

CITY OF LONGMONT

APPENDIX I: APPROVED MATERIALS LISTS

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CITY OF LONGMONT
APPENDIX I-1 (RESERVED)

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APPENDIX I-2 (RESERVED)

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APPENDIX I-3

Wastewater Collection Approved Materials List

The following list of approved materials applies to all additions or modifications to the City of Longmont wastewater collection system. All materials shall be designed, manufactured and installed in accordance with Section 400 of the City of Longmont *Design Standards and Construction Specifications*.

Proposed additions or changes to this list of approved materials shall be submitted to the City of Longmont in writing in accordance with Section 108 of the Standards and Specifications.

1. Sanitary Sewer Mains
 - a. Polyvinyl Chloride (PVC) Pipe (SDR-35, ASTM D-3034)
 - i. Acceptable manufacturers of unrestrained joint PVC pipe (SDR-35) are:
 1. Diamond Plastic
 2. WestLake
 3. Vinyltech
 4. JM Eagle
 - ii. Fusible PVC pipe will be considered on a case-by-case basis.
 - iii. Polyethylene pipe will be considered on a case-by-case basis.
 - b. Ductile Iron Pipe (AWWA C151)
 - i. Acceptable manufacturers of lined ductile iron pipe are:
 1. American Ductile Iron Pipe
 2. McWane Ductile/Pacific States
 3. United States Pipe and Foundry/Griffin Pipe
 - c. Asbestos Cement Pipe
 - i. No asbestos cement pipe materials are allowed to be installed.
 - d. Vitrified Clay Pipe
 - i. No vitrified clay pipe material is allowed to be installed.
 2. Fittings, Couplings, and Accessories
 - e. Ductile Iron Fittings (AWWA C110)
 - i. Acceptable manufacturers of ductile iron gasket fittings are:
 1. Sigma
 2. SIP Industries
 3. Star Pipe
 4. Tyler Union
 5. U.S. Pipe and Foundry Company
 - f. PVC Fittings (ASTM D2729-17, F1336-15) – Flexible Couplings (ASTM D 5926)
 - i. Acceptable manufacturers of flexible couplings are:
 1. Can-Tex
 2. C-T Adapters
 3. Jointers
 4. Calder Couplings
 5. Mission Couplings
 6. Nashua Pre-Cast Corporation
 7. Flex-o-joint
 - g. Under Ground flexible couplings stainless steel shielded
 - i. Acceptable stainless steel couplings are:
 1. Fernco 1000 RC
 2. Fernco 5000 RC
 3. Calder Couplings

- h. Tapping saddles
 - i. Mission Rubber Company
 - ii. GPK
 - iii. Multi Fittings
 - iv. IPEX
- i. Gasketed solid SDR 35 fittings
 - i. GPK
 - ii. Multi Fittings
 - iii. Plastic Trends
 - iv. IPEX
 - v. Westlake
- j. Inside Drops
 - i. All inside drops shall a bowl style drop.
 - ii. Acceptable manufacturers include:
 - 1. RELINER/Duran Inc.
- k. Metallic Casing Spacers, Stainless Steel
 - i. Acceptable manufacturers include:
 - 1. PSI Pipeline Seal and Insulator
 - 2. CCI Pipeline Systems
 - 3. Advance Products and System
- l. Casing End Seals
 - i. Acceptable manufacturers include:
 - 1. CCI Pipeline Systems
 - 2. Advance Products and Systems
 - 3. PSI Pipeline Seal and Insulator

