

CITY OF FRANKLIN
DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS

JULY 2017

The **2017** revisions to these design standards and construction specifications were prepared by City staff with input from consultant engineers with experience in public works construction. Changes **since** the **2007** edition are shown **in bold type.**

At certain times and for certain matters it may become necessary for an authorized representative of the City of Franklin to assume the responsibility, and to have the right of authority of the City Engineer, as it relates to a decision(s) described herein these standards and specifications.

Glen E. Morrow, P.E.
City Engineer

**STANDARD SPECIFICATIONS
FOR LAND DEVELOPMENT
CITY OF FRANKLIN**

TABLE OF CONTENTS

<u>CHAPTER</u>		<u>PAGE</u>
1.0	SURVEYING	
1.0	General	1
1.1	Horizontal and Vertical Control	1
1.2	Construction Staking.	2
1.3	Monuments	4
2.0	CONSTRUCTION PLAN REQUIREMENTS AND DESIGN STANDARDS	
2.0	General	5
2.1	Sanitary Sewer Plans.	8
2.2	Water Main Plans.	10
2.3	Storm Sewer Plans	13
2.4	Paving Plans.	16
2.5	Grading and Drainage Plans.	18
2.6	Erosion Control Plans for Land Disturbing Activities.	21
2.7	Stormwater Management Plan.	24
2.8	Miscellaneous Plan Requirements	24
3.0	ROADWAYS	
3.0	General	25
3.1	Standard Cross-Sections	25
3.2	Subgrade.	25
3.3	Crushed Limestone Base	26
3.4	Pulverizing and Milling of Existing Asphalt Pavement.	27
3.5	Asphalt Pavement.	28
3.6	Roadway Drainage.	30
3.7	Late Season Asphalt Paving Criteria	32
3.8	Concrete Curb and Gutter.	32
3.9	Concrete Driveway Approach Requirements	34
3.10	Concrete Walk	35
4.0	SANITARY SEWERS	
4.0	General	38
4.1	Manholes.	38
4.2	Mainline and Laterals	40
4.3	Testing	41
5.0	WATER DISTRIBUTION SYSTEM	
5.0	General	44
5.1	Water main.	44
5.2	Valves.	46
5.3	Fittings.	47
5.4	Markers	48
5.5	Hydrants.	48
5.6	Connection to Existing Mains.	50
5.7	Testing	50

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
6.0	GRADING AND DRAINAGE	
6.0	General	51
6.1	Subdivision Grading	51
6.2	Erosion Control	52
6.3	Ditch Grading	53
6.4	Storm Sewer	53
6.5	Storm Sewer Laterals.	55
6.6	Discharge from Sump Pumps, Down Spouts and Roof Drains for commercial, industrial properties	56
6.7	On-Site Stormwater Basins	56
6.8	Earth Berms	57
6.9	Retaining Walls	57
7.0	AS-BUILT RECORD DRAWINGS	
7.0	General	59
7.1	Sanitary Sewer Record Drawings.	59
7.2	Water Main Record Drawings.	59
7.3	Storm Sewer Record Drawings	60
7.4	Grading and Drainage Record Drawings.	61
8.0	ITEMS NECESSARY FOR DEVELOPMENT APPROVAL	
8.1	General	63
9.0	IMPROVEMENTS IN RIGHT OF WAY	
9.0	General	65
9.1	Street Trees.	65
9.2	Street Lighting	65
9.3	Street Signs.	65
10.0	MATERIALS OF CONSTRUCTION	
10.0	General	66
10.1	Concrete Reinforcement.	66
10.2	Expansion Joint Material.	67
10.3	Corrugated Metal Culvert Pipe	67
10.4	Double Wall Polyethylene Pipe	67
10.5	Topsoil	67
10.6	Curing Agent for Concrete	68
10.7	Asphalts and Asphaltic Road Oils.	68
10.8	Asphaltic Cement.	68
10.9	Crushed Limestone-Base Course	68
10.10	Crushed Concrete-Base Course.	68
10.11	Cover Bedding and Backfill Materials.	68
10.12	Asphaltic Concrete Pavement	70
10.13	Portland Cement Concrete.	70
10.14	Mix Design.	71

