Draft

Standard Specifications and Drawings

Prepared by
Santaquin City Engineering and Public Works.
(Portions of text and Unaltered Drawings
Provided by J-U-B Engineers, Inc.)

Approval by the Santaquin City Council
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This Manual Updated Yearly

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Chapter 4

Standard Specifications

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2024 Standard and Specifications and Drawings Updates

Errata for

Changes made to the Santaquin City Standard Specification and Drawings

Division 1

- Section 1.23 Subsection E: Compaction test of Soil, Untreated Base Course
  The proposed change is the update the testing requirements to include subgrade

  Section 1.23 Subsection E Compaction Test of Soil, Untreated Base Course, and subgrade:

  1) Laboratory test to establish maximum laboratory density shall be determined in accordance with AASHTO T-180, Method D or ASTM D 1557.
  2) Samples to determine laboratory density shall be taken from the stockpiled backfill or from the un-compacted imported subgrade or base course material in place.
  3) The acceptance of soil, subgrade, and base course, with respect to compaction shall be based upon the average density of all density tests made in a lot.
     a) Field density tests shall be taken as specified in AASHTO T-191 or by use of a portable nuclear density testing device. Field density tests shall be taken at a depth equal to ½ the maximum depth of the lift tested.
     b) A lot shall equal the amount of soil or untreated base course compacted in each production day.
     c) A test lot shall be divided into sub-lots and one density test shall be taken within each sub-lot.
     d) The location of sampling sites within the sub-lot shall be chosen on a random basis by use of a suitable random number table or at the locations designated by the Public Works Representative/Engineer.
     e) Each test lot shall have a minimum of two (2) sub-lots. A sub-lot shall be no larger than 1,000 cubic yards for embankment, no larger than 200 cubic yards for backfill over pipe or against structures and no larger than 500 tons for untreated road base.
  4) The test results of all samples tested shall be reported to the City. A test lot shall be accepted when the average of the density determinations is not less than the density required for that improvement in these specifications and when no one density determination is less than 95% of the density required by these specifications.
  5) Compaction test not meeting the required specifications may be rejected and re-compaction or related construction efforts to obtain compaction shall be at the Developer/Contractor's expense.

  6) All compaction testing must be completed no less than 24 hours prior to the placement of any structural material, road base, asphalt or concrete within the roadway and sidewalk.

Division 3

- Section 3.04 Subsection G. Tracer Wire
  The proposed change requires a continuity test for tracer wire on pressure irrigation pipe

  All pipe shall include a 12 gauge solid THHN tracer wire installed according to NESC standards. The locator wire shall be installed in the pipeline trench approximately 6-inches above the top of pipe. The locator wire shall be extended 30" into all service boxes to permit a continuity connection when doing line location.

  A continuity test shall be conducted to ensure there are no breaks in the tracer wire prior to the placement of material over said wire.

- Section 3.05 Subsection F. Service Box and Meter Box
  The proposed change requires a purple lid for the irrigation service box

  Service Box and Meter Box shall be DFW Plastics 1324C4-12-4T 63D with a purple lid or approved equivalent.

- Section 3.05 Subsection F. Service Box and Meter
  The proposed change requires PVC conduit be installed between the PI and Culinary meter boxes

  Where PI and culinary meters are located together, A 1 ¼" PVC conduit shall be installed extending from the PI meter box to the Culinary Water Box, and stub at least 2" into each box.

Division 3A
- Section 3A.04 Subsection I. Tracer Wire
  The proposed change requires a continuity test for tracer wire on culinary water pipe

  A continuity test shall be conducted to ensure there are no breaks in the tracer wire prior to the placement of material over said wire.

Division 3A
- Section 3A.05 Subsection D. Meter, Meter Setter Assembly, Meter Box and Cover:
  The proposed change requires PVC conduit be installed between the PI and Culinary meter boxes

  Where PI and Culinary meters are located together, A 1 ¼" PVC conduit shall be installed extending from the PI meter box to the Culinary Water Box, and stub at least 2" into each box.

