C, ASTM D217	285	285
Pour point °C ASTM D97	-24	-20	-21	-27	-48	Viscosity cSt@40°C ASTM D445	100	130

Note: We supply oil in quart, gallon, five gallon, and 55 gallon increments. Grease is supplied in 15 ounce tubes.

Our Lone Star Oil Sample Kit provides everything you need to take a sample of your oil and receive a detailed report of the analysis.

Each kit contains a carrying case, hand oil pump, tubing, sample jars that attach to the pump, shipping container, pre-paid postage envelope, and includes the cost of the analysis that will be sent to you and the factory for review.

**Oil and Grease should be changed when required. This is accomplished by sampling and determining the maintenance interval. • Never mix lubricants or over fill. • Consult your Operations and Maintenance manual for instructions.*

LONE STAR BLOWER
+1 832 532 3112 Office
+1 832 532 3115 Fax
info@lonestarblower.com
www.lonestarblower.com

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Lone Star Blower

Geared Turbo Field Service Report

Customer_____Facility _____

Contact Name _____ Phone #_____

LSB Job #_____ Date_____ Manufacturer _____

Model #_____ SN_____

The following jobs have been performed on compressor

- Test run to check oil tightness.
- Vibration level in test point (RMS-value) measured before disassembling of compressor (see notes).
- Dismounting of air inlet duct.
- Dismounting of silencer and air inlet filter.
- Dismounting of silencer.
- Check and replacement of air inlet filter.
- Cleaning and check of air inlet filter.
- Check of silencer.
- Repair of silencer
- Dismounting of outer diffuser drive system.
- Dismounting of outer prerotation drive system.
- Dismounting of inlet housing, volute casing, impeller/rotor and diffuser plate.
- Cleaning and check of all air-exposed surfaces, especially of impeller/rotor.
- Disassembling of inner diffuser drive system.
- Cleaning and check of all parts of the diffuser drive system.
- Assembling and check of diffuser drive system. Measuring of throat (see notes).
- Disassembling of inner prerotation drive system.
- Cleaning and check of all parts of prerotation drive system.
- Assembling and check of prerotation drive system.
- Disassembling of gear.
- Visual check of gear wheels, bearings, journal bearings and seals.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

LS Geared Turbo Field Service Report

- Replacement of bearing pos. .
- Replacement of seal pos. .
- Replacement of ball bearing pos. .
- Replacement of roller bearing pos. .
- Replacement of O-rings and flexible gaskets.
- Cleaning of all parts.
- Assembling of gear.
- Check and measuring of clearance of axial bearing in gear (see notes).
- Check of lubricating oil and cleaning and check of oil tank. Change of lubricating oil.
- Check of coupling alignment and tightening of bolts (see notes).
- Check of drive motor (cleaning of fan and lubrication).
- Check of blow-off valve and non-return valve (functional test).
- Check of lube oil pump.
- Replacement of bearing and shaft seal in oil pump.
- Assembling of compressor. Visual check of all parts, including check of clearance of axial bearing in rotor (see notes).
- Check of clearance between impeller and covering (see notes).
- Replacement of O-rings.
- Mounting, check and adjustment of outer diffuser drive system. Mechanical limit switch adjusted to stop at scale value “0”. Check of function and placing of limit switch (see notes).
- Mounting, check and adjustment of outer prerotation drive system. Check of function and placing of limit switch (see notes).
- Mounting of silencer.
- Mounting of silencer and air-inlet filter.
- Mounting of air inlet duct.
- Replacement of oil filter.
- Check/cleaning of oil filter.

-

Start-up of compressor and check of:

- Safety functions
- Oil tightness everywhere
- Vibration level (RMS-value) in test point when compressor has reached operational temperature (see notes)
- Oil cooler, oil pump and blow-off valve
- Start/stop and control sequences

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

LS Geared Turbo Field Service Report
INSTRUCTION MANUAL

Does customer have IO&M Manual? Y N

1. PIPING

A. Is piping properly supported? Y N

If no, explain: _____

B. Are multiple units running in parallel? Y N
C. Is check valve installed? Y N
   a. Is direction of flow correct? Y N
   b. Is valve stem oriented correctly? Y N
   c. Location of check valve Inlet Discharge
D. Is unit equipped with an air filter? Y N
   a. Brand _____ Model _____
   b. Material: Paper Felt Wire
   c. Is unit equipped with silencers? Y N
      i. Inlet Type _____
      ii. Discharge Type _____
E. Is a pressure relief valve installed? Y N
   a. Is PRV set properly? Y N

F. Additional Comments: _____

2. BLOWER

A. Has the blower been properly maintained during storage? Y N
   a. If no, explain: _____
B. Is there any visible damage? Y N
   a. If yes, explain: _____
C. Does shaft rotate freely? Y N
D. What type of belts/coupling used? _____
E. Is unit Oil or Grease lubricated? Oil Grease
F. If oil, is oil level correct? Y N
G. Oil filters changed? Y N

H. Additional Comments: _____

3. MOTOR

Brand_____ TEFC ODP HP: _____ Frame: _____
RPM_____ Voltage: _____ Class: _____

A. Is motor wired for proper voltage? Y N
B. Is there adequate room for ventilation of motor? Y N

C. Additional Comments: _____

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

LS Geared Turbo Field Service Report

4. ALIGNMENT

A.	Has alignment been checked?	Y	N
B.	What type of alignment equipment used?	Dial	Laser
C.	Alignment report attached?	Y	N

5. Test Mode Operations

A.	Low low oil pressure switch operating correctly?	Y	N
B.	Low oil pressure switch operating correctly?	Y	N
C.	Surge switch clean and operating correctly	Y	N

6. STARTUP

D.	Bump motor for rotation. Correct?	Y	N
E.	Is motor overloaded?	Y	N
F.	Do amp meter match calibrated readings?	Y	N
G.	Vibration levels acceptable?	Y	N
H.	Any leaks? Oil? Grease?	Y	N