3. Manholes

- m. Cast Lids and Frames
 - i. Lid shall be Deeter pattern No. 1258 or approved equal within the street pavement or open field.
 - ii. Lid shall be a smooth pattern within pedestrian and/or bike path (lid design to be approved before installation)
- n. Grout (ASTM C1107)
 - i. All grout in manholes shall be non-shrink, non-metallic, pre-mixed or approved equal. Acceptable manufacturers of grout include:
 - 1. Master Builders "Set Grout"
 - 2. Sika Grout 212
 - 3. Hydraulic Water-Stop Cement #1126, QUIKRETE
 - 4. Recrete 20 Minute Set, DAYTON Superior
 - 5. Dayton HD 50
 - 6. Sikaset Water plug
 - 7. QUIKRETE Non-shrink Precision Grout
- o. Preformed Plastic Gaskets
 - i. All preformed plastic gasket material shall conform to Federal Specification SS-S-00210, Rope Form, with primer on both surfaces of manhole joints. Material must arrive on-site in package, and package to be verified by Inspector prior to installation. Materials not in packaging, or verified by Inspector will be rejected. The material shall be rubberized not bituminous base. "Ram-Nek" is not acceptable. Conseal 101 and Conseal 102 are not acceptable.
 - ii. For 48 inch diameter manholes use 2 ½ inch wide material, for 60 inch diameter manholes and larger use a minimum of 2 inch wide material.
 - iii. Acceptable manufacturers of preformed plastic gaskets include:
 - 1. Kent-Seal by Hamilton-Kent Manufacturing Co.
 - 2. Rub'r-Nek by Henry Company LLC (formerly KT Snyder Co.)
 - 3. G.S. #4, #5 or #79, General Sealants Inc.
 - 4. Sika Hydrophilic swelling waterstop
 - 5. Conseal 202
- p. Pipe Penetration Gaskets (precast manholes) (ASTM C923)
 - i. Acceptable manufacturers include:
 - 1. Kor-N-Seal by Dukor Company
 - 2. PS-10 by Press Seal Gasket Corporation

3. A-Lok by A-Lok Corporation
 4. Lock Joint Flexible manhole Sleeve by Interpace Corporation.
 5. Vertite Water stop gasket
 6. Link-Seal
 7. Flexicraft PipeSeal
- q. Filter Fabric (trench stabilization)
- i. Acceptable manufacturers include:
 1. Dupont Tytar Style 3301
 2. Mirafi 140n
- r. Damp Proofing
- i. Damp proofing materials shall be Type I and Type II.
 - ii. Acceptable manufacturers include:
 1. MasterSeal
 2. Deco 20 seal
 3. SEALMASTIC Emulsion Type II
- s. Interior Coatings
- i. Materials shall be a two-component epoxy that is resistant to hydrogen sulfide
 1. Sikagard 100 CR
 2. Sherwin Williams DuraPlate 235 / Sherflex
- t. Sealants
- i. Acceptable manufacturers include:
 1. Avanti
 2. Sikaflex –1A
 3. Sikaflex –1c SL
 4. Sikafix HH
- u. Fiberglass Marker Posts
- i. Acceptable manufacturers include:
 1. Carsonite
 2. Electromark
 3. Rhino

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APPENDIX I-4

Water Distribution Approved Materials List

The following list of approved materials applies to all additions or modifications to the City of Longmont water distribution system. All materials shall be designed, manufactured and installed in accordance with Section 500 of the City of Longmont *Design Standards and Construction Specifications*.

Proposed additions or changes to this list of approved materials shall be submitted to the City of Longmont in writing in accordance with Section 108 of these Standards and Specifications.

1. WATER MAINS

A. Ductile Iron Pipe (AWWA C151)

- (1) Acceptable manufacturers of unrestrained joint ductile iron pipe are:
 - a. American Ductile Iron Pipe
 - b. McWane Ductile/Pacific States
 - c. United States Pipe and Foundry/Griffin Pipe
- (2) Restrained joint ductile iron pipe will be considered on a case-by-case basis.

B. Polyvinyl Chloride (PVC) Pipe (AWWA C900)

- (1) Acceptable manufacturers of unrestrained joint PVC pipe (AWWA C900) are:
 - a. Diamond Plastic
 - b. North American Pipe
 - c. Vinyltech
- (2) Per letter dated December 17, 2003, JM Eagle Pipe is not acceptable.
- (3) Restrained joint PVC pipe will be considered on a case by case basis.
- (4) Fusible PVC pipe will be considered on a case by case basis.

C. Asbestos Cement Pipe (No AWWA Standards)

- (1) No asbestos cement pipe materials are approved.

