FAIRFIELD CITY COUNCIL
REGULAR MEETING AGENDA
FAIRFIELD MUNICIPAL BUILDING
5350 PLEASANT AVENUE
FAIRFIELD, OHIO 45014

MONDAY, MARCH 10, 2014 **7:00 PM**

MAYOR…….STEVE MILLER
COUNCILMEMBER 1ST WARD…….ADAM B. JONES
COUNCILMEMBER 2ND WARD……MARTY JUDD
COUNCILMEMBER 3RD WARD……DEBBIE PENNINGTON
COUNCILMEMBER 4TH WARD……TERRY SENGER

COUNCILMEMBER AT-LARGE…CHAD OBERSON
COUNCILMEMBER AT-LARGE…MIKE SNYDER
COUNCILMEMBER AT-LARGE…BILL WOESTE
CITY MANAGER……..ARTHUR E. PIZZANO
CLERK OF COUNCIL……..ALISHA WILSON
LAW DIRECTOR……..JOHN H. CLEMMONS

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.

1. **Call to Order**

2. **Prayer/Pledge of Allegiance**

3. **Roll Call**

4. **Agenda Modifications**

5. **Executive Session Requests**

6. **Public Hearing(s)**

7. **Special Presentations and Citizen Comments**

8. **Mayor/Council Reports**

9. **Approval of Minutes**

   a) Regular Meeting Minutes of February 24, 2014

10. **OLD BUSINESS**

(A) **DEVELOPMENT SERVICES COMMITTEE**
Bill Woeste, Chairman; Adam Jones, Vice Chairman, Mike Snyder, Member

(1) 🕮 Ordinance amending Ordinance No. 166-84, the Codified Ordinances of Fairfield, Ohio, Section 1141.02, the City of Fairfield, Ohio, Zoning Map.

- Ordinance – Second Reading
- Motion – Suspend Third Reading
- Motion – Adoption

(2) 🕮 Ordinance to amend various sections of Ordinance No. 166-84, the Codified Ordinances of Fairfield, Ohio, relative to the City of Fairfield Design, Construction and Material Specifications Handbook and Water Requirements.

- Motion – Amend
- Ordinance – Second reading

(3) 🕮 Ordinance to amend various sections of Ordinance No. 166-84, the Codified Ordinances of Fairfield, Ohio, relative to the Storm Water Quality Management Plan, Drainage, Sedimentation Control, Stormwater Management Requirements and Sewer requirements.

- Ordinance – Hold second reading for Planning Commission recommendation

(B) **PUBLIC WORKS COMMITTEE**
Chad Oberson, Chairman; Mike Snyder, Vice Chairman, Bill Woeste, Member

(1) 🕮 Ordinance releasing the maintenance bond and accepting public improvements for the Iwata Drive Dedication Plat.

- Ordinance – Third Reading
- Motion – Adoption

(2) 🕮 Ordinance to authorize the City Manager to enter into a one (1) year contract with options for years two (2) and three (3) with R.A. Miller of Hamilton, Ohio for the 2014 Sidewalk/Apron Replacement Program.

- Ordinance – Third Reading
- Motion – Adoption

(3) 🕮 Ordinance to authorize the City Manager to enter into an agreement with Ohio Department of Transportation for Bridge Inspection Program Services.

- Ordinance – Second Reading

11. **NEW BUSINESS**

(A) **PUBLIC SAFETY COMMITTEE**
Adam Jones, Chairman; Marty Judd, Vice Chairman, Terry Senger, Member

(1) Simple Motion: Motion to approve a liquor permit application in the name of Mahakal, Inc., 6120 Winton Road, Fairfield, OH 45014 (Permit Classes: C1 and C2).

(B) **COMMUNITY & PUBLIC RELATIONS COMMITTEE**
Mike Snyder, Chairman; Bill Woeste, Vice Chairman, Debbie Pennington, Member

(1) Simple Motion: Motion to appoint the Clerk of Council as designee for mandatory training required by House Bill 9, Ohio's Public Records Act.

(2) Simple Motion: Boards & Commissions Appointments appoint the following residents to serve on Fairfield's boards and commissions **effective April 1, 2014**:

Board of Zoning Appeals - Mike Stokes, term expires 3/31/18
Civil Service Commission - Brian Wood, term expires 3/31/17
Design Review Committee - Bert Huffer, term expires 3/31/16
Design Review Committee - Arvind Kochar, term expires 3/31/16
Fair Housing Board - Melissa Judd, term expires 3/31/17
Parks and Recreation Board – Craig Keller, term expires 3/31/15
Parks and Recreation Board – Doug Meece, term expires 3/31/17
Planning Commission – Ron D'Epifanio, term expires 3/31/15
Traffic Advisory Committee – Mike Oler, term expires 12/31/15
Ward Boundary Review – Bonnie McMurray
Ward Boundary Review – Gregory Snow

(C) **FINANCE & BUDGET COMMITTEE**

Terry Senger, Chairman; Debbie Pennington, Vice Chairman, Chad Oberson, Member

(1) Ordinance to authorize the City Manager to enter into a contract with International Association of Firefighters (IAFF), Local 4010 for wages, hours and terms and conditions of employment for the fire department bargaining unit.

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

(2) Non-Contractual Appropriations - $28,160 water improvements for water main improvements at 4100 Port Union Road.

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

12. **Meeting Schedule**

Monday, March 24	Council-Manager Briefing, 5:30 p.m.; Regular Meeting, 7:00 p.m.
Monday, April 14	Regular Meeting, 7:00 p.m.
Monday, April 28	Regular Meeting, 7:00 p.m.

13. **Executive Session of Council (if needed)**

14. **Adjournment**

AGENDA

COUNCIL-MANAGER BRIEFING
FAIRFIELD MUNICIPAL BUILDING
5350 PLEASANT AVENUE

MONDAY, MARCH 10, 2014
6:00 P.M.

1. Property Maintenance Update – Tim Bachman
2. Economic Development Update – Tim Bachman

MINUTES
REGULAR MEETING OF COUNCIL
FEBRUARY 24, 2014

Call to Order
Mayor Steve Miller called the Regular Meeting of Council to order at 7:00 PM at the Fairfield Municipal Building, 5350 Pleasant Avenue.

Prayer/Pledge of Allegiance
Councilmember Oberson led in prayer and the Pledge of Allegiance.

Roll Call
Clerk Wilson called the roll of Council. Present members were Councilmember Adam Jones, Councilmember Marty Judd, Councilmember Debbie Pennington, Councilmember Terry Senger, Councilmember Chad Oberson, Councilmember Mike Snyder, and Councilmember Bill Woeste.

Agenda Modifications

Executive Session Requests
Councilmember Judd, seconded by Councilmember Pennington, moved for Executive Session for the purpose of discussing collective bargaining and employment of personnel. Clerk Wilson took a roll call vote of Council. Motion carried 7-0.

Public Hearing(s)

Joint Public Hearing - changes to Design, Construction and Materials Specification Handbook and Storm Water Quality Management Plan.

- Mayor Miller opened the public hearing at 7:13 PM. Clerk Wilson read the Public Meeting Notice and called the roll of Council and Planning Commission. All of Council present; Commissioners Hasselbeck, Morris, Lepsky and Woeste present. Councilmember Judd, seconded by Councilmember Pennington, moved to excuse Commissioners Myron and Hassler. Motion carried 7-0. Development Services Director Tim Bachman detailed the proposed changes to the Design, Construction and Materials Specification Handbook and Storm Water Quality Management Plan and a copy of his presentation is attached. Mayor Miller closed the public hearing at 7:35 PM.

Special Presentations and Citizen Comments
Proclamation to Ms. Brenda Matthews, Goodwill Industries

- Mayor Miller presented a proclamation to Brenda Matthews, of Goodwill Industries, for her heroic actions in saving an employee's life. Ms. Matthews thanked him and stated that she didn't do what she did just because it was her job, but that she truly cares about the people she works with.

Mayor/Council Reports
Councilmember Jones reported that there was an article in the Journal News this morning that crime statistics are on a downward trend in the city. He reminded citizens to lock car doors and put valuables out of sight, which will reduce car theft.

Councilmember Oberson reported that crews are picking up the last of the leaves, west of Winton Road, and also filling potholes. If residents notice potholes, please call Public Works at 867-4200.

Councilmember Snyder reported that the first round of interviews for Boards and Commissions were conducted this past Saturday and went well. He thanked those that have volunteered. Also, he commented that Jungle Jim's will be hosting a health fair on Saturday, March 1. Councilmember Snyder also noted that the skeleton sled used in the Olympics were manufactured by Machine Tech Corporation here in Fairfield.

Councilmember Woeste reported that there is an exciting project coming from the Development Services Department in the near future. He also thanked the Public Utilities staff and Police Department staff for stepping in to help out in a couple of situations that are normally outside their scope of responsibility.

Approval of Minutes

Regular Meeting Minutes of February 10, 2014

- The Regular Meeting Minutes of February 10, 2014 were approved as written

OLD BUSINESS

DEVELOPMENT SERVICES COMMITTEE
Bill Woeste, Chairman; Adam Jones, Vice Chairman, Mike Snyder, Member

Ordinance amending Ordinance No. 166-84, the Codified Ordinances of Fairfield, Ohio, Section 1141.02, the City of Fairfield, Ohio, Zoning Map.

- Hold Second reading for Planning Commission recommendation

Ordinance to authorize the City Manager to enter into a Professional Services Contract with the Fairfield Chamber of Commerce.

Legislative Action: Councilmember Woeste presented the third reading of this ordinance.

Councilmember Bill Woeste, seconded by Councilmember Debbie Pennington moved to adopt . Motion Carried 7-0. ORDINANCE NO. 11-14. APPROVED 7-0.

Ordinance to amend various sections of Ordinance No. 166-84, the Codified Ordinances of Fairfield, Ohio, relative to the City of Fairfield Design, Construction and Material Specifications Handbook, Storm Water Quality Management Plan, Drainage, Water and Sewer Requirements.

- Hold Second reading for Planning Commission recommendation

PUBLIC UTILITIES COMMITTEE
Marty Judd, Chairman; Chad Oberson, Vice Chairman, Adam Jones, Member

An Ordinance granting Butler Rural Electric Cooperative, Inc., its successors and assigns, the right to

acquire, construct, maintain and operate in the streets, thoroughfares, alleys, bridges and public places of the City of Fairfield, State of Ohio and its successors, lines for the distribution of electric power and energy to parts of the City of Fairfield and the inhabitants thereof for light, heat, power and other purposes and for the transmission of the same within, through or across said City of Fairfield, State of Ohio.

Councilmember Marty Judd, seconded by Councilmember Adam Jones moved to amend the ordinance. Motion Carried 7-0.

Legislative Action: Councilmember Judd presented the third reading of this ordinance. Councilmember Marty Judd, seconded by Councilmember Chad Oberson moved to adopt. Motion Carried 7-0. ORDINANCE NO. 12-14. APPROVED 7-0.

PUBLIC WORKS COMMITTEE
Chad Oberson, Chairman; Mike Snyder, Vice Chairman, Bill Woeste, Member

Ordinance releasing the maintenance bond and accepting public improvements for the Iwata Drive Dedication Plat.

Legislative Action: Councilmember Oberson presented the second reading of this ordinance.

Ordinance to authorize the City Manager to enter into a one (1) year contract with options for years two (2) and three (3) with R.A. Miller of Hamilton, Ohio for the 2014 Sidewalk/Apron Replacement Program.

Legislative Action: Councilmember Oberson presented the second reading of this ordinance.

NEW BUSINESS

PUBLIC SAFETY COMMITTEE
Adam Jones, Chairman; Marty Judd, Vice Chairman, Terry Senger, Member

Simple Motion: Motion to approve a liquor permit application in the name of Wake Nation, LLC, dba Wake Nation, 201 Joe Nuxhall Way, Fairfield, OH 45014 (Permit Classes: D1 and D2).

Councilmember Jones, seconded by Councilmember Pennington, moved to approve a liquor permit application in the name of Wake Nation, LLC. Motion carried 7-0. SIMPLE MOTION NO. 4-14. APPROVED 7-0.

PUBLIC WORKS COMMITTEE
Chad Oberson, Chairman; Mike Snyder, Vice Chairman, Bill Woeste, Member

Ordinance to authorize the City Manager to enter into an agreement with Ohio Department of Transportation for Bridge Inspection Program Services.

Councilmember Chad Oberson, seconded by Councilmember Mike Snyder moved to read the following ordinance by title only. Motion Carried 7-0.

Background: City Manager Pizzano recommended an agreement with ODOT for Bridge Inspection Services. There is no charge for these services, which will save the city money. Legislative Action: Councilmember Oberson presented the first reading of this ordinance.

FINANCE & BUDGET COMMITTEE
Terry Senger, Chairman; Debbie Pennington, Vice Chairman, Chad Oberson, Member

Councilmember Terry Senger, seconded by Councilmember Chad Oberson moved to read the following three (3) ordinances by title only. Motion Carried 7-0.

Ordinance to authorize the City Manager to enter into a grant agreement with Partners In Prime, in order to provide ARK Transportation services to residents of Fairfield and to provide funds for operations.

Background: City Manager Pizzano recommended the grant agreement with Partners in Prime, which was approved during the 2014 budget process last year. Legislative Action: Councilmember Senger presented the first reading of this ordinance.

Councilmember Terry Senger, seconded by Councilmember Chad Oberson moved to suspend the rules requiring three (3) readings of this ordinance. Motion Carried 7-0. Councilmember Terry Senger, seconded by Councilmember Bill Woeste moved to adopt. Motion Carried 7-0. ORDINANCE NO. 13-14. APPROVED 7-0.

Ordinance to reconcile accounts.

Background: City Manager Pizzano recommended an ordinance to reconcile accounts. Due to the harsh winter, the Public Works Department has exceeded their budget for road salt and needs additional funds to reconcile their accounts. Legislative Action: Councilmember Senger presented the first reading of this ordinance.

Councilmember Terry Senger, seconded by Councilmember Adam Jones moved to suspend the rules requiring three (3) readings of this ordinance. Motion Carried 7-0. Councilmember Terry Senger, seconded by Councilmember Marty Judd moved to adopt . Motion Carried 7-0. ORDINANCE NO. 14-14. APPROVED 7-0.

Non-Contractual Appropriations - $3,000 Fairfield City School District Canine Program; $43,882 for 2015 Chevrolet Silverado 2500 4x4 for Fire Department; $37,398 for 2014 Ford Interceptor Utility Vehicle for Police Department.

Background: City Manager Pizzano recommended non-contractual appropriations for the Fairfield City Schools Canine Program and two vehicle purchases. Legislative Action: Councilmember Senger presented the first reading of this ordinance.

Councilmember Terry Senger, seconded by Councilmember Debbie Pennington moved to suspend the rules requiring three readings of this ordinance. Motion Carried 7-0. Councilmember Jones commended the city for their support of the canine program in the city schools. Councilmember Terry Senger,

seconded by Councilmember Chad Oberson moved to adopt . Motion Carried 7-0. ORDINANCE NO. 15-14. APPROVED 7-0.

Meeting Schedule

Clerk Wilson read the following meeting schedule:

- Monday, March 10 Council-Manager Briefing, 6:00 p.m.; Regular Meeting, 7:00 p.m.
- Monday, March 24 Council-Manager Briefing, 5:30 p.m.; Regular Meeting, 7:00 p.m.
- Monday, April 14 Regular Meeting, 7:00 p.m.

Executive Session of Council (if needed)

Council adjourned to Executive Session at 8:55 PM.

Adjournment

The Regular Meeting of Council adjourned at 9:15 PM.

ATTEST:

_____
Clerk of Council
Date Approved_____

_____
Mayor's Approval

Design Construction and Materials Manual

February 24, 2014

Overview

- The construction handbook provides details, standards and specifications for public and private infrastructure.

THE OBJECTIVE:

- Review/update using industry best practices.

- Meant to improve the infrastructure life span while balancing the capital costs associated with the proposed standards.

Construction Manual content

- Five chapters
  - Chapter 100 - Introduction, Inspection and As-builts
  - Chapter 200 – Storm Drainage
  - Chapter 300 – Roadway
  - Chapter 400 – Water Supply
  - Chapter 500 - Wastewater

Chapter 200
Storm water management

- Many political subdivisions within Ohio Fairfield's size or greater, are following or have issued, these storm water standards.
  - Requirements from Ohio EPA to restrain water pollution from parking lots, streets and development sites greater than 1 acre are now mandated.

Storm water management cont.

- The City of Fairfield has been approved by the State of Ohio EPA for a General storm water discharge permit since 2003.
- The cycle for past permit ran from 2009-2013

  As part of the renewal process, we are submitting for the next cycle 2014-2018.
  - Requires a Storm Water pollution Prevention Plan (SWP3)
    - Mainly review the **qualitativ**e nature of storm water. Requires more drainage maintenance standards and requirements.
    - Quantitative locally handled after flood 1979.

Storm water management cont.

- Section 200 of the Construction manual modifications & Storm water management plan dovetail with the OEPA mandates. Added language includes:
  - Qualitative Control – dumpster areas & vehicle fueling. *201.06*
  - Compliance with OEPA standards for activities disturbing greater than one acre.201.06
  - Abatement of storm water issues. Remedies for non-compliance.201.09
  - New basins constructed after this ordinance takes effect must have clearer platting language regarding ownership/maintenance. 201.11

Chapter 300 Roadways

- Modify commercial and industrial driveways (only within the right-of-way) from 7 inch concrete to 9 inch concrete. 304.00
- Many new standard drawings have been added to assist contractors how to correctly replace, trench, back fill and construct various modifications within the roadway and or right-of-way.

Chapter 400 Water Supply

- Water line material upgraded from class 53 standard to class 55 standard Thickness standard. Increased costs associated with this change: 8”+/- $5-6.00 a foot; 10”+/-$9-10.00 a foot.

- Requirement for polyethylene wrap which the City is already installing on public contracts.401.06

Water supply cont.

- Storz universal fire connection standard on all hydrants.403.0

- Fire hydrant spacing more definitive by land use and spacing benefit given for sprinkled buildings. 403.02

Water supply cont.

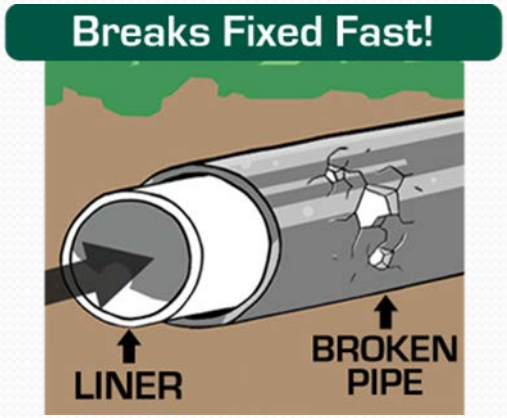
- Set a standard for water line/meter design for private commercial/industrial property.
  - For a proposed building 300 feet or greater from the water main - a fire line meter vault is required. 403.04
  - For a proposed building less than 300 feet – vault or inside meter can be installed (customer choice). But materials (meeting these standards) are specified before meter. Valves are required to separate public and private maintenance responsibilities. 403.05

Water supply cont.

- Water meters
  - Change of philosophy from placement of water meters inside structures to the placement of water meters outside homes, stores etc. 404.06
  - New provisions for servicing 404.11; Change outs 404.12; Protection 404.13; Multi tenant buildings – specification of manifolds/valves etc. for individual turn offs 404.15.

Chapter 500 Wastewater

- Create a new standard for private sewer lateral relining. Homeowners and contractors now have a minimum City standard to follow. 508.10
- Removal of preferred truss pipe standard. Updated all pipe types to meet manufacturers new standards 509.0.



Chapter 500 continued

- Manhole construction standards/inspection tightened up with measures to further prevent inflow and infiltration 510/511. Additional costs: +/- $1000 for an 8’ deep manhole.

- Vacuum testing standards for Manholes created 515.
- Standard for air testing sanitary sewer mains was replaced with Butler County standard 519.

Public Outreach & Next Steps

- 60 day public review process from development community completed in mid-December 2013.
- Manager/Council Briefing 1/27/2014
- First Reading 2/10/2014.
- Planning Commission Wed. Feb 26, 2014.
- City Council readings in March 2014.

Questions

Item No. 11(A)

City of Fairfield, Ohio
City Council Meeting Communication

Date 1-27-14

Item:
An ordinance approving a change in zoning from C-3, General Business District to R-2, One to Four Family Residential District on approximately one acre tract of land located at 4990 Winton Road.

Financial Impact:
None.

Synopsis:
The undeveloped property is surrounded by residentially zoned land to the south and west. To the north is a funeral home and other low intensity land uses. To the east is a used car lot and other similar high intensity commercial uses that abut Route 4. In order to protect the character of the neighborhood, to foster residential cohesiveness and to limit the encroachment of non-compatible land uses, the City requests the zoning be changed from C-3 to R-2.

Background:
The property received approval from the Board of Zoning Appeals (BZA) for a use variance to construct a duplex on June 5, 2013. A condition of approval was to maintain the eastern half of the lot as perpetual green space in order to prohibit the continuation of commercial uses in a residential area. The property owner had concerns regarding the marketability of the site given that one-half is unbuildable. On December 4, 2013 the property owner requested and received a three month extension of their use variance from BZA. In addition, the property owner owns two commercial lots abutting this site that front on Route 4, which contain a used car lot.

Recommendation:
It is recommended that City Council have first reading on this item at the January 27 meeting, set the public hearing for February 10, 2014 and await the written recommendation from the Planning Commission.

Legislative Actions: Rules Suspension and Adoption Requested? No.
Emergency Provision Needed? No.

Prepared by: Eric Dermer (Planning Manager)
Approved for Content by: Timothy Buchanan
Financial Review (where applicable) Mary Hoppe
Legal Review (where applicable) Steven H. Clemmons
Accepted for Council Agenda: Kevin Davison


Winton Road
Route 4
Olde Winton
N
W
E
S

DEPARTMENTAL CORRESPONDENCE

City of Fairfield

TO: Mayor Miller and City Councilmembers

FROM: Scott Lepsky, Chairman, Planning Commission

SUBJECT: PLANNING COMMISSION RECOMMENDATION

DATE: 02/27/14

Please be advised at the Planning Commission meeting held on Wednesday, February 26, 2014, the Planning Commission voted 4 – 0 in favor of recommending approval of the proposed rezoning of lot 143, 4990 Winton Road, from its current C-3, General Business District to R-2, One to Four Family Residence District.

Scott Lepsky, Chairman
Fairfield Planning Commission

plf

Attachment

c: Arthur E. Pizzano, City Manager
Alisha Wilson, Clerk of Council
Timothy Bachman, Development Services Director
David Butsch, Public Works Director
Rick Helsinger, Supt., Bldg. Inspection & Zoning
John Clemmons, Law Director
Planning Commission Members (7)

ORDINANCE NO. _____

ORDINANCE AMENDING ORDINANCE NO. 166-84, THE CODIFIED ORDINANCES OF FAIRFIELD, OHIO, SECTION 1141.02, THE CITY OF FAIRFIELD, OHIO, ZONING MAP.

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. The official Zoning Map of the City of Fairfield, Ohio, which is incorporated into Ordinance No. 166-84, The Codified Ordinances of Fairfield, Ohio, Section 1141.02, is hereby amended by changing the zoning classification of the one acre tract located at 4990 Winton Road, entire lot 143 of the City of Fairfield, Butler County, Ohio, from its present C-3, General Business District, to R-2, One to Four Family Residential District.

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\2014\Winton Road Zoning Map - Ord

Item No. 11(c)(1)

City of Fairfield, Ohio
City Council Meeting Communication

Date 02-10-14

Item:
An ordinance modifying various chapters of the Fairfield Codified Ordinances associated with the update of the Design Construction and Material Specifications Handbook and City of Fairfield Storm Water Quality Management Plan.

Financial Impact:
There may be possible financial impacts with the various modifications.

Synopsis:
The edited Design Construction and Material Specifications Handbook, City of Fairfield Storm Water Quality Management Plan as well as Chapter 906 Drainage Maintenance & Abatement; Chapter 921 Water; Chapter 925 Sewers; Chapter 1105.01 Definitions and Chapter 1117 Strom Drainage & Sedimentation Control are attached for review.

Significant modifications include:

1. Update of the City of Fairfield Storm Water Quality Management Plan (revised 8/2013) as required by the Ohio Environmental Protection Agency. The goal of the plan is to reduce the adverse effects of storm water discharged from 2014-2018. There are six minimum control issues developed in the plan:
    a. Public Education and Outreach
    b. Public Participation/Involvement
    c. Illicit Discharge Detection and Elimination
    d. Construction Site Storm Water Runoff Control
    e. Post Construction Storm Water Management in New Development and Redevelopment
    f. Pollution Prevention/Good Housekeeping for Municipal Operations
2. Modifications of driveway apron depth in commercial and industrial areas.
3. Upgrade in water line material from Class 53 to Class 55 and requirements for polyethylene wrap on all water main installations.
4. Set a standard for water line materials and meter/vault placement for private commercial and industrial infrastructure development.
5. Change metering requirements from placement of meters inside the structure to outside the structure in meter pits.
6. Create a standard for private sewer lateral relining.
7. Allow various pipe materials, constructed to manufacturer's specifications for wastewater mains, and modify standards and testing procedures for manholes to further eliminate inflow and infiltration into the wastewater system.

The attached modified ordinances provide the authority to impose the standards, specifications and materials as depicted in the Design Construction and Material Specifications Handbook and authorize the City of Fairfield Storm Water Quality Management Plan.

Background:
The last modification to the Design Construction and Material Specifications Handbook occurred in 2007. The City of Fairfield Storm Water Quality Management Plan was last updated in 2005.

At the January 27, 2014 Council Manager Briefing several staff members discussed the changes that are proposed in the Design Construction and Material Specifications Handbook and the City of Fairfield Storm Water Quality Management Plan.

In order to solicit stakeholder comments, letters went out to over 75 stakeholders giving them 45 days to comment on the proposed changes to the Design Construction and Material Specifications Handbook. Public input may continue during the Council and Planning Commission review process.

Recommendation:
It is recommended that City Council have first reading on this ordinance at the February 10th meeting and set the public hearing for Monday, February 24, 2014 and await the written recommendation from the Planning Commission.

Legislative Actions: Rules Suspension and Adoption Requested? No.
Emergency Provision Needed? No.

Prepared by: Timothy Boehmann
Approved for Content by: Timothy Boehmann
Financial Review (where applicable) Mary Thomas
Legal Review (where applicable) Gregory Stepanicich
Accepted for Council Agenda: Lisa Vorderbrueggen

Storm Water Quality Management Plan
Summary of Changes
Major SWQMP revisions in response to the Ohio EPA plan review:

General Revisions

- Adjusted the permit years 1-5 to coincide with years 2009-2013.
- Updated the City's Table or Organization

MCM 1 & 2 Public Education, Outreach, Involvement and Participation

- BMP 1.1 - Included Ohio EPA and USEPA website links within the plan on the City stormwater website.
- BMP 1.7 - Added a Best Management Practice (BMP) associated with the Groundwater Consortium Partnership.

MCM 3 Illicit Discharge Detection and Elimination (IDDE)

- BMP 3.1 - Inserted a portion of the City GIS map within BMP 3.1showing how the storm sewer pipes and outfalls are labeled.

MCM 4 Construction Site Stormwater Runoff Control

- BMP 4.1 – Revised ordinance 925.07 (g) to meet the minimum requirements of the Ohio EPA General Storm Water Permit for Construction Activities.
- BMP 4.1 – Explained erosion and sediment control enforcement proceedings.

MCM 5 Post-Construction Stormwater Management in New/Re-Development

- BMP 5.6 – Revised ordinance 1182 to require post-construction practices to be designed and installed per the Ohio EPA General Construction Permit.
- BMP 5.6 – Created ordinance 906 to ensure long-term operation and maintenance (O&M) plans are developed and agreements in place. The City is required to ensure that all privately maintained post-construction controls are inspected at least annually to ensure that the approved O&M plans are being properly followed. These inspections can be provided by the City or the post-construction operators can submit inspection reports to the City for review.

MCM 6 Pollution Prevention/Good Housekeeping for Municipal Operations

- BMP 6.3 – Added a BMP associated with applying fertilizers, herbicides, and pesticides within City maintained property and discuss means of reducing application amounts to improve water quality.

City of Fairfield
Storm Water Quality Management Plan

Prepared by

Public Works Department
City of Fairfield
5350 Pleasant Avenue
Fairfield, Ohio 45014

January 2005
Revised August 2013

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

City Manager, City of Fairfield, Ohio Date

_____

Public Works Director, City of Fairfield, Ohio Date

_____

City Engineer, City of Fairfield, Ohio Date

Approved as to form by:

_____

Law Director, City of Fairfield, Ohio Date

Contents

Appendicies

Background

This storm water quality management plan is intended to demonstrate compliance by the City of Fairfield with the NPDES Phase II regulations. The City of Fairfield is regulated under the Phase II program as the operator of a small municipal separate storm sewer system (MS4). All of the described storm water program activities will be funded through existing funding mechanisms, including the City's general fund, the flood protection fund, and the Public Works Department's small drainage project account. The City of Fairfield has the legal authority to implement all of the storm water best management activities (BMPs) described in this plan.

The storm water quality management plan (SWQMP) outlines the Six Minimum Control Measures that are expected to result in reductions in the adverse effects of storm water discharged by the City of Fairfield over the 5 year permitting period of 2009-2013.

The Six Minimum Control Measures are:

1. Public Education and Outreach
2. Public Participation/Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Storm Water Runoff Control
5. Post Construction Storm Water Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

Each measure is addressed separately within the plan. Generally, the plan identifies the strategies, existing programs and proposed programs for each minimum control measure. A table of organization outlines who will be responsible for completing each Minimum Control Measure under this permit.

The City will submit its required update annually during the permit cycle to the Ohio EPA. The report will include the status of compliance with the permit conditions, an assessment of the appropriateness of the BMPs and progress towards achieving measurable goals for each of the Six Minimum Control Measures.

A summary of the activities the City will undertake during the subsequent annual reporting cycle and any changes to the BMPs or measurable goals will be included in the annual report.

This plan was revised in August of 2012 by the City of Fairfield as a result of meeting with the Ohio EPA. The purpose of the meeting with the Ohio EPA was to evaluate the City's storm water management program. The revised plan indicates the status of the previously established measurable goals set forth by

the original plan and identifies additional BMPs, goals, and schedules that are planned to be implemented by the City over the remainder of the City's small MS4 permitting period.

BMPs, Measurable Goals, and Schedule

This section describes the best management practices (BMPs), measurable goals, and implementation schedule for each of the six minimum control measures listed in the Phase II rule.

1. Public Education and Outreach

According to the Phase II rule (paraphrased),

> *... operators of small MS4s must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff ...*

The City of Fairfield chose a mix of BMPs for public education and outreach. This control measure targets homeowners, commercial property owners, and the general public (those visiting Fairfield and non-homeowners). The program is predicated largely on increasing awareness of how the City's MS4 system functions through information dissemination. As awareness increases, the program will be enhanced to include more active public participation.

The City of Fairfield has partnered with the Groundwater Consortium and the Butler County and Hamilton County Soil and Water Conservation Districts for public education/outreach efforts and will continue its support of these activities within the City.

To fulfill this requirement, the City of Fairfield will use the following BMPs:

1.1 Storm Water Web-page - The City has developed a web-page (address - ***www.fairfield-city.org/publicworks/stormwater.cfm***), linked to the City of Fairfield homepage, that provides information on storm water quality and pollution prevention. The information presented at this web site includes the impact of urbanization on storm water, typical sources of storm water pollution, pollution prevention measures, an overview of the City's storm water management plan, and links to related websites.

Links to additional storm water educational websites:

Ohio EPA:
http://www.epa.ohio.gov/dsw/storm/ms4_index.aspx

US EPA:
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min_measure&min_measure_id=6

Butler County Storm Water District:
http://www.stormwaterdistrict.org/

Hamilton County Storm Water District
http://www.hamilton-co.org/stormwater/

Schedule

Permit Year 1	Finalized content for storm water web-page and activated link
Permit Years 2 - 5	Log activity at site and update content as needed

Measurable Goal: At least 200 visits annually to storm water web page in Permit Years 2 through 5 (actual number of visits will be monitored by Fairfield's Web Analyst).

As of August 2013, the City has developed a storm water related web-page and will modify and update the content as needed to continue to provide educational material to those who visit the web-site over the remainder of the permit period.

Responsible Person(s): The web-page content was developed by the City Engineer in conjunction with the City's Web Analyst. The Web Analyst will log activity at the site.

1.2 Newsletter Articles - The City publishes a series of articles in the *Fairfield Flyer*, a quarterly newsletter that is sent to all residents of Fairfield. The initial article focused on the planned activities of the storm water program, steps the public can take to reduce storm water pollution, and how the public can become involved in the program.

Schedule

Permit Years 1 through 5	Prepare and publish articles documenting progress of the storm water program and provide additional storm water pollution prevention

Measurable Goal: Publication of at least three articles in the Fairfield Flyer newsletter during the 5-year permit cycle.

As of August 2013, the City has published numerous newsletter articles and will continue to provide additional educational articles over the remainder of the permit period.

Responsible Person(s): The articles are written by Public Works Department personnel and they will coordinate their publications in the newsletters.

1.3 Public Education Display – The City has developed a set of educational materials for display at the Fairfield Municipal Building and Fairfield Library. This

display includes posters providing information on storm water pollution, a flyer describing pollution prevention measures, and distribution items such as magnets and coloring books.

Schedule

Permit Year 1	Developed and purchased display materials
Permit Years 1 - 5	Present storm water display and distribute educational materials

Measurable Goal: Presentation of storm water display at least twice annually and distribution of 200 storm water items (flyers, magnets, coloring books) annually in Permit Years 1 through 5.

As of August 2013, the City has developed an educational display and has posted at City facilities and has partnered with the Groundwater Consortium at public events where educational materials were shared with the public. The City will continue to post the display and provide educational material throughout the remainder of the permit period.

Responsible Person(s): The City Engineer will organize the materials and coordinate with other City staff and outside personnel for their display.

1.4 Storm Water Quality Flyer – The City has developed a flyer describing storm water pollution prevention measures that can be implemented by residents and businesses. The flyer has been distributed as part of the Public Education Display and the information posted on the City storm water web page.

Schedule

Permit Year 1	Developed storm water quality flyer
Permit Years 1 - 5	Distribute flyer to residents and businesses and post on the City web page

Measurable Goal: Distribution of at least 100 flyers annually in Permit Years 2 through 5.

As of August 2013, the City has developed, printed, and made a storm water education brochure available at various City facilities. An electronic version of the brochure is posted on the City's storm water web-page. The City will continue to distribute the brochure throughout the remainder of the permit period.

Responsible Person(s): The City Engineer will coordinate with an outside contractor to develop and print the storm water flyer.

1.5 Educational Video – The City has coordinated with the local cable company, Time Warner, to present a public service announcement (PSA) on storm water pollution. The PSA, "Protecting Our Communities from Storm Water

Pollution," was produced by the US EPA and can be shown in formats ranging from 4 minutes to 30 seconds. The PSA has been shown on Time Warner channel 18, a local public access channel for the City of Fairfield. As of August 2012, approximately 12,000 of Fairfield's 18,000 households receive Time Warner cable service. The City has additionally posted a storm water video, "After the Storm," on the City's storm water website to present to the public.

City web-page: *www.fairfield-city.org/publicworks/stormwater.cfm*

Schedule

Permit Years 1 - 5	Present storm water PSA on local public access channel and provide a link on the City web-page.

Measurable Goal: Monthly presentation of storm water PSA on local public access channel during first 5-year permit cycle. Presentation times will be varied to maximize audience coverage.

As of August 2013, the City has coordinated with the local cable company to present the storm water pollution prevention PSA and posted an additional EPA sponsored video on the City's storm water web-page. The PSA will continue to air over the local cable channel and the video will remain posted on the web-page throughout the remainder of the permit period.

Responsible Person(s): The City Engineer will coordinate with the Clerk of Council and the local cable company for the presentation of the public service announcement.

1.6 School Program – In coordination with the Fairfield City schools, the Groundwater Consortium, and the Butler County and Hamilton County Stormwater Districts, the City has provided storm water and groundwater pollution prevention educational presentations to students within the City's School District. The City additionally provided training to intermediate school teachers on storm water related issues that can be included within the school educational program.

Schedule

Permit Years 1 - 5	Present program at City schools through cooperation with the Ground Water Consortium

Measurable Goal: Presentation of educational program to at least two (2) intermediate school classes annually in Permit Years 1 through 5.

As of August 2013, the City has teamed with the Groundwater Consortium and has presented storm water and groundwater pollution prevention educational material to over 500 Fairfield students annually. The City has additionally teamed with the Butler County SWCD associated with providing storm water protection to

intermediate school teachers. The City will continue to explore educational opportunities throughout the remainder of the permit period.

Responsible Person(s): The City Engineer will coordinate with the Ground Water Consortium to develop and present the educational program to Fairfield students.

1.7 Pet Waste Collection Stations – City Ordinance 521.15 (see Appendix A) requires pet owners to remove their pet's waste from any public property or private property not owned by them. To ensure compliance with this ordinance, the City has installed and maintained pet waste collection stations in Fairfield's public parks. These stations include signs describing the purpose of the station and disposable plastic bags for collecting waste.

Schedule

Permit Years 1 - 5	Purchase materials and install stations

Measurable Goal: Installation of at least two (2) pet waste collection stations annually on Fairfield City Park property during the first 5-year permit cycle.

As of August 2013, the City has purchased pet waste collection stations that have been installed at various City park locations. The City will continue to maintain the pet waste collection stations throughout the remainder of the permit period.

Responsible Person(s): The Public Works and Parks Departments will coordinate on the purchase and installation of the pet waste collection stations.

1.8 Groundwater Consortium Partnership – The City will continue involvement with the Hamilton to New Baltimore Ground Water Consortium (website address: www.gwconsortium.org) as means of providing storm water and groundwater pollution prevention education materials to City residents and school students and providing public involvement activities such as the City of Fairfield Race for Global Water.

Schedule

Permit Years 1 - 5	Provide educational materials and organize public events

Measurable Goal: Presentation of educational materials to intermediate school classes annually and assisting with the organization of at least one annual public event in Permit Years 1 through 5.

As of August 2013, the City has coordinated with the Groundwater Consortium to assist with distributing educational storm water brochures to the public and providing storm water and groundwater pollution prevention educational presentation to Fairfield students. The City will continue to work with the

Groundwater Consortium throughout the remainder of the permit period to explore public educational opportunities.

Responsible Person(s): The City Engineer will coordinate with staff from the Ground Water Consortium to develop and present the educational materials and assist with organizing public events.

Rationale Statement

Individuals and households within Fairfield will be informed about the steps they can take to reduce storm water pollution through all of the BMPs previously described. The storm water web-page (BMP 1.1), newsletter articles (BMP 1.2), and storm water flyer (BMP 1.4) will encourage interested parties to contact the City to become involved in the program. The target audiences for the education program include homeowners and businesses at large. These groups were targeted because it is expected that changing their activities will produce the greatest storm water benefits. Additional narrowing of the target audience was not warranted because Fairfield does not have a particular population category or business type that is more prone to producing storm water impacts. The target pollutant sources include illegal dumping into the storm sewer system, improper disposal of yard waste, and improper use of household chemicals / lawn products. Through the newsletter articles (BMP 1.2), all households and business within the City will receive information on the storm water program during the first permit term. Success of this minimum measure will be based on the achievement of the measurable goals. The measurable goals for each BMP were selected to emphasize quantitative measurements of materials distributed to the public.

2. Public Involvement and Participation

According to the Phase II rule (paraphrased),

> *... operators of small MS4s must, at a minimum, comply with State and local public notice requirements when implementing a public involvement / participation program...*

The City recognizes that a successful storm water program relies not only on the MS4 owners and operators and the regulatory community, but also upon the input, assistance and understanding of the general public. The City's program includes means and methods to give the public opportunity to play an active role in both the development and implementation of the NPDES Phase II program.

To fulfill this requirement, the City of Fairfield will use the following BMPs:

2.1 Public Hearings – Hold a public meeting prior to completing the revised storm water management plan to solicit comments and other input from the public.

Schedule

Permit Year 4	Hold a public hearing to receive input on the revised storm water plan.

Measurable Goal: Hold one (1) public hearing to solicit comments from City Council and the general public on the storm water quality management plan.

As of August 2013, the City held a public hearing on January 14, 2003 prior to completing the initial storm water management plan to solicit comments and other input from the public. At the hearing, Public Works staff made a brief presentation and distributed copies of program materials. Additionally, the City will present the revised plan to City Council for review and adoption and publically advertise the meeting which will allow the public an opportunity to attend.

Responsible Person(s): The City Engineer will coordinate with the Clerk of Council and other City staff to publicize and conduct the public hearing.

2.2 Formal Adoption of Plan by City Council - The initial storm water quality management plan was formally adopted by the Fairfield City Council through Ordinance 27-03 (see Appendix A). The process involved public readings of a Council Letter at three City Council meetings. These council readings provided an opportunity to receive public comments on the storm water plan. A copy of the plan is kept at the Public Works Building for public review. The revised plan will be presented to City Council for review and approval by means of establishing a new ordinance.

Schedule

February 2003	Adoption of initial plan by City Council
Permit Year 4	Adopt the revised plan by City Council

Measurable Goal: Formally adopt the revised storm water quality management plan by City Council.

Responsible Person(s): The City Engineer coordinated with the Clerk of Council and other staff on the formal adoption of the revised plan by City Council.

2.3 Storm Drain Marking – The City has installed storm drain markers on curb inlets in Fairfield's public storm sewer system to assist with providing stormwater pollution prevention education to the public. The public storm sewer system in Fairfield contains an estimated 4,000 curb inlets.

Schedule

Permit Year 1	Purchased storm drain markers, and begin marker installation
Permit Years 2-5	Continue to install markers and inspect and maintain as necessary

Measurable Goal: Replace markers annually, in Permit Years 1 through 5.

As of August 2013, the City has installed markers on all public storm sewer inlets. Every storm sewer inlet will be checked by the City sidewalk inspector and markers replaced as necessary within the next five years. As structures are upgraded, the City will purchase storm sewer inlet grates that have the marking stamped into the metal.

Responsible Person(s): The City Engineer will coordinate with City staff to arrange for the installation of storm drain markers.

2.4 Tree Planting Program – The City of Fairfield has been recognized as a "Tree City" by the National Arbor Foundation since 1995. A key activity in the City's reforestation program is the use of volunteers to plant trees on City property. The City will continue this activity and encourage tree planting in riparian corridors whenever feasible.

Schedule

Permit Years 1 - 5	Plant trees through volunteer tree planting program

Measurable Goal: Provide a storm water and groundwater educational opportunity by coordinating with a volunteer group to plant trees within the City.

As of August 2013, the City has annually coordinated with a volunteer group to plant approximately 100 trees on public property every year since 2003. The

trees were donated by the Izaak Walton League and planted by the City of Fairfield elementary school students.

Responsible Person(s): The Parks Department will manage the tree planting program and report program activities to the City Engineer.

2.5 Storm Water Hotline – To encourage participation from the public, the City has designated and publicized the central Public Works Department phone number as a "storm water hotline." This phone number (513-867-4200) allows the public to report storm water problems such as illegal dumping, material spills, construction site erosion, clogged catchbasins, etc. This is featured prominently on the storm water flyer, Fairfield's storm water web page, and other materials distributed through the storm water program.

Schedule

Permit Years 1 - 5	Publicize storm water hotline, respond to calls, and keep records on reported problems.

Measurable Goal: During first 5-year permit term, respond to all reported problems and keep call records.

As of August 2013, the City has posted the "storm water hotline" on the City's web-page and has included the number on various printed educational material distributed to the public. The City has followed-up to each complaint and concern received from the public and will continue posting the hotline number throughout the remainder of the permit period.

Responsible Person(s): Public Works Department staff will receive and respond to all calls to the storm water hotline.

Rationale Statement

The public hearing (BMP 2.1) and adoption of the plan by City Council (BMP 2.2) will be the primary means of public involvement for developing this storm water management program. Public involvement in the program will continue through storm drain marking (BMP 2.3), tree planting (BMP 2.4), and calls to the storm water hotline (BMP 2.5). The target audiences for the public involvement program include community groups interested in volunteering and the public at large (both homeowners and businesses). Success of this minimum measure will be based on the achievement of the measurable goals. The measurable goals for each BMP were selected to emphasize quantitative measurements (i.e., number of markers installed, number of trees planted, number of calls received) of public participation in the storm water program.

3. Illicit Discharge Detection and Elimination

According to the Phase II rule (paraphrased),

> *... the operator of a small MS4 must: (1) develop a storm sewer system map showing the location of all outfalls and names and location of all surface waters of the United States that receive discharges from those outfalls; (2) effectively prohibit non-storm water discharges into the storm sewer system and implement appropriate enforcement procedures and actions; (3) develop and implement a plan to detect and address non-storm water discharges, including illegal dumping; and (4) inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste...*

Due to the largely residential nature of the City, it is important to coordinate the effort to eliminate illicit discharges by local citizens through the public education/outreach and public involvement portions of the Storm Water Management Plan. Public education, public complaint process, visual screening of outfalls, and dry weather screening of outfalls are components of the program.

The City has initiated an education program to increase public awareness of the storm water system and illicit discharge control. The City will continue to provide an illicit discharge detection and elimination brochure at City facilities. As the public education and outreach program results in greater awareness of the system, local citizens may become involved using the website to report illicit discharge locations.

To fulfill this requirement, the City of Fairfield will use the following BMPs:

3.1 Storm Sewer Mapping – The City has developed a geographic information system (GIS) map of the storm sewer system that includes all publicly-owned components (catchbasins, pipes, manholes, culverts, etc.), all outfalls that discharge to surface waters of the State, and the names and location of surface waters of the State. The storm sewer map was created using construction plans, field measurements, and an aerial survey of the City flown in March 2005. USGS maps were used to define surface waters of the State and an outfall will be defined as any conveyance (pipe or open channel) that directly connects to a surface water body. During the review of USGS mapping, it was determined that there are approximately 30 miles of receiving streams within the Fairfield City limits that receive discharge from the storm sewer system. No outfalls from Fairfield's public storm sewer directly discharge into the 2.5 river-miles of the Great Miami River that are adjacent to the city.

This GIS map was created using ArcView software. Construction plans used for the mapping work included hard-copy subdivision plans and roadway improvement plans. Field data was collected using survey-grade Trimble GPS

equipment (owned by City). The focus of the field work consisted of locating outfalls and storm sewer components in areas not covered by the available construction plans. The map will be updated by the City Public Works Department as new development occurs using construction plans and GPS-surveyed field data, if necessary.

A preliminary review of Fairfield's utility billing information indicates that there are approximately 160 addresses in Fairfield that feature home sewage treatment systems (HSTS). City and County records indicate that the majority of these systems are septic systems that percolate into the soil. As part of this storm sewer mapping BMP, staff from the Public Utilities Department inspected these systems over the first permit cycle to verify their working condition. If failing systems are found, the City contacted the local board of health to determine the proper course of action in resolving the non-functional HSTS. No HSTS's were found to be connected to the storm sewer system during the investigation.

Schedule

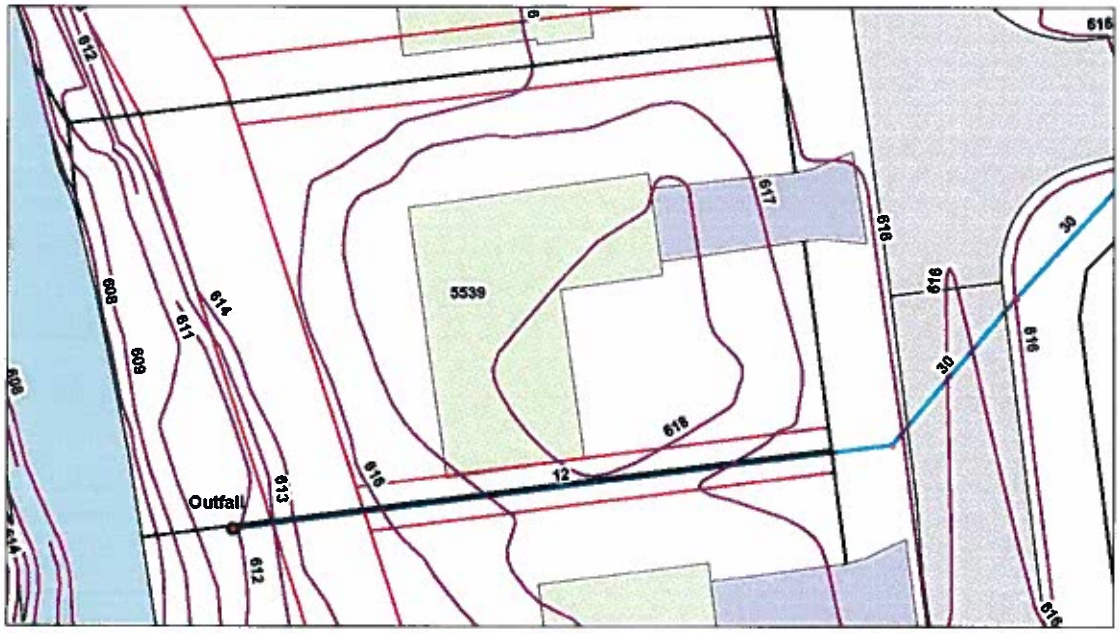
Permit Year 1	Completed Base Map of Storm Sewer System using available construction plans. Field-verified locations of outfalls and add other system components in areas not covered by construction plans. Inspected HSTS's.
Permit Years 1 - 5	Update the map using new development plans, as necessary.
Permit Years 4-5	Map the City maintained and privately maintained post-construction water quality Best Management Practices.

Measurable Goal: Base map of storm sewer system completed in Permit Year 1. Outfall locations field verified in Permit Years 2 through 5, beginning in largest stream reaches. All HSTS's inspected by end of first permit cycle.

As of August 2013, the City has developed a GIS map of the storm sewer system during Permit Year 1 that includes all the publicly-owned components, outfalls that discharge to waters of the State, and the names and locations of the surface waters of the State. Additionally, it has been confirmed that all HSTS located within the City don't consist of discharges into the City maintained storm sewer system. Known HSTS locations are identified on the City developed GIS map. The map will be updated as necessary during the remainder of the permit period by the City Public Works Department. The City will determine the locations of the City maintained and privately maintained post-construction water quality Best Management Practices and identify the locations on the map. The public can view the GIS map by means of the City web-site.

City web-site address: www.fairfield-city.org/maps/index.cfm

Storm System GIS Map Example



Responsible Person(s): Under the direction of the City Engineer, Public Works Department technicians will develop the storm sewer system map. Field work will be conducted by staff from the Public Works and Public Utilities Departments.

3.2 Prohibiting Illicit Discharges – Revised City Ordinance 925.07 (see Appendix B) prohibits illicit discharges into the storm sewer system and includes enforcement sanctions. Under this ordinance, any person, firm or corporation that is causing an illicit discharge is guilty of a third degree misdemeanor. Revised City Ordinance 521.08 (see Appendix B) prohibits littering and defines "litter" to include garbage, construction debris, leaves, yard waste or any material of an unsightly or unsanitary nature. Violations of Ordinance 521.08 are punishable as minor misdemeanors.

When necessary, these ordinances will be invoked to cause guilty parties to remove the source of an illicit discharge or stop illegal dumping. The City will enforce these ordinances using staff from the Public Works, Development Services, Police, and Fire Departments.

Schedule

Permit Year 1	Adopted Revised Ordinances 925.07 and 521.08
Permit Year 2 - 5	Enforce City Ordinances 925.07 and 521.08

Measurable Goal: When an illicit discharge / illegal dumping is detected or reported, City code will be invoked to cause the guilty party to eliminate the illicit discharge.

As of August 2013, the City has adopted revised City Ordinances 925.07 and 521.08 which prohibits illegal discharges into the City MS4 system. The City will continue to enforce these ordinances throughout the remainder of the permit period. Additionally as discussed within Part 2.3, the City has installed markers on all public storm sewer inlets to assist with educating the public and discourage illegal discharges into the City MS4 system.

Responsible Person(s): City Ordinances 925.07 and 521.08 will be enforced by the Public Works Director, City Engineer, Law Director, and other city staff as necessary.

3.3 Field Program to Detect and Address Illicit Discharges – The City has developed a program for the detection and elimination of illicit discharges. This program includes field inspection of outfalls, limited water quality analysis, and source identification. The field work involves walking City streams during dry-weather and visually inspecting outfalls. To best utilize City resources, this outfall inspection work will be conducted as part of the survey work for the GIS map development and routine drainage crew operations (see BMP 6.1).

If an outfall discharge is suspected to have an illicit source, on-site analysis with a YSI model 63 hand-held water quality meter will be conducted. The parameters included in this analysis include temperature, pH, and conductivity. If necessary, additional analysis will be performed at Fairfield's wastewater department laboratory. This facility has the ability to test samples for fluoride, ammonia, chlorine, fecal coliform, BOD5, and TSS.

If the visual inspection and water quality analysis indicate a potential illicit discharge, the source will be identified using the storm sewer map in conjunction with other measures such as TV inspection of storm sewer lines (equipment owned and operated by Fairfield wastewater department). The City will work with any parties found to be causing illicit discharges to eliminate those sources. If necessary, enforcement sanctions will be applied in accordance with City Code. Fairfield will coordinate with neighboring communities if the source of an illicit discharge is found to be outside of city limits.

Schedule

Permit Year 1	Developed illicit discharge field inspection program
Permit Years 2 – 5	Conduct outfall inspections in field for detection and elimination of illicit discharges. Identify the sources of any discovered illicit discharges and work with responsible parties to eliminate those discharges.

Measurable Goal: Outfall inspection conducted over approximately 7.5-miles (25%) of Fairfield's streams annually in Permit Years 2 through 5. All outfalls will be inspected by Year 5.

As of August 2013, the City has inspected has provided dry weather screening of all outfall locations within the MS4 system. These outfall locations are indicated on the City GIS map.

Responsible Person(s): The City Engineer will develop the illicit discharge detection program and coordinate with other Public Works Department staff in its implementation.

3.4 Educate Public Employees – The City will develop a training program for City staff that incorporates information on the hazards of illegal discharges and improper waste disposal. This training program will target staff from the Public Works, Development Services Departments, Public Utilities, Police, and Fire Departments.

Training for Public Works and Public Utilities staff will be oriented towards identification of existing illicit connections and improper waste disposal. Training for Development Services Department staff will be targeted towards insuring that new development / redevelopment projects do not result in illegal connections to the MS4. Training for Police and Fire Department staff will be targeted towards spill response / illegal dumping procedures.

Schedule

Permit Year 1	Developed a training program and conducted first session
Permit Years 3 and 5	Provide annual training for City staff

Measurable Goal: Determine the availability of educational training opportunities for City staff to attend during the first 5-year permit cycle.

As of August 2013, the City has City staff have attended various training sessions associated with illegal discharges and improper waste disposal. The City will continue to identify training opportunities for City staff to attend throughout the remainder of the permit period.

Responsible Person(s): The City Engineer will develop and present the public employee education program on illicit discharges.

3.5 Educate Businesses and the General Public – The Public Education and Outreach program includes information on the hazards of illegal discharges and improper waste disposal. This information is presented on the storm water web page (BMP 1.1), in the newsletter articles (BMP 1.2), on the storm water flyer (BMP 1.4), and is incorporated in the school program (BMP 1.6).

Schedule

Permit Years 1 - 5	Include illicit discharge information in Public Education program BMPs 1.1, 1.2, 1.4, and 1.6

Measurable Goal: See Public Education and Outreach Best Management Practices 1.1, 1.2, 1.4, and 1.6.

Responsible Person(s): Same as listed in Public Education and Outreach section.

3.6 Spill Response Program – The City of Fairfield is a member of the Greater Cincinnati Hazardous Materials Unit, a regional response team that covers a number of counties and cities in the Cincinnati area. In coordination with the Fairfield Fire Department, the Greater Cincinnati Hazardous Materials Unit provides spill containment services to Fairfield for significant spill events. A private contractor under the direction of the Fairfield Fire Department removes any contained spilled hazardous materials. Spill response for smaller events (vehicle accident leaks, etc.) is provided solely by Fire Department personnel.

Schedule

Permit Years 1 - 5	Implement existing spill response program

Measurable Goal: All spills reported to the Greater Cincinnati Hazardous Materials Unit within the City of Fairfield will be contained in accordance with their standard practices. The Fairfield Fire Department will respond to smaller spills.

Responsible Person(s): The Fire Department Chief will have overall authority in managing the City's spill response program.

Rationale Statement

The storm sewer map (BMP 3.1) will be developed by Public Works Department staff using construction plans, field data, and aerial mapping from Fairfield's GIS. The map will be updated using construction plans for new development projects in conjunction with field data collected with a survey-grade GPS unit. Ordinances 925.07 and 521.08 will be used to prohibit illicit discharges (BMP 3.2) and were selected because Fairfield's Codified Ordinances are a standard mechanism for enforcing compliance. Violations of Ordinance 925.07 are punishable as third-degree misdemeanors and violators are also subject to any enforcement penalties incurred by the City. Violations of Ordinance 521.08 are punishable as minor misdemeanors. The plan for detecting and addressing illicit discharges, including HSTS's, is described under BMP 3.3. Priority areas within Fairfield have not been identified because random, illegal dumping is the expected source of most illicit discharges, not aging sanitary sewer lines or failing septic systems. No particular areas of the City are more susceptible to illegal dumping than others. Procedures for tracking and removing illicit discharges are described in BMP 3.3.

The illicit discharge program will be evaluated annually by the City Engineer when the annual reports are being prepared. Public employees, businesses, and the general public will be informed on the hazards of illegal discharges through the following BMPs: employee training program (BMP 3.4), storm water web page (BMP 1.1), the newsletter articles (BMP 1.2), the storm water flyer (BMP 1.4), and the school program (BMP 1.6). Success of this minimum measure will be based on the achievement of the measurable goals. The primary measurable goal for this minimum control is the inspection of outfalls over the permit period. This measurable goal was selected because it is currently unknown whether there are any new significant illicit discharges in the City and the inspection program is the best mechanism for locating such discharges. Other measurable goals were selected to ensure that an accurate storm sewer map is prepared for the City and that City staff are trained to identify illicit discharges.

4. Construction Site Storm Water Runoff Control

According to the Phase II rule (paraphrased),

> *... the operator of a small MS4 is required to develop, implement, and enforce a pollutant control program to reduce pollutants in any storm water runoff from construction activities that result in land disturbance of greater than or equal to one acre. This program must include: (1) an ordinance or other regulatory mechanism to require erosion and sediment controls and sanctions to ensure compliance; (2) requirements for construction site operators to implement appropriate best management practices; (3) requirements for construction site operators to control waste that may cause adverse impacts to water quality; (4) procedures for site plan review; (5) procedures for receipt and consideration of information submitted by the public; (6) procedures for site inspection and enforcement of control measures ...*

The City recognizes that sediment laden runoff from construction sites, if unchecked, can deposit more sediment and pollutants in a stream than would be deposited there over the course of decades from other land use types. The resulting siltation, and other pollutants, can cause physical, chemical, and biological harm to the waterways.

The permit requires that the City's program include pre-construction storm water pollution prevention plan review of all construction activities resulting in a land disturbance of greater than or equal to one acre. To ensure compliance, these construction sites must be initially inspected. The frequency of follow-up inspections is on a monthly basis unless the City documents its procedures for prioritizing inspections, such as location to a waterway, amount of disturbed area, compliance of site, etc.

To fulfill this requirement, the City of Fairfield will use the following BMPs:

4.1 Erosion and Sediment Control Ordinance – Revised City Ordinances 1117.06 and 1309.15 (see Appendix B) requires that erosion and sediment control best management practices be established for all new development and redevelopment projects in Fairfield. Ordinance 1117.06 specifically states that an erosion and sediment control plan must be approved by the City through the Staff Technical Review (STR) site plan review process. The City currently requires the submittal of erosion and sediment control plans by means of the Building Division site plan submission checklist. Ordinance 1309.15 states that construction site operators are responsible for controlling construction site waste.

The City Engineer and Inspectors from the Public Works and Development Services Departments enforces these ordinances. If adequate erosion and sediment control measures are not being provided, the first response is to alert

the contractor or developer to the problem and advise them of the necessary changes both verbally and in writing. These ordinances provide the City with the authority to suspend work on a project until adequate controls are in place. Site inspections are performed by inspectors from the Public Works Department on projects involving the construction of public infrastructure. Public Works inspectors visit these sites at the following stages: site clearing / grading, sanitary sewer installation, water line installation, storm sewer installation, curb construction, and pavement construction. On individual lot developments (residential and commercial), Building Department staff inspects the site at the following stages of construction: footing / slab / foundation wall, rough framing, insulation, rough electric, HVAC, rough heating, and gas line installation. All construction sites are inspected by City staff, at a minimum of, once per month to ensure that construction site operators are properly managing the storm water runoff per the Revised City Ordinances. Sites requiring enforcement proceedings based upon observations made during site inspections will be implemented per Revised Ordinance 1117.06. Enforcement includes the issuance of stop-work orders where sediment and erosion control measures are not provided in accordance with the approved erosion and sediment control plan.

Schedule

Permit Years 1	Adopt Revised Ordinances 1117.06 and 1309.15
Permit Years 2 - 5	Review erosion and sediment control plans submitted to the City associated with site improvement projects.
Permit Years 2 - 5	Provide monthly erosion and sediment control site inspections and enforce Ordinances 1117.06 and 1309.15
Permit Years 4-5	Adopt an ordinance requiring the development of Storm Water Pollution Prevention Plans (SWPPPs) per the requirements of the latest version of the Ohio EPA's General Construction Storm Water Permit

Measurable Goal: All new development / redevelopment projects will include erosion and sediment control measures to minimize the water quality impact of construction site runoff.

As of August 2013, the City has adopted the revised ordinances that require erosion and sediment control plans to be submitted to the City for review and approval. The City has additionally been providing erosion and sediment control site inspections to ensure that the approved erosion and sediment control plans are being properly implemented throughout construction activities. The City will continue to review plans and conduct inspections throughout the remainder of the permit period. The City will additionally adopt an ordinance requiring the development of Storm Water Pollution Prevention Plans (SWPPPs) per the requirements of the latest version of the Ohio EPA's General Construction Storm Water Permit.

Responsible Person(s): The Public Works Director, Development Services Director, City Engineer, and other staff from the Public Works and Development Services Departments will enforce the erosion and sediment control ordinances.

4.2 Adoption of Erosion Control Manual – Per Revised Ordinance 1117.06, Fairfield has officially adopted the standard erosion control manual of the Ohio DNR, "Rainwater and Land Development." It is expected that the use of this widely available and accepted manual will help ensure that erosion control measures are used properly on construction projects. The manual is referred to during plan reviews and field inspections.

Schedule

Permit Years 1	Adopted Revised Ordinance 1117.06
Permit Years 1 - 5	Per Ordinance 1117.06, use "Rainwater and Land Development" manual as standard reference for erosion control measures.

Measurable Goal: "Rainwater and Land Development" will be the standard erosion control reference document used for plan review and field inspection of all new development / redevelopment projects in Fairfield.

As of August 2013, the City has adopted Revised Ordinance 1117.06 that requires all erosion and sediment controls used to manage construction site runoff are to be installed and maintained per the Ohio DNR "Rainwater and Land Development" manual. City Staff will continue to inspect construction sites to ensure that the controls are installed and maintained per the manual requirements throughout the remainder of the permit period.

Responsible Person(s): The City Engineer and inspectors from the Public Works and Development Services Departments will be responsible for ensuring that erosion and sediment control measures be implemented in accordance with this ODNR manual.

4.3 City Staff Training – The City has developed a training program for inspectors in the Public Works and Development Services Departments. The training focused on the proper installation and maintenance of erosion and sediment control measures and verification that a given set of measures provides adequate protection. Public Works Department inspectors are used primarily for the inspection of residential and commercial subdivision projects. Development Services Department inspectors will be used for the inspection of individual lot projects.

Schedule

Permit Year 1	Developed training program and conduct first session
Permit Years 2 - 5	Conduct annual training sessions

Measurable Goal: Select City staff from Public Works and Development Services Departments will attend at least three (3) training sessions during first permit cycle that include information on construction site erosion and sediment control.

As of August 2013, City staff has attended at least three training sessions associated with erosion and sediment control. The City will continue to evaluate potential training opportunities during the remainder of the permit period.

Responsible Person(s): The City Engineer will develop and present the public employee education program on erosion and sediment control.

Rationale Statement

Ordinances 1117.06 and 1309.15 (BMP 4.1) will be used to enforce compliance with the construction site runoff program and were selected because Fairfield's Codified Ordinances are a standard regulatory mechanism for the City. Compliance with the City's erosion control requirements will be monitored through the site inspection process described in BMP 4.1. When violations occur, stop work orders will be issued. Ordinances 1117.06 and 1309.15 describe the City's basic requirements for preventing storm water pollution due to construction site runoff and construction site waste. Ordinance 1117.06 also states that Fairfield will use the most recent standards and specifications available from the Ohio Department of Natural Resources, which currently is the manual "Rainwater and Land Development," as an erosion and sediment control reference (BMP 4.2). Site plan review for all new construction and redevelopment projects will be provided through the City's Staff Technical Review process, and will include a consideration of water quality impacts. Information submitted by the public will be forwarded to the City Engineer. Inspectors from the Public Works and Development Services Departments will conduct site inspection. Success of this minimum measure will be based on the achievement of the measurable goals. The measurable goals were selected to ensure the continued operation of the City's erosion control program.

Prior to applying for its Phase II permit, Fairfield has had an erosion and sediment control program in place and has experienced good compliance with the program requirements. The BMPs listed under this minimum control represent a refinement of the existing program, not the beginning of a completely new City function.

5. Post-Construction Storm Water Management

According to the Phase II rule (paraphrased),

> *... the operator of a small MS4 must develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre. The program must ensure that controls are in place that would prevent or minimize water quality impacts. The operator of a small MS4 is required to: (1) develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for the community; (2) use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects; (3) ensure adequate long-term operation and maintenance of BMPs...*

The City addresses the post-construction storm water management in new development and redevelopment with structural and non-structural BMPs in keeping with the BMP requirements of the OEPA Construction General Permit, OHC00003. As part of this minimum control, the City seeks to effectively manage quantities of post development flow, diminish the impact of the amount of impervious cover within its system and enhance existing storm water practices through inclusion of water quality components.

To fulfill this requirement, the City of Fairfield will use the following BMPs:

5.1 Stormwater Management Requirements – Through revised Ordinance 1182 (see Appendix B), the City currently requires on-site stormwater runoff quantitative and qualitative control for all new development and redevelopment projects that result in an increased amount of impervious surface. Specifically, this ordinance requires the construction of facilities that reduce a 100-year post-developed peak flow rate from the site to the 2-year pre-developed level. Revised Ordinance 906.0 (see Appendix B) describes the maintenance responsibilities for facilities located on commercial, industrial, multi-family residential property and in single-family residential subdivisions.

City regulations allow for the use of dry basins (detention), wet basins (retention), underground storage, and infiltration measures to meet the requirements of Ordinance 1182. Infiltration structures have typically been used in the northwest portion of Fairfield where soils are permeable and the flat topography has made the construction of storm sewers difficult. On small sites where these facilities are not practical or in locations where they would not provide the intended benefits, the ordinance allows the developer to pay a waiver fee in lieu of constructing such facilities. In addition to requiring the construction of on-site facilities, the City also has built two regional detention basins for flood mitigation.

The storm water quality benefits of detention / retention facilities include the reduction of peak flows which can erode stream channels and the pollutant removal characteristics of wet ponds. Infiltration facilities provide additional storm water quality benefits because potential pollutants are not transported to surface waters. Ordinance 1182 is primarily enforced through the City's STR (Staff Technical Review) plan approval process.

Schedule

Permit Years 1 - 5	Enforce Ordinance 1182.

Measurable Goal: All new development / redevelopment projects will be reviewed for storm water detention/retention facilities. Waivers will only be granted in those instances where these facilities are impractical or do not provide benefits.

As of August 2013, the City has reviewed site improvement plans to ensure compliance with ordinance 1182. The City will continue to review plans throughout the remainder of the permit period.

Responsible Person(s): The Development Services Director will enforce City Ordinance 1182 through the plan review process.

5.2 Wellhead Protection Program – Under City Ordinance 1192 (see Appendix A), portions of Fairfield have been delineated into a set of districts, collectively referred to as the "wellhead protection area" (see figure in Appendix C). Development within these districts is regulated for the protection of groundwater resources. These regulations include restrictions on new businesses with a high pollution risk potential such as gas stations, registration of existing facilities, and requirements for spill control plans.

This ordinance provides storm water quality benefits because it addresses a number of potential pollution sources (hazardous material spills, industrial operations involving hazardous materials, etc.) and provides authority to assess penalties for non-compliance.

Schedule

Permit Years 1 - 5	Enforce Ordinance 1192.

Measurable Goal: All new development / redevelopment projects will be regulated in accordance with the wellhead protection program.

As of August 2013, the City has reviewed site improvement plans to ensure compliance with ordinance 1192. The City will continue to review plans throughout the remainder of the permit period.

Responsible Person(s): The Public Utilities Director will enforce City Ordinance 1192.

5.3 Maintenance of Regional Basins – Permits from the Ohio Department of Natural Resources (ODNR) were obtained for the two regional detention basins built and owned by the City (Sites 'A' and 'C'). These permits require that the City conduct regular inspection, vegetation maintenance, and clearing of the basin outlet structures. The City will continue to inspect, maintain, and repair the two regional detention facilities in accordance with the ODNR permits.

Schedule

Permit Years 1 - 5	Maintain two regional detention basins in accordance with ODNR permits.

Measurable Goal: Regional basins will be inspected by City staff at least quarterly, mowed at least monthly during the growing seasons, and repaired as necessary.