APPENDIX

- Appendix A. Sample Letter of Credit
- Appendix B. Preconstruction Notification Checklist
- Appendix B. Preconstruction Meeting Form
- Appendix C. Water Utility Preconstruction Reminders
- Appendix D. **Construction** Inspection Services Requirements
- Appendix E. Acceptance Criteria for Completed Development and Certification
- Appendix E. Items to be Completed for Issuance of Building Permits**
- Appendix F. Sample Subdivision Development Agreement
- Appendix G. Sample Water Main Easement
- Appendix H. Sample Sanitary Sewer Easement
- Appendix J. Sample Conservation Easement
- Appendix K. Sample Natural Resource Protection Easement
- Appendix M. Sample Storm Drainage Easement
- Appendix N. Sample Storm Water Management Access Easement
- Appendix O. Sample Temporary Grading Easement
- Appendix P. Sample Temporary Turn Around Easement
- Appendix Q. Sample Storm Water Facilities Maintenance Agreement
- Appendix R. Standards For Lawn Sprinkler Systems**
- Appendix S. Figures**

CITY OF FRANKLIN

DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS

GENERAL

The construction of residential subdivisions and multi-family, commercial and industrial developments shall include the following features:

A. Development Requirements

All developments shall include paved streets with curb and gutter, sidewalks (on one side of collector streets and one side of local street that services connection to school and park sites), sanitary sewer, storm sewer, water main and street trees.

B. Street Widths

60' ROW		24' Pavement plus curb and gutter
66' ROW		32' Pavement plus curb and gutter
80' ROW		36' Pavement plus curb and gutter
120' ROW	2 @	24' Pavement plus curb and gutter Plus 30' median (F of curb to F of curb)

C. Pavement Section

6" of asphalt (4" binder, 2" surface) on 8" of crushed limestone
or:

7" of concrete on prepared ground base on 6" of crushed limestone.

D. Concrete Curb and Gutter Section

30" curb and gutter (6" top of curb & 24" flange) with 6" vertical face

E. Concrete Sidewalk

Sidewalk shall be 5 ft. wide and 5 inches thick
(7" thick in driveway area)

F. Concrete Drive Approach

See **Figures** for detail sheets.

List of Figures

1. Standard Plan Sheet Title Block
2. Cross Section For 60' Street With Bituminous Concrete Pavement
3. Cross Section For 80' Street With Bituminous Concrete Pavement
4. Cross Section for 60' Street With 7" Concrete Pavement
5. Typical Section Tied Transverse Construction Joint For Concrete Pavement
6. Tied Concrete Pavement – Alternate Details At Structures
7. Typical Section – Mountable Curb and Gutter
8. Typical Section – 6" Vertical Face Concrete Curb and Gutter
9. Minimum Typical Section For Private Development 6" Concrete Vertical Face Curb and Gutter
10. Interim Pavement/Inlet Design
11. Typical Flared Driveway Approach – Vertical Face Concrete Curb
12. Typical flared Driveway Approach – Mountable Concrete Curb
13. Typical Flared Driveway Approach – Mountable Concrete Curb (on curve)
14. Typical Flared Driveway Approach – Vertical Face Concrete Curb (on Curve)
15. Industrial & Commercial Drive Approach
16. Storm Sewer Inlet Detail
- ~~17. Example Of Pond Outlet Control Manhole~~
18. Dry Pond Trash Rack Designs For Outlets 24" Diameter or Less
19. Drop Inlet Filter Fabric Barrier
20. Silt Fence Installation
21. Drain Tile Detail
22. Standard Hydrant Setting
23. Standard Tree Planting Detail

24. Sanitary Sewer And Riser Detail Flexible to Flexible
25. Island Plow Nose Detail
26. Precast Outside Drop w/Pipe on Precast Manhole
27. Rip Rap Details
28. Typical **Rehab** Sanitary Sewer Manhole Pavement External Seal
- 28.-A Typical Sanitary Sewer Manhole Pavement External Seal**
- 28.-B Typical Off-Road Sanitary Sewer Manhole Pavement External Seal**
29. Curb Ramp w Cast Iron/Detectable Warning Plate
- ~~29. A **ADA Standard** ———~~
30. Ditch Enclosure Details Inlet Prior To Drive
31. Sanitary Manhole Bench Detail
32. Catch Basin In Driveway Cut
33. Yard Inlet Detail
- 34. Typical Retaining Wall Detail**
- 35. Typical Storm Water Management Retention Basin**
- 36. Typical Sanitary Sewer Cut In Lateral Connection**
- 37. Temporary Turnaround Cul-De-Sac**
- 38. Curb Cut**