2. FITTINGS, COUPLINGS, SLEEVES AND ACCESSORIES

D. Ductile Iron Fittings (AWWA C110) and Ductile Iron Compact Fittings (AWWA C153)

- (1) Acceptable manufacturers of ductile iron fittings, ductile iron compact fittings and swivel tees are:
 - a. Sigma
 - b. SIP Industries
 - c. Star Pipe
 - d. Tyler Union
 - e. U.S. Pipe and Foundry Company
- (2) Swivel tees are not included in AWWA Standards. Applicable AWWA Standards for materials shall apply.

E. Mechanical Joint Adaptors

- (1) Acceptable manufacturers of bolt-through mechanical joint adaptors (MJ x MJ adapters) are:
 - a. InFact Corp. Foster Adaptor
 - b. Star Pipe Series 100 adapter
 - c. Sigma MJ Connector

F. Applicable AWWA Standards for materials shall apply Bolted Sleeve Type Couplings (AWWA C219)

- (1) Acceptable manufacturers and models of ductile iron wide range / extended range couplings are:
 - a. Ford Style "FC2W-L12" Ultra-Flex Wide Range Couplings
 - b. JCM Number "242" Long Length Optimum Range Coupling
 - c. Romac Macro HP Extended Range Coupling (only allowed when connecting water mains that are different materials)
 - d. Romac Style "XR501" Extended Range Coupling (long center ring)
 - e. Smith-Blair Type 461 Quantum Coupling (long sleeve)

G. Fabricated Carbon Steel Tapping Sleeves (AWWA C223)

(1) Approved manufacturers and models of fabricated carbon steel tapping sleeve are:

- a. Ford Style FTSC
- b. JCM Number 412
- c. Mueller Model H-619 (AC pipe only)
- d. Romac Style FTS 420
- e. Smith-Blair Type 622

3. HYDRANTS

H. Dry Barrel Fire Hydrant (AWWA C502)

(1) Acceptable manufacturers and models of dry barrel fire hydrants are:

- a. Clow Medallion F2545 (grease lubrication)
- b. Mueller Super Centurion 250 Model A423 (oil lubrication)
- c. Waterous Pacer Traffic Model WB67-250 with cast iron break away flange with "c" on flange (oil lubrication)

I. Flush Type Hydrant (AWWA C502)

(1) Acceptable manufacturer and model of flush-type hydrant with one 2-1/2" hose nozzle is:

- a. Mueller Model A-412

4. RESILIENT SEATED GATE VALVES

J. Resilient Seated Gate Valves (AWWA C509) & Reduced Wall Resilient Seated Gate Valves (AWWA C515)

(1) Acceptable manufacturers and models of resilient seated gate valves are:

- a. American AVK Series 45
- b. Clow 2639
- c. M&H Style 4067
- d. Mueller A-2362
- e. U.S. Pipe A-USP2

(2) Acceptable manufacturers and models of reduced wall resilient seated gate valves are:

- a. American AVK Series 65
- b. American Flow Control Series 2500
- c. Clow 2638
- d. M&H Style 7000
- e. Mueller A-2361
- f. U.S. Pipe A-USP1

5. VALVE BOXES

K. Acceptable manufacturers and models of cast iron two-piece valve boxes with screw-in risers are:

- (1) Castings, Inc. Model 6850 with 17" Rite Hite cast iron screw type valve box riser
- (2) East Jordan Iron Works 8550 Series valve box with #69 screw type adjustable riser
- (3) Tyler Union 6850 Series valve box with #69 screw type adjustable riser
- (4) Star Pipe Products Cast Iron Heavy Duty valve box CL35, two piece, screw type adjustable riser
- (5) Sigma 2600 Series Cast Iron valve box CL35, with screw type adjustable riser

6. RESTRAINT, SUPPORT AND INSULATION

L. Joint Restraints

(1) Acceptable manufacturers and models of mechanical joint restraint for ductile iron pipe are:

- a. EBAA Iron Series 1100
- b. Ford Series UFR1400
- c. Sigma ONE-LOK Series SLDE
- d. Star Pipe Products Stargrip Series 3000

(2) Acceptable manufacturers and models of restraint harness for push on joints for ductile iron pipe are:

