

PART 3

STANDARD SPECIFICATIONS FOR CONSTRUCTION

3.0. INTRODUCTION

In this document, **Ivins City adopts the most recent edition (currently 2007), including all amendments, of the APWA Utah Chapter's *Manual of Standard Specifications***. Part 3 is a listing of all of the specifications from the APWA manual and identifies any local modifications that have been made to these specifications.

3.1. APPLICATION TO DEVELOPER PROJECTS

All specifications listed with an asterisk (*) do not apply to developer projects and only apply to City contracts. All other specifications may apply to both a developer project as well as a City contract. In these specifications, any reference to "CONTRACTOR" may also imply a responsibility to the Developer as determined by the Developer's private contract with its Contractors. All references to "OWNER" apply to Ivins City. All references to "ENGINEER" refer to Ivins City Engineer or other City representative acting with the scope of assigned duties.

3.2. LOCAL SPECIFICATIONS

All specifications shown in **BOLD** are not references to the APWA manual and are instead attached to PART 3 at the end of the document. These are standards that have been locally prepared for Ivins City and may replace an APWA specification or at the very least will govern over any conflict with an APWA specification.

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DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

SECTION 00 72 00 General Conditions

PART 1 GENERAL

1.1 DEFINED TERMS

***PART 2 PRELIMINARY MATTERS**

***2.1 DELIVERY OF BONDS AND INSURANCE**

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***2.3 COMMENCEMENT OF CONTRACT TIME – NOTICE TO PROCEED**

***2.4 STARTING THE WORK**

***2.5 BEFORE STARTING CONSTRUCTION**

***2.6 PRECONSTRUCTION CONFERENCE**

***2.7 FINALIZING SCHEDULES**

***2.8 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION**

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3.2 RESOLVING DISCREPANCIES

***3.3 AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS**

3.4 REUSE OF DOCUMENTS

3.5 INTERPRETATION AND VENUE

PART 4 AVAILABILITY OF LANDS, SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

***4.1 AVAILABILITY OF LANDS**

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4.3 PHYSICAL CONDITIONS – UNDERGROUND FACILITIES

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6.1 CONTROL OF THE WORK

6.2 LABOR, MATERIAL AND EQUIPMENT

6.3 ADJUSTING PROGRESS SCHEDULE

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6.5 SUBCONTRACTORS, SUPPLIERS AND OTHERS

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6.7 PERMITS

6.8 LAWS AND REGULATIONS

6.9 TAXES

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- 6.15 CONTINUING THE WORK
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- 6.18 HAZARDOUS WASTE GENERATION
- PART 7 OTHER WORK
 - 7.1 RELATED WORK AT SITE
 - 7.2 COORDINATION
 - 7.3 UTILITY REARRANGEMENTS
 - 7.4 WORK DONE BEYOND THE SITE
- *PART 8 OWNER'S RESPONSIBILITIES
 - *8.1 OWNER'S RESPONSIBILITIES
- PART 9 ENGINEER'S STATUS DURING CONSTRUCTION
 - 9.1 OWNER'S REPRESENTATIVE
 - 9.2 PROJECT REPRESENTATIVE
 - 9.3 AUTHORITY AND DUTIES OF RESIDENT PROJECT REPRESENTATIVE
 - 9.4 CLARIFICATIONS AND INTERPRETATIONS
 - 9.5 AUTHORIZED VARIATIONS IN WORK.
 - 9.6 REJECTING DEFECTIVE WORK
 - 9.7 NOTICE OF INTENTION TO APPEAL
 - 9.8 DECISIONS ON DISPUTES
 - 9.9 LIMITATIONS ON ENGINEER'S RESPONSIBILITIES
- PART 10 CHANGES IN THE WORK
 - *10.1 ADDITIONS, DELETIONS, REVISIONS
 - *10.2 WORK NOT REQUIRED BY CONTRACT DOCUMENTS
 - 10.3 NOTICE TO SURETY
- *PART 11 CHANGE OF CONTRACT PRICE
 - *11.1 CONTRACT PRICE
 - *11.2 CONTRACT PRICE ADJUSTMENT
 - *11.3 DETERMINING CONTRACT PRICE ADJUSTMENT
 - *11.4 COST OF THE WORK
 - *11.5 CONTRACTOR'S FEE
 - *11.6 CASH ALLOWANCES
 - *11.7 UNIT PRICE WORK
 - *11.8 FORCE ACCOUNT WORK (COST OF THE WORK PLUS CONTRACTOR'S FEE)
- *PART 12 CHANGE OF CONTRACT TIME
 - *12.1 CONTRACT TIME ADJUSTMENT
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 - *12.3 DELAYS RELATED TO WEATHER
- PART 13 TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK
 - 13.1 NOTICE OF DEFECTS
 - 13.2 ACCESS TO WORK

- *13.3 TESTS AND INSPECTIONS
- 13.4 DEFECTIVE WORK
- 13.5 UNCOVERING WORK
- 13.6 CORRECTION OR REMOVAL OF DEFECTIVE WORK BY CONTRACTOR
- *13.7 CORRECTION PERIOD
- 13.8 ACCEPTANCE OF DEFECTIVE WORK
- 13.9 OWNER MAY CORRECT DEFECTIVE WORK
- *PART 14 PAYMENTS TO CONTRACTOR AND COMPLETION
- *14.1 BASIS FOR PROGRESS PAYMENTS
- *14.2 APPLICATION FOR PROGRESS PAYMENTS
- *14.3 CONTRACTOR'S WARRANTY OF TITLE
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- *14.5 SUBSTANTIAL COMPLETION
- *14.6 PARTIAL UTILIZATION
- *14.7 FINAL INSPECTION
- *14.8 FINAL APPLICATION FOR PAYMENT
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- *14.10 WAIVER OF CLAIMS
- *PART 15 SUSPENSION OF WORK AND TERMINATION
- *15.1 OWNER MAY SUSPEND WORK
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- *15.3 TERMINATION OF WORK BY CONTRACTOR
- *PART 16 DISPUTE RESOLUTION
- *16.1 APPEALS PROCESS
- PART 17 MISCELLANEOUS
- 17.1 GIVING NOTICE
- 17.2 COMPUTATION OF TIME
- 17.3 NOTICE OF CLAIM TIME LIMITS
- 17.4 CUMULATIVE REMEDIES