Division 3A
- Section 3A.05 Subsection D. Meter, Meter Setter Assembly, Meter Box and Cover:
  The proposed change requires 4" meter vaults to have drain rock instead of a concrete floor

  4" Meter Vaults shall have no concrete floor. Place 12" of drain rock along the bottom of vault.

Division 6
- Section 6.06 Fire Hydrants
  The proposed change requires Fire Hydrants to be located outside of the clear view area as defined by city code 10.16.090
  The proposed change requires a minimum of a 3 foot square concrete maintenance pad around the base of fire hydrants
  Proposed change to require an "snake pit" access box for the locator wires at the fire hydrant

  Fire Hydrants shall be located outside of the clear view area as defined in Santaquin City Code

  All Fire Hydrants shall have a concrete maintenance pad surrounding the base of the fire hydrant. The fire hydrant shall be located in the center of the concrete pad. The maintenance pad shall be a minimum of 3 foot wide by the width of the planter strip or 3 foot square, whichever is greater.

  A snake pit access box (PART #: CD14BTP BLUE LID) or approved equivalent shall be provided by and installed by the developer to house the locator wires at the hydrant. Box shall be located between the hydrant and the curb and gutter and within the concrete maintenance pad.

- Section 6.10 Pressure Irrigation 4-Inch Flushing, Air Inlet and Removal Facility
  Proposed change to require 4" vaults to have drain rock instead of a concrete floor

  Each 4-inch flushing, air inlet and removal facility shall be constructed as detailed and placed at the locations shown on the drawings. The work is to include excavation, gravel foundation, backfill, piping, fittings, concrete thrust blocks and collars, valves, utility boxes, sod replacement, and appurtenances.

  4" Vaults shall have no concrete floor. Place 12" of drain rock along the bottom of vault.

Division 10
- Section 10.03 Removal of Pavement, Sidewalks, Curbs, Etc.
  Proposed change to require asphalt joints to run diagonally at a small angle

  Asphalt joints shall run diagonally across the roadway at a 1 to 2 degree angle

Division 13

- Section 13.04 Manholes
  Proposed change to require flowable fill where manholes and inlet boxes are located close together

  Flowable fill shall be used between the manhole and an inlet box if they are located 32" or less from each other.

- Section 13.07 Subsection A. Concrete Inlet boxes:
- Proposed change to correct the part number of the storm drain grate required

  The storm drain inlet grate and frame shall be a D & L Supply I-3517~~8~~ single unit with curb box ~~with type "V" grate or equal.~~.Grates and frames are to be dipped in cold tar epoxy following fabrication. Following construction of the curb and gutter improvements and before the final inspection each inlet box shall have a decal mounted on the curb face adjacent to the inlet box. The decal shall be purchased from the City by the Developer.

- Section 13.07 Subsection A. Concrete Inlet Boxes:
  Proposed change to require a 10" opening at the curb box

  The opening of the curb box must be at least 10" wide.

- Proposed change to adds Section 13.09 requirements for Underground Stormwater Detention Systems
  Section 13.09 UNDERGROUND STORMWATER DETENTION SYSTEMS
  All underground stormwater detention systems are required to have a 10" diameter inspection port located at the end of the infiltration gallery furthest away from the inlet at the chambers.

  The inspection port shall have a threaded cap and have a minimum 10 inch cast iron lid for access.

Division 16

- Section 16.05 Topsoil
  Proposed change to require fractured rock surface in detention basins

  Detention basins shall have a minimum of 6 inches of 2-3 inch Fractured rock along the entire surface of the basin, if not landscaped with grass.

Division 20:

- Section 20.02 Topsoil Requirements and Placement
  Proposed change to specify a topsoil mix for landscaping

  Topsoil shall be fertile, sandy loam topsoil, obtained from well-drained areas. It shall be without admixture of subsoil or slag and shall be free of stones, lumps, sticks, plants or their roots, toxic substances or other extraneous matter that may be harmful to plant growth and would interfere with future maintenance. Topsoil ~~pH range shall be 5.3 to 6.0~~ shall meet the requirements listed in the tables below. Native topsoil at the site may be used as the final topsoil layer if it is of adequate quality. Where topsoil is required a 6" layer of topsoil shall be placed.