7. TRAINING

A.	Have you reviewed blower and controls operation with customer?	Y	N
B.	Have you explained surge and overload conditions?	Y	N
C.	Have you instructed the customer in routine blower, motor and accessory maintenance?	Y	N

8. MEASUREMENTS

Vibration Levels as Found: _____

Vibration Levels as Left: _____

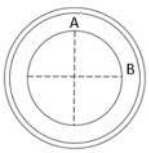
Vibration probe gap high speed shaft : X_____Y_____ Thrust "Z" _____

Limit Switch For DVG: _____

Limit Switch For IGV: _____

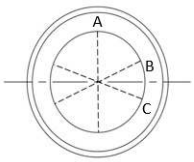
Hour Counter: _____

9. Journal Bearing Measurements (Inboard)



A_____B_____

10. Journal Bearing Measurements (Outboard)



A_____B_____ C_____

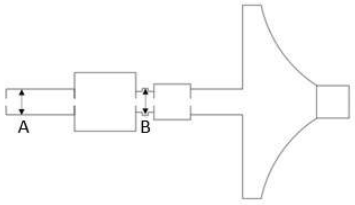
Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

LS Geared Turbo Field Service Report

Shaft (O.D.)

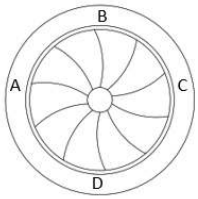
A_____

B_____



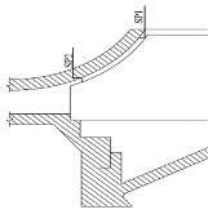
11. SP1 Impeller Circ.

	As Found:	As Left:
A.	_____	_____
B.	_____	_____
C.	_____	_____
D.	_____	_____



SP2 Impeller Inner Volute Casing

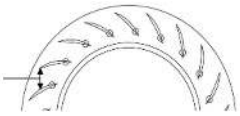
Internal Gap : _____



12. Diffuser Throat Clearance

As Found: _____mm

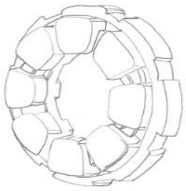
As Left: _____mm



13. Thrust Bearing Conditions

Active Thrust: _____

Inactive Thrust: _____



14. Axial Thrust

As Found: _____mm

As Left: _____mm

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

LS Geared Turbo Field Service Report

FIELD DATA LOG

Blower S/N: _____ Date: _____

SKID READINGS	*VD (SCALE)*							
	IGV (SCALE)							
	INLET TEMPERATURE (F)							
	DIFFERENTIAL PRESSURE (PSI)							
	DISCHARGE PRESSURE (PSI)							
	OIL PRESSURE (PSI)							
	OIL TEMPERATURE (F)							
MCC/LCP READINGS	*TIME OF DAY*							
	HOUR METER							
	IGV POSITION							
	VD POSITION							
	DIFFERENTIAL PRESSURE							
	INLET AIR TEMPERATURE							
	OIL RESERVOIR TEMPERATURE							
	BLWR SS SHAFT 0DE / DE BRG TEMPERATURE							
	BLWR HS SHAFT IMP / OPP IMP END BRG TEMPERATURE							
	BLWR HS SHAFT THRUST BRG TEMPERATURE							
	BLWR HS SHAFT IMPELLER END VIBRATION X / Y							
	BLWR HS SHAFT "Z" POSITION							
	MOTOR AMPERAGE							
	MOTOR "A" WINDING TEMPERATURE							
	MOTOR "B" WINDING TEMPERATURE							
	MOTOR "C" WINDING TEMPERATURE							
	MOTOR DE / ODE BRG TEMPERATURE							
	MOTOR SHAFT DE X / Y VIBRATION							
	MOTOR SHAFT ODE X / Y VIBRATION							
	DISCHARGE AIR TEMPERATURE							
	FLOW AT DCS							

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15. **Notes:**

_____
_____
_____
_____
_____
_____
_____
_____
_____

Additional Notes:

_____
_____
_____
_____
_____
_____
_____
_____

16. **STARTUP CERTIFICATION**

Startup Completed by:

LSB Technician _____ Date _____

Customer Signature: _____ Date _____

Customer Printed Name: _____

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Office: + 832 532 3112
Fax: + 832 532 3115
www.lonestarblower.com

Lone Star Blower, Inc

TERMS & CONDITIONS OF SALE
(EQUIPMENT AND/OR SERVICE)

1. GENERAL: As used herein, "Seller" means Lone Star Blower "Purchaser" means the entity to which Seller's offer is made, or the entity purchasing Equipment and/or service from Seller. The term "Equipment" as used herein includes any and all products, equipment, parts, and accessories furnished by Seller to Purchaser. All offers and sales by Seller are expressly conditional upon these Terms and Conditions of Sale. Any terms or conditions in Purchaser's purchase order (or in any other Purchaser communication) which are different from or in addition to the terms and conditions contained in these Terms and Conditions of Sale are hereby objected to. All orders submitted to Seller are subject to approval by Seller's headquarters.

2. DELIVERY: The shipment/delivery period is an estimate only and commences after Seller's receipt of all necessary information, approvals, and signed submittals with release for manufacturing. In no event shall delivery be construed as falling within the meaning of "time is of the essence". Seller reserves the right to deliver in installments. Unless otherwise specified in Seller's quotation, delivery is F.O.B. Seller's manufacturing facility.

3. TITLE and RISK OF LOSS: Unless otherwise specified in Seller's written quotation, title and risk of loss or damage to the Equipment shall pass to Purchaser upon tender of delivery F.O.B. manufacturing facility. Notwithstanding the foregoing, a security interest in the Equipment or any replacement shall remain in Seller, regardless of mode of attachment to realty or other property, until full payment has been received by Seller. Purchaser agrees upon request to do all things and acts necessary to perfect and maintain said security interest and shall protect Seller's interest by adequately insuring the Equipment against loss or damage from any cause.