- a. EBAA Iron Series 1700
- b. Ford Series UFR1450-D
- c. Sigma PV-LOK Series PWP
- d. Star Pipe Products Series 3100P

- (3) Acceptable manufacturers and models of mechanical joint restraint for PVC pipe are:
 - a. EBAA Iron Series 2000PV
 - b. Ford Series UFR1500-C
 - c. Sigma One-LOK Series SLCE
 - d. Star Pipe Products Stargrip Series 4000
- (4) Acceptable manufacturers and models of restraint harness for push on joints for PVC pipe are:
 - a. EBAA Iron Series 1500
 - b. Ford Series UFR1390-D
 - c. Sigma PV-LOK Series PWP
 - d. Star Pipe Products Series 1100G2
- (5) Applicable AWWA Standards for materials shall apply.

M. Pipe Insulation

- (1) Acceptable manufacturer and materials for 2-inch thick pipe jacket insulation are:
 - a. Pittsburgh Corning FOAMGLAS® ONE™ insulation with PC 88® adhesive and PITTWRAP® SS jacketing.
- (2) Acceptable manufacturers of 2-inch thick closed-cell extruded polystyrene (XPS) foam rigid insulation board:
 - a. Dow Styrofoam HIGHLOAD 100
 - b. Owens Corning Formular 1000

7. CORROSION PROTECTION

N. Polyethylene Encasement (AWWA C105)

- (1) No manufacturers are listed.

8. LOCATING SYSTEMS

O. Tracing Wire and Accessories

- (1) Acceptable manufacturers and materials for tracing wire are:
 - a. Open Trench or Open Cut Installations: Copperhead Industries High Strength – 1230 CCS Tracer Wire
 - b. Direction Drilling or Boring Installations: Copperhead Industries Extra-High Strength – 1245 CCS Tracer Wire
- (2) Acceptable manufacturer and model of tracing wire splice kits are:
 - a. 3M Direct Bury Splice Kit Model DBR-6.
- (3) Acceptable manufacturer and model of test station boxes are:
 - a. Copperhead RB14*TP single-terminal

P. Warning Tape: No manufacturers are listed.

Q. Electronic Marker System

- (1) Acceptable manufacturer and model of an electronic marker is:
 - a. 3M EMS Ball Marker 1403-XR

9. DISINFECTION AND FLUSHING

R. Hypochlorite Tablets (AWWA B300)

- (1) No tablet manufacturers or products are listed. Tablets shall comply with applicable AWWA B300 Standards.
- (2) Acceptable manufacturers of chlorine tablet adhesive are:
 - a. Dow Corning 748 noncorrosive sealant
 - b. Approved equals manufactured for food processing applications with FDA 21, NSF 51 and NSF 61 listings.

S. Dechlorination Tablets (AWWA C655)

- (1) No tablet manufacturers or products are listed. Tablets shall comply with applicable AWWA C655 Standards.

10. SERVICE LINE, VALVES, AND FITTINGS

T. Service Line (AWWA C800)

- (1) No manufacturers are listed.

U. Service Saddles (AWWA C800)

- (1) Acceptable manufacturers and models of two-piece, all brass or bronze body, **HINGED** service saddles for cast iron sized AWWA C900 PVC pipe with AWWA taper (C.C.) taps are:
 - a. A.Y. McDonald Model 3895 (4" to 8" pipe with ¾" to 2" taps)
 - b. Ford Style S90 Hinged Design (4" to 8" pipe with ½" to 2" taps)