As of August 2013, the City has performed quarterly inspections and conducted routine maintenance to ensure the proper functionality of the basins. The City will continue to provide inspection and maintenance activities throughout the remainder of the permit period.

Responsible Person(s): The City Engineer will inspect the two regional basins. Maintenance will be performed by staff from the Public Works and Parks Departments.

5.4 Inspection of Residential Subdivision Detention Basins – The City has created an inventory of the detention/retention basins located in residential subdivisions and provides inspections. The purpose of the inspections is to verify their condition, with particular emphasis given to structural components such as inlet pipes, headwalls, outlet structures, and paved gutter. Where damaged components are found, their repair and replacement will be scheduled into the small drainage project program or capital improvement program.

Schedule

Permit Year 1	Established inventory of detention / retention basins located in residential subdivisions.
Permit Years 2 - 5	Inspect detention / retention basins located in residential subdivisions.

Measurable Goal: A complete inventory of residential subdivision detention / retention basins will be completed in Permit Year 1. City staff will inspect these basins once every two years in Permit Years 2 through 5. Damaged structural components will be scheduled for repair or replacement through the small drainage project and/or capital improvement programs.

As of August 2013, the City has established an inventory of basins located within residential subdivisions and has inspected the basins on a two-year cycle.

Responsible Person(s): Under the direction of the City Engineer, Public Works Department staff will perform the residential subdivision basin inspections.

5.5 Stamped Curb Inlets – Fairfield replaces existing curb inlets with new inlets that have grates stamped with a fish logo and the message "DUMP NO WASTE." These inlets have been replaced through the street overlay program and a contract specifically intended for curb inlet work. These stamped inlets are also used in new development, redevelopment and public roadway improvement projects, whenever possible. The use of the stamped inlets serves the same purpose as the storm drain marking program (BMP 2.3).

Schedule

Permit Years 1 - 5	Install new curb inlets featuring fish logo and text "DUMP NO WASTE"

Measurable Goal: Install at least 15 stamped curb inlets annually during first 5-year permit cycle.

As of August 2013, the City has installed more than 100 inlets and dry wells with "Dump No Waste" stamps. The City will continue to incorporate this educational Best Management Practice during future improvement projects during the remainder of the permit period.

Responsible Person(s): The City Engineer will coordinate with other City staff to monitor the activity and progress of the stamped inlet program.

5.6 Post-Construction BMP's - Through the Staff Technical Review (STR) process, developers of projects involving the disturbance of at least 1 acre of land are required to demonstrate compliance with part III.G.2.e of the Ohio EPA's general NPDES permit for construction activity. Project plans submitted to the City are required to include post-construction BMP's as a condition for their approval. Allowable BMP's include vegetated swales / filter strips, extended detention basins, retention basins, constructed wetlands, and alternative BMP's that are equivalent in effectiveness to other structural controls listed in the general permit. Developers of large construction projects (five or more acres of disturbed land) will also be required to provide structural BMP's that are sized to treat the water quality volume as defined in the Ohio EPA general permit.

Schedule

Permit Years 3 - 5	*Ensure compliance with part III.G.2.e of the Ohio EPA general construction permit through the STR process.*

Permit Year 4-5	*Adopt an ordinance requiring a post-construction Operation and Maintenance Plan and agreement*
Permit Year 5	*Ensure long-term O&M plans are prepared for post-construction water quality Best Management Practices*
Permit Year 5	*Ensure annual inspections are being provided to ensure compliance with the approved O&M plans*

Measurable Goal: Through the STR process, all new development / redevelopment projects that involve the disturbance of at least 1 acre of land will be required to submit plans that demonstrate compliance with part III.G.2.e of the Ohio EPA general construction permit prior to receiving site plan approval by the City.

As of August 2013, the City has reviewed site improvement plans to ensure that post-construction water quality controls are provided per the Ohio EPA General Construction Permit. The City will revise an existing ordinance or adopt new ordinance that requires the development of O&M plans and agreements between the post-construction operator and the City.

Responsible Person(s): The Public Works Director or his designee will be responsible for ensuring that all projects involving the disturbance of at least 1 acre meet the requirements of part III.G.2.e of the OEPA general construction permit.

Rationale Statement

Through Ordinance 1182, on-site detention / retention facilities are required for all new development and redevelopment projects that result in an increased amount of impervious surface (BMP 5.1). Ordinance 1182 also allows for the use of infiltration practices. Revised Ordinance 925.07 includes language describing maintenance responsibility for detention / retention facilities (BMP 5.1). Ordinance 1192 functions as a non-structural BMP that provides additional regulatory control for the region of the City where maintaining high groundwater quality is critical (BMP 5.2). BMP 5.3 describes the long-term maintenance program for the City's two regional detention basins. The residential subdivision basin inspection / inventory program (BMP 5.4) will help ensure the long-term operation of those facilities. Installation of the stamped curb inlets (BMP 5.5) serves the function of a non-structural BMP by reducing the likelihood of illegal dumping. BMP 5.6 will ensure that post-construction BMP's are incorporated into new development projects that disturb at least 1 acre (in accordance with the Ohio EPA general construction permit) and that an Operation and Maintenance plan and agreement are established.

Success of this minimum measure will be based on the achievement of the measurable goals. These BMPs were chosen because controlling peak runoff

rates, protecting groundwater quality, and addressing illegal dumping are high priority concerns for Fairfield. The measurable goals were selected to: (1) ensure the continued operation of the City's detention / retention and wellhead protection policies, (2) ensure that the residential detention / retention basins and the City's two regional basins are performing properly, and (3) establish a quantitative goal for installation of stamped curb inlets.

6. Pollution Prevention / Good Housekeeping

According to the Phase II rule (paraphrased),

> *... the operator of a small MS4 must develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing storm water pollution from municipal operations...*

The City has a variety of procedures in place to provide 'good housekeeping'. These procedures include the following:

- The proper disposal of waste oils and greases used in the City's maintenance facilities;
- The careful use of salt and calcium chloride during snow removal periods using measures appropriate to conditions;
- Catch basin cleaning, removal of debris from swales, ditches and culverts;
- Maintenance of City-owned storm pipe;
- Street sweeping;
- Very limited pesticide/herbicide use on City-owned property.

To fulfill this requirement, the City of Fairfield will use the following BMPs:

6.1 Drainage Crew Operations – The City utilizes a four-man crew within the Public Works Department to conduct general maintenance and repair work on the public storm sewer system. Their operations include inspection of the storm sewer system, catchbasin cleaning, repairing structural components, and removing obstructions from major streams.

The storm water quality benefits of this crew's activities include the removal of pollutants from catchbasins and the potential identification and elimination of illicit discharges.

Schedule

Permit Years 1 - 5	Maintain public storm sewer system using Public Works Department drainage crew

Measurable Goal: Drainage crew will address maintenance-related storm sewer system problems by performing necessary repairs or scheduling repair into long-range plan. Catchbasin structures will be inspected annually by the Drainage Crew. Specific Drainage Crew activities will be reported in annual reports.

Responsible Person(s): Under the direction of the Public Works Director, Streets Superintendent, and City Engineer, the drainage crew will perform storm sewer maintenance duties.

6.2 Street Sweeping Program – The City contracts with an outside vendor for street sweeping services. The street sweeping program involves the sweeping of all curbed streets within the City (approximately 232 curb miles) and four (4) publicly owned parking lots. The frequency of cleaning varies from weekly in the City center area to bi-monthly in lower-use residential streets (see figure in Appendix C).

This program provides storm water quality benefits through the removal of pollutants from streets that would otherwise be washed into receiving streams. The pollutants removed from the impervious areas as a result of the Street Sweeping Program are temporarily stored within enclosed dumpsters, in a manner not to expose the collected pollutants to storm water, located within the City maintained construction yard. The temporary stored pollutants are removed from the yard and properly disposed of at a licensed facility by a local waste management company.

Schedule

Permit Years 1 - 5	Perform street sweeping operations and properly dispose of the collected pollutants

Measurable Goal: Street sweeping over approximately 232 curb miles of public street and four publicly-owned parking lots in accordance with schedule shown in figure from Appendix C.

Responsible Person(s): The Streets Superintendent will be responsible for management of the street sweeping program.

6.3 Fertilizer, Pesticide, and Herbicide Application Program – Certified City staff and Contractors apply these chemicals on City owned and maintained property. The chemicals are stored at the City facilities in a manner not to be exposed to storm water. The chemicals are applied per the manufacturers recommended application rates and careful consideration is made not to apply these chemicals just prior to, or during, a rain event or on impervious surfaces. The appropriate storage and application of these chemicals assist with storm water pollution prevention.

Schedule

Permit Years 1 - 5	Track the amount of chemicals applied to City maintained property and determine means to reduce application amounts throughout the City.

Measurable Goal: Determine means to reduce application amounts on City maintained property to assist with water quality improvements.

Responsible Person(s): The Streets Superintendent and Parks Superintendent will be responsible for management of the application of the products.

6.4 Leaf / Brush Pickup Programs – The City provides leaf and brush pick-up services for all City residents. The leaf pick-up program operates from November through January. All areas of the City will receive the pick-up service three times over this period (see figure in Appendix C). The collected leaves are deposited at a City-owned lot for composting.

The brush pick-up program, provided upon request to City residents, begins in April and continues through October. The collected brush is chipped and transported to a local waste disposal company, Rumpke, for composting. A third program, Operation Dump truck, allows residents to borrow City-owned trucks for the collection and disposal of yard waste. This material is transported to Rumpke.

These programs provide storm water quality benefits through the removal of leaves, brush, and yard waste, which could otherwise be washed into the storm sewer system.

Schedule

Permit Years 1 - 5	Operate City leaf and brush pick-up programs

Measurable Goal: Leaf and brush removal throughout City in accordance with program guidelines.

Responsible Person(s): The Streets Superintendent will be responsible for managing the leaf and brush pick-up programs.

6.5 Fleet Maintenance Program - The City's fleet maintenance program incorporates several components that help minimize the potential for storm water pollution. Pollution prevention measures used include the following:

- All City fleet maintenance operations are conducted within the main garage at the Public Works facility. This area is completely enclosed and features numerous spill control measures. All floor drains within the main garage are connected to the sanitary sewer system and feature grease interceptors.
- The Public Works facility includes an enclosed truck wash. The wash-water runoff is routed through an oil-water separator before being discharged to the sanitary sewer system.
- All waste oil generated through fleet maintenance operations is either re-used on-site in a waste oil furnace or recycled by an outside contractor.
- The City only uses above-ground fuel storage tanks equipped with leak detection systems.

Schedule

Permit Years 1 - 5	Continue use of existing pollution prevention measures in fleet maintenance program

Measurable Goal: All City fleet maintenance activities will be conducted in accordance with storm water program guidelines. Quantified use of these measures (number of vehicles through truck wash and amount of oil recycled) will be included in the Phase 2 annual reports.

Responsible Person(s): The Fleet Manager will be responsible for managing the City's fleet maintenance program.

6.6 Snow Removal Program – The City's current snow removal program is based on the use of salt and calcium chloride. Although the amounts can vary widely from year to year, an average of 3,000 tons of salt and 1,800 gallons of calcium chloride are used annually. The salt is stored in a 4,000-ton capacity salt barn that is completely enclosed. All calcium chloride is stored in a 5,600-gallon tank. The pavement adjacent to the salt barn drains to a catchbasin equipped with a sediment trap that is periodically cleaned. All of the City's snowplows are equipped with computerized hydraulic control systems that optimize the application of road salt.

The storm water pollution prevention benefits of the City's snow removal program are that any un-necessary contact between salt and storm water is minimized and salt application to roads is optimized.

Schedule

Permit Years 1 - 5	Continued operation of Snow Removal program

Measurable Goal: All salt and calcium chloride used in the snow removal program will be stored in the salt barn and tank and snowplows will continue to use computerized control systems. Actual amounts of materials used (salt and calcium chloride) will be included in the Phase 2 annual reports.

Responsible Person(s): The Streets Superintendent will be responsible for managing the City's snow removal program.

6.7 City Staff Training – The City has developed a training program for select City staff involved in municipal operations that could impact storm water quality. These staff members will include representatives from the Parks and Public Works Departments. The training focuses on minimizing the potential for storm water pollution from fleet maintenance, street maintenance, storm sewer maintenance, and park and golf course maintenance.

Schedule

Permit Year 1	Developed a training program and conducted the first session
Permit Years 3 and 5	Provide additional training sessions and determine educational opportunities for City staff to attend

Measurable Goal: Selected City staff from Parks and Public Works Departments will attend training sessions during first 5-year permit cycle.

Responsible Person(s): The City Engineer will develop and present the City staff training program on water quality impacts of municipal operations.

Rationale Statement

Fairfield's program to prevent or reduce pollutant runoff from municipal operations includes all of the BMPs described in this section of the plan. Municipal operations that are involved include storm sewer maintenance (BMP 6.1), street sweeping (BMP 6.2), fertilizer, pesticide, and herbicide application (BMP 6.3), *yard waste management (BMP 6.4), fleet maintenance (BMP 6.5), snow removal (BMP 6.6), and parks / open space maintenance (BMP 6.7). The City staff training program is described in BMP 6.7. Floatables and other pollutants that could potentially enter the MS4 will primarily be controlled through BMPs 6.1 (drainage crew operations), street sweeping (BMP 6.2), and leaf / brush pick-up (BMP 6.4). Pollutants from streets, municipal parking lots, maintenance shops, and salt storage areas will be controlled primarily through BMPs 6.2 (street sweeping), 6.5 (fleet maintenance program), 6.6 (snow removal program). Waste material collected through the drainage crew operations is disposed of at Fairfield's sewage treatment plant. Yard waste collected through the leaf and brush pick-up programs is disposed of through composting.*

Prior to applying for its Phase II permit, the City of Fairfield has been proactive in ensuing that City operations did not lead to storm water pollution. The BMPs listed under this minimum control represent a refinement of the existing City operations, not the beginning of a completely new City function. Success of this minimum measure will be based on the achievement of the measurable goals. The measurable goals were selected to ensure continued success in the implementation of these practices.

Appendix A

Existing City Ordinances

CHAPTER 521
Health, Safety and Sanitation

CROSS REFERENCES

See sectional histories for similar State law

Flagpole installation in sidewalk - see Ohio R.C. 723.012

Excavation liability - see Ohio R.C. 723.49 et seq.

Removal of noxious weeds or litter - see Ohio R.C. 731.51 et seq.

Nuisances - see Ohio R.C. Ch. 3767

Tampering with safety devices - see GEN. OFF. 541.04

521.08 LITTERING AND DEPOSIT OF GARBAGE, RUBBISH, JUNK, ETC.

(a) No person shall, regardless of intent, throw, drop, discard, place or deposit litter or cause litter to be thrown, dropped, discarded, placed or deposited on any public property, on private property not owned by him, or in or on waters of the State, the Municipality or waters not owned by him, unless the person has:

(1) Been directed to do so by a public official as part of a litter collection drive.

(2) Thrown, dropped, discarded, placed or deposited the litter in a litter receptacle in a manner that prevents its being carried away by the elements; or

(3) Been issued a permit or license covering the litter pursuant to Ohio R.C. Chapter 3734 or 6111.

(Ord. 158-95. Passed 11-13-95.)

(b) As used in this section "litter" means garbage, trash, waste, rubbish, ashes, cans, drums, bottles, wire, oil, paper, cartons, boxes, scrap pieces of wood, concrete pieces, pieces of brick or concrete blocks, pieces of drywall, construction debris of any type, automobile or truck parts, furniture, glass, leaves, yard waste or anything else of an unsightly or unsanitary nature.
(Ord. 127-03. Passed 8-11-03.)

(c) No person shall cause or allow litter to be collected or remain in any place to the damage or prejudice of others or of the public, or unlawfully obstruct, impede, divert, corrupt or render unwholesome or impure, any natural watercourse.

(d) No person shall throw, drop, discard, place or deposit litter in any dumpster or receptacle not owned by that person without the permission of the owner of the dumpster or receptacle or his/her authorized agent.

(e) Whoever violates subsection (a) or (d) hereof, is guilty of a misdemeanor of the third degree. The sentencing court may, in addition to or in lieu of the penalty provided in this subsection require a person who violates subsection (a) or (d) hereof to remove litter from any public or private property, dumpster or receptacle, or from any waters.

(f) Whoever violates subsection (c) hereof is guilty of a minor misdemeanor.
(Ord. 158-95. Passed 11-13-95.)

CHAPTER 925
Sewers

CROSS REFERENCES

Power to license sewer tappers and vault cleaners - see Ohio R.C. 715.27

Power to regulate water closets and privies - see Ohio R.C. 715.40

Power to construct sewerage system - see Ohio R.C. 715.40, 717.01

Compulsory sewer connections - see Ohio R.C. 729.06

Regulations to control house sewers and connections - see Ohio R.C. 729.51

Weekly deposit of sewer rentals collected - see Ohio R.C. 729.52

Untreated sewage - see Ohio R.C. 3701.59

Interference with sewage flow - see Ohio R.C. 4933.24

Sewerage districts - see Ohio R.C. 727.44 et seq.

Assessments - see Ohio R.C. Ch. 729

Household sewage disposal systems - see OAC Ch. 3701-29

925.07 SPECIAL STORM SEWER RULES.

(a) 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:

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

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

(b) Discharges Into Storm Sewers Regulated. Storm water 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.

(c) 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 storm water, except as follows:

(1) Water line flushing or other potable water discharges, irrigation or lawn watering, diverted stream flows, rising ground water, uncontaminated ground water infiltration, uncontaminated pumped ground water, 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 discharges, water from fire fighting activities, and any other water source not containing pollutants.

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

(3) Any non-storm water 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.

(d) 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.

(e) 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.

(f) 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.

(g) 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.

(h) Maintenance Responsibility for Detention/Retention Basins.

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

(2) 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.

(3) 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.)

(i) Storm Water Quality Management Plan. As a requirement of the City's NPDES Phase II Storm Water Permit, Council hereby adopts the "Storm Water Quality Management Plan" dated January 2005, prepared by City staff as the City's official planning document for addressing storm water quality and pollution prevention. All subsequent amendments to the "Storm Water 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.
(Ord. 20-05. Passed 2-14-05.)

(j) 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.

(k) 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.)

CHAPTER 1117
Storm Drainage and Sediment Control

CROSS REFERENCES

Storm drain conductors and leaders - see OAC 4101:2-51-69

Water backflow prevention - see S.U.&P.S. 921.12

Sanitary sewers - see S.U.&P.S. Ch. 925

Excavation and fill - see P. & Z. Ch. 1196

Lands subject to flooding - see P. & Z. Ch. 1199

1117.06 SEDIMENTATION PLAN.

(a) Intent.

(1) 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.

(2) No subdivision shall be approved unless:

A. 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

B. There has been a determination by the Planning Commission that such plans are not required.

(b) Performance Principles and Standards.

(1) The following principles are effective in minimizing erosion and sedimentation and shall be included where applicable in the control plan.

A. 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.

B. 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.

C. 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.

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

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

F. 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.

G. 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.

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

A. 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.

B. 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 with the requirements of the City.
(Ord. 167-95. Passed 11-13-95.)

C. 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. 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.)

(3) 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:

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

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

C. 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 two foot increments.

D. A certification of the quantity of excavation and fill involved.

E. 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.

F. 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.

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

(c) Approval Procedures.

(1) Three backline copies of complete plans shall be filed with the office of the City Engineer.

(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 storm water management and sediment control program.
(Ord. 167-95. Passed 11-13-95.)

(d) Enforcement.

(1) The Public Works Director or his designee shall en force 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 sediment and erosion control measures are not provided in accordance with the approved site development plans.
(Ord. 127-03. Passed 8-11-03.)

1117.07 DETENTION/RETENTION OF STORM WATER.

Detention/retention of storm water shall be required for each subdivision unless specifically exempted by the Planning Commission.

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

(a) Definitions. Unless the context specifically indicates otherwise, the meaning of the terms used in this section shall be as follows:

(1) "Storm water detention/retention facility" means any structure or facility used to detain storm water run-off, and gradually release the stored run-off at an acceptable rate.

(2) "Detention basin" means dry surface areas created by constructing an excavated or embankment basin.

(3) "Retention basin" means permanent ponds where additional storage capacity is provided above the normal water level.

(4) "Storm water run-off" means that portion of rainfall that is not lost to infiltration, surface storage or evaporation.

(b) Exemptions to Detention/Retention Requirements. The developer may apply to the Planning Commission for exemption from construction of detention/retention facilities. Each request will be reviewed on its own merit and as it affects the entire drainage area in which it lies and into which it flows.

(c) Design.

(1) Quantity of run-off. The peak rate of run-off during the 100 year post development storm cannot exceed the peak rate of run-off during the two year pre-development storm. 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.

(d) Submission Requirements. Plans and supporting data to verify storage volumes, release dates, etc., shall be submitted to the City Engineer. The submission shall include, but is not limited to, the following:

(1) A plan prepared by a registered professional engineer which may be the improvement plan, drainage and grading plan or similar plan at a scale of one inch to 100 feet or larger, shall be submitted and contain at least the following information:

A. All existing and proposed drainage facilities.

B. Existing and proposed contours.

C. Existing structures.

D. The detention/retention facility with outlet structures.

E. Cross section through detention/retention facility.

F. Pertinent elevations, e.g., water surface, flowline of flow control devices, etc.

G. Emergency spillway designed to pass a 100 year storm and with a minimum

depth of one foot.

H. Any other information required by the City Engineer to clarify intent or design features.

(2) All calculations, outlines and designation of drainage areas, and other supporting data in sufficient detail and form to facilitate an expedient and accurate review.

(e) Fees. Review work performed by professional consultants and other costs incurred by the City may be charged to the applicant at their billed cost plus ten percent (10%). The fee must be paid in full prior to approval of the plans by the Planning Director.
(Ord. 167-95. Passed 11-13-95.)

CHAPTER 1182
Detention/Retention Requirements

CROSS REFERENCES

Storm drain conductors and leaders - see OAC 4101:2-51-69

Special storm sewer rules - see S.U. & P.S. 925.07

Storm drainage and sediment control - see P. & Z. Ch. 1117

1182.01 INTRODUCTION.

(a) Detention/retention of stormwater refers to storage of excess runoff on the site of a development and gradual release of the stored runoff at an acceptable rate.

(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.

(e) Detention/retention of stormwater will be required for each subdivision or land development unless specifically exempted. (Ord. 94-84. Passed 7-9-84.)

1182.02 EXEMPTIONS TO DETENTION/RETENTION REQUIREMENTS.

(a) The developer may apply to the City Engineer for exemption from construction of detention/retention facilities.

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

(c) If an exemption is granted by the City Engineer, the developer shall be required to pay a fee in lieu of the construction of the detention/retention facilities. The fee shall be 75 cents per cubic foot of detention/retention volume that would have been required if an exemption had not been granted. 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.

(d) The developer may appeal the denial of an exemption to the Board of Zoning Appeals. (Ord. 30-00. Passed 3-13-00.)

1182.03 DESIGN.

(a) Runoff and Volume Calculation Methods. The methods outlined in the City Subdivision Rules and Regulations shall be used to determine the runoff and storage volumes.

(b) Quantity of Runoff.

(1) The peak rate of runoff during the 100 year post development storm cannot exceed the peak rate of runoff during the two year pre-development storm.

(2) 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.

(c) Basin Construction.

(1) The side slopes of a detention/retention basin shall not exceed four to one and shall be seeded or sodded.

(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 six feet.

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

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

(6) Other requirements may be imposed for specific cases.

(Ord. 94-84. Passed 7-9-84.)

1182.04 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).

(2) All existing and proposed drainage facilities.

(3) Existing and proposed contours.

(4) Existing structures.

(5) The detention/retention basin with outlet structures.

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

(7) A recommendation from a soils 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.

(Ord. 94-84. Passed 7-9-84.)

1182.05 FEE.

Work performed by professional consultants and other costs incurred by the City will be charged to the applicant at their billed cost plus ten percent (10%). The fee must be paid in full prior to approval of the plans by the City Engineer.
(Ord. 94-84. Passed 7-9-84.)

CHAPTER 1192
Source Water Protection Program

1192.01 DEFINITIONS.

The following terms shall have the following meanings within the context of this Chapter:

(a) ABOVEGROUND STORAGE TANK (AST).

This term, as it applies to Source Water Protection, refers to any non-portable container and supporting structure, excluding all pipes connected thereto, which is used to store an accumulation of Regulated Substances and in which more than 90 percent of the final volume of the storage container is at or above the final ground elevation.

(b) BEST MANAGEMENT PRACTICES (BMP).

This term, as it applies to Source Water Protection, refers to schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of the environment. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spills, and leaks.

(c) BOREHOLE.

This term, as it applies to Source Water Protection, refers to a hole drilled/cored into the ground to obtain geological information, release water, etc.

(d) BUSTR.

This term, as it applies to Source Water Protection, refers to the Ohio Bureau of Underground Storage Tank Regulations.

(e) CERCLA.

This term, as it applies to Source Water Protection, refers to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., Pub. L. 96-510, December 11, 1980), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 (Pub. L. 99-499, October 17, 1986; 100 Stat. 1613). All references to CERCLA within this regulation are meant to indicate CERCLA, as amended by SARA.

(f) CITY.

This term, as it applies to Source Water Protection, refers to the City of Fairfield and any of its designated agents.

(g) DRY WELL.

This term, as it applies to Source Water Protection, refers to a type of drainage well used for the underground disposal of storm water runoff from paved areas, which include parking lots, streets, highways, residential subdivisions, and building rooftops; agricultural areas; and industrial areas.

(h) EPCRA.

This term, as it applies to Source Water Protection, refers to the Emergency Planning and Community Right-To-Know Act of 1986, also known as the Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 (Pub. L. 99-499, 42 U.S.C. 960).

(i) EXISTING FACILITY or EXISTING STORAGE UNIT.

This term, as it applies to Source Water Protection, refers to any Facility or Regulated Substance storage unit in operation or for which construction commenced on or before the effective date of this Chapter. Construction of a Facility or Regulated Substance storage unit has commenced if:

(1) The owner or operator has obtained the Federal, State and local approvals or permits necessary to begin physical construction; and either

(2) A continuous on-site, physical construction program has begun; or the owner or operator has entered into contractual obligations for physical construction of the Facility or Regulated Substance storage unit which cannot be canceled or modified without substantial loss.

(j) EXTREMELY HAZARDOUS SUBSTANCE.

This term, as it applies to Source Water Protection, refers to any substance listed by the United States Environmental Protection Agency under 40 CFR Part 355 appendixes A and B; and any substance listed by the commission pursuant to divisions (B)(4) and (C)(5) of Section 3750.02 of the Ohio Revised Code.

(k) FACILITY.

This term, as it applies to Source Water Protection, refers to all contiguous land and related structures, appurtenances, and improvements on land with the same Facility Operator. A Facility may consist of several operations. For these purposes, contiguous land shall include land separated by a public right-of-way so long as such land would otherwise be contiguous. The term Facility includes all principal and accessory uses, including residential uses.

(l) FACILITY OPERATOR.

This term, as it applies to Source Water Protection, refers to the person or designee in possession or control of a Facility or Regulated Substance storage unit, regardless of whether such person is the owner, lessee, or other possessor. The term also includes contractors or site managers at construction sites who are responsible for the general management of Regulated Substances located on site.

(m) GREAT MIAMI BURIED VALLEY AQUIFER.

This term, as it applies to Source Water Protection, refers to a regionally extensive groundwater aquifer system providing drinking water to communities throughout central and southwest Ohio. The Great Miami Buried Valley Aquifer is a designated Sole Source Aquifer under the federal Safe Drinking Water Act, signifying a protected status as a valued natural resource.

(n) GEOTHERMAL WELL.

This term, as it applies to Source Water Protection, refers to well(s) that have been drilled to access and utilize heat sources from within the earth.

(o) GROUNDWATER.

This term, as it applies to Source Water Protection, refers to all the water naturally occurring beneath the surface of the ground, excluding those waters in underground piping for water, wastewater, and/or storm water distribution/collection systems.

(p) HAMILTON TO NEW BALTIMORE GROUNDWATER CONSORTIUM.

This term, as it applies to Source Water Protection, refers to a consortium of seven public and industrial groundwater suppliers and users in the Hamilton to New Baltimore area of Butler and Hamilton Counties, Ohio. Members are: Greater Cincinnati Water Works, The City of Fairfield, The City of Hamilton, Southwest Regional Water District, Millercoors LLC, Butler County Water and Sewer Southwestern Ohio Water Company, and their successors.

(q) IMPERVIOUS SURFACE.

This term, as it applies to Source Water Protection, refers to any surface which prevents the absorption of Regulated Substances into surrounding soils or other pervious surface areas, and which will not react with the Regulated Substance being stored in such a way that the surface will deteriorate and no longer be impervious.

(r) NEW FACILITY OR NEW STORAGE UNIT.

This term, as it applies to Source Water Protection, refers to any Facility or Regulated Substance storage unit beginning operation after the effective date of this chapter.

(s) NON-CONFORMING FACILITY or NON-CONFORMING STORAGE UNIT.

This term, as it applies to Source Water Protection, refers to any existing Facility or Regulated Substance storage unit which, as of the effective date of this ordinance, would otherwise be prohibited within a designated TOT.

(t) OAC.

The Ohio Administrative Code.

(u) OHIO EPA.

The Ohio Environmental Protection Agency.

(v) PERMANENT.

This term, as it applies to Source Water Protection, refers to more than ninety (90) consecutive days.

(w) PESTICIDE.

This term, as it applies to Source Water Protection, refers to (1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest as defined in Section 2 (t) of the Federal Insecticide, Fungicide, and Rodenticide Act (P.L. 100-64, 100-464, to 100-526 and 100-532); and (2) any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant. The term shall include all fungicides, insecticides, nematicides, or other substances used for the control of pests.

(x) PRIMARY CONTAINMENT.

This term, as it applies to Source Water Protection, refers to the first level of containment, i.e., the inside portion of a container or storage device which comes into immediate contact on its inner surface with a Regulated Substance.

(y) PRINCIPAL.

This term, as it applies to Source Water Protection, refers to the primary, predominant, or foremost use or activity at a Facility.

(z) PROCESS.

This term, as it applies to Source Water Protection, refers to the incorporation of a Regulated Substance into a product. Includes making mixtures, repackaging, or using a Regulated Substance as a feedstock, raw material, or starting material for making another chemical.

(aa) RAIL SWITCH YARD.

This term, as it applies to Source Water Protection, refers to any area or railroad center where trains/railroad cars are made up, serviced, switched from track to track, or stored.

(bb) RCRA.

This term, as it applies to Source Water Protection, refers to the Resource Conservation and Recovery Act of 1976 (Pub. L. 94-580; 42 U.S.C. 6901 et seq.), as amended.

(cc) REGULATED SUBSTANCES.

This term, as it applies to Source Water Protection, refers to those substances identified in Subsection 1192.10(a) of this Chapter which are regulated under the Source Water Protection Program.

(dd) REGULATED SUBSTANCE STORAGE AREA.

This term, as it applies to Source Water Protection, refers to that area where Regulated Substances are stored. A Regulated Substance storage area can include single or multiple Regulated Substance storage units.

(ee) REGULATED SUBSTANCE STORAGE UNIT.

This term, as it applies to Source Water Protection, refers to any underground storage tank, aboveground storage tank, drum, carboy, or other container used for the storage of one or more Regulated Substance(s), including silo, bag, tank wagon, box, glass, cylinder, tote bin, and truck body, rail car, or tanker when used for the permanent or temporary storage of Regulated Substances.

(ff) RELEASE.

This term, as it applies to Source Water Protection, refers to the spilling, leaking, pumping,

pouring, emitting, emptying, or dumping of Regulated Substances upon or into any land or water. Release includes, without limitation, leakage of such materials from failed or discarded containers or storage systems and disposal of such materials into any on-site sewage disposal system, dry-well, catch basin, or landfill. The term "release" when used and applied in this Chapter does not include the following:

(1) Disposal, in accordance with all applicable legal requirements and in accordance with the requirements of RCRA regulations, of hazardous wastes in a Facility that has received and maintained all necessary legal approvals for that purpose;

(2) Disposal or release of any substance in compliance with applicable legal requirements, including without limitation, the terms and provisions of a valid municipal, State, or Federal permit if such permits are required by applicable environmental laws;

(3) Disposal, in accordance with all legal requirements, of any substance to a sanitary sewer system that has received and maintained all necessary legal approvals for that purpose;

(4) Disposal, in accordance with all legal requirements, of "sanitary sewage" to subsurface sewage disposal systems as defined and permitted by state or county health departments;

(5) Any discharge of a petroleum substance in a quantity less than twenty-five (25) gallons unless such petroleum discharge enters a dry well, storm sewer, test well, monitoring well, abandoned well or surface water body; or

(6) Any discharge of hazardous materials listed in SARA Title III or CERCLA when the discharge is less than twenty-five (25) pounds within a twenty- four (24) hour period in the one (1) and five (5) year time-of-travel zone, or less than one hundred (100) pounds within a twenty-four (24) hour period in the ten (10) year time-of-travel zone; or

(7) The application of agricultural chemicals, fertilizers, mineral acids, organic sulfur compounds, etc. as used in routine agricultural operations and applied under best management practices as indicated by soil tests, the Ohio State University Cooperative Extension Service, the Soil and Water Conservation District, and label directions approved by the United States Environmental Protection Agency or the Ohio Department of Agriculture.

(gg) REPLACEMENT.

This term, as it applies to Source Water Protection, refers to the physical removal of a Regulated Substance storage unit for installation of a new Regulated Substance storage unit.

(hh) RESTRICTED USE PESTICIDE.

This term, as it applies to Source Water Protection, refers to any pesticide or pesticide use classified by the administrator of the United States Environmental Protection Agency for use only by a certified applicator or by an individual working under the direct supervision of a certified applicator.

(ii) SALVAGE YARD.

This term, at it applies to Source Water Protection, refers to a location where wrecked or decommissioned vehicles and machinery are brought; their usable parts are sold, while the unusable metal parts, known as scrap metal parts, are sold to metal-recycling companies.

(jj) SECONDARY CONTAINMENT.

This term, as it applies to Source Water Protection, refers to containment external to and separate from primary containment designed to contain a release from a primary containment unit. Secondary containment may include, but is not limited to, double walls, dikes, vaults, or impervious liners (both natural and synthetic).

(kk) SENSORY RECEPTORS.

As a part of the body's nervous system, sensory receptors are responsible for processing obtained information from the surrounding environment.

(ll) SOURCE WATER PROTECTION PROGRAM (SWPP).

In 1996, the Safe Drinking Water Act was amended again. Section 1453 was added, providing states with federal funding to complete source water assessments for their public water systems. At that time, the program was extended to include surface water systems and was renamed "Source Water Protection". Also an additional piece of information was required in an assessment- A susceptibility analysis. It is the intent of Congress that public water systems use the information in their source water assessment to develop a drinking water Source Protection Plan.

(mm) STORM WATER MANAGEMENT PLAN.

This term, as it applies to Source Water Protection, refers to the Ohio Environmental Protection Agency requirements to control pollutants in storm water discharge from municipal separate storm sewer systems, industrial storage facilities and construction activities. OEPA requirements include such activities as training, planning, maintenance, construction and facilities management with a common focus on water quality issues.

(nn) STORM WATER MANAGEMENT ZONE.

This terms, as it applies to Source Water Protection, refers to any area applicable to the Storm Water Management Plan.

(oo) TEMPORARY.

This term, as it applies to Source Water Protection, refers to a period of ninety (90) consecutive days or less. Regulated Substances and the individual storage units containing such substances that are used on site as part of regular business operations are not to be considered temporary storage.

(pp) TIME OF TRAVEL ZONE (TOT).

This term, as it applies to Source Water Protection, refers to the advective travel time for water to flow through an aquifer and reach a well or wellfield.

(qq) UNDERGROUND STORAGE RELEASE COMPENSATION BOARD (USRCB).

The Ohio Petroleum Underground Storage Tank Release Compensation Board (The Board) consists of government and industry representatives and has the primary responsibility of administering the Petroleum Financial Assistance Fund. The Fund is a source of income derived from mandatory per-tank fees and is available to eligible underground storage tank owners to reimburse petroleum release clean up costs.

(rr) UNDERGROUND STORAGE TANK (UST).

This term, as it applies to Source Water Protection, refers to one or any combination of tanks, including the underground pipes connected thereto, that are used to contain an accumulation of Regulated Substances the volume of which, including the volume of the underground pipes connected thereto, is 10% or more beneath the surface of the ground. For the purposes of this Chapter, the term does not include:

(1) Pipeline facilities, including gathering lines, regulated under the "Natural Gas Pipeline Safety Act of 1968", 82. Stat, 720, 49 U.S.C.A. 2001, as amended;

(2) Surface impoundments, pits, ponds, or lagoons;

(3) Storm or waste water collection systems;

(4) Flow-through process tanks;

(5) Septic tanks;

(6) Storage tanks located in underground areas when the tanks are located on or above the surface of the floor and the integrity of the tank is periodically visually evaluated; or

(7) Liquid traps or associated gathering lines directly related to oil or gas production or gathering operations.

(ss) USE or OTHERWISE USE.

This term, as it applies to Source Water Protection, refers to handling, transferring, processing,

packaging, treating, emitting, discharging, or disposal of Regulated Substances at a Facility.

(tt) WELLFIELD.

A tract of land that contains one or a number of wells (wellheads) for use in public water supplies.

(uu) WELLHEAD.

An individual well for supplying water.

(vv) SOURCE WATER PROTECTION AREA (SWPA).

The surface and subsurface areas supplying water to wells or wellfields through which contaminants are likely to move and reach such wells or wellfields. The Source Water Protection Area includes the one (1), five (5), and ten (10) year time- of-travel zones.

(ww) SOURCE WATER PROTECTION PROGRAM (WHPP).

A program established by Section 1428 of the Safe Drinking Water Act of 1986 (Public Law 93-523) designed to minimize the potential for contamination of groundwater being used as a source of public drinking water.

(Ord. 120-11. Passed 11-28-11.)

1192.02 DESIGNATION OF PROTECTION AREAS.

(a) Source Water Protection Areas Established.

(1) Certain areas of the City of Fairfield are hereby delineated into the following districts for the protection of groundwater resources and shall be collectively referred to as the "Source Water Protection Area" (SWPA). A map of the SWPA (SWPA map) is on file in the City Planning Department and the office of the Clerk of Council, which map is hereby incorporated herein by reference.

(2) One (1) Year Time-of-Travel (TOT) Zone. The one (1) year TOT zone is that area around the well or wellfield from which groundwater will be drawn for use in a public water supply in a one (1) year or less time period. The one (1) year TOT is hereby established in those areas of the City of Fairfield as illustrated in Exhibit A of this Chapter.

(3) Five (5) Year Time-of-Travel (TOT) Zone. The five (5) year TOT zone is that area located outside the one (1) year TOT zone but within the boundaries of the five (5) year TOT zone from which groundwater will be drawn for use in a public water supply in a five (5) year or less time period. The five (5) year TOT is hereby established in those areas of the City of Fairfield as illustrated in Exhibit A of this Chapter.

(4) Ten (10) Year Time-of-Travel (TOT) Zone. The ten (10) year TOT zone is that area located outside the one (1) and five (5) year TOT zones but within the boundaries of the ten (10) year TOT zone from which groundwater will be drawn for use in a public water supply in a ten (10) year or less time period. The ten (10) year TOT is hereby established in those areas of the City of Fairfield as illustrated in Exhibit A of this Chapter.

(b) Redelineation of the SWPA.

(1) Procedure for Proposals Respecting Changes/Redelineation of SWPA Designation. Any change in the boundary of a SWPA resulting from redelineation of a SWPA shall be effective after approval of the redelineation by Fairfield City Council. Public notice of the change shall be provided in accordance with requirements for the City of Fairfield but shall include no less than the following:

A. Notification through publication of the change for one (1) day in at least one (1) newspaper with general circulation in the community; and

B. Notification via first class mail to those registered Facility Operators in the pre-existing SWPA whose location in a TOT zone has changed as a result of the redelineation, and any non-residential property owners in the newly delineated portions of the updated SWPA. Said notification shall be mailed, via first class mail, no less than thirty (30) days prior to the public hearing date and the notification shall be in the form of a letter stating the results of the redelineation and any subsequent change in the facility's regulatory status.

(c) Impact on SWPA Facilities.

(1) Where an existing facility required to comply with the provisions set forth herein is no longer located in a SWPA as a result of the redelineation, the facility is no longer subject to compliance with the requirements of this Chapter.

(2) Any facility previously located outside the boundary of the SWPA that is located inside the boundary of the SWPA as a result of the redelineation must be registered in accordance with Subsection 1192.04(d) of this Chapter and must comply with those provisions required of existing facilities for the TOT zone in which the facility is located as applicable and in accordance with the time frames specified for those applicable provisions.

(3) Any registered facility whose classification within a TOT zone is changed to a different TOT zone as a result of the redelineation must submit an amended facility registration to the

Development Services Director or Designee in accordance with Subsection 1192.04(d)(7) of this Chapter and must comply with those provisions required of existing facilities as applicable for the new TOT zone in which that facility is now located in accordance with the time frames specified for those applicable provisions.

(d) Prohibitions in the Source Water Protection Area.

(1) One (1) Year TOT Prohibitions. Establishment of the following new activities/land uses is prohibited in the one (1) year TOT as of the effective date of this Chapter:

A. Commercial junk and salvage yards;

B. Commercial sanitary/solid waste/construction and demolition debris landfills;

C. The disposal of shingles, asphalt, asbestos and/or lead-based or lead containing materials in an unlicensed landfill;

D. The manufacturing, processing, or recycling of Regulated Substances as the principal activity where storage, handling, or use of a Regulated Substance exceeds fifty-five (55) gallons aggregate for liquid materials or four-hundred forty (440) pounds aggregate for dry weights;

E. Commercial establishments for gasoline and or diesel fuel dispensing service stations, motor vehicle repair/service shops and/or body repair where storage or use of a Regulated Substance exceeds fifty-five (55) gallons aggregate for liquid materials or four- hundred forty (440) pounds aggregate for dry weights;

F. Trucking or bus terminals where storage or use of a Regulated Substance exceeds fifty-five (55) gallons aggregate for liquid materials or four-hundred forty (440) pounds aggregate for dry weights;

G. Animal feedlots exceeding one thousand (1,000) animal units;

H. Primary metal product industries where storage or use of a Regulated Substance exceeds fifty-five (55) gallons aggregate for liquid materials or four-hundred forty (440) pounds aggregate for dry weights;

I. Metal plating, polishing, etching, engraving, anodizing, or similar processes where storage or use of a regulated substance exceeds fifty-five (55) gallons aggregate for liquid materials or four-hundred forty (440) pounds aggregate for dry weights;

J. Lawn, garden, pesticide, and agricultural services with on-site bulk mixing or blending of fertilizers, pesticides, and other industry- related chemicals for commercial application when quantities of concentrated fertilizers, pesticides, and other industry-related chemicals stored on site exceed fifty-five (55) gallons aggregate for liquid materials or four hundred forty (440) pounds aggregate for dry weights;

K. Permanent storage of regulated substances in trucks, trailers, tankers, or rail cars not meeting conditions specified in Subsection 1192.05(b)(3) of this Chapter where storage of the Regulated Substance(s) exceeds fifty-five (55) gallons aggregate for liquid materials or four-hundred forty (440) pounds aggregate for dry weights;

L. Use of oil, waste oil, or similar liquid petroleum-type products for dust suppression;

M. Use of fly ash or other ash material for fill material. This prohibition does not apply where fly ash is used as a component in cement, concrete, or cinder block;

N. Dry cleaning facilities with on-site dry cleaning service where storage or use of a Regulated Substance(s) exceeds fifty-five (55) gallons aggregate for liquid materials or four-hundred forty (440) pounds aggregate for dry weights;

O. Installation of underground storage tanks except as permitted in Subsection 1192.06(d) of this Chapter; and

P. Temporary or permanent storage of regulated substances other than vehicle fuels, vehicle

lubricants, and fuel for building and/or process heating in new underground storage tanks (USTs),except as permitted in Subsection 1192.06(d) of this Chapter.

Q. Rail switch yards and container ports.

R. The application of sewage sludge solids.

S. All oil and gas drilling and exploration.

(2) Five Year TOT Prohibitions. Establishment of the following new activities/land uses is prohibited in the five-year TOT zone as of the effective date of this chapter:

A. Points A. - D., K., L., O., P., Q., R., and S. in Subsection 1192.02(d)(1).

(3) Ten Year TOT Prohibitions. Establishment of the following new activities/land uses is prohibited in the ten-year TOT zone as of the effective date of this provision:

A. Points B., C., K., L., O., P., Q., R., and S. in Subsection 1192.02(d)(1).

(4) Conditional Uses Applicable to all Source Water Protection Time- of- Travel (TOT) Zones. The following land uses/activities will only be permitted within specified TOTs based on case-by-case review by the Board of Zoning Appeals. Each case must be submitted as a variance request to the Board of Zoning Appeals in accordance with Section 1137.05 of these Codified Ordinances:

A. Use of fly ash as fill material as described in Subsection 1192.02(d)(1)M. at any facility or property located in the ten-year TOT zone. This prohibition does not apply where fly ash is used as a component in cement, concrete or cinder block.

B. Lawn, garden, pesticide, and agricultural services, located in the five-year TOT zone, which have on-site bulk mixing or blending of fertilizers, pesticides, and other industry-related chemicals for commercial application when quantities of concentrated fertilizers, pesticides, and other industry-related chemicals stored on site meet or exceed five hundred (500) gallons aggregate for liquid materials or four thousand (4,000) pounds aggregate for dry weights.

(e) General Applicability.

(1) Unless specified otherwise, all provisions of this Chapter apply to any Facility Operator of any real property or business in the City of Fairfield when storing or otherwise using Regulated Substances as defined in Subsection 1192.10(a) of this Chapter, or conducting any activity regulated under Section 1192.07 herein, and located within a Source Water Protection Area as established in Subsection 1192.02(a) of this Chapter. It is the responsibility of the Facility Operator to determine the applicability of this Chapter to his or her property and/or business, and to comply with all requirements established in this rule as applicable to the Facility. Failure to do so shall not excuse any violations of this Chapter.

(2) Limited Exemptions. The following are exempt from the provisions set forth herein except for compliance with Subsections 1192.04(d) through 1192.04(i) of this Chapter:

A. Indoor storage/use of Regulated Substance(s) in an area capable of fully containing a total release of the Regulated Substance(s) within the facility or draining the release to a wastewater treatment system capable of and permitted to/agreeable to treating the released substance(s). Septic tank systems do not qualify as a wastewater treatment system under this exemption;

B. Sale/storage of Regulated Substances packaged as consumer products in original containers when the aggregate quantity on site meets or exceeds those thresholds established in Subsection 1192.10(a)(3) of this Chapter;

C. Current hazardous waste storage areas at RCRA permitted facilities;

D. Radioactive materials regulated by the U.S. Nuclear Regulatory Commission;

E. Aboveground storage tanks in the five (5) year TOT used exclusively for the storage of residential quantities of Grade 1 or Grade 2 heating fuels and diesel fuel; and

F. Oil/water separator underground storage tanks.

(3) Full Exemptions. The following uses of Regulated Substances are exempt from the provisions set forth herein.

A. Laboratory activities;

B. Chemical storage tanks containing pressurized gases such as chlorine, propane, hydrogen, and nitrogen;

C. Household use of Regulated Substances packaged for consumer use in original pre-packaged containers;

D. Excavation or removal of earth materials;

E. Office and maintenance/janitorial use of Regulated Substances packaged as consumer products. This exemption does not apply to hydrocarbon or halogenated hydrocarbon solvents;

F. Oils and fluids within electrical utility transformers/switches except when stored in quantities meeting or exceeding thresholds established in subsection 1192.10(a)3) of this chapter;

G. Materials present as a solid inside of a manufactured item;

H. Transport of Regulated Substances in trucks, trailers, tankers, or rail cars to facilities through the Source Water Protection Area, provided the Regulated Substances are fueling the transporting vehicle, or the transporting vehicle is in continuous transit, making a delivery, or is stopped for a period of time not to exceed twenty- four (24) hours;

I. Sale/storage of Regulated Substances packaged as consumer products in original containers when the aggregate quantity on site is less than those thresholds established in Subsection 1192.10(a)(3) of this Chapter.

(Ord. 120-11. Passed 11-28-11.)

1192.03 REGULATED SUBSTANCES.

(a) Regulated Substances.

(1) Defined. Regulated Substances shall be those substances listed in Subsection 1192.10(a)(1) herein when storage or use at a facility at any time of the year meets or exceeds those thresholds specified in Subsection 1192.10(a)(2). A Facility Operator may, at their choice, calculate the quantity of Regulated Substances stored or used on site as follows:

A. Maximum amount at any one time. The Facility Operator may report the quantity of Regulated Substances stored or otherwise used on site as the maximum amount found on site at any one time during the course of a year. Where there are seasonal fluctuations in Regulated Substance use, the amount should be based on storage or use of Regulated Substances during peak times of the year; or

B. Monthly daily average. The Facility Operator may calculate the daily average of Regulated Substance storage or use on site over the course of a month. The Facility Operator must calculate this average using the anticipated quantity of Regulated Substances storage or use during peak months at the facility.

(b) Exemptions from the Regulated Substance Listing.

(1) A substance listed in Subsection 1192.10(a)(1) may be partially or fully exempt from regulation under this Chapter if use or storage of the Regulated Substance is exempted under Subsections 1192.02(e)(2) or (3) of this Chapter, or if the Facility Operator can provide proper documentation to the Development Services Director or Designee that a Regulated Substance does not present a threat to groundwater due to the nature of the substance. Information from the substance manufacturer or other qualified, verifiable source indicating that the substance does not present a threat to groundwater shall be considered proper documentation.

(c) Additions/Deletions to the Regulated Substance List.

(1) The Development Services Director or Designee reserves the right to designate additional substances or remove substances from the list of Regulated Substances in Subsection 1192.10(a)(1) as necessary for the protection of the groundwater resource. Public notice of changes to the Regulated Substance list shall be provided by the Development Services Director or Designee in accordance with public notice requirements for the City of Fairfield but shall include no less than:

A. Notification of the intent to remove or add a Regulated Substance to the list via mail to all registered Facility Operators no later than thirty (30) days prior to action by the Development Services Director or Designee;

B. Notification through publication of the change for one (1) day in at least one (1) paper with general circulation in the community; and

C. Notification via first-class mail to all registered Facility Operators no later than thirty (30) days after removal or addition of Regulated Substances to the list by the Development Services Director or Designee.

(Ord. 120-11. Passed 11-28-11.)

1192.04 GENERAL PROVISIONS.

(a) Purpose.

(1) The purpose of this Chapter is to safeguard the public health, safety, and welfare of persons and property in the City of Fairfield by protecting designated groundwater supplies from degradation resulting from the improper storage, use, or discharge of Regulated Substances in and around existing and future wellfields and their recharge areas, and to promote the economic viability of the City of Fairfield by balancing the protection of groundwater with the promotion of the economy of the City.

(b) Compliance with Existing Federal, State and Local Regulations.

(1) Facility Operators subject to regulation under this Chapter must comply fully with all existing applicable federal, state, and local regulations in addition to any of the requirements established in this Chapter.

(c) Continuation of Existing Non-conforming Facilities and Non-conforming Uses of Land.

(1) Where, at the effective date of the adoption of, or amendment to, the provisions set forth herein, lawful use of land exists that is no longer permissible under the provisions of Subsection 1192.02 (d) of this Chapter as enacted or amended, such use may be continued, so long as it remains otherwise lawful, subject to provisions of this Chapter.

(2) Any non-conforming use of land, building, or regulated substance storage unit existing as of the effective date of adoption of, or amendment to, the provisions set forth herein and which operates within a Source Water Protection Area Time-of-Travel Zone is permitted to continue operation as a non-conforming existing land use, building, or regulated substance storage unit provided it remains otherwise lawful and complies with the provisions of this Chapter which apply to existing facilities.

(3) An existing use made non-conforming solely by application of the Source Water Protection provisions set forth herein shall be treated as non- conforming only as to those uses prohibited by these Source Water Protection provisions. As to existing uses not prohibited or otherwise regulated by these Source Water Protection provisions, those uses remain conforming such that they may be expanded or otherwise altered without violation of this Chapter.

(d) Facility Registration.

(1) Registration. Facility registration is required once every two (2) years for any facility where on site storage or use of Regulated Substances meets or exceeds those quantities established in Subsection 1192.10(a)(2) of this Chapter, or for any activity identified as a regulated activity under Section 1192.07 of this Chapter or for any active ground water monitoring or remediation system regulated b ythe USEPA, Ohio EPA or BUSTR. A Facility Operator may register the facility or, at the request of the Facility Operator, the Development Services Director or Designee may register the facility. The Development Services Director or Designee shall conduct any facility registration in the following manner:

A. The Development Services Director or Designee shall provide written notice of the intent to register the facility no less than fourteen (14) days prior to the registration date;

B. The registration shall be conducted at reasonable times during normal business hours. To help ensure accuracy of the registration and safety of the persons involved, the Facility Operator or designee must accompany the Development Services Director or Designee during the registration;

C. The registration will not unreasonably interfere with facility operations; and

D. The scope of the registration will be limited to gathering information necessary to complete the registration required by this Section.

All facility registrations must be completed and, where applicable, submitted to the

Development Services Director or Designee within one hundred eighty (180) days of the date a property becomes subject to regulation under this Chapter, and by July 1 of every second year thereafter. A Facility Operator choosing to have their facility registered by the Development Services Director or Designee must contact the Development Services Director or Designee no less than ninety (90) days before a registration is due to ensure completion of the registration by the required due date.

(2) Registration Requirements. Facility registration will include, but is not necessarily limited to, information on the following:

A. Name, address, and phone number of the registered Facility;

B. Facility Operator name and number;

C. Emergency contact, address, and phone;

D. Primary and, where applicable, secondary business activities at the Facility, including Standard Industrial Classification codes or Chemical Abstract Service (CAS) number and a brief description of how Regulated Substances are used at the Facility;

E. The types, quantity, and location of Regulated Substances stored or otherwise used on-site. Where the Regulated Substance is identified by a common trade name or a mixture, the primary chemical component(s) must be identified;

F. The manner of Regulated Substance storage (i.e., ASTs, fifty-five (55) gallon drums, totes, etc.). AST registration will include information on current tank status, contents, volume, construction, and age;

G. A general description of any secondary containment or other spill containment and/or spill prevention measures used at the Facility for Regulated Substance storage units or storage areas;

H. A general description of Regulated Substance waste disposal methods. Where applicable, the Facility's hazardous waste generator identification number must be provided;

I. Where applicable, location of any groundwater monitoring equipment on the Facility's property;

J. Where applicable, the location of any dry wells on the Facility property; and

K. Where applicable, the type of septic system used on site and type of waste treated.

L. Where applicable, the location of any production wells used for potable and non-potable use on the facility (property) or any unused well of any type.

M. For facilities located in approved storm water management zones and the approved storm water management plans; compliance with such a plan must be in addition to compliance with the requirements of this Source Water Protection Program.

Any person identified as the emergency contact for a Facility under Subsection 1192.04(d)(2) C. must have authority to provide additional information about the Facility and materials stored or otherwise used on site when requested and to authorize the use of response personnel, including hazardous materials contractors, in the event of a release at the Facility. The Facility Operator must notify the Development Services Director or Designee of any change in name, phone number, and/or address of the emergency contact person no later than two (2) weeks after any change.

(3) Operator Signature. The Facility Operator must sign the completed facility registration. The Facility Operator's signature shall serve as acknowledgment of the accuracy of the registration and compliance with the following, where applicable:

A. Storage Unit Inspections - compliant with Subsection 1192.05(b)(1)E.

B. Development and implementation of a Spill Control Plan - compliant with Subsection 1192.05(g).

Any Facility Operator whose Facility is registered by the Development Services Director or Designee must submit a copy of the signed registration to the Development Services Director or Designee no later than two (2) weeks after the registration date.

(4) Use of Existing Registration Information. Any Facility Operator required to register a Facility or Regulated Substance storage unit under another federal, state, or local program may submit a copy of that registration to the Development Services Director or Designee to expedite the registration process. Any existing registration information should be presented to the Development Services Director or Designee prior to or at the time of facility registration.

(5) New Facility Registration. Any Facility subject to regulation under this Chapter that begins operation or commences conduct governed by this Chapter after the effective date of this Chapter must be registered in accordance with Subsection 1192.04(d)(1) no later than one hundred eighty (180) days after beginning operation.

(6) Registration of Previously Exempt Facilities. Any previously exempt Facility that becomes subject to the requirements of this Chapter due to changes at the Facility must be registered in accordance with Subsection 1192.04(d)(1) no later than one hundred eighty (180) days after becoming subject to regulation under the Chapter. A previously exempt Facility becomes subject to regulation under this Chapter when:

A. A new AST or UST system subject to regulation under this Chapter is installed at the Facility;

B. There is a permanent change in the type and/or volume of Regulated Substances stored or otherwise used at the Facility that results in the storage or use of Regulated Substances in quantities meeting or exceeding the thresholds established in Subsection 1192.10(a)(2) and/or

C. There is a change in the delineated TOTs as specified in Subsection 1192.02(b) of this Chapter.

(7) Amending Existing Facility Registrations. A Facility Operator must amend an existing Facility registration, or may request that the Development Services Director or Designee amend the registration, no later than sixty (60) days after any:

A. Change in ownership or management of the Facility;

B. Installation, return to service, or removal of an AST or UST system subject to regulation under this Chapter;

C. Permanent on-site storage or use of a previously unregistered Regulated Substance in quantities meeting or exceeding the thresholds established in Subsection 1192.10(a)(2) and/or

D. Change in the delineated TOTs as specified in Subsection 1192.02(b) of this Chapter.

And no later than ninety (90) days after:

E. Permanent cessation of regulated operations or storage of Regulated Substances as specified in Subsection 1192.04(f).

A Facility Operator choosing to have their facility registration amended by the Development Services Director or Designee must contact the Development Services Director or Designee no less than thirty (30) days before a registration is due to ensure completion of the registration within the allowed sixty (60) day time frame when meeting Subsections A. through D. above. The Facility Operator is responsible for amending a registration under the Subsection E. above.

(8) Registration of Multiple Facilities. Any person owning and/or operating more than one facility subject to regulation under this Chapter must register each regulated facility separately in accordance with the provisions of this Chapter.

(e) Temporary Storage of Regulated Substances.

(1) Applicability. This Section applies to the temporary storage of Regulated Substances at new and existing non-residential facilities in the Source Water Protection Area when the Regulated Substances:

A. Are stored or otherwise used in quantities meeting or exceeding the quantity thresholds

established in Subsection 1192.10(a)(2); and

B. Do not meet any of the exemption criteria specified in Subsection 1192.05(e)(1).

(2) Conditions. Temporary storage subject to regulation under this Chapter must meet the following conditions when aboveground:

A. The Regulated Substance storage unit(s) must meet the general container requirements specified in Subsections 1192.05(b)(1) through (3) of this Chapter; and

B. When possible, the temporary storage unit(s) should be located in a non-hazardous area (i.e., where the unit(s) are not generally exposed to routine vehicular traffic, flammables, or other hazards).

Any Regulated Substance release meeting or exceeding the release notification criteria in Subsection 1192.04(g)(1) must be reported and remediated in accordance with Subsection 1192.04(g) of this Chapter.

(3) Temporary Storage Extensions. Temporary storage of Regulated Substances beyond ninety (90) days is permitted provided compliance with the following requirements.

A. The Facility Operator must notify the Development Services Director or Designee of the need to continue temporary storage of the Regulated Substance(s) prior to expiration of the temporary storage period. The Facility Operator shall submit notification to the Development Services Director or Designee on a prescribed form supplied by the Development Services Director or Designee at the request of the Facility Operator. The notification shall specify:

1. Facility name, address, and telephone;

2. Facility Operator name and twenty-four (24) hour emergency contact. Designation of an emergency contact must be done in accordance with Subsection 1192.04(d)(2);

3. Regulated Substance(s) temporarily being stored at the Facility;

4. The manner in which the Regulated Substances are stored; and

5. The anticipated date when temporary storage will cease.

B. The Regulated Substance continues to be stored in compliance with Subsections 1192.05 (b)(1) through (3) when aboveground.

(f) Facility Closure.

(1) Applicability. This Section applies to any non-residential Facility subject to regulation under this Chapter that becomes unoccupied or where operations are permanently discontinued for a period greater than ninety (90) consecutive days any time after the effective date of this Chapter. Facility Operators subject to compliance with any federal, state, or local facility closure program addressing the storage or handling of Regulated Substances at a closing facility are exempt from the requirements in this Section except for compliance with Subsection 1192.04(f)(3).

(2) Removal of All Regulated Substances. Except in the case of seasonal discontinuation of operation, the Facility Operator must remove all Regulated Substances other than those used exclusively for heating, cooling, and providing electrical lighting for the premises from the property no later than ninety (90) days after the date the property initially became unoccupied or operation was permanently discontinued.

(3) Closure Notice. Any Facility Operator permanently discontinuing operation of a Facility subject to regulation under this Chapter must submit an amended Facility registration to the Development Services Director or Designee in accordance with Subsection 1192.04(d)(7). The amended Facility registration shall include the date on which operations will or have ceased; the current operator's new phone number and address; and the fate of Regulated Substances stored or otherwise used on site. Any Facility Operator required to submit a closure notification under any federal, state, or local closure program may copy the Development Services Director or Designee on that notification in

lieu of submitting an amended Facility registration.

(4) Facility Security. Upon permanent closure of a facility, the Facility Operator must take reasonable steps to secure all Regulated Substance storage units or Regulated Substance storage areas against vandalism. Compliance with Subsections 1192.05(b)(1) through (3) and maintenance of all security measures implemented in accordance with this Section are required until all Regulated Substances are removed from the site.

(g) Regulated Substance Releases.

(1) Release Notification Required. Any release of a Regulated Substance within a Source Water Protection Area, if such release:

A. originates from an underground storage tank; or

B. contacts a pervious ground surface; and

C. is not immediately and completely remediated within twenty-four (24) hours; or

D. enters a surface water body; or

E. enters a dry well, monitoring well, abandoned well or storm sewer must be reported to the Development Services Director or Designee or on-duty drinking water treatment plan operator or ground water consortium manager within twenty-four (24) hours of discovery by the Facility Operator or any other party responsible for the storage unit from which the release occurred. Such notification in no way alleviates other federal, state, or local reporting obligations imposed by law.

(2) Notification Contents. Initial notice shall include, at a minimum, information related to the following:

A. Location of the release (Facility name, address, and phone);

B. Facility/responsible party's name, address, and phone;

C. Emergency contact and phone;

D. Description of the nature of the incident, including date, time, location, and cause of the incident; type, concentration, and volume of substance(s) released.

E. Description of preliminary release control and mitigation efforts.

(3) Regulated Substance Release Report. Within seven (7) days of a reported release, the responsible party must submit to the Development Services Director or Designee a Regulated Substance Release Report providing any additional detail on the nature and management of the release, including control and corrective actions taken, fate of the released material, and, where applicable, the name of the contractor responsible for removal of released substances. Information submitted in the Regulated Substance Release Report shall be used by the Development Services Director or Designee to determine if and where any additional follow-up work needs to be completed to assess the potential pollution impact of the release.

(4) Remediation of Release. Upon discovery of a release, the Facility Operator or other responsible party must take appropriate reasonable actions to mitigate the potential impact of the release on groundwater and remediate the release. Remediation must be conducted in a timely manner and in accordance with applicable law. Wastes generated during remediation of a Regulated Substance release must be handled in accordance with Subsections 1192.05(b)(1) through (3) when the quantity of regulated wastes generated meet or exceed the quantity thresholds established in Subsection 1192.10(a)(2) in addition to all applicable legal requirements. Storage of these materials for a period of greater than ninety (90) days must be reported to the Development Services Director or Designee by the Facility Operator in accordance with Subsection 1192.04(e)(3)A.

(5) Submission of Additional Information. The responsible party must copy the Development Services Director or Designee on all correspondence submitted to federal, state, or local agencies related to site assessment and site remediation. The Development Services Director or Designee may request, if

deemed necessary, that:

A. The Fire Department provide a copy of the department's Ohio Fire Incident Reporting System report to the Development Services Director or Designee;

B. The Ohio EPA provide a copy of the agency's Emergency Response Section Incident Report to the Development Services Director or Designee; and/or

C. The Facility Operator develop and implement procedures to minimize the likelihood of reoccurrence of such a release. The Facility Operator must submit procedures developed under this provision to the Development Services Director or Designee no later than sixty (60) days after being required, and implemented no later than one hundred eighty (180) days after approval by the Development Services Director or Designee.

(6) Liability. The City is authorized to order the cleanup or abatement, or take such other actions as may be necessary to cause cleanup or abatement, of any hazardous material release to soils, surface water, and/or groundwater in or near a SWPA which may present a threat to groundwater quality or violate Ohio's water quality standards. The entity or person responsible for the release shall be liable for any reasonable expense, loss, or damages attributable to the release incurred by the City in response to such an incident, in addition to any fines imposed under Ohio and Federal law, and these Codified Ordinances.

(h) Records Retention.

(1) The Facility Operator must retain all records, reports, or other documentation related to the requirements of this Chapter on site for a minimum of five (5) years from the original date of the record, report, or document.

(i) Inspection.

(1) The Development Services Director or Designee shall inspect all facilities subject to regulation under this Chapter no less than once every two (2) years for compliance with the provisions of this Chapter. Any inspection shall be conducted under the conditions listed in Subsection 1192.04(d)(1)A. through D.

(j) Severability.

(1) Each provision of this Chapter shall be construed as separate, to the end that if any part of it is held invalid for any reason, the remainder shall continue in full force and effect.

(k) Confidentiality.

(1) Information contained in any documentation collected by or submitted to the Development Services Director or Designee under the provisions of this Chapter that is designated as confidential by a Facility Operator shall be considered confidential only to the extent allowable under Ohio Public Records Law and other applicable federal and state laws.

(Ord. 120-11. Passed 11-28-11.)

1192.05 REGULATED SUBSTANCE STORAGE PROVISIONS: ABOVE GROUND STORAGE.

(a) Applicability.

(1) This Section applies to the above ground storage of Regulated Substances in the Source Water Protection Area in quantities meeting or exceeding those specified in Subsection 1192.10(a)(2).

(b) General Container and Regulated Substance Handling Requirements at Non- residential Facilities.

(1) All containers subject to regulation under this Chapter used for the storage or use of Regulated Substances at new and existing non-residential facilities must be:

A. Product-tight and free of any defects which may result in a release of the contained Regulated Substance;

B. Made of or lined with materials which will not react with and are otherwise compatible with the Regulated Substance stored;

C. Individually and clearly labeled with the contents of the container. If a Regulated Substance is being stored on site under the temporary storage provisions in Subsection 1192.04(e), the Regulated Substance storage unit must also be labeled with the date on which temporary storage began.

D. Stored on or above an impervious surface at all times that is free of any gaps, cracks, or other effects of deterioration that would allow for the penetration of Regulated Substances stored on that surface into surrounding soils, or, if stored on a pervious surface, stored with secondary containment in the form of a dike, containment pallet, or other containment unit capable of containing a release from the Regulated Substance storage unit. Existing ASTs are exempt from this requirement; and

E. Visually inspected weekly by the Facility Operator for any evidence of leaks, improper storage, or potential hazards that may result in a release of materials being stored in or transferred into the storage unit. Aisle space between containers must be adequate to allow for inspections. Where applicable, any leak detection or early warning system associated with an AST also must be inspected on a weekly basis. The Facility Operator must maintain a record of inspections and the findings of those inspections, and made available on request by the Development Services Director or Designee. Any weekly inspection log maintained by a Facility Operator under another federal, state, or local program shall satisfy the requirements of this subsection provided the inspection includes those Regulated Substance storage units regulated under this Chapter.

Any Facility Operator installing an impervious surface or providing secondary containment under subsection (b)(1)D. hereof must do so no later than one hundred eighty (180) days after becoming subject to regulation under subsection (b)(1)D. hereof. Continued storage of Regulated Substances on a pervious surface beyond this one hundred eighty (180) day period is permitted only if granted a temporary variance.

(2) Defective Storage Units. A Facility Operator must remove defective storage units from service immediately and repair or replace the defective units if needed. Defective storage units permanently taken out of service must be decontaminated and disposed of in accordance with applicable federal, state, and local waste management standards.

(3) Storage in Trucks, Trailers, Tankers, or Rail Cars. Any truck, trailer, tanker, or rail car used for the storage of Regulated Substances within the Source Water Protection Area must:

A. Be structurally stable and free of any defects that may result in a release of the Regulated Substances stored in the truck, trailer, tanker, or rail car;

B. Be clearly labeled with the contents;

C. Be visually inspected weekly by the Facility Operator for any evidence of leaks, improper storage, or potential hazards that may result in a release of materials being stored in or transferred into or out of the storage unit; and

D. Have all doors, valves, or other openings through which a release could occur locked or otherwise secured when not in use so as to prevent a release of the Regulated Substance through the opening(s)

(4) Spill Control Plan. Permanent storage or use of Regulated Substances subject to regulation under this Chapter at new and existing facilities in a storage unit where a release from the storage unit would reach a pervious soil surface, dry well, storm sewer, or surface water body requires the development of a Spill Control Plan in accordance with Subsection 1192.05(g). A Facility Operator is exempt from this requirement if the storage unit or storage/usage area is secondarily contained.

(c) Residential Regulated Substance Storage Units.

(1) All containers subject to regulation under this Chapter used for the storage or use of Regulated Substances at new and existing residential facilities must be:

A. In compliance with Subsections 1192.05(b)(1)A. through D.;

B. Visually inspected by the Facility Operator on a monthly basis. Where applicable, any leak detection or early warning system associated with an AST also must be inspected at that time; and,

C. Provided with a Spill Control Plan in accordance with Subsection 1192.05(g)(5), where applicable.

(d) Aboveground Storage Tank (AST) Installation.