4. TAXES: Purchaser shall be responsible for applicable local, state and federal taxes which may be now or hereafter be applicable to, measured by, or imposed upon, or with respect to this transaction, the Equipment, its sale, its value or its use, or any services performed in connection therewith (except any taxes on Seller's income). If sales, use or other State or Municipal taxes in addition to any listed specifically as part of the stated purchase price, are imposed upon Seller, Purchaser agrees to pay the same or reimburse Seller upon demand. Seller will accept a valid exemption certificate from Purchaser, if applicable. If an exemption certificate previously accepted by Seller is not recognized by the governmental taxing authority involved, Purchaser agrees to promptly reimburse Seller for any taxes covered by such exemption certificate which Seller is required to pay.

5. PAYMENT: Unless specifically agreed otherwise in writing, payment is due in full within 30 days of the invoice date. Seller reserves the right to charge late fees on overdue amounts at a monthly rate of 1.5% (one and a half percent) or the rate permitted by law, whichever is lower. Purchaser shall have no right to set-off against any amounts which may become payable to Seller under this contract or otherwise, for amounts which Seller may allegedly or in fact owe Purchaser or any affiliate of Purchaser or assignee whether arising under this contract or otherwise. Any waiver by Seller of any lien or lien right shall be conditioned upon Purchaser's timely payment to Seller of all amounts due.

6. INSTALLATION: Unless Seller's written quotation specifies that Seller will perform installation of the Equipment, it is understood and agreed that Seller will not perform any installation of the Equipment.

7. START-UP, OTHER SERVICE: Any service (for example, Equipment start-up, if applicable) to be performed by Seller is specified in Seller's written quotation. Dates/time for the service is subject to scheduling and confirmation by Seller's service department. Seller's performance of service is subject to Seller's normal working hours (8:30 am to 5:00 pm, Monday through Friday excluding public holidays), unless expressly agreed otherwise. If any forklift, crane, and/or other lifting or rigging equipment or lighting equipment is necessary (as reasonably determined by Seller's service technician) for Seller to perform the service, Purchaser shall supply such equipment at its own expense together with sufficiently skilled and qualified labor in connection therewith, unless expressly agreed otherwise. If Purchaser requests Seller to comply with Purchaser's safety programs/procedures in connection with performing service at Purchaser's premises, Seller shall comply with such safety programs/procedures that have been provided in advance to Seller in writing with reasonable opportunity to review/implement, to the extent they are reasonable and applicable to the scope of Seller's activities at the premises.

8. INSURANCE: During the term of the Contract, Seller agrees to have the following insurance coverage:

a) Commercial General Liability insurance in an amount of $1,000,000 each occurrence for bodily injury and physical damage to tangible property, subject to an annual aggregate not to exceed $2,000,000;
b) Automobile Liability insurance in an amount of $1,000,000 combined single limit each occurrence;
c) Worker's Compensation insurance in accordance with applicable statutory law; and
d) Employer's Liability insurance in an amount of $1,000,000 for bodily injury each accident or disease.

If Seller will physically enter onto Purchaser's premises (or a third party's premises) in connection with the sale of the Equipment/ service, Seller agrees to, at Purchaser's reasonable request, provide an ACORD form of certificate confirming the above-stated insurance coverage.

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Fax: + 832 532 3115
www.lonestarblower.com

Seller shall have no other insurance-related requirement, unless specifically agreed to in writing by an authorized manager of Seller in connection with the order.

9. RETURN POLICY: Shipping and handling charges are not refundable. Purchaser is responsible for the return shipping fee. All returned items are subject to a 30% restocking fee. Returned items must be in brand new condition with all packaging enclosed in the exact condition in which you received them. Special order or non-stock items will not be accepted for return/refund.

10. CANCELLATION: Each party has the right to cancel the order/contract in whole or in part in writing with immediate effect if the other party becomes insolvent, makes a general assignment for the benefit of creditors, suffers or permits the appointment of a receiver for its business or assets, becomes subject to any proceeding under any bankruptcy or insolvency law, or has wound up or liquidated (voluntarily or otherwise). In addition, each party has the right to cancel the order/contract or any part thereof if the other party fails, within 30 days after receipt of written notice from the non-breaching party specifying the material breach and intent to terminate, to commence and diligently pursue cure of the breach. Unless an order is cancelled by Purchaser in accordance with this paragraph, Purchaser shall pay Seller's cancellation charges if Purchaser cancels the order (including if Purchaser cancels the order for Purchaser's convenience). The cancellation charges shall be reasonable and may include (among other things) all costs and expenses incurred, and commitments made by Seller and a reasonable profit thereon. Notwithstanding anything set forth to the contrary, Seller may suspend Seller's performance or cancel the order/contract (or any part thereof) immediately if Purchaser fails to provide payment security (if applicable) or if Purchaser fails to make any payments when due.

11. WARRANTY: Seller hereby warrants to Purchaser that the Equipment manufactured or distributed by it and delivered hereunder will be free from defects in material and workmanship under proper use and service; this warranty shall expire one (1) year from start-up or 18 months from the original shipment date from Seller's manufacturing facility whichever comes first. This warranty applies only to Equipment manufactured by Seller and does not cover motors, starters, electrical equipment or other components or accessories manufactured by others. Seller will repair or replace, F.O.B. its factory, any defective part or parts, at no charge, if promptly returned to it within the above-noted warranty period. This warranty extends only to the original purchaser of Equipment furnished hereunder and shall be void if the Equipment is repaired or tampered with in any manner other than by Seller's authorized service personnel. If Seller's inspection does not disclose a defect covered by the warranty, the Equipment will be returned to Purchaser at its expense or, if Purchaser elects, Seller will repair or replace the equipment and charge for such service at the regular rate.