- c. Mueller S-13000 Series (4" to 8" pipe with ¾" to 1" taps)
- (2) Acceptable manufacturers and models of two-piece, all brass or bronze body, **BOLTED** service saddles with AWWA taper (C.C.) taps for cast iron sized AWWA C900 PVC pipe are:
 - a. A.Y. McDonald Model 3805 (4" to 12" pipe with ¾" to 2" taps)
 - b. Ford Style S902 (4" to 12" pipe with ¾" to 2" taps)
 - c. Jones J-996 Series (4" to 12" pipe with ¾" to 2" taps)
 - d. Mueller H-13000 Series (4" to 12" pipe with ¾" to 2" taps)
- (3) Acceptable manufacturers and models of two-piece, brass or bronze top body with **SINGLE WIDE** stainless steel band/strap, bolted service saddles for cast iron sized AWWA C900 PVC pipe with AWWA taper (C.C.) taps:
 - a. A.Y. McDonald Model 3845 (4" to 12" pipe with ¾" to 2" taps)
 - b. Ford Style 202BS (4" to 12" pipe with ¾" to 2" taps)
 - c. Jones J-969W Series (4" to 12" pipe with ¾" to 2" taps)
- V. Corporation Stop (AWWA C800)
 - (1) Acceptable manufacturers and models of AWWA Standard Thread / Corporation Cock (AWWA/CC) taper thread inlet by compression outlet for Copper Tube Size (CTS) ball style corporation stops are:
 - a. A.Y. McDonald Model 74701BQ
 - b. Ford Model FB1000
 - c. Mueller Model B25008N
- W. Curb Stop Valve and Box (AWWA C800)
 - (1) Acceptable manufacturers and models of curb stop valves are:
 - a. A. Y. McDonald: 6100 Series
 - b. Ford: B44
 - c. Mueller: H15000 Series
 - (2) Acceptable manufacturers and models of curb stop valve boxes are:
 - a. McDonald (Arch Pattern): 5601 – ¾" to 1" and 5603 – 1 ½" to 2"
 - b. Mueller (Arch Pattern): H10314 – ¾" to 1" and H10310 – 1 ½" to 2"
- X. Meter Setters (AWWA C800)
 - (1) Acceptable manufacturers and models of copper meter setters are:
 - a. A.Y. McDonald: Model 731-2--WWQQ33
 - b. Ford: #V82-W-44-33 with two angle valves.
 - c. Ford 70 Series for 1- ½" & 2" with second angle valve and lockable bypass

11. WATER METERS

- Y. Meter Pits (no AWWA Standard)
 - (1) Acceptable manufacturers of meter pits are:
 - a. Mid-States MS2036B
 - b. Armorcast - Fiberglass Reinforced Plastic (FRP)
 - c. Sigma Raven RMP2036-W
- Z. Meter lid (no AWWA Standard)
 - (1) Acceptable manufacturers and models of frost proof meter covers are:
 - a. Castings, Inc.: Cast lid with pre-drilled 2" antenna hole
- AA. Meter frost lid (no AWWA Standard)
 - (1) Acceptable manufacturers and models of frost proof meter covers are:
 - a. Castings, Inc.: INLP3 HDPE meter inner lid frost proof

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APPENDIX I-5

Parks and Open Space Approved Materials List

The following approved materials list applies to all City of Longmont Natural Resource Division related improvements per Section 600 of the City of Longmont Design Standards and Construction Specifications. Proposed substitutes to the following specific brands and / or models shall be submitted to the City of Longmont Engineering Services Division in writing with all necessary technical information needed for analysis. A written approval from Engineering Services of substitute is REQUIRED for all products.

1. GRADING AND FINE GRADING

- A. Soil Amendment: Premium 3 by A-1 Organics composted aspen humus or other amendments certified as Class I or Class II by Rocky Mountain Organics Council.

2. IRRIGATION

Note: For common open space irrigation systems, equipment equal to these must be used (i.e. commercial-grade and heavy-duty).