(1) Installation of New ASTs. This Section applies to the installation of ASTs at new or existing facilities after the effective date of this Chapter when the capacity of the AST meets or exceeds the quantity thresholds established in Subsection 1192.10(a)(2). All new ASTs must be registered in accordance with Subsection 1192.04(d)(1) and meet the general handling requirements specified in Subsection 1192.05(b) in addition to the following:

A. Bottom Clearance. All ASTs must have ground clearance of no less than two (2) inches from the outermost wall of the AST to allow for visual inspection of the underside of the AST. This requirement may be waived if the size of the AST prevents raising the tank as required or the AST is a concrete vaulted tank.

B. Secondary Containment. Unless required under Subsection 1511.01(c)(18) of these Codified Ordinances, all ASTs meeting or exceeding the thresholds established for secondary containment in Subsection 1192.05(e)(2) herein must be installed with secondary containment meeting or exceeding those requirements specified in Subsections 1192.05(e)(3) through (5).

C. Barriers. Any AST meeting or exceeding the thresholds established for secondary containment in Subsection 1192.05(e)(2) and which is installed in an area where the AST is open to vehicle damage must be protected against impact with physical barriers meeting the approval of the Development Services Director or Designee. Any impervious dike utilized as secondary containment meets the requirements for a physical barrier.

(2) Replacement of Existing ASTs. Replacement of an existing AST after the effective date of this Chapter with any new or used AST is considered installation of a new system and therefore subject to any federal, state, and local regulations for the installation of new ASTs in addition to the provisions of this Chapter, unless specified otherwise.

(e) Secondary Containment Requirements.

(1) Exemptions. Unless required under Subsection 1511.01(c)(18) of these Codified Ordinances, the following are exempt from the secondary containment requirements in this Chapter:

A. Storage of Regulated Substance(s) indoors in an area capable of fully containing within the Facility a total release of the Regulated Substance(s) for which the exemption is being claimed, or

draining the release to a wastewater treatment system capable of treating the released substance(s). NOTE: Septic tank systems do not qualify as a wastewater treatment system under this exemption;

B. Storage of Regulated Substances as consumer products packaged in original containers;

C. Storage of Regulated Substances in storage units/areas with secondary containment comparable to or exceeding that required in Subsections 1192.05(e)(3) through (5) herein; and

D. ASTs located in the 10 year TOT.

(2) Secondary Containment Requirements for ASTs. Unless exempted under Subsection 1192.05(e)(1), secondary containment is required as follows for ASTs installed after the effective date of this Chapter:

A. All ASTs installed in the one (1) year TOT with a capacity exceeding fifty-five (55) gallons; and

B. All ASTs installed in the five (5) year TOT with a capacity of five hundred (500) gallons or more when storing petroleum or petroleum-based products, or two hundred and fifty (250) gallons or more when storing all other Regulated Substances.

(3) Construction. Secondary containment systems must be constructed of or lined with materials compatible with the Regulated Substance stored. Secondary containment must be of sufficient thickness, density, and composition so as not to be structurally weakened from contact with the Regulated Substance or precipitation, and must be free of cracks, joints, gaps, or other imperfections which would allow leakage through the containment.

(4) Double Walls and Diking. An AST must have at least one of the following at the choice of the Facility Operator:

A. Double Walls: designed as a containment area and providing the Facility Operator with manual or electronic interstitial space monitoring capabilities. Laminated, coated, or clad materials shall be considered single-walled and shall not be construed to fulfill the requirement for double walling; or

B. Diking: capable of containing one hundred and ten percent (110%) of the total volume of the tank. If the storage area contains multiple ASTs, the secondary containment must be large enough to contain one hundred and fifty percent (150%) of the volume of the largest AST placed in it, or ten percent (10%) of the aggregate internal volume of all ASTs in the storage area, whichever is greater.

(5) Precipitation.

A. If an AST using a dike as a secondary containment system is exposed to and subject to accumulation of precipitation within the dike, the dike must be designed and operated as follows:

1. The base of the dike must be sloped to a collection point or sump to allow for controlled removal of accumulated storm water or spilled regulated materials; and

2. If the dike is penetrated by a drainage pipe, the pipe must have a lockable valve. This valve shall be kept closed and locked under normal conditions until a determination is made by the Facility Operator that the discharge of storm water is acceptable pursuant to subsection (e)(5)B. hereof.

B. Storm water accumulated within secondary containment that is known or suspected to contain a release from the primary containment unit must be handled in accordance with applicable federal, state, or local laws. No potentially contaminated stormwater may be discharged to a sanitary sewer without approval of the Development Services Director or Designee. The Development Services Director or Designee may require analysis of the stormwater before allowing discharge to the sanitary sewer if the released substance could present a treatment problem at the wastewater treatment plant. The Facility Operator must take all reasonable steps to neutralize the stormwater before discharging the stormwater to any septic system, dry well, sewer, soil, or surface water body.

(f) Temporary Placement Out of Service of ASTS.

(1) Removal from Service. Any Facility Operator intending to place an AST system out of

service for less than one (1) year must remove the system from service in accordance with Chapter 1301:7-7-28, Section FM- 2807.2.1 of the State Fire Code in addition to any other applicable federal, state, or local regulations. Any AST meeting any of the secondary containment exemption criteria in Subsection 1192.05(e)(1) or any heating fuel AST taken out of use for seasonal conditions, is exempt from this requirement.

(2) Returning the Tank to Service. Unless required otherwise under another applicable federal, state, or local regulation, any AST placed out of service for more than ninety (90) consecutive days but less than one (1) year which is to be brought back into service must be brought back into service by the Facility Operator in accordance with Chapter 1301:7-7-28, Section FM- 2807.2.1 of the State Fire Code. Any AST meeting any of the secondary containment exemption criteria in Subsection 1192.05(e)(1) is exempt from this requirement.

(g) Spill Control Plans.

(1) Non-Residential Facilities. Facility Operators required to develop a Spill Control Plan (SCP) must complete the plan no later than one hundred eighty (180) days after becoming subject to this requirement. The Development Services Director or Designee may provide, at the request of the Facility Operator, a template of the SCP to facilitate development of the SCP. The SCP does not require the signature of a professional engineer. The SCP must be stored on site and made available on request to the fire department or other inspection authority. Any SCP developed in compliance with other federal, state, or local regulatory programs may satisfy the requirements of this provision provided that SCP contains all information specified in Subsection 1192.05(g)(2) Any deficient information must be amended into the existing SCP to be considered compliant with this Section. If a pre-existing SCP is being used to satisfy this requirement, only compliance with Subsections 1192.05(g)(3) and (4) is required. Where applicable, one (1) copy of the SCP must be kept in the Facility's repository box (lock box).

(2) Content of the Spill Control Plan. The SCP must specify all of the following:

A. Facility name, address, and phone;

B. Facility Operator name and phone;

C. Emergency contact and phone. Designation of an emergency contact must be done in accordance with Subsection 1192.04(d)(2);

D. A brief description of the type of business conducted at the Facility;

E. The location of the Regulated Substance storage area(s) for which the SCP is being developed;

F. The type(s) and normally anticipated quantity of Regulated Substance(s) stored in the Regulated Substance storage area(s) for which the plan is being developed;

G. Potential hazards (including activities) to the Regulated Substance(s) stored in the area;

H. All openings/routes through which a release from the storage area(s) would potentially flow into the Facility's property and within five hundred (500) feet beyond the property line, including floor drains, doorways, storm sewers, dry wells, streams, and other openings/routes;

I. Emergency response procedures to be followed in the event of a release, including specific points of contact for releases, evacuation procedures, and emergency notification procedures for appropriate federal, state, and local agencies; and

J. Emergency equipment available to the Facility Operator and location of equipment.

(3) Employee Training. A Facility Operator must train all employees annually on the release procedures outlined in the SCP. The Facility Operator must maintain a log of employee training and make the log available to the Development Services Director or Designee upon request. Copies of the SCP must be readily available for employee use in work areas in or near Regulated Substance storage areas.

(4) Updating the SCP. A Facility Operator must review and amended the SCP as necessary every two (2) years and when any of the following occur:

A. There is a change in ownership or management at the Facility;

B. An out-of-service AST system lacking secondary containment comparable to that required in Subsection 1192.05(e) is returned to service; and/or

C. Changes, structural or otherwise, are made at the Facility that will affect the anticipated flow direction of any release from the storage area or unit (ex: regrading of property, paving, building additions).

(5) Residential Spill Control. Any residence with a Regulated Substance storage unit required to have a Spill Control Plan shall receive information from the Development Services Director or Designee on how to respond to a release from the storage unit as those units are registered. This information shall be provided in an easy to follow format. The owner of the Regulated Substance storage unit must keep any information related to spill control readily available in the event of a release.

(Ord. 120-11. Passed 11-28-11.)

1192.06 UNDERGROUND STORAGE TANKS.

(a) Applicability.

(1) This Section applies to any person currently owning and/or operating or intending to own and/or operate any underground storage tank (UST) with a capacity exceeding fifty-five (55) gallons when located within the one (1) or five (5) year time-of-travel zone (TOT), or with a capacity meeting or exceeding five hundred (500) gallons or more when located within the ten (10) year TOT.

(b) Exemptions.

(1) The following USTs are exempt from regulation under this Section:

A. USTs containing de minimis quantities of a Regulated Substance.

A de minimis quantity is one (1) inch or less. Any claim that a UST contains de minimis quantities when storing more than one (1) inch of Regulated Substance shall be determined by the Development Services Director or Designee on a case-by-case basis. A Facility Operator must submit verification to the Development Services Director or Designee that the UST contains a de minimis quantity of a Regulated Substance when making any de minimis claim.

(c) Registration of UST Systems.

(1) Registration. All UST systems subject to regulation under this Section must be registered in accordance with Subsection 1192.04(d)(1) of this Chapter. Any Facility Operator required to annually register a UST system with the State Fire Marshal under OAC 1301:7-9-04 may provide a copy of that registration to the Development Services Director or Designee to satisfy this registration requirement.

(2) Information. UST registration shall include, but is not limited to, information on the following:

A. Facility name, address, and phone;

B. Facility Operator, address, and phone;

C. Number, size, construction, date of installation, and location of USTs;

D. Regulated Substances stored in the UST; and

E. Brief description of the type of monitoring equipment used for tanks.

(3) New UST Registration. Any new UST system subject to regulation under this Section that is installed at a facility beginning operation after the effective date of this Chapter must be registered in accordance with Subsection 1192.04(d)(1) no later than one hundred eighty (180) days after beginning operation.

(4) Registration of Previously Exempt Facilities. Any previously exempt Facility that becomes subject to regulation under this Section due to:

A. Installation of an UST subject to regulation under this Section;

B. Return to service of any temporarily abandoned UST or UST containing de minimis quantities of Regulated Substances; and/or

C. Changes in the delineated Source Water Protection Area as specified in Subsection 1192.02(b) of this Chapter must be registered in accordance with Subsection 1192.04(d)(1) no later than one hundred eighty (180) days after becoming subject to regulation under this Section.

(5) Amending Registrations. A Facility Operator must amend, or at the request of the Facility Operator, the Development Services Director or Designee must amend an existing UST registration no later than sixty (60) days after any:

A. Replacement of an existing UST system;

B. Change in ownership or management of the Facility;

C. Return to service of any temporarily abandoned UST or UST containing de minimis quantities of Regulated Substances;

D. Permanent abandonment and/or removal of a UST; and/or

E. Change in the delineated Source Water Protection Area as specified in Subsection 1192.02(b) of this Chapter.

A Facility Operator choosing to have their facility registration amended by the Development Services Director or Designee must contact the Development Services Director or Designee no less than thirty (30) days before a registration is due to ensure completion of the registration within the allowed sixty (60) day time frame.

(6) Registration of Multiple Facilities. Any person owning and/or operating more than one Facility subject to regulation under this Section must register each regulated Facility separately in accordance with the provisions of this Section.

(d) UST Installation Requirements.

(1) BUSTR Sensitive Area USTs. All USTs subject to regulation under the BUSTR Sensitive Area regulations (OAC §1301:7-9-10) must be installed in accordance with those requirements when installed in the Source Water Protection Area.

(2) Underground Storage Release Compensation Board. All petroleum UST systems subject to SWPA provisions must hold a current and valid certificate of coverage from the State of Ohio Petroleum Underground Storage Tank Release Compensation Board.

(3) Heating Fuel USTs; Diesel Fuel USTs. Heating fuel and diesel fuel USTs subject to regulation under this Section must be must be vaulted in accordance with Subsection 1192.06(d)(4) herein.

(4) Other USTs. UST systems installed for permanent storage, use, or handling of Regulated Substances other than vehicles fuels, vehicle lubricants, and fuel for building and/or process heating must be vaulted in accordance with Subsection 1192.06(d)(4) herein.

(5) Vaulted USTs. Vaults must meet the criteria specified in OAC 1301:7-9- 10(C)(2)(a) and (c). The Facility Operator must inspect the vaulted UST at least once every thirty (30) days for visible signs of leaks, cracks, or other structural defects that may result in the release of the substance into the vault or surrounding soils.

(6) Any UST system which, on the effective date of this Chapter,

A. is being installed;

B. has received approval from the State Fire Marshal or Ohio EPA to be installed; or

C. is being reviewed by the State Fire Marshal or Ohio EPA for a permit to install is considered an existing UST system for the purposes of this Section.

(e) Upgrading/Replacement of UST Systems.

(1) For the purpose of this Section, replacement of an existing UST shall be considered installation of a new system and required to comply with any applicable federal, state, and local regulations for the installation of new USTs in addition to the provisions of this Section, unless specified otherwise.

(f) Temporary Placement Out-of-Service, Temporary Closure, Abandonment, Removal, and Change in Service of UST Systems.

(1) Compliance. Facility Operators must comply with all applicable federal, state, and local regulations for the temporary placement out of service, closure, abandonment, removal, or change in service of any UST system in addition to any requirements set forth in this Section.

(2) Abandonment of UST Systems. No UST system located in the Source Water Protection Area may be abandoned in place unless approved by a certified fire safety inspector or the State Fire Marshal. The Facility Operator must copy the Development Services Director or Designee on any closure assessment and other information related to the closure and abandonment in place of the UST system as the information is submitted to the Bureau of Underground Storage Tank Regulations, the State Fire Marshal, or Ohio EPA.

(g) Tank Tightness Testing.

(1) Exemptions. The following USTs are exempt from the tank tightness testing provisions required by this Section:

A. USTs regulated under and operated in compliance with the BUSTR Sensitive Area Requirements (OAC Chapter §1301:7-9-10);

B. USTs vaulted in accordance with Subsection 1192.06(d)(4); and

C. USTs with a capacity of less than five hundred (500) gallons used exclusively for holding diesel fuel and heating fuel oil grades no. 1 and 2 .

(2) Tightness Testing. Any UST not exempt under Subsection 1192.06(g)(1) must be tested for tightness as follows:

A. Prior to the conveyance of real property by sale or otherwise on which an UST is located, the grantor shall have each UST located thereon tested for tightness in accordance with OAC Chapter 1301:7-9-07(E)(3) and (F)(2), provided no such UST shall be subject to testing more than three (3) times in the same ten (10) year period.

B. Where a conveyance of real property on which an UST is located has not occurred within any consecutive ten (10) year period, commencing from the effective date of this Chapter, the owner shall cause each UST located thereon to be tested for tightness in accordance with OAC Chapter 1301:7-9-07(E)(3) and (F)(2) within such period.

Testing results shall be submitted to the Development Services Director or Designee no later than thirty (30) days after completion of the test. A tightness test is not required if the UST will be removed in conjunction with sale of the property or where a test has been completed for a UST within one (1) year prior to sale or transfer of ownership of a property.

(3) Failure of a Tank Tightness Test. If a UST fails a tank tightness test, the Facility Operator must determine if a release has occurred. If a release is confirmed, the release must be reported and remediated in accordance with Subsection 1192.04(g).

(Ord. 120-11. Passed 11-28-11.)

1192.07 MANAGEMENT OF OTHER POTENTIAL POLLUTION SOURCES.

(a) Land Application of Pesticides and Fertilizers.

(1) Applicability. This Section applies to the application of restricted use pesticides as identified by the United States Environmental Protection Agency at existing and new commercial, recreational, and agricultural facilities in the one (1) and five (5) year TOT.

(2) Registration of Restricted Use Pesticides. Facility Operators applying restricted use pesticides within the one (1) and five (5) year TOT in any quantity must register the application of those restricted use pesticides with the Development Services Director or Designee within one hundred eighty (180) days of the effective date of this Chapter and by March 1 of every second year thereafter. Any Facility Operator required to maintain records of restricted use pesticide application under any other federal, state, or local program may submit a copy of those records to the Development Services Director or Designee to satisfy this registration requirement. A Facility Operator may request that the registration be completed by the Development Services Director or Designee. A Facility Operator choosing to have their facility registered by the Development Services Director or Designee must contact the Development Services Director or Designee no less than ninety (90) days before a registration is due to ensure completion of the registration by the required due date.

(3) Registration Information. Registration will include, but is not necessarily limited to, general information on the facility and the application of restricted use pesticides at the facility.

(4) Registration of Previously Exempt Facilities. Any previously exempt Facility that becomes subject to regulation under this Section due to:

A. Changes in the types of pesticides applied at a Facility from non- restricted to restricted use pesticides; and/or

B. Changes in the delineated Source Water Protection Area as specified in Subsection 1192.02(b) must be registered in accordance with Subsection 1192.07(a)(2).

(b) Road Salt Storage.

(1) New Facilities. All road salt stored at new facilities in the one (1) year and (5) year TOT must be stored under a covered shelter on an impervious surface and capable of catching, diverting, and controlling storm water run- off. This requirement does not apply to salt prepackaged for consumer use.

(2) Registration. Any Facility in the one (1) year TOT storing road salt outdoors in quantities meeting or exceeding one thousand (1,000) pounds must be registered in accordance with Subsection 1192.04(d)(1).

(c) On-Lot Sewage Systems.

(1) Registration. Any on-lot sewage system in the Source Water Protection Area used for the disposal of process waters other than sanitary wastes must be registered in accordance with Subsection 1192.04(d)(1). Any Facility Operator required to register such disposal to any other federal, state, or local authority may submit a copy of that registration to the Development Services Director or Designee to satisfy the registration requirements of this Subsection. The Development Services Director or Designee reserves the right to ask for additional information when deemed necessary.

(2) Cessation of On-Site Disposal. Any Facility Operator permanently ceasing disposal of process wastes on site through an on-lot sewage system must submit an amended facility registration no later than sixty (60) days of ending disposal in accordance with Subsection 1192.04(d)(7).

(d) Commercial Junk and Salvage Yards.

(1) All commercial junk and salvage yards in the Source Water Protection Area must be registered in accordance with Subsection 1192.04(d)(1) and must comply with the following as

applicable: Subsection 1192.04(f) (Facility Closure); Subsection 1192.04(g) (Release Notification); and Subsection 1192.05(b) (General Container and Regulated Substance Handling Requirements).

(2) Fluid Management. Scrap vehicles or other units brought into a commercial junk yard located within the Source Water Protection Area must have all fluids removed in accordance with current federal, state, and local regulations before on-site crushing and/or storage of the vehicle or unit. All Regulated Substances removed from a vehicle or other unit must be handled and stored in accordance with current federal, state, and local regulations in addition to the provisions of this Chapter as required.

(e) Dry Wells.

(1) Registration of New Dry Wells. The Development Services Director or Designee must be notified of the installation of any new dry well within the Source Water Protection Area no later than sixty (60) days after installation of the new dry well. Notification shall be provided on a standard form supplied by the Development Services Director or Designee at the request of the registrant. The registration shall include information including, but not limited to, the location and design of the new dry well(s). One registration form may be submitted for the installation of multiple dry wells with the same design at a site.

(2) Use of Existing Registration Information. Any municipality or Facility Operator required to register or report a dry well or dry well system to any other federal, state, or local authority may submit a copy of that registration or report to the Development Services Director or Designee to satisfy the registration requirements of this Section. The Development Services Director or Designee reserves the right to request additional information when deemed necessary.

(3) Inspection and Maintenance Schedule. Any municipality, developer, or facility using dry wells for storm water management in the one (1) and five (5) year TOT must development and implement a schedule for the regular inspection and maintenance of those dry wells. All new dry wells shall have limited, controlled access, and be posted with signage indicating: "No dumping, drains to drinking water aquifer" as defined in this chapter.

(f) Landfills.

(1) Registration. All commercial landfills in the Source Water Protection Area must be registered in accordance with Subsection 1192.04(d)(1). Any releases meeting criteria specified in Subsection 1192.04(g)(1), or any release to groundwater detected through a groundwater monitoring network associated with the site, must be reported to Development Services Director or Designee in accordance with Subsection 1192.04(g). The Development Services Director or Designee shall make all reasonable effort to register former unlicensed landfills in addition to commercial landfills or open dumpsites.

(g) Wells or Boreholes.

(1) Applicability. This Section applies to any existing or new well or borehole in a SWPA used for the production of groundwater that does not require plan approval by the Ohio EPA. This includes any well or borehole used for producing water not intended for human consumption.

(2) Installation and Maintenance. Any well or borehole subject to regulation under this Section installed after the effective date of this chapter must be installed in accordance with Chapter 3745-9-05 of the Ohio Administrative Code. All new wells and boreholes must be registered by the well or borehole owner with the Development Services Director or Designee no later than fifteen (15) days prior to installation of the well or borehole. All new wells or boreholes must be installed by a State-recognized well driller. All new wells or boreholes must be installed in accordance with the State of Ohio Technical Guidance for Well Construction and Ground Water Protection.

(3) Abandonment of Wells or Boreholes. All wells or boreholes which are not maintained for production, standby, or observation purposes are to be permanently sealed according to the State of Ohio Technical Guidance Manual for Sealing Abandoned and Unsealed Wells or Boreholes developed by the State Coordinating Committee on Ground Water. The Facility Operator must notify the Development Services Director or Designee no later than fifteen (15) days prior to abandonment of the well or borehole and all paperwork associated with the well or borehole abandonment process must be filed with the Ohio Department of Natural Resources and the City of Fairfield Building and Zoning Division.

(4) Geothermal Wells or Boreholes. Any geothermal well or borehole installed in any SWPA must do so in accordance with the State of Ohio Technical Guidance for Installation of Geothermal Wells.

(h) Fill Operations. All fill operations shall use clean, hard fill materials and shall be approved by the administering authority prior to the commencement of fill activities.

(1) Fill dirt shall not contain fly ash, sewage, sludge, asphalt, shingles, construction debris or any other material prohibited by any local, state or federal regulation.

(2) All fill operations must comply with local, state, and federal law including, but not limited to, ORC Chapter 3714, and OAC Chapter 3745. In accordance with OAC Chapter 3745-400-05, a written notice of "intent to fill" shall be filed with the City of Fairfield as required by this rule and shall also be filed with the administering authority. Such notice is required to be filed seven days prior to the commencement of fill operations.

(3) All fill sites shall have limited, controlled access, and be posted with signage indicating: "Source Water Protection Area. Fines will be imposed for illegal dumping of fill materials. No asphalt, shingles, construction debris, or any other prohibited material." The site must be secured during unauthorized times with emergency contact information posted.

(4) Any violation of this section shall be subject to the penalty provisions of Section 1192.08.

(Ord. 120-11. Passed 11-28-11.)

1192.08 VIOLATION, PENALTY, AND ADMINISTRATIVE REMEDIES.

(a) Violations and Penalties.

(1) No person shall knowingly submit false or inaccurate information to the Development Services Director or Designee or City of Fairfield, or violate, disobey, omit, neglect, or refuse to comply with any provision of this Chapter or order issued pursuant to this Chapter. Any person doing so shall be subject to penalty under Section 1135.99 of these Codified Ordinances.

(Ord. 120-11. Passed 11-28-11.)

1192.09 VARIANCE AND APPEALS UNDER THE WELLHEAD PROTECTION PROGRAM.

(a) Appeal.

(1) Any person aggrieved by any order issued by the Development Services Director or Designee under the provisions of this Chapter may appeal such decision to the City of Fairfield Board of Zoning Appeals in accordance with established filing procedures.

(2) Source Water Protection Appeals Advisory Board Established. The member communities of the Hamilton to New Baltimore Groundwater Consortium and their surrounding jurisdictions have established a Source Water Protection Appeals Advisory Board (SWPAAB) for the technical review of any variance or appeals request submitted under the Source Water Protection Program. The SWPAAB shall consist of representatives from communities in the Hamilton to New Baltimore area as selected by City Council or other designated authority for that community. The SWPAAB shall operate in accordance with the bylaws developed by and for the group.

(3) SWPAAB Review. Before action on any variance or appeal under this Chapter by the City of Fairfield Board of Zoning Appeals, the SWPAAB shall review any variance or appeal request to ensure that the request, if granted, will not present a contamination threat to groundwater. The SWPAAB shall provide a recommendation on the variance or appeal request to the Board of Zoning Appeals. In doing so, they may include with the recommendation any such alternatives or modifications to the request as necessary to minimize the potential for groundwater contamination. The SWPAAB shall have thirty (30) days from receiving a variance or appeals request to make a recommendation to the Board of Zoning Appeals. This thirty (30) days period shall be inclusive within, not in addition to, the allowed time frame for review by the Board of Zoning Appeals. (Ord. 120-11. Passed 11-28-11.)

1192.10 REGULATED SUBSTANCES LIST

(a) Regulated Substance List.

(1) The substances to be regulated ("Regulated Substances") are those chemicals, mixtures, and other substances, or components thereof, that are known or suspected (as classified by EPA standards) carcinogens, toxic or highly toxic agents, corrosives, or which otherwise have been determined to be a health hazard or require monitoring as a primary or secondary contaminant under the Safe Drinking Water Act of 1986 (Public Law 93- 523), as amended. These substances shall be regulated when the concentration of Regulated Substances stored or otherwise used on site meets or exceeds those quantities specified in Subsection 1192.10(a)(2). Regulated Substances include:

A. Petroleum or petroleum-based products, including fuels, fuel additives, lubricating oils, motor oils, hydraulic fluids, and other similar petroleum-based products;

B. Antifreeze, transmission fluids, brake fluids, and coolants;

C. Solvents (raw or spent), including cleaning solvents, degreasing solvents, stripping compounds, dry cleaning solvents, painting solvents, and/or hydrocarbon or halogenated hydrocarbon solvents;

D. Inks, printing and photocopying chemicals, and waste rags used for solvent-based cleaning;

E. Organic pigments;

F. Liquid storage batteries;

G. Non-aerosol, non-latex based paints, primers, thinners, dyes, stains, wood preservatives, varnishing and cleaning compounds, paint sludges, and paint filters;

H. Corrosion and rust prevention solutions;

I. Industrial and commercial cleaning supplies, including drain cleaners;

J. Sanitizers, disinfectants, bactericides, and algaecides;

K. Pesticides, herbicides, and fertilizers;

L. Acids and bases with a pH less than or equal to 2 or greater than or equal to 12.5;

M. Aqueous metals;

N. Road salt (only when stored in the 1 and 5 year TOT);

O. Or any other material containing one percent (1%) or more by weight of a hazardous raw or waste product that is regulated: as an Extremely Hazardous Substance under Section 302 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (OAC Chapter 3750-20); as a Hazardous Substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (OAC Chapter 3750-30); or as a Toxic Chemical regulated under Section 313 of EPCRA (OAC 3745-100).

(2) A substance listed above may be exempted from regulation under this Chapter if the Regulated Substance does not present a threat to groundwater due to the nature of the substance, and the Facility Operator claiming this exemption for a specific Regulated Substance shows the Development Services Director or Designee proper documentation from the chemical manufacturer or other qualified, verifiable source that the Regulated Substance does not present a threat to groundwater.

(3) Chemicals which are regulated by SWDA, TSCA, RCRA, OSHA, CERCLA, SARA, FIFRA or other State and/or Federal Environmental Laws and Regulations, or for which there is scientific evidence such as the contaminant candidate list (CCL) under the USEPA that indicate acute or chronic health effects can result from exposure including carcinogens, toxic and highly toxic agents, reproductive toxins, teratogens, endocrine disruptors, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, obxoxious substances causing odor and taste problems, and agents which damage the lungs, skin, eyes, or mucous membranes;

(4) Baseline Quantity Thresholds. Substances listed in Subsection 1192.10(a)(1) shall be considered regulated when, at any time of the year, the concentration of Regulated Substances Stored or used at a facility meets or exceeds the lesser of the following quantities:

A. When located within the one (1) and five (5) year TOT, in amounts exceeding fifty-five (55) gallons aggregate for liquid materials or four hundred forty (440) pounds aggregate for dry weights;

B. When located within the ten (10) year TOT, in amounts meeting or exceeding one thousand (1,000) gallons aggregate for liquid materials or eight thousand (8,000) pounds aggregate for dry weights when stored aboveground, or five hundred (500) gallons aggregate for liquid materials when stored in an underground storage tank.

(5) Regulated Substances for Consumer Purchase. Storage of Regulated Substances packaged as consumer products in original containers for consumer purchase shall be regulated under this Chapter only when storage meets or exceeds five (500) hundred gallons aggregate for liquid materials or four thousand (4,000) pounds aggregate for dry weights, whichever is less, in the one (1) and five (5) year TOT, or one thousand (1,000) gallons aggregate for liquid materials or eight thousand (8,000) pounds aggregate for dry weights, whichever is less, in the ten (10) year TOT. (Ord. 120- 11. Passed 11-28-11.)

CHAPTER 1309
Permits

CROSS REFERENCES

Fees - see BLDG., Ch. 1311

Craft license - see BLDG., Ch. 1315

Board of Building Appeals - see BLDG. Ch. 1317

1309.15 MAINTENANCE OF PERMIT PREMISES.

(a) Every person, firm or corporation to whom a building permit has been issued under this Code shall until the issuance of a final occupancy permit be responsible for and shall cause the permit premises to be maintained at all times in accordance with the following requirements:

(1) All paper, trash, plastic and any other material which is subject to being blown about or off the permit premises shall at all times be placed or secured in such a manner that it does not blow about or off the permit premises.

(2) All uprooted trees and bushes, branches, limbs, trash, construction debris and litter as defined in Section 557.02(b) shall be removed from the permit premises at least once in every two week period and shall not be burned or buried on the permit premises. Such trash, construction debris and litter shall be removed to an appropriate landfill or other approved facility. The building permit holder shall be responsible at all times for controlling such material on-site and ensuring that there are no adverse impacts to water quality.

(3) Sedimentation control devices and measures shall be installed and maintained at all times in accordance with the approved plot plan, if any, and in such a manner that all mud and sediment is contained on the permit premises and not permitted to escape onto adjoining property or public right of way. These sedimentation control measures shall include, but are not limited to, a driveway base or temporary construction entrance for each lot under development. On residential development lots, the driveway base should be established no later than during the foundation construction phase using ODOT Type 304 aggregate base material (or approved equivalent). On commercial/industrial development lots, a temporary construction entrance should be established during the initial site grading operation using 2-inch stone (or approved equivalent).

(4) The building permit holder shall be responsible under the provisions of Section 905.03(b) for the immediate removal and cleaning and/or the cost of such removal and cleaning of all mud and other sediment which comes from the permit premises by any means onto any street, alley or public ground.

(b) As provided in Section 1305.07, the Building Superintendent has the authority to issue a stop work order for failure to maintain any site in accordance with the requirements listed above.
(Ord. 7-05. Passed 1-24-05.)

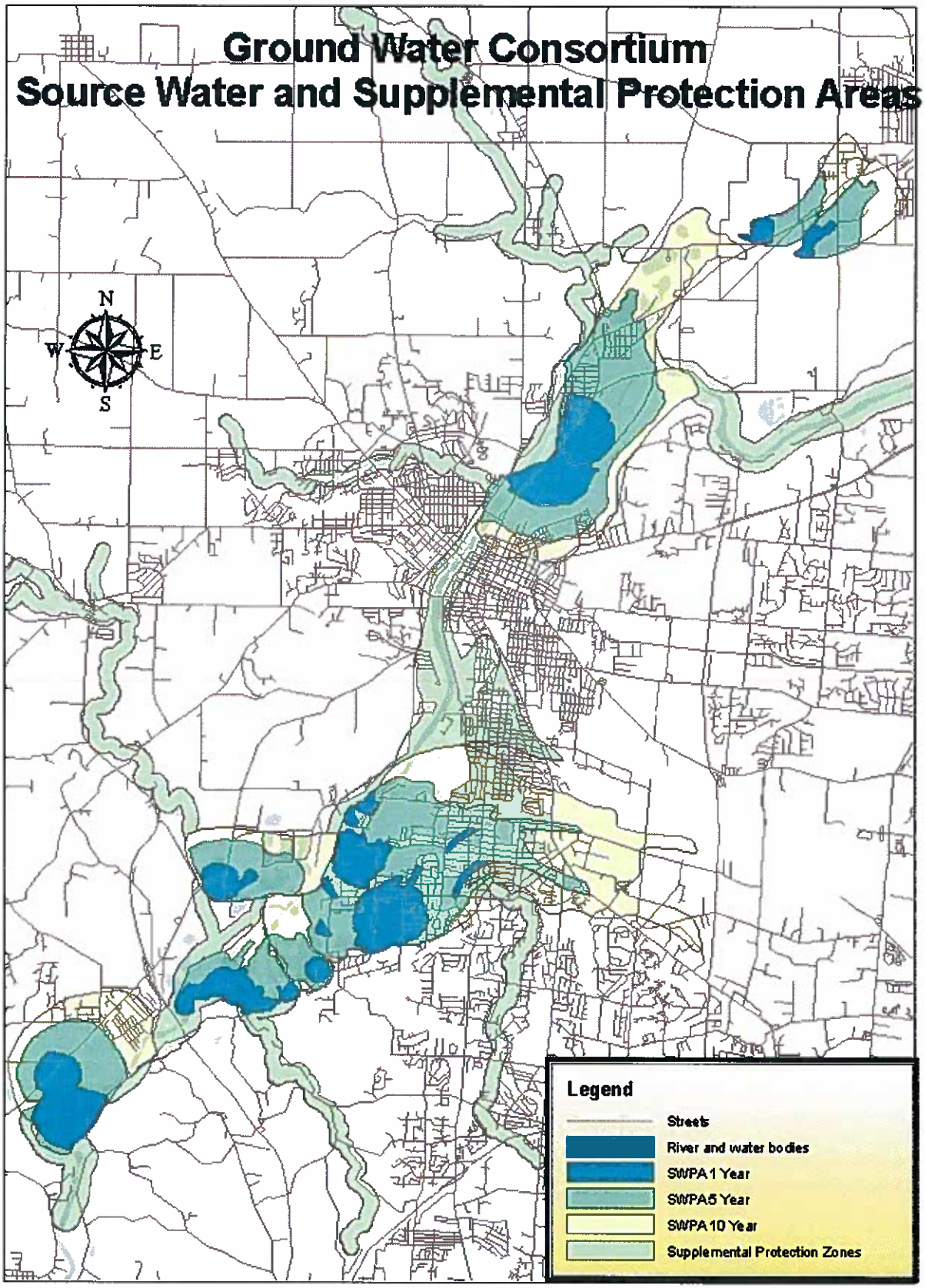
Appendix B

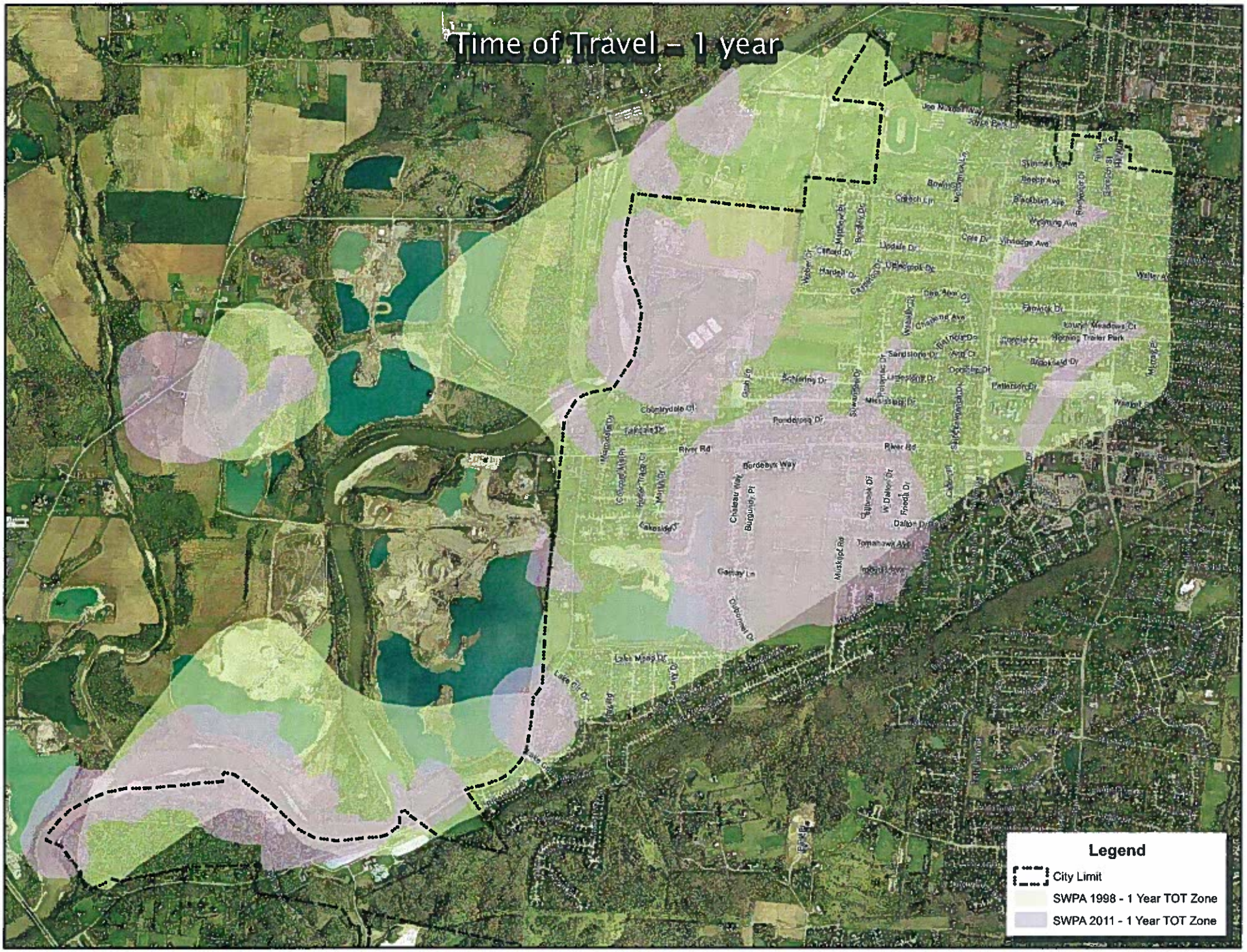
Revised City Ordinances

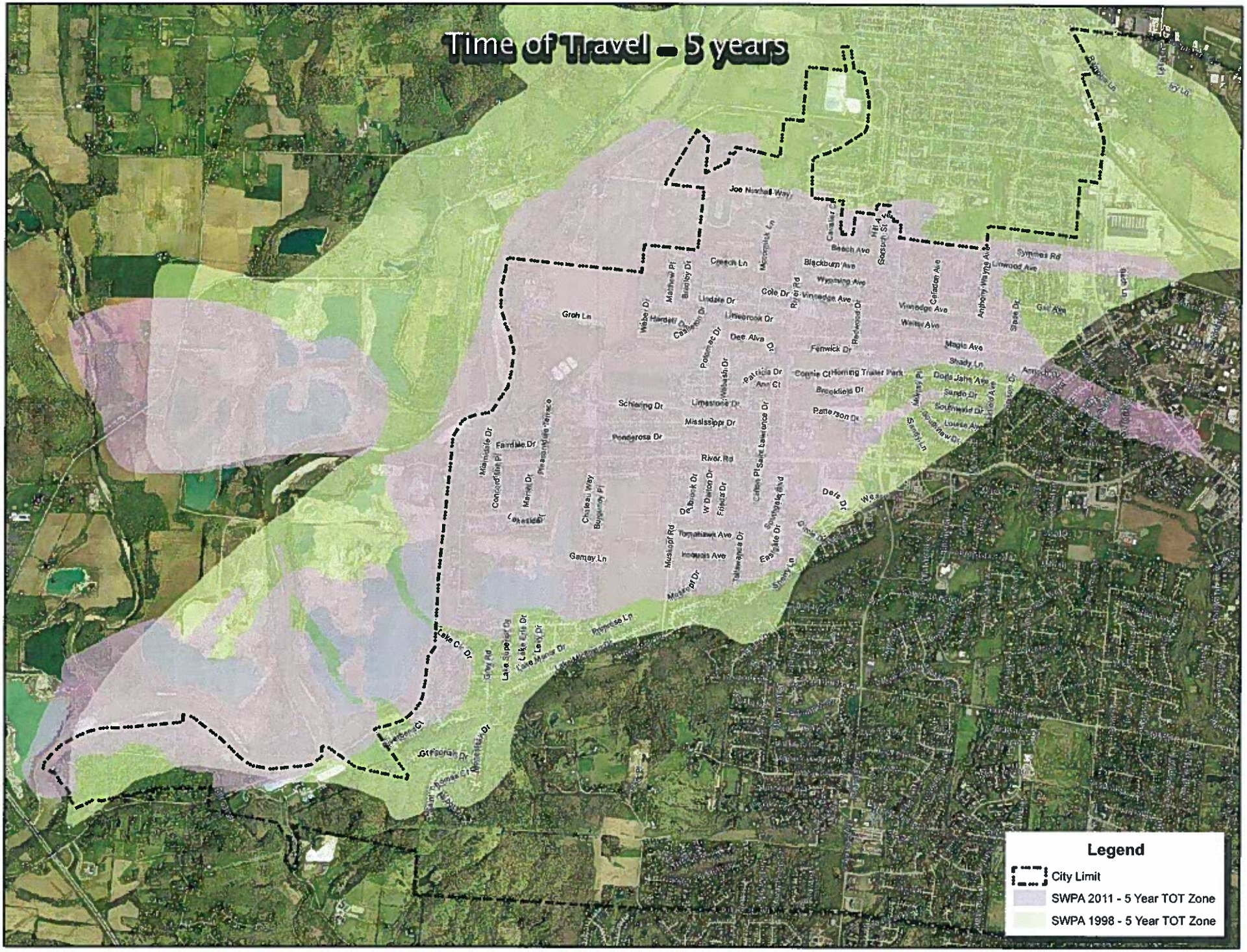
Appendix C

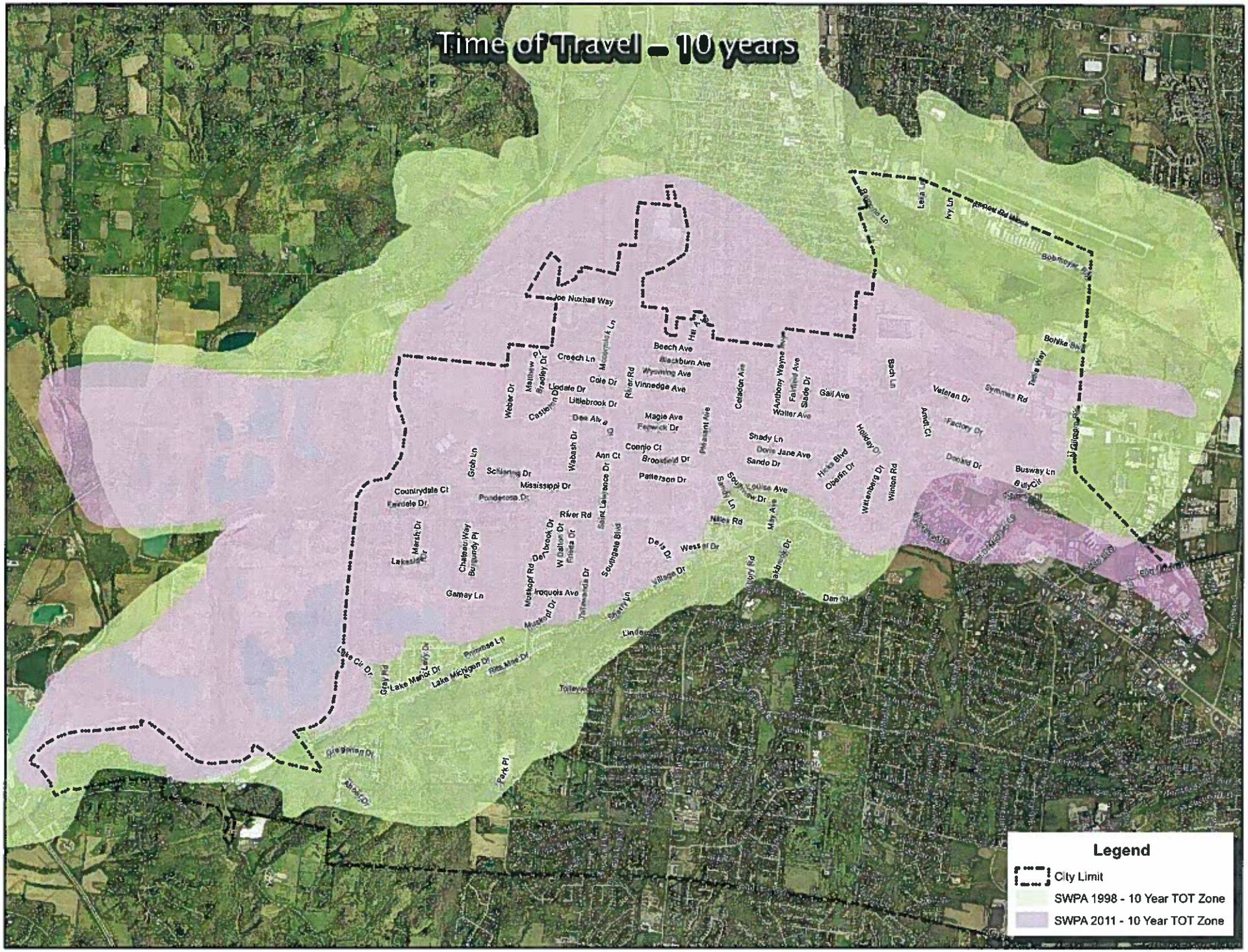
Figures

Ground Water Consortium
Source Water and Supplemental Protection Areas

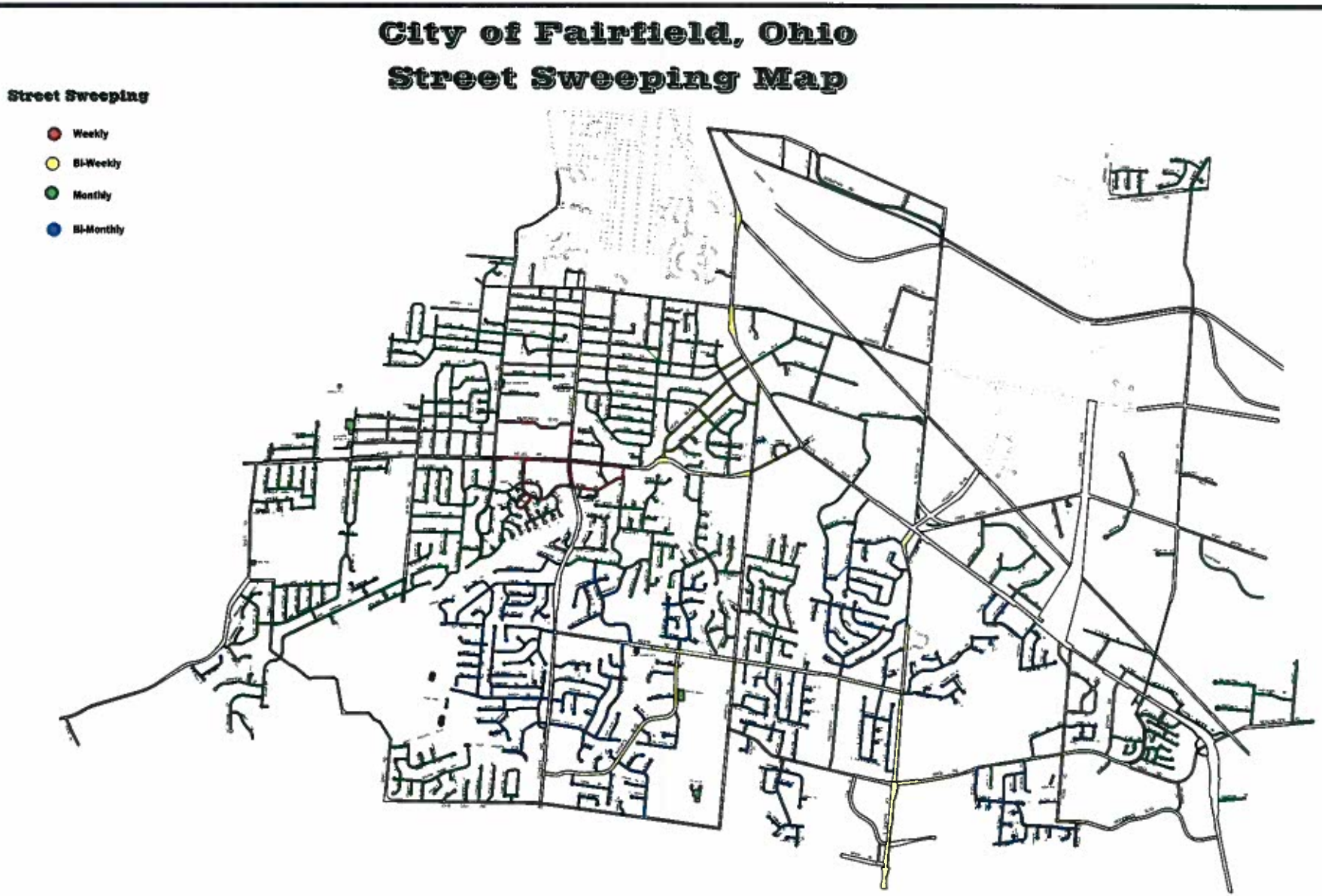



Time of Travel – 1 year
Legend
City Limit
SWPA 1998 - 1 Year TOT Zone
SWPA 2011 - 1 Year TOT Zone


Time of Travel – 5 years
Legend
City Limit
SWPA 2011 - 5 Year TOT Zone
SWPA 1998 - 5 Year TOT Zone


Time of Travel – 10 years
Joe Nuxhall Way
Creech Ln
Beech Ave
Blackburn Ave
Wyoming Ave
Vinnedge Ave
Cole Dr
Lindale Dr
Littlebrook Dr
Magie Ave
Fenwick Dr
Connie Ct
Brookfield Dr
Patterson Dr
Ann Ct
Wabash Dr
Pleasant Ave
Cleadon Ave
Anthony Wayne Trail
Fairfield Ave
Slade Dr
Walter Ave
Gail Ave
Veteran Dr
Symmes Rd
Factory Dr
Donald Dr
Busway Ln
Busy Cir
Shady Ln
Doris Jane Ave
Sando Dr
Holiday Dr
Hicks Blvd
Oberlin Dr
Wittenberg Dr
Winton Rd
Southgate Ave
Niles Rd
May Ave
River Rd
Saint Lawrence Dr
Southgate Blvd
Deis Dr
Wessel Dr
Village Dr
Deerbrook Dr
W Dalton Dr
Frisia Dr
Tottenanda Dr
Muskopf Rd
Muskopf Dr
Iroquois Ave
Gamay Ln
Chateau Way
Burgundy Pl
Marsh Dr
Lakeridge Dr
Countrydale Ct
Eardale Dr
Grob Ln
Schlarman Dr
Mississippi Dr
Ponderosa Dr
Webber Dr
Matthew Dr
Bradley Dr
Castlewood Dr
Meadowlark Ln
River Rd
Lake Cir Dr
Gray Rd
Lake Manor Dr
Lake Michigan Dr
Primrose Ln
Rita Mae Dr
Tollevwood Dr
Greenland Dr
Fork Pl
Alice Dr
Linden
Dan Ct
Legend
City Limit
SWPA 1998 - 10 Year TOT Zone
SWPA 2011 - 10 Year TOT Zone

City of Fairfield, Ohio
Street Sweeping Map



Leaf & Brush Pick Up Removal Zones

West of Pleasant — **1st Week of the Month**

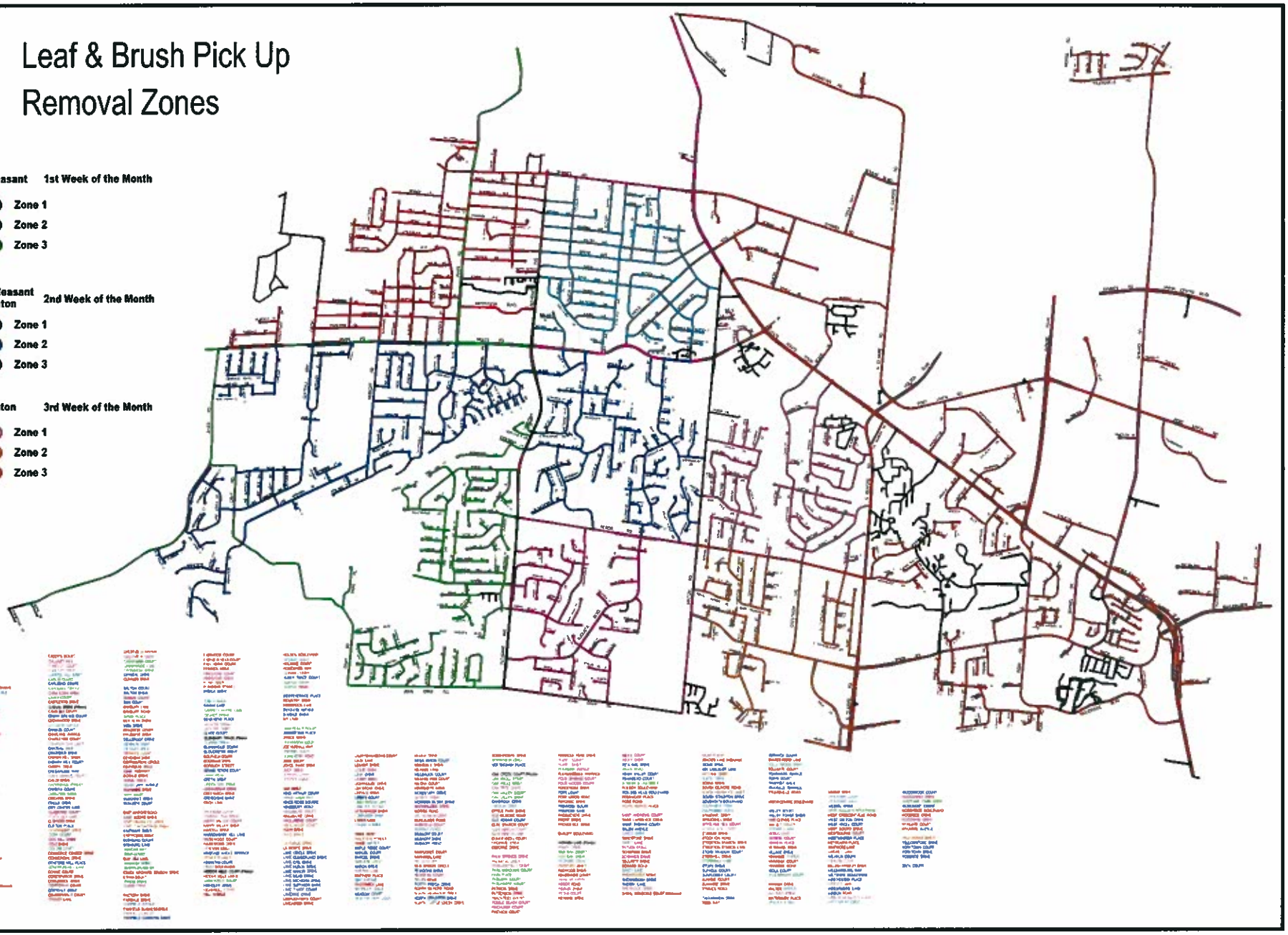
- Zone 1
- Zone 2
- Zone 3

Between Pleasant and Winton — **2nd Week of the Month**

- Zone 1
- Zone 2
- Zone 3

East of Winton — **3rd Week of the Month**

- Zone 1
- Zone 2
- Zone 3



Appendix D

Table of Organization

Table of Organization

City of Fairfield

Ben Mann, PE
Stormwater Program Administrator
City Engineer
513-867-4213
bmann@fairfield-city.org

MCM 1
Public Education and Outreach on Storm Water Impacts

Nicholas Dill
Engineering Department
513-867-4221
ndill@fairfield-city.org
Ben Mann, PE
City Engineer
513-867-4213
bmann@fairfield-city.org
Tim McLelland
Ground Water Consortium Manager
513-785-2464
tmclelln@ci.hamilton.oh.us
Jim Bell
Parks and Recreation Director
513-867-5348
jbell@fairfield-city.org

MCM 2
Public Involvement/Participation

Ben Mann, PE
City Engineer
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Ground Water Consortium Manager
513-785-2464
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Jim Bell
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513-867-5348
jbell@fairfield-city.org
Dave Butsch
Public Works Director
513-867-4200
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MCM 3
Illicit Discharge Detection and Elimination

Ben Mann, PE
City Engineer
513-867-4213
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Dave Butsch
Public Works Director
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dbutsch@fairfield-city.org
Don Bennett
Fire Chief
513-867-5379
dbennett@fairfield-city.org
Dave Crouch
Public Utilities Director
513-896-8157
dcrouch@fairfield-city.org

MCM 4
Construction Site Storm Water Runoff Control

Ben Mann, PE
City Engineer
513-867-4213
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Dave Butsch
Public Works Director
513-867-4200
dbutsch@fairfield-city.org
Tim Bachman
Development Serivces Director
513-867-5345
tbachman@fairfield-city.org

MCM 5
Post Construction Storm Water Management in New Development and Redevelopment

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513-867-5345
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Mark Parker
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Dave Crouch
Public Utilities Director
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Ben Mann, PE
City Engineer
513-867-4213
bmann@fairfield-city.org
Dave Butsch
Public Works Director
513-867-4200
dbutsch@fairfield-city.org

MCM 6
Pollution Prevention/ Good Housekeeping for Municipal Operations

Dave Butsch
Public Works Director
513-867-4200
dbutsch@fairfield-city.org
Dain McCune
Streets Superintendent
513-867-4212
dmccune@fairfield-city.org
Brian Rose
Facilities/Fleet Manager
513-867-4209
brose@fairfield-city.org
Jim Bell
Parks and Recreation Director
513-867-5348
jbell@fairfield-city.org
Ben Mann, PE
City Engineer
513-867-4213
bmann@fairfield-city.org

Figure 1

CITY OF FAIRFIELD, OHIO

Design, Construction and Materials Specification

INDEX

~~FOURTH~~ FIFTH EDITION

Adopted ~~09-24-07~~

Ordinance ~~120-07~~

(Print Date ~~09-24-07~~)

SECTION 100

INTRODUCTION AND PROCEDURE

The Design, Construction and Materials Specification Handbook applies to all construction on City-owned property and within the public right-of-way in the City of Fairfield 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 "State of Ohio Department of Transportation – Location and Design Manuals".

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 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 two (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 for that project from his own forces. 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 the inspectors time will be billed ~~to the Contractor~~ at the hourly rate paid the inspectors by the City, plus thirty percent (30%), with a minimum billing of one-half (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 thirty percent (30%) with a minimum billing of one-half hour. The city reserves the right to request testing on any material (i.e., 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 City may not provide for day-by-day inspection services and shall not have the inspector act as an agent of the Developer, Contractor or Engineer.~~ 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's 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.

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 ~~mylar~~ sheets measuring twenty-four (24") inches by thirty-six (36") inches and sealed and signed by the engineer to certify that the "As Builts" are per field conditions and along with an AutoCAD (.dwg or .dxf) ~~or Microstation (.dgn),~~ on CD or DVD.

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 their related public improvements.

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

3. The City of Fairfield may 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. If deemed necessary to assure adequate operation and/or durability, the City may also require a one (1) year maintenance period with a maintenance bond for such improvement in an appropriate amount, generally ten percent (10%) of the cost of the public improvement.

4. If the maintenance bond period is required, the City of Fairfield will provide a punch list of any items requiring repairs prior to final acceptance and release of the maintenance bond.

5. "As Built" plans will be provided thirty (30) days after the public improvement becomes operable in accordance with the requirements hereinabove stated.

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 its 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 or 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.

SECTION 200

STORM DRAINAGE

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

[ORDINANCE 1117.05(Ord.167-95. Passed 11-13-95)]

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 Detention/Retention Basin Design

Detention/Retention of storm water shall be required for each subdivision unless specifically exempted by the Planning Commission.

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

(a) Definitions. Unless the context specifically indicates otherwise, the meaning of the terms used in this section shall be as follows:

(1) "Storm water detention/retention facility" means any structure or facility used to detain storm water run-off, and gradually release the stored run-off at an acceptable rate.

(2) "Detention basin" means dry surface areas created by constructing an excavated or embankment basin.

(3) "Retention basin" means permanent ponds where additional storage capacity is provided above the normal water level.

(4) "Storm water run-off" means that portion of rainfall that is not lost to infiltration, surface storage or evaporation.

(b) Exemptions to Detention/Retention Requirements. The developer may apply for exemption from construction of detention/retention facilities. 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) Design.

(1) Quantity of run-off. The peak rate of run-off during the 100 year post development storm cannot exceed the peak rate of run-off during the two year pre-development storm. 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.

(d) Submission Requirements. Plans and supporting data to verify storage volumes, release dates, etc., shall be submitted to the City Engineer. The submission will include, but is not limited to, the following:

(1) A plan prepared by a registered professional engineer which may be the improvement plan, drainage and grading plan or similar plan at a scale of one inch to 100 feet or larger, shall be submitted and contain at least the following information:

A. All existing and proposed drainage facilities.
B. Existing and proposed contours.
C. Existing structures.
D. The detention/retention facility with outlet structures.
E. Cross section through detention/retention facility.
F. Pertinent elevations, e.g., water surface, flowline of flow control devices, etc.
G. Emergency spillway designed to pass a 100 year storm and with a minimum depth of one foot.
H. Any other information required by the City Engineer to clarify intent or design features.

(2) All calculations, outlines and designation of drainage areas, and other supporting data in sufficient detail and form to facilitate an expedient and accurate review.

(e) Fees. Review work performed by professional consultants and other costs incurred by the City may be charged to the applicant at their billed cost plus ten percent (10%). The fee must be paid in full prior to approval of the plans by the Planning Director.

[ORDINANCE 1117.07(Ord.167-95. Passed 11-13-95)

201.06 Stormwater Management Requirements

GENERAL

(A) INTRODUCTION

(1) ~~Detention/retention of~~ stormwater Management refers to the collection, safe conveyance and storage of excess storm runoff on a ~~the site of 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 ~~and~~ 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.

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

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

(4) 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.

(B) STORMWATER MANAGEMENT GENERAL REQUIREMENTS

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

(2) Qualitative Control. Stormwater quality control shall be implemented into sites within developing and redeveloping areas in accordance with general and specific requirements outlined in the latest edition of the Ohio EPA General (NPDES) permit for stormwater dicharges associated with construction activity (see Part IIIG2e of the Ohio EPA's NPDES permit (Permit No. OHC0004, or latest edition).)

EXEMPTIONS TO ~~DETENTION/RETENTION~~ 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 ~~detention/retention~~ facilities.

(b) Each request will be reviewed on its own merit and as it affects the entire drainage area in which it lies 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 ~~detention/retention~~ stormwater management facilities. The fee shall be 75 cents per cubic foot of detention/retention volume that would have been required if an exemption had not been granted. 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.

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

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 Materials Specification document (latest edition), shall be used to determine the runoff and storage volumes.

(b) Quantity of Runoff.

(1) The peak rate of runoff during the 100 year post development storm cannot exceed the peak rate of runoff during the two year pre-development storm.

(2) 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.

(C) Quality of Runoff

(1) 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).

(D) Basin Construction.

(1) The side slopes of a detention/retention basin shall not exceed four to one and shall be seeded or sodded.

(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 six feet.

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

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

(6) Other requirements may be imposed for specific cases.

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).

(2) All existing and proposed drainage facilities.

(3) Existing and proposed contours.

(4) Existing structures.

(5) The detention/retention basin with outlet structures.

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

(7) A recommendation from a soils 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.

FEE.

Work performed by professional consultants and other costs incurred by the City will be charged to the applicant at their billed cost plus ten percent (10%). The fee must be paid in full prior to approval of the plans by the City Engineer.
[ORDINANCE 1182 (Ord. XXX. Passed XXX)]

201.07 Storm Drainage and Sedimentation Control

(a) Intent.

(1) 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.

(2) For sites regulated under the Ohio EPA General Construction Permit for storm water discharges (Ohio EPA permit no. OHC000004, 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.

(3) No subdivision shall be approved unless:

A. 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

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

(b) Performance Principles and Standards.

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

A. Development or redevelopment sites that are covered under the Ohio EPA General Construction Permit shall develop a stand-alone Storm Water Pollution Prevention Plan (SWP3) per the requirements of the Ohio EPA Permit OHC000004 (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 made kept on the construction

site, along with a copy of the NOI and letter granting permit coverage under the Ohio EPA general construction permit.

B. 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.

C. 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.

D. 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.

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

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

G. 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.

H. 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.

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

A. 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.

B. 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 with the requirements of the City.
(Ord. 167-95. Passed 11-13-95.)

C. 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.)

(3) 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:

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

B. 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).

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

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

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

F. 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.

G. A description of prior land uses at the site.

H. A site map identifying the following:

(1.) 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.

(2.) 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 two 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.

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

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

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

(6.) 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.

(7.) Sediment and storm water management basins noting their sediment settling volume and contributing drainage area.

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

(9.) The location of designated construction entrances where the vehicles will access the construction site.

(10.) The location of any in-stream activities including stream crossings.

(11.) 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;

(12.) 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.

I. 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.

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

K. Detail drawings for all structural practices that include installation, inspection, and maintenance procedures.

L. A certification of the quantity of excavation and fill involved.

M. 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.

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

(c) Approval Procedures.

(1) Three backline copies of complete plans shall be filed with the office of the City Engineer.

(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 storm water management and sediment control program.
(Ord. 167-95. Passed 11-13-95.)

(d) Enforcement.

(1) The Public Works Director or his designee shall en force 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 sediment and erosion control measures are not provided in accordance with the approved site development plans.
[ORDINANCE 1117.06(Ord.XXX. Passed XXX)]

201.08 Special Storm Sewer Rules

(a) 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:

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

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

(b) Discharges Into Storm Sewers Regulated. Storm water 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.

(c) 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 storm water, except as follows:

(1) Water line flushing or other potable water discharges, irrigation or lawn watering, diverted stream flows, rising ground water, uncontaminated ground water infiltration, uncontaminated pumped ground water, 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 discharges, water from fire fighting 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.

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

(3) Any non-storm water 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.

(d) 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.

(e) 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.

(f) 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.

(g) 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 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 storm water discharges (Ohio EPA permit no. OHC000004, 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.

(h) Stormwater Management Controls.

(1) 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 Materials Specification document, or any subsequent supplements to this document.

(2) 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 storm water discharges (Ohio EPA permit no. OHC000004, 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.

(I) Maintenance Responsibility for Detention/Retention Basins.

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

(2) 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.

(3) 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.)

(i) Storm Water Quality Management Plan. As a requirement of the City's NPDES Phase II Storm Water Permit, Council hereby adopts the "Storm Water Quality Management Plan" dated

~~January 2005~~ August 2013, prepared by City staff as the City's official planning document for addressing storm water quality and pollution prevention. All subsequent amendments to the "Storm Water 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.
~~(Ord. 20-05. Passed 2-14-05.)~~

(j) 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.

(k) 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.)
[ORDINANCE 925.07(Ord.XXX. Passed XXX)]

201.09 Drainage Maintenance and Abatement Procedure

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 storm water 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 storm water 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" storm water problems, and maintenance will not be provided by the City except in case of public emergency as determined by the Public Works Director.

ABATEMENT PROCEDURES.

(a) Notice To Correct Improper Drainage.

(1) Whenever the City shall find that (i) a tract of land not maintained by the City is inadequately drained, or (ii) there is excessive erosion or sedimentation upon such land, or (iii) there is an obstruction to a culvert or water course upon such land that interferes with water naturally flowing therein, or (iv) 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.

(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.

A. 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.

B. 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.

C. 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.

(3) 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.

(4) 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.

(5) 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.

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:

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

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

C. Indicate a schedule for inspection and maintenance tasks.

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

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

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

G. 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.

(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).

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.