Seller hereby warrants to Purchaser that all other Equipment manufactured by Seller and delivered hereunder will be free from defects in material and workmanship under proper use and service; this warranty shall expire one year from the original shipment date from Seller's manufacturing facility. This warranty applies only to Equipment manufactured by Seller and does not cover components or accessories outside of standard packaged equipment offered. Seller will repair or replace, F.O.B. its factory, any defective part or parts, at no charge, if promptly returned to it within the warranty period. This warranty extends only to the original purchaser of Equipment furnished hereunder and shall be void if the product is repaired or tampered with in any manner other than by Seller's authorized service personnel. If Seller's inspection does not disclose a defect covered by the warranty, the Equipment will be returned to Purchaser at its expense or, if Purchaser elects, Seller will repair or replace the Equipment and charge for such service at the regular rate.

Seller warrants to Purchaser that Equipment or parts thereof repaired or replaced pursuant to the above warranty under proper use and service against defects in workmanship and material; this warranty shall expire 60 days from date of start-up of such repaired or replaced Equipment or parts thereof or on the expiration of the original Equipment warranty, whichever is later.

If the nature of the defect is such that it is appropriate in the judgment of Seller to do so, repairs shall be made at the site of the Equipment. Seller warrants to Purchaser that any services performed by Seller in connection with startup or other servicing of Equipment shall be performed in a workmanlike manner; this warranty shall expire 60 days after the service date visit. If any nonconformity with this warranty appears, Seller shall re-perform the non-conforming portion of the services in a conforming manner.

Any warranties granted beyond those stated above must be specifically identified as a warranty in Seller's specific quotation. Correction by Seller of nonconformities (i.e. repair or replacement of Equipment that is defective in material or workmanship, and re-performance of service which was not performed in a workmanlike manner) in the manner and warranty period provided above shall be Purchaser's exclusive remedy (and Seller's exclusive obligation) with respect to nonconforming Equipment and/or services.

In the event Purchaser and Seller agree that Seller will sell any used Equipment to Purchaser, such used Equipment is sold AS-IS, WITH ALL FAULTS, AND WITHOUT WARRANTY OF ANY KIND.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Office: + 832 532 3112
Fax: + 832 532 3115
www.lonestarblower.com

THE ABOVE-STATED WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, IMPLIED, OR OTHERWISE. SELLER HEREBY EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE.

12. CONFIDENTIALITY: In connection with the order and/or performance under this contract, Seller and Buyer (as to information disclosed, the "Disclosing Party") may each disclose Confidential Information to the other party hereto (the "Receiving Party"). " Confidential Information" shall mean all information related to the business or products (including but not limited to the Equipment) or services of the Disclosing Party that is not generally known to the public, and all pricing and terms of this contract, provided that the obligations of this paragraph shall not apply as to any portion of the Confidential Information which: (i) is or becomes generally available to the public other than as a result of disclosure by the Receiving Party, its representatives or its affiliates, or (ii) has been or is subsequently independently developed by the Receiving Party, its representatives or affiliates, without reference to the Confidential Information, or (iii) is required to be disclosed by law or valid legal process provided that the Receiving Party who intends to make such disclosure shall promptly notify the Disclosing Party in advance of such disclosure and reasonably cooperate in attempts to maintain the confidentiality of the Confidential Information. The Receiving Party agrees, except as otherwise required by law: (i) to use the Confidential Information only as the Disclosing Party intended it to be used by the Receiving Party in connection with providing or receiving the Equipment/service under this contract, and (ii) to take reasonable measures to prevent disclosure of the Confidential Information, except disclosure to its employees to the extent necessary to facilitate providing or receiving Equipment/services as contemplated under this contract. Upon the Disclosing Party's request, the Receiving Party shall destroy or return to Disclosing Party all copies of Confidential Information. If either party or any of their respective affiliates or representatives is required or requested by subpoena, interrogatories, or similar legal process
to disclose any Confidential Information, such party agrees to provide the Disclosing Party with prompt written notice of such request, so that the Disclosing Party may seek an appropriate protective order or waive compliance by the Receiving Party with the provisions herein. It is understood and agreed that this paragraph survives any expiration/termination of this contract.

13. INTELLECTUAL PROPERTY: No patents, copyrights, trademarks, trade secrets, or other intellectual property rights are being sold, granted, transferred, or assigned to Purchaser. Without limiting the generality of the foregoing, Seller retains all right, title and interest in and to all inventions, discoveries, ideas, works of authorship (including but not limited to all drawings), processes, methods, know-how, and techniques developed, discovered or conceived by Seller or its employees, including without limitation those developed and/or used in connection with the manufacture of Equipment or performing services hereunder. Such rights include, but are not limited to, patent rights, copyrights, trade secret rights, trademark rights, mask work rights and other proprietary rights throughout the world. Purchaser acknowledges and understands that no drawings, designs, specifications, or anything else provided by Seller shall be deemed to be "work made for hire."

14. PATENT INDEMNITY: Seller shall defend any suit or proceeding brought against Purchaser and shall pay any adverse judgment entered therein so far as such suit or proceeding is based upon a claim that the use of the Equipment or any part thereof manufactured by Seller, and furnished under this contract constitutes infringement of any patent of the United States of America, provided Seller is promptly notified in writing and given authority, information and assistance for defense of same, and Seller shall, at its option, procure for Purchaser the right to continue to use said Equipment, or modify it so that it becomes non-infringing, or replace the same with non-infringing equipment, or remove said Equipment and to refund the purchase price (less a reasonable amount for the time the Equipment was used). The foregoing shall not be construed to include any agreement by Seller to accept any liability whatsoever in respect to patents for inventions including more that the Equipment furnished hereunder, or in respect of patents for methods and processes to be carried out with the aid of said Equipment, except those which are inherent in the Equipment as furnished. The foregoing states the entire liability of Seller with regard to patent infringement. If any Equipment shall be sold by Seller to meet Purchaser's specifications or requirements and is not a part of Seller's standard line offered by it to the trade generally in the usual course of Seller's business, Purchaser agrees to defend, protect, and indemnify and save harmless Seller from any loss, damage, or injury arising out of a claim, suit or action at law or equity for actual or alleged infringement of any patent of the United States or foreign country because of the sale of such Equipment, and to defend any suits or actions which may be brought against Seller.