- A. Flow Meter: Flow Tech Ultra Sonic Flow Meter for 1" to 6", model number FLMQS200-XX.
- B. Backflow Enclosure: **Strong Box Aluminum Front Entry (SBBC-AL series)** or **Aluminum Clamshell (SBBC-AL, SBBC-HP, or PE-AL)**.
- C. Mainline:
 - (1) For pipe sizes larger than 3" - J.M. Ringtite Class 200 PVC pipe.
 - (2) For Pipe sizes 3" and smaller – Schedule 40 PVC
- D. Joint Restraints: For all mainline sized 4" and larger - Leemco ductile iron gasketed fittings and Leemco pipe restraints, or Macros Mechanical Joints with mega lugs.
- E. Drip line: Irritrol blue stripe drip pipe, 80 PSI rated. Centennial drip tubing or Rainbird XT-700 only.
- F. Valves:
 - (1) Remote Control Zone Valves:
 - a. Rainbird PEB Series.
 - b. Rainbird PES-B Series.
 - c. Hunter ICV series (or Hunter ICV with Sentry filter for raw water applications).
 - (2) Pressure regulating function to be used as needed per the remote-control master valve requirements in Section 602 of the City Standards:
 - a. Rainbird GB Series (brass).
 - b. For ¾" taps, use 1" Master Valve with reducing bushings.
 - c. For 3" taps, use Rainbird 300 BPES valve, or Bermad model BER410-XX up for master valves.
 - (3) Drip Remote Control Valves:
 - a. Same as remote control zone valves, including pressure regulator, y-strainer, & RBY upstream filter.
 - b. Rainbird X CZ-PRB-100-COM.
 - (4) Ball Valves: Spears plastic ball valves with tee handle – slip joint (no female threads), or Matco model MAT772ST-XX.
 - (5) Isolation Gate Valves: MATCO Gate Valve with resilient seat, series MAT 10RS threaded or MAT 514-T.
 - (6) Manual Drain Valve: AY McDonald Model # 76101010 1" curb stop.
 - (7) Quick Coupling Valves: Rainbird 44RC units with rubber cover.
- G. Keys: Rainbird 44K brass key. 1" on all QC valves.
- H. Valve Boxes: Highline (formerly Pentek) or AEP series 1320 or AEP 910L. Jumbo – sized only for irrigation control boxes. 10" rounds for quick couplers or blow out fittings.
- I. Control System:
 - (1) Control System Enclosure: Hoffman Floor Stand (A-FK1212), Latch Kit (AL2BR), Back Panel (C-P2424) and Enclosure (A-242412LP). Field enclosures will include a riser.
 - (2) Controller (for systems not to be maintained by the City of Longmont):

- a. Hunter I-Core series controller.
- b. Surge Protection: *(as appropriate)*.
- (3) Satellite Control Field Unit *(for systems to be maintained by the City of Longmont)*:
 - a. Satellite control system (site depending, to be approved by the City Engineer), size per design plus two spare zones. To include the following specific brand and models in addition to miscellaneous requirements in Section 602.00 of the City Standards:
 - Toro Sentinel control field unit - Toro DXi Central Control System with the cellular communication package and the Pro Max Connect App.
 - Must contact CPS to confirm the enclosure, station count, communication add-on, two wire decoders and accessories as each site will be custom.
- J. Sprinkler heads:
 - (1) Gear driven Rotor heads:
 - a. Rainbird 8005 with stainless steel risers in athletic areas only
 - b. Rainbird 5004,
 - c. Hunter I-25 with stainless steel risers in athletic areas only,
 - d. Hunter I-20,
 - e. Rainbird Falcon 6504 Series, all with stainless steel riser, may be used with City approval.
 - (2) Pop-Up Spray heads:
 - a. Rainbird 1806-SAM-PRS series (6" pop-up riser). NOTE: Hunter MP1000 rotating spray sprinklers may be considered for potable only areas provided they are in low quantity and being used for a specific reason. If approved, they must be housed in a Rainbird 1806-SAM-P45 spray body.
- K. Drip system:
 - (1) Emitters: Rainbird XB series with spiral barb emitters. Tree Cans model RBLRWS for trees only.
 - (2) Flush caps: Agrifim model #CETC-34 or NDS CEP-900
- L. Irrigation Pump Station SyncroFlo Eagle Model 820-32L-100-850 prefabricated vertical turbine pump station designed to meet 850 GPM at a discharge pressure of 100 psi. Pump station shall include pumps shafts, bowls, filter screen, motors and associated piping and fittings all mounted on a metal skid. The system shall be factory tested and UL listed.
- M. Miscellaneous Irrigation Equipment:
 - (1) Waterproof connections: 3M DBR direct bury splice kits model DBR/Y-600 or Blazing Snaploc wire connector BVS-2 on 14-gauge (hot) wires
 - (2) Elbows: Rainbird SBE-050 - to match pipe brand. Risers: Funny pipe for pop-up heads; nipples for rotors. Fabricate each swing joints – no prefabricated swing joints permitted
 - (3) Pipe Glue: EZWELD 216 heavy body grey glue with EZWELD P212.
 - (4) Two wire systems If approved, the two-wire control path wire shall be Page Model P7072D-12 AWG and alterations to the approved controller specification will need to be made to function with this alternate system.