[ORDINANCE 906(Ord.XXX. Passed XXX)]

201.10 Run-off Coefficients **Use Table 201-C**

201.11 Declaration of Covenants and Restrictions **Use Attachment 201-D**

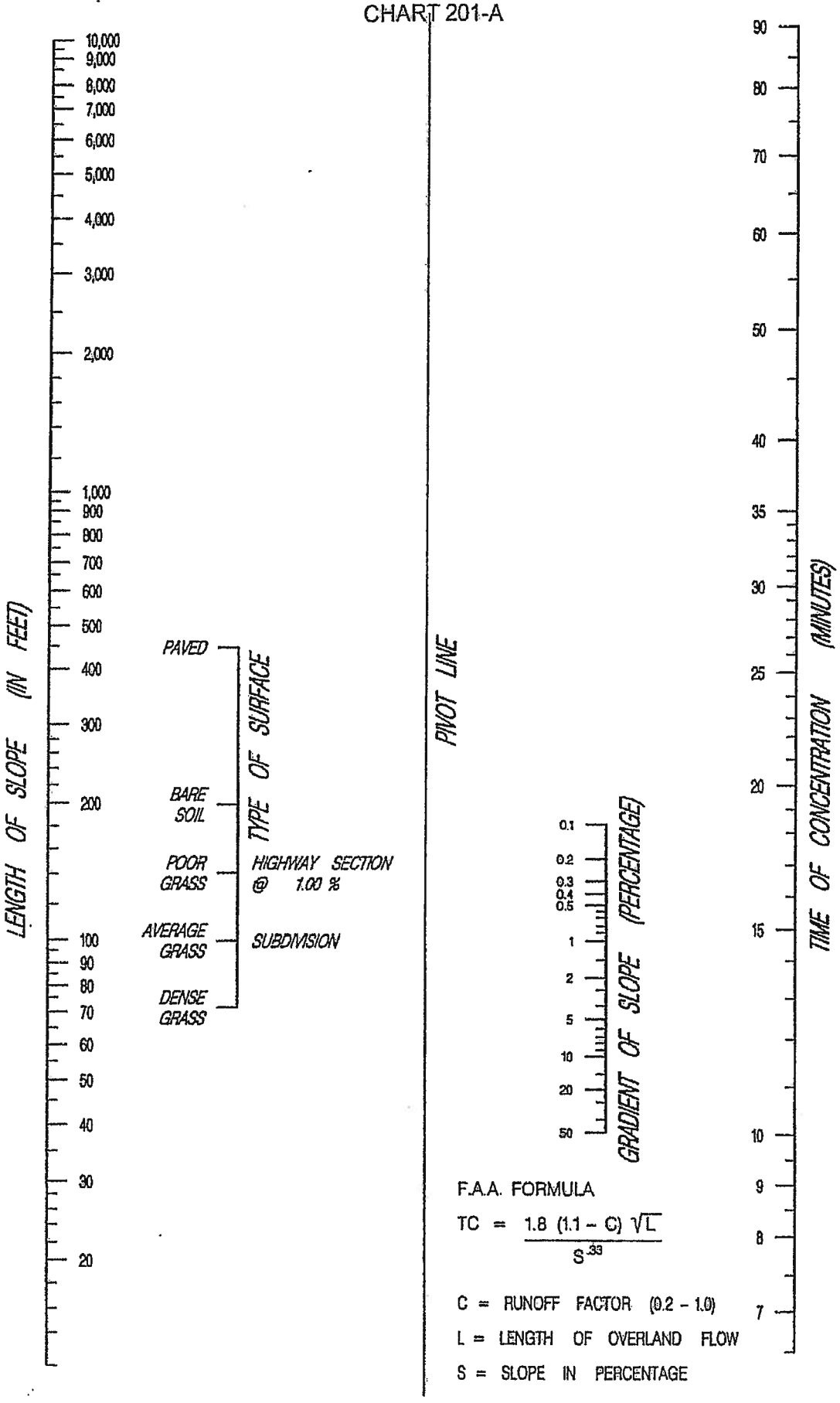
202.00 STORM SEWER

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 O.D.O.T., Location and Design Manual, Volume 2, Drainage Design.

CHART 201-A



F.A.A. FORMULA

$$TC = \frac{1.8\ (1.1 - C)\ \sqrt{L}}{S^{.33}}$$

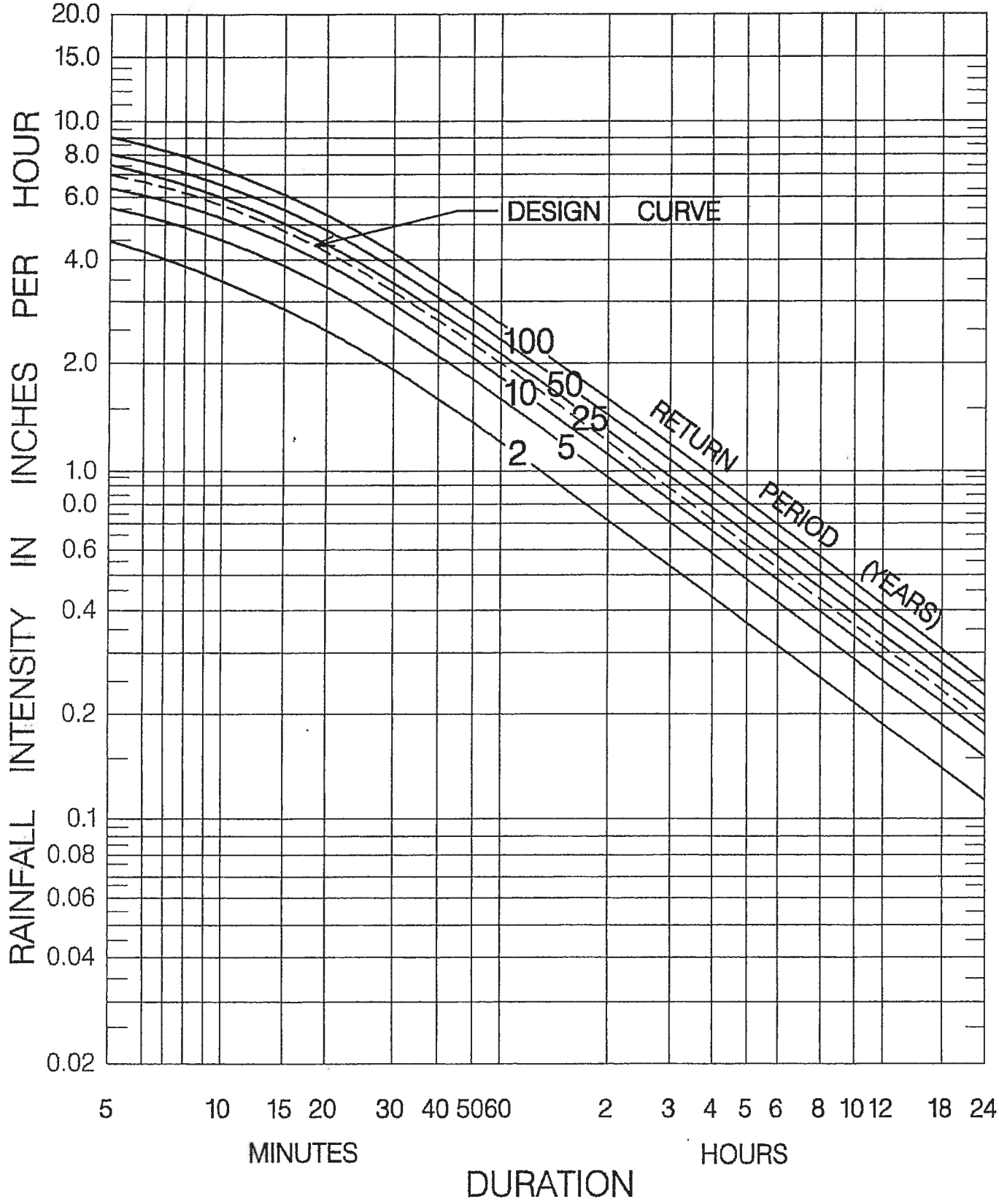
C = RUNOFF FACTOR (0.2 – 1.0)

L = LENGTH OF OVERLAND FLOW

S = SLOPE IN PERCENTAGE

OVERLAND FLOW TIME

FAIRFIELD, OHIO



RAINFALL INTENSITY – DURATION – FREQUENCY CURVES

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

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. OHCO00004, dated April 21, 2013, (hereinafter referred to as the "General Permit"), which General Permit requires Declarant to submit a post-construction operation and maintenance plan for storm water 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 storm water 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 storm water 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 storm water management responsibilities as designated on the plat.

Specific storm water 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]

§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:

_____
_____

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 O.D.O.T., 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 and 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" 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". 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 two (2") inch allowable depth of gutter flow based upon a ten (10) minute time of concentration and a ten (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 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 two (2%) percent.

See City of Fairfield Public Works Standard Drawing ~~2007001~~ for transition between modified catch basins and standard curb and gutter.

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

203.04 Minimum Freeboard 1 foot

203.05 Minimum Grade

Grass	1.0 %
Concrete	0.35 %

The minimum grade for all ditches shall be one percent (1%) except for streams, large channels with a paved bottom, and slopes paved to a height approved by the City Engineer. [ORDINANCE 1117.05(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. [ORDINANCE 1117.05(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 sixty (60") inches, the requirements for storm sewer pipes may be waived in favor of ditches.

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 Spouts

Roof down spout pipes are not permitted to be discharged into the curb and gutter adjacent to the roadway.

204.00 CONSTRUCTION REQUIREMENTS AND MATERIAL SPECIFICATIONS

204.01 Trench Excavation

Item 611 ~~603.03~~ of the current State of Ohio Department of Transportation Construction and Material Specifications and the following shall apply:

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.
See City of Fairfield Public Works standard drawing for trenching.

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

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

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

204.02 Pipe Bedding

Item 611.02 ~~603.04~~ and 611.06 ~~603.06~~ of the current State of Ohio Department of Transportation Construction and Material Specifications will apply.

204.03 Pipe Laying

Item 611.05 ~~603.05~~ of the current State of Ohio Department of Transportation Construction and Material Specifications and the following will apply:

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.

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%.

204.04 Joints

Item 611.08 ~~603.08~~ of the current State of Ohio Department of Transportation Construction and Material Specifications and the following shall apply.

In all jointing operations, the trench shall be dry.

204.05 Backfilling Trenches

Item 611.06 ~~603.10~~ of the current State of Ohio Department of Transportation Construction

and Material Specifications and the following shall apply:

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 Public Works standard drawing for plating and typical restoration sections.

Unless specifically authorized, place no rock or rock excavation detritus in the upper eighteen (18") inches (460mm) of the trench. Place no rock or stones having a dimension larger than four (4") inches (100mm) within three (3') feet (0.9m) 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

Items 611 ~~603~~, 706 and 707 of the current State of Ohio Department of Transportation Construction and Material Specifications shall apply.

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

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

See Item 611 ~~604~~ of the current State of Ohio Department of Transportation Construction and Material Specifications.

204.08 Drywell

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 City of Fairfield Public Works standard drawings ~~79096~~ for dry wells.

If drywells are to be used for storm water drainage control or storm water 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 storm water 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.)

PUBLIC WORKS CONSTRUCTION STANDARDS*

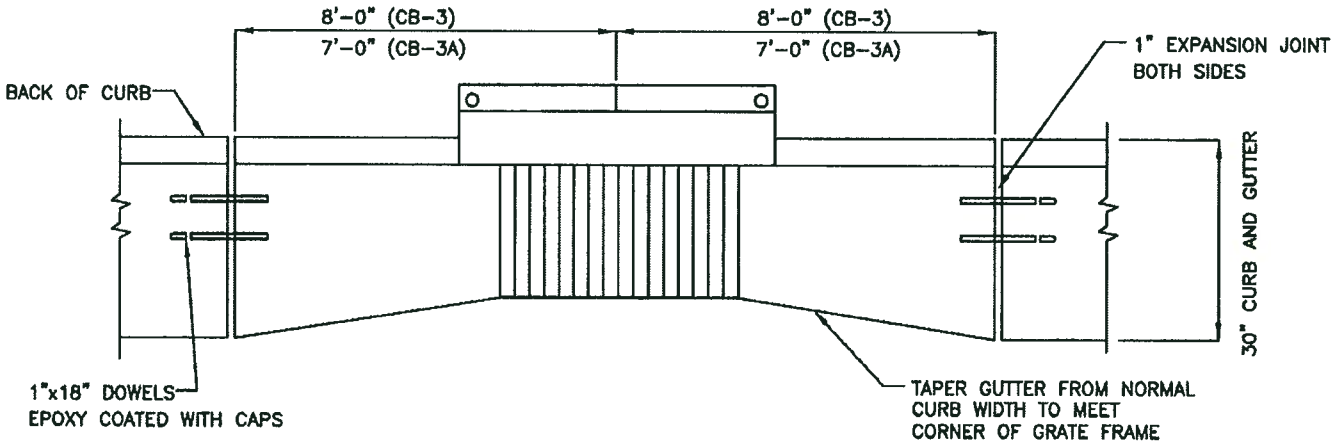
*Refer to Section 200 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013	SCALE: NONE	FILE: PUBLICWORKSDETAILS.DWG

New Drawing

MODIFIED TYPE–3 & TYPE–3A CATCH BASINS



PLAN VIEW

PUBLIC WORKS CONSTRUCTION STANDARDS*

*Refer to Section 200 for Complete Specification Details

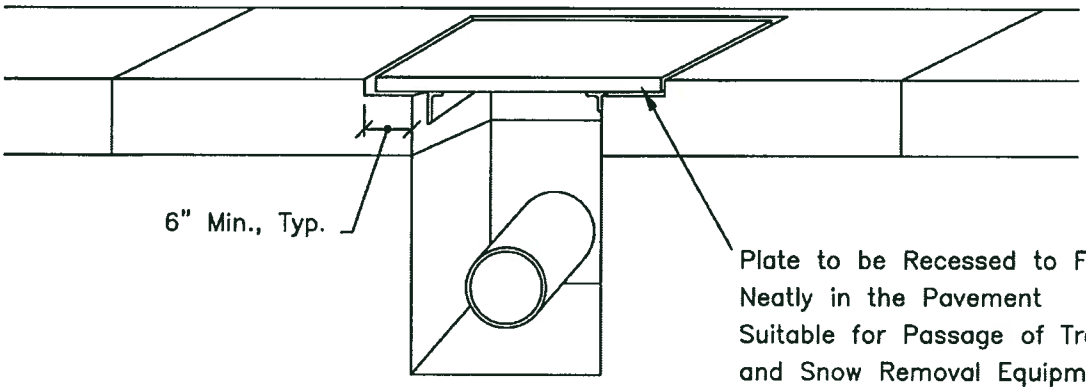
City of Fairfield Construction Standards Fairfield, Ohio

DATE: 01/23/2013 | SCALE: NONE | FILE: PUBLICWORKSDETAILS.DWG

Left out of old handbook

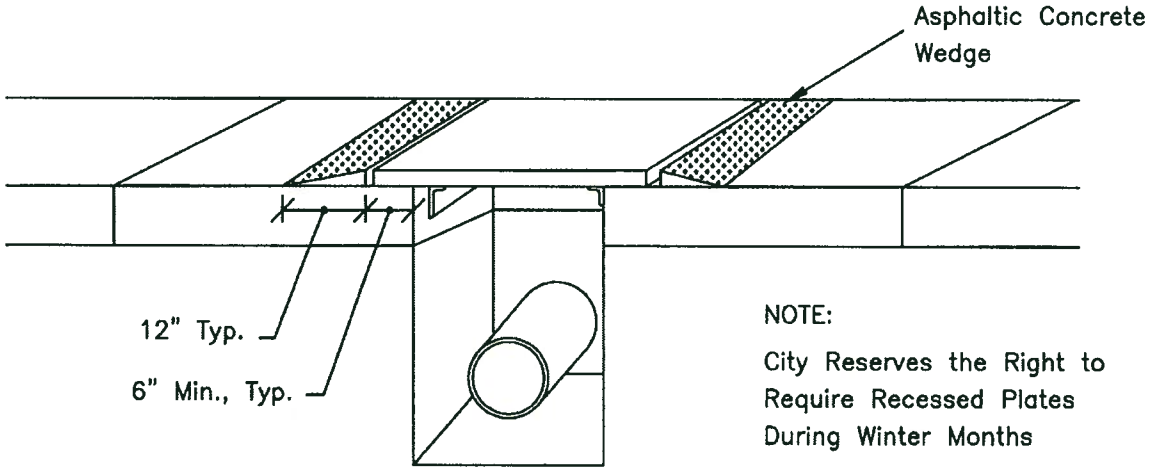
For trenches excavated within city roads, trenches shall be plated in accordance with the details shown below. The intent of the detail is to provide the availability of all traffic lanes especially during peak traffic periods.

* Excavation must be backfilled to the bottom of the plate if left unattended for over 4 hours.



HIGHER SPEED/ VOLUME APPLICATIONS

45 MPH or Greater
Greater Than 6000 ADT



NOTE:

City Reserves the Right to Require Recessed Plates During Winter Months

LOWER SPEED/ VOLUME APPLICATIONS

40 MPH or Less
6000 ADT or Less

PUBLIC WORKS CONSTRUCTION STANDARDS*

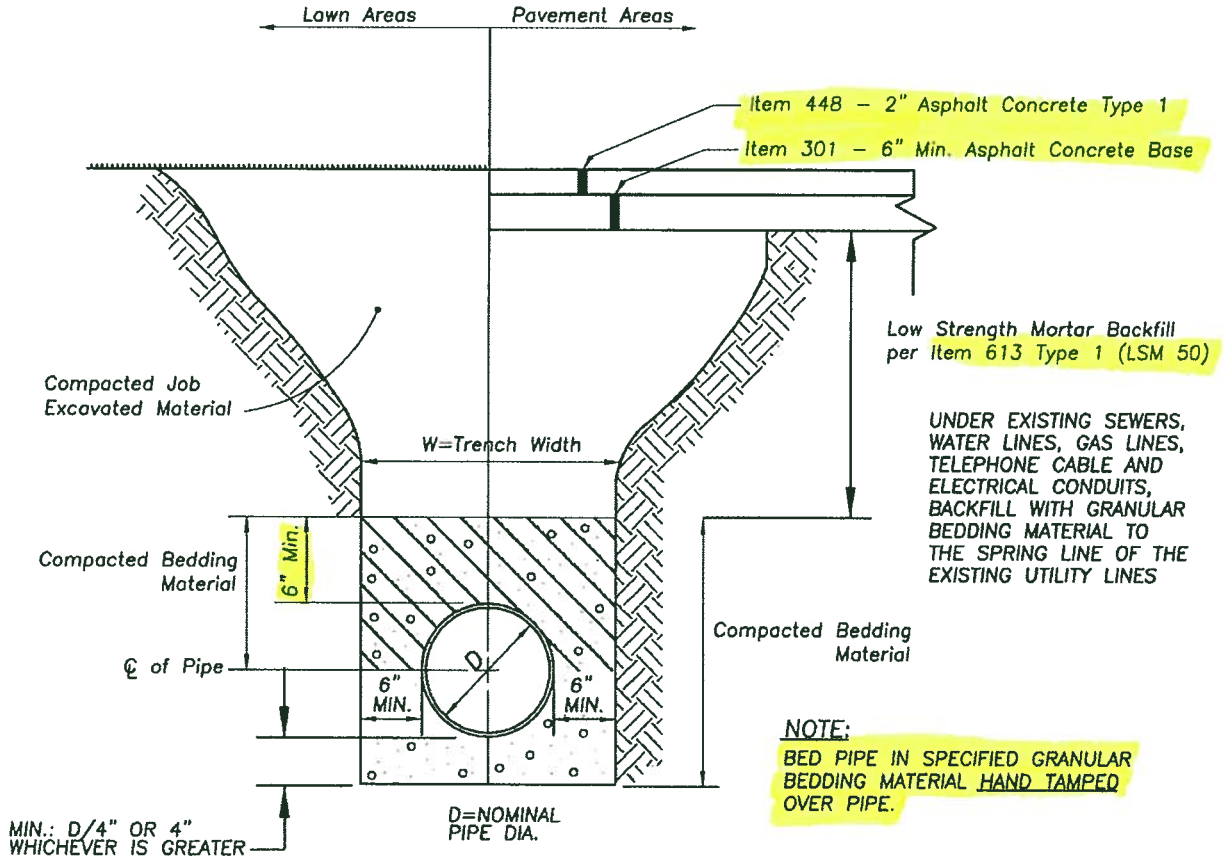
*Refer to Section 200 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 5/17/2013	SCALE: NONE	FILE: WDETAILS.DWG

New Standard - Replaces old trench detail

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 of the sewer and at an elevation so that the bottom of the water main is at least 18" above the top of the sewer.



TYPICAL TRENCH DETAIL

NTS

NOTES:

Bedding consisting of 8's, 9's or washed 57's will be used in all water main construction.

Other bedding not listed here are considered non-standard and must be approved in writing prior to use.

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.

Trench to be backfilled with low strength mortar backfill to street subgrade within existing street limits.

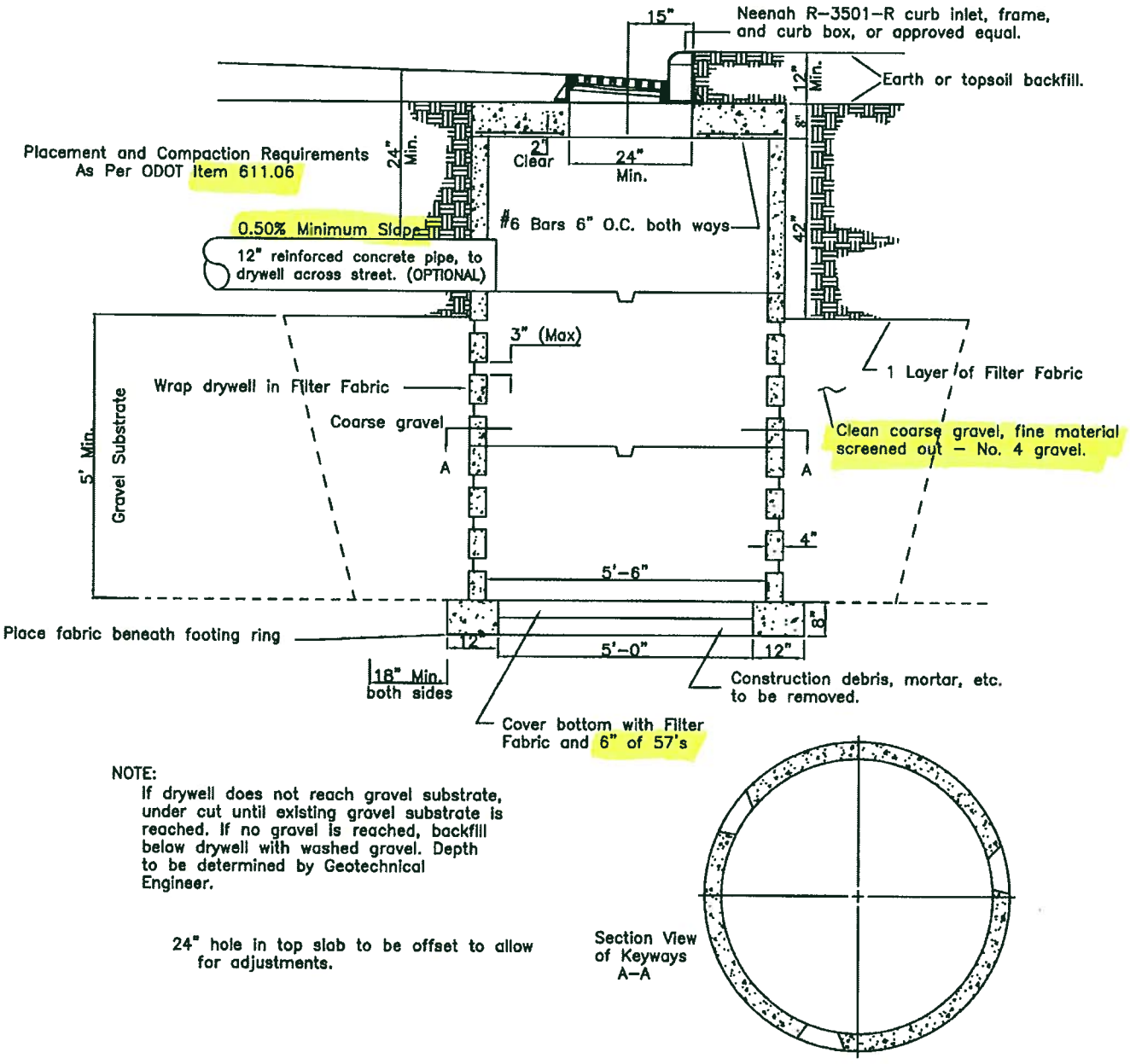
PUBLIC WORKS CONSTRUCTION STANDARDS*

*Refer to Section 200 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013	SCALE: NONE	FILE: PUBLICWORKSDETAILS.DWG

STANDARD PRE-CAST CONCRETE DRYWELL



NOTE:
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.

24" hole in top slab to be offset to allow for adjustments.

Section View of Keyways A-A

PUBLIC WORKS CONSTRUCTION STANDARDS*

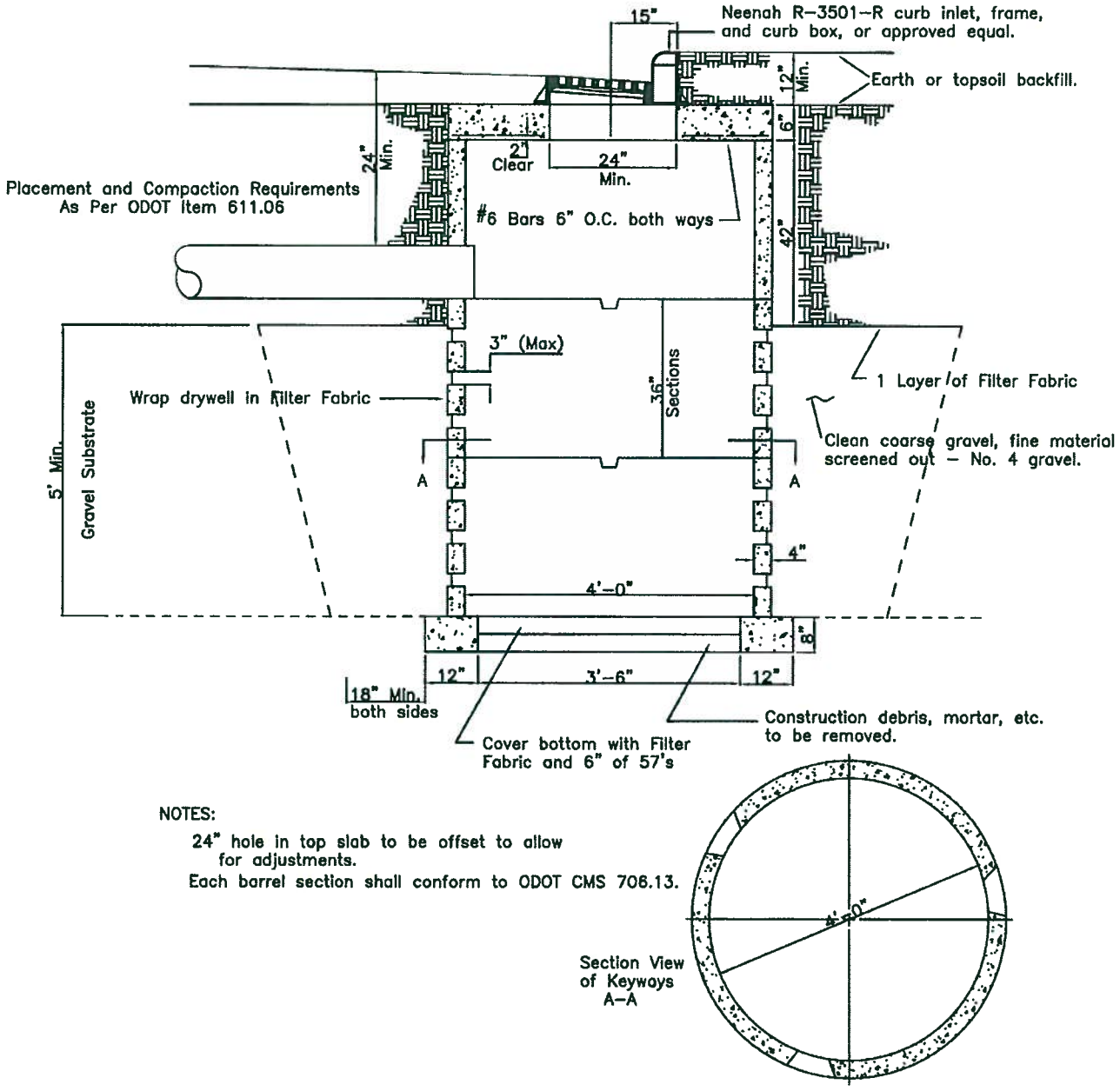
*Refer to Section 200 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013	SCALE: NONE	FILE: PUBLICWORKSDETAILS.DWG

New Drawing

MINI PRE-CAST CONCRETE DRYWELL



NOTES:

24" hole in top slab to be offset to allow for adjustments.

Each barrel section shall conform to ODOT CMS 706.13.

SECTION 300

ROADWAY

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') fifteen and (10') ten feet respectively. In business districts, a chord may be substituted for such arc.

(b) Street curb intersections shall be rounded by radii of at least twenty-five feet.

(c) The above minimum radii shall be increased when the smallest angle of intersection is less than ninety degrees.

[ORDINANCE 1109.11(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, thirty-eight feet.

(c) Local and minor streets, twenty-eight feet.

(d) The pavement of a turning circle at the end of a cul-de-sac street will have a minimum outside diameter of eighty 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 twenty feet wide with the flared portion rounded by minimum radii of twenty feet.

(e) Alleys, full width of right of way, twenty feet.

[ORDINANCE 1109.13(Ord.141-83. Passed 9-26-83)]

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%

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

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

3. Vertical sight distance shall be measured from an eye level of three and one-half (3.5') feet to the top of a two (2) foot high object.

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

5. 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.

6. Minimum pavement widths as detailed in the Thoroughfare Plan for ~~shown on the Standard Construction Drawings of~~ the City of Fairfield shall be used for all two (2) lane streets except that all industrial streets shall have a minimum width of thirty-eight (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 forty-five (45') feet. Underdrains, when required by the Public Works Director, shall be eight (8") inch perforated plastic pipe and shall be installed two (2') feet behind, and parallel to the back of curb and two (2') 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 granular material.

7. As the city's Federal Aid Design Guidelines, ODOT's L&D manual shall be followed with the rewording of *A on chart 104-1 to indicate that the design speed shall not be construed to be the legal speed limit, with the AASHTO Green book guidelines as a minimum.

8. Sump collector lines ~~drains~~ are required in all developments. The ~~An~~ eight (8") inch sump collector line ~~drain~~ shall be located two (2') foot behind the curb and three (3') feet below grade. Tie-ins to sump lines shall be approved and inspected by the City of Fairfield Public Works Department. A minimum of two (2) working days notification is required for inspection request. Proposed tie in to be shown on the site plan. Tie to sump lines shall be accomplished with commercial fittings. Concrete collars shall not be permitted.

   The 8" sump collector line shall be PVC (SDR-35, schedule 40, or approved equal). All private sump lines connecting to the 8" sump collector line shall be of same material and properly bedded within the public right-of-way.
   See City of Fairfield Public Works standard drawing for typical sump or downspout drain.

9. All residential driveways which are new construction will be reviewed on a case by

case basis. For any design questions regarding these driveways, the City of Fairfield Public Works and Fire and Safety Departments shall make the final determination involving a workable driveway design.

10. Curb ramps shall be installed according to the most recent ODOT standard drawings SP-7.1. Detectable warnings shall be by Armor Tile, ADA Solutions, or approved equal.

304.00 PAVEMENT STANDARDS

304.01 Rigid Pavement

The use of rigid pavement in the City requires prior approval and acceptance by the Public Works Director or his/her designee. Portland Cement Concrete pavement shall be designed and as specified by the design engineer. If acceptable, concrete pavement shall be a minimum of seven (7") inches residential or nine (9") commercial of continuously reinforced Portland Cement Concrete with non integral curb and gutter in accordance with Item 451 (Class C concrete) of the ODOT Construction and Materials Specifications Handbook.

304.02 Flexible Pavement

Flexible pavement for commercial/industrial, primary, secondary and collector streets shall consist of minimum thickness of asphalt concrete base and asphalt surface course as designed and as specified by the design engineer, (based on traffic volumes and results of geotechnical investigation) over a uniformly compacted subgrade. Tack coat (ODOT Item 407) will be applied at a minimum rate of 0.1 gallon per square yard. Item 448 Asphalt Concrete, will be a minimum of three (3") inches thick applied in two (2) lifts, with the one and one-half (1-1/2") inch surface lift being installed just before the final acceptance.

A minimum design for local residential streets will be five (5") inches of Item 301 Asphalt Concrete Base, one and one half (1-1/2") of Item 448 Intermediate Course and one and one half (1-1/2") inches of Item 448 Surface Course.

A minimum design for industrial streets will be eight (8") inches of Item 301 Asphalt Concrete Base, one and one half (1-1/2") of Item 448 Intermediate Course and one and one half (1-1/2") inches of Item 448 Surface Course.

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 Asphalt Concrete Base Course

Item 301 of the current State of Ohio Department of Transportation Construction and Material Specifications.

304.04 Driveways, Culverts and Sidewalks

Concrete residential drive aprons within the public right-of-way shall be 7" thick. Concrete

commercial drive aprons within the public right-of-way shall be 9" thick. Concrete sidewalk within the public right-of-way shall be 4" thick. Concrete sidewalk that is part of the drive/apron shall be the same thickness as the drive apron.
See City of Fairfield Public Works standard drawings ~~97001~~.

304.05 Road Cut Restoration
See City of Fairfield Public Works standard drawings ~~97004 and 97005~~.

304.06 Trench Excavation
See Section 204.01.

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 designee.

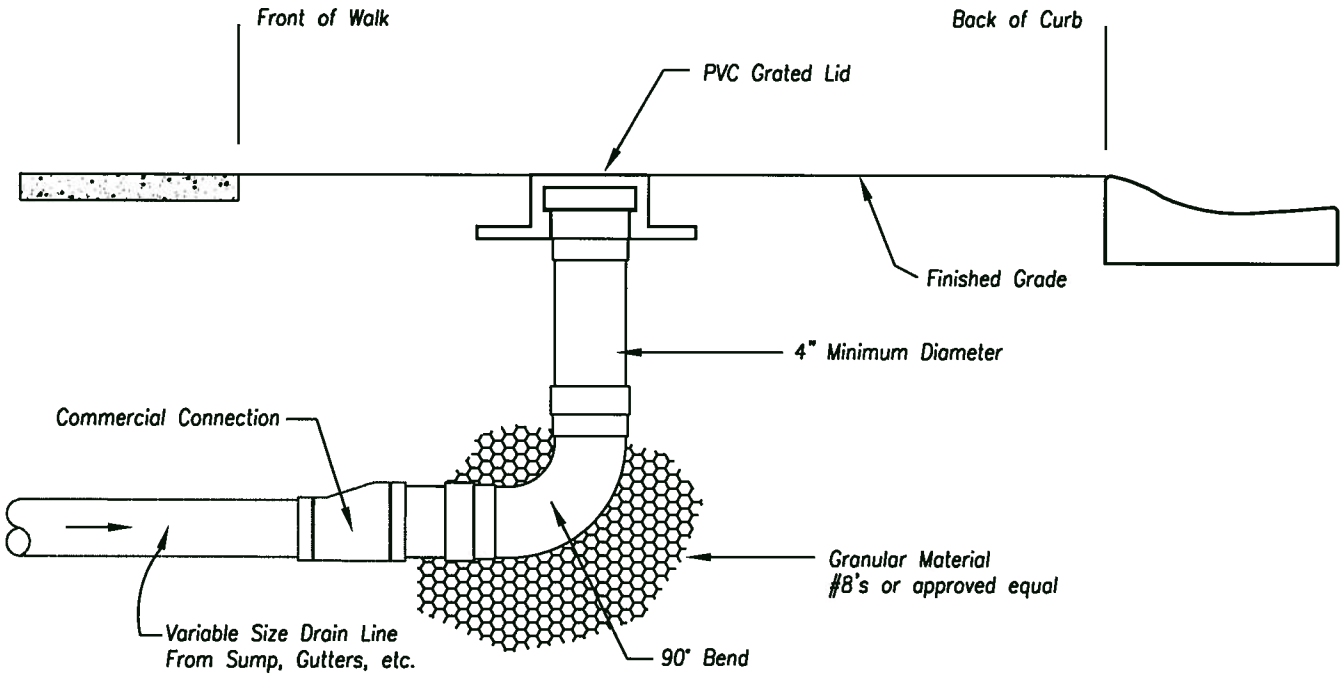
PUBLIC WORKS CONSTRUCTION STANDARDS*

*Refer to Section 300 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013 | SCALE: NONE | FILE: PUBLICWORKSDETAILS.DWG

New Drawing



TYPICAL SUMP OR DOWN SPOUT DRAIN

PUBLIC WORKS CONSTRUCTION STANDARDS*

*Refer to Section 300 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

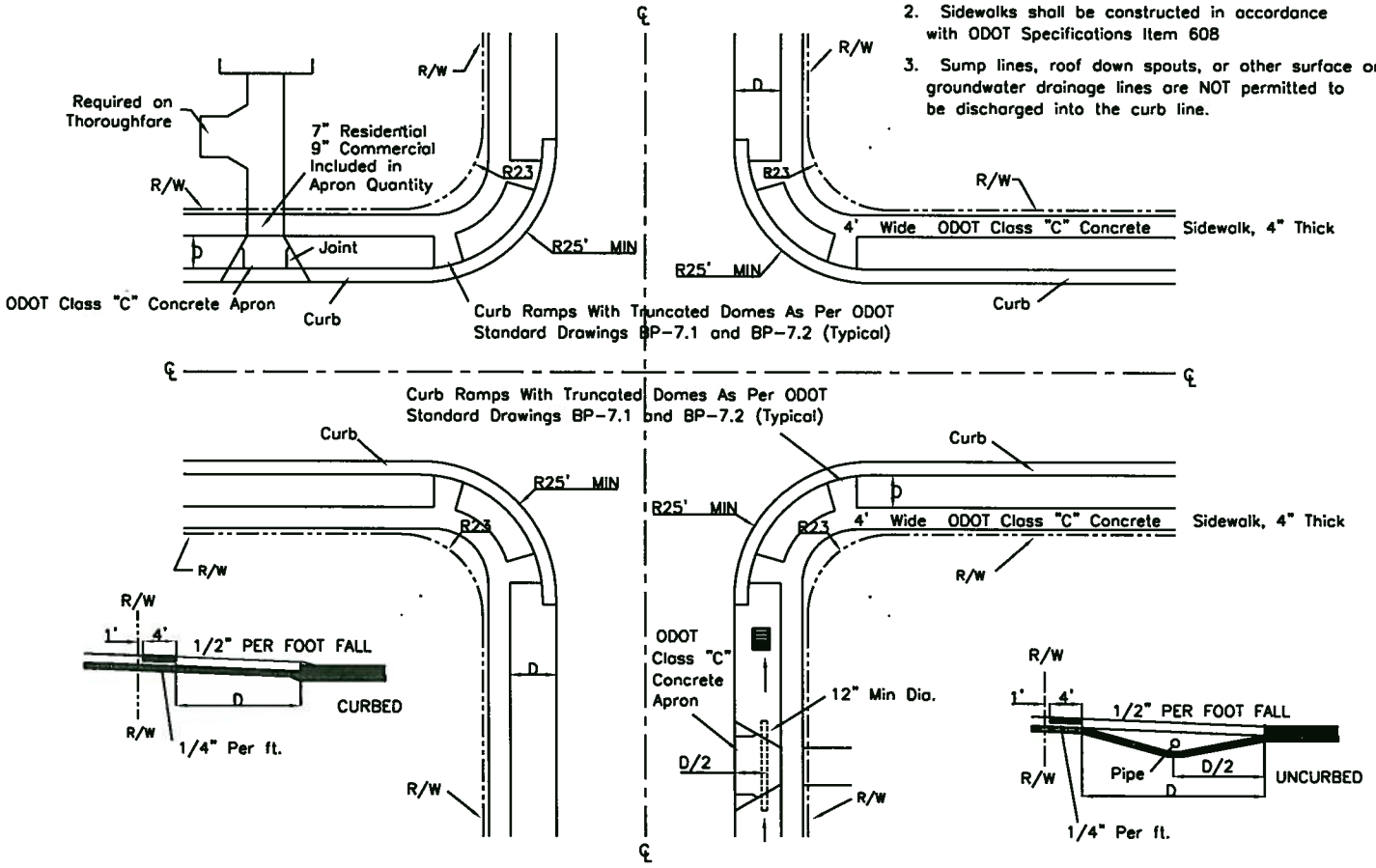
DATE: 01/23/2013 | SCALE: NONE | FILE: PUBLICWORKSDETAILS.DWG

Drawing left out of old handbook

TYPICAL DRIVEWAY, CULVERT & SIDEWALK

NOTES:

1. See Plot Plan or Subdivision Construction drawing for pipe size and "D" dimension
2. Sidewalks shall be constructed in accordance with ODOT Specifications Item 608
3. Sump lines, roof down spouts, or other surface or groundwater drainage lines are NOT permitted to be discharged into the curb line.



PUBLIC WORKS CONSTRUCTION STANDARDS*

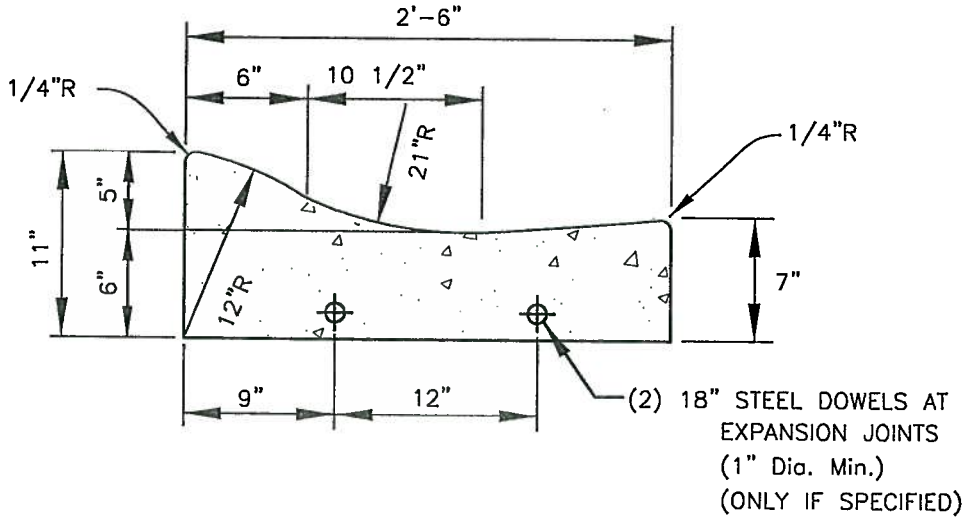
*Refer to Section 300 for Complete Specification Details

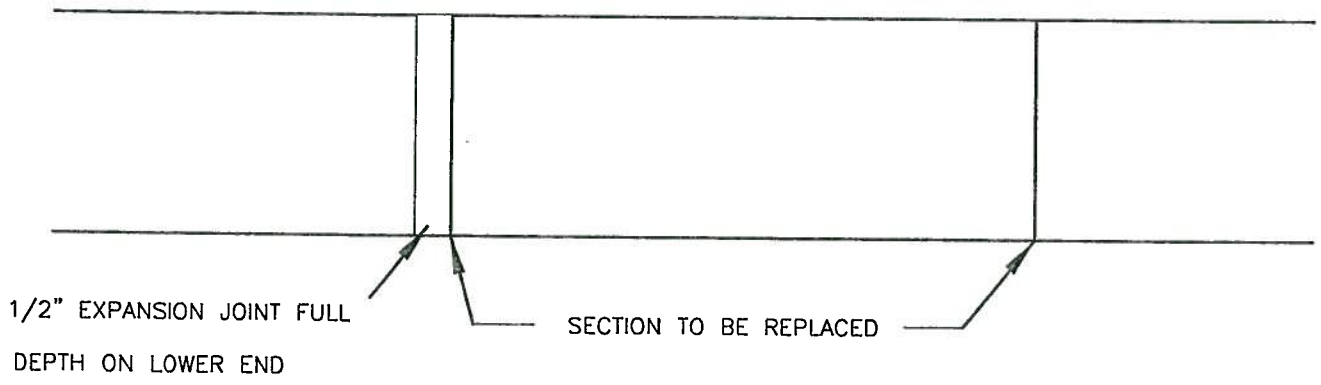
City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013	SCALE: NONE	FILE: PUBLICWORKSDETAILS.DWG

New Drawing

STANDARD ROLL TYPE CURB AND GUTTER





Construct ramps to meet required slopes and existing conditions.

PUBLIC WORKS CONSTRUCTION STANDARDS*

*Refer to Section 300 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

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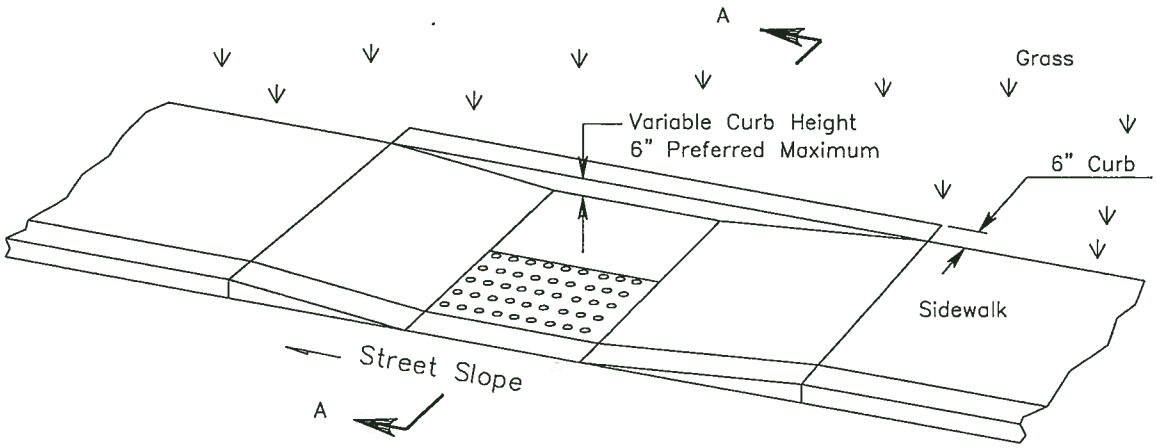
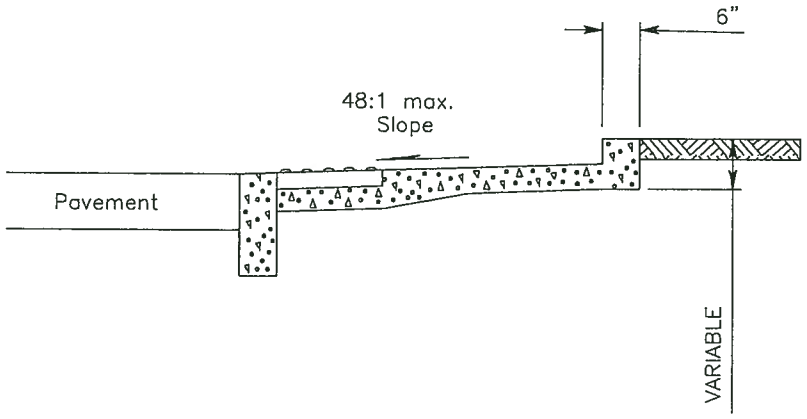
MODIFIED TYPE 6 CURB

New Drawing



MODIFIED TYPE 6 CURB, AS PER PLAN



SECTION A–A

PUBLIC WORKS CONSTRUCTION STANDARDS*

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City of Fairfield Construction Standards
Fairfield, Ohio

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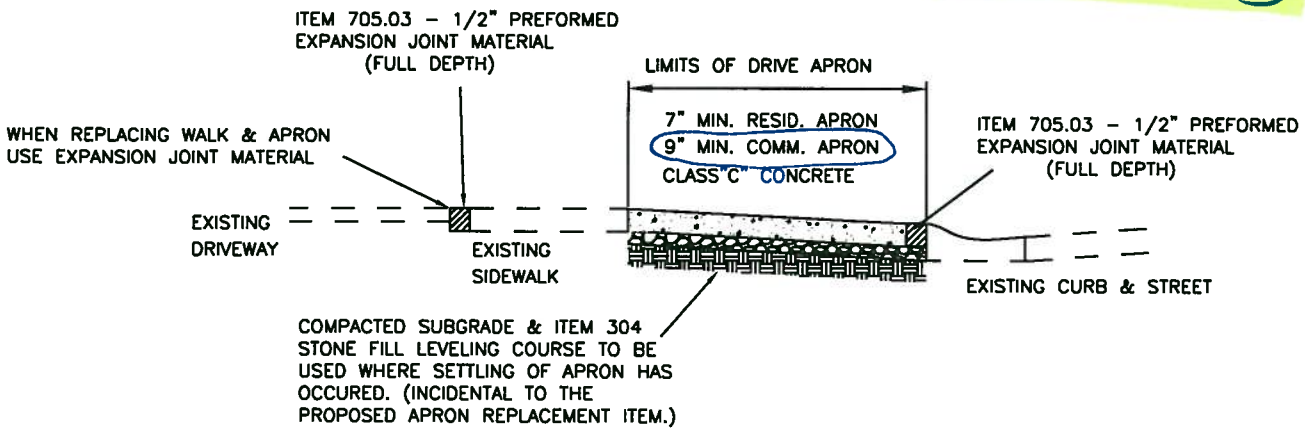
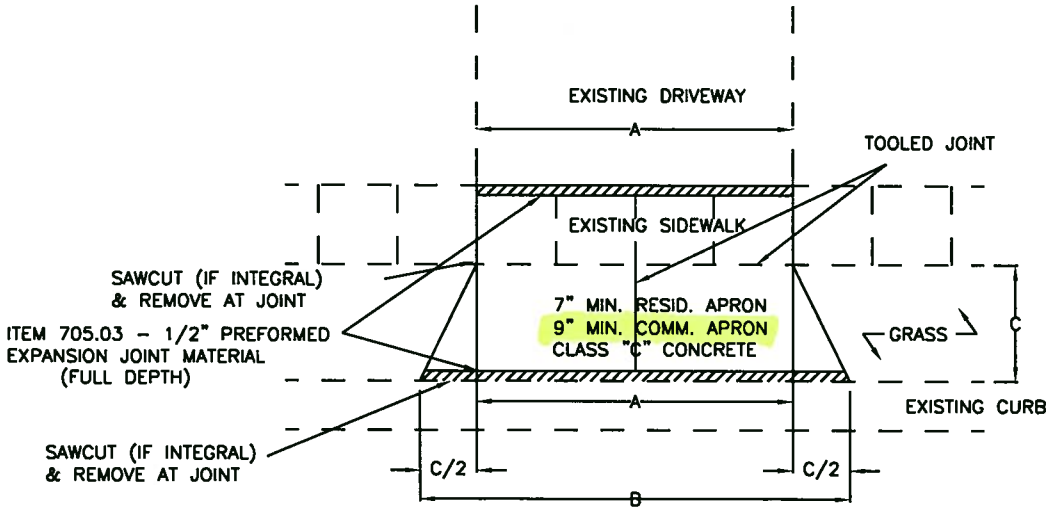
ITEM 452 – NON-REINFORCED CONCRETE PAVEMENT – DRIVE APRON DETAIL

New Drawing



NOTE:
THE NEW APRON SHALL MEET THE SIDEWALK AND CURB AT EXISTING ELEVATIONS

SECTION



NOTES:
THE DRIVEWAY SHALL BE REPLACED IN ITS EXISTING SIZE UNLESS THE OWNER REQUESTS THE REPLACEMENT IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS LISTED BELOW.

CITY SUBDIVISION REGULATIONS:
THE DRIVEWAY WIDTH AT THE BACK OF THE CURB SHALL BE EQUAL TO THE (B=A+C) DRIVEWAY WIDTH AT THE FACE OF THE SIDEWALK PLUS THE WIDTH OF THE GRASS STRIP BETWEEN THE CURB AND SIDEWALK.

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.

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 OF THE PAVEMENT SHALL BE TOOLED WITH AN EDGER OR JOINT TOOL AFTER BROOMING OR HAND FINISHING OF THE FINAL FINISH.

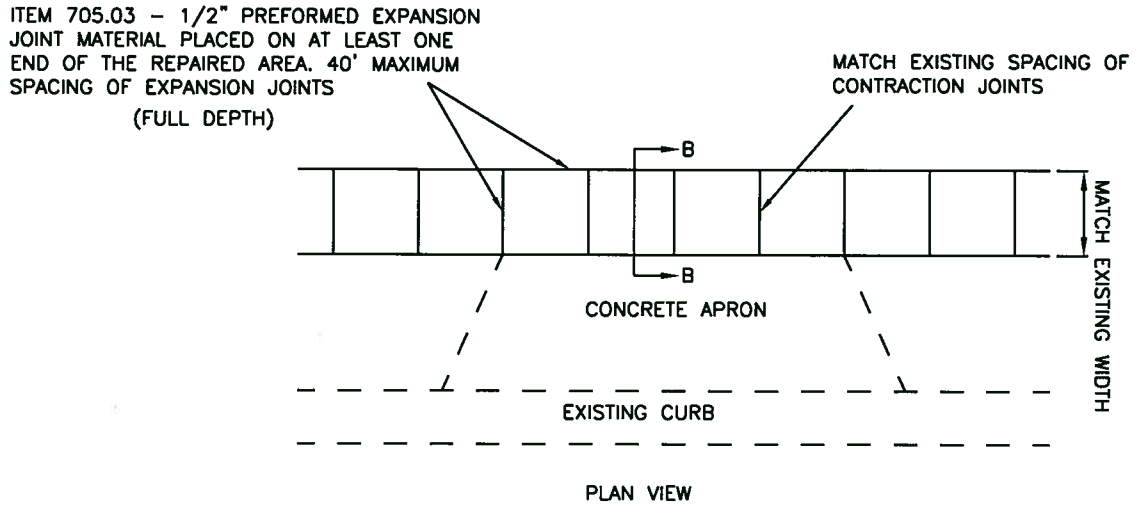
PUBLIC WORKS CONSTRUCTION STANDARDS*

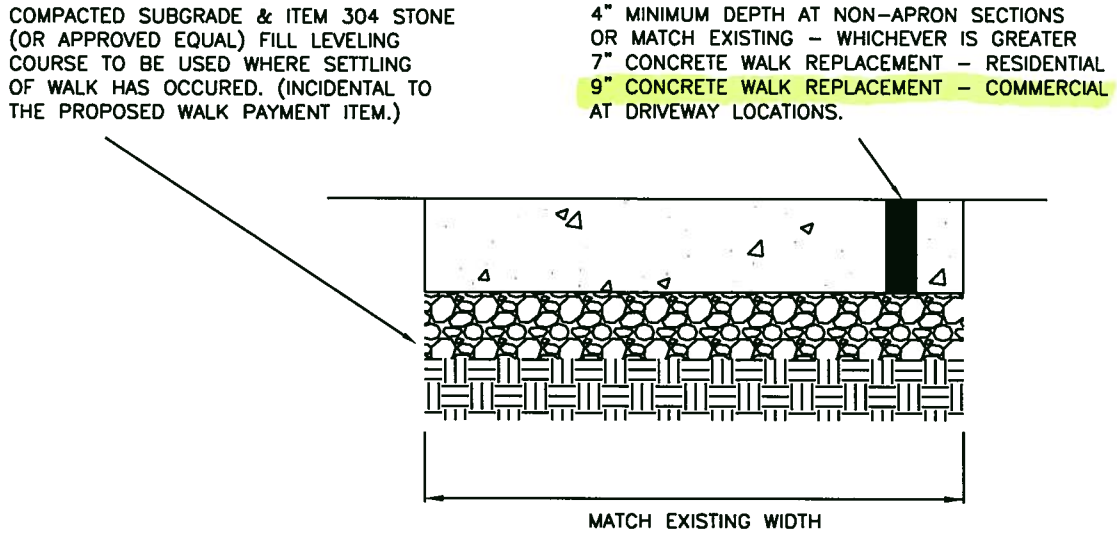
*Refer to Section 300 for Complete Specification Details

City of Fairfield Construction Standards Fairfield, Ohio

DATE: 01/23/2013 | SCALE: NONE | FILE: PUBLICWORKSDETAILS.DWG

ITEM 608 –CONCRETE SIDEWALK DETAIL New Drawing





NOTES:

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 SAME JOINT PATTERN SHALL BE MAINTAINED. ITEM 705.03 – 1/2" PREFORMED EXPANSION JOINT MATERIAL SHALL BE PLACED ON AT LEAST ONE END OF THE REPAIRED AREA. ALL REPAIRS ARE TO BE MADE TO THE NEAREST JOINT. ANY DAMAGE TO ADJACENT WALK OR DRIVEWAY BY THE CONTRACTOR, THE COST SHALL BE INCURED BY THE CONTRACTOR.

THE FINISH APPLIED TO THE CONCRETE WALK SHALL BE CONSISTENT WITH THE EXISTING WALK IT IS TO MATCH AND BE APPROVED BY THE CITY. ALL JOINTS AND OUTSIDE EDGES OF THE WALK SHALL BE TOOLED WITH AN EDGER OR JOINT TOOL AFTER BROOMING OR HAND FINISHING OF THE FINAL FINISH.

THE REPLACEMENT SIDEWALK SHALL BE A MINIMUM THICKNESS OF 7" AT RESIDENTIAL APRONS AND A MINIMUM. THICKNESS OF 9" AT COMMERCIAL APRONS.

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 608 – SIDEWALK, REMOVE AND REPLACE.

PUBLIC WORKS CONSTRUCTION STANDARDS*

*Refer to Section 300 for Complete Specification Details

City of Fairfield Construction Standards
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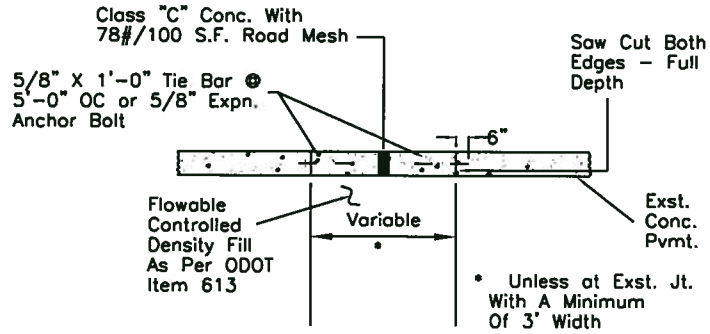
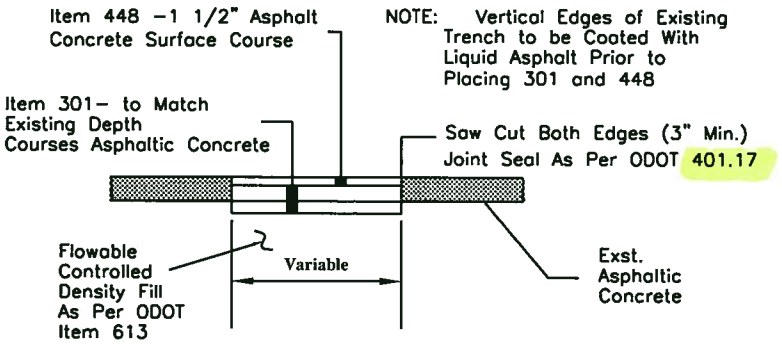
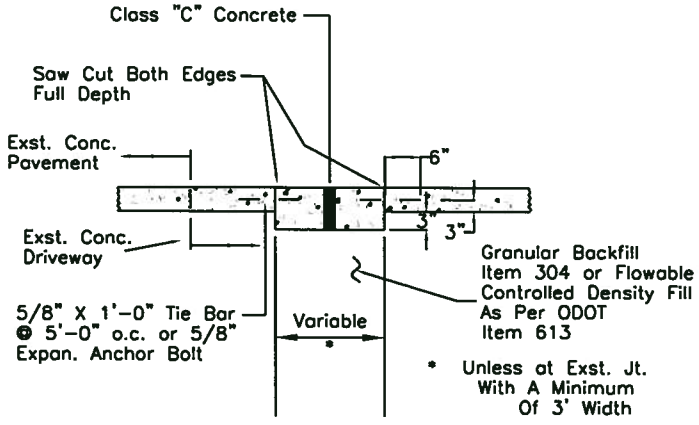
Drawing left out of old handbook

RESTORATION CLASS	TYPICAL RESTORATION SECTIONS	BACKFILL
CONCRETE ROADWAY		FLOWABLE CONTROLLED DENSITY FILL
ASPHALTIC CONCRETE		FLOWABLE CONTROLLED DENSITY FILL
CONCRETE DRIVEWAY		FLOWABLE CONTROLLED DENSITY FILL – – – – – – – – 304 GRADATION OR FLOWABLE CONTROLLED DENSITY FILL

PUBLIC WORKS CONSTRUCTION STANDARDS*

*Refer to Section 300 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

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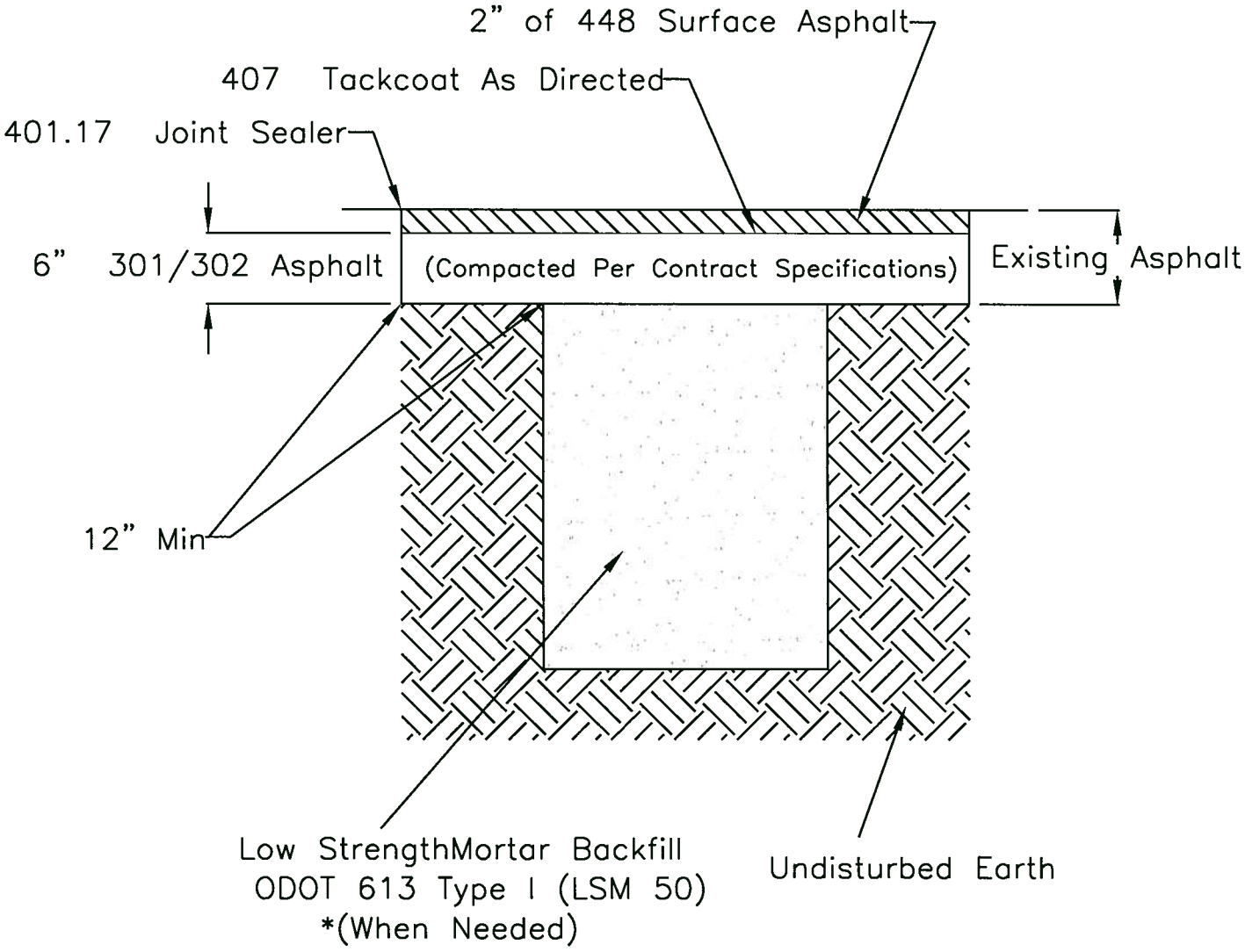
New Drawing

Type I – 8" Repair
Full Depth Asphalt
Concrete Pavement



PUBLIC WORKS CONSTRUCTION STANDARDS*

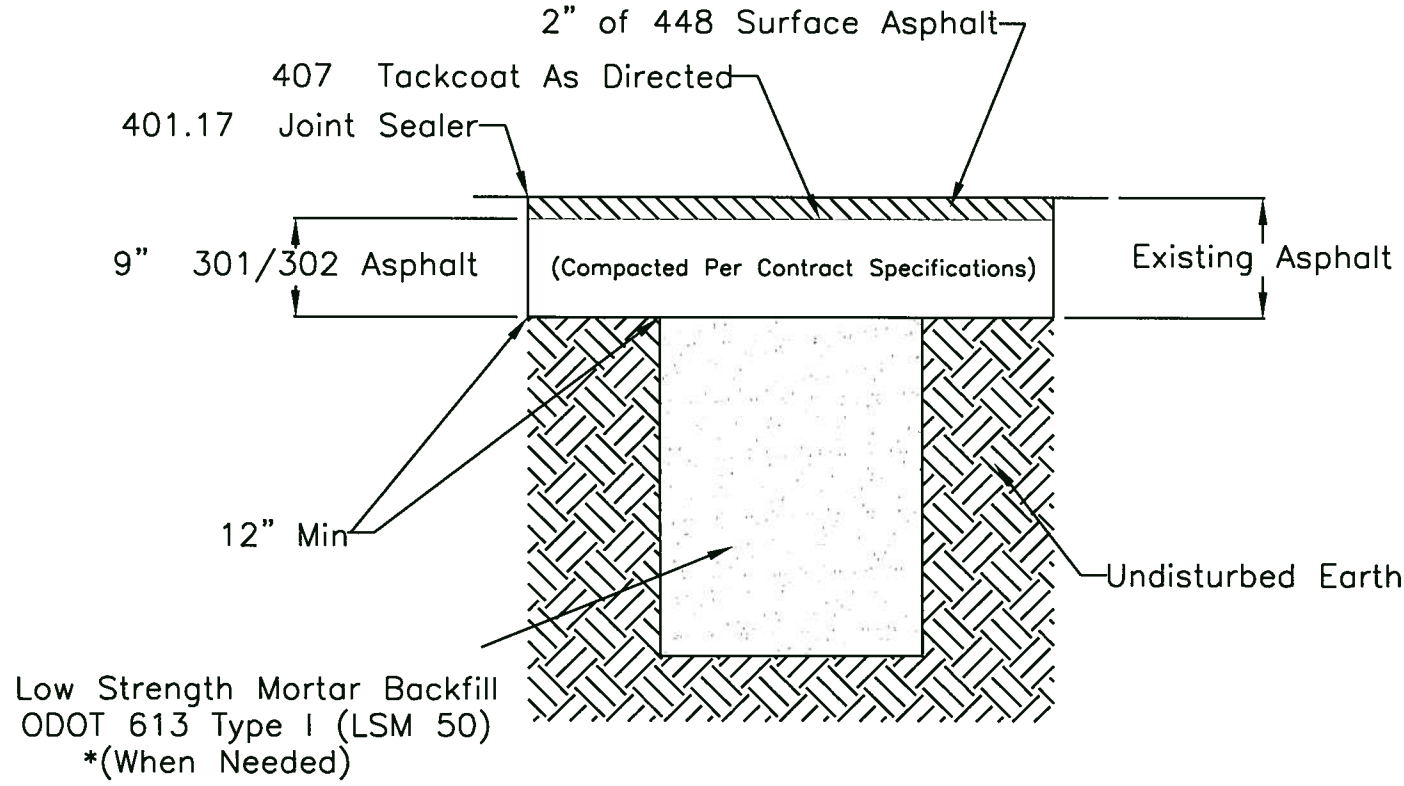
*Refer to Section 300 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013	SCALE: NONE	FILE: PUBLICWORKSDETAILS.DWG

New Drawing

Type II – 11" Repair
Full Depth Asphalt
Concrete Pavement



SECTION 400

WATER SUPPLY

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 public water distribution system:

1. ***City of Fairfield Design, Construction and Material 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 shall exist between reference sources, the more restrictive requirement shall prevail. The Public Utilities Director shall provide interpretation as requested. All materials used in construction of the water systems components which come in contact with drinking water shall meet the NSF/ANSI 61 Standard.

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 http://fairfield-city.org/publicworks/rightofway.cfm.

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.

Construction Requirements and Materials Specifications

401.00 **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 fifteen (15) feet; and seven point five (7.5) feet off the center of the water main to include an open area for maintenance.

401.01 **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.

401.02 **Pipe Size.** **The minimum size of public water mains shall be eight (8) inches in diameter**. Larger size mains will be required if necessary to allow withdrawal of required fire fighting 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.

401.03 **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. The normal working pressure in the distribution system should be approximately 90 psi. Pressure reducing valves (PRV) are required to be installed on the water service when the static pressure is 80 psi or greater.

401.04 **Control Valves.** At least one control valve shall be installed in each source of water supply, except fire department connections. Where there is more than one source of water supply, a check valve shall be installed in each connection. A control valve shall be installed on each side of each check valve.

401.05 **Depth of Cover.** ~~The depth of the cover over water pipes shall be determined by the maximum depth of frost penetration.~~ The top of the pipe shall be buried by 4

feet of cover. ~~not less than one (1) foot below the frost line. *Usually the frost line in this area is four feet.*~~ 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. ~~Fire mains usually require a deeper cover because of the lack of water circulation.~~

401.06 Polyethylene Encasement

Water main piping, fittings and valves shall be encased in polyethylene (PE wrap) as outlined in AWWA C105.Where Thrust blocking is required, encasement will be completed before any concrete is placed.

Water Main Pipe Materials

402.00 Ductile Iron Pipe. Only ~~ANSI~~/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 ~~ANSI~~/AWWA C150 and C151. **In no case shall less than Class ~~53~~ 55 (ductile iron pipe wall thickness) be used**. All pressure pipe shall be clearly marked as to class by the manufacturer.