15. SOFTWARE: In the event any Equipment includes software in any form, such software is not sold to Purchaser but is only licensed on a limited, non-exclusive basis. Subject to Purchaser's compliance with these terms and conditions of sale, Seller grants to Purchaser for the useful life of such Equipment a royalty-free, non-exclusive, non-transferable license to use the software as intended by Seller solely for normal use of the Equipment. Purchaser shall not create derivative works based on the software, or reverse engineer, or disassemble or decompile the software, or transfer, copy, modify, or otherwise change the software.

16. EXPORT CONTROL: Equipment, technical data, technology, software, and services furnished by Seller to Purchaser shall at all times be subject to any and all applicable export control laws and regulations, including but not limited to applicable U.S. Export Administration Regulations, United Nations resolutions and European Union directives relating to trade embargoes and restrictions. Purchaser agrees and warrants that no Product, services, technical data, technology, software or other technical information or assistance or other item furnished by Seller, or any good or product resulting therefrom, shall be exported or re-exported by Purchaser or its authorized transferees, if any, directly or indirectly, in violation of any law or regulation.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Office: + 832 532 3112
Fax: + 832 532 3115
www.lonestarblower.com

Any export and/or re-export must be in strict accordance with applicable U.S. export laws and regulations, as well as United Nations resolutions and European Union directives relating to trade embargoes and restrictions. Violation of this paragraph constitutes a material and non-curable breach and entitles Seller to terminate the order immediately (even after shipment of the Equipment).

17. FORCE MAJEURE: If either party is delayed at any time by any Force Majeure, such party shall have such additional time within which to perform its obligations as may reasonably be necessary under the circumstances. "Force Majeure" means circumstances beyond the delayed party's reasonable control, including but not limited to, acts of God, acts of public enemies, wars, delays by Seller's suppliers, blockades, insurrections, riots, epidemics, quarantine restrictions, floods, lightning, fire, storms, earthquakes, and civil disturbances.

18. LIMITATION OF LIABILITY:
IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS OR REVENUE, LOSS OF TOTAL OR PARTIAL USE OF THE EQUIPMENT OR SERVICES, DOWNTIME COSTS, AND DELAY COST) HOWSOEVER ARISING, WHETHER ON ACCOUNT OF EQUIPMENT OR SERVICES FURNISHED HEREUNDER, DELAYS OR OTHERWISE (WHETHER A CLAIM IS BASED ON WARRANTY, STRICT LIABILITY, CONTRACT, TORT, NEGLIGENCE OR OTHERWISE).

SELLER'S TOTAL LIABILITY FOR ALL CLAIMS OF ANY KIND (WHETHER BASED ON WARRANTY, STRICT LIABILITY, CONTRACT, TORT, NEGLIGENCE OR OTHERWISE) FOR ANY LOSS OR DAMAGE ARISING OUT OF, CONNECTED WITH, OR RESULTING FROM THIS CONTRACT OR THE PERFORMANCE OR BREACH THEREOF, OR FROM THE DESIGN, MANUFACTURE, SALE, DELIVERY, RESALE, REPAIR, REPLACEMENT, INSTALLATION, TECHNICAL DIRECTION OF INSTALLATION, INSPECTION, SERVICING, OPERATION OR USE OF ANY EQUIPMENT COVERED BY OR FURNISHED UNDER THIS CONTRACT SHALL BE LIMITED TO 100% OF THE PURCHASE PRICE AMOUNT PAID BY PURCHASER TO SELLER UNDER THIS CONTRACT FOR THE SPECIFIC EQUIPMENT OR SERVICE WHICH GIVES RISE TO THE CLAIM. ALL CAUSES OF ACTION AGAINST SELLER ARISING OUT OF OR RELATING TO THIS CONTRACT OR THE PERFORMANCE HEREOF SHALL EXPIRE UNLESS BROUGHT WITHIN ON YEAR OF TIME OF ACCRUAL THEREOF.

19. MISCELLANEOUS:
19.1 If for any reason, Seller's quotation (or any other document or act by Seller) is deemed an acceptance of an offer from Purchaser, such acceptance is expressly conditional upon Purchaser's assent to any additional or different terms or conditions set forth in these Terms and Conditions of Sa**19.2** No modification or additional term or condition shall be applicable to this contract by virtue of Seller's receipt, acknowledgment or acceptance of Purchaser's purchase order, shipping instruction forms, or other Purchaser documentation containing terms or conditions which are different from or in addition to those set forth in these Terms and Conditions of Sale. Any such modifications or additional terms or conditions are specifically rejected and deemed a material alteration hereof. Purchaser's issuance of a purchase order or Purchaser's acceptance of any drawings, Equipment, or services from Seller shall (without prejudice to any other manner in which acceptance of these Terms and Conditions of Sale may be evidenced) constitute full acceptance of these Terms and Conditions of Sale.

19.3. Neither party shall assign or transfer this contract without the prior written consent of the other party (which consent shall not be unreasonably withheld); any purported assignment in violation of this sentence shall be void. Irrespective of the foregoing, Seller may without consent assign this contract (or any of rights or obligations hereunder) to any of its affiliates and use sub-contractors.

19.4. If any part of this document is held by a court of competent jurisdiction to be invalid or unenforceable for any reason, such invalidity or enforceability does not affect any other provision, and this document shall be construed as if the invalid or unenforceable provision had never been set forth.