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DIVISION 01 GENERAL REQUIREMENTS

*SECTION 01 11 00 Summary of Work

No Modifications

*SECTION 01 24 00 Value Analysis

No Modifications

*SECTION 01 25 00 Product Options and Substitutions

No Modifications

*SECTION 01 26 00 Contract Modification Procedure

No Modifications

*SECTION 01 29 00 Payment Procedure

No Modifications

SECTION 01 31 13 Coordination

Modified as follows:

1. Modify paragraph on page 100 as follows:

- 2.1 **INTERRUPTION OF OWNER'S OPERATIONS**

- C. Shutdown of utilities must be accomplished during approved hours at no additional cost to the OWNER. If work requires a longer shutdown, it must then be accomplished during separate periods.

1. No interruption in existing service shall occur before affected residents are notified.

2. Notification shall be given no less than 24 hours prior and no more than 72 hours.

3. When possible, shutdowns should occur on a weekday between 8:00 a.m. and 4:00 p.m.

*SECTION 01 31 19 Preconstruction Conference

No Modifications – See Part 1 for additional Preconstruction Conference Requirements

SECTION 01 31 20 Partnering

No Modifications

SECTION 01 32 16 Progress Schedule

No Modifications

SECTION 01 33 00 Submittal Procedure

Modified as follows:

1. City may allow submittals to be transferred electronically as agreed by all involved parties.

SECTION 01 35 10 Acceptance

No Modifications

SECTION 01 42 19 References

No Modifications

SECTION 01 43 00 Quality Assurance

No Modifications

SECTION 01 43 40 Resident Superintendent

No Modifications

SECTION 01 45 00 Quality Control

No Modifications

SECTION 01 55 26 Traffic Control

Modified as follows:

1. Modify paragraph on page 126 as follows:
 - 2.1 **PAVEMENT MARKINGS, SIGNS, BARRICADES**
 - A. MUTCD

SECTION 01 57 00 Temporary Controls

Modified as follows:

1. Modify paragraph on page 127 as follows:
 - 3.1 **NOISE CONTROL**
 - B. Control construction noise in residential areas from 10:00 pm to 6:00 am.
 - C. During the months of April through October, concrete pouring may begin at 3:00 am with written approval from the City.

*SECTION 01 64 00 Owner-furnished Products

No Modifications

SECTION 01 65 00 Product Delivery and Handling

No Modifications

SECTION 01 66 00 Product Storage and Protection

Modified as follows:

1. Do not store products in City right-of-way outside of the construction area unless prior written approval is granted.

SECTION 01 71 13 Mobilization and Demobilization

No Modifications

SECTION 01 71 23 Construction Layout

No Modifications

SECTION 01 72 24 Survey Referencing

No Modifications

SECTION 01 73 29 Cutting and Patching

No Modifications

SECTION 01 74 13 Progress Cleaning

No Modifications

SECTION 01 75 16 Startup Procedures

No Modifications

SECTION 01 78 23 Operation and Maintenance Data

No Modifications

SECTION 01 78 39 Project Record Documents

Modified as follows:

2. For all construction (including developer projects) within 100 feet of any privately or publicly owned structure, Contractor shall provide pre-construction photography to the City. This information shall be provided at pre-construction conference.
3. Contractor may submit construction photography, video or still imagery, in a commonly used electronic format on CD, DVD or flash drive.
4. Modify paragraph on page 155-6 as follows:
1.4 **DOCUMENTS ON SITE**

Ivins City Standard Specifications for Design and Construction
Part 3 Standard Specifications for Construction

- A. Keep at job site 1 copy of each of the following, if issued for the Work.
1. Contract Drawings.
 2. Project Manual.
 3. Addenda.
 4. Reviewed Shop Drawings, Product Data and Samples.
 5. Modifications to the Contract Documents.
 6. Field test records.
 7. Inspection certificates.
 8. Manufacturer's certificates.
 9. Survey documentation.
 10. Storm Water Pollution Prevention Plan (SWPPP).
 12. Permits (as required).

SECTION 01 78 50 Closeout Procedures

No Modifications

DIVISION 02 EXISTING CONDITIONS

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 02 41 13 Selective Site Demolition

No Modifications

SECTION 02 41 14 Pavement Removal

Modified as follows:

1. When colored concrete is removed, it must be replaced with a best possible match of colored concrete.
2. When removing concrete curb and gutter adjacent to asphalt pavement, if the asphalt is damaged, an additional strip of asphalt approximately 12 inches wide must be saw cut, removed and replaced.

SECTION 02 41 15 Pavement Pulverizing

Modified as follows:

1. Modify paragraph on page 171 as follows:
 - 1.5 **ACCEPTANCE**
 - A. Gradation: Random measure each 15,000 square feet.
 - B. Depth: Random measure each 5,000 square feet. All measurements shall not be deficient by more than 1-inch. The average measurement shall not be less than the design thickness. If there is insufficient material to match design, supplement with crushed aggregate base unless directed by ENGINEER otherwise.
 - C. Density: Nuclear gage or proof roll. See Section 32 05 10 for proof rolling requirements.
 - D. Quantity of stabilizer added matches submittal data.