All buried pipe, fittings and flanged joints shall be wrapped with polyethylene encasement tubing and tape per ~~ANSI~~/AWWA C105. Complete the "polywrap" prior to the placement of concrete anchors, collars, support or thrust blocks. Repair all polyethylene material damaged during construction.

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 18 feet), concrete blocking 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.* ~~*Pipe repairs shall conform to AWWA C104 guidelines.*~~

402.01 Pipe Joint. All pipe joints shall ~~be mechanical and~~ 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.

402.02 Fittings. Ductile Iron, mechanical joint fittings, three (3) inch through twenty-four (24) inch shall conform to ANSI for ductile iron compact fittings, and AWWA C153~~/A21.53~~. 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.

402.03 **Tapping Sleeves and Tapping Valves.** **Tapping sleeves shall be used for water services larger than two (2) inch in diameter**. All tapping sleeves shall be either ductile iron body, 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; Kennedy 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 and C515. Valves shall have a 2" 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.

402.04 **Tapping Saddle.** **A tapping saddle shall be used on a water service sizes of one and half (1 ½) to two (2) inches in diameter**. Tapping saddles shall be iron, bronze, brass, or stainless steel. They shall be band-type, or double strap type, with International Pipe Standard (IPS) tapping or AWWA tapered thread inlet.

402.05 **Water Main Valve Boxes.** All buried valves shall be provided with 'Buffalo" type cast iron valve boxes. Valve boxes have a screw type extension sleeve and also designed for the size of valve on which it is to be used, and with the required depth of cover. Valve boxes shall be cast iron, furnished in two or three section styles, with cover and with a base corresponding to the size of the valve. There shall be an insulating centering device between the valve box and valve. Heavy-duty type shall be used then located within existing or proposed pavement, driveway or traffic areas. The water box shall be coated with an asphaltic coating by the manufacturer. The cover shall have the word "WATER" cast in it.

402.06 **Gate Valves.** Valves of a size twelve (12) inches or smaller shall be AWWA C509 (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 two- inch (2") square operating nut. All gland bolts and nuts for iron body valves shall be stainless steel ~~bronze and fitted with brass nuts~~. Mechanical joint end connections shall conform to AWWA C111/~~A21.11~~. Adjust and test valve prior to backfill. Valve shall be certified to ~~ANSI/~~NSF 61 Drinking Water System Components-Health Effects.

402.07 **Butterfly Valves.** Valves of a size greater than (12) inches shall be a mechanical joint butterfly type. All butterfly valves shall conform to AWWA C504 standards. All valves shall be set in vertical position, and the box cover shall be flush with the grade of the ground or street surface. Whenever valve boxes fall outside of the roadway pavement, the top of the box shall be set in a concrete slab 24"x 24"x 6" thick with the top of the slab and box flush with the top of the ground. Adjust and test valve prior to backfill. Valve shall be certified to ~~ANSI/~~NSF 61 Drinking Water System Components-Health Effects.

402.08 **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.

Fire Hydrants

403.00 **Fire Hydrants.** **Fire hydrants shall conform to the "AWWA Standard for Dry-Barrel Fire Hydrants" ~~ANSI~~/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 eight (8) inch. All fire hydrants and auxiliary valves shall be positively locked to the water main by restrained mechanical joints. The thread sizing on the 2-1/2" hydrant ears barrel shall be 3.187x7, ~~and 5.718x4.~~ All hydrants shall conform to a "Harrington HPHA" type specification for 5" which has a built in permanent adapter and Storz cap, or approved equal. Hydrants shall have a dual rating of AWWA and FM-1510 approval.
~~**See City of Fairfield Standard Construction Drawing for Water Dept**~~ **See City of Fairfield Water Division standard drawing for fire hydrants.**

All required fire department connections **(STORZ)** or hose couplings shall be placed within one hundred (100) feet of an accessible fire hydrant.

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

- Manufacturer's name or trademark.
- Model or type designation.
- Maximum rated working pressure.
- Size of main valve opening.
- Year of manufacture.
- FM Approval mark.
- The hydrant top shall the word "OPEN" and an arrow, showing the counterclockwise direction for opening.
- The hydrant shall be a minimum rated working pressure of ~~175~~ 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 eighteen (18) inches and a maximum of thirty (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 placement of concrete thrust-blocking, or approved mechanical anchor. 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 410.00.*

403.01 **Color of Hydrants.** Fire hydrants shall be ~~painted~~ coated by the manufacturer as per the City of Fairfield requirements with an industrial ~~enamel~~ epoxy exterior grade paint. Public fire hydrants shall be painted OHSA safety yellow. Private fire hydrants shall be painted OHSA safety red.

403.02 **Spacing.** ~~Fire Hydrants shall be spaced or located as follows:~~

- ~~Fire Hydrants shall be spaced not more than three hundred (300) feet, if the required fire flow is higher than 2,000 gpm.~~
- ~~Fire Hydrants shall be spaced at four hundred (400) feet, if the required fire flow is less than 2,000 gpm.~~
- ~~Public and Private fire hydrants shall also be spaced by the determination of proper accessibility, maximum hose length requirements, and travel distances of the fire apparatus.~~ 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.
- Spacing of fire hydrants shall be 400' in public right of ways.
- In residential zoned areas, hydrants must be within 800' travel distance to a building with a flow rate of at least 1000 gpm.
- In commercial and industrial zoned areas, hydrants must be within 400' 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'.
- 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.
- All dead end water mains shall have a hydrant. If the potential is there for an extension on the dead end water main, a main line T valve and auxiliary valve shall be installed.
- All the above mentioned requirements under hydrant spacing are subject to change by the authority having jurisdiction.

403.03 **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 five (5) feet from the curb area. All fire hydrants shall be installed not closer than two (2) feet from the curb, street, driveway, or other traffic edge. No portion of the hydrant or nozzle cap shall cause an obstruction to a sidewalk, or pedestrian traffic.

Fire Services

403.04 **Fire Protection.** When a structure requires a dedicated Fire Line and is more than 300 feet from the public water main, a fire line meter vault is required.

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. ~~**See City of Fairfield Drawing for Water Division Construction Standards.**~~ **See City of Fairfield Water Division standard drawing for fire hydrants.**

All required fire department connections **(STORZ)** or hose couplings shall be placed within one hundred (100) feet of an accessible fire hydrant.

403.05 **Fire Line Meter Pit.** The meter pit shall be built of Class "C" concrete for the accommodation of a double check detector assembly, and shall conform to AWWA C510-92. All pipe and fittings shall be Ductile Iron class ~~53~~ 55 and conform to AWWA C151 and C110. The pit shall have a sump drain or floor drain. The access door to meter pit shall be a Bilco Aluminum double hatch door # JD-3AL-H2O. ~~**See City of Fairfield Drawing for Water Division Construction Standards.**~~ **See City of Fairfield Water Division standard drawing for fire line meter pit.**

When it's determined a vault is not needed, two valves shall be installed at locations in front of the right of way and behind the right of way. This is for the purpose of public/private separation.

403.06 **Detector Check.** 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 "Detector Check Valve" with a metered by-pass. The metered by-pass shall be of sufficient size to carry normal usage without activating the detector check valve. The detector check valve shall be as manufactured by the Kennedy Valve Company or approved equal. A full flow meter may be used as approved by the Director of Public Works or his/her designee. ~~**See City of Fairfield Drawing for Water Division Construction Standards.**~~ **See City of Fairfield Water Division standard drawing for detector check.**

403.07 **Post Indicator Valve.** Connections to Public water systems shall be controlled by post indicator valves of an approved type, and located not less than forty (40)

feet from the protected building. The post indicator valves shall be placed where they will be readily accessible in case of fire, and liable to injury. Post indicator valves shall be set so that the top of the post will be thirty- six (36) inches above the final grade. Post indicator valve shall properly protected against mechanical damage. Post indicator valves shall conform to NFPA 24. ~~**See City of Fairfield Drawing for Water Division Construction Standards.**~~ **See City of Fairfield Water Division standard drawing for post indicator valve.**

403.08 **Valve Pits.** Valve pits 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. Valve pits shall conform to NFPA 24.

403.09 **Operating Test.** Each hydrant and control valves 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. **See AWWA Manual 17, Installation, Maintenance, and Field Testing of Fire Hydrants.**

Water Service Connections

404.00 **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 Section 405 of this manual.**

404.01 **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 as per Section 403.02. At the discretion of the Public Utility Director or his/her designee, As-Built or GPS location verification may be required.

404.02 **Water Services.** The Contractor shall provide each lot with an individual water service. The Contractor shall install the corporation stop, service line, meter setting and meter pit/~~or~~ curb stop and curb box in a suitable manner from the city water main to the curb box or meter pit. The elevation of the curb box shall be established so that it is no less than four (4) feet below the finished grade. The elevation of the curb box shall be no more than five and one half (5 ½) feet of maximum depth. 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. Looping through water services, or multiple metering systems to permit water to pass between public water mains is not permitted. All underground water service pipe systems shall be thoroughly flushed before a connection to any fire suppression 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 City of Fairfield Standard Construction Drawing.**~~ **See City of Fairfield Water Division standard drawing for water service installation.**

404.03 **Copper Service.** 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 three fourths (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.

404.04 **Corporation Stop.** **(Water Tap)** Corporation stops for use with saddles shall be bronze alloy with IPS inlet thread of 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 one (1", 1 ½", or 2") in size, shall be Ford FB-1000 ball type or equal. The corporation stop shall be installed at either the two (2) o'clock or ten (10) o'clock position on the pipe. ~~The developer shall install the corporation stop while it is under pressure; i.e. a pressure tap.~~

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. All curb stops (1", 1 ½ ", or 2") shall be Ford B44-444 ball valve type or equal. Service boxes shall be of a "Buffalo" type cast iron Covers shall have the word "WATER" cast in raised letters and shall be securely 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 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 eighteen (18) inches into the ground next to the curb box. The blue stake shall be thirty six (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 City of Fairfield Standard Drawing for Water Division Construction Standards.**~~ **See City of Fairfield Water Division standard drawing for utility service designation.**

Meter Sets

404.06 **Classification of Meter Sets.** Meter sets are classified by location into two categories: Indoor meter sets and outdoor meter sets. Indoor meter sets shall only be used when outdoor meter sets cannot be used. Meter sets are further classified by the use as follows: Domestic water meters and sprinkling meters.

404.07 **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 every case after the final inspection required by the building code having jurisdiction. All meters shall be installed between the sidewalk and curb except as otherwise provided in the following sections.

404.08 Indoor Meter Sets. All indoor meter sets shall be installed by a private contractor and shall conform to the following requirements and must be approved by the Public Utilities Department before installation can begin.

(a) Meters shall not be set higher than four (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.

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.

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

(g) 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.

(h) 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 and the building or structure to be served is of a type of construction defined as approved, 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.

(i) 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.

404.09 **Outdoor Meter Sets.** All outdoor meter sets shall be installed by a private contractor and shall conform to the following requirements:

(a) Meter sets shall be placed between the curb and sidewalk, when possible, at such location as to prevent an accumulation of water within the tile.

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

(c) Meters shall be set in a tile or pit and in the arrangement as show in the Standard Drawing Section of this manual.
See City of Fairfield Water Division standard drawing for water meter pit.

(d) Outdoor meters must be in a location accessible to Public Utilities Department vehicles

(e) Meter pits and meters shall be owned and maintained by the Public Utilities Department.

404.10 **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% 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. Water meters shall be purchased from the City of Fairfield Public Utilities Department. Meters shall be installed 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; however, if a customer wishes his meter tested for accuracy, the City will comply after the payment of a fee by the customer for the service in

accordance with the schedule in section 921.05 of the City of Fairfield Codified Ordinance book, Inspection of Meters.

404.11 **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, he may request that his meter be changed after normal working hours; however, he will be required to bear the cost of this service.

404.12 **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.

404.13 **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 and vandalism. If the meter is stolen or lost, the replacement cost shall be paid by the owner. Unauthorized entry into a meter pit will result in a penalty being assessed against the owner for testing of the meter to assure its proper operation.

404.14 **Meters Required.** All water service branches shall be metered.

404.15 **Number of Meters.** The supply of water from the service connection may be measured by one or more meters. When more than one meter is used, they 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, except that in all cases, the meter or meters must satisfy the minimum requirements for service branches and meters, as provided for by these regulations and each separate service shall be subject to the same rules and regulations as a service where one branch serves a single meter. Normally, a separate service line is required for each metered service; however, at the owner's option, one service line may be installed to serve more than one metered service provided: Service lines are divided near the property line and individual curb stop valves are installed, and proper sizing is made of the service lines, and property served cannot logically be divided for sale.

Only one meter is required for each building or development complex. However, at the owner's option, a meter may be installed for each dwelling unit.

Proper provision shall be made to permit the City to discontinue service either by:
(i) Installation of separate curb stop valves in public right-of-way or easements and separate lines from the curb stop to the meter,
or
(ii) 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 (ii) above will be for multiple living units where one service is run into the meter room and each individual service is taken from a manifold. For multiple units served from one service line, a master meter is/may be required.

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

Meters set inside a building in a manifold shall be set in accordance with Public Utilities Department Standards.

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

Meters may not be placed in manifold unless the total of such meters satisfies the minimum requirements determined by the size of the service branch being utilized.

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

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.

~~**404.06 Water Meter Pits.** Water Metering Pits shall only be used when metering devices cannot be installed inside a structure. 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% 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. Water meter pits requiring concrete construction shall be constructed per the City of Fairfield Standard Drawing. Lids shall be double duty and fit tightly. All fittings inside of a pit with a three (3) inch or larger service, shall be flanged.~~

~~**404.07 Water Meters.** Water meters shall be purchased from the City of Fairfield Water Utility Department. Meters shall be installed 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. An underground meter shall be set at minimum of four (4) feet bellow grade. The meter setting yoke shall permit the meter to be readily installed without disturbing piping. There shall be a~~

~~coupling between the water meter and the downstream valve. Water metering devices on branch service lines, which provide fire protection, shall comply with the AWWA standards, and be UL approved for the measuring device as applied to that service. All leak detection meters on detector checks, shall be a meter purchased from the City of Fairfield. Meters shall certified as to suitable for contact with drinking water by an accredited organization in accordance with ANSI/NSF Standard 61, Drinking Water System Components-Health Effects.~~

~~**404.08 Remote Reading.** All meters shall be equipped and installed with a remote reading system, to enable obtaining register readings without directly accessing the meters location. The system shall be suitable for indoor and outdoor use, and shall be factory sealed to prevent tampering.~~

Separation of Water Mains and Sewers

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

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

405.01 Parallel Installation of Water and Sewer Lines. Under normal conditions, water mains shall be laid at least ten (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 ten (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 eighteen (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.

405.02 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 eighteen (18) inches between the bottom of the water main and the top of the sewer. When conditions prevent a vertical separation of eighteen (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 vertical separation of at least eighteen (18) inches between the bottom of the sewer and top of the water main.
- Adequate structural support for sewers to prevent excessive deflection of joints and seepage.
- 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.
- No water pipe shall pass through, or come in contact with any part of the sewer manhole.

Protection and Interruption

406.00 **Protection of Existing 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. **If necessary, 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.

406.01 **Service interruptions.** It is the responsibility of the Contractor to notify the ~~City Water~~ 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 be performed during normal City business hours not excluding City observed holidays. These holidays can be found on the City of Fairfield's website. The Contractor shall notify the City Water Division ~~Department~~ 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.

Excavation

407.00 **Trenching and Excavation.** No trenching or laying of pipe, or fittings shall be done until grade stakes have been set. The Contractor shall use digging equipment that produces an even ~~bedding and~~ trench foundation. The trench shall conform to the *Typical Trench Detail* found in the *Standard Drawing* section of this handbook. ~~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. If in rock, the bottom of the trench base shall be undercut six (6) inches, and then back filled with sand. 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 it's entire length, except to excavate for bell holes and joints. Allowing the pipe to be bridged by the bell is unacceptable. The trench shall be excavated to the depth required to provide a uniform and continuous bearing and support for the pipe on solid and undisturbed ground at every point between bell holes.~~ All water lines shall a minimum cover of forty-eight (48) inches. The open trench ahead of pipe-laying shall be kept to a minimum, and shall not be in excess of twenty- five (25) feet at the end of the working day, or at the ceasing of work.

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.

The width of the trench shall be ample to permit the pipe to be laid and joined properly, and the back 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, bracing and handling of specials.

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.

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. ~~Materials unsuitable for backfilling shall be wasted by the project inspector.~~ 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 back filled at the Contractors expense with good, well- ~~tamped~~ compacted material.

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 City of Fairfield Drawing for Water Division Construction Standards.**~~ **See City of Fairfield Water Division standard drawing for typical trench detail.**

407.01 **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 use such methods; either 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 and an inspector present for any pavement restoration to be acceptable.

407.02 **Tunneling.** Tunneling, or boring when necessary, shall be done under the supervision of the engineer or project inspector. No tunneling shall be permitted in a public roadway or right of way, unless authorized by permit and review by the Public Works Department. **See City of Fairfield standard drawing for Water Division Construction Standards.**

407.03 **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.

Installation

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

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.

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.

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

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.

408.01 **Thrust Blocking.** **When required on existing mains, a**~~A~~ll bends over five (5) degrees, shall be securely blocked against movement with concrete blocking placed against undisturbed earth in accordance with AWWA C600. All concrete shall be Class "C" type. ~~All deflections over five (5) degrees closer than the standard length of pipe (approximately 18 feet) shall be thrust blocked. Water mains at all pipe intersections and changes of direction shall be thrust blocked. See City of Fairfield Drawing for Water Division for Construction Standards.~~ **See City of Fairfield Water Division standard drawing for thrust block detail.**

Concrete thrust blocking shall be placed at least two 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 Department, or project inspector.

408.02 **Restraining Joint Sytems.** New water main installation 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 City of Fairfield Drawing for Water Division Construction Standards.~~ **See City of Fairfield Water Division standard drawing for restraining joint detail.**

408.03 **Pipe Cutting.** Cutting the pipe shall be kept to a minimum, and shall be done in a neat and workmanlike 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.

408.04 **Connection to City Mains.** Newly installed piping shall not be connected to existing City mains until acceptance of pressure and leakage tests or in special circumstances as approved by the Public Utilities Director and/or his/her designee. Test plugs, corporations, connecting sleeves, and temporary piping to a water source, shall be furnished by the Contractor.

Backfilling

409.00 **Backfilling of Trenches.** ~~Materials for tamped backfill and the method of placement shall be specified per AWWA C600 Type 3 pipe bedding. The trenches shall then be carefully backfilled up to twelve (12) inches above the top of the pipe with sand and earth, in layers of not more than six (6) inches thick and carefully tamped to form a solid bedding for the pipe.~~

~~The balance of the excavated material shall be consolidated in the following manner. Tamped backfill will be required for the full depth of the trench above the pipe bedding in layers not to exceed twelve (12) inches in depth. As backfilling proceeds, the entire mass shall be vibrated with a mechanical vibrator.~~ Refer to Standard Drawing Section, Trench Detail.

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, main 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.

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 ~~for a period of thirty (30) days following their placement.~~ until a satisfactory stand of grass has been established.

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.

409.01 **Backfilling Under Pavement.** Flowable controlled density fill shall be per ODOT 613 under roadway and curb. Granular backfill item 304 may be used

under private driveways. ~~**See standard construction drawing #97004.**~~ **See Public Works Standard Construction Drawing.**

409.02 **Nonshrinkable Backfill.** The non-shrinkable backfill shall be ~~a mixture of sand, gravel, Portland cement, and water which flows easily around the utility being covered, and develops a 28-day compressive strength from 30 to 200psi. No nonshrinkable backfill mix designs shall be used without the approval of the project inspector. Fly ash may be approved in the mix, if test data are submitted to indicate the above characteristics are met.~~ per ODOT Standard 613.

~~The mix design shall meet the following requirements:~~

- ~~Portland Cement 60 lbs.~~
- ~~47 B Sand Gravel 3,300 lbs.~~
- ~~Water 40 gal.~~

See City of Fairfield standard drawing for Water Division Construction Standards.

Testing, Disinfecting, and Flushing Mains.

410.00 **Disinfection of Water Mains.** The Contractor shall pay for the costs of testing, disinfecting, and flushing of the water mains. The disinfections of the water main shall be performed before hydrostatic testing. 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 ~~ANSI~~ C-651. A solution of hypo chlorite using HTH or equal shall be introduced into the section of the line by using a chlorine dosage, attached chlorine tablets of at least twenty-five (25) ppm in the main. While the solution is being applied, the water should be allowed to escape at the ends of the line until tests indicate that dosage of twenty-five (25) ppm has been obtained throughout the pipe. The chlorinated water shall be allowed to remain in the pipe for a minimum of twenty-four (24) hours, after which a residual of ten (10) ~~ppg~~ ppm shall be obtained. The disinfections shall be repeated until ten (10) ~~ppg~~ ppm can be obtained after twenty-four (24) hours. The main shall be thoroughly flushed until the residual chlorine content is not greater than 2.0 ~~ppg~~ ppm.

410.01 **Flushing.** The Contractor shall provide a means of disposing of the water and ~~sterilizer~~ disinfectant to prevent damage to the environment during flushing operations. If there is any question that the chlorinated discharge will cause damage to the environment, then the Contractor shall supply a reducing agent (Sodium Thiosulfate) to the water to be wasted.

410.02 **Disinfection.** The main shall then be tested to Ohio EPA Standards for (MRDL), Maximum Residual Disinfection Levels for rule 3745-81-10, and 3745-81-70; OEPA Drinking Water Rules and Regulations.

410.03 **Bacteriological Test.** After final flushing, and before the water main is placed in service, samples shall be collected from the line, and shall be tested for bacteriological quality in accordance with the "Standard Methods For The Examination of Water and Wastewater" as prepared and published by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation. The bacteriological test and sample collection shall be performed by the city. The cost for all testing shall be paid by the Contractor.

If the bacteriological test is positive, the Contractor must re-disinfect the line until the bacteriological test is negative. Upon successful passing of the bacteriological test, the water main shall be flushed to establish and maintain a chlorine residual no greater than two (2) mg/l for six (6) hours. Two (2) consecutive negative bacteriological tests will be required, and performed by the city. The cost for all testing shall be paid by the Contractor.

Pressure and Leakage Test

411.00 **Pressure Testing.** All water lines shall be given a hydrostatic test to two hundred (200) psi, under which leakage shall not exceed ten (10) gallons per twenty-four (24) hours per inch of diameter per mile of pipe. Loss of water pressure during the Pressure and Leakage test shall not exceed ten (10) psi in a twenty-four (24) hour period, nor two (2) psi in a four (4) hour period. Where practicable, pipe lines shall be tested between line valves or plugs at a maximum of fifteen hundred (1500) feet. Water line sections shall not be pressure tested until all service taps, branches, hydrants, etc. have been installed. The Duration of the test shall not be less than four (4) hours, nor more than twenty-four (24) hours.

The Contractor shall furnish all labor, pumps, pipe connections, additional line plugs, adapters, caps, and all other necessary apparatus. The Pressure and Leakage Test shall be in accordance with the AWWA Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances by ~~ANSI~~/AWWA C-600.

411.01 **Air Removal Before Test.** Before applying the specified test pressure, air shall be expelled completely from the pipe, valves, and hydrants. If permanent air vents are not located at all high points, the Contractor shall install corporation cocks at such points so the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and plugged by the Contractor.

411.02 **Procedure.** The pipe shall be slowly filled with water, and the specified test pressure shall be applied by means of a pump connected to the pipe.
During the pressure test, any exposed pipe, fittings, valves, fire hydrants, and joints shall be examined carefully. Any damaged or defective pipe, fittings, valves, fire hydrants, or joints that are discovered shall be replaced or repaired

with sound material. The test shall be repeated until the City of Fairfield is satisfied.

A recording pressure gauge shall be used for the measurement. The pressure gauge is furnished either by the Contractor, or by the City of Fairfield at the discretion of the Public Utilities Director.

411.03 **Leakage Testing.** A leakage test shall be conducted after the pressure test has been satisfactorily complete. Leakage testing shall be performed at the same pressure as specified for the pressure test. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valve section thereof, to maintain pressure within two pounds per square inch (2) of the specified test pressure after the pipe has been filled with water and the air has been expelled.

Acceptance shall be determined on allowable leakage. If any test of laid pipe discloses leakage greater than specified, the Contractor shall, at his own expense, locate and make approved repairs as necessary until the leakage is within the specified allowance. All visible leaks are to be repaired regardless of the amount of leakage.

411.04 **Isolation Valve.** The main isolation valve shall not be operated for flushing or rechlorination until a downstream hydrant is opened. During such operations, the main isolation valve shall only be operated by Utility Department personnel.

411.05 **Completion.** After completion of the disinfections and testing procedures, the main shall be flushed by the Contractor under City supervision until the chlorine concentration is reduced to a level not exceeding ~~1 mg/l~~ 2 ppm. The main shall be connected to the City's water distribution system by the Contractor under City supervision. *See section 410.01 Flushing.*

412.00 **As Built.** ~~At the completion of construction, the developer shall supply the City with one (1) set of Mylar plans to indicate any and all deviations from the original plans. 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.~~ 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 mains constructed, including those constructed in subdivisions. 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 twenty-four (24) inches by thirty six (36) inches and sealed and signed by the engineer to certify that the "As Builts" are per field conditions and along with an AutoCAD (.dwg or .dxf) on CD or DVD.

Backflow Prevention and Cross-Connection Control

413.00 If, in the judgment of the Public Utilities Director and/or his/her designee, an approved backflow prevention device is necessary for the safety of the Water Works System, notice will be given to the water customer to install and maintain such an approved device. The water consumer, at his 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 as required by the Ohio Administrative Code Chapter 3745-95.

413.01 **Where Protection is Required.** An approved backflow prevention device shall be installed on each service line to a consumer's water system serving premises, where in the judgment of the supplier of water or the director, a health, pollutional or system hazard to the public water system exists. An approved backflow prevention device shall be installed on each service line to a consumer's water system serving premises where the following conditions exist:

(a) Premises having an auxiliary water system, unless such auxiliary system is accepted as an additional source by the supplier of water and the source is approved by the director;

(b) Premises on which any substance is handled in such a fashion as to create an actual or potential hazard to a public water system. This shall include premises having sources or systems containing process fluids or waters originating from a public water system which are no longer under the control of the supplier of water;

(c) Premises having internal cross-connections that, in the judgment of the supplier of water, are not correctable or intricate plumbing arrangements which make it impracticable to determine whether or not cross-connections exist;

(d) Premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impracticable to make a complete cross-connection survey;

(e) Premises having a repeated history of cross-connections being established or re-established.

413.02 **Type of Backflow Protection Required.** An approved backflow prevention device of the type designated shall be installed on each domestic water service connection to the following types of facilities unless the Director determines that no real or potential health, pollutional or system hazard to the public water system exists. This list is presented as a guideline and should not be construed as being complete.

Abbreviations used are as follows:
A.G. - Air Gap Separation
R.P. - Reduced Pressure Principle Backflow Preventer
D.C. - Double Check Valve Backflow Preventer

Type of Facility	Minimum type of Protection
Breweries, Distilleries, Bottling Plants	D.C.
Car Wash with Recycling System and/or Wax Eductor	R.P.
Chemical Plants	R.P.
Dairies	D.C.
Dentist Offices	R.P.
Fertilizer Plants	R.P.
Film Laboratories or Processing Plants	R.P.
Food or Beverage Processing Plants	D.C.
Hospitals, Clinics, Medical Buildings	R.P.
Laboratories	R.P.
Laundries & Dry Cleaning Plants	D.C.
Machine Tool Plants (Health or System Hazard)	R.P.
Machine Tool Plants (Pollutional Hazard)	D.C.
Metal Processing Plants (Health or System Hazard)	R.P.
Metal Processing Plants (Pollutional Hazard)	D.C.
Metal Plating Plants	R.P.
Morgues or Mortuaries	R.P.
Nursing Homes	R.P.
Packing Houses or Rendering Plants	R.P.
Paper Products Plants	R.P.
Petroleum Processing Plants	R.P.
Petroleum Storage Yards (Health or System Hazard)	R.P.
Petroleum Storage Yards (Pollutional Hazard)	D.C.
Radiator Repair Shop Acid Tanks	R.P.
Pharmaceutical or Cosmetic Plants	R.P.
Piers, Docks or Waterfront Facilities	R.P.
Power Plants	R.P.
Radioactive Material Plants	R.P.
Restaurants, with Soap Eductors and/or Industrial Type Disposal	R.P.
Sand and Gravel Plants	D.C.
Schools with Laboratories Having Acid Wastes	R.P.
Sprinkling or Irrigation Systems	R.P.
Swimming Pools with Piped Fill Line	A.G.
Sewage Treatment Plants	R.P.
Sewage Pumping Stations (Health or System Hazard)	R.P.
Storm Water Pumping Stations	R.P.
Veterinary Establishments	R.P.

In addition to and including those types of facilities listed above, an approved backflow prevention device of the type designated shall be installed on each domestic water service connection to any premises containing the following real or potential hazards.

Others Specified by the Director	Minimum type of Protection
Premises having an auxiliary water system not connected to a public water system	R.P.
Premises having a water storage tank, reservoir, pond or similar appurtenance	R.P.
Premises having a steam boiler, cooling system or hot water heating system where chemical water conditioners are used	R.P.
Premises having submerged inlets to equipment	R.P.
Premises having self-draining yard hydrants, fountains, hose boxes or similar devices presenting a health or system hazard (i.e., chemical storage plants tank farms, bulk storage yards)	R.P.
Premises having self-draining yard hydrants, fountains, hose boxes or similar devices presenting a pollutional hazard (i.e., parks, play fields, cemeteries)	D.C.
Others specified by the Director	

(4) An approved backflow prevention device shall be installed at any point of connection between a public water system or a potable consumer's water system and an auxiliary water system, unless such auxiliary system is accepted as an additional source by the supplier of water and the source is approved by the Director.

(E) Type of Protection Required.
(1) The type of protection required under paragraphs (1), (2) and (3) 5of the above Section D shall depend on the degree of hazard which exists as follows:

(a) An approved air gap separation shall be installed where a public water system may be contaminated with substances that could cause a severe health hazard.

(b) An approved air gap separation or an approved reduced pressure principle backflow prevention device shall be installed where a public water system may be contaminated with any substance that could cause a system or health hazard.

(c) An approved air gap separation or an approved reduced pressure principle backflow prevention device or an approved double check valve assembly shall be installed where a public water system may be polluted with any substance that could cause a pollutional hazard.

(2) The type of protection required under paragraph 4 of above Section D shall be an approved air gap separation or an approved interchangeable connection.

(3) Where an auxiliary water system is used as a secondary source of water for a fire protection system, the provisions of paragraph (2) of this rule for an approved air gap separation or an approved interchangeable connection may be waived by

the Director provided:

(a) At premises where the auxiliary water system may be contaminated with substances that could cause a system or health hazard, a public water system or potable consumer's water system shall be protected against backflow by installation of an approved reduced pressure principle backflow prevention device;

(b) At all other premises, a public water system or a potable consumer's water system shall be protected against backflow by installation or (of) either an approved reduced pressure principle backflow prevention device or an approved reduced pressure principle backflow prevention device or an approved double check valve assembly;

(c) A public water system or a potable consumer's water system shall be the primary source of water for the fire protection system;

(d) The fire protection system shall be normally filled with water from a public water system or a potable consumer's water system;

(e) The water in the fire protection system shall be used for fire protection only, with no other use of water from the fire protection system downstream from the approved backflow prevention device.

(f) Backflow Prevention Devices.
(1) Any backflow prevention device required by the above Sections (d) and (e) shall be of a model or construction approved by the supplier of water and the Director.

(2) Any backflow prevention device required by the above Sections (d) and (e) shall be installed at a location and in a manner approved by the supplier of water and shall be installed by and at the expense of the water consumer. In addition, any backflow prevention device required by paragraphs (2) and (3) of above Section (e) shall be installed at a location and in a manner approved by the Director as required by Section 6109.13 of the Revised Code.

(3) It shall be the duty of the consumer, on any premises on which backflow prevention devices required by Sections (d) and (e) are installed, to have thorough inspections and operational tests made of the devices at such intervals and in such manner as may be reasonably required by the supplier of water or the Director. These inspections and tests shall be at the expense of the water consumer and shall be performed by the supplier of water or a person approved by the supplier as qualified to inspect and test backflow prevention devices. It shall be the duty of the supplier of water to see that these tests and inspections are made. These devices shall be repaired, overhauled or replaced at the expense of the consumer whenever they are found to be defective. Records of such inspections, tests, repairs and overhaul shall be kept by the consumer and made available to the supplier of water.

(4) Existing backflow prevention devices approved by the supplier of water or the Director prior to the effective date of this rule and which are properly maintained shall, except for inspection, testing, and maintenance requirements, be excluded from the requirements of paragraphs (1) and (2) of this rule if the supplier of water and the Director are assured that the devices will satisfactorily protect the public water system.

413.03 Booster Pumps.

(A) No person shall install or maintain a water service connection to any one, two or three family dwelling where a booster pump has been installed, unless an air gap separation is provided to ensure that the booster pump cannot exert suction on the service line.

(B) For booster pumps not intended to be used for fire suppression, no person shall install or maintain a water service connection to any premises not included in paragraph (A) of this rule where a booster pump has been installed on the service line to or within such premises, unless such booster pump is equipped with a low pressure cut-off designed to shut-off the booster pump when the pressure in the service line on the suction side of the pump drops to twenty pounds per square inch gauge or less.

(C) For booster pumps used for fire suppression installed after the effective date of this rule, no person shall install or maintain a water service connection to any premises not included in paragraph (A) of this rule where a booster pump has been installed on the service line to or within such premises, unless the pump is equipped with a minimum pressure sustaining valve on the booster pump discharge, which throttles the discharge of the pump when necessary so that suction pressure will not be reduced below twenty pounds per square inch gauge while the pump is operating.

(D) For booster pumps used for fire suppression installed prior to the effective date of this rule, no person shall maintain a water service connection to any premises not included in paragraph (A) of this rule where a booster pump has been installed on the service line to or within such premises, unless the pump is equipped with either a low pressure cut-off designed to shut-off the booster pump when the pressure in the service line on the suction side of the pump drops to twenty pounds per square inch gauge or less, or a minimum pressure sustaining valve on the booster pump discharge, which throttles the discharge of the pump when necessary so that suction pressure will not be reduced below ten pounds per square inch gauge while the pump is operating.

(E) It shall be the duty of the water consumer to maintain the low pressure cut-off device or minimum pressure sustaining valve in proper working order and to certify to the supplier of water, at least once every twelve months, that the device is operable and maintained in continuous operation.

413.03 Violations.

(1) The supplier of water shall deny or discontinue, after reasonable notice to the occupants thereof, the water service to any premises wherein any backflow prevention device required by this chapter 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 of if a low pressure cut-off required by the above Section (G) is not installed and maintained in working order or if the supplier of water or the Director or the authorized representative of either, is denied entry to determine compliance with this section.

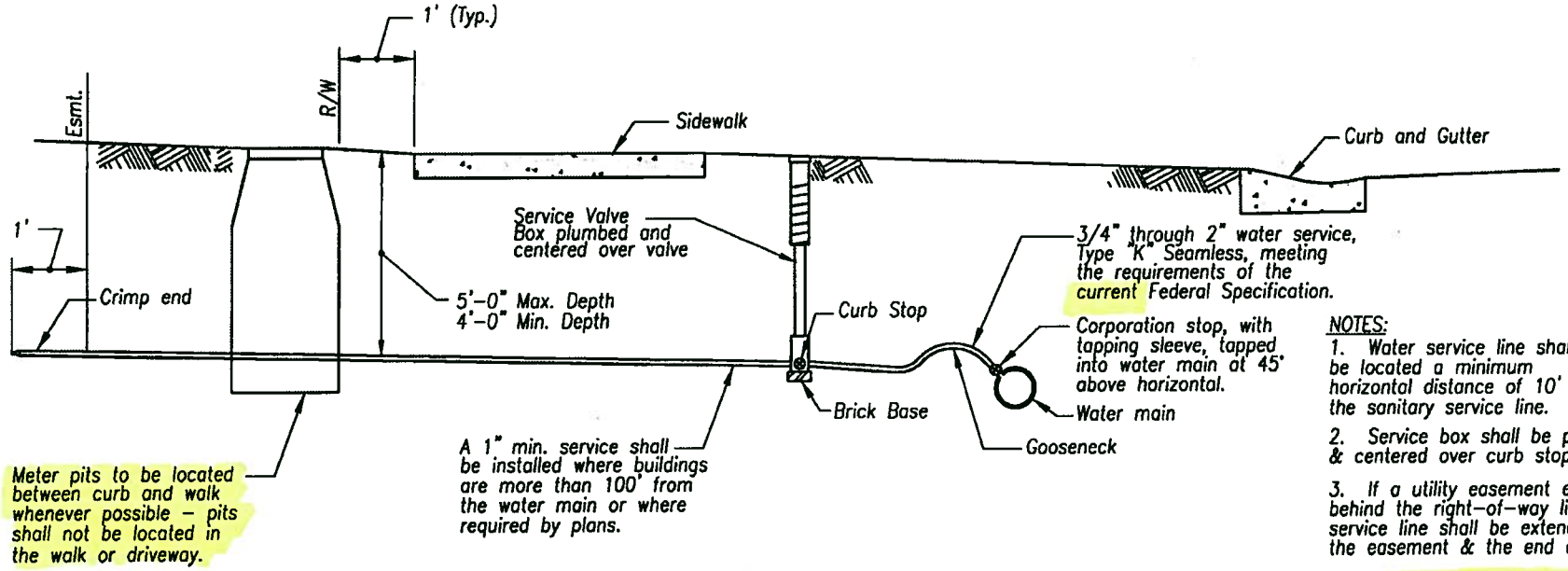
(2) Water service to such premises shall not be restored until the consumer has corrected or eliminated such conditions or defects in conformance with this chapter and to the satisfaction of the supplier of water.

WATER DIVISION
CONSTRUCTION STANDARDS*

*Refer to Section 400 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 1/23/2013	SCALE: NONE	FILE: WDETAILS.DWG



NOTES:

1. Water service line shall be located a minimum horizontal distance of 10' from the sanitary service line.
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 the easement & the end crimped.
4. Water service shall be bedded with sand, 8's, 9's, or 57's.

WATER SERVICE INSTALLATION DETAIL

NTS

WATER DIVISION
CONSTRUCTION STANDARDS*

*Refer to Section 400 for Complete Specification Details

City of Fairfield
Construction Standards
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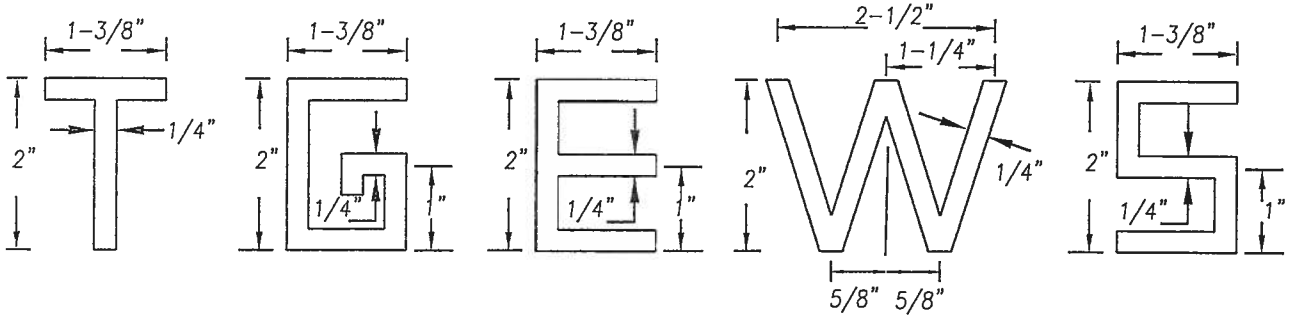

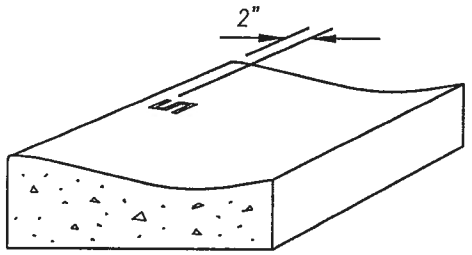

Letters to be impressed into the fresh concrete a depth of 1/2" directly above point where services cross the curb.

UTILITY SERVICE LOCATION DESIGNATION

WATER DIVISION
CONSTRUCTION STANDARDS*

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Construction Standards
Fairfield, Ohio

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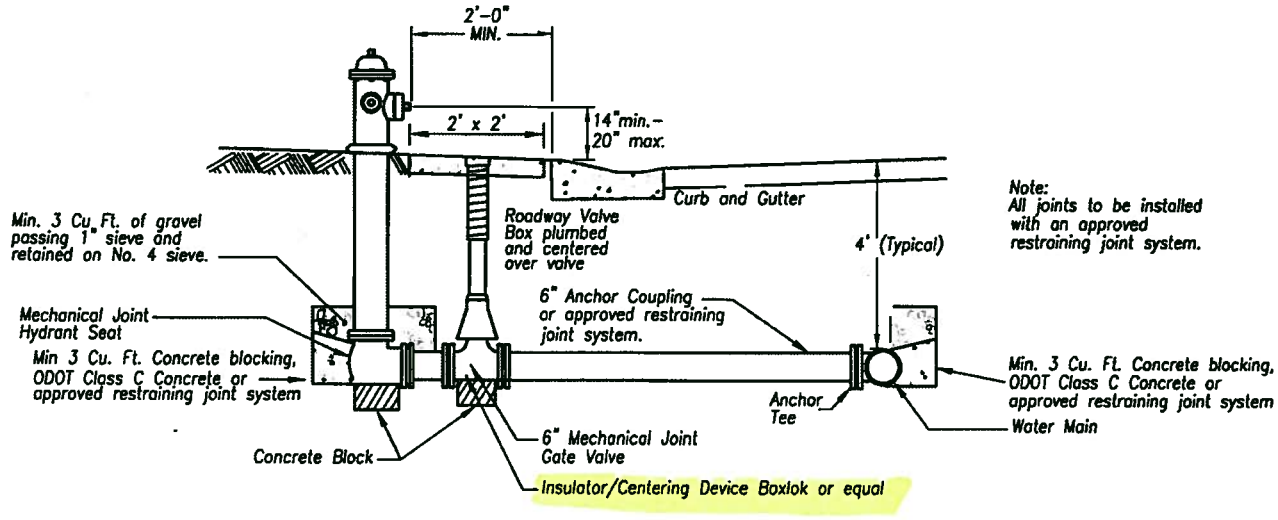
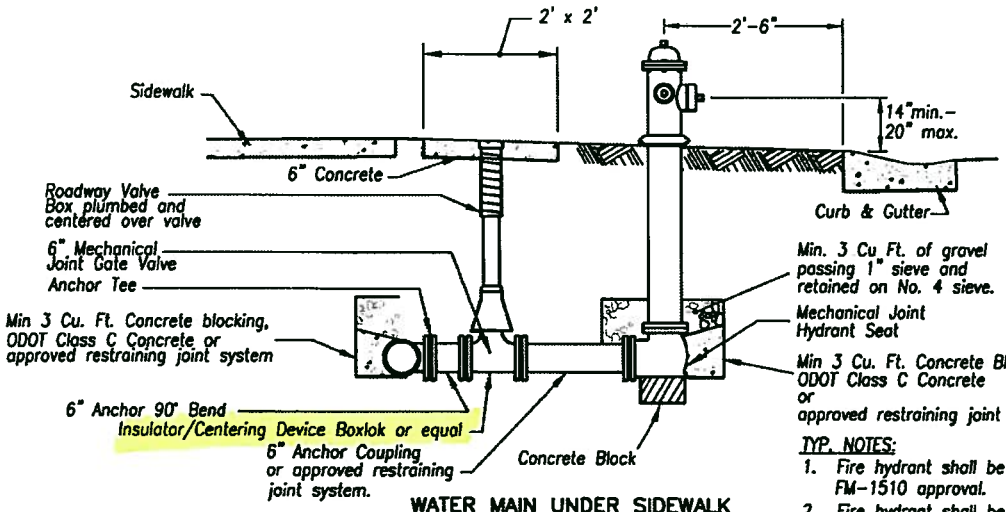


WATER MAIN UNDER STREET PAVEMENT



WATER MAIN UNDER SIDEWALK

TYP. NOTES:

1. Fire hydrant shall be AWWA C502 and FM-1510 approval.
2. Fire hydrant shall be placed on the North or east side of the street.
3. Polyethylene wrap all ductile iron joints and fittings.

FIRE HYDRANT INSTALLATION DETAIL

NTS

WATER DIVISION
CONSTRUCTION STANDARDS*

*Refer to Section 400 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

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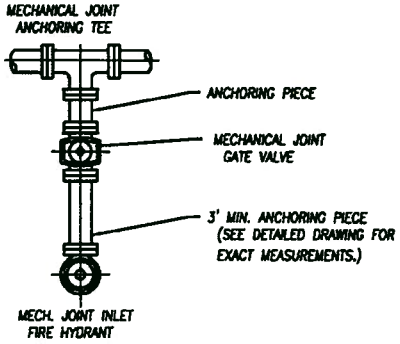
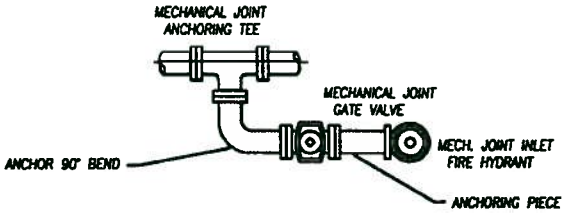
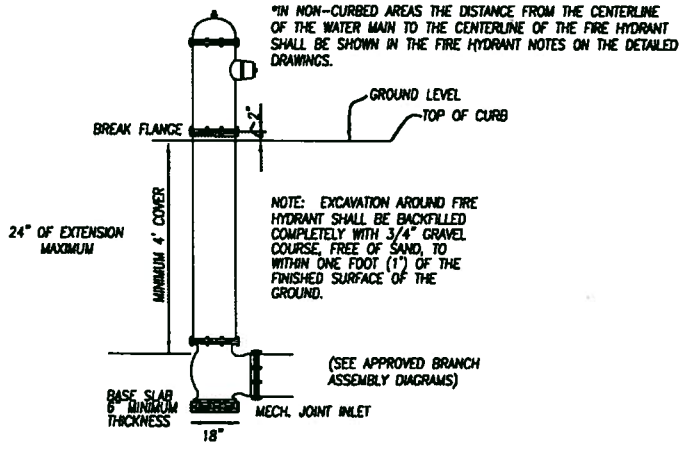


TYPE "A" HYDRANT
NTS



TYPE "B" HYDRANT
NTS



FIRE HYDRANT PROFILE VIEW
NTS

TABLE NO. 1
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
HAMILTON-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, OR APPROVED EQUAL

* ALL MAIN LINE PIPE AND FITTINGS SHALL CONSIST OF CLASS 55 DUCTILE IRON PIPE AND FITTINGS C151 AND C153 WITH POLYETHYLENE WRAP FOR HYDRANT BRANCH, BARREL AND FITTINGS.

WATER DIVISION
CONSTRUCTION STANDARDS*

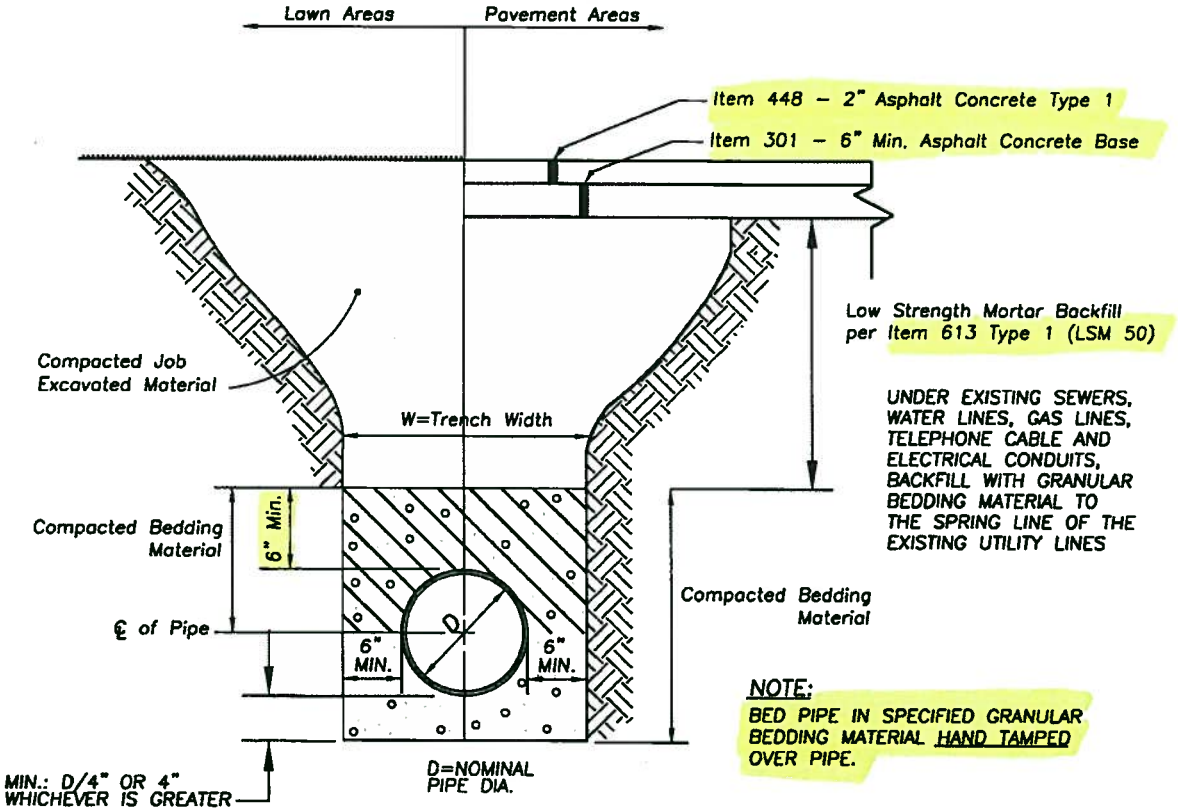
*Refer to Section 400 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 1/23/2013	SCALE: NONE	FILE: WDETAILS.DWG

New Standard - Replace old trench detail

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 of the sewer and at an elevation so that the bottom of the water main is at least 18" above the top of the sewer.



TYPICAL TRENCH DETAIL

NTS

NOTES:

Bedding consisting of 8's, 9's or washed 57's will be used in all water main construction.

Other bedding not listed here are considered non-standard and must be approved in writing prior to use.

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.

Trench to be backfilled with low strength mortar backfill to street subgrade within existing street limits.

WATER DIVISION
CONSTRUCTION STANDARDS*

*Refer to Section 400 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 1/23/2013	SCALE: NONE	FILE: WDETAILS.DWG

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"	.250	.250
10"	10 3/4"	.250	.250
12"	12 3/4"	.250	.250
14"	14"	.250	.250
16"	16"	.250	.281
18"	18"	.250	.312
20" & 22"	20" & 22"	.281	.344
24"	24"	.312	.375

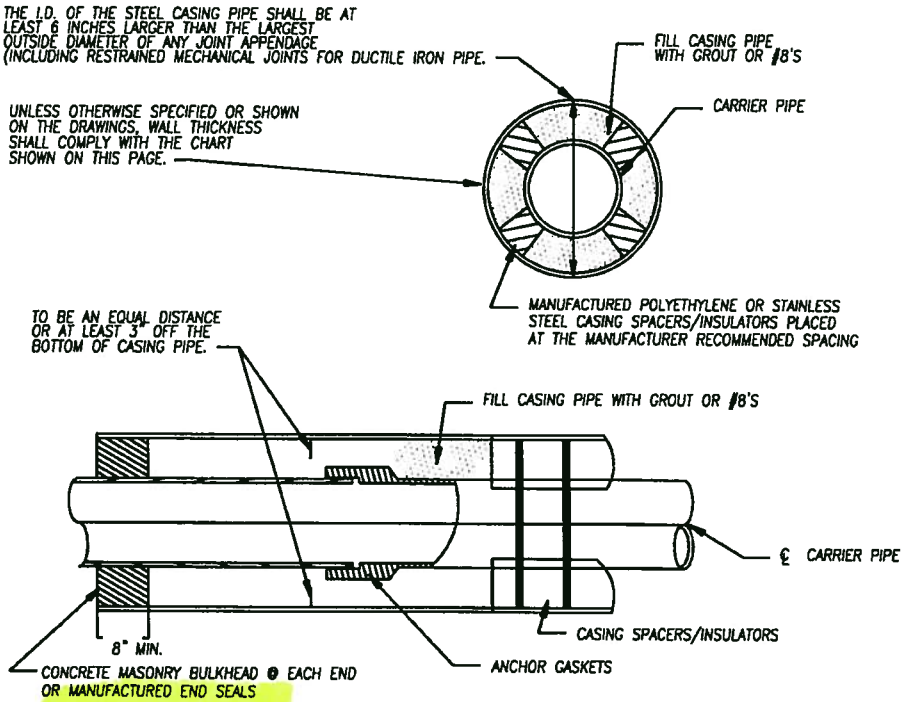
NOTE:

* BASED ON E80 LOADINGS WITH A MINIMUM COVER AT 4'-6".

STEEL CASING PIPE SHALL HAVE A STEEL YIELD STRENGTH OF 35,000 PSI, MEET ASTM A139 GRADE B REQUIREMENTS

NO HYDROTEST REQUIRED

CHART BASED ON RECOMMENDATIONS FROM AMERICAN RAILWAY ENGINEERING ASSOCIATION



CASING PIPE DETAIL

*REQUIRE RESTRAINED JOINTS - FIELD LOK OR EQUAL

WATER DIVISION
CONSTRUCTION STANDARDS*

*Refer to Section 400 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

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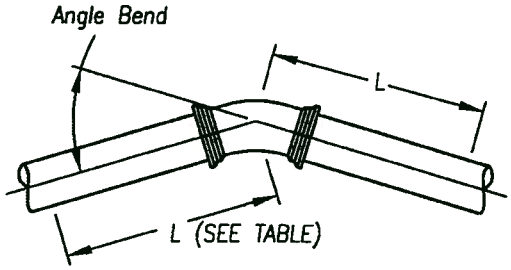

Table For Required Restraint Lengths Based on:
100 psf Soil Unit Weight 0.25 Soil Friction Coefficient
150 psi Water Pressure 1.25 Factor of Safety

Diameter of Watermain

Angle Bend	6"	8"	10"	12"	14"	16"	LARGER THAN 16"
11-1/4°	*	*	*	*	*	2'	BY DESIGN
22-1/2°	2'	3'	4'	5'	6'	7'	
45°	8'	11'	14'	19'	23'	26'	
TEE, 90°	26'	37'	47'	66'	77'	90'	

* Restraint Required at Fitting Only

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, shall be used.

RESTRAINED JOINT LENGTHS

WATER DIVISION
CONSTRUCTION STANDARDS*

*Refer to Section 400 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

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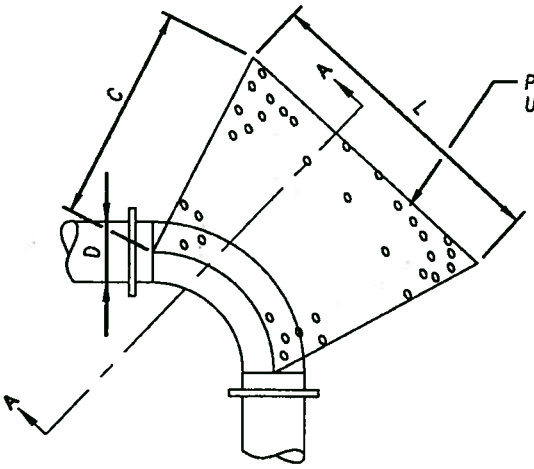
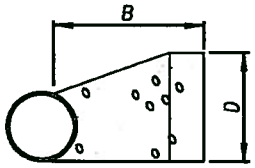


PLAN VIEW



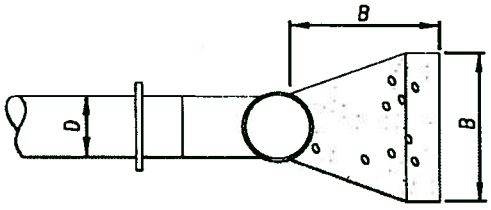
SECTION A–A

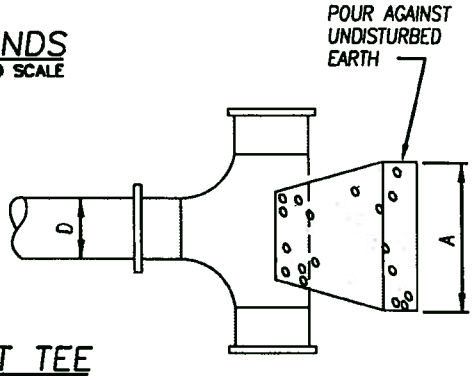
MIN. AREA OF ELBOW BLOCKS (SQ. FT.)

	HORIZONTAL BEND				
DIA. D	11 1/4°	22 1/2°	45°	90°	TEE OR DEAD END
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

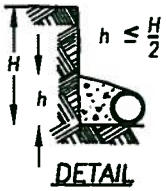
Areas tabulated are for single fittings and bearing pressure of 2000 lb/sf. When more than one fitting is used, the bearing area should be increased proportionately.

THRUST BLOCK AT BENDS
NO SCALE





THRUST BLOCK AT TEE
NO SCALE



DETAIL

1. *Bearing depth shall be determined from bearing area required. Bearing length will be 1.0' 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.*

* *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.*

WATER DIVISION
CONSTRUCTION STANDARDS*

*Refer to Section 400 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 1/23/2013 | SCALE: NONE | FILE: WDETAILS.DWG

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"	.250	.250
10"	10 3/4"	.250	.250
12"	12 3/4"	.250	.250
14"	14"	.250	.250
16"	16"	.250	.281
18"	18"	.250	.312
20" & 22"	20" & 22"	.281	.344
24"	24"	.312	.375

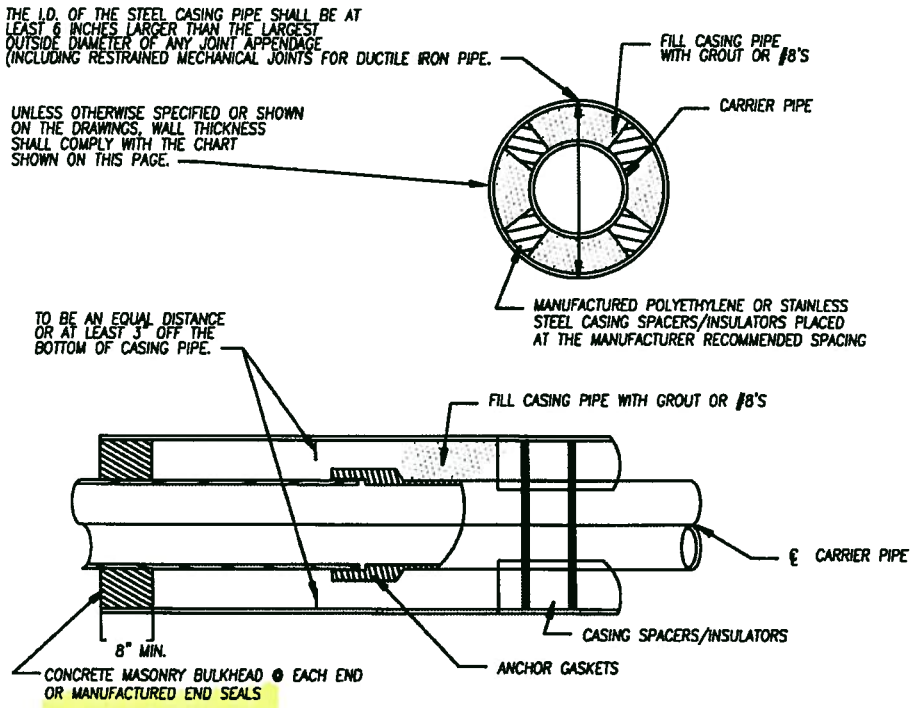
NOTE:

* BASED ON E80 LOADINGS WITH A MINIMUM COVER AT 4'-6".

STEEL CASING PIPE SHALL HAVE A STEEL YIELD STRENGTH OF 35,000 PSI, MEET ASTM A139 GRADE B REQUIREMENTS

NO HYDROTEST REQUIRED

CHART BASED ON RECOMMENDATIONS FROM AMERICAN RAILWAY ENGINEERING ASSOCIATION



CASING PIPE DETAIL

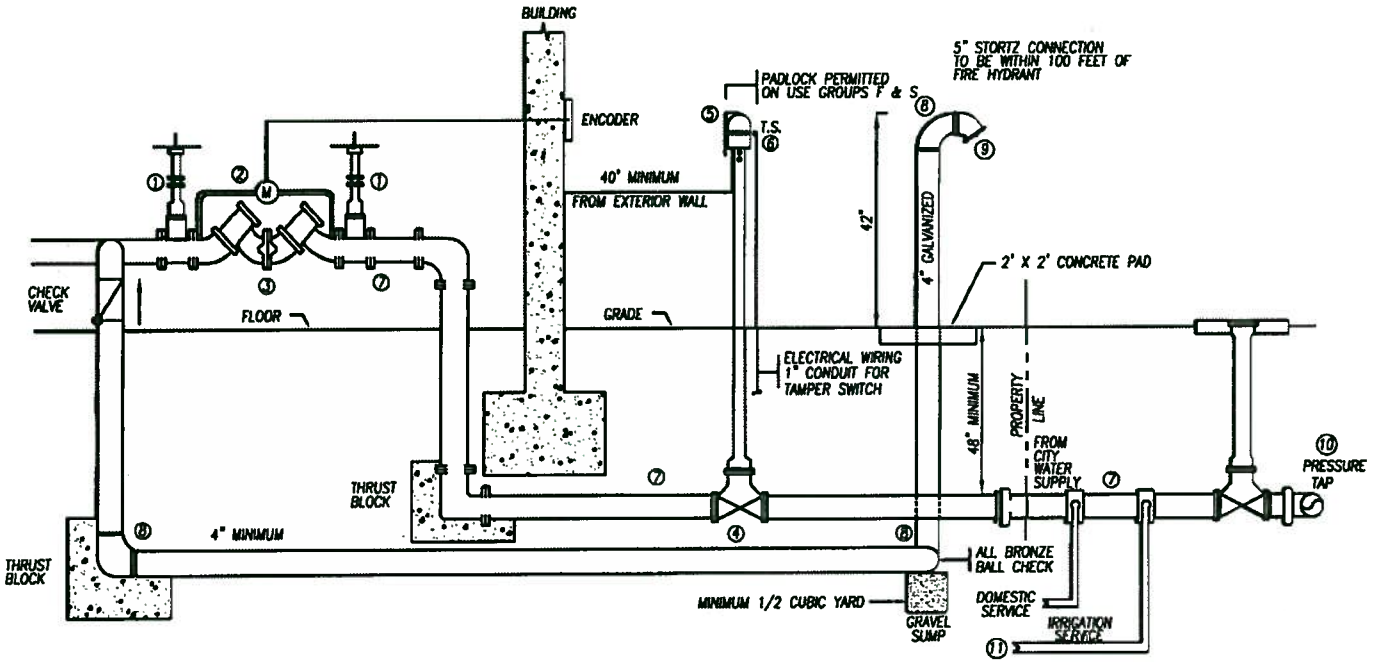
*REQUIRE RESTRAINED JOINTS - FIELD LOK OR EQUAL

WATER DIVISION
CONSTRUCTION STANDARDS*

*Refer to Section 400 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 1/23/2013	SCALE: NONE	FILE: WDETAILS.DWG



FIRE LINE DOUBLE DETECTOR
CHECK INSTALLATION INSIDE BUILDING

-VALVE LEGEND-

1) VALVE, O.S.&Y.
2) 1" BYPASS LINE W/ ENCODER METER AND DOUBLE CHECK BACKFLOW PREVENTER
3) REDUCED PRESSURE DOUBLE DETECTOR CHECK ASSE 1047, AWWA C511-92
4) FLANGED NRS RESILENT WEDGE INDICATOR POST GATE VALVE AWWA C509
5) POST INDICATOR VALVE
6) POTTER TAMPER SWITCH M PCVS-2 2 SETS OF CONTACTS 120V
7) CLASS 55 DUCTILE IRON PIPING AND FITTINGS FROM MAIN TO DETECTOR CHECK
8) 4" GALVANIZED 90 DEGREE ELBOW
9) 4"x5" STORTZ CONNECTION WITH 30 DEGREE TURNDOWN AND BLIND FLANGE
10) PRESSURE TAP TO CITY OF FAIRFIELD SPECIFICATIONS
11) VALVED AND METERED DOMESTIC / IRRIGATION SERVICE WITH CURB BOX
12) POLYETHYLENE WRAP REQUIRED FOR ALL DUCTILE IRON JOINTS AND FITTINGS (BELOW GRADE)
13) BACKFLOW PREVENTERS REQUIRED FOR DOMESTIC AND IRRIGATION LINES

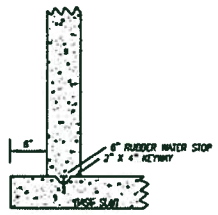
WATER DIVISION
CONSTRUCTION STANDARDS*

*Refer to Section 400 for Complete Specification Details

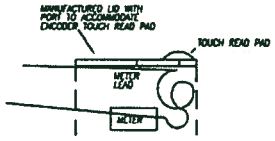
City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 5/17/2013 | SCALE: NONE | FILE: WDETAILS.DWG

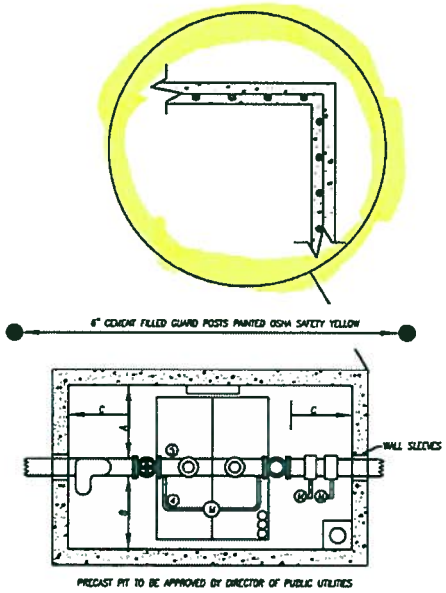
MINIMUM CLEARANCES FOR DETECTOR CHECK INSTALLATION				
METER SIZE	A	B	C	DOOR SIZE
4" X 1"	41-1/2"	41-1/4"	25"	48" X 48"
6" X 1"	45"	45"	28"	48" X 72"
8" X 1"	48-3/4"	49-1/4"	30"	48" X 72"
10" X 1"	54"	50"	34"	48" X 72"
10" X 12" X 1"	58"	50"	36"	48" X 72"
CLEARANCES FOR FIRE PIT METER				
METER SIZE	A	B	C	DOOR SIZE
2"	37"	28"	21"	36" X 36"
3"	38"	29"	23"	36" X 36"
4"	39"	30"	25"	36" X 36"
5"	43"	30"	28"	60" X 60"
6"	34"	36"		60" X 60"



WATER STOP DETAIL

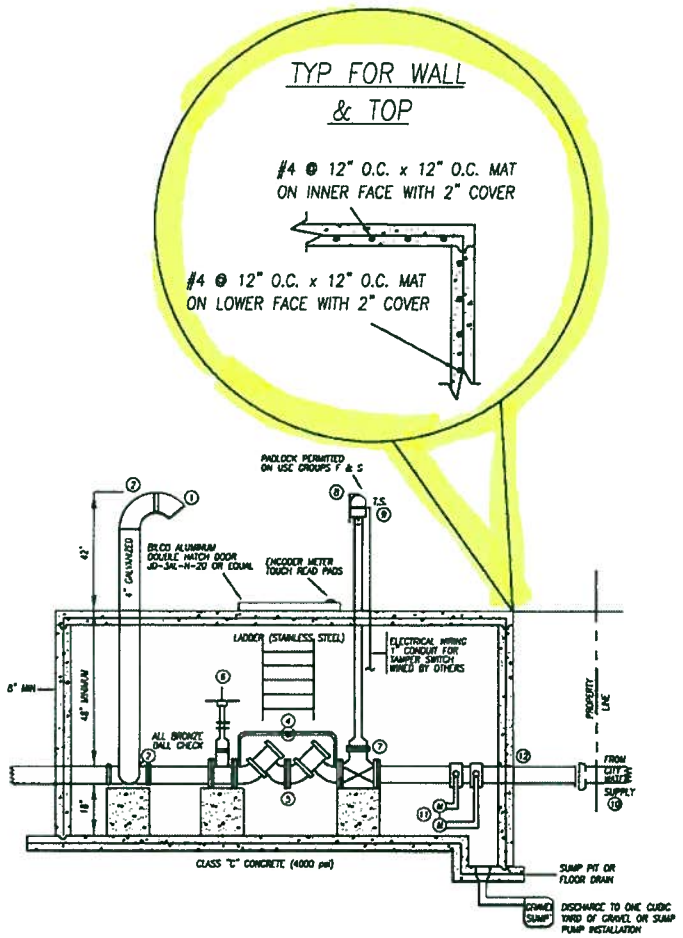


ENCODER METER



-VALVE LEGEND-

1) 4"X5" STORTZ CONNECTION WITH 30 DEGREE TURNDOWN AND BLIND FLANGE
2) 4" GALVANIZED 90 DEGREE ELBOW
3) POST INDICATOR
4) 3/4" BYPASS LINE WITH ENCODER METER AND DOUBLE CHECK BACKFLOW PREVENTER
5) DOUBLE CHECK DETECTOR ASSEMBLY, ASSE 1048 AWWA C510-97
6) VALVE, O.S.&Y.
7) FLANGED RESILIENT WEDGE INDICATOR POST GATE VALVE, AWWA C509
8) INDICATOR POST
9) POTTER TAMPER SWITCH M PCVS-2 TWO SETS OF CONTACTS 120V
10) PRESSURE TAP TO CITY OF FAIRFIELD SPECIFICATIONS
11) VALVED AND METERED DOMESTIC / IRRIGATION SERVICES
12) CLASS 55 DUCTILE IRON PIPE AND FITTINGS, AWWA C151 AND C153
13) DOMESTIC AND IRRIGATION BACKFLOW PREVENTERS ARE ALSO REQUIRED



FIRE LINE WITH DOUBLE CHECK DETECTOR METER PIT INSTALLATION

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.