3. TREES, PLANTS AND GROUND COVER

- A. Mulch for seeded areas:
 - (1) Mulch: Comply with CDOT 213.02.
 - (2) Hydromulch:
- B. Tackifier: Comply with CDOT 213.02. Tackifier shall be guar gum or other product approved by Owner.
- C. Erosion Control Blanket:
- D. Road Delineators: Durapost or SafeHit. White with reflectors.
- E. Backfill mix: Comand® Turf Compost, by A-1 Organics.
- F. Tree wrap: 4" wide Kraft tree wrap.
- G. Steel edging: 3/16" x 4" x 16' Ryerson steel edging.
- H. Mulch in non-seeded areas: Aspen bark mulch, pole peelings (linear strips only), recycled rubber (with staff approved cut sheet), 2"-4" cobble or shredded cedar. Cobble is not to be used in Greenway areas unless otherwise approved by staff.
- I. Tree Stakes: Two-inch (2") x six feet (6') round wooden posts or six foot (6') long, heavy-duty t-bar steel posts with white tops.
- J. Tree Guys: ¾" green polypropylene tree tie webbing, or ¼" natural fiber cordage; green tree straps with metal grommets
- K. Tree Grates: Cast Iron only. Minimum 4' x 10' (comes in two pieces) or 9' x 5' (comes in 4 pieces). Inside the LDDA boundary, ej 60" x 96", sunray pattern shall be used.
- L. Beaver protection: Galvanized steel, welded wire four (4) foot high (2" x 4" openings) fencing.

4. MISCELLANEOUS

- A. Benches: Webcoat expanded metal six-foot bench – surface mount on appropriately sized concrete pad (B6WBRCM), black color.
- B. Trash Receptacles: Webcoat – 32-gallon (TR32 – TSRM) – surface or in-ground mount as appropriate – black color with DOME32 gray top. Also include 30-gallon galvanized trash can (no lid) inside receptacle.
- C. Recycling Receptacles: Recycle Away Landscape 34 Gallon Dome (RC-34R DM CANS RBL). Blue color with dome lid.
- D. Picnic Tables: Webcoat T6RC and T8RCHDCP tables – surface mount – black color, including Play World #1409 PVC-coated clamps to bolt tables to appropriately sized concrete pad.
- E. Bike racks: Madrax inverted U-style #U238-SF, surface mount, black color on appropriately sized concrete pad.

5. Plant Materials List

- A. Trees specifically **PROHIBITED** from City of Longmont regulated areas (discouraged from use elsewhere)

Tree name	Any area	Streetscapes	Primary Greenways
Russian Olive	✓	✓	✓
Lombardy Poplar	✓	✓	✓
Siberian Elm	✓	✓	✓
Boxelder Maple	✓	✓	✓
Cotton-bearing Cottonwood	✓	✓	✓
Ash – any species	✓	✓	✓
Fruit-bearing trees*		✓	
Thorn-bearing trees*		✓	
Willow (all varieties)		✓	
Tree of Heaven		✓	
Cottonwood (all varieties)		✓	
Silver Maple		✓	

**Trees that drop fruit or bear thorns will be allowed in streetscape areas only if the mature size of the tree does not come within 5' of bikepaths, walks or other pedestrian areas.*

- B. See the City of Longmont Approved Tree and Shrub list and the Approved Trees for City Regulated Areas document for additional information. The Tree and Shrub list can be provided by the City Engineer upon request, and the Trees list can be found on the City website (<https://longmontcolorado.gov/forestry/city-maintained-trees-and-services/>).
- C. See the City of Longmont Urban Landscaping Native Plant Species and Mixes on the City of Longmont website for additional information.

