City of Lawrence Municipal Services & Operations Annual Review
of
Construction Material Specifications, Design Standards, and Standard Details

Summary of Changes

Construction Material Specifications:

Section 0010 – General Technical Provisions
Section 1300 – Asphaltic Concrete Pavement
Section 1500 – Concrete Curb Gutter Sidewalk Driveways
Section 2400 – Solid Waste
Section 2500 – Sanitary Sewer
Section 2900 – Waterline
Section 3000 – Fiber Optics
Section 3000 – Approved Materials for Fiber Optics
Section 6000 – Storm Sewers
Section 6100 – Erosion and Sediment Control
Section 7200 – Seeding

Design Standards:

Combined Plan Preparation and Design Criteria
- 2.3 General Notes, General Layout, and Quantities
- 2.6 Storm Sewer Plan and Profile
- 2.7 Sanitary Sewer Plan and Profile
- 2.12 Erosion and Sediment Control

Section 4 – Access Management
Section 5 – Roadway Lighting
7.3.1 Radius of Curvature from C900 PVC Pipe
Appendix B

Standard Detail Sheets:

0010 – Erosion and Sediment Control
1500 – Concrete Driveways
1502 – Integral Sidewalk and Retaining Wall
1506 – Concrete Curb and Gutter
2900 – Waterlines
2902.2 – Fireline Connection Detail
2902.6.1 – Backflow Manhole Detail
6000 – Storm Sewer
6000 – Underdrains

NOTE:

Updates and corrections to the City of Lawrence Department of Municipal Services & Operations construction material specifications, design criteria, and standard details are as follows. Grammatical or other minor corrections are not noted in this summation.

UPDATES TO: CONSTRUCTION MATERIAL SPECIFICATIONS

Section 0010 – General Technical Provisions

0013 – C. Right of Way Management
Replaced inactive link with current link to ROW web page.

0015 – K.10.b. Fire Hydrant Assembly Installation or Relocation
Added 6" gate valve to list of items requiring payment for fire hydrant installation or relocation.

0016 – A. Asphaltic Concrete Testing
Clarified that cores will be obtained and repaired at the Contractor's expense.

Section 1300 – Asphaltic Concrete Pavement

1309 – Density and Surface Requirements
Clarified that cores will be obtained and repaired at the Contractor's expense.

Section 1500 – Concrete Curb Gutter Sidewalk Driveways

1510 – Exposed Aggregate Concrete
Changed "hot type joint sealant" to "joint sealant application".

Section 2400 – Solid Waste

2401 – Scope
Added sentence to scope "All development shall be designed for and include a permanent method or designated area for solid waste collection."

2403 – 1. Site Requirements
Changed minimum concrete pad thickness from 8" to 6"

2403 – 7. Site Requirements
Changed minimum number of bollards per container from two to one, with two minimum along the inside of the back wall.

Added sentence "For Rear Load container enclosures there must also be two bollards on each side of the enclosure".
Changed bollard location requirement from 6" to 8" from the back wall.
Changed bollard height from 4' to 6' to 5'.

2404 – A.2. Enclosure Requirements
Added enclosure entrance width "24 feet for Rear Load Enclosures".

2404 – A.3. Enclosure Requirements
Added gate opening width "24 feet for Rear Load Enclosures".

2404 – A.5. Enclosure Requirements
Added bollard requirements "2 bollards minimum. Rear Load Enclosures must also have 2 bollards along the side walls. One on each wall."

2404 – B.1.a. - Enclosures with two containers
Added width requirement "24 feet for Rear Loader Enclosure".

Section 2500 – Sanitary Sewer

2505 – B. Testing - General

Added sentence "All testing shall conform to the most recent version of KDHE's *Minimum Standards of Design for Water Pollution Control Facilities*".

2505 – D.2.a. Conformance Procedure

Added that testing shall conform to "KDHE's *Minimum Standards of Design for Water Pollution Control Facilities*".

Section 2900 – Waterline

2902 – F. Compliance

Added "All pipes, fittings, valves, coatings, gaskets, lubricants, adhesives, teflon tape, thread sealer, suitable joint compound and other appurtenances and materials in contact with raw, partially treated, or treated potable water must be NSF 61 product certified, as applicable."

2903 – B.1.a. Pipe Joints

Added "Gaskets and lubricants shall be NSF 61 product certified."