19.5. Neither party's failure to enforce, or its waiver of a breach of, any provision contained in this document shall constitute a waiver of any other breach or of such provision.

19.6. The validity, performance, and all other matters relating to the interpretation and effect of this contract shall be governed by the laws of the State of Texas, USA, without regard to its conflict of laws principles, and the exclusive forum shall be the State of Texas. The United Nations Convention on the International Sale of Goods shall not apply.

19.7 These Terms and Conditions of Sale cannot be superseded, amended, or modified except by a written document signed in handwriting by
Seller's duly authorized officer and Buyer's duly authorized representative.

19.8. All headings, captions and numbering in these Terms and Conditions of Sale are for convenience of reference only and shall notbe used to interpret any meaning of any terms or condition.

19.9. Seller and Purchaser are independent contractors; neither party shall act as the agent for the other. This contract is between Seller and
Purchaser alone, and there are no intended rights or benefits provided hereunder to any third party.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

From:	Jason Hunold
To:	Adam Sackenheim
Subject:	FW: Class 2 Service
Date:	Friday, August 28, 2020 8:18:27 AM
Attachments:	image003.png image004.png image005.png image007.png image001.png image010.png

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Jason Hunold
Treatment Superintendent
City of Fairfield, Ohio
Department of Public Utilities
5021 Groh Lane
513-858-8348

FAIRFIELD
THE FIELD IS OPEN

https://www.fairfield-city.org/314/Wastewater

The City of Fairfield is subject to Ohio sunshine laws relating to public records. Email sent or received by City employees are subject to these laws. Unless otherwise exempted from the public records law, senders and recipients of City email should be aware that their emails may be subject to disclosure upon request. This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain private, confidential or privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, employee or agent responsible for delivering this message, please contact the sender by reply e-mail and destroy all copies of the original e-mail message.

From: Jayson Thorp <jthorp@lonestarblower.com>
Sent: Thursday, August 27, 2020 2:18 PM
To: Randy Hassler <rhassler@fairfield-city.org>; Jason Hunold <JHunold@fairfield-city.org>
Cc: Colleen LeGrand <clegrand@lonestarblower.com>; Cameron Turner <cturner@lonestarblower.com>
Subject: Class 2 Service

Randy and Jason,

We appreciated the opportunity to partner with you on the recent Class II service of your Turblex blower. As you know we made several repairs in addition to the original scope of work. Following is a breakdown of the charges. To help offset some of the time spent getting the replacement

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

bushings correct, I've credited two days labor and the over time for the entire service visit. Please let us know if you'd like the total amount invoiced on the original PO, or if you'd like us to send a separate invoice for the additional work.

Description		Price		Over Time
Per Diem ($740 / day)	$	7,400.00		
Daily Rate ($2,500 / day) + overtime	$	36,625.00	$	11,625.00
Mobilization / de mobilization	$	6,209.00		
Replacement Parts	$	1,020.00		
Flight Cost	$	1,999.21		
Oil	$	~~4,838.00~~		
Bushings - qty 32 at $41.74 / bushing	$	1,335.68		
guide vane machining	$	455.74		
Coating of Gear Box	$	4,154.59		
Credit 2 days for bushing parts issue and no overtime	$	(18,105.00)		
Total Price	$	~~45,932.22~~		

Thanks again for partnering with us!

REVISED TOTAL: $41,094.22

All the best,
Jayson

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

City Council Information Item
Regular Meeting - September 14, 2020

Submitted by: Lance Kennedy,
Submitting Department: City Manager's Office

Subject:
0CM01 - Network Infrastructure

Legislation Title:
0CM01 - Network Infrastructure Appropriation in the amount of $50,000 is being requested for network infrastructure equipment.

Recommendation:
It is recommended that City Council authorize and direct the preparation of legislation for the appropriation of $50,000 from the Capital Improvement Fund and suspend the rules requiring the second and third reading.

Background/Synopsis:
Scheduled replacement of network infrastructure equipment is palnned for, and was approved in the 2020-2024 Capital Improvement Program under project 0CM01. Ohio State bid pricing is used when state bid pricing is the lower cost option.

Network equipment utilized in the Municipal Building, Municipal Building Annex, Justice Center, and Public Utilities buildings has gone end-of-support. These devices are no longer receiving technical support, replacements, patches, or security updates; and are in need of replacement.

Financial Impact:
An appropriation in the amount of $50,000 is being requested for the upgrade or replacement of city networking equipment as is necessary for the continued operation of the City's overall computing systems. Funding for these efforts was included in the 2020-2024 Capital Improvement Program (CIP) under project 0CM01.

Attachments:
1. Quote – Cisco Hardware
2. Quote – FS Fiber Cassette
3. Quote – Cisco FP Hardware
4. Quote – Cisco FP Licensing
5. Quote – Core Integration

Attachments:
1. 1 - Cisco 9200L LPTP893
2. 2 - FS Fiber Cassette RQ2009010036-Quote 01.FS.COM
3. 3 - FP1010 Estimate_WN20200825Q_2020-10-23
4. 4 - FP Licensing LPRK815

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

5. 5 - Estimate_WN20200827E_2020-09-28

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

QUOTE CONFIRMATION

DEAR LANCE KENNEDY,

Thank you for considering CDW•G for your computing needs. The details of your quote are below. Click here to convert your quote to an order.