  Physical Properties

Test	pH	EC	SAR	% Sand	% Silt	% Clay	% OM
Acceptable level(s)	5.5-8.0	<3.0	<6.0	15-60	10-60	5-30	>1.0

Nutrients

Test	No3-N ppm	P ppm	K ppm	Fe ppm
Acceptable level(s)	>20	>11	>130	>10

Section 20.04 Subsection A. Basic Irrigation Requirements

- Proposed change to specify a minimum of 2" diameter for the irrigation connection to open space areas
- Proposed change to require unions at all valves filters and connection points

The Developer/Irrigation Contractor shall provide labor, materials, equipment and services necessary to complete the irrigation work as defined in these specifications and as indicated on the Improvement Drawings. The Contractor shall coordinate work of this section with work of all related trades and subcontractors to assure smooth progression of work. Work shall include, but is not limited to:

1. The minimum service connection to all open space areas either public dedication or privately maintained must be a minimum of 2" diameter.
2. Completing the irrigation system as shown on the Improvement Drawings and required by these specifications.
3. Verifying the underground utility locations.
4. Protecting and/or restoring all existing improvements.
5. Trenching and backfilling for all pipes, valves and drain pits specified.
6. Furnishing and installing all filter mains, laterals, risers and fitting, heads, quick-coupling valves, gate valves, control valves, controllers, electric wire, controls, etc., and all necessary specialties and accessories.
7. Furnishing and installing all sleeves beneath walkways, roads, and driveways where required.
8. Testing of irrigation system.
9. Regulating and adjusting all heads and programming controller.
10. Unions shall be installed at all valves, filters, and connection points, etc.

Section 20.04 Sub-section C. Fittings

Proposed change to require swing joints on fittings 1" or larger.

Swing joints are required on all fittings 1" and greater in diameter.

Section 20.04 Subsection D. Automatic Controller

Proposed change to the model of automatic controller required and to require a hydrometer and valve to accompany the controller

~~The developer will check with the Public Works Director prior to purchasing an automatic controller. Unless directed otherwise the automatic controller will be a Huner controller with stainless steel pedestal mount, ICC, with TBOX batter operated module~~..The automatic controller shall be a WeatherTrak pro3 2 wire controller and ET Pro3 2-Wire housing box. The controller shall be housed in a NEMA Type 4, weatherproof, watertight enclosure with lockable access door. The enclosure shall be at grade or pedestal mounted as determined by the Public Works Director.

The developer shall provide an appropriately sized Netafim combined hydrometer and valve, with a digital register, after the point of connection, such as the meter. The equipment must be installed with the manufacturer's required materials.

- Section 20.04 Subsection J. Valves and Couplers:
  Proposed change to require manual isolation valves on sprinklers

  Manual Isolation valves shall be installed at each sprinkler valve.

- Section 20.04
  Proposed change to add a requirement for filters before the flow meter, and bypass systems on filters larger than 4”

  Sub-section L. Filters

  All filters must be installed before the flow meter. Filters must be an auto-flushing Amiad filter or approved equivalent.

  All Filters 4” or larger shall utilize a bypass system with a manual flush drain valve before the filter.

- Section 20.07 Trees
  Proposed change to require deep root tree irrigation systems on trees

  A deep root tree irrigation system shall be installed on all trees.

- Proposed change to add section 20.08 Recreational Facility specifications for recreational facilities, including pour-in-place rubber play surfaces for playgrounds, and pavilion materials.

  Section 20.08 Recreational Facilities

  Playgrounds: Pour-in-place rubber surfaces shall be installed under all playground equipment. The manner and area of installation shall be done according to the approved plans and the manufacturer’s recommendations for both the play structure and play surface. Colors must be neutral earthtone colors approved by Santaquin City.

  Pavillions: Any pavilions installed shall be finished with an architectural powder coated metal or aluminum construction.

Standard Drawings:

- All Drawings: Update title block to show current address

- W3 Update the label on 4” Double check valve to state that it must be testable

- PI2 change label on conduit between meter boxes to match specification text

- W7: Remove label that says 2” PVC on the Eclipse Hydrant Blow-Off Assembly and replace with 2” ductile iron

CHAPTER 4

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