2903 – B.1.d. Fitting Coating

Added "Coatings shall be NSF 61 product certified."

2903 – B.5. Polyethylene Tubing

Added that polyethylene tubing "shall be NSF 61 product certified."

2903 – C.8. Stem Seals and Coatings

Added that standard epoxy coating will be acceptable "provided the interior fusion bonded epoxy is NSF 61 product certified."

2903 – D.1.c. Fire Hydrants

Added requirement for hydrant shoe coatings to be "NSF 61 certified product".

2903 – F.7.e. Meter Assembly

Changed 5/8" and 1" lid spec from "367-5810" to "367-5815".

2904 – B.7.a. Push-On Joints

Added requirement for lubricant to be "NSF 61 product certified".

2906 – Commissioning, Disinfection, and Testing

Added section B. Cleaning

"After installation, all water mains exceeding 6 inches in diameter and 200 feet in length shall be cleaned by pigging.

a. Pigs shall be open cell polyurethane, pass through a reduction up to 65 percent of the cross-sectional area of the nominal pipe diameter, and be able to traverse standard piping arrangements such as 90 degree bends, tees, crosses, wyes, and gate valves. Abrasives are not permitted unless expressly approved by the Engineer or designee.
b. Contractor shall furnish all equipment, material, and labor to perform cleaning and pigging operations."

2906 – C.e. Disinfection
Added "All chlorine products shall be NSF 60 product certified".

2907 – A.3. Protective Measures
Added "Pressure testing shall be performed as described in Section 2505."

2907 – B. Other Pollution Sources
Removed "Sanitary sewer service lines may be constructed using schedule 40 PVC pipe with solvent welded joints. Pipe joints shall be located a minimum of ten (10) feet either side of the waterline crossing"
Replaced with

"B. Other Pollution Sources

It is of the utmost importance that potable water lines be protected from any source of pollution. The following shall pertain to instances where septic tanks, absorption fields, waste stabilization ponds, feedlots, or other sources of pollution are encountered.

a. A minimum distance of 25 ft. (7.6 m) shall be maintained between all potable water lines and all pollution sources, e.g., septic tanks, septic tank absorption fields, waste stabilization ponds, sewage contamination, wastewater, landfill leachate, and all CAFO facilities.
b. Under no circumstances shall a water line be extended through an area that is a real or potential source of contamination to the water line or water supply.
c. Under no conditions shall the encasement of a water line be considered as adequate protection of a water line or a water supply for the purpose of extending the water line through a real or potential source of contamination.

C. Stream Crossings

a. For waterlines crossing a non-navigable stream, the waterline must be buried at least 5 ft. below the bottom of the streambed.
b. For waterlines crossing a navigable stream, the waterline must be buried at least 7 ft. below the bottom of the streambed."

Section 3000 – Fiber Optics

3003 – A. General
Added that standard runs of conduit "shall consist of 1 ¼" SDR-11 with orange as the primary color or a multi-duct conduit with up to 7 interior conduits with sizes to be determined by project and interior conduit colors specified per project using orange, red, white, gray, brown, green, or blue."

Added "multi-duct conduit" to location requirements for grounding/tracer wire

3004 – Fiber Optic Cable
Added fiber installation location to include "multi-duct conduit with interior conduits sizes determined per project or application".

3004 – B. Fiber Optic Cable
Added that single mode cable shall consist of "up to 432 fibers determined by project or application".

Added “or cable will be a micro-fiber cable” to cable requirements.

Section 3000 – Approved Materials for Fiber Optics

Appendix A – Cables

Added “Micro Fiber RaDD (10-21002.01A 12F)”

“Micro Fiber RaDD (10-21008.02A 24F)”

“Micro Fiber RaDD (10-21017.02A 48F)”

“Micro Fiber RaDD (10-21022.02A 72F)”

“Micro Fiber RaDD (10-21027.02A 96F)”

“Micro Fiber RaDD (10-21031.02A 144F)”

“Micro Fiber RaDD (10-21036.02A 288F)”

“Micro Fiber RaDD (10-21046.02A 432F)”

Appendix A – Conduit and Couplings

Added “Micro-Duct RaDD (20-12065Or.03L-18awg) 07-Way Multi-Duct, 18x14mm”

“Micro-Duct RaDD (20-12062Or.03L-18awg) 04-Way Multi-Duct, 18x14mm”