SECTION 02 41 19 Selective Building Demolition

No Modifications

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DIVISION 03 CONCRETE

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 03 11 00 Concrete Forming

No Modifications

SECTION 03 20 00 Concrete Reinforcing

No Modifications

SECTION 03 30 04 Concrete

Modified as follows:

1. All concrete in contact with soils shall be sulfate resistive in accordance with paragraph 2.5 A. 1.
2. Class 2000 concrete shall not be used except in special nonstructural cases, but never without prior approval by City Engineer.
3. Class 3000 concrete shall only be used for minor semi-nonstructural items such as thrust blocks, anchors, and mass concrete, unless specifically waived prior to delivery by the City Engineer.
4. Concrete color shall be in accordance with Part 2 Engineering and Design Standards, paragraph 2.6.12 A.
5. Modify Table 3 – Mix Properties and Limitations as follows:
 - a. Slump shall not exceed 4-inches as measured prior to any admixtures without prior approval of City Engineer.
 - b. Entrained air shall be 5 percent plus or minus 1 percent.
6. Modify paragraph on page 196 as follows:

2.5 MIX DESIGN

E. Selection of Mix Properties:

 1. Cold Weather: ACI 306. Unless allowed otherwise by ENGINEER, increase cement content in the mix design by 1 bag when low temperatures are predicted to be less than 20 degrees, i.e. 5.5 becomes 6.5, or 6.5 becomes 7.5, etc.

SECTION 03 30 05 Concrete Testing

No Modifications

SECTION 03 30 10 Concrete Placement

No Modifications

SECTION 03 35 00 Concrete Finishing

No Modifications

SECTION 03 39 00 Concrete Curing

No Modifications

SECTION 03 40 00 Precast Concrete

No Modifications

SECTION 03 61 00 Cementitious Grouting

No Modification

DIVISION 04 MASONRY

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 04 05 16 Masonry Mortar and Grout

No Modifications

SECTION 04 21 00 Clay Unit Masonry

No Modifications

SECTION 04 05 16 Concrete Unit Masonry

No Modifications

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DIVISION 05 METALS

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 05 05 10 Metal Galvanizing

No Modifications

SECTION 05 05 23 Bolts, Nuts and Accessories

No Modifications

SECTION 05 12 00 Structural Steel Framing

No Modifications

SECTION 05 51 00 Metal Stairs

No Modifications

SECTION 05 53 00 Gratings and Floor Plates

No Modifications

SECTION 05 56 00 Metal Castings

No Modifications

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DIVISION 06 WOOD, PLASTICS AND COMPOSITES

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 06 10 00 Rough Carpentry

No Modifications

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DIVISION 07 THERMAL AND MOISTURE PROTECTION

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 07 19 00 Water Repellent

No Modifications

SECTION 07 21 00 Insulation

No Modifications

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DIVISION 09 FINISHES

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 09 91 00 Painting

Modified as follows:

1. Color coding may not be required if specified otherwise.

SECTION 09 96 23 Graffiti Resistant Coating

No Modifications

SECTION 09 97 14 Coatings for Steel Bridges

No Modifications

SECTION 09 97 15 Coatings for Steel Water Storage Tank

No Modifications

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DIVISION 13 SPECIAL CONSTRUCTION

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 13 34 19 Metal Building

No Modifications

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DIVISION 22 PLUMBING

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 22 05 00 Mechanical General Requirements

No Modifications

SECTION 22 11 13 Facility Water Distribution Piping

No Modifications

SECTION 22 11 23 Water Pump

No Modifications

SECTION 22 12 19 Water Storage Tank

No Modifications

SECTION 22 13 33 Submersible Pump

No Modifications

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DIVISION 26 ELECTRICAL

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 26 05 00 Electrical General Requirements

No Modifications

SECTION 26 05 13 Conductors and Cables

No Modifications

SECTION 26 05 33 Raceway

No Modifications

SECTION 26 05 34 Electrical Boxes and Fittings

No Modifications

SECTION 26 09 26 Panelboard

No Modifications

SECTION 26 13 13 Circuit Breaker

No Modifications

SECTION 26 56 19 Roadway Lighting

Modified as follows:

1. See Part 2, Section 2.10 Lighting Design for fixture, photocell, and pole requirements for streetlights and bollards.
2. Modify paragraph on p 3.74 as follows:

2.4 JUNCTION BOXES

B. Cover stencil: "*Ivins City* Street Lighting". *Voltage greater than 600 V not allowed.*

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DIVISION 31 EARTHWORK

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

Section 31 05 10 Boundary Markers and Survey Monuments

No modifications

Section 31 05 13 Common Fill

Modified as follows:

1. All material proposed to be imported shall be subject to the review and approval of the City Engineer prior to starting of hauling operations.

Section 31 05 15 Cement Treated Fill

No modifications

Section 31 05 19 Geotextiles

No modifications

Section 31 05 21 Geogrids/Geocomposites

No modifications

Section 31 11 00 Site Clearing

No modifications

Section 31 23 16 Excavation

No modifications

Section 31 23 17 Rock Removal

No modifications

Section 31 23 23 Backfilling for Structures

Modified as follows:

1. When backfilling with common fill, no material larger than 3-inches will be allowed unless otherwise approved by the City.
2. Table 1 –
 - a. Lot Size for Structural Backfilling Operations (p418) has been modified (refer to the Ivins City Minimum Field Testing Checklist in Appendix A).

- b. Test Criteria shall use Modified Proctor Density (ASTM D1557)
- 3. Compaction (Paragraph 3.6): See Section 31 23 26 modifications.

Section 31 23 26 Compaction

Modified as follows:

- 1. All compaction shall be as follows:
 - a. Landscape Areas: 90 percent
 - b. Under Footings: 95 percent
 - c. Under Roadways (Pavement, Curbs, Gutters, Sidewalks, Driveways): 95 percent
 - d. Exception for fine grained soils: 91 percent
- 2. Modify paragraph on page 422 as follows:

2.1 FIELD QUALITY CONTROL

C. Optimum Soil Density: Use ASTM D2216 and ASTM D1557 Method A or D (Modified Proctor) for all soils.

Section 31 25 00 Erosion and Sedimentation Control

No modifications

Section 31 31 19 Vegetation Control

No modifications

Section 31 36 00 Gabions

No modifications

Section 31 37 00 Rip Rap or Rock Lining

No modifications

Section 31 41 00 Shoring

No modifications

DIVISION 32 EXTERIOR IMPROVEMENTS

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

Section 32 01 05 Information, Regulatory, and Warning Signs

No modifications

Section 32 01 06 Post Mounted Signs

No modifications

Section 32 01 07 Relocate Post Mounted Signs and Mail Boxes

No modifications

Section 32 01 10 Relocate Fences and Gates

No modifications

Section 32 01 13 Slurry Seal

Modified as follows:

1. Modify paragraph on page 453 as follows:

- 2.1 **PAVING ASPHALT**

- B. Emulsified Asphalt: Use a polymer modified emulsion CQS-1HP, meeting CQS-1H specifications identified in AASHTO M 208 and ISSA A 105, using solid synthetic rubber or latex material.