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 Section 500 are complimentary 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.

"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. Sewage shall be considered available if the property can be connected by gravity flow within a hundred (100) 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 the Butler County Environmental Services Division.

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.

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 Material 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 shall exist between reference sources, the more restrictive requirement shall prevail. The Public Utilities Director shall provide interpretation, as requested.

An approval by the City of Fairfield does not imply, nor assure approval by the Ohio EPA.

Plans are approved as 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 from 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.

As required by the Public Utilities Director, plans shall be submitted to the Ohio EPA for approval. The Developer shall pay the cost of submitting the plans to the Ohio EPA, and for the review by the Ohio EPA. Construction shall not begin until the Ohio EPA approves such plans, or unless the Public Utilities Director issues a conditional release.

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***
- **BCDES** - ***Butler County Dept. of Environmental Services***
- **BOD** - ***Biochemical Oxygen Demand***
- **CCTV** - ***Closed Circuit Television***
- **CRF** - ***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***

Prohibited Discharges

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

- Not be susceptible to treatment or interfere with the process or efficiency of the treatment system.
- Constitute a hazard to human or animal life, or to the stream or water course receiving the treatment plant effluent.
- Violate pretreatment standards.
- Causes 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).

Approval

502.00 **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.

503.00 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 right of way within City limits will require a permit from Public Works. Permits can be found at http://fairfield-city.org/publicworks/rightofway.cfm.

504.00 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.

505.00 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.

506.00 **Construction Requirements and Materials Specifications.**
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
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
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

506.01 Peak Flows. Sanitary sewers shall be designed on a peak flow basis using a peak factor of four (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:

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

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.

DESIGN OF SEWERS

507.00 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.

507.01 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.

507.02 Minimum Size. All public sanitary sewers conveying raw sewage shall be a minimum of eight (8) inches in diameter. Sanitary sewer laterals shall be a minimum of six (6) inches of diameter, and run to within five (5) feet of the building, and tied directly into the building sanitary sewer.

507.03 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 thirty-six (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.

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

507.05 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

**Greater than 30 feet of depth shall require the approval of the Director of Public Utilities.*

This sewer maintenance easement shall be no less than twenty (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.

507.06 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, bases on Manning's formula using an "n" value of 0.013.When velocities greater than twelve (12) feet per second are expected, provisions should be made to protect against displacement by erosion and impact.

507.07 Minimum Allowable Slope. The following are recommended minimum slopes, which should be provided for sewers eighteen (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 two (2) feet per second when the sewer pipe flows at ¼ of full depth. Sewers of eighteen (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 whenever possible.

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	

507.08 Minimum Flow Depths. Slopes, which are slightly less than the recommended minimum slopes, may be permitted only by the review of the City of Fairfield,

Director of Public Utilities, or his/her designee. Such decreased slopes may be considered where the depth of flow will be 0.3 of the diameter, or greater for design average flow.

507.09 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.

507.10 Slope Between Manholes. Sewers shall be laid with uniform slope between manholes. The minimum design slope for an eight (8) inch sewer main shall be 0.50%.

507.11 Steep Slope Protection. Sewers of a 15% slope or greater shall be anchored with concrete anchors spaced as follows:

1. Grades from 15% to 35% shall be anchored on 36 feet center to center.
2. Grades from 36% to 50% shall be anchored on 24 feet center to center.
3. Grades from 51% and over shall be anchored on 16 feet center to center.

507.12 Alignment. In general, sewers 24 inches or less shall be laid with straight alignment between manholes. Straight alignment shall be checked by either using a laser beam, or by lamping. A laser beam system shall conform to OSHA requirements, and have an early warning system. See section 515.00 Laser System.

Curvilinear alignment of sewers larger than 24 inches may be considered on a case by case basis provided compression joints are specified and ASTM or specific pipe manufacturers' maximum allowable pipe joint deflection limits are not exceeded. Curvilinear sewers shall be limited to simple curves, which start and end at manholes. When curvilinear sewers are proposed, the recommended minimum slopes must be increased accordingly to provide a minimum velocity of 2.0 feet per second when flowing.

507.13 Changes in Pipe Size. The invert of the larger sewer should be lowered sufficiently to maintain the same energy gradient. An approximate method to accomplish this is to place the 0.8 depth point of both sewers at the same elevation. When larger sewer discharges into a smaller one, the invert of the smaller sewer should not be raised to maintain the same energy gradient.

Sewer extensions should be designed for projected flows even when the diameter of the receiving sewer is less than the diameter of the proposed extension at a manhole constructed with consideration of an appropriate flow channel to minimize turbulence when there is a change on sewer size.

507.14 Connections. Roof drains, and foundation drains, as well as all other clean water connections to the sanitary sewer system are prohibited. The following shall appear on sanitary sewer plans submitted for review: "*No Buildings Shall Be Connected To A Lateral Until The Building Is Under Roof.*"

507.15 Protection 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.

507.16 Parallel Installation. Sanitary sewers and manholes shall be laid a minimum of ten (10) feet horizontally from any existing or proposed water main. When local conditions prevent a separation of ten (10) feet, a sewer line may be laid closer than ten (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 eighteen (18) inches below the invert of the water main. When it is impossible to obtain proper separation, the sewer shall be mechanical joint material, or seamless high density pipe (HDP) and both services shall be pressure tested to assure water tightness.

507.17 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 eighteen (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 mechanical -joint pipe 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 should be centered over the sewer so that both joints will be as far from the sewer as possible.

LATERALS

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

508.01 Lateral Slope. The slope of the six (6) inch pipe shall be not less than one quarter (1/4) inch (2 %) per lineal foot, while maintaining a minimum vertical separation of thirty six (36) inches. **A minimum vertical separation of thirty-six (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 standard drawing for sanitary laterals.**~~ **See City of Fairfield Sanitary Sewer standard drawing for sanitary laterals.**

508.02 Location. No sewer lateral shall be laid parallel to within five (5) feet of any bearing wall, which might thereby be structurally weakened. A two-inch (2") high "S" shall be stamped on the curb face at all sewer lateral locations. ~~**See standard construction drawings water and sewer location designation.**~~ **See City of Fairfield Sanitary Sewer standard drawing for sewer location designation.**

508.03 Depth. The minimum sewer lateral cover depth shall be thirty-six (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 thirty-six inches (36) shall be required as measured from the crown of the public sanitary main and the lowest floor elevation served by gravity sewers.**

508.04 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 forty-five (45°) degrees permitted. The maximum connection angle shall be no greater than sixty (60°) degrees into the public main.

508.05 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 the standard pipe-fitting or manufacturer's recommended adapter designed to join the type of pipes together. The connection from the four (4) inch pipe to the six (6) inch lateral shall be made by use of a commercial fitting only and within five (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. ~~**No boring of the tap shall be permitted.**~~ Boring of the tap may, at the discretion of the Public Utilities Director, be completed. For Truss pipe tapping connections, a "Fernco" type coupling with wide stainless shear bands shall be used in addition to slip-lock clamps 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 under ground shall be covered or the trenches filled until after the sewer has 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.

508.06 Clean Outs. Clean outs to grade shall use a four (4) inch minimum diameter riser tapped with a four (4) inch metallic cleanout plug. The metallic clean out cap/plug shall be locatable with a metal detector. The cap/plug shall not have a protruding operating nut, but rather a recessed operating nut. Clean outs are required at every one hundred (100) feet or fraction thereof along all straight lines of pipe ~~intervals of straight pipe~~ and at the discretion of the Public Utilities Director or his/her designee, at changes of direction of forty-five (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 constructed of plastic material in traffic areas shall be un-acceptable. ~~**See standard drawing for typical sanitary clean-out.**~~ **See City of Fairfield Sanitary Sewer standard drawing for typical sanitary clean out.**

508.07 Bedding. All sanitary sewer laterals shall be embedded in ~~pea gravel, or comply with ODOT 603.04 Class B bedding.~~ #8's, #9's or #57's gravel. The granular bedding shall extend to twelve (12) inches above the top of the lateral. The over-dig area can utilize one inch (1") gravel to aid placement of the bedding. Bedding shall have bell holes for joint shape and locations.

508.08 Backfill. Flowable controlled density fill shall be per ODOT 613 under roadway and curb. Granular backfill item 304 may be used under private driveways. ~~**See standard construction drawing # 97004.**~~ **See City of Fairfield Sanitary Sewer standard drawing for trench details.**

508.09 Sewer Stubs. All sewer lateral stubs shall be capped with a watertight plug. Plug location shall be marked with a 2x4 stake, 12 feet long, with one end buried at depth of the plug invert and extending at least three (3) feet vertically out of ground. The portion of the stake above the ground shall be **painted green** and marked with the word "SEWER" and indicates 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 standard drawing for curb stamp location and dimensions.**~~ **See City of Fairfield Sanitary Sewer standard drawing for curb stamp locations and dimensions.**

508.10 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 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 on DVD or MPEG format 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.

The Inversion Process must conform with ASTM F 1216.

1. The Contractor must have a valid City of Fairfield Sewer Tapper License. The Contractor must be a certified CIPP installer with proof of certification.
2. The Contractor will 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.

3. 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. Generally no by-pass pumping is needed.
4. 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 will need to be removed to the extent necessary to effectively line the entire pipe to the main.
5. 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.
6. 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.
7. The resin will not be contaminated and/or diluted prior to installation.
8. The liner tube will 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.
9. Once the curing process is finished, the calibration tube is removed and the lateral sewer collection pipe is immediately inspected for final acceptance. The new lined pipe will be free of any foreign objects providing a smooth, seamless and continuous lined pipe from entry point to main sewer connection pipe.
10. Any liner tube protruding from the lateral sewer collection pipe into the main sewer pipeline will be removed by remote robotic cutting equipment.
11. 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.
12. A final TV Inspection of the lined lateral will be recorded and provided to the owner for final approval. A TV inspection of the main sewer connection pipe will be recorded and provided to the Director of Public Utilities or designee 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.

SEWER MAIN PIPE MATERIALS

509.00 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.

~~The City of Fairfield prefers a "Truss Pipe" design for normal sewer main installations involving pipe sizes from eight (8) inches to (15) inches in diameter. The double- wall system of a Truss pipe offers a high pipe stiffness and beam strength to minimize deflection and ground water infiltration at the pipe joints.~~

A manufacturer's certificate that the ABS or PVC 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.

ABS and PVC 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 twenty-five (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.

509.01 ABS Pipe. ABS composite pipe shall conform to ASTM D 2680 or current standard for pipe sizes of eight (8) inches to fifteen (15) inches in diameter. All pipe spigots shall have a "home" mark to facilitate joint closure.

509.02 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

509.03 Ductile Iron Sewer Pipe. All ductile iron shall conform to ANSI/AWWA C150 ~~and ANSI/AWWA C151~~ /A21.50-08 or current standard. In no case shall the pipe be less than Class ~~53~~ 55(Ductile Iron Wall Thickness). The lining and coating for ductile iron pipe and fittings shall be cement mortar ~~epoxy~~ lined with bituminous seal coat conforming to ANSI/AWWA/C104 A/21 or current standard.

The joints 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. A Polyethylene Encasement conforming to AWWA C105 shall be utilized when ductile iron pipe is installed.

509.04 Deflection of Pipe. The deflection of pipe diameter shall not exceed (5%). 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.

509.05 Joints. ABS or PVC pipe joints can be solvent-welded and conform to ~~ASTM 2680~~, ASTM D2680-01 or current standard or elastomeric gasket joints which shall conform to ASTM D 3212-07 or current standard. Ductile iron joints shall be mechanical, and conform to ANSI/AWWA/C111 A/21 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 and dry.

509.06 Concrete Encasement. In areas requiring concrete encasement, Ductile Iron Class ~~53~~ 55 with poly wrap (refer to 509.03) 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 one fourth (1/4) of the outside diameter of the pipe, or a minimum of six (6) inches, which ever is greater. In addition, four (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 City of Fairfield Sanitary Sewer standard drawings for case piping detail.**

509.07 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.

Manholes

510.00 Manholes. Manholes shall be installed in accordance with the City of Fairfield Sanitary Sewer Standard Construction Drawings. ~~Manholes~~ and shall not be spaced further apart than four hundred (400) feet. Manholes shall conform to ASTM C478-12a or current standard for precast reinforced concrete manhole sections. In traffic load bearing conditions, ~~M~~manholes shall conform to AASHTO M199 or current standard ~~for traffic load bearing conditions~~. 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. ~~The joint between manhole sections shall be o-ring, or equal as approved by the Director of Public Utilities.~~ Manhole joints shall be sealed with flexible watertight rubber gaskets conforming to ASTM C900, C443 or current standard. Prior to backfilling, 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 insure 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 may be permitted provided there is not a substantial difference in inside diameters~~, a smooth uniform flow line is maintained,~~ and a watertight rubber sleeve or mechanical coupler conforming to ASTM C-425-04 or current standard, (*Flexible Compression Joints*) is used to

make the transition. All metal hardware shall be stainless steel. The transition sleeves shall be manufactured by Fernco, or approved equal.

510.01 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 Neenah R 1767 or approved equal and have 'SEWER" factory cast into the lid. Vented lids shall have a maximum of four (4), 1-inch ventilation holes and be utilized in all unpaved areas. 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 Neenah R 1916-F or approved equal. Vented Manhole covers shall be permitted only if the manhole, and sanitary system has high- pressure fluctuations and requires pipe venting. Steps inside the manhole shall be either cast iron, polypropylene encapsulated steel, or aluminum spaced a minimum ~~maximum~~ of twelve (12) and a maximum of sixteen (16) inches apart. The standard base shall be precast by the manufacturer.

510.02 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 in the top cone at the required elevation, rather than ~~use~~ using pre-cast grade rings.~~brick to raise the casting.~~ In areas where the manholes are located in streets, the casting and cover shall be installed at the same grade as the street ~~by use of an solid ring or other approved method.~~ with use of pre-cast grade rings. Pre-cast grade rings may be utilized to adjust grade levels at a minimum of two (2) inches, and a maximum of sixteen (16) inches. No more than three pre-cast grade rings may be utilized for grade adjustment.

The minimum diameter of the manhole shall be forty-eight (48) inches and shall conform to the requirements of ASTM C478-12a or current standard. A minimum access opening of twenty-two (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 two (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 eight (8) inches, and be capable of expanding two (2) inches, or alternate as approved by the Director of Public Utilities, or his/her designee.

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.

510.03 **Drop inlets** shall be avoided whenever possible. However, where they are required, a drop pipe shall be provided for a sewer entering a manhole at an elevation of twenty- four (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 will need 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 twenty-four (24) inches, the invert should be filleted to prevent solids deposition.
See City of Fairfield Sanitary Sewer standard drawings for manholes and typical drop connection.

510.04 **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 (1) inch per foot.

511.00 **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 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.

511.01 Manhole Inspection. Sanitary Sewer manholes will be inspected in the field for visual damage and water tightness. All manholes shall be ~~air~~ vacuum tested by the contractor prior to acceptance using testing procedures described in ~~ASTM C-1244-05 or ASTM C-828 or current standard, as necessary~~. 515.02. The vacuum test method shall demonstrate the integrity of the installed materials. This preliminary test shall be preformed prior to backfill. ~~**See section 515.01 for testing requirements for acceptance.**~~

512.00 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. If necessary, the Contractor shall call the Ohio Utilities Protection Service (1-800-362-2764 or 8-1-1) 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.

Separation of Water Mains and Sewers. **See section 405.00 water utilities**

513.00 Trenching and Excavation. No trenching or laying of pipe, or 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. If in rock, the bottom of the trench base shall be undercut six (6) inches, and then back filled with ~~pea~~ #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 thirty- six (36) inches. The open trench ahead of pipe-laying shall be kept to a minimum, and shall not be in excess of twenty-five (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 ~~governing state laws,~~ 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 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 way from the trench edge. The project inspector ~~shall waste~~ 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 the grade shall be backfilled at the Contractors expense with controlled fill.

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 407.01**

Tunneling. **See Section 407.02**

Protection of the Public. **See Section 407.03**

514.00 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 form dirt, excess mortar and other foreign material as the 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.

Concrete Encasement. **See section 509.06**

515.00 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 one hundred feet (100') 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 an Engineer on the ground to set grade of each pipe joint by means of an engineers level.

515.01 Testing Requirements. The contractor ~~at his option may air~~ will vacuum test the manhole and air test the sanitary system before backfilling to ~~aid the contractor in checking~~ check for any defects. ~~The testing for acceptance and compliance shall be performed after backfilling has been completed.~~ Testing for acceptance and compliance will be performed at this time. If the line does not meet or exceed the test requirements, the Contractor shall make repairs to the line as necessary, and shall retest the sanitary system. The ~~air~~ vacuum test is usually conducted between two consecutive manholes. All manholes shall be tested separately.

Air Testing Requirements. **See section 519.**

515.02 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.

At least twenty-five percent (25%) of the total sanitary sewer manholes and other structures on each project shall be vacuum tested as specified herein. 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. If more than ten percent (10%) of the manholes tested fail the initial test, an additional twenty-five percent (25%) of the total manholes shall be tested. This process shall continue until a series of manhole (25% of the total) successfully tests with no more than 10% initial failures or until all manholes have been tested.

The plans may require vacuum testing for specific manholes in areas especially susceptible to infiltration. The manholes selected for testing by the Inspector shall be in addition to the manholes indicated on the plans (i.e. the manholes indicated on the plans will not count toward the required 25%).

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

1. Lift holes, if any, shall be plugged with an approved, non-shrinkable grout prior to testing.
2. Drop connections shall be installed prior to testing.
3. The vacuum test shall include testing of the seal between the cast iron frame and the concrete cone, slab or grade rings.
4. Manhole vacuum testing shall be performed prior to backfilling.
5. 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.
6. 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:

1. 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.
2. The test head shall be placed inside the rim of the cast iron fr4ame at the top of the manhole and inflated, in accordance with the manufacture's recommendations.
3. A vacuum of at least ten 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.
4. The pressure gauge shall be liquid filled, having a 3.5 inch diameter face with a reading from zero to thirty inches of mercury.
5. 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.

6. 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 has cured according to the manufacture's recommendations the vacuum test shall be repeated. This process shall continue until a satisfactory test is obtained.
7. All temporary plugs and braces shall be removed after each test.

~~**See section 511.01 for manhole testing.**~~
See section 519.00 Testing Requirements for Gravity Sewers and Pipes.
See Section 519.01Testing Requirements for Low Pressure Force Mains.
An Occupancy Permit shall not be issued until the sanitary sewers are tested and accepted by the City of Fairfield. See section 520.00 for building permits and occupancy.

516.00 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 ~~of Environmental Services (BCDES)~~ 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.

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 twenty-four (24") 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 five hundred (500) 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 the twenty-five (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 not less than every 90 days. Permits for the hauling and disposal of this material must be secured from the Butler County Health Department.

516.01 FOG Capacity Sizing Procedure for Restaurants based on the UPC Code. This procedure is not based on any determining flow rates. Specify the standard

Interceptor size (liquid capacity)=Number of meals per peak hour [1] x Waste flow rate[2] x Retention time[3] x Storage factor[4]	
1. Meals Served at Peak Hour	
2. Waste Flow Rate	
a. With dishwashing machine	6-gallon flow
b. Without dishwashing machine	5-gallon flow
c. Single-service kitchen	2-gallon flow
d. Food-waste disposer	1-gallon flow
3. Retention Times	
a. Commercial kitchen waste- Dishwasher	2.5 hours
b. Single-service kitchen- Single serving	1.5 hours
4. Storage Factors	
a. Fully equipped commercial kitchen	
8-hour operation: 1	
16-hour operation: 2	
24-hour operation: 3	
b. Single- service kitchen: 1.5	

size with a capacity greater than or equal to the calculated size.

516.02 FOG Capacity Sizing Procedure for Establishments based on Maximum Flow Rate. This method is based on the probability that no more than two fixtures discharge at the exact same time. Use the table below to determine the flow rates.

Note: Floor drains in the kitchen areas where FOG may spill on the floor shall be routed to the grease interceptor but shall not be connected in the design calculations for maximum flow, because grease concentrations are likely to be a lot lower than from fixtures.

S=GL x 225 **S= Interceptor size in gallons GL= Flow rate of fixtures in dishwasher**

1. Determine the largest fixture and the dishwater size discharging into the interceptor. Do not use floor drains in this equation.
2. Add the dishwasher and the single largest flow rates together. If there is no dishwasher, add the two largest fixture flow rates together. This is the maximum probable flow rate into the interceptor.
3. Multiply the flow rate by 225 to calculate the minimum grease retention in gallons. This figure of 225 has a proven history of success.

4. Specify the standard size with a capacity greater than, or equal to the calculated size.

Drainage Fixture Size in Inches equivalent	=	Peak gallons per minute
1- 1.5		2.25
2		3.0
2.5		3.5
3		4.5
4		6.0

Note: the drainage fixture flow rate is from the UPC and the dishwasher flow rates are from the EPA.

Dishwasher	
Up to 30-gallon water capacity	1.5
Up to 50-gallon capacity	2.5
Up to 100-gallon capacity	4.0

517.00 Closed Circuit Television (CCTV). All new sanitary sewer extensions shall be CCTV camera inspected by the City of Fairfield Wastewater Division prior to acceptance. The sanitary laterals shall 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.

518.00 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 three (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.

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.

518.01 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 for each set of plans.

518.02 *The Complete system design shall include*:

1. Numbers of properties served by each force main and force main branch.
2. Type of occupancy and anticipated flow rate for each property.
3. Development sequence and timetable.
4. Design flows (average, daily peak, instantaneous peak etc.).
5. Grinder pump system manufacturer and model number(s). Include catalog cut sheets, pump curve(s), and a description of system features.
6. 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.
7. Table indicating the following information for each branch-zone to include:
   a). Branch number.
   b). Number of pumps connected directly to the branch.
   c). Accumulated total number of pumps connected directly or indirectly.
   d). Maximum daily flow in branch.
   e). Pipe size.
   f). Maximum daily velocity in branch.
   g). Length of branch.

h). Friction loss in branch per Hazen Williams with C 120.
i). Accumulated friction loss.
j). Maximum force main elevation (between branch and discharge).
k). Maximum pump elevation (connected directly to branch).
l). Maximum elevation difference.
m). Maximum total dynamic head (for pump connected directly to branch).

518.03 ***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**

518.04 ***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:

1. The maximum number of contiguous (or nearly contiguous) homes allowed with private grinder pumps shall be eighty (80) homes. Public wastewater lift stations will be considered for larger developments.
2. 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.
3. No public force main branches shorter than three hundred feet (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.

4. 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.
5. 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.
6. **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 other approved material. 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.
7. **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 other approved material. Piping 3" nominal diameter and larger shall be Ductile Iron Class 53. Joints shall be rated for at least 200 psi.
8. 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.
9. 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.
10. 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 brass 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 five feet (5') from the public force main. Curb stops shall be least two inches (2") lower than the connection of the service lateral to the public force main. All curb stops shall be made of brass, and all curb-stop-boxes shall be made of cast iron. The top of each curb stop box shall be set in a concrete slab 18"x18"x6" thick (or 18" circular x6" thick) with the top of the slab and box flush with the top of the ground.
11. 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.
12. All public force mains shall be at least 2" nominal diameter. Force mains 3" nominal diameter and larger shall be Ductile Iron Class 53. Force mains

smaller than 3" nominal diameter shall be SDR 21 PVC (200)psi with gasketed joints. Other materials may be allowed for force mains smaller than 3" if they are demonstrated to be more reliable and suitable for this application and are approved by the City of Fairfield. Detectable magnetic marking tape shall be installed in the ditch line for non-metallic public force mains both one foot (1') below the final surface grade and one foot (1') above the force main.

13. Private force mains shall be installed with a minimum of four feet (4') ground cover. Common/public force mains shall be installed with a minimum of six feet (6') and a maximum of twelve feet (12') ground cover. A minimum of ten feet (10') horizontal clearance (for parallel installations) and eighteen inches (18") vertical clearance (at crossings) shall be maintained between all force mains/services laterals and water mains/services.
14. 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 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 plumber should also evaluate the need for air release valve(s) at high points on private force mains and service laterals.
15. Flushing installations 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 one thousand feet (1000'). The Engineer and plumber should also evaluate the need for flushing attachments on private force mains and laterals.
16. 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 ten feet (10') 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 twelve feet (12') of this manhole.
17. A hydrostatic pressure test at 150 psig 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 two 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, 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).

18. 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 psig) with the maximum number of grinder pumps operating simultaneously daily (see article five). Grinder pump motor shall have built-in automatic reset overload protection. Grinder pumps shall be designated for the specific purpose of grinding and 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.
19. Detectable marking tape shall meet the following requirements:
    - 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.
    - Minimum width of 3 inches (3").
    - Color coded green to signify Sewer or associated line.
    - Tensile strength of 35 lbs./in. (15,000 psi).
    - Elongation of 80%.
    - Adhesives with value of Morton 548 or higher.
    - Bottom layer with the value of virgin PE.
    - Top layer with the value of virgin PET.
    - Printability value of 45 dynes.

20. 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.
21. 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.

22. 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.

518.05 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 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. At least annual maintenance of each grinder pump system shall be performed by a licensed 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 Utility Department. 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.

518.06 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.

1. 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.
2. 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.
3. 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.
4. 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.

5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. The property owner shall be responsible for operation, maintenance, and future replacement of the private grinder pump system.
12. 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.
13. The Engineer and plumber should evaluate the need for air release valve(s) and/or flushing attachments on private force mains and service laterals.
14. A hydrostatic pressure test of each private force main/service lateral shall be performed in accordance with the City of Fairfield requirements.
15. The following requirements apply to installations connected to a common force main:

a) 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.

b) 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.

c) An anti-siphon valve and check valve shall be integral with the grinder pump.

d) Level sensing control for the grinder pump systems shall be of a non-fouling type with no moving parts in contact with sewage.

e) 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.

f) Grinder pump systems shall be GP2000 series 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 City of Fairfield Sanitary Sewer standard drawing for typical low flow grinder pump installation.**

518.07 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.

1. 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.
2. The property owner shall be responsible for operation, maintenance, and future replacement of the grinder pump system. At least annual maintenance of each grinder pump system shall be preformed 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 Utility 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.
3. For installations connected to a common force main:
   a) 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.

b) 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.

c) 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.

519.00 Testing Requirements of Gravity Sewers ~~and Manholes.~~ ~~The intent of these specifications is to insure a sanitary system with a minimum amount of infiltration. To that end, all sewer pipes and manholes shall be inspected for leakage.~~

~~Sewer pipe joints shall be tight and all visible leakage shall be repaired in a manner approved by the City of Fairfield.~~

~~Sanitary sewer lines shall be tested after backfill using a low pressure air test in accordance with ASTM C828-76T. All sewer lines and manholes shall also be tested for final acceptance using either the infiltration or exfiltration method as directed by, and in the presence of the City of Fairfield's Construction Inspector. The leakage outward or inward (exfiltration and infiltration) shall not exceed 100 gallons per inch of pipe diameter per mile per day (24 hours) for any section of the system. An exfiltration or infiltration test shall be performed with the minimum positive head of two (2') feet. All sanitary sewer mains and manholes shall be air tested by the Contractor. The test procedure may be used as a presumptive test which enables the installer to determine the acceptability of the line prior to backfill and subsequent construction activities.~~

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.

Low Pressure Air Test:

Prior to backfilling, 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 F 1417-11a, or current standard, for plastic pipe, except as specified by the Director of Public Utilities, or his/her designee, herein. All pip outlet 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 – 48seconds
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

Infiltration Test:

The Contractor may elect to use an infiltration test when the level of the current prevailing groundwater is two (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 infiltration and may be required to relay sections with such conditions that cannot be corrected, even though infiltration is within allowable limits.

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 24hours 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.

519.01 Testing Requirements of ~~Low Pressure~~ Force Mains. A hydrostatic pressure test at 150 psig for at least two (2) hours shall be performed where joints are exposed and not less than eight (8) hours where joints are covered. 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 five (5) psi of leakage is greater than allowable is 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).

520.00 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.

521.00 As-Builts. ~~At the completion of construction, the developer shall supply the City of Fairfield with one (1) set of Mylar plans (or other reproducible format) to indicate any and all deviations from the original plans~~. 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 posy-construction survey made at the developer's expense.

"As Built" plans shall be provided on reproducible sheets measuring twenty-four (24) inches by thirty-six (36) inches and sealed and signed by the engineer to certify that the "As Builts" are per field conditions and along with an AutoCAD (.dwg or .dxf) on CD or DVD.

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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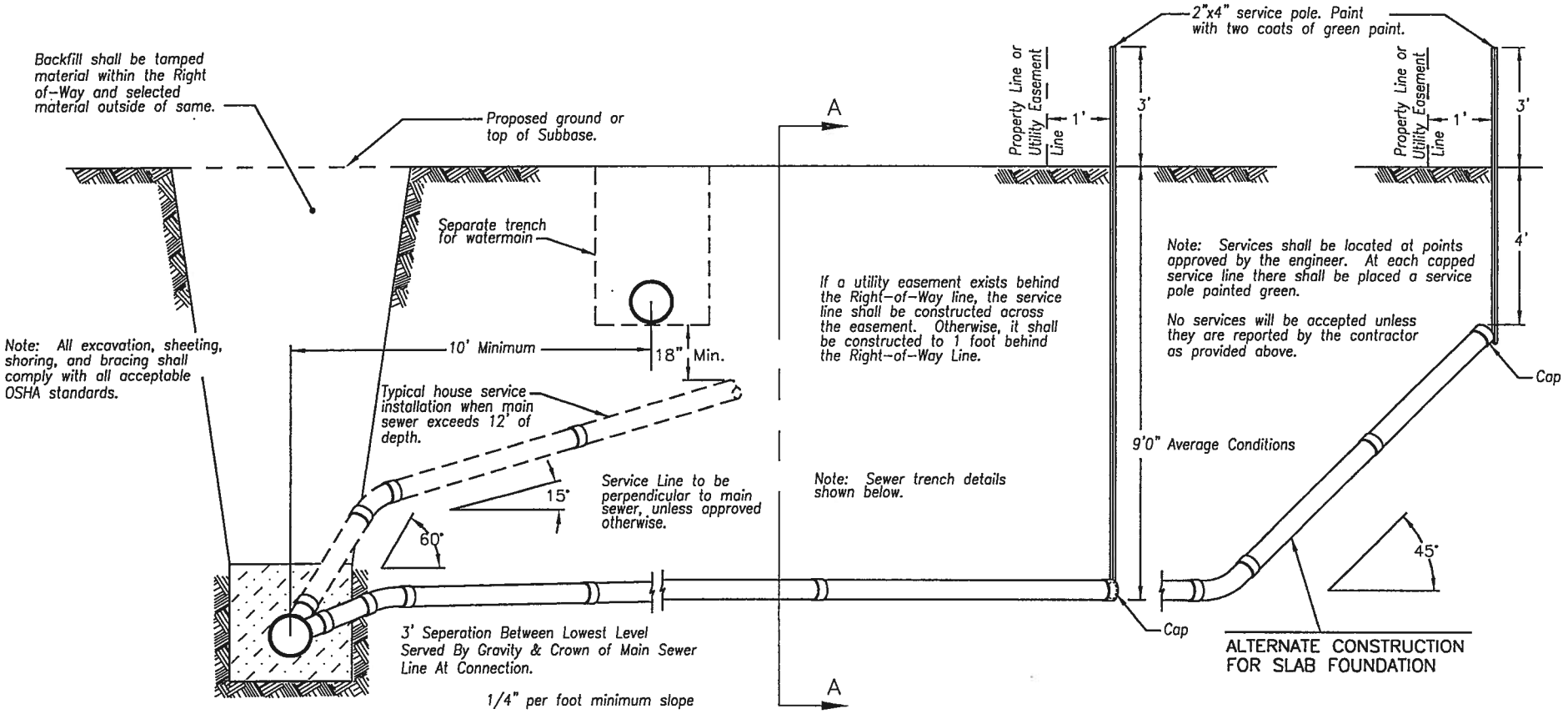

SERVICE LINE DETAILS*

*Minimum lateral depth of cover will be 36". Written permission will be required for coverage less than 36".

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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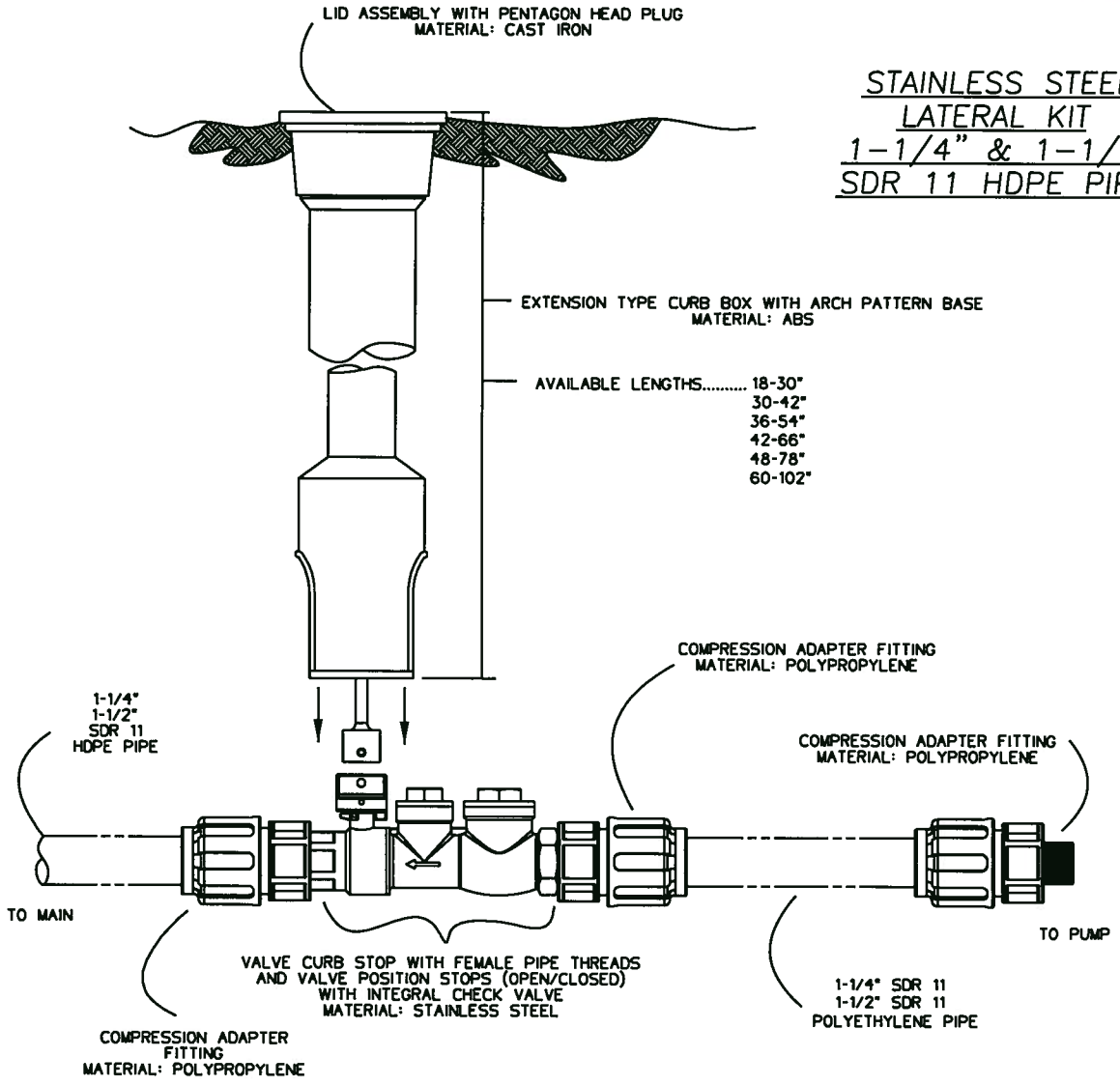
New Drawing

STAINLESS STEEL LATERAL KIT 1-1/4" & 1-1/2" SDR 11 HDPE PIPE



NOTES:

1. SS CURB STOP/CHECK VALVE AND FITTINGS ARE PROVIDED SEPARATELY
2. TO ASSEMBLE, APPLY A DOUBLE LAYER OF TEFLON TAPE, A LAYER OF PIPE DOPE TO THE THREADS ON THE PLASTIC FITTINGS AND INSTALL PER THE MANUFACTURER'S INSTRUCTIONS
3. ASSEMBLY IS TO BE PRESSURE TESTED
4. ASSEMBLY IS TO BE USED WITH SDR11 HDPE PIPE
5. TO ORDER SS LATERAL KIT

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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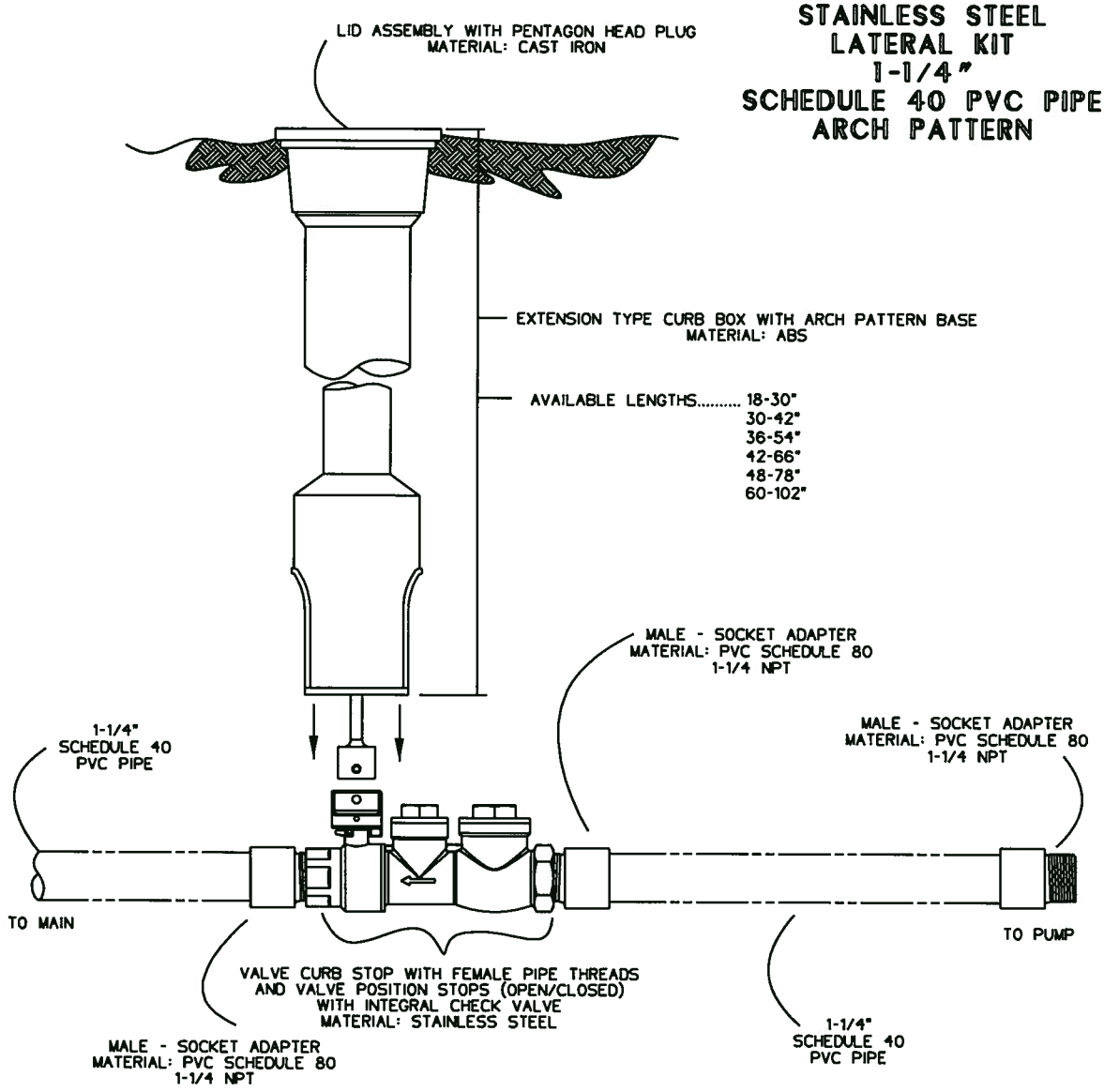
New Drawing

STAINLESS STEEL LATERAL KIT 1-1/4" SCHEDULE 40 PVC PIPE ARCH PATTERN



NOTES:

1. SS CURB STOP/CHECK VALVE AND FITTINGS ARE PROVIDED SEPARATELY
2. 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
3. ASSEMBLY IS TO BE PRESSURE TESTED
4. ASSEMBLY IS TO BE USED WITH SDR11 HDPE PIPE
5. TO ORDER SS LATERAL KIT

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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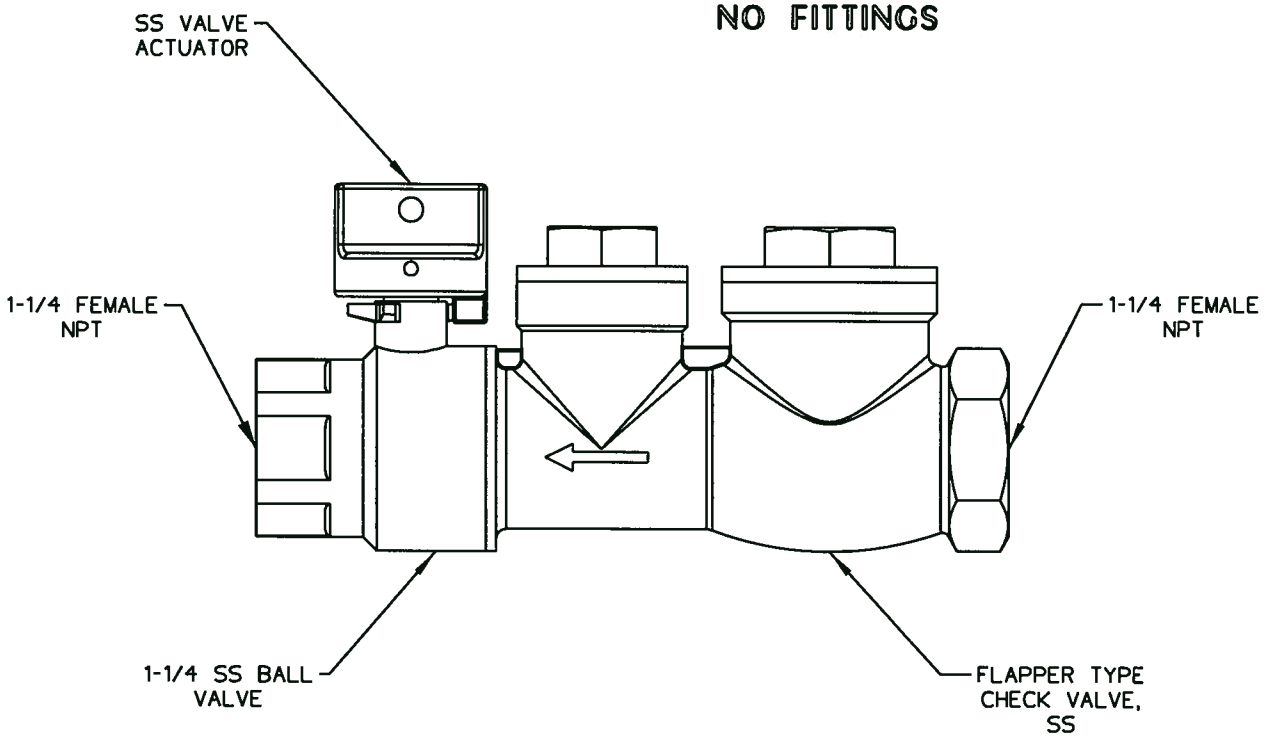
New Drawing

STAINLESS STEEL LATERAL ASSEMBLY NO FITTINGS



PART IS A BALL VALVE CURB STOP WITH FEMALE PIPE THREADS, VALVE POSITION STOPS (OPEN/CLOSED), AND INTEGRAL CHECK VALVE
MATERIAL: STAINLESS STEEL

PRESSURE RATING: 235 PSI

SANITARY SEWER CONSTRUCTION STANDARDS*

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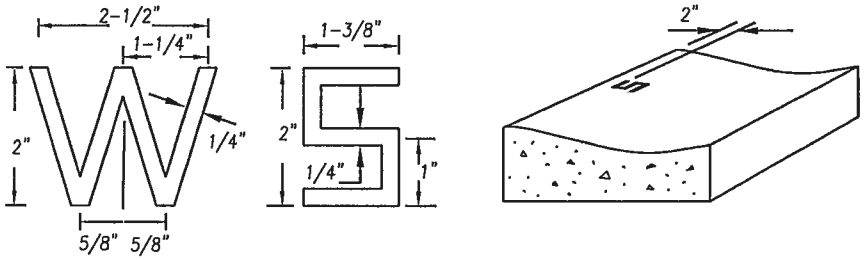
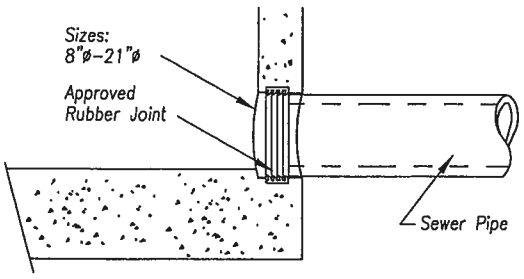


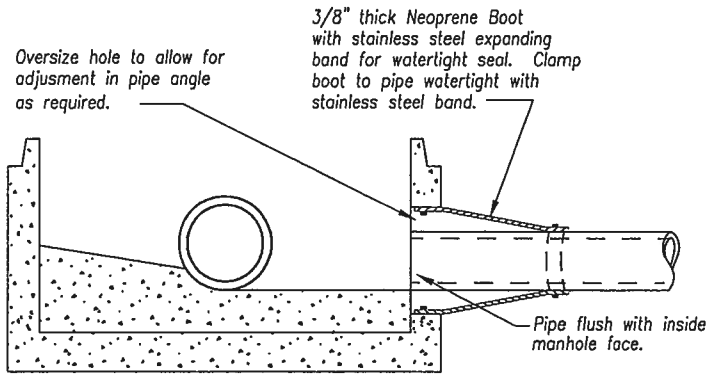
Letters to be impressed into the fresh concrete a depth of 1/2" directly above point where services cross the curb.

WATER & SEWER LOCATION DESIGNATION



PIPE CONNECTION DETAIL ALTERNATE #1

NOTE: All joints at pipe openings in the manhole will be thoroughly caulked with cement mortar to prevent infiltration into the manhole.



PIPE CONNECTION DETAIL ALTERNATE #2

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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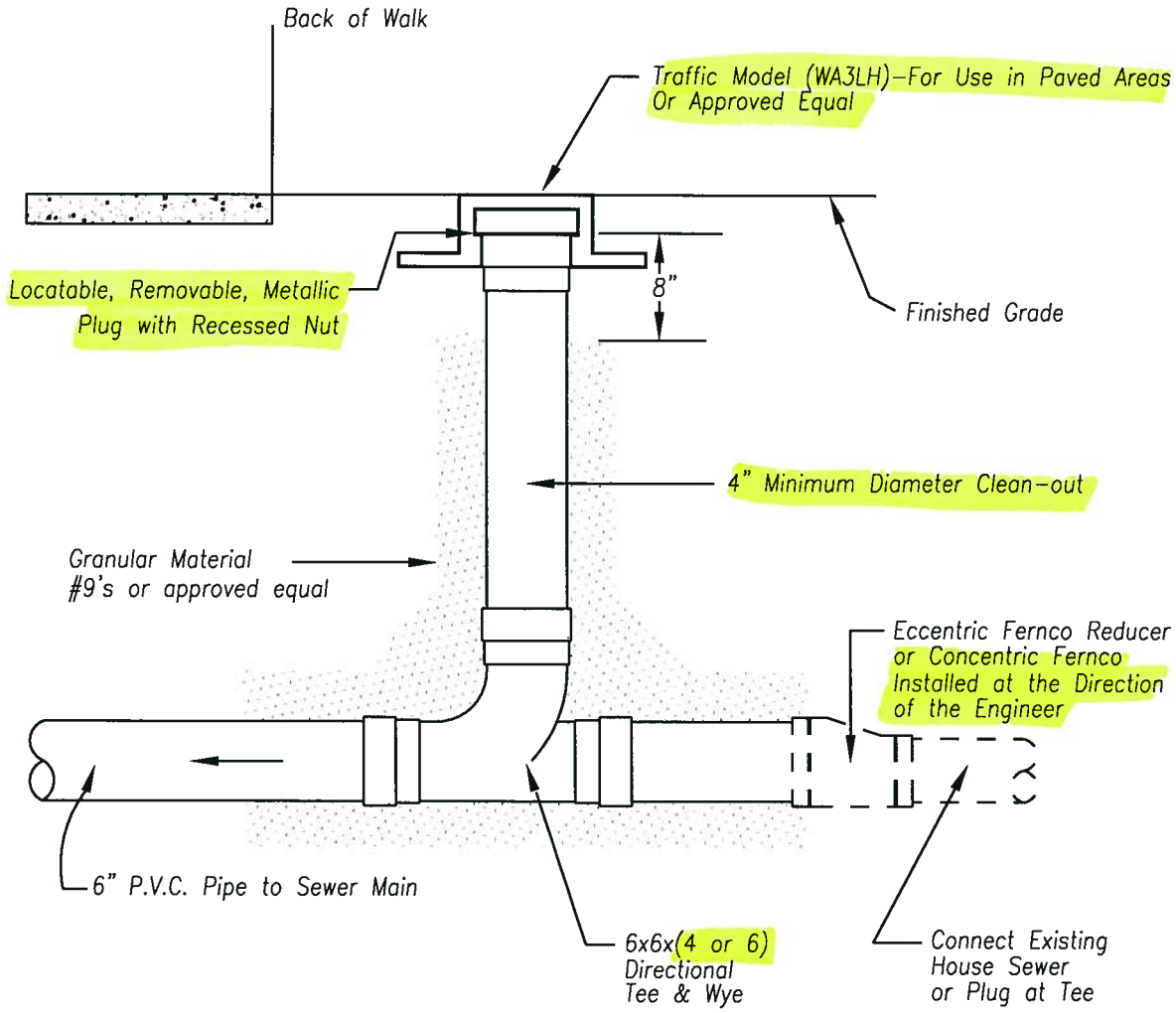
Note: Clean-Out Cover and/or cap to be locatable with a metal detector.



TYPICAL SANITARY LATERAL CLEAN-OUT

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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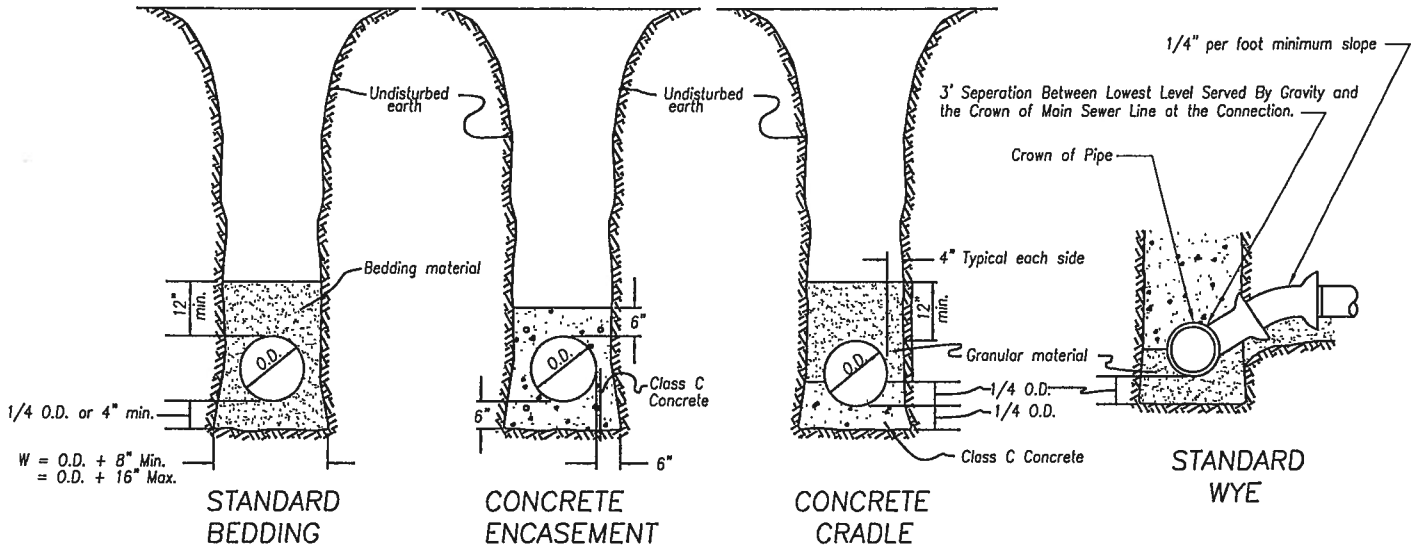
STANDARD SANITARY TRENCH DETAILS



NOTES:

Bedding consisting of 8's, 9's or 57's will be used in all sewer construction. Other bedding not listed here are considered non-standard and must be approved in writing prior to use.

All building drains and building sewers must be embedded and compacted in sand, pea gravel or grits to four (4) inches above the top of the crown of the pipe.

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.

Trench to be backfilled with low strength mortar backfill to street subgrade within existing street limits.

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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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"	.250	.250
10"	10 3/4"	.250	.250
12"	12 3/4"	.250	.250
14"	14"	.250	.250
16"	16"	.250	.281
18"	18"	.250	.312
20" & 22"	20" & 22"	.281	.344
24"	24"	.312	.375
26"	26"	.344	.406
28"	28"	.375	.438
30"	30"	.406	.469
32"	32"	.438	.500
34" & 36"	34" & 36"	.469	.531
38"	38"	.500	.562
40"	40"	.531	.594
42"	42"	.562	.625
44" & 46"	44" & 46"	.594	.656
48"	48"	.625	.688
50"	50"	.656	.719
52"	52"	.688	.750
54"	54"	.719	.781
56" & 58"	56" & 58"	.750	.812
60"	60"	.781	.844
62"	62"	.812	.875
64"	64"	.844	.906
66" & 68"	66" & 68"	.875	.938
70"	70"	.906	.969
72"	72"	.938	1.000

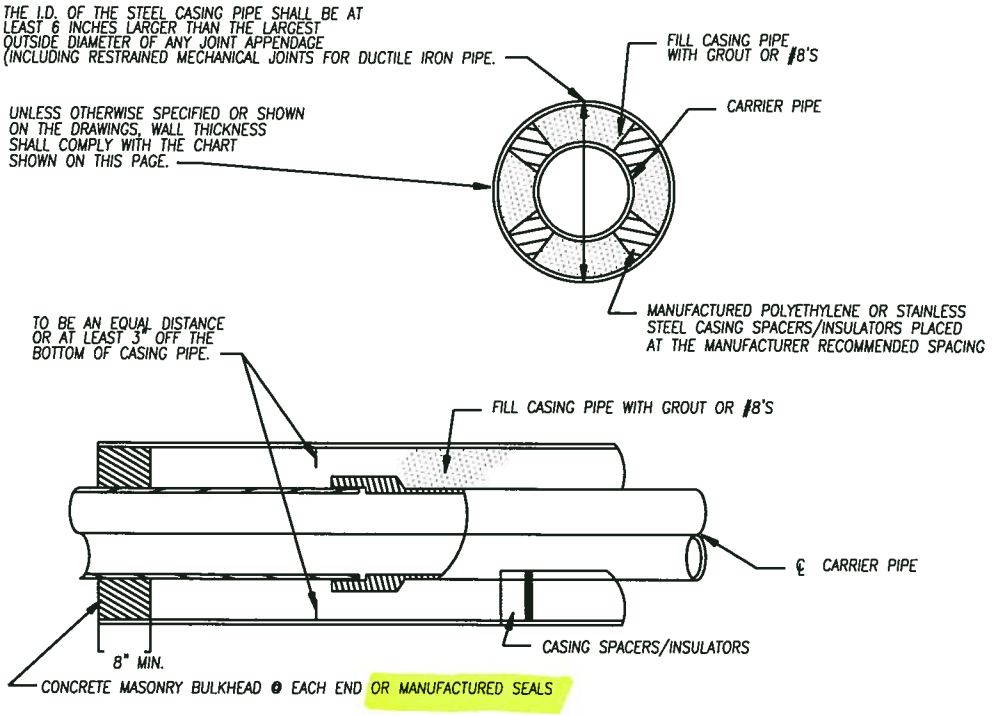
NOTE:

* BASED ON E80 LOADINGS WITH A MINIMUM COVER AT 4'-6".

STEEL CASING PIPE SHALL HAVE A STEEL YIELD STRENGTH OF 35,000 PSI, MEET ASTM A139 GRADE B REQUIREMENTS

NO HYDROTEST REQUIRED

CHART BASED ON RECOMMENDATIONS FROM AMERICAN RAILWAY ENGINEERING ASSOCIATION



CASING PIPE DETAIL

* RESTRAINED JOINTS REQUIERED FOR FORCEMAIN (FIELDLOK OR APPROVED EQUAL)

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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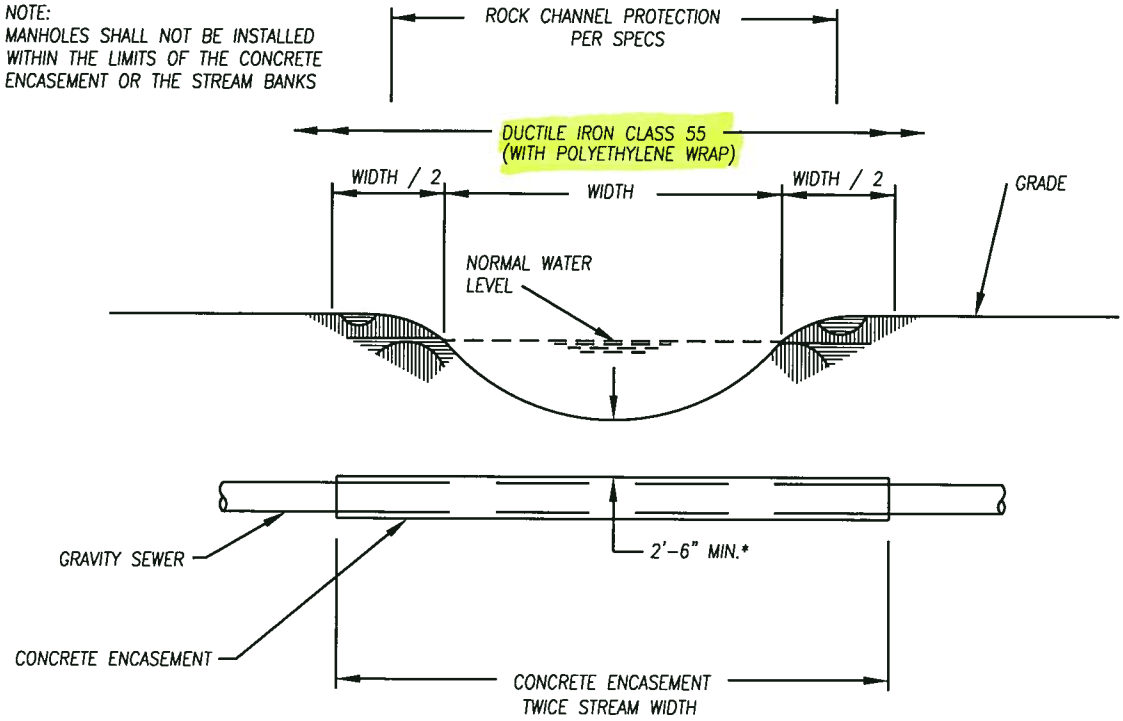
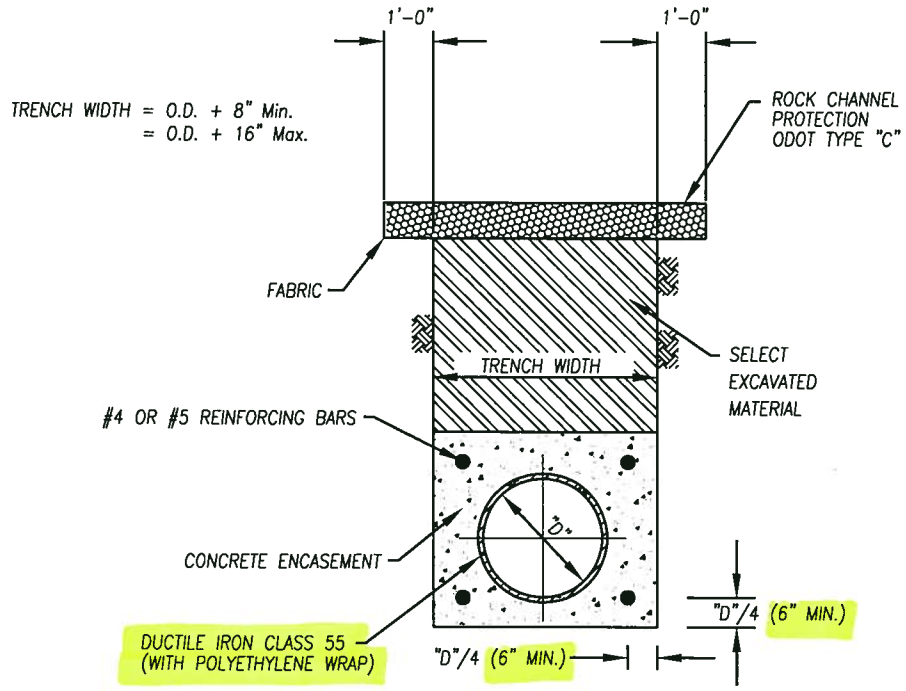


* Minimum depth of cover for concrete encasement will be reviewed on a case by case basis. Greater depth of cover may be required for higher velocity streams. Final determination on depth of cover required is to be made by the Director of Public Utilities.



TYPICAL CREEK CROSSING FOR GRAVITY SEWERS

SANITARY SEWER CONSTRUCTION STANDARDS*

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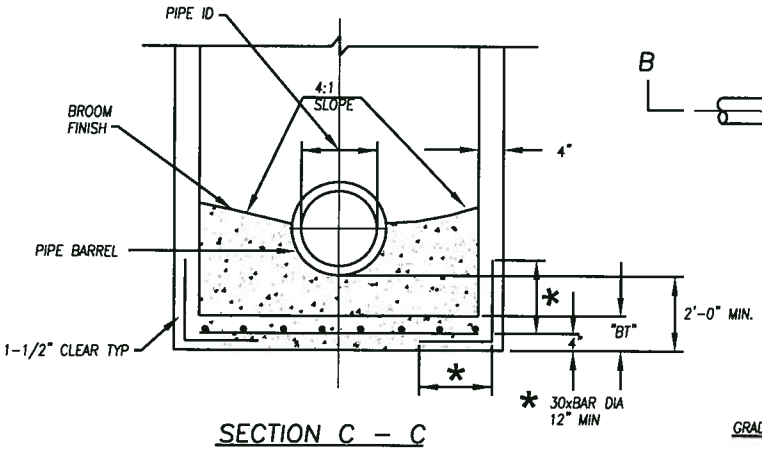
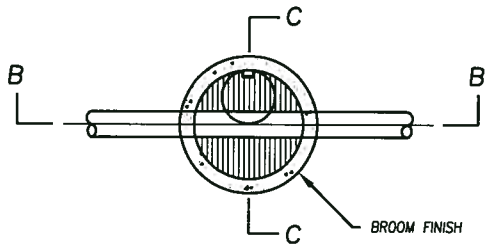
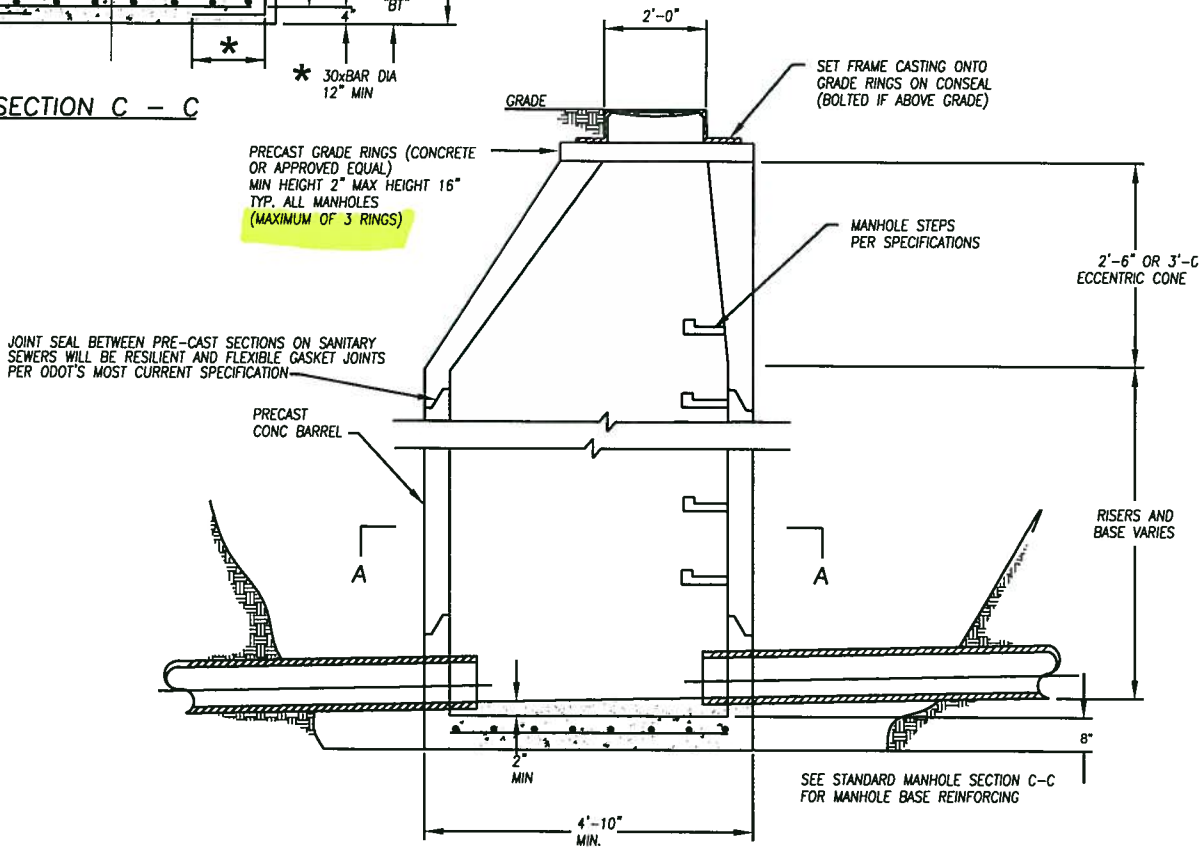


SECTION C – C



SECTION A – A

MIN. BASE SLAB THICKNESS "BT"	
DEPTH (FEET)	BT (INCHES)
0' – 15'	8" SLAB
15.1' – 20'	10" SLAB
20.1' – 25'	12" SLAB
25.1' – 30'	14" SLAB



SECTION B – B

STANDARD CONTROL MANHOLE

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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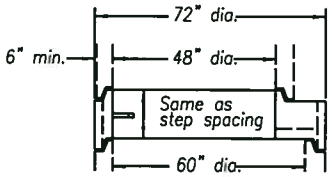
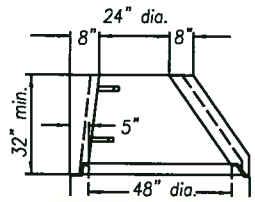
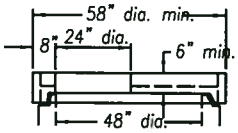


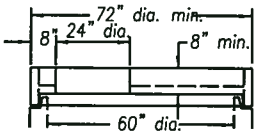
FLAT SLAB TRANSITION



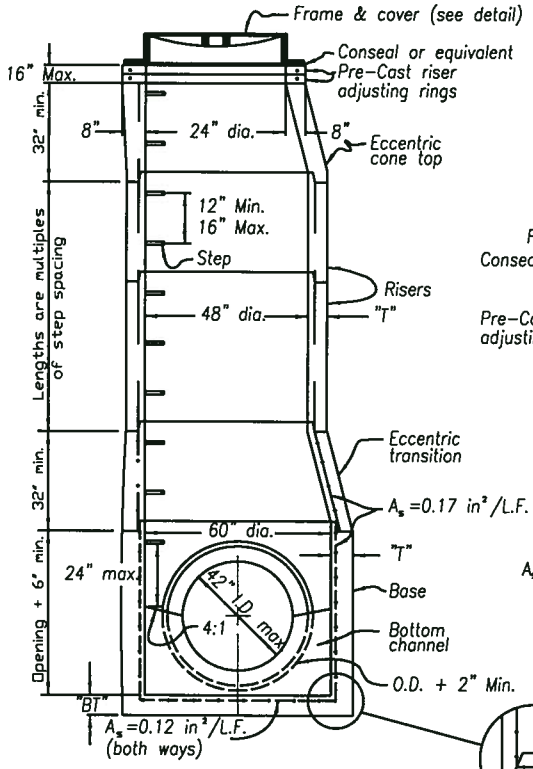
ECCENTRIC CONE TOP



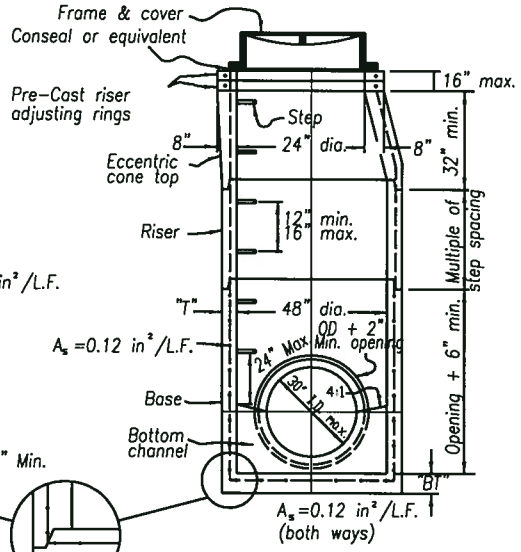
FLAT SLAB TOP



FLAT SLAB TOP



60" PRECAST BASE
FOR 42" AND SMALLER PIPE



ALTERNATE

48" PRECAST BASE
FOR 30" AND SMALLER PIPE

MIN. BASE SLAB THICKNESS "BT"	
DEPTH (FEET)	BT (INCHES)
0' – 10'	6" SLAB
10.1' – 15'	8" SLAB
15.1' – 20'	10" SLAB
20.1' – 25'	12" SLAB
25.1' – 30'	14" SLAB

WALL THICKNESS "T"	
MH DIA. (FEET)	T (INCHES)
4'	5"
5'	6"
6'	7"

NOTES:

1. Manhole walls and top cone 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. Manhole steps will be per ODOT Standard Drawing MH-1.1, dated 7-20-12.