QUOTE #	QUOTE DATE	QUOTE REFERENCE	CUSTOMER #	GRAND TOTAL
LPTP893	8/27/2020	LPTP893	6636447	$42,384.46

QUOTE DETAILS

ITEM	QTY	CDW#	UNIT PRICE	EXT. PRICE
Cisco Catalyst 9200L - Network Essentials - switch - 48 ports - rack-mounta Mfg. Part#: C9200L-48P-4G-E UNSPSC: 43222612 Contract: MARKET	12	5400548	$2,154.59	$25,855.08
Cisco Catalyst 9200L - Network Essentials - switch - 48 ports - managed - r Mfg. Part#: C9200L-48P-4X-E UNSPSC: 43222612 Contract: MARKET	4	5433909	$3,151.09	$12,604.36
Axiom Cisco GLC-SX-MMD= Compatible - SFP (mini-GBIC) transceiver module - G Mfg. Part#: GLC-SX-MMD-AX UNSPSC: 43201553 Contract: MARKET	10	3158595	$49.87	$498.70
Axiom Cisco GLC-LH-SMD= Compatible - SFP (mini-GBIC) transceiver module - G Mfg. Part#: GLC-LH-SMD-AX UNSPSC: 43201553 Contract: MARKET	10	2896074	$55.85	$558.50
Axiom Cisco SFP-10G-LR= Compatible - SFP+ transceiver module - TAA Complian Mfg. Part#: SFP-10G-LR-AX UNSPSC: 43201553 Contract: MARKET	8	2694170	$324.18	$2,593.44
Black Box 2M LC/LC Duplex Single-mode 9-micron Fiber Patch Cable, Yellow Mfg. Part#: FOSM-002M-LCLC UNSPSC: 26121609 Contract: MARKET	6	2370764	$17.32	$103.92
Black Box 2M LC/LC Duplex Multimode 62.5/125 OM1 Fiber Patch Cable, Orange Mfg. Part#: FO625-002M-LCLC UNSPSC: 26121609 Contract: MARKET	6	2029590	$11.91	$71.46

PURCHASER BILLING INFO	SUBTOTAL	$42,285.46

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Billing Address: CITY OF FAIRFIELD ACCOUNTS PAYABLE 5350 PLEASANT AVE FAIRFIELD, OH 45014-3597 **Phone:** (513) 867-5315 **Payment Terms:** NET 30-VERBAL	**SHIPPING** $99.00 **SALES TAX** $0.00 **GRAND TOTAL** **$42,384.46**
DELIVER TO	**Please remit payments to:**
Shipping Address: CITY OF FAIRFIELD 701 WESSEL DR FAIRFIELD, OH 45014-3611 **Shipping Method:** UPS Ground (1- 2 day)	CDW Government 75 Remittance Drive Suite 1515 Chicago, IL 60675-1515

Need Assistance? CDW•G SALES CONTACT INFORMATION				
	John Bautista	|	(877) 810-5987	| johnbau@cdwg.com

This quote is subject to CDW's Terms and Conditions of Sales and Service Projects at
http://www.cdwg.com/content/terms-conditions/product-sales.aspx
For more information, contact a CDW account manager

© 2020 CDW•G LLC, 200 N. Milwaukee Avenue, Vernon Hills, IL 60061 | 800.808.4239

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

FS

Official Quote

Date Sep 1st,2020

RQ number RQ2009010036
Trade Term FOB
Currency USD
Payment Term Undetermined
Ship Via UPS Ground® service
Created By Orange.Fu
Email orange.fu@fs.com

Deliver To
City of Fairfield
5350 Pleasant Ave
Fairfield Ohio 45014
United States
Consignee:Mike

Issued By
FS.COM INC
380 CENTERPOINT BLVD
NEW CASTLE, DE 19720
United States
Tel: +1 (888) 4687419

NO.	Product ID	Item Description	Qty(pcs)	Unit Price	Total	Stock
1	57016	MTP®-12 to 6x LC Duplex, Type A, 12 Fibers OS2 Single Mode FHD MTP® Cassette	1	US$79.00	US$79.00	US warehouse 488 pcs in stock
2	57037	MTP®-12 to 6x LC Duplex, Type AF, 12 Fibers OS2 Single Mode FHD MTP® Cassette	1	US$79.00	US$79.00	US warehouse 1901 pcs in stock
3	68103	10m (33ft) MTP® Female 12 Fibers Type A Plenum (OFNP) OS2 9/125 Single Mode Elite Trunk Cable, Yellow	1	US$82.00	US$82.00	US warehouse 197 pcs in stock
4	70419	1U 144 Fibers Rack Mount FHD Modular Fiber Enclosure Panel, Holds up to 4x FHD Cassette or Panels	2	US$38.00	US$76.00	US warehouse 57 pcs in stock

Other Comments or Special Instructions:

SUBTOTAL	US$316.00
S&H	US$0.00
Sales Tax	US$0.00
TOTAL	US$316.00

Please send the PayPal payment to the following account:

paypal@fs.com

Please Wire Transfer to the following account:

Bank Name: Bank of America
Account Name: FS COM INC
CHK Account: 1381 1962 5329
ABA/ACH Routing Number: 125000024
Wire Routing Number: 026009593
Swift Code: BOFAUS3N

Payment with credit card

To protect customer's information, we will not use your card to proceed the order directly.We will create an online order for you and send you the link for payment via credit card

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

Orange.Fu	Sep 1st,2020
Authorised by	Date

Note:
1.The quotation is only valid for 15days, please contact your account manager to re-inquire after expiration.
2.Please kindly leave a message of this order RQ No. or your companyname when you paythis order.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

QUOTE

Wesley Pa
708 Curtis
Nashville, Tennessee 372
United Stat

93121550

BILL TO
City of Fairfield OH
Lance Kennedy IT
5350 Pleasant Avenue
Fairfield, Ohio 45014
United States

(513) 867-5300
lkennedy@fairfieldoh.gov

Estimate Number:	WN20200825Q
P.O./S.O. Number:	Vendor 24164
Estimate Date:	August 25, 2020
Expires On:	October 23, 2020
Grand Total (USD):	**$2,463.96**

Product	Quantity	Price	Amou
FPR1010 Cisco Firepower 1010 Appliance	4	$615.99	$2,463.