1. Combine the polymer modifier with the base asphalt or asphalt emulsion at a minimum rate of 3 percent solids by weight of asphalt, prior to loading at the manufacturing plant.
 2. Use a polymer modified emulsion compatible with the mix design developed for the conventional slurry seal.

(Note: sourced from UDOT Standard Specification 02789)

Section 32 01 14 Chip Seal

No modifications

Section 32 01 15 Micro Surface Seal

No modifications

Section 32 01 16 Recycled Asphalt Paving

No modifications

Section 32 01 17 Pavement Crack Seal

No modifications

Section 32 01 18 Fog Seal

As attached. Required on all new pavements in the first year prior to release of warranty bonds.

Section 32 01 19 Asphalt Emulsion Seal Coat

As attached.

Section 32 01 26 White Top Inlay

No modifications

Section 32 01 29 Concrete Paving Raising

No modifications

Section 32 01 90 Plant Maintenance

No modifications

Section 32 01 91 Tree Root Cutting

No modifications

Section 32 01 93 Pruning Trees

No modifications

Section 32 05 10 Backfilling Roadways

Modified as follows:

1. Table 1 – Lot Sizes (p498) has been modified refer to the Ivins City Minimum Field Testing Checklist in Appendix A.
2. Compaction (Paragraph 3.6): See Section 31 23 26 modifications.
3. Proof Rolling (Paragraph 3.8): In addition to following the APWA specifications.
 - a. Verify no deflections.
 - b. Measure amount of deflection and where occurring.
 - c. Correct any areas that deflect in accordance with geotechnical recommendations.
 - d. Retest at no additional cost to City.

Section 32 11 23 Crushed Aggregate Base

Modified as follows:

1. Table 1 – Placement Type and Sub-lot Size (p7 of 2007 Supplement) has been modified (refer to the Ivins City Minimum Field Testing Checklist in Appendix A).
2. Modify paragraph on Page 7 of 2007 Supplement as follows:

1.6 ACCEPTANCE

C. Gradation: Lot size is 15,000 square feet. Collect samples from grade prior to compaction. Conduct at least 1 gradation test for each Lot. Material not within tolerance may remain in-place at ENGINEER's discretion provided density requirements are met. Tolerance deficiency must be corrected before placement continues.

F. Thickness: Measure at least twice every 9,000 square feet. All measurements shall not be deficient by more than 1-inch. The average measurement shall not be deficient by more than 1/4-inch of the design thickness.

3. Modify paragraph on Page 10 of 2007 Supplement as follows:

1.6 PLACEMENT

D. Finish: Uniform with surface deviation no more than 3/8 of an inch from line and grade in 10 feet in any direction. Measure in two locations per a lot size of 1000 square feet.

Section 32 12 03 Paving Asphalts

No modifications

Section 32 12 05 Asphalt Concrete

No modifications

Section 32 12 06 Superpave

No modifications

Section 32 12 13 Prime Coat

No modifications

Section 32 12 14 Tack Coat

No modifications

Section 32 12 16 Plant-Mix Asphalt Paving

Modified as follows:

1. No surface course shall be placed less than 1 inch in thickness.
2. Profilograph only required to be used on arterial streets.
3. Modify paragraph on Page 13-14 of 2007 Supplement as follows:

1.6 ACCEPTANCE

E. Compaction: Basis for acceptance is core density, non-destructive density, or control strip density with visual observation. Use non-destructive density testing by gage unless specified otherwise.

1. **Core Density:** This method compares the average density of cores extracted from a pavement surface to maximum theoretical density.
 - a. Lot: 7,000 square feet or part thereof. A lot is acceptable if average core density does not exceed pay factor 1.00 limits.
 - b. Sampling Protocol: ASTM D 3665 for random test location selection with at least 2 test locations per Lot. ASTM D 5361 for collection and 1 core sample per test location. Samples are full depth or overlay depth in overlay construction.
CONTRACTOR may take additional cores at no additional cost to the City and with prior approval by the ENGINEER.
 - d. Repair core hole with at least 4-inch thick concrete within two days of sample.
2. Non-Destructive Density (Marshall) Testing by Gage:
 - a. Lot: One days' production with 7,000 square feet sub-lots.

Table 1.5 Density Testing Acceptance			
Maximum Laboratory Density (Marshall), Percent		Air Voids, Percent	Acceptance
Average	Lowest Test		
96 or greater	92 or greater	Test not required	Pass
93 to 96	92 or greater	3 to 5	Pass
93 to 96	92 or greater	5 to 7	Add Type II Slurry Seal
91 to 93	90 or greater	Test not required	Mill edges near concrete and install 1" asphalt overlay
Less than 91	Less than 90	Test not required	Remove and replace

- b. Sampling Protocol: ASTM D3665 for random test location selection with at least 1 test location per sub-lot.
- c. Testing Protocol: ASTM D2950 (nuclear gage) or AASHTO TP 68 (Non-nuclear gage) and ASTM D2041 for maximum theoretical density.