“Micro-Duct RaDD (20-11041Or.04L) Multi colors Single Micro-Duct, 16x12mm

“Micro-Duct RaDD (20-11051Or.03L) Multi colors Single Micro-Duct, 18x14mm”

Appendix A – Locating Materials

Added “Ground Test Wells, Copperhead Industries, CD14*2T-SW Snakepit”

“Detectable Pull Tape, Erin Rope Corporation, WPD18003000 5/8” 3000lb”

“Detectable Pull Tape, Erin Rope Corporation, WPD18005000 5/8” 5000lb”

Appendix A – Service Boxes

Added “AXS-900R450-CO Tier 22 RaDD (25-10024.00L) Heavy Duty Straight Wall Round Vault w/o Base, External Dimensions (39.00”D x 41.00”H)”

“AXS-900R450-CO Tier 22 RaDD (25-10022.00L) Heavy Duty Straight Wall Round Vault without Base, External Dimensions (39.00”D x 23.00”H)”

“RFW 24x36x30-T22 RaDD (25-10032.01L) Heavy Duty Flared Wall Rectangular

Vault, External Dimensions (38.00″W x 45.00″L x 31.00″H)″

Appendix A – Splice Enclosures

Added "Opticonn 500 Dome Fiber Closure RaDD (30-10055.04Ac) Micro

"Opticonn 500 Dome Fiber Closure RaDD (30-10058.02Ac) Armor

Section 6000 – Storm Sewers

6004 – K. Structure Steps

Added "Structure Steps: Steps may be used in structures for construction. All Steps inside structures shall be removed prior to final acceptance."

6005 – Abandonment

Added Section "6005 – Abandonment

A. Scope – This section applies to the construction methods and procedures for the abandonment of storm sewer piping.
B. Removal of Storm Sewer Piping – the preferred method of storm sewer piping system abandonment is complete removal. Details of abandonment of stormwater piping including plans and profiles showing the limits of excavation and backfill details (such as backfill material and compaction), and existing soil stratum at the pipe abandonment location should be provided in plans and approved by the Engineer.

C. Grouting of Existing Pipes – if removal of the pipes and other structures related to the piping system is not feasible, the pipes and other structures should be grouted full with a grout based on cement-bentonite, or flowable fill. The grout of flowable fill mix should be approved by the Engineer. The grout shall be fluid enough, and pumped in the upslope direction, so that the pipe will be completely filled leaving no voids. Details of abandonment of the piping system, including plans and profiles showing the limits and elevations of pipes to be grouted relative to the existing/proposed surfaces, existing soil stratum at the pipe abandonment location, and grout mix should be provided in plans and approved by the Engineer."

Section 6100 – Erosion and Sediment Control

Added new construction material specification document "6100 - Erosion and Sediment Control"

Section 7200 – Seeding

7204 – Installation

Added "G. Establishment Period and Acceptance.

a. Contractor shall be responsible for the growth of the seeded area(s).
b. Owner will inspect seeding for emergence 30 days after seeding work is completed. Contractor will be notified of and permitted to attend the inspection(s).

i. Any areas deemed by Owner to be thin, weak or dead will be replaced by Contractor.
ii. All washouts will be reseeded immediately after the germination inspection.
iii. Any portion of the seeded area that is not in good growing condition at the end of 30 days shall be re-seeded at Contractor's expense.

c. Owner will inspect seeding for establishment and acceptance no sooner than 60 days after seeding work is completed. Contractor will be notified of and permitted to attend the inspection(s).
d. Owner acceptance will be based upon seeded areas are in live, healthy, growing, and well-established condition without eroded areas, bare spots, weeds, undesirable grasses, disease, or insects.
    i. Satisfactory establishment of grass shall based upon:
        1. Healthy, uniform, close stands of grass, 90 percent weed free, and without surface grade irregularities.
        2. Coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 6 by 6 inches.
        3. Minimum of 2" in height.
e. During the warranty period, correct and reseed any defects in the seeded areas and grass stand, such as weedy areas, eroded areas, and bare spots, until all affected areas are accepted by Owner.
f. After acceptance by the Owner, the Contractor shall notify the adjacent property owner(s) that the Contractor's maintenance obligation is complete and maintenance is now the responsibility of the property owner.

