**City of Cornelius Standard Notes**

*The* black*,* non-italic text *below are standard notes that should be incorporated into engineering plan sets for public infrastructure. The blue text below is simply explanatory notes for the designer. These standard notes are based on the City of Cornelius Public Works Standards. Notes below that are not relevant to a project can be omitted.*

**Water**

* All new and replacement public water mains shall be class DR18 C900.

*(However, the standards allow Class 52 Ductile Iron pipe to be used on short runs, 18 feet or less, between valves, tees, crosses, and reducers).*

* Hydrant assemblies shall use Class 52 Ductile Iron pipe to connect the gate valve to the hydrant and shall be installed as shown in City of Cornelius Detail W-1.
* Valves shall be resilient seated gate valves.
* All valves shall be Mueller brand.
* Valves shall be set as shown in City of Cornelius Detail W-2.
* A minimum of three lengths of pipe shall be restrained at all water system dead-ends. *(This note only applies if the plans include a dead end line).*
* Mechanical restraints shall be used on all tees, crosses, valves, and changes in pipe direction of more than 10 degrees. Field lock gaskets alone are insufficient to meet this requirement for mechanical restraints.
* Concrete thrust blocks shall only be used in special cases and when directed by the City Engineer or City’s engineering inspector. When required, thrust blocks shall be installed in accordance with City of Cornelius Details W-3 and W-4.
* Water services 2-inch and smaller shall be installed in accordance with City of Cornelius Detail W-7.
* The party constructing a new water main shall be responsible for constructing all 2-inch and smaller service connections. These connections include the connection to the main line, service, meter box, and curb stop. The City will set the meter.
* Where service lines will be constructed for adjoining lots, the service lines shall be laid in the same trench, whenever possible, to minimize street cuts. The taps into the main line and the centerline of the meter boxes shall be a minimum of 24” apart. Service lines shall be a minimum of 12” apart.
* 12-gauge copper tracer wire is required on all service lines between the water main and the meter.
* 12-gauge copper tracer wire is required on main lines where the run between valve boxes is not linear.
* Trenching backfill in public right-of-way or public easements shall be accomplished in accordance with City of Cornelius Detail S-3.
* Pavement shall be restored to pre-existing conditions or better. Pavement restoration shall follow the requirements of City of Cornelius Details S-4 and S-5.

**Sanitary and Storm Sewers**

* In general, the latest version of the Clean Water Services (CWS) *Design and Construction Standards for Sanitary Sewer and Surface Water Management*standards shall govern construction and design of sanitary sewer and storm and erosion control facilities. Where conflicts exist between the City of Cornelius Public Works Standards and the CWS Standards, the City standards shall prevail.
* All non-metallic pipe, including main lines and laterals, shall have 12-gauge, green-coated tracer wire installed directly on top of the pipe. The tracer wire shall climb the outside of the manhole to the top pick hole and go behind steps and tie to the top step with a 30” tail.
* Tracer wire is not required on straight sections of pipe between structures (manholes and catch basins).
* Trenching backfill in public right-of-way or public easements shall be accomplished in accordance with City of Cornelius Detail S-3.
* Pavement shall be restored to pre-existing conditions or better. Pavement restoration shall follow the requirements of City of Cornelius Details S-4 and S-5.

**Streets**

* Where storm and sanitary laterals traverse under a curb, the curb shall be stamped to identify the lateral type.
* Restoration of an existing curb and gutter is shown in City of Cornelius Detail S-15
* Sidewalks shall meet ADA requirements unless steep terrain makes this impossible.
* The pedestrian zone, which includes sidewalks, pathways, and bulb-outs, must remain free of obstacles. Obstacles include above ground obstructions including but not limited to: fire hydrants, mailboxes, utility pedestals, utility poles, above ground utility vaults, trees, sign posts and signs, street light poles, signal poles, and signal control equipment. The only exception to this rule is where the sidewalk is more than 6 feet wide. In the cases of these wide sidewalks, the above ground obstructions should be placed as close as possible to the curb so that a clear corridor for pedestrians at least 5-feet wide is maintained.
* Pedestals, power meter boxes, power transformers, cable closures, and similar franchise utility facilities shall be located outside the right-of-way in the public utility easement, unless approved by the City Engineer.
* Sidewalk finishing requirements are shown in City of Cornelius Detail S-25.

**Signing and Striping**

* Signs projecting over sidewalks shall be mounted such that they are at least 7 feet above a sidewalk or pathway.
* The width of the bottom of the ADA ramp shall be at least as wide as the sidewalk or pathway it serves.
* Signing and striping shall follow the latest edition of the *Manual on Uniform Traffic Control Devices for Streets and Highways* by the Federal Highway Administration except as noted in these notes.
* Arterials shall be striped with the appropriate lane markings.
* Bike lanes shall be striped.
* Parking spaces in parallel parking bays can be marked with a simple “T” at the corner of the spaces adjacent to the travel lanes.
* Parking spaces in head-in parking bays must be striped between the spaces.
* All striping shall be thermoplastic.
* Permanent signs shall be installed in accordance with City of Cornelius Detail S-31.

**Landscaping**

* Broadleaf trees planted in single-family and duplex neighborhoods, shall be a minimum caliper size of 1.5”.
* Broadleaf trees planted in other than single-family and duplex neighborhoods shall be a minimum caliper size of 2”.
* Conifers must be a minimum 5 feet in height at time of planting.
* Trees in parkway strips shall be installed with an 18-inch deep root barrier.
* The appropriate planting methods for trees are shown in City of Cornelius Detail S-41.
* Watering of newly planted trees is required. Watering shall be accomplished through use of a temporary irrigation system or with individual portable tree watering devices such as “gator bags.”

**Street Lighting**

* Street lighting shall be LED.
* Street light fixtures shall emit no light upward.
* Color temperature (CCT) shall not exceed 3000K.
* All street lighting shall be Option C, in other words, owned and maintained by the City.