G. Thickness:

1. Lot Size: 7,000 square feet or part thereof.
2. Sampling Protocol: ASTM D 3665 and ASTM D 5361 with at least 2 test locations per Lot and 1 core sample per test location. Samples are full depth. Thickness not measured in overlay construction. CONTRACTOR may take additional cores at no additional cost to the City and with prior approval by the ENGINEER.
3. Coring requirement may be waived if City inspector determines that sufficient inspection verifying the pavement thickness was provided during the installation.

4. Modify paragraph on Page 540 as follows:

1.6 TOLERANCES

E. Roughness: Profilograph only arterial streets unless the ENGINEER requests it due to suspicion of a roughness defect.

Section 32 12 17 Cold-Mix Asphalt Paving

No modifications

Section 32 13 13 Concrete Paving

No modifications

Section 32 13 73 Concrete Paving Joint Sealants

No modifications

Section 32 14 13 Precast Concrete Unit Paving

No modifications

Section 32 14 16 Brick Unit Paving

No modifications

Section 32 16 13 Driveway, Sidewalk, Curb, Gutter

Modified as follows:

1. Sidewalk contraction joints should be spaced as close to the width of the sidewalk as possible. In no instance should the width to length ratio of a single square created by the contraction joints exceed 1.2:1 in either direction. (i.e. a 5 foot wide sidewalk should have contraction joints spaced between 4.2 and 6.0 feet.).

Section 32 16 14 Curb Ramp

Modified as follows:

1. Refer to standard drawings for additional information.
2. Truncated domes shall be either plastic composite or uncoated cast iron with an earth tone color contrasting with the concrete curb ramp.
3. Modify paragraph on page 580 as follows:

3.3 LAYOUT

A. Curb Cut (excluding flare or curb radius measurement):

1. Width: 5 feet for each crosswalk served.

4. Modify paragraph on page 578 as follows:

3.9 PROTECTION AND REPAIRS

C. Repair: 03 30 10

1. Correct all humps or depressions
2. Replace all cracked sidewalks.
3. Seal all cracked curb and gutters if crack is smaller than width of dime, otherwise replace cracked curb and gutters.
4. Secure ENGINEER's acceptance of method of correction.

Section 32 17 23 Pavement Markings

No modifications

Section 32 31 13 Chain Link Fences and Gates

No modifications

Section 32 31 16 Welded Wire Fences and Gates

No modifications

Section 32 32 26 Crib Walls

No modifications

Section 32 84 23 Underground Irrigation Systems

No modifications

Section 32 91 19 Landscape Grading

No modifications

Section 32 92 00 Turf and Grasses

No modifications

Section 32 93 13 Ground Cover

No modifications

Section 32 93 43 Tree

No modifications

DIVISION 33 UTILITIES

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

Section 33 05 01 Acrylonitrile-Butadiene-Styrene (ABS) Pipe

No modifications

Section 33 05 02 Concrete Pipe and Culvert

No modifications

Section 33 05 03 Copper Pipe

No modifications

Section 33 05 04 Corrugated Metal Pipe

No modifications

Section 33 05 05 Ductile Iron Pipe

Modified as follows:

1. Ductile Iron Pipe must be double bagged with polyethylene materials per manufacturer recommendations for corrosive soils.

Section 33 05 06 Polyethylene Pipe

No modifications

Section 33 05 07 Polyvinyl Chloride Pipe

Modified as follows:

1. Modify paragraph on page 648 as follows:
 - 1.3 **PRESSURE PIPE SYSTEMS**
 - D. Fittings: Ductile Iron and Grey Cast Iron
 1. In accordance with AWWA C110 and C153
 2. Lined with cement mortar in accordance with AWWA C104.
 3. Provide flange adapter designed for AWWA C900 and AWWA C905 when connecting PVC pressure pipe to flanged fittings or flanged valves.
 4. Restrain joints with ductile iron joint restraints as manufactured by EBAA, Romac, Star or approved equal.

Section 33 05 08 Pre-Stressed Concrete Pipe

No modifications

Section 33 05 09 Steel Pipe – Lined and Coated

No modifications

Section 33 05 10 Vitrified Clay Pipe

No modifications

Section 33 05 14 Utility Grade Adjustments

Modified as follows:

1. Modify paragraph on page 667 as follows:
 - 3.4 **INSTALLING COVER COLLAR**
 - B. Set concrete collar to 1/8 inch minimum to 1/4 inch maximum below asphalt concrete pavement surface and 1/4 inch below Portland cement concrete pavement surface.

Section 33 05 20 Backfilling Trenches

Modified as follows:

1. Table 1 – Lot Sizes for Trench Backfilling Operation (p 670) has been modified (refer to Ivins City Minimum Field Testing Checklist in Appendix A).
2. Compaction (Paragraph 3.6): See Section 31 23 26 modifications.
3. Table 2 – (as shown below) shall be associated with paragraph 3.3 Pipe Zone.

Table 2 Foundation and Pipe Zone Backfill Material			
Sieve Size	Foundation Material (if required)	Bedding/Pipe Zone Material	Final Backfill Material
	Percentage Passing		
12"	--	--	Native material which contains no sod, vegetation, rocks larger than 6" diameter, asphalt or concrete chunks, etc. No clays without prior approval.
6"	--	--	
3"	100	--	
2"	90-100	--	
1"	70-90	100	
1/2"	51-75	90-100	
#4	31-65	50-80	
#16	16-40	30-42	
#200	2-12	9-25*	
*Must be non-plastic backfill material (Class I or Class II) when installed with flexible pipe systems (i.e. PVC, HDPE, and other plastic pipes)			

4. Continuous plastic line markers are not required as indicated in paragraph 3.4D.

Section 33 05 23 Trenchless Utility Installation

No modifications

Section 33 05 25 Pavement Restoration

No modifications

Section 33 08 00 Commissioning of Water Utilities

Modified as follows:

1. Modify paragraph on page 686 as follows:

- 1.3 **PRESSURE TEST**

- A. Air Test: Per pipe manufacturer's recommendation.