SANITARY SEWER CONSTRUCTION STANDARDS*

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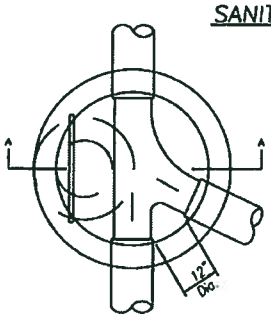
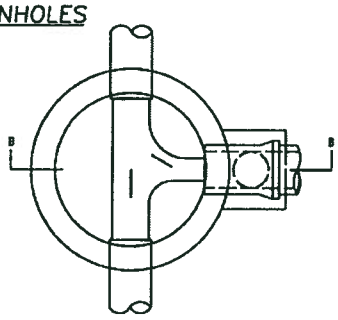
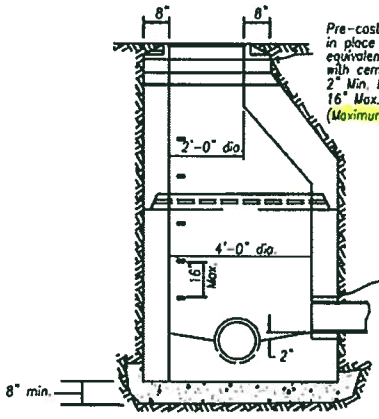
SANITARY MANHOLES



PLAN–STANDARD TYPE A

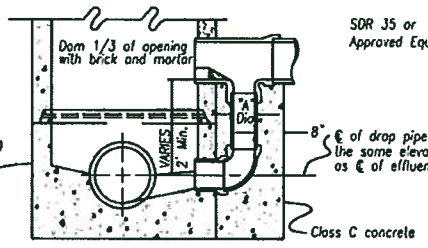


PLAN–STANDARD TYPE B
DROP MANHOLE

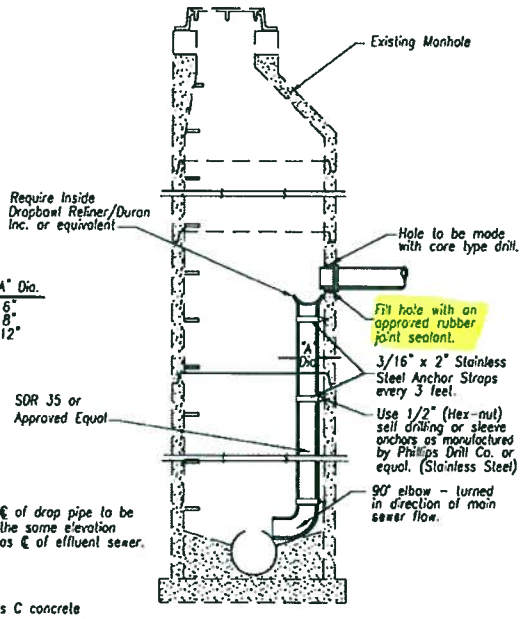


SECTION A–A

Incoming Pipe Dia.	"A" Dia.
6"	6"
8" to 18"	8"
21" to 30"	12"



SECTION B–B



SEWER DROP
INSIDE MANHOLE*

* The inside drop assembly must be approved in writing prior to use by the City's Public Utilities Director.

SECTION VIEWS OF REINFORCED PRECAST MANHOLES

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

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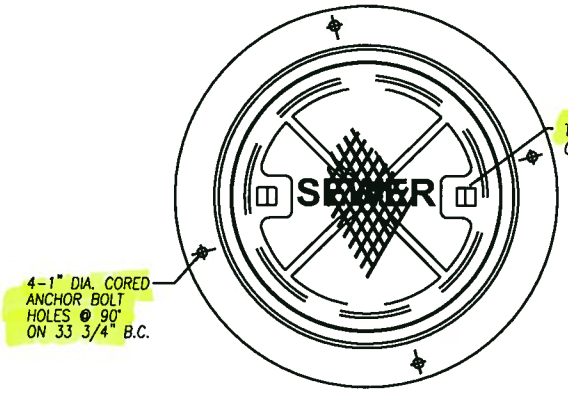
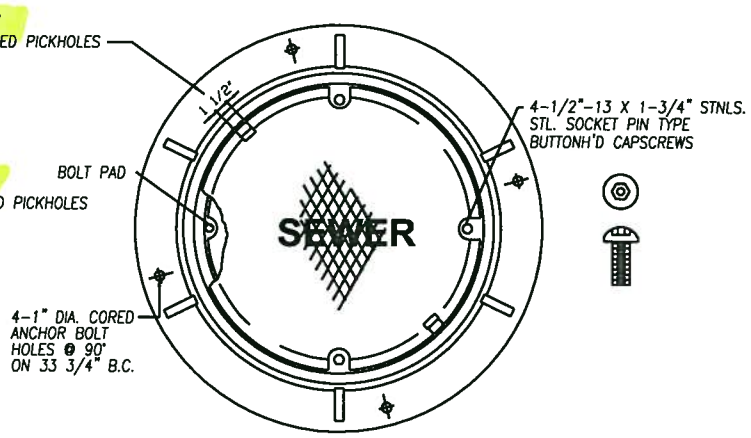
SELF-SEALING
NEENAH R-1767 FRAME & 1767-5027 LID
OR APPROVED EQUAL



NEENAH R-1916-F FRAME & LID
OR APPROVED EQUAL

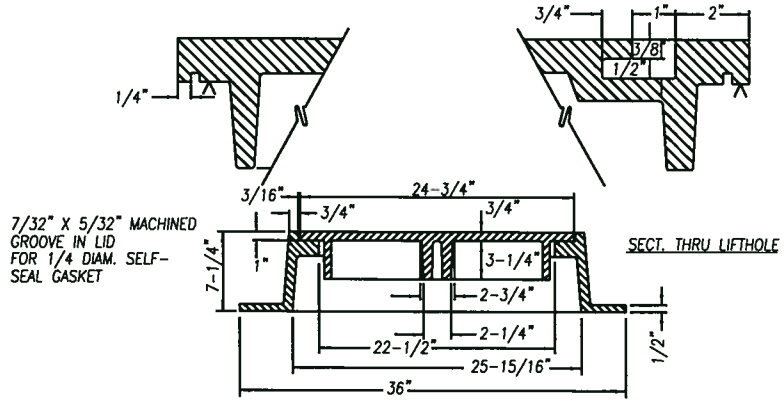


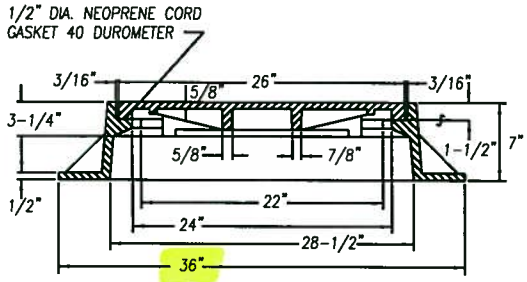
NOTES:

In unpaved areas, use Neenah R-1767 Series, Manhole Frames, (4) 1" hole vented lids, or equivalent

In streets, use Neenah R-1767 Series, Manhole Frames, 1767-5027 self-sealing lids, or equivalent.

Other locations use Neenah R-1916-F Series, Waterproof Manhole Frames, with stainless steel tamperproof bolts, or equivalent.





SANITARY SEWER CONSTRUCTION STANDARDS*

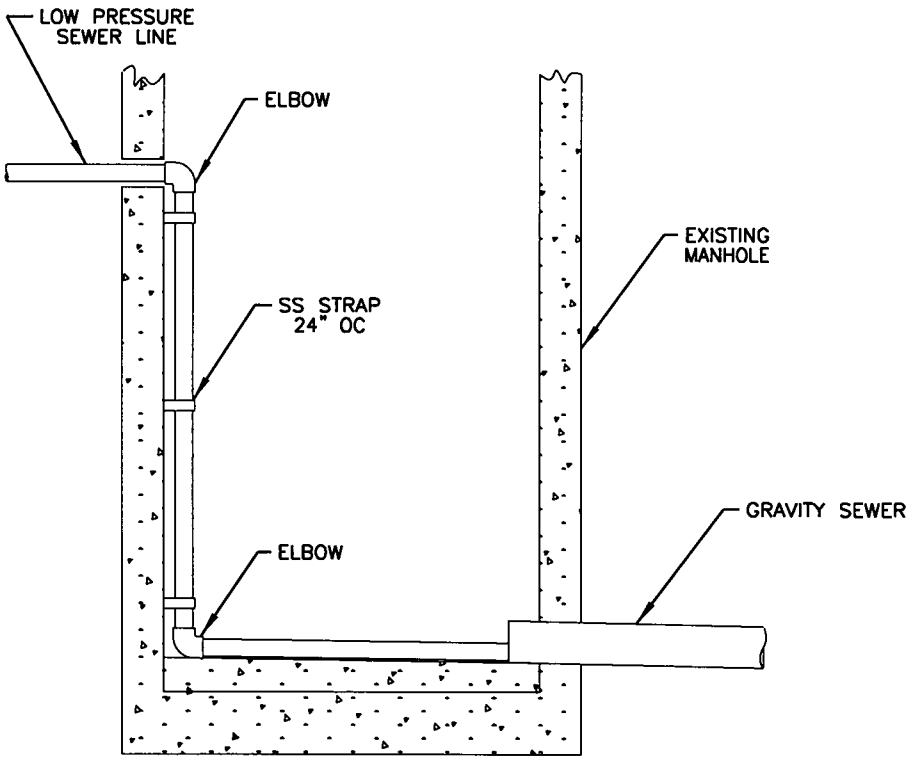
*Refer to Section 500 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013	SCALE: NONE	FILE: WASTEWATERDETAILS.DWG

New Drawing

TYPICAL DROP CONNECTION IN EXISTING MANHOLE



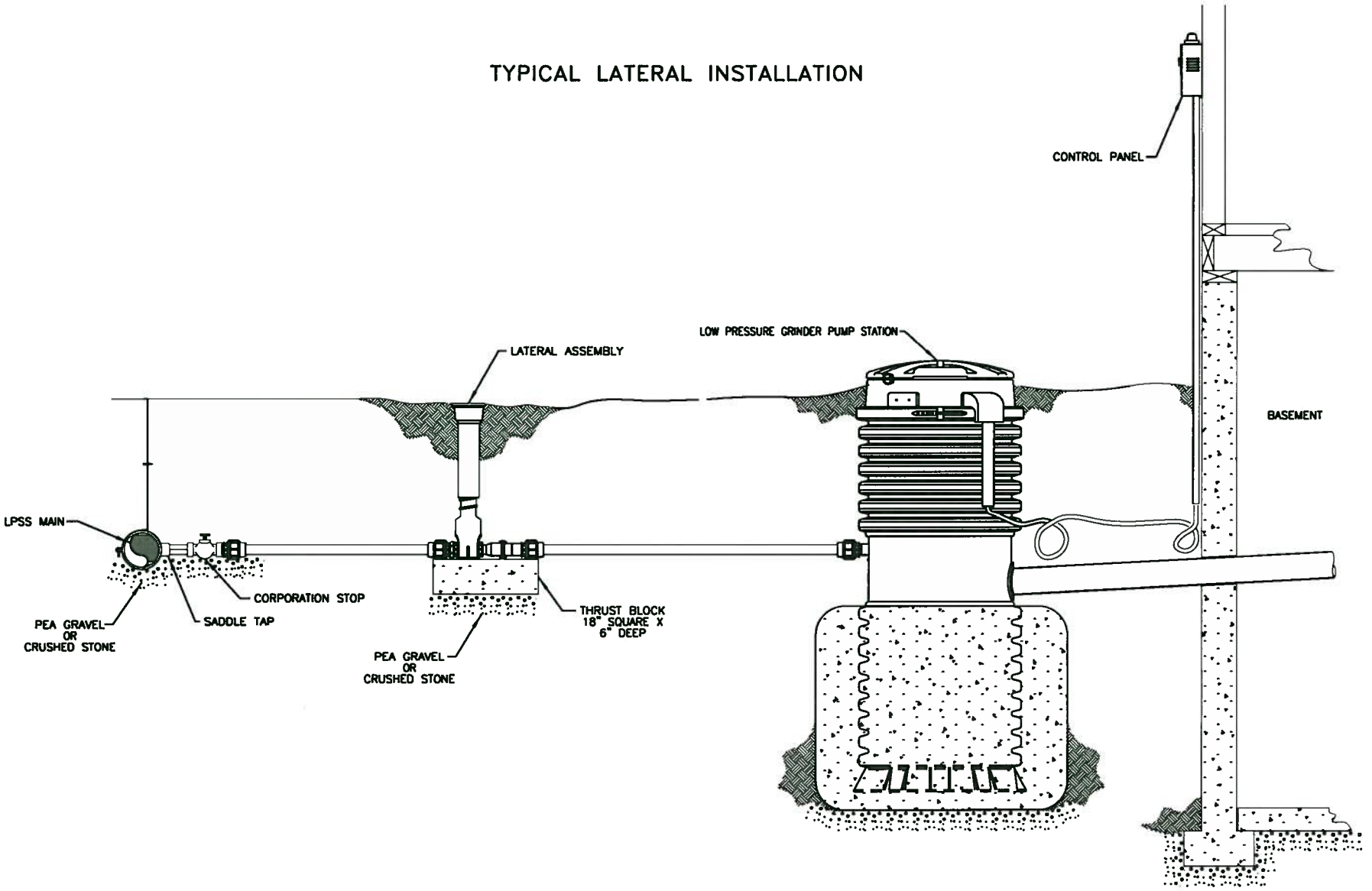
SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013	SCALE: NONE	FILE: WASTEWATERDETAILS.DWG

TYPICAL LATERAL INSTALLATION



New Drawing

SANITARY SEWER CONSTRUCTION STANDARDS*

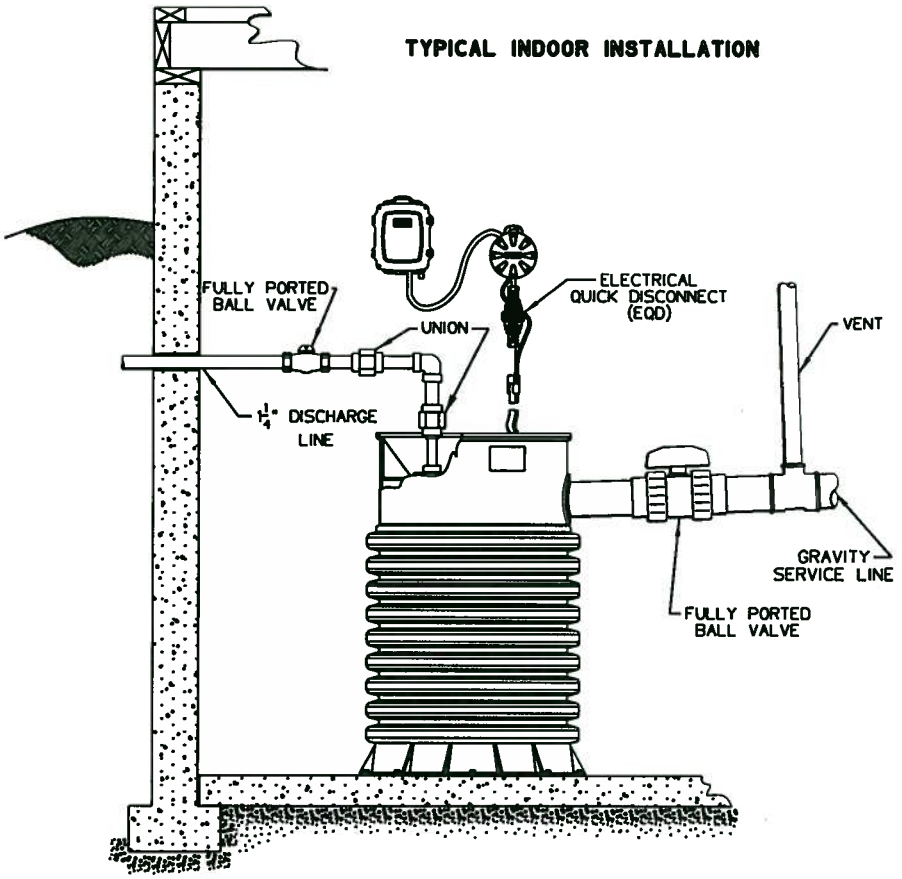
*Refer to Section 500 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

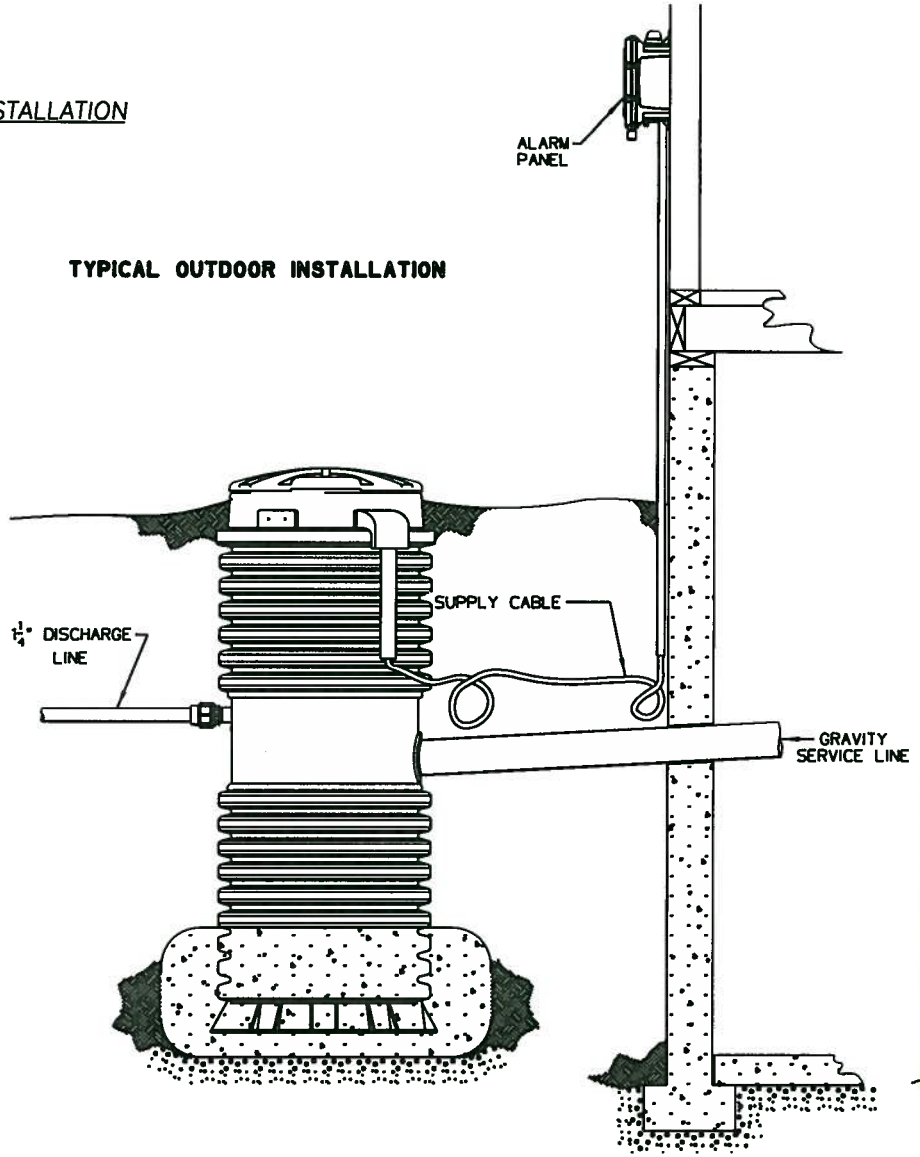
DATE: 01/23/2013	SCALE: NONE	FILE: WASTEWATERDETAILS.DWG

GRINDER PUMP STATION INSTALLATION

TYPICAL INDOOR INSTALLATION



TYPICAL OUTDOOR INSTALLATION



New Drawing

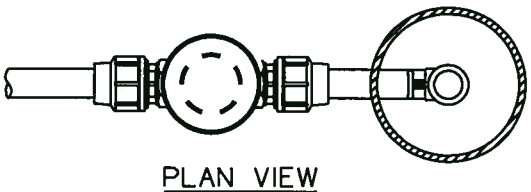
SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

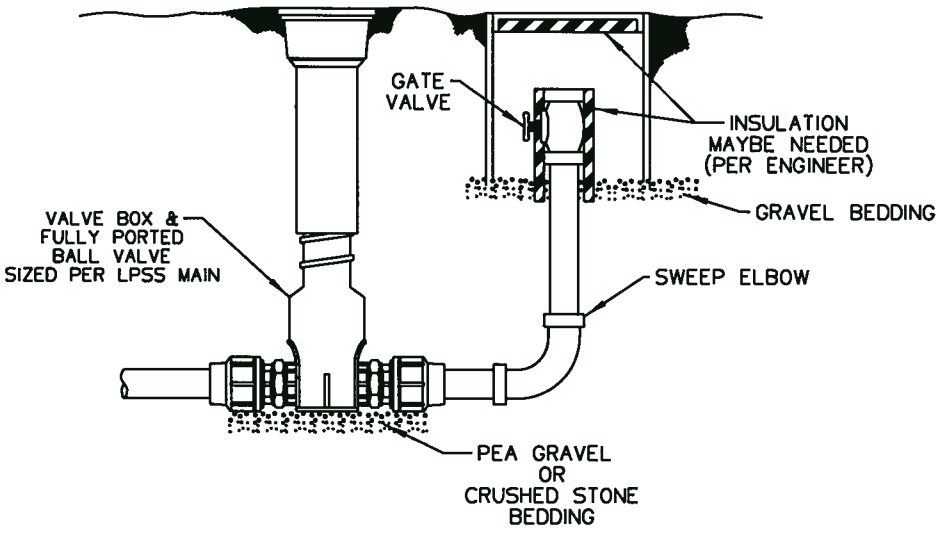
City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013	SCALE: NONE	FILE: WASTEWATERDETAILS.DWG

New Drawing



PLAN VIEW



TYPICAL TERMINAL FLUSHING CONNECTION

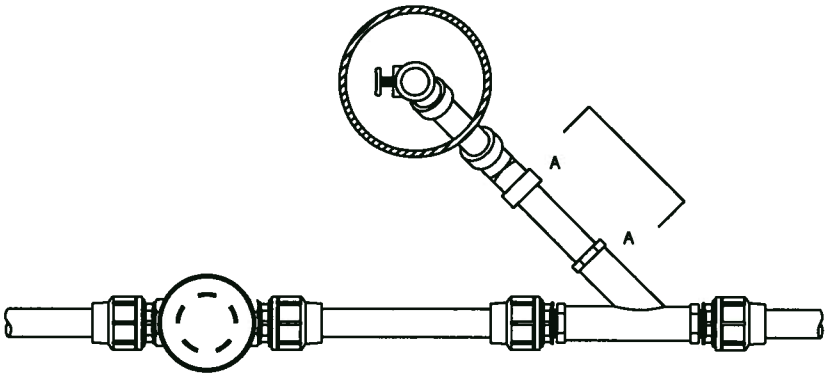
SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

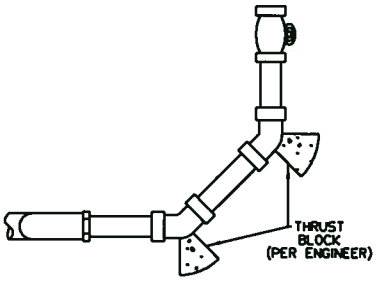
City of Fairfield
Construction Standards
Fairfield, Ohio

DATE: 01/23/2013	SCALE: NONE	FILE: WASTEWATERDETAILS.DWG

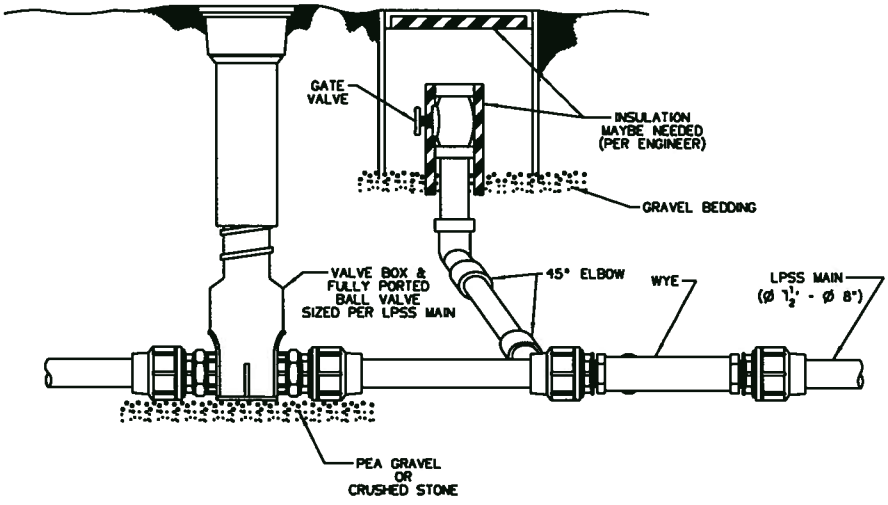
New Drawing



PLAN VIEW



VIEW "A"
3/4 = 1



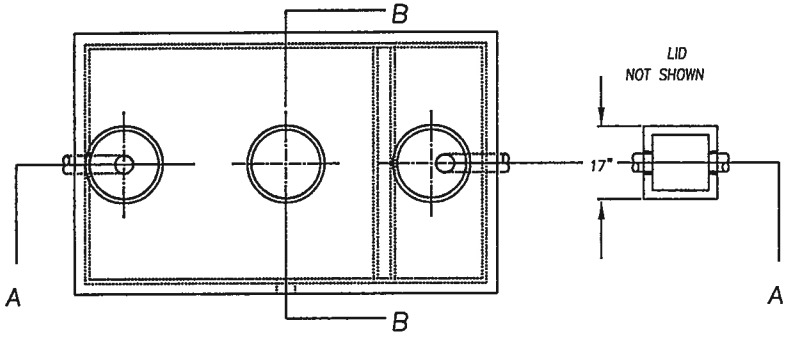
TYPICAL FLUSHING CONNECTION ON LPSS MAIN

SANITARY SEWER CONSTRUCTION STANDARDS*

*Refer to Section 500 for Complete Specification Details

City of Fairfield
Construction Standards
Fairfield, Ohio

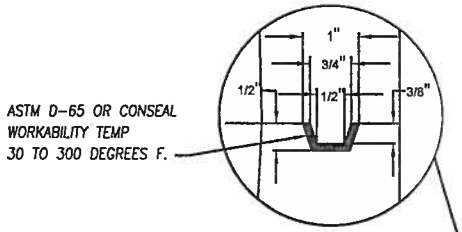
DATE: 01/23/2013	SCALE: NONE	FILE: WASTEWATERDETAILS.DWG



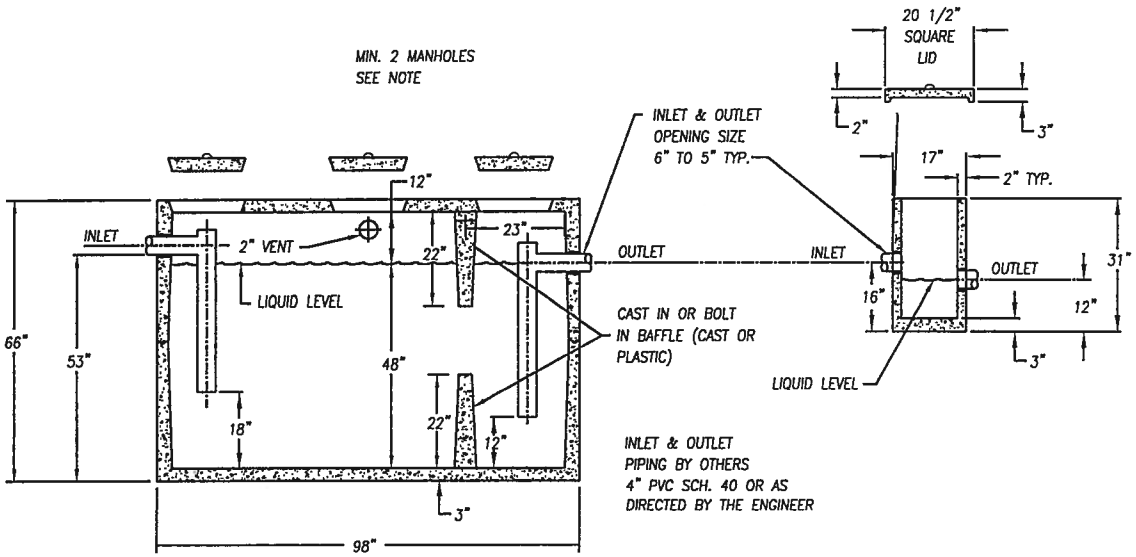
PLAN VIEW

INSPECTION BOX
(OPTIONAL)

NOTE:
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 HAVE READILY REMOVABLE COVERS TO FACILITATE INSPECTION, GREASE REMOVAL, AND WASTEWATER SAMPLING ACTIVITIES.

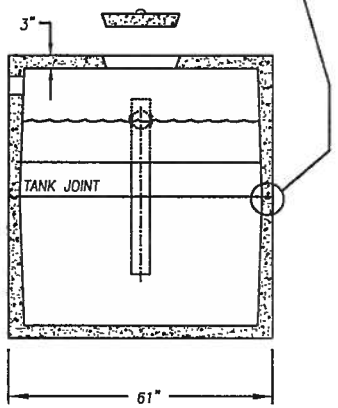


JOINT DETAIL



READILY REMOVABLE COVERS TO FACILITATE INSPECTION,

SECTION A–A



SECTION B–B

TWO PIECE SEPTIC TANK MODIFIED
FOR GREASE INTERCEPTOR 1000 GALLON CAPACITY

DEPARTMENTAL CORRESPONDENCE

City of Fairfield

TO: Mayor Miller and City Councilmembers

FROM: Scott Lepsky, Chairman, Planning Commission

SUBJECT: PLANNING COMMISSION RECOMMENDATION

DATE: 02/27/14

Please be advised at the Planning Commission meeting held on Wednesday, February 26, 2014, the Planning Commission voted 4 – 0 in favor of recommending approval of the proposed change to Section 1105.01, Definitions, which adopts the Fifth Edition of the Design, Construction and Materials Specification Handbook for the City of Fairfield.

Scott Lepsky, Chairman
Fairfield Planning Commission

plf

Attachment

c: Arthur E. Pizzano, City Manager
Alisha Wilson, Clerk of Council
Timothy Bachman, Development Services Director
David Butsch, Public Works Director
Rick Helsinger, Supt., Bldg. Inspection & Zoning
John Clemmons, Law Director
Planning Commission Members (7)

1105.01 DEFINITIONS.

For the purpose of these Regulations, certain terms and words used herein shall be used, interpreted and defined as follows:

(1) "Alley" or "service drive" means a passage or way affording generally a secondary means of vehicular access to abutting properties and not intended for general traffic circulation.

(2) "Applicant" means the owner of the land to be subdivided.

(3) "Bond" means a form of security agreement in an amount and form, as provided for in Section 1105.08. All bonds shall be approved by the City Engineer on behalf of the Planning Commission and approved as to form by the Director of Law.

(4) "City" means the city of Fairfield, Ohio.

(5) "City Engineer" means the City Engineer of the City or his agent designated to perform certain duties on his behalf.

(6) "Construction plans" or "drawings" means the maps or drawings accompanying a final subdivision plat and showing the specific location and design of improvements to be installed in the subdivision in accordance with these Regulations and with the requirements of the Planning Commission as a condition of the approval of the plat.

(7) "Comprehensive Plan" means the official Comprehensive Plan of the City and including any part of such plan separately adopted and any amendment to such plan or parts thereof.

(8) "County Engineer" means the County Engineer of Butler County, Ohio.

(9) "Cul-de-sac" means a local street with only one outlet and having an appropriate terminus for the safe and convenient reversal of traffic movement.

(10) "Developer" means the owner of land proposed to be subdivided.
(Ord. 141-83. Passed 9-21-83.)

(11) "Design, Construction and Material Specification Handbook" as referenced herein means the official standards for the City governing the design, construction and materials used in all proposed improvements. Such handbook dated April **[~~2007~~] 2014**, and prepared by the administrative staff of the City, a copy of which is on file in the office of the Clerk of Council, is hereby adopted for purposes of these subdivision regulations and shall also have general application to the construction of all improvements to which it pertains in the City whether such improvements are constructed in subdivisions or otherwise.
(Ord. 120-07. Passed 9-24-07.)

(12) "Drainage plan" means a plan for the control of storm water runoff in accordance with the requirements of Chapter 1117 of these Regulations.

(13) "Easement" means a right of a person or entity to use the property of another, or part thereof, for a specific purpose or purposes.

(14) "Final plat" means the plan or record of a subdivision intended to be recorded with the Butler County Recorder's office and any accompanying material, as prescribed

in these Regulations.

(15) "Frontage" means the side of a lot abutting on a public street and as defined in the Zoning Ordinance.

(16) "Frontage access" or "service road" means a minor street or road generally running parallel with a main street or thoroughfare and connected therewith at infrequent intervals or placed at the rear of lots abutting a main street or thoroughfare and which is designed to limit curb cuts on the main street and segregate local traffic from higher speed through traffic.

(17) "Health officer" means the Butler County Board of Health or other official of the City or County or other individual appointed or officially designated to perform the functions and duties of a health officer or sanitarian for the City.

(18) "Local street" or "collector street" means a street intended to serve and to provide access to neighborhoods or subneighborhoods.

(19) "Lot" means a piece or parcel of land occupied or intended to be occupied by a principal building or group of such buildings and accessory buildings, or utilized for a principal use and uses accessory thereto, together with such open spaces as required by the Zoning Ordinance of the City and having its principal frontage on a public street.

(20) "Lot, corner" means a lot abutting upon two or more streets at their intersection or upon two parts of the same street. The point of intersection of the street lines is the "corner".

(21) "Lot, interior" means a lot other than a corner lot.

(22) "Maintenance bond" means an agreement by the developer with the City to maintain and keep in good repair all improvements of the subdivision for a period of one year after approval by the City Engineer of the construction of such improvements and in an amount determined by the City Engineer to be sufficient to secure such maintenance and not less than ten percent (10%) of the performance bond amount and which agreement shall be secured by sufficient sureties or assets.

(23) "Major subdivision" means any subdivision not classified as a minor subdivision.

(24) "Minor subdivision" means a division of a parcel of land in accordance with Ohio R.C. 711.131 and with Section 1105.06 of these Regulations; also known as lot splits.

(25) "Minor street" means any street not a highway, primary or secondary thoroughfare, or local or collector street, and intended to serve and to provide access exclusively to the properties abutting thereon.

(26) "Performance bond" means an agreement by the developer with the City guaranteeing the completion of physical improvements according to approved plans and specifications and in an amount determined by the City Engineer to be sufficient to secure the completion of such improvements and secured by sufficient sureties or assets.

(26.1) "Permanent marker" means a one-half inch diameter steel rod thirty inches in length.

(27) "Planned Unit Development" means the type of land development defined in the

Zoning Ordinance, wherein standards and procedures are established for such land use, including reference to these Regulations.

(28) "Planning Commission" means the Planning Commission of the City.

(29) "Planning Director" means the Planning Director as defined in the Charter of the City or his agent designated to perform certain duties on his behalf.

(30) "Preliminary plat" means the preliminary drawing described in these Regulations, indicating the proposed manner or layout of the subdivision to be submitted to the Planning Commission for approval.

(31) "Public way" means an alley, avenue, boulevard, bridge, channel, ditch, easement, expressway, freeway, highway, land, parkway, right of way, road, sidewalk, street, subway, tunnel, viaduct, walk or other ways which the general public or a public entity have a right to use, or which are dedicated to public use, whether improved or not.

(32) "Registered engineer" means an engineer properly licensed and registered in the State of Ohio.

(33) "Registered land surveyor" means a land surveyor properly licensed and registered in the State of Ohio.

(34) "Resubdivision" means a change in the plat or drawing of a recorded major or minor subdivision if such change affects any street layout, lot line or public way.

(35) "Right of way" means any parcel of land taken or dedicated for use as a public way. In addition to the roadway, it normally incorporates the curbs, lawn strips, sidewalks, lighting and drainage facilities and may include special features such as separation, landscaped areas, viaducts and bridges.

(36) "Sedimentation plan" means a plan for the control of sedimentation in accordance with the requirements of Chapter 1117 of these Regulations.

(37) "Sidewalk bond" means an agreement by the developer with the City guaranteeing the construction of required sidewalks in a subject subdivision or development.

(38) "Subdivision" means:

A. The division of any parcel of land shown as a unit or as continuous units on the last preceding tax roll, into two or more parcels, sites or lots, any one of which is less than five acres for the purpose whether immediate or future, of transfer of ownership; provided, however, that the division or partition of land into parcels of more than five acres not involving any new streets or easements of access, and the sale or exchange of parcels between adjoining lot owners, where such sale or exchange does not create additional building sites, shall be exempted; or

B. The improvement of one or more parcels of land for residential, commercial or industrial structures or groups of structures involving the division or allocation of land for the opening, widening, extension of any street or streets, except private streets serving industrial structures; the division or allocation of land as open spaces for common use by owners, occupants or lease holders or as easements for the extension and maintenance of public sewer, water, storm drainage or other public facilities.

(39) "Tree plan" means a plan for the planting of desirable shade trees in public areas in accordance with Chapter 1129 of these Regulations.

(40) "Thoroughfare" means a major trafficway designated in the Thoroughfare Plan as a regional thoroughfare, primary thoroughfare, secondary thoroughfare or collector street.

(41) "Thoroughfare Plan" means the official plan of proposed regional highways, primary and secondary thoroughfares, and collector streets of the City.

(42) Other pertinent terms shall be as defined in any current Zoning Ordinance or other ordinance of the City or as their use and ordinary meaning indicate.
(Ord. 141-83. Passed 9-26-83.)

ORDINANCE NO. _____

ORDINANCE TO AMEND VARIOUS SECTIONS OF ORDINANCE NO. 166-84, THE CODIFIED ORDINANCES OF FAIRFIELD, OHIO, RELATIVE TO THE CITY OF FAIRFIELD DESIGN, CONSTRUCTION AND MATERIAL SPECIFICATIONS HANDBOOK AND WATER REQUIREMENTS.

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. Various sections of Ordinance No. 166-84, The Codified Ordinances of Fairfield, Ohio, relative to the City of Fairfield Design, Construction and Material Specifications Handbook and Water requirements are hereby amended to read as shown in the attached Exhibit "A" which is incorporated herein by reference.

Section 2. This Ordinance shall take effect at the earliest period allowed by law.

Passed _____ _____
Mayor's Approval

Posted _____

First Reading 2/10/14 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\2014\Design Handbook - Ord

Exhibit A

CHAPTER 921 – WATER

921.03 APPLICATION FOR CONNECTION.

(a) General Requirements.

(1) Application for a water service branch and water meter service must be made by a licensed person. Application for branch service must be made concurrently with request for meter service. A tap fee shall be paid at the time of application.

(2) No water branch service shall be permitted to any property outside the City's corporate limits without approval of Council.

(b) Installation of Service Branch. All service branches shall be installed at the cost of the property owner by a licensed person. All water service branches shall be taken directly from a public water main.

(c) Requirements of Service Branches and Meters. The Public Utilities Director shall establish minimum size requirements for service branches and meters.

(d) Water Branches Not to be Laid in Sewer Trench. No water service branch is to be laid in the same trench with a sewer line. In extreme cases, shelving will be permitted if the shelf is eighteen inches wide and the water service pipe is so staked so as to prevent its slipping into the sewer trench.

(e) Replacement or Repair of Service Branches. Where a service branch is installed, the Water Division shall repair and maintain it or replace it with a branch of the same size from the main to and including the curb stop **[~~valve if the valve is outside~~]** **WITHIN** the right of way or to the limits of the right of way if the valve is **[~~inside~~]** **OUTSIDE OF** the right of way. The property owner is responsible for maintaining the **BALANCE OF THE** service branch **[~~from the edge of the right of way to the ultimate point of use~~, WITH THE EXCEPTION OF THE WATER METER, TO ASSURE A SAFE WATER SUPPLY AND IN A STRUCTURAL CONDITION THAT WILL PERMIT WATER SERVICE WITHOUT LEAKAGE. COMPLETE REPLACEMENT MUST BE MADE WHERE IT IS DETERMINED BY THE PUBLIC UTILITY DIRECTOR OR DESIGNEE THAT A LINE IS LEAKING OR OTHERWISE DEFECTIVE. FAILURE BY THE OWNER TO MAKE TIMELY REPAIRS TO OR REPLACEMENT OF THE SERVICE LINE WILL RESULT IN THE TERMINATION OR REFUSAL OF WATER SERVICE.**
(Ord. 20-87. Passed 2-23-87.)

(f) REPLACEMENT OF WATER METER/REPAIR OF ASSOCIATED WATER LINE. THE CITY HAS THE RIGHT TO REPLACE OR REQUIRE REPLACEMENT OF ANY WATER METER AS DEEMED NECESSARY TO PREVENT LEAKS OR OTHERWISE PROTECT THE WATER SUPPLY. THE CITY SHALL NOT BE RESPONSIBLE FOR BREAKAGE OF PIPES OR VALVES OCCURRING DURING REPLACEMENT OR INSTALLATION OF METERS WHEN SUCH BREAKAGE IS DUE TO OLD OR FAULTY PLUMBING. THE CITY MAY TERMINATE OR REFUSE WATER SERVICE IF A METER CANNOT BE INSTALLED OR REPLACED APPROPRIATELY DUE TO THE CONDITION OF THE WATER LINE ADJACENT TO THE METER.

~~(f)~~ (g) Expansion and Water Tap Fees. Expansion fees for properties located inside the corporate limits of the City are hereby established in accordance with Appendix A which is attached to Ordinance 53-91 and incorporated herein as Appendix A. No building permit shall be issued until a water expansion fee is paid. Water expansion fees for properties located outside the corporate limits of the City shall be one hundred and fifty percent (150%) of the amounts stated in Appendix A. A tap fee shall be paid at the time of application by anyone tapping into the City's water system. The tap fee is for payment of materials supplied by the City for the physical service connection at the public water main. The cost of materials shall be 1.5 times the City's cost of purchasing the material.
(Ord. 52-95. Passed 5-8-95.)

921.04 LICENSE; BONDING REQUIREMENTS

(a) License. Any person, firm or corporation working on any part of the City's water distribution system, including water service lines and water meters, must first obtain a valid water service license issued and signed by the Public Utilities Director or his/her designee. Application for such license shall be made to the Public **~~[Works]~~ UTILITIES** Director, and a license fee of thirty dollars ($30.00) shall accompany the application. The license shall be valid within the calendar year that it was issued, and must be renewed cyclical on January 1st with an additional fee paid each year. The license applicant shall be required to prove to the satisfaction of the Public Utilities Director and City Manager that he/she possesses the qualifications necessary for working on the City's water distribution system. The applicant may be required to pass a test as to competency under the bylaws and regulations adopted by the City of Fairfield. A license may be revoked by the Public Utilities Director if the licensee violates any laws, ordinances, bylaws and regulations governing work on the City water distribution system.
(Ord. 128-07. Passed 10-9-07.)

921.06 PERMITS FOR TEMPORARY WATER USE.

Where water is required for temporary use, application shall be made to the Water Division for a special permit to use water from a fire hydrant or other available source. All arrangements for temporary water use shall be approved by the Superintendent.

(a) Special Meters.

(1) The Superintendent is authorized to require the use of a special water meter to register water consumed for a temporary use. The meter will, in such cases, be furnished by the Division without charge except that a deposit may be required. Rates for special meter water use shall be a minimum of ten dollars ($10.00) for the first 3,000 gallons. Water used in excess of 3,000 gallons will be charged at the normal residential/commercial rate.

~~(b) Charge for Unmetered Water. Unmetered water shall be paid for on the basis of meter rates, according to the estimated amount used or to be used. The minimum charge shall be fifteen dollars ($15.00). The Superintendent shall be authorized to provide, by rule, for the method of fixing charges in the case of particular types of unmetered uses. Construction water for use at a building site operating under a~~

~~valid building permit shall be charged at a rate of three times the minimum monthly water bill for the specified meter size for each meter in the building. Construction water shall be authorized for three months and may be extended by written authorization of the Superintendent.~~

~~(c)~~ (b) Use of Water Without a Permit. No person, firm or corporation shall use or make a connection to use water from a fire hydrant or other available source unless a properly authorized temporary use permit is issued by the Water Division. The Superintendent is hereby authorized to remove and confiscate any hose or connection found attached to a fire hydrant or other available source of water for which no temporary use permit has been issued.
(Ord. 20-87. Passed 2-23-87.)

921.09 BILLING; NONPAYMENT.

(a) Unlawful Taking of Water. No person, firm or corporation shall take water from any connection to the water system of the Water Division unless a proper water service connection is installed according to law and water bills are paid, except as otherwise provided for temporary use or Municipal use of water.

(b) Time of Payment. Water bills shall be paid on or before the due date stated on the bill, after which the account is overdue and subject to a ten percent (10%) late charge.

(c) Termination of Water Service for Nonpayment. If an account is more than 45 days past due, the Superintendent shall turn off the water service in accordance with bylaws and regulations established by the City Manager or his/her designee. There shall be a charge of forty dollars ($40.00) for termination of water service under this section.

(d) Assessing Charges.

(1) Any person, firm or corporation served by any water service connection shall be considered as accepting the provisions of all laws, ordinances, bylaws and regulations of the Water Division and as agreeing, in particular, to be liable for all water and service charges for such premises.

(2) When more than one meter is supplied by a single service branch and where only one curb stop is used to control water to that service branch, the owner of the property on which the service branch is located shall be liable for all water and service charges for such property whether the account for such premises is carried in the name of the owner or in the name of tenants or other persons. The maintenance of water service connections being a substantial and valuable benefit to land, any owner of real estate premises served by such water service connections shall assume responsibility for the total of all water charges levied against the premises during his ownership in the same manner as the person who actually incurred the charges or in whose name the account is carried.

This assumption of responsibility shall be a necessary condition to the continuation of water service to the premises.

(e) Restoration of Water Service. Water service shall not be restored to any premises for which

there is an unpaid water account unless satisfactory arrangements for the payment of the unpaid account are made pursuant to bylaws and regulations established by the City Manager or his/her designee. There shall be a charge of forty dollars ($40.00) for restoration of water service after termination for non-payment under this section.

(f) Estimated Bills. Bills for water usage may be estimated.

(g) Processing Fee. If an account is more than 45 days past due, the account shall be charged a processing fee of twenty dollars ($20.00).

921.14 TAMPERING WITH WATER DIVISION EQUIPMENT.

(a) NO PERSON SHALL KNOWINGLY, WITHOUT CONSENT OF THE CITY PUBLIC UTILITIES DIRECTOR OR DESIGNEE:

(1) INTERFERE WITH, DAMAGE, OR BY-PASS A WATER METER OR RELATED ACCESSORY.

(2) TURN ON A WATER SERVICE THAT HAS BEEN TURNED OFF AT THE CURB STOP OR WITH A LOCK OUT AT THE METER BY THE CITY TO DISCONTINUE SERVICE TO THE PREMISES.

(3) CONNECT TO A FIRE HYDRANT FOR PURPOSES OTHER THAN FIRE FIGHTING, HYDRANT MAINTENANCE, OR OTHER ACTIVITIES.

(4) OPEN, CLOSE, ADJUST OR INTERFERE WITH A FIRE HYDRANT, VALVE, CURB STOP, TANK, METERS, PIPES, MAINS, OR OTHER COMPONENTS OF THE WATER SYSTEM OWNED BY THE CITY.

(5) TAP, SEVER, OPEN OR MAKE UNAUTHORIZED CONNECTIONS WITH A MAIN OR PIPE USED OR INTENDED FOR THE TRANSMISSION OF WATER.

IN A PROSECUTION UNDER SUBSECTION (1) OR (2) HEREOF, PROOF THAT A METER OR CURB STOP HAS BEEN TAMPERED WITH IS PRIMA-FACIE EVIDENCE THAT THE PERSON WHO IS OBLIGED TO PAY FOR THE SERVICE RENDERED THROUGH THE METER AT THE TIME THE TAMPERING OCCURRED HAS CAUSED THE TAMPERING.

(Ord. 116-11. Passed 11-14-11).

1105.01 DEFINITIONS.

For the purpose of these Regulations, certain terms and words used herein shall be used, interpreted and defined as follows:

(1) "Alley" or "service drive" means a passage or way affording generally a secondary means of vehicular access to abutting properties and not intended for general traffic circulation.

(2) "Applicant" means the owner of the land to be subdivided.

(3) "Bond" means a form of security agreement in an amount and form, as provided for in Section 1105.08. All bonds shall be approved by the City Engineer on behalf of the Planning Commission and approved as to form by the Director of Law.

(4) "City" means the city of Fairfield, Ohio.

(5) "City Engineer" means the City Engineer of the City or his agent designated to perform certain duties on his behalf.

(6) "Construction plans" or "drawings" means the maps or drawings accompanying a final subdivision plat and showing the specific location and design of improvements to be installed in the subdivision in accordance with these Regulations and with the requirements of the Planning Commission as a condition of the approval of the plat.

(7) "Comprehensive Plan" means the official Comprehensive Plan of the City and including any part of such plan separately adopted and any amendment to such plan or parts thereof.

(8) "County Engineer" means the County Engineer of Butler County, Ohio.

(9) "Cul-de-sac" means a local street with only one outlet and having an appropriate terminus for the safe and convenient reversal of traffic movement.

(10) "Developer" means the owner of land proposed to be subdivided.
(Ord. 141-83. Passed 9-21-83.)

(11) "Design, Construction and Material Specification Handbook" as referenced herein means the official standards for the City governing the design, construction and materials used in all proposed improvements. Such handbook dated April **[~~2007~~] 2014**, and prepared by the administrative staff of the City, a copy of which is on file in the office of the Clerk of Council, is hereby adopted for purposes of these subdivision regulations and shall also have general application to the construction of all improvements to which it pertains in the City whether such improvements are constructed in subdivisions or otherwise.
(Ord. 120-07. Passed 9-24-07.)

(12) "Drainage plan" means a plan for the control of storm water runoff in accordance with the requirements of Chapter 1117 of these Regulations.

(13) "Easement" means a right of a person or entity to use the property of another, or part thereof, for a specific purpose or purposes.

(14) "Final plat" means the plan or record of a subdivision intended to be recorded with the Butler County Recorder's office and any accompanying material, as prescribed

in these Regulations.

(15) "Frontage" means the side of a lot abutting on a public street and as defined in the Zoning Ordinance.

(16) "Frontage access" or "service road" means a minor street or road generally running parallel with a main street or thoroughfare and connected therewith at infrequent intervals or placed at the rear of lots abutting a main street or thoroughfare and which is designed to limit curb cuts on the main street and segregate local traffic from higher speed through traffic.

(17) "Health officer" means the Butler County Board of Health or other official of the City or County or other individual appointed or officially designated to perform the functions and duties of a health officer or sanitarian for the City.

(18) "Local street" or "collector street" means a street intended to serve and to provide access to neighborhoods or subneighborhoods.

(19) "Lot" means a piece or parcel of land occupied or intended to be occupied by a principal building or group of such buildings and accessory buildings, or utilized for a principal use and uses accessory thereto, together with such open spaces as required by the Zoning Ordinance of the City and having its principal frontage on a public street.

(20) "Lot, corner" means a lot abutting upon two or more streets at their intersection or upon two parts of the same street. The point of intersection of the street lines is the "corner".

(21) "Lot, interior" means a lot other than a corner lot.

(22) "Maintenance bond" means an agreement by the developer with the City to maintain and keep in good repair all improvements of the subdivision for a period of one year after approval by the City Engineer of the construction of such improvements and in an amount determined by the City Engineer to be sufficient to secure such maintenance and not less than ten percent (10%) of the performance bond amount and which agreement shall be secured by sufficient sureties or assets.

(23) "Major subdivision" means any subdivision not classified as a minor subdivision.

(24) "Minor subdivision" means a division of a parcel of land in accordance with Ohio R.C. 711.131 and with Section 1105.06 of these Regulations; also known as lot splits.

(25) "Minor street" means any street not a highway, primary or secondary thoroughfare, or local or collector street, and intended to serve and to provide access exclusively to the properties abutting thereon.

(26) "Performance bond" means an agreement by the developer with the City guaranteeing the completion of physical improvements according to approved plans and specifications and in an amount determined by the City Engineer to be sufficient to secure the completion of such improvements and secured by sufficient sureties or assets.

(26.1) "Permanent marker" means a one-half inch diameter steel rod thirty inches in length.

(27) "Planned Unit Development" means the type of land development defined in the

Zoning Ordinance, wherein standards and procedures are established for such land use, including reference to these Regulations.

(28) "Planning Commission" means the Planning Commission of the City.

(29) "Planning Director" means the Planning Director as defined in the Charter of the City or his agent designated to perform certain duties on his behalf.

(30) "Preliminary plat" means the preliminary drawing described in these Regulations, indicating the proposed manner or layout of the subdivision to be submitted to the Planning Commission for approval.

(31) "Public way" means an alley, avenue, boulevard, bridge, channel, ditch, easement, expressway, freeway, highway, land, parkway, right of way, road, sidewalk, street, subway, tunnel, viaduct, walk or other ways which the general public or a public entity have a right to use, or which are dedicated to public use, whether improved or not.

(32) "Registered engineer" means an engineer properly licensed and registered in the State of Ohio.

(33) "Registered land surveyor" means a land surveyor properly licensed and registered in the State of Ohio.

(34) "Resubdivision" means a change in the plat or drawing of a recorded major or minor subdivision if such change affects any street layout, lot line or public way.

(35) "Right of way" means any parcel of land taken or dedicated for use as a public way. In addition to the roadway, it normally incorporates the curbs, lawn strips, sidewalks, lighting and drainage facilities and may include special features such as separation, landscaped areas, viaducts and bridges.

(36) "Sedimentation plan" means a plan for the control of sedimentation in accordance with the requirements of Chapter 1117 of these Regulations.

(37) "Sidewalk bond" means an agreement by the developer with the City guaranteeing the construction of required sidewalks in a subject subdivision or development.

(38) "Subdivision" means:

A. The division of any parcel of land shown as a unit or as continuous units on the last preceding tax roll, into two or more parcels, sites or lots, any one of which is less than five acres for the purpose whether immediate or future, of transfer of ownership; provided, however, that the division or partition of land into parcels of more than five acres not involving any new streets or easements of access, and the sale or exchange of parcels between adjoining lot owners, where such sale or exchange does not create additional building sites, shall be exempted; or

B. The improvement of one or more parcels of land for residential, commercial or industrial structures or groups of structures involving the division or allocation of land for the opening, widening, extension of any street or streets, except private streets serving industrial structures; the division or allocation of land as open spaces for common use by owners, occupants or lease holders or as easements for the extension and maintenance of public sewer, water, storm drainage or other public facilities.

(39) "Tree plan" means a plan for the planting of desirable shade trees in public areas in accordance with Chapter 1129 of these Regulations.

(40) "Thoroughfare" means a major trafficway designated in the Thoroughfare Plan as a regional thoroughfare, primary thoroughfare, secondary thoroughfare or collector street.

(41) "Thoroughfare Plan" means the official plan of proposed regional highways, primary and secondary thoroughfares, and collector streets of the City.

(42) Other pertinent terms shall be as defined in any current Zoning Ordinance or other ordinance of the City or as their use and ordinary meaning indicate.
(Ord. 141-83. Passed 9-26-83.)

ORDINANCE NO. _____

ORDINANCE TO AMEND VARIOUS SECTIONS OF ORDINANCE NO. 166-84, THE CODIFIED ORDINANCES OF FAIRFIELD, OHIO, RELATIVE TO THE STORM WATER QUALITY MANAGEMENT PLAN, DRAINAGE, SEDIMENTATION CONTROL, STORM WATER MANAGEMENT REQUIREMENTS AND SEWER REQUIREMENTS.

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. Various section of Ordinance No. 166-84, The Codified Ordinances of Fairfield, Ohio, relative to the Storm Water Quality Management Plan, Drainage, Sedimentation Control, Storm Water Management Requirements and Sewer requirements are hereby amended to read as shown in the attached Exhibit "A" which is incorporated herein by reference.

Section 2. This Ordinance shall take effect at the earliest period allowed by law.

Passed _____ _____
Mayor's Approval

Posted _____

First Reading 2/10/14 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\2014\Storm Water - Ord

Exhibit A

CHAPTER 906 DRAINAGE MAINTENANCE AND ABATEMENT PROCEDURE

906.01 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 STORM WATER 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 STORM WATER 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" STORM WATER PROBLEMS, AND MAINTENANCE WILL NOT BE PROVIDED BY THE CITY EXCEPT IN CASE OF PUBLIC EMERGENCY AS DETERMINED BY THE PUBLIC WORKS DIRECTOR.

906.02 ABATEMENT PROCEDURES.

(A) <u>NOTICE TO CORRECT IMPROPER DRAINAGE.</u>

(1) WHENEVER THE CITY SHALL FIND THAT (I) A TRACT OF LAND NOT MAINTAINED BY THE CITY IS INADEQUATELY DRAINED, OR (II) THERE IS EXCESSIVE EROSION OR SEDIMENTATION UPON SUCH LAND, OR (III) THERE IS AN OBSTRUCTION TO A CULVERT OR WATER COURSE UPON SUCH LAND THAT INTERFERES WITH WATER NATURALLY FLOWING THEREIN, OR (IV) 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.

(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.

A. 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.

B. 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.

C. 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.

(3) 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.

(4) 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.

(5) 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) <u>ABATEMENT COSTS.</u>

(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 ONE 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, SHALL BE CERTIFIED TO THE COUNTY AUDITOR TO BE PLACED ON THE TAX DUPLICATE AND COLLECTED AS OTHER TAXES ARE COLLECTED.

906.03 POST-CONSTRUCTION STORMWATER BEST MANAGEMENT PRACTICE OPERATION AND MAINTENANCE.

(A) <u>OPERATION AND MAINTENANCE PLAN.</u>

(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:

A. DESIGNATE THE ENTITY ASSOCIATED WITH PROVIDING THE BEST MANAGEMENT PRACTICES (BMPS) INSPECTION AND MAINTENANCE.

B. INDICATE ROUTINE AND NON-ROUTINE MAINTENANCE TASKS TO BE UNDERTAKEN.

C. INDICATE A SCHEDULE FOR INSPECTION AND MAINTENANCE TASKS.

D. PROVIDE PROOF OF ANY NECESSARY LEGALLY BINDING MAINTENANCE EASEMENTS AND AGREEMENTS THAT ARE NECESSARY TO PROPERLY INSPECT AND MAINTAIN THE BMP(S).

E. PROVIDE A MAP SHOWING THE LOCATION OF THE BMP(S) THAT ARE INDICATED ON THE CITY OF FAIRFIELD APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND NECESSARY ACCESS AND MAINTENANCE EASEMENTS.

F. PROVIDE DETAILED BMP DRAWINGS AND INSPECTION AND MAINTENANCE PROCEDURES.

G. ENSURE THAT THE COLLECTED POLLUTANTS RESULTING FROM BMP MAINTENANCE ACTIVITIES ARE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL GUIDELINES.

(B) <u>DECLARATION OF COVENANTS AND RESTRICTIONS.</u> 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) <u>INSPECTION</u>.

(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.

(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 906.01 AND 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).

906.99 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.

CHAPTER 921 – WATER

921.03 APPLICATION FOR CONNECTION

(e) Replacement or Repair of Service Branches. Where a service branch is installed, the Water Division shall repair and maintain it or replace it with a branch of the same size from the main to and including the curb stop ~~valve if the valve is outside~~ **WITHIN** the right of way or to the limits of the right of way if the valve is ~~inside~~ **OUTSIDE OF** the right of way. The property owner is responsible for maintaining the service branch from ~~the edge of the right of way to the~~ **SAID LOCATION TO THE PREMISES, WITH THE EXCEPTION OF THE WATER METER, TO ASSURE A SAFE WATER SUPPLY AND IN A STRUCTURAL CONDITION THAT WILL PERMIT WATER SERVICE WITHOUT LEAKAGE. COMPLETE REPLACEMENT MUST BE MADE WHERE IT IS DETERMINED BY THE WATER DIVISION THAT A LINE IS UNSERVICEABLE. FAILURE BY THE OWNER TO MAKE TIMELY REPAIRS TO OR REPLACEMENT OF THE SERVICE LINE WILL RESULT IN THE TERMINATION OF WATER SERVICE INCLUDING SERVICE LINES PROPOSED FOR RE-USE FOR NEW CONSTRUCTION.** ~~Ultimate point of use.~~

(Ord. 20-87. Passed 2-23-87.)

921.04 LICENSE; BONDING REQUIREMENTS

(a) License. Any person, firm or corporation working on any part of the City's water distribution system, including water service lines and water meters, must first obtain a valid water service license issued and signed by the Public Utilities Director or his/her designee. Application for such license shall be made to the Public ~~Works~~ Utilities Director, and a license fee of thirty dollars ($30.00) shall accompany the application. The license shall be valid within the calendar year that it was issued, and must be renewed cyclical on January 1st with an additional fee paid each year. The license applicant shall be required to prove to the satisfaction of the Public Utilities Director and City Manager that he/she possesses the qualifications necessary for working on the City's water distribution system. The applicant may be required to pass a test as to competency under the bylaws and regulations adopted by the City of Fairfield. A license may be revoked by the Public Utilities Director if the licensee violates any laws, ordinances, bylaws and regulations governing work on the City water distribution system.

(Ord. 128-07. Passed 10-9-07.)

CHAPTER 925 - SEWERS

925.03 GENERAL SEWER CONSTRUCTION REQUIREMENTS.

(g) Inspections.

(1) All sewer and appurtenant structures shall be inspected during construction, ~~and~~ installation **AND REPAIR** by the Public Works Director or inspectors assigned by him and responsible to him.

(2) The Public Works Director shall appoint or designate an inspector for periodical or continuous inspection as the type of work may require or as he deems necessary.

925.05 CONNECTION TO PUBLIC SEWERS

(c) License Required for Construction.

(1) Sewer tapper's license. A sewer service **LATERAL AND/OR** connection may only be made, built or repaired by a person, firm or corporation having a sewer tapper's license issued by the Public Utilities Director. Application for such licenses must be made to the Public Utilities Director and a license fee of thirty dollars ($30.00) shall accompany the application. The license shall be valid for one year, and must be renewed and an additional license fee paid each year. The license applicant shall be required to prove to the satisfaction of the Public Utilities Director that he/she possesses the qualifications necessary for a competent sewer builder. The applicant may be required to pass a test as to competency under the bylaws and regulations adopted by the Public Utilities Director.

925.07 SPECIAL STORM SEWER RULES.

(a) 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:

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

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

(b) Discharges Into Storm Sewers Regulated. Storm water 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.

(c) 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 storm water, except as follows:

(1) Water line flushing or other potable water discharges, irrigation or lawn watering, diverted stream flows, rising ground water, uncontaminated ground water infiltration, uncontaminated pumped ground water, 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 discharges, water from fire fighting 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.**

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

(3) Any non-storm water 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.

(d) 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.

(e) 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.

(f) 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.

(g) 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 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 STORM WATER DISCHARGES (OHIO EPA PERMIT NO. OHC000004, 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.**

(H) STORMWATER MANAGEMENT CONTROLS.

(1) 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 MATERIALS SPECIFICATION DOCUMENT, OR ANY SUBSEQUENT SUPPLEMENTS TO THIS DOCUMENT.

(2) 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 STORM WATER DISCHARGES (OHIO EPA

PERMIT NO. OHC000004, 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.

~~(h)~~**(I)** Maintenance Responsibility for Detention/Retention Basins.

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

(2) 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.

~~(3) 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.)

~~(i)~~**(J)** Storm Water Quality Management Plan. As a requirement of the City's NPDES Phase II Storm Water Permit, Council hereby adopts the "Storm Water Quality Management Plan" dated ~~January 2005~~ **February 2014,** prepared by City staff as the City's official planning document for addressing storm water quality and pollution prevention. All subsequent amendments to the "Storm Water 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.
(Ord. 20-05. Passed 2-14-05.)

~~(j)~~**(K)** 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.

(kL) 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.)

CHAPTER 1117 – STORM DRAINAGE AND SEDIMENTATION CONTROL

1117.06 SEDIMENTATION PLAN.

(a) Intent.

(1) 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.

(2) FOR SITES REGULATED UNDER THE OHIO EPA GENERAL CONSTRUCTION PERMIT FOR STORM WATER DISCHARGES (OHIO EPA PERMIT NO. OHC000004, 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.

(3) No subdivision shall be approved unless:

A. 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

B. There has been a determination by the Planning Commission **AND THE OHIO EPA** that such plans are not required.

(b) Performance Principles and Standards.

(1) The following principles are effective in minimizing erosion and sedimentation and shall be **MET** ~~included~~ where applicable **FOR A DEVELOPING SITE AND INCLUDED** in the control plan.

A. DEVELOPMENT OR REDEVELOPMENT SITES THAT ARE COVERED UNDER THE OHIO EPA GENERAL CONSTRUCTION PERMIT SHALL DEVELOP A STAND-ALONE STORM WATER POLLUTION PREVENTION PLAN (SWP3) PER THE REQUIREMENTS OF THE OHIO EPA PERMIT OHC000004 (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.

B. 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.

C. 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.

D. 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.

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

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

G. 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.

H. 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.

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

A. 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.

B. 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 with the requirements of the City.

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

C. 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.)

(3) 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:

A. A DESCRIPTION OF THE NATURE AND TYPE OF THE CONSTRUCTION ACTIVITY.

B. 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).

C. AN ESTIMATE OF THE IMPERVIOUS AREA AND PERCENT IMPERVIOUSNESS CREATED BY THE CONSTRUCTION ACTIVITY.

D. A CALCULATION OF THE RUNOFF COEFFICIENTS FOR BOTH THE PRE-CONSTRUCTION AND POST- CONSTRUCTION SITE CONDITIONS.

E. EXISTING DATA DESCRIBING THE SOIL AND, IF AVAILABLE, THE QUALITY OF ANY DISCHARGE FROM THE SITE.

F. 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.

G. A DESCRIPTION OF PRIOR LAND USES AT THE SITE.

H. A SITE MAP IDENTIFYING THE FOLLOWING:

(1.) 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.

(2.) 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 two 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.**

(3.) SOILS TYPES FOR ALL AREAS OF THE SITE, INCLUDING LOCATIONS OF UNSTABLE OR HIGHLY ERODIBLE SOILS.

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

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

(6.) 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.

(7.) SEDIMENT AND STORM WATER MANAGEMENT BASINS NOTING THEIR SEDIMENT SETTLING VOLUME AND CONTRIBUTING DRAINAGE AREA.

(8.) FOR SUBDIVIDED DEVELOPMENTS WHERE THE SWP3 DOES NOT CALL FOR A CENTRALIZED SEDIMENT CONTROL CAPABLE OF CONTROLLING MULTIPLE INDIVIDUAL LOTS, A DETAIL DRAWING OF A TYPICAL INDIVIDUAL LOT SHOWING STANDARD INDIVIDUAL LOT EROSION AND SEDIMENT CONTROL PRACTICES.

(9.) THE LOCATION OF DESIGNATED CONSTRUCTION ENTRANCES WHERE THE VEHICLES WILL ACCESS THE CONSTRUCTION SITE.

(10.) THE LOCATION OF ANY IN-STREAM ACTIVITIES INCLUDING STREAM CROSSINGS.

(11.) 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;

(12.) 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.

I. 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.

J. TEMPORARY AND PERMANENT SOIL STABILIZATION CONTROLS IN ACCORDANCE WITH THE OHIO EPA GENERAL CONSTRUCTION PERMIT REQUIREMENTS AND ODNR RAINWATER AND LAND DEVELOPMENT MANUAL STANDARDS.