Total:	$2,463.
Grand Total (USD):	**$2,463.**

Notes / Terms
Firewall for VPN site to site project

Thank you for your business

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

QUOTE CONFIRMATION

DEAR LANCE KENNEDY,

Thank you for considering CDW•G for your computing needs. The details of your quote are below. Click here to convert your quote to an order.

QUOTE #	QUOTE DATE	QUOTE REFERENCE	CUSTOMER #	GRAND TOTAL
LPRK815	8/26/2020	LPRK815	6636447	$1,518.16

QUOTE DETAILS

ITEM	QTY	CDW#	UNIT PRICE	EXT. PRICE
Cisco Threat Defense Threat, Malware and URL - subscription license (1 year Mfg. Part#: L-FPR1010T-TMC-1Y UNSPSC: 43233205 Electronic distribution - NO MEDIA Contract: MARKET	2	5641283	$400.99	$801.98
Cisco FirePOWER Management Center (VMWare) - license - 2 devices Mfg. Part#: SF-FMC-VMW-2-K9 UNSPSC: 43233205 Electronic distribution - NO MEDIA Contract: MARKET	2	4638220	$358.09	$716.18

PURCHASER BILLING INFO		
Billing Address: CITY OF FAIRFIELD ACCOUNTS PAYABLE 5350 PLEASANT AVE FAIRFIELD, OH 45014-3597 **Phone:** (513) 867-5315 **Payment Terms:** NET 30-VERBAL	**SUBTOTAL**	$1,518.16
	SHIPPING	$0.00
	SALES TAX	$0.00
	GRAND TOTAL	**$1,518.16**
DELIVER TO	**Please remit payments to:**	
Shipping Address: CITY OF FAIRFIELD 701 WESSEL DR FAIRFIELD, OH 45014-3611 **Shipping Method:** ELECTRONIC DISTRIBUTION	CDW Government 75 Remittance Drive Suite 1515 Chicago, IL 60675-1515	

Need Assistance? CDW•G SALES CONTACT INFORMATION

John Bautista | (877) 810-5987 | johnbau@cdwg.com

This quote is subject to CDW's Terms and Conditions of Sales and Service Projects at
http://www.cdwg.com/content/terms-conditions/product-sales.aspx
For more information, contact a CDW account manager

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Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

ESTIMATE

Wesley Pa
708 Curtis
Nashville, Tennessee 372
United Stat

93121550

BILL TO
City of Fairfield OH
Lance Kennedy IT 5350
Pleasant Avenue
Fairfield, Ohio 45014
United States

(513) 867-5300
lkennedy@fairfieldoh.go
v

Estimate Number:	WN20200827E
P.O./S.O. Number:	Vendor 24164
Estimate Date:	August 27, 2020
Expires On:	September 28, 2020
Grand Total (USD):	**$2,025.00**

Product	Quantity	Price	Amou
Net Infrastructure Infrastructure update/integration with updated core services	13.5	$150.00	$2,025.

Total:	$2,025.
Grand Total (USD):	**$2,025.**

Notes / Terms
Time and materials. Final invoice will reflect actual time and material incurred. Please sign and return.

Attachment: NonContractuals.091420 (1618 : Non-Contractual Appropriations)

ORDINANCE NO. _____

ORDINANCE TO AMEND ORDINANCE NO. 119-19 ENTITLED "AN ORDINANCE TO MAKE ESTIMATED APPROPRIATIONS FOR THE EXPENSES AND OTHER EXPENDITURES OF THE CITY OF FAIRFIELD, OHIO, DURING A PERIOD BEGINNING JANUARY 1, 2020, AND ENDING DECEMBER 31, 2020."

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. Ordinance No. 119-19, the 2020 Appropriation Ordinance, is hereby amended in the following respects:

From:	**Unappropriated County Motor Vehicle Fund**	**$30,720**
To:	20516025-252000 Improvements Other Than Building *(Closed Circuit Television Replacement 0PW15 ($5,000); Traffic Signal Upgrades 0PW02 ($15,000); Radar Signs for School Zones 0PW42 ($10,720))*	$30,720
From:	**Unappropriated Law Enforcement Fund**	**$5,000**
To:	21131025-252000 Improvements Other Than Building *(Closed Circuit Television Replacement 0PW15)*	$5,000
From:	**Unappropriated Capital Improvement Fund**	**$158,066**
To:	40216025-252000 Improvements Other Than Building *(Golf Course Maintenance 0RC02 ($32,985); Energy Management Upgrade 0FC02 ($44,931)) Network Infrastructure 0CM01 ($42,650))*	$120,566
To:	40216025-253400 Computer Supplies *(Camera Surveillance Equipment 0CM05)*	$37,500
From:	**Unappropriated Water Surplus Fund**	**$60,500**
To:	60516025-252000 Improvements Other Than Building *(Pump Overhaul & Replacement Program 0WT04 ($14,500); Walkway Improvements 0WT25*	$60,500

Attachment: Non Contractual 9-14-ORd (1618 : Non-Contractual Appropriations)

	($19,000); Maintain Raw Water Production Wells 0WT01 ($27,000)	
From:	**Unappropriated Sewer Surplus Fund**	**$8,800**
To:	62416023-234100 Maintenance of Equipment *(Turblex Blower Service - Wastewater Treatment Plant 0WW19)*	$8,800

Section 2. This Ordinance shall take effect at the earliest period allowed by law.

Passed _____ _____
Mayor's Approval

Posted _____

First Reading _____ Rules Suspended _____

Second Reading _____

Third Reading _____

ATTEST:

_____
Clerk of Council

This is to certify that this Ordinance has been duly published by posting and summary publication as provided by Charter.

_____
Clerk of Council

Active Clients\City of Fairfield\Ordinances\2020\Non Contractual 9-14-Ord

Attachment: Non Contractual 9-14-ORd (1618 : Non-Contractual Appropriations)