1. Required for all gravity drain (sewer and storm drain) pipes.

2. Follow ASTM F1417 or UNI-B-6 (by Uni-bell) for plastic gravity drain pipes.

3. Follow ASTM C924 for concrete pipes.

- E. If any leakage is detected, even if within acceptable limits, contractor shall check all pipe fittings (tees, bends, service taps, etc.) for leakage and tighten fittings to stop all leaks at these locations.

2. Modify paragraph on page 687 as follows:

- 3.4 **PIPE TESTING SCHEDULE**

- B. Deflections:

2. Maximum reduction of internal diameter in any plane measured full length of installation and not less than 30 days after installation as follows.

- a. Polyvinyl chloride pipe, 5 percent

3. Modify paragraph on page 687 as follows:

- 3.5 **INFILTRATION TEST**

- A. Maximum is 25 gallons per inch diameter per mile per 24 hours.

4. Add the following paragraphs on page 687:

- 3.6 VIDEO INSPECTION

- A. Run water through gravity system prior to video inspection

- B. Conduct at least 30 days after backfill and prior to installation of pavements.

- C. City inspector shall be present during video inspection.

- D. Video shall be color and in an electronic format viewable with any standard computer with standard video playback software.

- E. The date, identification of pipe reach, upstream and downstream manhole numbers, and manhole to manhole footage shall be displayed on the video data at all times.

- F. Provide video inspection log as a computerized data report with a map of the system inspected with appropriate identification labels as referenced in the video.

- 3.7 TRACER WIRE CONTINUITY TEST

- A. Test all tracer wire sections for continuity.

5. Modify paragraph on page 687-688 as follows:

- 3.7 PIPE TESTING SCHEDULE

- A. Irrigation (for landscaping) - Gravity System:

1. Grade test: All circuits drain.
- B. Irrigation (*for landscaping*) – Pressure System:
 1. Grade test: All circuits drain.
 2. Pressure test.
 3. Operational Testing:
 - a. Perform operational testing after hydrostatic test is complete; backfill is in place and sprinkler heads adjusted to final coverage.
 - b. Demonstrate system meets coverage requirements and automatic controls function properly.
 - c. Coverage requirements are based on operation of 1 circuit at a time.
- C. Sanitary Sewers:
 1. Alignment and grade test.
 2. Obstructions and deflection test.
 3. Infiltration test for gravity pipeline systems.
 4. Pressure test for pressure pipeline systems.
 5. Video inspection.
 6. Air test.
- D. Subdrains:
 1. Grade test: All circuits drain.
 2. Obstructions and deflection test.
- E. Storm Drains:
 1. Alignment and grade test.
 2. Obstructions and deflection test.
 3. Infiltration test for gravity pipeline systems.
 4. Pressure test for pressure pipeline systems.
 5. Video inspection.
 6. Air test.
- E. Potable Water System:
 1. Obstruction and deflection test.
 2. Pressure test.
 3. Disinfection (Section 33 13 00)
 4. Tracer wire continuity test.
- F. Secondary Water System
 1. Obstruction and deflection test.
 2. Pressure test.
 3. Flushing (See Section 33 13 00 disinfection not required)
 4. Tracer wire continuity test.

1. Modify paragraph on page 689 as follows:

1.3 PERFORMANCE REQUIREMENTS

A. Depth of Cover:

1. 30 inches minimum to top of pipe, service line. 48 inches minimum where final street grades are undetermined. 72 inches maximum unless ENGINEER authorizes otherwise.

2. Modify paragraph on page 691 as follows:

2.7 SERVICE CONNECTION

A. Polyethylene Pipe (Iron Pipe Size)

3. Add paragraph on page 691 as follows:

2.8 TRACER WIRE

A. Wire must be at least 14 AWG in size with THWN insulation.

B. Provide wire coils in valve boxes, fire hydrants, and meter services such that wire can be lifted at least 3 feet above the ground surface.

C. No splices allowed unless approved by City. (Do not splice in laterals to main line tracer wire.)

1. If splice is allowed, must use an approved water tight splicing system.

D. Place wire under haunch of pipe prior to trench backfill and compaction.

E. When reasonably possible, loop tracer wire into valve box with appropriate length of coil and continue along main without cutting the wire.

F. All wire ends shall be terminated with a greased wire nut.

Section 33 11 11 Relocate Water Meters and Fire Hydrants

No modifications

Section 33 12 16 Water Valves

Modified as follows:

1. For regular distribution or transmission system valves, use direct buried gate valves for sizes 3-inches through 12-inches. For larger sizes, may use butterfly valves.
2. Gate Valves, use:
 - a. Mueller
 - b. M&H
 - c. Kennedy
 - d. AVK
 - e. Or approved equal.
3. Butterfly Valves, use:
 - a. Pratt
 - b. M&H
 - c. Crispin, K-flow series
 - d. Or approved equal.
4. Check Valves, use:
 - a. Crispin

- b. Kennedy
 - c. Val-matic
 - d. Or approved equal.
5. Pressure Reducing Valve – Main Line, use:
- a. Cla-Val Co., 90 Series
 - b. Watts
 - c. Or approved equal.
6. Corporation Stops
- a. A.Y. McDonald
 - b. Mueller Co.
 - c. Ford Meter Box Co.
 - d. Or approved equal.
7. Air Release
- a. ARI Flow Control Accessories, D-040
 - b. Crispin / Multiplex Manufacturing Co., PL Series
 - c. Or approved equal.
8. Air & Vacuum
- a. Crispin
 - b. Vent-o-mat, RBX
 - c. Valve and Primer Corp. (Apco/Willamette), 1604/152
 - d. Or approved equal.
9. Combination Air Valves
- a. Crispin
 - b. Valve and Primer Corp. (Apco/Willamette), APCO 143C – 151C
 - c. Val-Matic Valve and Mfg. Corp., 200C Series
 - d. Golden Anderson Industries, Series 945E Kinetic
 - e. Or approved equal.