K. DETAIL DRAWINGS FOR ALL STRUCTURAL PRACTICES THAT INCLUDE INSTALLATION, INSPECTION, AND MAINTENANCE PROCEDURES.

L. A certification of the quantity of excavation and fill involved.

M. 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.

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

(c) Approval Procedures.

(1) Three backline copies of complete plans shall be filed with the office of the City Engineer.

(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 storm water management and sediment control program.
(Ord. 167-95. Passed 11-13-95.)

(d) Enforcement.

(1) The Public Works Director or his designee shall en force 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 sediment and erosion control measures are not provided in accordance with the approved site development plans.
(Ord. 127-03. Passed 8-11-03.)

CITY OF FAIRFIELD, OHIO
CITY COUNCIL MEETING COMMUNICATION

ITEM NO. 11(J)(2)

DATE: February 10, 2014

ITEM:

The public improvements for Iwata Drive are ready to be accepted by the City.

FINANCIAL IMPACT:

None

SYNOPSIS:

This project to create a public street located on the south side of Union Centre Boulevard (approximately 1300' east of Seward Road) was a project by Schumacher Dugan Construction, Inc. Schumacher Dugan completed the project in 2009. This street was constructed to create public access for the businesses constructed on Iwata Drive.

BACKGROUND:

This project involved the construction of approximately 600 feet of new road from Union Centre Boulevard. Included in this work was asphalt pavement with an aggregate base, curb and gutter, storm sewer, sanitary sewer, and waterline. This project was inspected by Public Works staff and a punch list of deficient items generated. These punch list items have been addressed to City staff's satisfaction. The dedication plat for this street was approved and accepted by Planning Commission.

STAFF RECOMMENDATION:

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

LEGISLATIVE ACTION: Suspension of Rules and Adoption Requested?	☐ **yes**	☒ **no**	**If yes, explain above.**
Emergency Provision Needed?	☐ **yes**	☒ **no**	**If yes, explain above.**

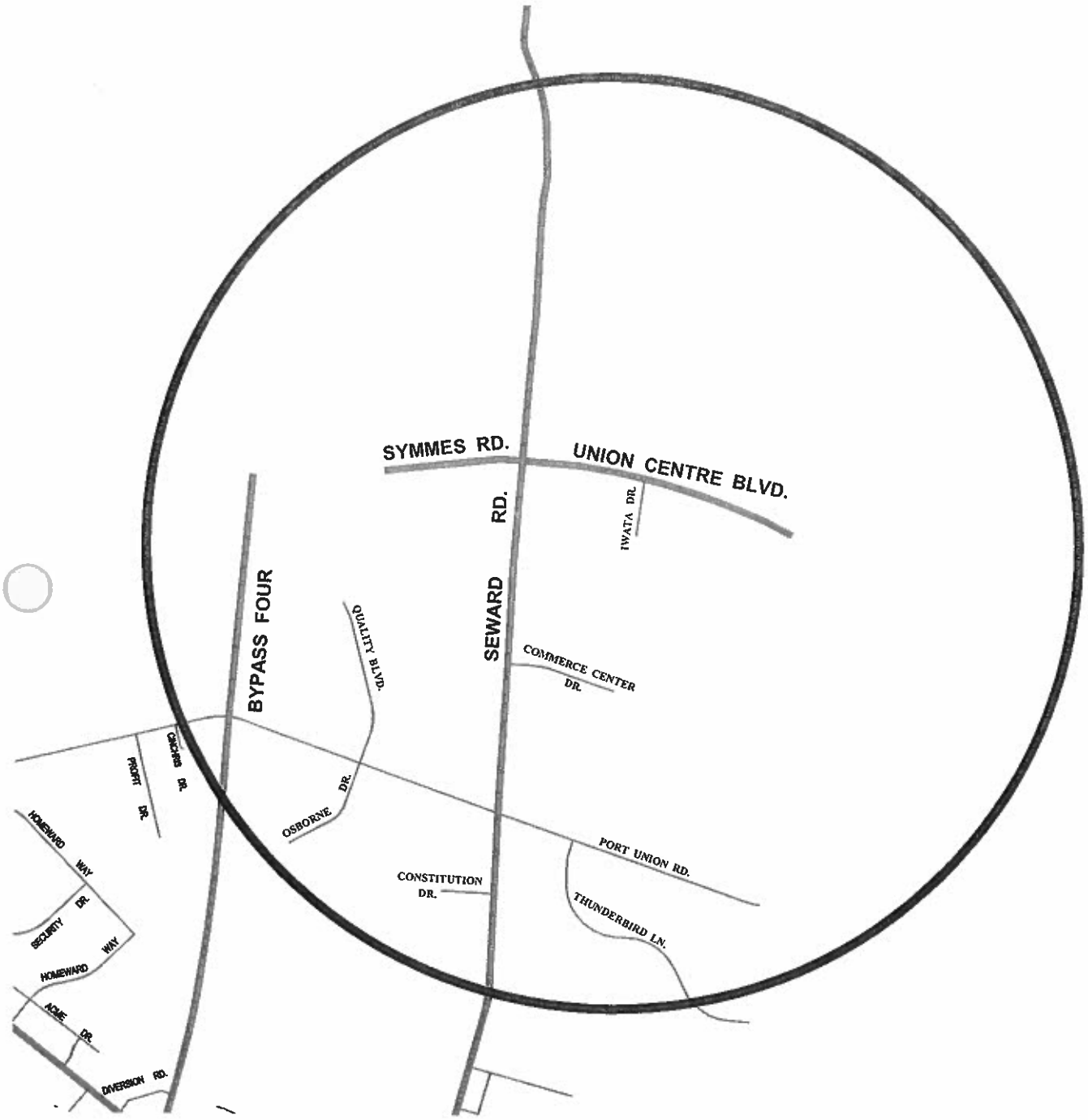
Prepared by: _____

Approved for Content by: _____

Financial Review (where applicable): _____

Legal Review (where applicable): _____

Accepted for Council Agenda: _____


SYMMES RD.
UNION CENTRE BLVD.
IWATA DR.
SEWARD RD.
BYPASS FOUR
QUALITY BLVD.
COMMERCE CENTER DR.
CIRCUS DR.
PROFIT DR.
OSBORNE DR.
HOMEWARD WAY
PORT UNION RD.
CONSTITUTION DR.
THUNDERBIRD LN.
SECURITY DR.
HOMEWARD WAY
ACME DR.
DIVERSION RD.

ORDINANCE NO. _____

ORDINANCE RELEASING THE MAINTENANCE BOND AND ACCEPTING PUBLIC IMPROVEMENTS FOR THE IWATA DRIVE DEDICATION PLAT.

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. The maintenance bond for the Iwata Drive dedication plat 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 the Iwata Drive dedication plat.

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\2014\Iwata Drive - Ord

11(b)(3)

ITEM NO.

CITY OF FAIRFIELD, OHIO
CITY COUNCIL MEETING COMMUNICATION

ITEM:

DATE: 02/10/2014

2014 Sidewalk/Apron and Curb Replacement Program.

FINANCIAL IMPACT:

Total Impact of $382,000.
$232,000 ($210,333 for the sidewalk plus a contingency of $21,667) from the General Fund.
$150,000 ($95,325 for the curb plus a contingency of $54,675) from the Street Fund.

SYNOPSIS:

The sidewalk replacement program was implemented to complete inspections of all city sidewalks on a four (4) year rotational basis. The curb replacement program and sidewalk program were combined this year in order to achieve better pricing for the City.

BACKGROUND:

The Sidewalk/Apron Replacement program that was implemented in 1994 to inspect sidewalks and approach aprons citywide. Marking of sidewalks and aprons city wide has been completed.

The property owners are notified by certified mail that they have sixty days to either seek an independent contractor on their own to complete the work, or have the city's contractor perform the work. If they choose to use the City contractor, the property owners are required to reimburse the City by either invoice payment or through an assessment on their property taxes collected over a five (5) year period.

A bid opening was held on January 21, 2014 for which seven (7) bids were received. The bid results are attached. Based on past performance of the lowest bidder, the best bidder is R.A. Miller Construction Company of Hamilton, Ohio.

STAFF RECOMMENDATION:

The staff recommends that City Council authorize the City Manager to enter into a one (1) year contract with R.A. Miller of Hamilton, Ohio for the 2014 Sidewalk/Apron and Curb Replacement Program at the unit prices indicated. The recommendation to exercise the year 2 and year 3 option will be determined in years 2 and 3.

It is further recommended that City Council authorize and direct the preparation of legislation for the appropriation of funding in the amount of $382,000. $232,000 ($210,333 for the sidewalk plus a contingency of $21,667) from the General Fund and $150,000 ($95,325 for the curb plus a contingency of $54,675) from the Street Fund.

LEGISLATIVE ACTION: Suspension of Rules and Adoption Requested? ☐ yes ☒ no **If yes, explain above.**

Emergency Provision Needed? ☐ yes ☒ no **If yes, explain above.**

Prepared by: _____

Approved for Content by: _____

Financial Review (where applicable): _____

Legal Review (where applicable): _____

Accepted for Council Agenda: _____

City of Fairfield

March 2014

Dear Property Owner:

The sidewalk and apron in front of your property was recently inspected by the City of Fairfield as part of its Sidewalk Replacement Program. This program is designed to identify cracks and structural deficiencies of sidewalks and driveway aprons and to provide an efficient mechanism for the replacement of such problems.

The City of Fairfield understands the inconvenience which may result from this notice. However, sidewalk replacement is an important method of reducing the potential for injury to citizens as well as the liability to you as a property owner.

Please find enclosed Exhibit "A" which identifies the items in need of replacement which have been marked with white paint.

You may complete the replacement or repair yourself or hire a contractor of your choice. If you choose one of these options, we ask that the replacement or repair be completed no later than sixty (60) days from the date you received this letter, and that you notify the City of your intentions to have the work performed by you or your own contractor. Please remember that replacements must be made in accordance with construction standards of the City of Fairfield. **In order to ensure that these standards are met, please contact the City's Construction Services Sidewalk Inspector at 867-4218 for an inspection when the forms are in place and at least twenty-four (24) hours in advance of the new concrete being poured.** If the City is not properly notified and the forms inspected, you may be required to remove the concrete and have it replaced again in order for the proper inspection procedures to occur.

After sixty (60) days, the City will contract for any replacement that has not been completed. The City's contractor will perform the work and you will receive an invoice from the City. The cost for the City's contractor to replace your sidewalk is **$6.05 per square foot** for sidewalk and **$6.40 per square foot** for the apron and the sidewalk area between the apron and your driveway **($7.80 per square foot for commercial aprons)**. Many of the deficiencies marked were for trip hazards which can be corrected by cutting the trip hazard. The City has identified many of these hazards that can be corrected via the cutting method as a way to save the residents money, inconvenience, and damage to the adjacent lawn areas. The cuts will be done by a separate City contractor prior to any sidewalk and apron replacement. The cost for each cut will be $51.50 per cut. This will be a savings of more than 50% on most sidewalk block replacements. **The City will employ the cutting method when applicable unless the owner directs us to replace the block instead.** The contractor performing the concrete cutting will be Precision Concrete. An informational sheet on the cutting is included and more information can be found at www.safesidewalks.com

The City requests you not send the payment until you receive an invoice from the City.

Should you choose to defer payment, the City will arrange for the cost of the replacement to be added to your property tax bill as an assessment. Such assessments are collected over a period of five (5) years and include an interest charge and a service charge of 7% on the unpaid balance.

If the City's contractor performs the work, please notify the City of any privately installed underground lines located near the marked sidewalk/apron replacement area (i.e. invisible fences, sprinkler systems, and sump pump drain pipes). Every effort will be made by the City's contractor to avoid damaging these lines. **However, the City will not be responsible for damage to any privately installed underground services located within the public right-of-way.**

If there are any questions, or if you need additional information, please do not hesitate to contact Rick Scalf the Construction Services Sidewalk Inspector at 867-4218 or by email at rscalf@fairfield-city.org.

Sincerely,

David Butsch

David Butsch
Public Works Director

City of Fairfield
Bid Tabulation for "2014 Sidewalk/Apron Replacement Program"
Bid Opening: January 21, 2014, City of Fairfield Council Chambers
Estimate - $330,000 1 yr.

	Prus Construction 5325 Wooster Road Cincinnati, OH 45226			**Hendy Inc.** 7968 Wesselman Road Cleves, OH 45002			**Jackson Construction Inc.** 5245 Thomas Rd. Trenton, OH 45067		
Description	Unit Cost Yr 1	Unit Cost Yr 2	Unit Cost Yr 3	Unit Cost Yr 1	Unit Cost Yr 2	Unit Cost Yr 3	Unit Cost Yr 1	Unit Cost Yr 2	Unit Cost Yr 3
Concrete Sidewalks - 4" (approx. 17,460 S.F.) Surface Sq. Ft.	$ 6.65	$ 7.10	$ 7.25	$ 7.24	$ 7.75	$ 8.25	$ 6.85	$ 7.25	$ 8.20
Concrete Driveway Aprons /Approaches - 7" (approx. 15,750 S.F.) Surface Sq. Ft.	$ 7.25	$ 7.60	$ 7.75	$ 7.34	$ 7.85	$ 8.35	$ 7.85	$ 8.10	$ 9.10
Concrete Driveway Aprons /Approaches - 9" (approx. 500 S.F.) Surface Sq. Ft.	$ 8.00	$ 8.50	$ 8.50	$ 7.34	$ 7.85	$ 8.35	$ 10.85	$ 11.00	$ 12.85
Concrete Curb & Gutter (approx. 1,765ft.) Foot	$ 30.00	$ 33.00	$ 34.00	$ 40.00	$ 41.00	$ 42.00	$ 32.00	$ 36.00	$ 42.00
Curb Ramps (with truncated domes) (approx. 10 each) Each	$ 300.00	$ 350.00	$ 375.00	$ 500.00	$ 550.00	$ 575.00	$ 985.00	$ 1,000.00	$ 1,500.00
Modified Type 6 Curb (Lawn curb) Foot	$ 25.00	$ 25.00	$ 25.00	$ 38.00	$ 39.00	$ 40.00	$ 45.00	$ 50.00	$ 60.00
Full Depth Concrete Pavement Repair Surface Sq. Ft.	$ 135.00	$ 135.00	$ 135.00	$ 61.25	$ 62.00	$ 63.00	$ 150.00	$ 165.00	$ 185.00
Complete Curb Replacement Foot	$ 27.00	$ 27.00	$ 27.50	$ 42.00	$ 42.50	$ 43.00	$ 62.00	$ 68.00	$ 68.00
Concrete Curb & Gutter (approx. 500 feet) Foot	$ 38.00	$ 39.00	$ 39.00	$ 40.00	$ 40.75	$ 41.75	$ 42.00	$ 48.00	$ 52.00
Concrete Driveway Aprons/Approaches - 7" (approx. 1,500 sf) Surface Sq. Ft.	$ 8.50	$ 8.75	$ 8.75	$ 7.50	$ 8.00	$ 41.50	$ 8.85	$ 9.00	$ 10.00
Concrete Driveway Aprons/Approaches - 9" (approx. 500 sf) Surface Sq. Ft.	$ 9.00	$ 9.25	$ 9.25	$ 7.60	$ 8.10	$ 8.50	$ 11.85	$ 12.00	$ 13.00
Concrete Sidewalks - 4" (misc.) (approx. 1,500 sf) Surface Sq. Ft.	$ 8.00	$ 8.25	$ 8.25	$ 7.15	$ 7.65	$ 8.20	$ 7.85	$ 8.00	$ 9.00
Total Base Bid (Yr. 1 Only)	$ 338,496.50			$ 367,060.40			$ 366,888.50		

These bids will be reviewed by the Public Works Department and a recommendation will be made to Council. There is no guarantee that the contract will be awarded to the lowest bidder. Contracts are awarded to the bidder deemed to be the best and the lowest bidder.

City of Fairfield
Bid Tabulation for "2014 Sidewalk/Apron Replace
Bid Opening: January 21, 2014, City of Fairfield C
Estimate - $330,000 1 yr.

	America's Decorative Concrete 901 E. Elm Street Union City, OH 45390			Adleta Construction P.O. Box 15872 Cincinnati, OH 45215			R.A. Miller Construction Co. 4148 Augspurger Road Hamilton, OH 45011		
Description	Bid Unit	Unit Cost Yr 1	Unit Cost Yr 2	Unit Cost Yr 3	Unit Cost Yr 1	Unit Cost Yr 2	Unit Cost Yr 3	Unit Cost Yr 1	Unit Cost Yr 2	Unit Cost Yr 3
Concrete Sidewalks - 4" (approx. 17,460 S.F.)	Surface Sq. Ft.	$ 5.62	$ 5.90	$ 6.25	$ 6.85	$ 7.06	$ 7.28	$ 6.05	$ 6.35	$ 6.70
Concrete Driveway Aprons /Approaches - 7" (approx. 15,750 S.F.)	Surface Sq. Ft.	$ 6.46	$ 6.80	$ 7.20	$ 7.70	$ 7.94	$ 8.19	$ 6.40	$ 6.75	$ 7.10
Concrete Driveway Aprons /Approaches - 9" (approx. 500 S.F.)	Surface Sq. Ft.	$ 9.14	$ 9.60	$ 10.15	$ 7.70	$ 7.94	$ 8.19	$ 7.80	$ 8.20	$ 8.60
Concrete Curb & Gutter (approx. 1,765ft.)	Foot	$ 28.47	$ 29.96	$ 31.65	$ 24.40	$ 25.15	$ 25.93	$ 30.00	$ 31.50	$ 33.10
Curb Ramps (with truncated domes) (approx. 10 each)	Each	$ 867.41	$ 915.00	$ 963.80	$ 1,300.00	$ 1,340.21	$ 1,381.66	$ 250.00	$ 262.50	$ 275.65
Modified Type 6 Curb (Lawn curb)	Foot	$ 29.00	$ 30.50	$ 32.22	$ 30.00	$ 30.93	$ 31.89	$ 18.00	$ 18.90	$ 19.85
Full Depth Concrete Pavement Repair	Surface Sq. Ft.	$ 72.00	$ 75.80	$ 80.00	$ 85.00	$ 87.63	$ 90.34	$ 58.00	$ 60.90	$ 63.95
Complete Curb Replacement	Foot	$ 55.00	$ 57.90	$ 61.10	$ 22.00	$ 22.68	$ 23.38	$ 20.35	$ 21.40	$ 22.50
Concrete Curb & Gutter (approx. 500 feet)	Foot	$ 47.66	$ 50.20	$ 52.95	$ 24.40	$ 25.15	$ 25.93	$ 32.00	$ 35.70	$ 37.50
Concrete Driveway Aprons/Approaches - 7" (approx. 1,500 sf)	Surface Sq. Ft.	$ 9.61	$ 10.12	$ 10.70	$ 7.70	$ 7.94	$ 8.19	$ 6.70	$ 7.45	$ 7.85
Concrete Driveway Aprons/Approaches - 9" (approx. 500 sf)	Surface Sq. Ft.	$ 10.44	$ 11.00	$ 11.60	$ 7.70	$ 7.94	$ 8.19	$ 8.00	$ 8.85	$ 9.30
Concrete Sidewalks - 4" (misc.) (approx. 1,500 sf)	Surface Sq. Ft.	$ 7.50	$ 7.90	$ 8.33	$ 6.85	$ 7.06	$ 7.28	$ 6.55	$ 6.90	$ 7.25
Total Base Bid (Yr. 1 Only)		$ 318,078.85			$ 338,667.00			$ 305,658.00		

These bids will be reviewed by the Public Works Departmen will be made to Council. There is no guarantee that the cor to the lowest bidder. Contracts are awarded to the bidder a and the lowest bidder.

City of Fairfield
Bid Tabulation for "2014 Sidewalk/Apron Replace
Bid Opening: January 21, 2014, City of Fairfield C
Estimate - $330,000 1 yr.

Advanced Contractors
115 Hosea Avenue
Cincinnati, OH 45215

Description	Bid Unit	Unit Cost Yr 1	Unit Cost Yr 2	Unit Cost Yr 3
Concrete Sidewalks - 4" (approx. 17,460 S.F.)	Surface Sq. Ft.	$ 6.90	$ 7.90	$ 8.90
Concrete Driveway Aprons /Approaches - 7" (approx. 15,750 S.F.)	Surface Sq. Ft.	$ 8.10	$ 9.10	$ 10.10
Concrete Driveway Aprons /Approaches - 9" (approx. 500 S.F.)	Surface Sq. Ft.	$ 12.00	$ 13.00	$ 14.00
Concrete Curb & Gutter (approx. 1,765ft.)	Foot	$ 32.00	$ 35.00	$ 40.00
Curb Ramps (with truncated domes) (approx. 10 each)	Each	$ 500.00	$ 600.00	$ 700.00
Modified Type 6 Curb (Lawn curb)	Foot	$ 40.00	$ 50.00	$ 60.00
Full Depth Concrete Pavement Repair	Surface Sq. Ft.	$ 65.00	$ 75.00	$ 85.00
Complete Curb Replacement	Foot	$ 35.00	$ 45.00	$ 55.00
Concrete Curb & Gutter (approx. 500 feet)	Foot	$ 33.00	$ 36.00	$ 40.00
Concrete Driveway Aprons/Approaches - 7" (approx. 1,500 sf)	Surface Sq. Ft.	$ 8.50	$ 9.50	$ 10.50
Concrete Driveway Aprons/Approaches - 9" (approx. 500 sf)	Surface Sq. Ft.	$ 12.50	$ 13.50	$ 14.50
Concrete Sidewalks - 4" (misc.) (approx. 1,500 sf)	Surface Sq. Ft.	$ 7.00	$ 8.00	$ 9.00
Total Base Bid (Yr. 1 Only)		$		361,529.00

These bids will be reviewed by the Public Works Departmen will be made to Council. There is no guarantee that the cor to the lowest bidder. Contracts are awarded to the bidder a and the lowest bidder.

ORDINANCE NO. _____

ORDINANCE TO AUTHORIZE THE CITY MANAGER TO ENTER INTO A ONE (1) YEAR CONTRACT WITH OPTIONS FOR YEARS TWO (2) AND THREE (3) WITH R.A. MILLER OF HAMILTON, OHIO FOR THE 2014 SIDEWALK/APRON REPLACEMENT PROGRAM.

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 one (1) year contract with options for years two (2) and three (3) with R.A. Miller of Hamilton, Ohio for the 2014 Sidewalk/Apron replacement in accordance with the bid on file in the office of the City Manager.

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\2014\RA Miller - Ord

ITEM NO. 11(B)(1)

CITY OF FAIRFIELD, OHIO
CITY COUNCIL MEETING COMMUNICATION

DATE: 02/24/2014

ITEM:

Preliminary Legislation for Bridge Inspection Services

FINANCIAL IMPACT:

None at this time.

SYNOPSIS:

The Ohio Department of Transportation would perform bridge load rating calculations, scour assessments, bridge inspections and fracture critical plan development for all City bridges.

BACKGROUND:

The Ohio Department of Transportation is letting a contract for Bridge Inspection Program Services to perform bridge load rating calculations, scour assessments, bridge inspections and fracture critical plan development. ODOT has kept an inventory of these activities for local bridges in the past, but has required the work be done by the governing jurisdiction. The City would no longer perform these evaluations as required by FHWA for the national bridge inventory.

This project will evaluate bridges in order to keep the City's bridge inventory in compliance with the National Bridge Inspection Standards. This inventory must be kept in compliance to be eligible for federal funding.

City staff has contracted this work out to consultants in the past. Most recently Lockwood, Jones, and Beals completed bridge inspections for the City in 2013.

RECOMMENDATION:

It is recommended that the City Council authorize the City Manager to enter into a preliminary legislation agreement with the Ohio Department of Transportation for Bridge Inspection Program Services.

LEGISLATIVE ACTION: Suspension of Rules and Adoption Requested?	☐ **yes**	☒ **no**	**If yes, explain above.**
Emergency Provision Needed?	☐ **yes**	☒ **no**	**If yes, explain above.**

Prepared by: _____
Approved for Content by: _____
Financial Review (where applicable): _____
Legal Review (where applicable): _____
Accepted for Council Agenda: _____

Scope of Services Meeting Date: **/**/**
Approved Final Scope of Services Minutes Date: **/**/**

GENERAL ENGINEERING SERVICES
Central Office, Office of Structural Engineering
Scope of Services

The CONSULTANT may be required to perform the following services on a task order type basis for bridges designated by regulation or by agreement as City or Village inspection responsibility. Consultants must be prequalified for major bridge inspection services, which may include but are not limited to the following:

Task 1 - Scour Tasks
- Task 1A - Scour Critical Assessment
- Task 1B - Scour Plan-of-Action

Task 2 - Load Rating Tasks
- Task 2A - Field Measurements for Load Rating
- Task 2B - Load Rating Calculations
- Task 2C - Field Measurements for Gusset Plates
- Task 2D - Load Rating and Analysis of Gusset Plates

Task 3 – SMS/BMS Structure Inventory and Review

Task 4 – Inspection Procedures

- Task 4A - Fracture Critical Plan
- Task 4B – Underwater Inspection Procedures

Task 5 - Bridge Inspection
- Task 5A – Routine Bridge Inspection
- Task 5B – Fracture Critical Inspection
- Task 5C – Underwater Dive Inspection

Services shall be conducted in accordance with the following:

- ODOT Manual of Bridge Inspection, Latest Version
- Hydraulic Engineering Circulars 18, 20 and 23
- The Manual for Bridge Evaluation, Second Edition 2011 interim with revisions, AASHTO Publication
- Bridge Inspector's Reference Manual, FHWA NHI **Publication Number:** 03-001
- Underwater Bridge Inspection, **FHWA Publication Number:** FHWA NHI-10-027, Publication Year: 2010
- ODOT Bridge and Appraisal Coding Guide, Latest Version
- ODOT Bridge Design Manual, Latest Version

All work shall be performed on an actual cost basis. The CONSULTANT shall maintain a project cost accounting system that will segregate costs for individual task orders.

The duration of the agreement will be thirty-six (36) months from the authorization date of the agreement.

The Department will be performing an annual Quality Assurance Review (QAR) for each selected consultant in accordance with Manual of Bridge Inspection to ensure accuracy and consistency of the inspection and documentation in SMS/BMS.

The project will be divided in to four sub-projects (SP). A CONSULTANT will be selected for each sub-project. Municipalities will have the option to opt into or out of this program. The sub-projects have the following general geographic areas, general characteristics, and maximum contract values for all municipal bridges with municipal inspection responsibility obtained from BMS data as of October 2013:

Project: SP01 - District (1, 2, & 3), Total Structures = 530

Type	Span =< 20	20' < Span =< 60	60' < Span =< 200'	Span > 200'	Total
Single Span	78	137	33	0	**248**
Multi-Span	3	6	50	31	**90**
Culvert	154	35	1	0	**190**
Truss	0	1	1	0	**2**
Underwater Inspection	0	0	0	2	**2**
Fracture Critical Inspection	0	0	2	0	**2**

Project: SP02 - District (4, 11, & 12), Total Structures = 416

Type	Span =< 20	20' < Span =< 60	60' < Span =< 200'	Span > 200'	Total
Single Span	31	112	26	0	**169**
Multi-Span	0	7	54	45	**106**
Culvert	100	33	2	0	**135**
Truss	1	2	4	4*	**6**
Underwater Inspection	0	0	1	4	**5**
Fracture Critical Inspection	2	1	3	5	**11**

* Includes 4 movable steel truss structures

Project: SP03 - District (5, 6, & 10), Total Structures = 576

Type	Span =< 20	20' < Span =< 60	60' < Span =< 200'	Span > 200'	Total
Single Span	86	103	29	0	**218**
Multi-Span	1	6	42	34	**83**
Culvert	181	81	6	0	**268**
Truss	0	0	7	0	**7**
Underwater Inspection	0	0	0	0	**0**
Fracture Critical Inspection	0	0	11	5	**16**

Project: SP04 - District (7, 8, & 9), Total Structures = 594

Type	Span =< 20	20' < Span =< 60	60' < Span =< 200'	Span > 200'	Total
Single Span	57	121	29	0	**207**
Multi-Span	2	9	63	56	**130**
Culvert	155	90	5	0	**250**
Truss	0	0	5	2	**7**
Underwater Inspection	0	0	2	8	**10**
Fracture Critical Inspection	0	1	7	4	**12**

Please note that the total numbers of structure types is estimated based on current BMS data and may be adjusted. The estimated contract price value for each project is as follows:

SP01 $217,000
SP02 $221,000
SP03 $262,000
SP04 $300,000

The total amount of the four (4) agreements associated with this project shall not exceed $1,000,000.00. CONSULTANT shall clearly designate in the letter of intent the SP(s) they wish to be considered for.

Three copies of the letter of intent shall be submitted. The letter of intent shall demonstrate that the CONSULTANT has a clear understanding of the scope of services.

UNDERSTANDING

1. Inspections shall be completed by firms prequalified with ODOT for major bridge inspection with full time staff qualified for bridge inspection according to Manual of Bridge Inspection.

2. All reports and records compiled under this agreement shall become the property of the City or Village and shall be housed in the City or Village. CONSULTANT shall submit copies of all reports and calculations, both hard copy and electronic, to the City or Village for inclusion in their bridge records. This includes, as applicable, a printed copy of the inspection report, Scour Plan-of-Action, Fracture Critical Plan, load rating report, gusset plate analysis, inspection procedures, and field measurement notes, digital pictures as well as a reproducible digital data file (.pdf, .doc, and .xls formats).

3. Copies of all transmittal letters related to this Task Order shall be submitted to Central Office, Office of Structural Engineering. CONSULTANTS shall not submit reports to ODOT unless specifically requested to do so.

Price Proposal Due Date: **/**/**

Services to be furnished by CONSULTANT may include:

TASK 1 - SCOUR TASKS

Task 1A – Scour Assessment - The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection for the scope of this task. Deliverables include field notes, a completed Scour Critical Assessment Checklist as per Appendix I of the 2013 Manual of Bridge Inspection, and any other reference material needed for the bridge owner to properly maintain their bridge files. As applicable, CONSULTANT

shall complete structure inventory information in SMS/BMS with applicable scour updates.

Task 1B - Scour Plan-of-Action - The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection Appendix H for the scope of this task. Deliverables include a completed Scour Plan-of-Action, field notes, calculations, and any other reference material needed by bridge owner to maintain bridge files. As applicable, CONSULTANT shall complete Structure Inventory forms and SMS/BMS with applicable scour updates for submittal to ODOT.

TASK 2 – LOAD RATING TASKS

Task 2A - Field Measurements for Load Rating - Should no plans exist or if additional information is required, each main member shall be field measured for load rating. The condition of the member should be noted on the field documentation. All measurements shall be included in the load rating report.

Task 2B - Load Rating Calculations - The bridge carrying vehicular traffic shall be rated to determine the safe load carrying capacity. The CONSULTANT shall review existing bridge plans and inspection reports and other inspection information such as photographs and estimates of section loss for bridge members and connections. The analysis shall be performed for AASHTO HS20-44 [MS 18] (truck & lane) loading for both inventory and operating levels, and for four Ohio Legal Loads (2F1, 3F1, 4F1, and 5C1) at operating level. The CONSULTANT shall complete the Load Rating Analysis utilizing:

- Hand-calculations
- Spreadsheet(s); or
- ODOT- approved bridge analysis computer programs as listed in BDM Section 900 (PC Bars, VIRTIS, other software).

All programs other than PC Bars, VIRTIS, or spreadsheets shall be approved by the ODOT Office of Structural Engineering. Other computer programs which are approved by the Office of Structural Engineering shall include input and output data files as a deliverable to the City or Village.

AASHTO Load Factor Rating (LFR) shall be utilized for all bridges not designed by load and resistance factor design. AASHTO Load and Resistance Factor Rating (LRFR) shall be utilized for all structures designed by the load and resistance factor design method.

Load Rating Report Submittal to the City or Village shall include:

1. Two (2) printed copies and one electronic copy of the Load Rating Report for each bridge.

    a. The Load Rating Report shall be prepared and signed by a registered or non-registered engineer and checked, signed, sealed and dated by an Ohio Registered Professional Engineer.

    b. The Load Rating Report shall explain the method used to calculate the load rating of each bridge.

    c. The electronic deliverable shall include an Excel spreadsheet for each bridge which shall include the member areas, member capacities both with and without section loss, influence lines (can be the ordinates or graph of the lines), dead loads and dead load stresses in members, live loads and live load stresses in members for all truck loadings and the load ratings of the members. Truck loadings to be used for the ratings are specified in BDM Section 900.

2. Final summary of inventory and operating ratings for each member and the overall ratings of the structure shall be presented for each live load truck. An acceptable format is ODOT form BR-100.

3. The inventory and operating ratings shall be coded as per the most recent version of the ODOT Bridge Inventory Coding Guide.

4. Analysis program input files. Both input and output files shall be submitted when programs other than PC Bars, VIRTIS, or spreadsheets are used.

5. All calculations related to the load rating.

6. Completed SMS/BMS Structure Inventory forms with applicable load rating updates for submittal to ODOT.

Task 2C - Field Measurements for Gusset Plates - Gusset Plate analysis shall reflect the existing condition of the gusset plates and connections. As such, an ultrasound test (UT) shall be performed on gusset plates to determine the amount of section loss on the members.

CONSULTANT shall prepare and submit a gusset plate measurement report to the City, including, as applicable:

a. A minimum of one portal view and one elevation view photograph of each structure shall be provided. The reference photographs will provide a basis for determining present condition and future changes for the record.
b. The truss layout and table of gusset plate dimensions with percentage of section loss noted.

c. A description of all deficiencies and recommendations of maintenance repairs needed.
d. Photographs of bridges showing defects which require repairs.

The CONSULTANT shall provide one printed copy and one digital copy of the detailed measurements report to the City or Village.

Task 2D – Load Rating and Analysis of Gusset Plates - The CONSULTANT shall perform gusset plate analyses according to FHWA Publication FHWA-IF-09-014 to determine gusset plate capacity including the welded, bolted or riveted connections. This document is available on the ODOT Office of Structural Engineering web site. The gusset plate/connection capacity will be compared to the gusset plate/connection strength requirements for the maximum DL+LL+I forces created by the critical truck. If the gusset plate controls the bridge rating, the report will indicate as such and give the recommended rating for the critical truck. If the gusset plate and connections exhibit sufficient or excess capacity the analysis shall reflect the amount of excess capacity. The analysis shall reflect the existing condition of the gusset plates and connection, including ultrasound tests (UT) performed on gusset plates to determine the amount of section loss on the members.

If the gusset plate analysis is required to be performed by the CONSULTANT and the bridge load rating has been performed already by the City or a previous CONSULTANT, the City shall provide the load rating information including the analysis to the CONSULTANT performing the gusset plate analysis. If the load rating of the bridge has not been performed previously, the CONSULTANT shall load rate the bridge (see **Task 2b** of this document) as well as perform the gusset plate analysis.

Gusset plate analysis deliverables for each gusset plate analyzed shall include all calculations including, but not limited to, hand-calculations, spreadsheets and/or ODOT-approved computer analysis in hard copy and a reproducible data (.pdf, .doc. and/or .xls).

TASK 3 – SMS/BMS STRUCTURE INVENTORY AND REVIEW

The scope of this task includes a limited review of the structure inventory data in the ODOT SMS/BMS. In general, the CONSULTANT shall review specific existing ODOT bridge inventory records (as provided by the City and approved by ODOT) of the designated bridge. The CONSULTANT may download the inventory report, which contains inventory data for each bridge on file with ODOT from the ODOT website. The CONSULTANT shall verify this data and determine if the ODOT SMS/BMS structure file information needs changing. If no changes are necessary then no SMS/BMS inventory needs to be filled out. If changes are necessary, the scope of this task shall also include completing and filing inventory updates (and supplements, as needed) with the ODOT Office of Structural Engineering and providing the City or Village with copies of submittals. Only the information requiring changing or updating

shall be filled out. The CONSULTANT shall refer to the ODOT Office of Structural Engineering Inventory and Coding Guide of SMS/BMS for inventory coding details.

TASK 4 – INSPECTION PROCEDURES

Task 4A – Fracture Critical Plan – A Fracture Critical Member Plan and inspection procedure shall be developed. For more details, refer to Chapter 4: Inspection Types in the Manual of Bridge Inspection. It shall include:

1. Sketch(es) of the superstructure with locations of all fatigue and fracture prone details identified.
   a. Use framing plan or schematic with detail locations labeled and a legend explaining each labeled item on the scheme.
   b. Use an elevation view for trusses.
   c. Classify similar fatigue/fracture prone details as types (e.g. end of partial cover plate).

2. A table or location of important structural details indicating:
   a. Type of detail (e.g. end of partial cover plate, short web gap, etc.)
   b. Location of each occurrence of detail
   c. AASHTO Fatigue Category of detail
   d. Identify retrofits previously installed

3. Risk Factors Influencing the inspector access.

Photos and sketches shall be properly referenced. The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection for additional details on the scope of this task.

Task 4B – Underwater Inspection Procedures – An underwater inspection procedure shall be developed. For more details, refer to Chapter 4: Underwater Inspections in the Manual of Bridge Inspection.

TASK 5 – BRIDGE INSPECTION

Task 5A – Routine Bridge Inspection (SMS/BMS Input) - Perform a routine field inspection of the structure to determine the general condition. The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection for additional details on the scope of this task. Section 1111 of the Moving Ahead for Progress in the 21st Century Act (MAP-21) modified 23 U.S.C.144, requires Ohio to report bridge element level data for NBIS bridges on the National Highway System (NHS) to FHWA. A condition rating or element level inspection will be assigned.

Task 5A.1 – Condition Rating Inspection for non-NBI or NBI but not classified as NHS

Task 5A.2 – Element Level Inspection for NBI classified as NHS

Task 5B – Fracture Critical Inspection - Perform a fracture critical field inspection of fracture critical items. The CONSULTANT shall update the FCM inspection procedure with current photos and descriptions. The CONSULTANT shall refer to the most recent ODOT Manual of Bridge Inspection for additional details on the scope of this task.

Task 5C – Underwater Dive Inspection – Perform Underwater/ In-Water inspection of substructure units according to the cycle shown in SMS/BMS. Emergency underwater inspection may arise for specific structures over the duration of the contract period. Work shall be done in accordance with the reference manuals and inspection procedure. Scour risk shall be evaluated after field and data collection.

Agreement Administration Procedures

I. Type I Task Order Notification and Authorization Procedures for task orders less than $10,000 with a well-defined scope of services

A. Central Office will identify a task order, assign a task order number and develop a detailed scope of services.

B. Central Office will authorize the CONSULTANT to perform the task by standard authorization letter that includes:
   1. A detailed scope of services for the task order.
   2. The completion time from authorization.
   3. The maximum compensation (including net fee).
      a. The net fee shall be calculated as 11% of actual cost (labor + overhead + direct non-salary expenses). Subconsultant net fees shall be calculated in the same manner but the prime CONSULTANT shall not earn net fees on subconsultant costs.

II. Type II Task Order Proposal Request, Review and Authorization Procedures for task orders greater than $10,000

A. Central Office will identify a task order, assign a task order number and develop a detailed scope of services

B. Central Office will prepare a request for a task order proposal in the format included herein and transmit it to the CONSULTANT. Review of the task order request and task order proposal preparation are allowable costs and shall be shown as a separate line item in the proposal.

C. Standard Proposal Format - Each Task Order Proposal shall include the following elements:
   1. Letter of transmittal with reference to include:
      a. Central Office General Engineering Services Agreement
      b. PID No.
      c. Agreement No.
      d. Task Order No.

      The project for which the task order is being performed shall NOT be in the letter of transmittal reference, but shall be referenced in the body of the letter.
   2. All other proposal requirements shall conform to Chapter 6, Price Proposals for Agreements and Modifications, of the current Specifications for Consulting Services.
   3. Appendix A of the CONSULTANT's proposal shall include the task order proposal request transmitted to the CONSULTANT by the District.

D. Central Office will review the CONSULTANT's proposal for:
   1. Adherence to submittal requirements.
   2. Compliance with the scope of services.
   3. Mathematical accuracy.
   4. Labor hours and rates.
   5. Net fee percentage.

E. Central Office will resolve any issues with the CONSULTANT and obtain a revised proposal (if necessary).

F. Central Office will authorize the CONSULTANT to proceed with the task.

III. Task Order Identification and Numbering

A. The task order numbering system shall be a two component series consisting of the City or Village FIPS Code number and a number identifying subsequent task orders. Subsequent task orders could be either continuing task or a modification due to changes in the scope of a previously authorized task order.
   1. For example, the first task order issued in the City of Columbus would be numbered 18000-1.
      a. Continuing task orders on that project would be numbered 18000-2, 18000-3, etc.
   2. A new task order number shall be assigned rather than increase the fee of an existing task order.

IV. Invoice and Project Schedule Requirements

A. The CONSULTANT shall provide monthly invoices and project schedules in the format transmitted with the executed agreement. Each invoice shall include all task orders authorized, a summary of the total amount authorized, the total amount invoiced and appropriate project schedules.

Authorization to Proceed - Type I Task Order

Consultant Name and Address

Re: Central Office, Office of Structural Engineering
General Engineering Services Agreement
PID No.
Agreement No.
Task Order Number (FIPS Code) - (Number)

Dear Consultant:

Effective this date you are hereby authorized to proceed with the subject task order.

Project Identification

a. Bridge List
b. Tasks required on each bridge

Services Requested

(Detailed description of services required.)

Documents Furnished by the Agency (attached)

Additional Scope of Services Notes

Task Order Completion Time

___ days from Notice to Proceed.

Prime Compensation

The State agrees to compensate the CONSULTANT for the performance of the task order specified in accordance with Agreement No. _____, as follows:

Actual costs plus a net fee. The Maximum Prime Compensation shall not exceed _____ ($). The net fee shall be calculated as 11% of actual cost (labor + overhead + direct non-salary expenses). Subconsultant net fees shall be calculated in the same manner but the prime CONSULTANT shall not earn net fees on subconsultant costs.

Please address your written acknowledgment of this communication to:

Omar Abu-Hajar
Office of Structural Engineering
Ohio Department of Transportation
1980 West Broad Street
Columbus, OH 43223-1102

Respectfully,

Attachments:
cc: file

Request for Task Order Proposal - Type II Task Order

Consultant Name and Address

Re: Central Office, Office of Structural Engineering
General Engineering Services Agreement
PID No.
Agreement No.
Task Order Number (FIPS Code) - (Number)

Dear Consultant:

Please provide a cost proposal for the subject task order as follows:

Project Identification

a. Bridge List
b. Tasks required on each bridge

Services Requested

(Detailed description of services required.)

Documents Furnished by the State (attached)

Additional Scope of Services Notes

Task Order Completion Time

___ days from Notice to Proceed.

Due date for Cost Proposal:

Please submit your proposal to:

Omar Abu-Hajar
Office of Structural Engineering
Ohio Department of Transportation
1980 West Broad Street
Columbus, OH 43223-1102

If you have any questions or comments regarding this request, please contact this office prior to submitting your proposal.

Respectfully,

Attachments:

cc: file

Authorization to Proceed - Type II Task Order

Consultant Name and Address

Re: Central Office, Office of Structural Engineering
General Engineering Services Agreement
PID No.
Agreement No.
Task Order Number (FIPS Code) - (Number)

Dear Consultant:

Reference is made to your task order proposal dated _____, requesting compensation for the identified task.

Effective this date you are hereby authorized to proceed with the subject task order.

Prime Compensation

The State agrees to compensate the CONSULTANT for the performance of the task order specified in accordance with Agreement No. _____, as follows:

Actual costs plus a net fee of _____ ($). The maximum prime compensation shall not exceed _____ ($).

Please address your written acknowledgment of this communication to:

Omar Abu-Hajar
Office of Structural Engineering
Ohio Department of Transportation
1980 West Broad Street
Columbus, OH 43223-1102

Respectfully,

cc: file

Ben Mann

From: Abu-Hajar, Omar <Omar.AbuHajar@dot.state.oh.us>
Sent: Tuesday, February 04, 2014 1:18 PM
To: Ben Mann
Subject: Legislative Consent
Attachments: PID97103_Municipal Bridge Inspection Services Consent Legislation.doc; Exhibit A_VAR-STW-GES_SoS_PID_97103.pdf

Ben,

As a follow up to my voicemail, please see below:

ODOT is launching a new program to help municipalities across the state in achieving full compliance with FHWA's bridge metrics. The metrics are shown in the following link: http://flh.fhwa.dot.gov/programs/fabs/documents/2013-metrics.pdf. The program is named "STW MUNI BRDG INSP PROG 2", PID: 97103 with a start date around 7/1/2014. It will be fully funded by ODOT. We are asking each municipality having bridges open to the public if they wish to opt in or opt out of the program. Please respond to this email with your answer including a signed legislative consent form. A template form is provided in the attachment

Bridge Management System (BMS) is showing only (23) vehicular open to traffic bridge(s) for which City of Fairfield has the inspection responsibility. The city will not incur any cost in joining this program.

Please let me know if you would like to opt in or opt out of this program soon.

Regards,

Omar Abu-Hajar, P.E.
Local Bridge Program Manager
Office of Structural Engineering
Mail Stop 5180
Ohio Department of Transportation
1980 West Broad Street, 3rd Floor
Columbus, Ohio 43223
Tel: 614-387-1257

Ordinance to authorize the City Manager to enter into an agreement with OHio Department of Transportation for Bridge Inspection Services.

PRELIMINARY LEGISLATION

Consent

Rev. 6/26/00

Ordinance/Resolution # : _____

PID No. : 97103

County/Route/Section : _____

The following is a/an _____ enacted by the _____ of _____
(Ordinance/Resolution) (Local Public Agency)
County, Ohio, hereinafter referred to as the Local Public Agency (LPA).

SECTION I – Project Description

WHEREAS, the (LPA) has determined the need for the described project:

Bridge Inspection Program Services, including, but not limited to bridge load rating calculations, scour assessments, bridge inspections, and fracture critical plan development.

NOW THEREFORE, be it ordained by the _____ of _____ County, Ohio.
(LPA)

SECTION II – Consent Statement

Being in the public interest, the LPA gives consent to the Director of Transportation to complete the above described project.

SECTION III – Cooperation Statement

The LPA shall cooperate with the Director of Transportation in the above described project as follows:

The State shall assume and bear 100% of all of the cost for Bridge Inspection Program Services requested by the City and agreed to by the State. Eligible Bridge Inspection Services are described in the Consultant's Scope of Services Task Order Contract (Exhibit A).

The LPA agrees to pay 100% of the cost of those features which are not included in Exhibit A.

PID No.: 97103

SECTION IV – Utilities and Right-of-Way Statement

The LPA agrees that all right-of-way required for the described project will be made available in accordance with current State and Federal regulations.

SECTION V Authority to Sign

I, _____ of said _____ is hereby empowered on behalf of the
(Contractual Agent) (LPA)
_____ to enter into contracts with the Director of Transportation which is necessary to
(LPA)
complete the above described project.

Passed: _____, 2_____.
(Date)

Attested: _____ _____
(Clerk) (Contractual Agent of LPA – title)

Attested: _____ _____
(Title) (President of Council)

The _____ is hereby declared to be an emergency measure to expedite the highway project and
(Ordinance/Resolution)
to promote highway safety. Following appropriate legislative action, it shall take effect and be in force immediately upon its passage and approval, otherwise it shall take effect and be in force from and after the earliest period allowed by law.

PID No.: 97103

CERTIFICATE OF COPY
STATE OF OHIO

_____ of _____ County, Ohio
(LPA)

I, _____, as Clerk of the _____
(LPA)
of _____ County, Ohio, do hereby certify that the foregoing is a true and correct copy of
_____ adopted by the legislative Authority of the said
(Ordinance/Resolution)
_____ on the _____ day of _____, 2_____.
(LPA)
That the publication of such _____ has been made and certified of record according to
(Ordinance/Resolution)
Law; that no proceedings looking to a referendum upon such _____ have been taken;
(Ordinance/Resolution)
and that such _____ and certificate of publication thereof are of record in _____,
Page _____. (Ordinance/Resolution)
(Record No.)

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my official seal, if applicable, this _____ day of _____ 2_____.

_____
(Clerk)

(CITY SEAL)

_____ of _____ County, Ohio
(LPA)

(If the LPA is designated as a City then the "City Seal" is required. If no Seal, then a letter stating "No Seal is required to accompany the executed legislation.)

The aforegoing is accepted as a basis for proceeding with the project herein described.
For the _____ of _____ County, Ohio.
(LPA)

Attested: _____ _____ Date _____
(Contractual Agent)

For the State of Ohio

Attested: _____ _____ Date _____
(Director, Ohio Department of Transportation)

ITEM NO. 11 (A) (1)

CITY OF FAIRFIELD, OHIO
CITY COUNCIL COMMUNICATION

ITEM: **March 10, 2014**

Liquor permit application in the name of Mahakal, Inc., 6120 Winton Road, Fairfield, Ohio 45014 (Permit Classes: C1 and C2).

FINANCIAL IMPACT:

No financial impact.

SYNOPSIS:

The City of Fairfield is in receipt of an application from the Ohio Division of Liquor Control for a C1 and C2 permit for the above liquor permit applicant.

BACKGROUND:

Background checks from the Building and Zoning Division and Police Department are attached for Council and staff's review.

RECOMMENDATION:

It is recommended that City Council request, by simple motion, that **no hearing be held** on the liquor permit application in the name of Mahakal, Inc., 6120 Winton Road, Fairfield, Ohio 45014 (Permit Classes: C1 and C2).

LEGISLATIVE ACTION REQUIRED: Simple Motion of Council

Prepared by: Alisha Colson
Approved for Content by: Alisha Colson
Financial Review (where applicable) by: Mary Ann Hahn
Legal Review (where applicable) by: Scott Timmons
Accepted by Council Agenda: Alisha Colson

11 (A) (1)

DEPARTMENTAL CORRESPONDENCE

City of Fairfield

TO Michael J. Dickey, Police Chief
Tim Bachman, Development Services Director

FROM Alisha Wilson, Clerk of Council

SUBJECT **Request for Background Check – Liquor Permit**

DATE 02/25/2014

Attached is a liquor permit application in the name of Mahakal, Inc., 6120 Winton Road, Fairfield, OH 45014 (Permit Classes: C1 and C2)

Please complete the necessary background check and submit your findings to me **no later than 3:00 PM on Monday, March 3, 2014.**

This item will be added to Council's Regular Meeting agenda of Monday, March 10, 2014.

Thank you for your assistance.

c: Arthur E. Pizzano, City Manager
Peggy Flaig, Development Services
File

NOTICE TO LEGISLATIVE AUTHORITY

OHIO DIVISION OF LIQUOR CONTROL
6606 TUSSING ROAD, P.O. BOX 4005
REYNOLDSBURG, OHIO 43068-9005
(614)644-2360 FAX(614)644-3166

TO

5426725 PERMIT NUMBER	TRFO TYPE	MAHAKAL INC 6120 WINTON RD FAIRFIELD OHIO 45014
06 01 2013 ISSUE DATE		
02 18 2014 FILING DATE		
C1 C2 PERMIT CLASSES		
09 TAX DISTRICT / 011 / A / F11526 RECEIPT NO.		

FROM 02/20/2014

01863130005 PERMIT NUMBER	TYPE	APEXA INC DBA WINTON FOOD MART 6120 WINTON RD FAIRFIELD OHIO 45014
06 01 2013 ISSUE DATE		
02 18 2014 FILING DATE		
C1 C2 PERMIT CLASSES		
09 TAX DISTRICT / 011 / / RECEIPT NO.		

MAILED 02/20/2014

RESPONSES MUST BE POSTMARKED NO LATER THAN. 03/24/2014

IMPORTANT NOTICE

PLEASE COMPLETE AND RETURN THIS FORM TO THE DIVISION OF LIQUOR CONTROL WHETHER OR NOT THERE IS A REQUEST FOR A HEARING.

REFER TO THIS NUMBER IN ALL INQUIRIES A TRFO 5426725
(TRANSACTION & NUMBER)

(MUST MARK ONE OF THE FOLLOWING)

WE REQUEST A HEARING ON THE ADVISABILITY OF ISSUING THE PERMIT AND REQUEST THAT THE HEARING BE HELD ☐ IN OUR COUNTY SEAT. ☐ IN COLUMBUS.

WE DO NOT REQUEST A HEARING. ☐
DID YOU MARK A BOX? IF NOT, THIS WILL BE CONSIDERED A LATE RESPONSE.

PLEASE SIGN BELOW AND MARK THE APPROPRIATE BOX INDICATING YOUR TITLE:

(Signature) (Title)- ☐ Clerk of County Commissioner (Date)
☐ Clerk of City Council
☐ Township Fiscal Officer

CLERK OF FAIRFIELD CITY COUNCIL
5350 PLEASANT AV
FAIRFIELD OHIO 45014

CORPORATION INQUIRY PCS15

TUBE C162
TIME 14.24.11
DATE 02/19/14

PERMIT NUMBER (CORPORATION) 5426725
MAHAKAL INC
6120 WINTON RD
FAIRFIELD OHIO 45014

F.T.I. NUMBER 46-3946516
STATUS (ACTIVE OR INACTIVE) ACTIVE
SHARES OUTSTANDING 1500.00
ACTIVE DATE 02/18/14
INACTIVE DATE
EXCEPTION CODE TEXT
STOCK TRANSFER CODE TEXT AND DATE

RAJESHKUMAR PATEL	375.00	02/18/14	ACTIVE	SECR-TREA
HASMUKH PATEL	150.00	02/18/14	ACTIVE	
SHARADCHANDRA PATEL	975.00	02/18/14	ACTIVE	PRESIDENT

DEPARTMENTAL CORRESPONDENCE

City of Fairfield

TO Alisha Wilson, Clerk of Council

FROM Timothy Bachman, Development Services Director

SUBJECT Liquor Permit Application

DATE 02/26/14

The business at 6120 Winton Road, in the name of Mahakal, Inc., and doing business as Winton Food Mart, is in a C-1, Neighborhood Business District and is a permitted use.

Timothy Bachman
Development Services Director

plf

NAME OF ESTABLISHMENT Mahakal Inc.

ADDRESS 6120 Winton Road

Fairfield, OH 45014

	YES	NO
1. Is there a conviction record of the applicant, any partner, member, officer director, manager or any shareholder owning 5% or more of the capital stock, for felonies or other crimes relating to his ability to operate a liquor establishment?	☐	☒
2. Is there a prior unfavorable enforcement record of applicant and/or operation in disregard for laws, regulations or local ordinances?	☐	☒
3. Is there misrepresentation of material fact by applicant in making application to the Department?	☐	☒
4. Is there an inability of law enforcement authorities and of authorized agents of the Department to gain ready entrance to the permit premise; or location of permit premise at such distance from the road or street as to be isolated from police or other observation?	☐	☒
5. Will the place substantially and adversely interfere with the public decency, sobriety, peace, or good order of the neighborhood in which it Is located?	☐	☒
6. Will the place substantially and adversely interfere with the normal orderly conduct of a church, library, public playground, school or township park?	☐	☒
7. Will the granting or transferring of a permit substantially interfere with the morals, safety, or welfare of the public?	☐	☒
8. Will there be adverse effects of saturation of the area in relation to the number of existing permits, and will there be any adverse conditions in the area?	☐	☒

REMARKS:

Michael J. Dickey
Chief of Police

HEARING REQUESTED: Yes ☐ No ☒

Date: February 27, 2014

CITY OF FAIRFIELD, OHIO
CITY COUNCIL MEETING COMMUNICATION

Item No. 11(B)(1)

Item

March 10, 2014

Appointment of Clerk of Council as designee for mandatory training required by House Bill 9, Ohio's Public Records Act.

Financial Impact

None

Synopsis/Background

House Bill 9 which became law on September 29, 2007 requires all elected officials *or their appropriate designee* to obtain three hours of public records training via a curriculum approved the Ohio Attorney General during each term served in elected office. This mandate applies whether the official was appointed or elected to that office.

Recommendation

It is recommended that City Council, via simple motion, formally appoint the Clerk of Council as the Mayor and Council designee for the mandatory three hours of training required by House Bill 9.

LEGISLATIVE ACTION: **SIMPLE MOTION OF COUNCIL**

Prepared by: Kristin Wilson
Approved for Content by: Kristin Wilson
Financial Review (where applicable) by: Mary Harper
Legal Review (where applicable) by: Scott H. Klemmons
Accepted by Council Agenda: Kristin Wilson

CITY OF FAIRFIELD, OHIO
CITY COUNCIL MEETING COMMUNICATION

Item No. 11(3)(2)

March 10, 2014

Item

Appointment of members to Fairfield's boards and commissions.

Financial Impact

None

Synopsis/Background

Each year on March 31, positions become available on Fairfield's various boards and commissions due to expiring terms of office. Advertising for the March 31 vacancies began on January 1, 2014 and concluded on February 14, 2014. The members of City Council interviewed applicants on February 22, 2014 and March 1, 2014.

Recommendation

It is recommended that City Council, via simple motion, appoint the following residents to serve on the various boards and commissions **effective April 1, 2014**:

Board of Zoning Appeals - Mike Stokes, term expires 3/31/18
Civil Service Commission - Brian Wood, term expires 3/31/17
Design Review Committee - Bert Huffer, term expires 3/31/16
Design Review Committee - Arvind Kochar, term expires 3/31/16
Fair Housing Board - Melissa Judd, term expires 3/31/17
Parks and Recreation Board – Craig Keller, term expires 3/31/15
Parks and Recreation Board – Doug Meece, term expires 3/31/17
Planning Commission – Ron D'Epifanio, term expires 3/31/15
Traffic Advisory Committee – Mike Oler, term expires 12/31/15
Ward Boundary Review – Bonnie McMurray
Ward Boundary Review – Gregory Snow

LEGISLATIVE ACTION: **SIMPLE MOTION**

Prepared by: Trisha Wilson
Approved for Content by: Trisha Wilson
Financial Review (where applicable) by: Mary Hoppe
Legal Review (where applicable) by: John Clemmons
Accepted by Council Agenda: Trisha Wilson

ITEM NO. 11(c)(1)

CITY OF FAIRFIELD, OHIO
CITY COUNCIL MEETING COMMUNICATION

ITEM:

DATE: 3/10/14

A new collective bargaining agreement between the City of Fairfield and the International Association of Firefighters, Local 4010 (hereinafter "IAFF") effective April 1, 2014 through March 31, 2017.

FINANCIAL IMPACT:

The net financial impact anticipates a net increase in base annual wages of 2.66% over the three-year term of the agreement, adjusted to reflect modifications in employee contributions to the City's health care premium.

SYNOPSIS:

It is requested that Council authorize the execution of a replacement collective bargaining agreement between the City and the IAFF. The following ranks are represented by the union: Firefighter/Paramedics, Fire Lieutenants, and Fire Captains. The existing collective bargaining agreement expires on March 31, 2014.

BACKROUND:

As stated in the synopsis, the collective bargaining agreement entered into on April 1, 2011, will expire on March 31, 2014 necessitating the negotiation and implementation of a successor agreement effective April 1, 2014. The parties have successfully negotiated a successor agreement that calls for employees to assume a greater share of the cost of the City's health care premium in years two and three (the current cost-share of 15% will remain in place for 2014/2015, increasing to 16% in 2015/2016 and 17% in 2016/2017) of the agreement. The increase to base wages is 3% for each year of the contract, but after adjustment for the health care premium deduction, employees will receive effective raises of 3% in 2014/2015; 2.5% in 2015/2016; and 2.5% in 2016/2017. This agreement augments the City's efforts to require employees to assume a greater share of the cost of medical benefits. The City also received concessions from the IAFF on length of pay period language and recuperative leave policies.

RECOMMENDATION:

It is recommended that City Council authorize execution of the successor collective bargaining agreement between the City and the International Association of Firefighters, Local 4010, representing the ranks of Firefighter/Paramedic, Fire Lieutenant, and Fire Captain. Rules suspension and emergency adoption is requested in order for the new agreement to be effective upon the expiration date of the current collective bargaining agreement set to expire on March 31, 2014.

LEGISLATIVE ACTION:	**Suspension of Rules and Adoption Requested?**	[X] yes	[] no	**If yes, explain above.**
	Emergency Provision Needed?	[X] yes	[] no	**If yes, explain above.**

Prepared by: Mark T. Wendling _____ Mark T. Wendling, Asst. City Manager

Approved for Content by: Mark T. Wendling _____ Mark T. Wendling, Asst. City Manager

Financial Review (where applicable): Mary I. Hopton _____ Mary I. Hopton, Finance Director

Legal Review (where applicable): John H. Clemmons _____ John H. Clemmons, Law Director

Accepted for Council Agenda: Alisha Wilson _____ Alisha A. Wilson, Clerk of Council

ORDINANCE NO. _____

ORDINANCE TO AUTHORIZE THE CITY MANAGER TO ENTER INTO A CONTRACT WITH THE INTERNATIONAL ASSOCIATION OF FIREFIGHTERS (IAFF), LOCAL 4010 FOR WAGES, HOURS AND TERMS AND CONDITIONS OF EMPLOYMENT FOR THE FIRE DEPARTMENT BARGAINING UNIT.

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 the International Association of Firefighters (IAFF), Local 4010 for wages, hours and terms and conditions of employment for the fire department bargaining unit in accordance with the agreement on file in the office of the City Manager.

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\2014\IAFF - Ord.doc

ITEM NO. 11(C)(2)

CITY OF FAIRFIELD, OHIO
CITY COUNCIL COMMUNICATION

ITEM: **March 10, 2014**

Request for appropriation for **non-contractual** agenda items.

FINANCIAL IMPACT:

$28,160.00 from noted funding source.

SYNOPSIS:

The following appropriations have been requested:

$28,160 for water main improvements at 4100 Port Union Road

BACKGROUND:

Please refer to specific Council Communications dated March 10, 2014 for a description of these items.

RECOMMENDATIONS:

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

LEGISLATIVE ACTIONS:	**Suspension of Rules & Adoption Requested?**	☒ **yes**	☐ **no** **If yes, explain above**
	Emergency Provision Needed?	☐ **yes**	☒ **no** **If yes, explain above**

Prepared by: Alicia Wilson
Approved for Content by: Alicia Wilson
Financial Review (where applicable) by: Mary Hoppe
Legal Review (where applicable) by: Gregory A. Clemmons
Accepted by Council Agenda: Alicia Wilson

ITEM NO. 11(C)(2) A

CITY OF FAIRFIELD, OHIO
CITY COUNCIL MEETING COMMUNICATION

Date: 3/3/14

ITEM:

An appropriation of $28,160 for professional services for Water Main Improvements at 4100 Port Union Road.

FINANCIAL IMPACT:

Water Line Expansion Improvements are funded from the Water Expansion Fund.

SYNOPSIS:

Project includes installation of approximately 1000 L.F. of 12 inch, Public Water Main, a 50 L.F. directional bore and associated hardware.

BACKGROUND:

As part of the Koch Foods expansion, a new water main improvement was negotiated by the Public Utility Department. This is a private/public partnership between Koch Foods at 4100 Port Union Road, DCT Enterprises at 4260 Port Union Road and the City of Fairfield, Public Utility Department. The existing 10" water line was upsized to a 12" diameter, Class 55, Ductile Iron Pipe with Polyethylene encasement. The new waterline better facilitated the Koch Foods expansion project, improved water capacity and fire flows to adjoining businesses. The new main also provides the means to extend a new water main north to Union Center Boulevard. In the future, this will improve water service for the entire industrial park.

RECOMMENDATION:

Staff is recommending that the City Manager authorize payment in the amount of $28,160 for professional services provided by United Insulated Structures Corp. for the water main installation. This will meet the City's obligation for the partnership agreement between Koch Foods and The City of Fairfield.

LEGISLATIVE ACTION: Suspension of Rules and Adoption Requested?	**yes** ☒	**no**	**If yes, explain above.**
Emergency Provision Needed?	**yes** ☒	**no**	**If yes, explain above.**

Prepared by: _____
Approved for Content by: _____
Financial Review (where applicable): _____
Legal Review (where applicable): _____
Accepted for Council Agenda: _____

11(C)(2)A

UNITED INSULATED STRUCTURES CORP.
5430 St. Charles Road
Berkeley, IL 60163
Fax: 708.544.8274
708.544.8200

February 3, 2014

Mr. Timothy Bachman
Development Services Director
City of Fairfield
5350 Pleasant Avenue
Fairfield, OH 45014

RE: Koch Foods 4100 Port Union Road
Public Water Main

INVOICE
12021-2700-1

50 L.F. – Directional Bore	$15,900.00
12" Tapping Sleeve and Valve	6,975.00
Bore Pits and Connection	3,185.00
Traffic Control	1,200.00
Restoration	900.00
TOTAL AMOUNT DUE THIS INVOICE	**$28,160.00**

/word/invoices/koch ohio phase 6 city of Fairfield 12021-2700-1

Loveland Excavating and Paving
9520 LeSaint Drive
Fairfield , Ohio 45014

August 30, 2013

Bill to: United Insulated Structures Corporation
5430 St. Charles Road
Berkeley , IL 60163

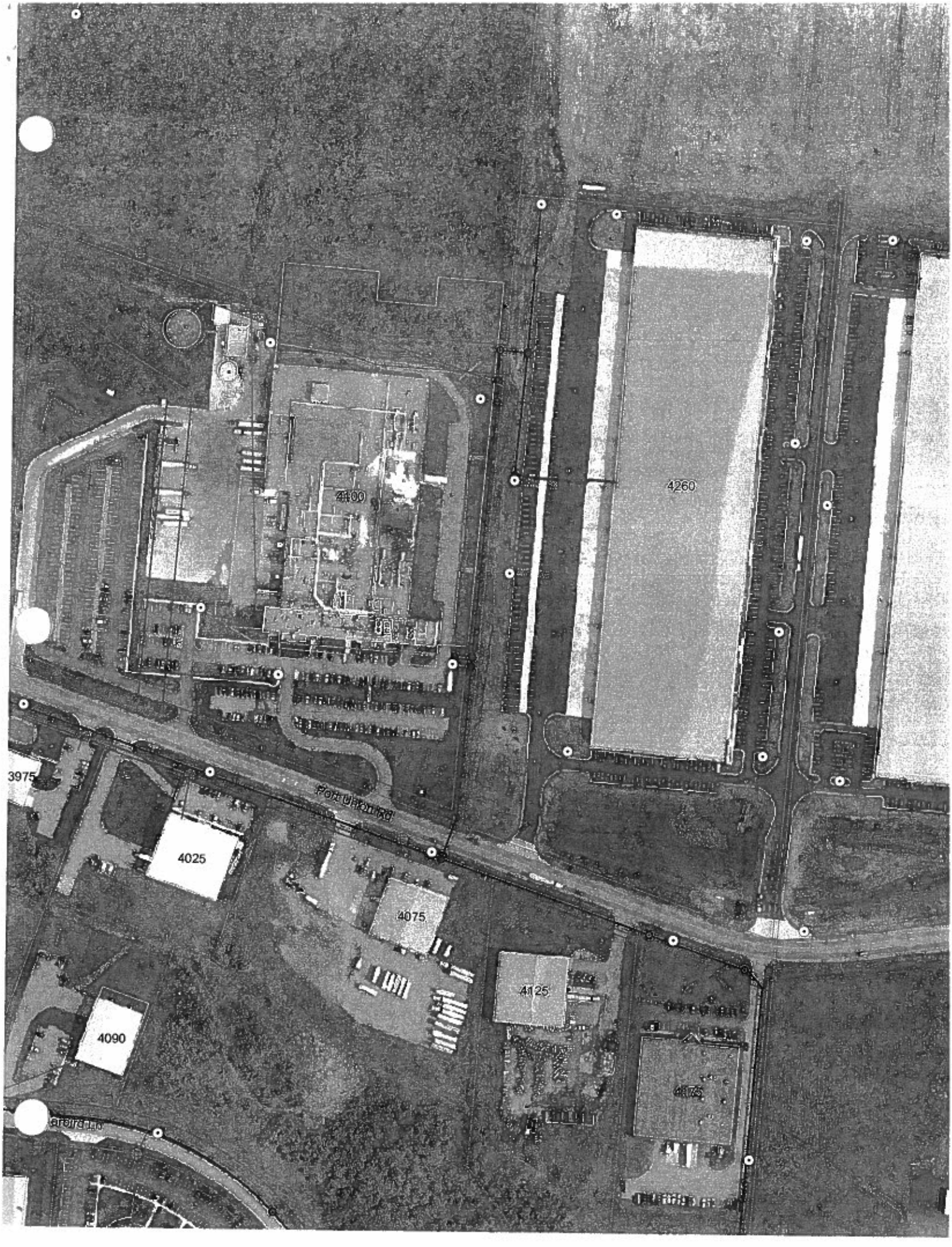
Public Water Main -- Koch Foods, 4100 Port Union Road

1.	50 L.F. - Directional Bore	$ 15,900.00
2.	12 " Tapping Sleeve and Valve	$ 6,975.00
3.	Bore Pits and Connection	$ 3,185.00
4.	Traffic Control	$ 1,200.00
5.	Restoration	$ 900.00

Total Amount Due **$28,160.00**

Please send payment to the above address

"Due and Payable in 30 days"


4400
4260
3975
Fox Union Rd
4025
4075
4125
4090

ORDINANCE NO. _____

ORDINANCE TO AMEND ORDINANCE NO. 109-13 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, 2014, AND ENDING DECEMBER 31, 2014."

BE IT ORDAINED by the Council of the City of Fairfield, Ohio, that:

Section 1. Ordinance No. 109-13, the 2014 Appropriation Ordinance, is hereby amended in the following respects:

From:	**Unappropriated Water Expansion Fund**	**$28,160**
To:	40716023-233900 Other Professional Services *(Professional Services for Water Line Expansion on Port Union Road)*	$28,160

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