H. MEASUREMENT AND PAYMENT. The Engineer will measure "Seeding" by the lump sum. No measurement will be made of the area seeded. Payment for "Seeding" at the contract unit price is full compensation for the specified work."

UPDATES TO: PLAN PREPARATION AND DESIGN CRITERIA

Section	Changes:
2.3 General Notes, General Layout, and Quantities	Add new line to table under Pavement section: Asphalt Intermediate Course (XX") with TON units. Adjust table under Pavement section: Milling (XX"), Asphalt Surface Course (XX"), and Asphalt Leveling Course (XX") (inches variable was shown as X").
2.6 Storm Sewer Plan & Profile, Drainage Area Map, and Design Information Subsection 2.j.	Add X in table under Arterial Street ROW for PP pipe type, add superscript B to PP header.
2.6 Storm Sewer Plan & Profile, Drainage Area Map, and Design Information Subsection 3.m.	Add new subsection m. Post Construction BMPs and Green Stormwater Infrastructure i. Show and label means and methods to incorporate post-development water quality aspects according to stormwater Best Management Practices (BMPs) for water quality and/or KCWater Green Stormwater Infrastructure. ii. Include Level of Service calculation worksheets from the current version of the Mid-America Regional County (MARC)/KC APWA BMP Manual and/or the Kansas City Green Stormwater Infrastructure Activity Plan Template and required design report requirements, drawing requirements and specification requirements as applicable.
2.7 Sanitary Sewer Plan and Profile Subsection 3.m.	Move subsection m. to new subsection l. in 2.6.2. Storm Sewer Plan & Profile, Drainage Area Map, and Design Information
2.12 Erosion and Sediment Control Subsection 18.	Add subsection 18. Stormwater BMPs shall incorporate methods to address post-construction water quality as prescribed in the current version of the Mid America Regional Council/American Public Works Association Kansas City Metro Chapter Manual of Best Management Practices for Stormwater Quality.
2.15 Roadway Lighting	Added subsection 2.15 and sub-subsections 2.15.1 Plan Sheet Requirements and 2.15.2 Wiring Diagram Requirements.
Add Section 4 - Access Management	See added section. Shifts all subsequent sections up in number by one.
Add Section 5 Roadway Lighting	See added section. Shifts all subsequent sections up in number by one.
7.3.1. Radius of Curvature from C900 PVC Pipe	Adjust former subsection 5.3.1 table as follows: 4" - 12", adjust to 200' (was 573') >12", adjust to 300' (was 764')
Appendix B	Updated to 2024 Edition of the LPA Project Development Manual.

UPDATES TO: STANDARD DETAIL SHEETS

0010-Erosion and Sediment Control

Revised the temporary gravel construction entrance pad geotextile fabric, aggregate depth and inclusion of trackout control mat.

1500-Concrete Driveways

Added residential driveway note on Curb Replacement Detail for joint sealant requirements. Revised commercial driveway note to require detectable warning surfaces for stop, yield or signal control.

1502-Integral Sidewalk and Retaining Wall

Expanded detail to three sheets to include concrete stamp & stain, foundation, handrail, and fence information.
Sheet 1: Added notation for when to use exposed aggregate concrete. Added width dimensions for facility type. Added summary table. Added notes.
Sheet 2: New detail sheet for concrete stamp, stain and additional details
Sheet 3: New detail sheet for metal handrail and wood fence installation on concrete or block retaining walls.

1506-Concrete Curb & Gutter

Curb replacement detail added denotation for joint sealant requirements.

2900-Waterlines

Updated Typical ¾" and 1" Service Connection Detail to show division between publ and private side service line.

2902.2-Fireline Connection Detail

Sheet 1 (Long Service) diagram revised to remove meter tile, curb stop and valve box and to show pipe straight through. Revised note 2 to include "Iron Pipe Thread...". Removed notes 7 & 8.
Sheet 2 (Short Service) same revisions as Sheet 1.

2902.6.1-Backflow Manhole Detail

Sheet 1 (Backflow Manhole) plan view revised to illustrate eccentric dome. Note 6 revised to indicate eccentric cone.
Sheet 2 (Backflow Manhole) note 6 revised to indicate eccentric cone.

6000-Storm Sewer

Sheet 1 (Storm Sewer Curb Inlets) & Sheet 2 (Storm Sewer Junction Boxes) revised note 3.

6000-Underdrains

Revised Underdrain Cleanout Detail.