Section 33 12 19 Hydrants

Modified as follows:

- 1. Hydrants shall be mechanical joint without foot valve as follows:
 - a. Mueller, Modern Centurion, Model A-423;
 - b. Kennedy, Model K-81A
 - c. AVK, Series 2780
 - d. Or equal
- 2. Modify paragraph on page 703 as follows:
 - 2.1 **INSTALLATION**
 - B. Install so bottom of hydrant flange is 2 to 4 inches above final grade. Verify final grade with survey equipment prior to installation.
- 3. Paint materials as follows:
 - a. Primer: as delivered by manufacturer.
 - b. Final Coat: as recommended by manufacturer after installation.

Section 33 12 33 Water Meters

Modified as follows:

1. All service lines 1-inch or less shall use smooth wall polyethylene pipe, IPS, SDR 9 per Section 33 05 06.
 - a. Fitting connectors shall be brass compression type with pipe stiffeners.
 - b. Use of pipe sealing compounds, pipe dope, and detergent type lubricants are not permitted.
2. Meters, (provided by City):
 - a. Badger,
 - b. No substitutions.
3. AMR transmitter, (provided by City)
 - a. Itron
 - b. No substitutions.
4. Meter Box, use:
 - a. For 3/4" or 1" meters outside of traffic areas, use 18 – 21 inch diameter corrugated polyethylene pipe.
5. Meter Box Ring and Lid, use:
 - a. D&L Supply, L-2240
 - b. Culinary water – Cast with 1-3/4" hole and marked with lid casting "WATER"
 - c. Secondary water – No holes or text markings.
 - d. No substitutions
6. Meter Setters (Meter Yoke), use:
 - a. Mueller H-1404
 - b. Ford
 - c. Or approved Equal

Section 33 13 00 Disinfection

No modifications

Section 33 31 00 Sanitary Sewer Systems

Modified as follows:

1. Pipe 8 inches in diameter, and larger, shall be laid with the use of an electronic laser or equivalently precise method of establishing line and grade.

Section 33 41 00 Storm Drainage Systems

Modified as follows:

1. Pipe shall be laid with the use of an electronic laser or equivalently precise method of establishing line and grade.

Section 33 47 00 Ponds

No modifications

Section 33 71 73 Electrical Utility Services

This specification does not apply to Ivins City. Refer to Rocky Mountain Power.

DIVISION 34 TRANSPORTATION

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

Section 34 41 13 Traffic Signals

No modifications

Section 34 71 13 Vehicle Barriers

No modifications

Section 34 71 19 Vehicle Delineators

No modifications

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DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

SECTION 00 72 00 General Conditions

PART 1 GENERAL

1.1 DEFINED TERMS

*PART 2 PRELIMINARY MATTERS

*2.1 DELIVERY OF BONDS AND INSURANCE

*2.2 COPIES OF DOCUMENTS

*2.3 COMMENCEMENT OF CONTRACT TIME – NOTICE TO PROCEED

*2.4 STARTING THE WORK

*2.5 BEFORE STARTING CONSTRUCTION

*2.6 PRECONSTRUCTION CONFERENCE

*2.7 FINALIZING SCHEDULES

*2.8 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

PART 3 CONTRACT DOCUMENTS, INTENT, AMENDING, REUSE

3.1 INTENT

3.2 RESOLVING DISCREPANCIES

*3.3 AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS

3.4 REUSE OF DOCUMENTS

3.5 INTERPRETATION AND VENUE

PART 4 AVAILABILITY OF LANDS, SUBSURFACE AND PHYSICAL CONDITIONS;