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APPENDIX I-6

LPC Approved Materials List

All materials shall meet the requirements of the City of Longmont's Public Improvement Design Standards and Construction Specifications.

1. Specification for Meter Housings 200 Amps or less Single-Phase

A. General

Description: Socket, Meter, 5 Terminal, 200 Amp, Continuous Duty Bypass required

Unit of Measure: Each

Use: Mounting watt-hour meters for residential and commercial revenue metering

Recommended dimensions for individual meter sockets used in underground installations shall be: up to 200 amp – 19" height by 13" width

B. Standards

All sockets shall have a lever-operated bypass and shall be constructed in accordance with and conform to the following ANSI (American National Standards Institute) publications.

Meter socket bypass lever shall be constructed of metal.

Two-piece lids are not allowed unless combination meter main equipment is being used.

Meter sockets shall have ringless style covers with latch capable of accommodating City seal and lock mechanism.

Meter sockets shall be suitable for outdoor installation, i.e. weatherproof (NEMA 3R, IP, 14, or equivalent)

C. Construction

Meter sockets shall be constructed of galvanized steel, 16-gauge minimum. Non-metallic or aluminum enclosures are not acceptable

Cover shall be of the one-piece ringless type, equipped with a suitable device for closing and sealing with padlock type seals.

Finish shall be bonderized with light neutral gray baked enamel.

Knockout for load carrying cable shall be concentric type.

The general construction of the socket shall provide protection to personnel against accidental contact with energized elements of the meter and socket; and shall provide protection to the electrical components against adverse environmental weather conditions.

All three wire sockets, both single-phase and network, shall have a fifth jaw installed at the 9 o'clock position.

D. Electrical

The neutral terminal shall be electrically bonded to the enclosure by a bolted or riveted connection.

A bonding jumper in the form of a separate screw, strap, or other means shall bond the enclosure to the grounded (neutral) conductor using a #4 AWG copper jumper.

The following are pre-approved products:

Milbank part number: Z911531-AC

Durham part number: ARPO I074

Landis and Gyr #HQ Block, part number: 64 560-1

2. Specifications for 320 Class, NEMA 3R, IP, 14 or Equivalent Meter Housing

A. 400 amp K-Base meter housings are not acceptable

B. General

(1) Socket, Meter, Self-Contained, 120/240 or 120/208 volt, single-phase, rated for up to 320 amps (continuous duty) shall have jaw-clamping, lever-operated bypass mechanism that can operate as a continuous duty bypass device.

(2) 320 class meter sockets shall be equipped with anti-inversion clips that prevent normal width terminal blades from being installed in a 320 class socket. All three wire sockets, both single-phase and network, shall have a fifth terminal installed at the 9 o'clock position.

(3) Two-piece lids are not allowed, unless combination meter main equipment is being used. Recommended dimensions for individual meter sockets used in underground installations shall be:
320 amp – 26.5" height by 13" width

C. Standards

- (1) Meter sockets should be constructed of galvanized steel, 16-gauge minimum. Non-metallic or aluminum enclosures are not acceptable.
- (2) Meter sockets shall be suitable for outdoor installation, i.e. weatherproof (NEMA 3R, IP, 14, or equivalent).
- (3) 320 class meter sockets shall be equipped with anti-inversion clips that prevent normal width terminal blades from being installed in a 320 socket.
- (4) ANSI C12.7 American National Standard Requirements for Watt-hour Meter Sockets dated 1993 or latest revision.

D. Construction

- (1) Sockets shall be constructed of 16 gauge (minimum) galvanized sheet steel.
- (2) Cover shall be equipped with a suitable device for closing and sealing with padlock type seals.
- (3) Finish shall be bonderized with light neutral gray baked enamel.
- (4) Knockout for load carrying cable shall be concentric type.
- (5) The general construction of the socket shall provide protection to personnel against accidental contact with energized elements of the meter and socket; and shall provide protection to the electrical components against adverse environmental weather conditions.

E. Electrical

- (1) The neutral terminal shall be electrically bonded to the enclosure by means of a bolted or riveted connection.

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