REFERENCE POINTS

*4.1 AVAILABILITY OF LANDS

4.2 PHYSICAL CONDITIONS – GENERAL

4.3 PHYSICAL CONDITIONS – UNDERGROUND FACILITIES

4.4 REFERENCE POINTS AND MONUMENTS

*4.5 ASBESTOS, PCBs, PETROLEUM, HAZARDOUS WASTE OR RADIOACTIVE MATERIAL

*PART 5 BONDS AND INSURANCE

*5.1 PERFORMANCE, PAYMENT AND OTHER BONDS

*5.2 INSURANCE

PART 6 CONTRACTOR'S RESPONSIBILITIES

6.1 CONTROL OF THE WORK

6.2 LABOR, MATERIAL AND EQUIPMENT

6.3 ADJUSTING PROGRESS SCHEDULE

6.4 SUBSTITUTES OR "OR-EQUAL" ITEMS

6.5 SUBCONTRACTORS, SUPPLIERS AND OTHERS

6.6 PATENT FEES AND ROYALTIES

6.7 PERMITS

6.8 LAWS AND REGULATIONS

6.9 TAXES

6.10 USE OF PREMISES

6.11 RECORD DOCUMENTS

6.12 SAFETY AND PROTECTION

- 6.13 EMERGENCIES
- 6.14 SHOP DRAWINGS AND SAMPLES
- 6.15 CONTINUING THE WORK
- 6.16 CONTRACTOR'S GENERAL WARRANTY AND GUARANTEE
- 6.17 INDEMNIFICATION
- 6.18 HAZARDOUS WASTE GENERATION
- PART 7 OTHER WORK
 - 7.1 RELATED WORK AT SITE
 - 7.2 COORDINATION
 - 7.3 UTILITY REARRANGEMENTS
 - 7.4 WORK DONE BEYOND THE SITE
- *PART 8 OWNER'S RESPONSIBILITIES
 - *8.1 OWNER'S RESPONSIBILITIES
- PART 9 ENGINEER'S STATUS DURING CONSTRUCTION
 - 9.1 OWNER'S REPRESENTATIVE
 - 9.2 PROJECT REPRESENTATIVE
 - 9.3 AUTHORITY AND DUTIES OF RESIDENT PROJECT REPRESENTATIVE
 - 9.4 CLARIFICATIONS AND INTERPRETATIONS
 - 9.5 AUTHORIZED VARIATIONS IN WORK.
 - 9.6 REJECTING DEFECTIVE WORK
 - 9.7 NOTICE OF INTENTION TO APPEAL
 - 9.8 DECISIONS ON DISPUTES
 - 9.9 LIMITATIONS ON ENGINEER'S RESPONSIBILITIES
- PART 10 CHANGES IN THE WORK
 - *10.1 ADDITIONS, DELETIONS, REVISIONS
 - *10.2 WORK NOT REQUIRED BY CONTRACT DOCUMENTS
 - 10.3 NOTICE TO SURETY
- *PART 11 CHANGE OF CONTRACT PRICE
 - *11.1 CONTRACT PRICE
 - *11.2 CONTRACT PRICE ADJUSTMENT
 - *11.3 DETERMINING CONTRACT PRICE ADJUSTMENT
 - *11.4 COST OF THE WORK
 - *11.5 CONTRACTOR'S FEE
 - *11.6 CASH ALLOWANCES
 - *11.7 UNIT PRICE WORK
 - *11.8 FORCE ACCOUNT WORK (COST OF THE WORK PLUS CONTRACTOR'S FEE)
- *PART 12 CHANGE OF CONTRACT TIME
 - *12.1 CONTRACT TIME ADJUSTMENT
 - *12.2 DELAY NOT CAUSED BY CONTRACTOR
 - *12.3 DELAYS RELATED TO WEATHER
- PART 13 TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK
 - 13.1 NOTICE OF DEFECTS
 - 13.2 ACCESS TO WORK

- *13.3 TESTS AND INSPECTIONS
- 13.4 DEFECTIVE WORK
- 13.5 UNCOVERING WORK
- 13.6 CORRECTION OR REMOVAL OF DEFECTIVE WORK BY CONTRACTOR
- *13.7 CORRECTION PERIOD
- 13.8 ACCEPTANCE OF DEFECTIVE WORK
- 13.9 OWNER MAY CORRECT DEFECTIVE WORK
- *PART 14 PAYMENTS TO CONTRACTOR AND COMPLETION
- *14.1 BASIS FOR PROGRESS PAYMENTS
- *14.2 APPLICATION FOR PROGRESS PAYMENTS
- *14.3 CONTRACTOR'S WARRANTY OF TITLE
- *14.4 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT
- *14.5 SUBSTANTIAL COMPLETION
- *14.6 PARTIAL UTILIZATION
- *14.7 FINAL INSPECTION
- *14.8 FINAL APPLICATION FOR PAYMENT
- *14.9 FINAL PAYMENT AND ACCEPTANCE
- *14.10 WAIVER OF CLAIMS
- *PART 15 SUSPENSION OF WORK AND TERMINATION
- *15.1 OWNER MAY SUSPEND WORK
- *15.2 OWNER MAY TERMINATE
- *15.3 TERMINATION OF WORK BY CONTRACTOR
- *PART 16 DISPUTE RESOLUTION
- *16.1 APPEALS PROCESS
- PART 17 MISCELLANEOUS
- 17.1 GIVING NOTICE
- 17.2 COMPUTATION OF TIME
- 17.3 NOTICE OF CLAIM TIME LIMITS
- 17.4 CUMULATIVE REMEDIES

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DIVISION 01 GENERAL REQUIREMENTS

*SECTION 01 11 00 Summary of Work

No Modifications

*SECTION 01 24 00 Value Analysis

No Modifications

*SECTION 01 25 00 Product Options and Substitutions

No Modifications

*SECTION 01 26 00 Contract Modification Procedure

No Modifications

*SECTION 01 29 00 Payment Procedure

No Modifications

SECTION 01 31 13 Coordination

Modified as follows:

1. Modify paragraph on page 100 as follows:

- 2.1 **INTERRUPTION OF OWNER'S OPERATIONS**

- C. Shutdown of utilities must be accomplished during approved hours at no additional cost to the OWNER. If work requires a longer shutdown, it must then be accomplished during separate periods.

1. No interruption in existing service shall occur before affected residents are notified.

2. Notification shall be given no less than 24 hours prior and no more than 72 hours.

3. When possible, shutdowns should occur on a weekday between 8:00 a.m. and 4:00 p.m.

*SECTION 01 31 19 Preconstruction Conference

No Modifications – See Part 1 for additional Preconstruction Conference Requirements

SECTION 01 31 20 Partnering

No Modifications

SECTION 01 32 16 Progress Schedule

No Modifications

SECTION 01 33 00 Submittal Procedure

Modified as follows:

1. City may allow submittals to be transferred electronically as agreed by all involved parties.

SECTION 01 35 10 Acceptance

No Modifications

SECTION 01 42 19 References

No Modifications

SECTION 01 43 00 Quality Assurance

No Modifications

SECTION 01 43 40 Resident Superintendent

No Modifications

SECTION 01 45 00 Quality Control

No Modifications

SECTION 01 55 26 Traffic Control

Modified as follows:

1. Modify paragraph on page 126 as follows:
 - 2.1 **PAVEMENT MARKINGS, SIGNS, BARRICADES**
 - A. MUTCD

SECTION 01 57 00 Temporary Controls

Modified as follows:

1. Modify paragraph on page 127 as follows:
 - 3.1 **NOISE CONTROL**
 - B. Control construction noise in residential areas from 10:00 pm to 6:00 am.
 - C. During the months of April through October, concrete pouring may begin at 3:00 am with written approval from the City.

*SECTION 01 64 00 Owner-furnished Products

No Modifications

SECTION 01 65 00 Product Delivery and Handling

No Modifications

SECTION 01 66 00 Product Storage and Protection

Modified as follows:

1. Do not store products in City right-of-way outside of the construction area unless prior written approval is granted.

SECTION 01 71 13 Mobilization and Demobilization

No Modifications

SECTION 01 71 23 Construction Layout

No Modifications

SECTION 01 72 24 Survey Referencing

No Modifications

SECTION 01 73 29 Cutting and Patching

No Modifications

SECTION 01 74 13 Progress Cleaning

No Modifications

SECTION 01 75 16 Startup Procedures

No Modifications

SECTION 01 78 23 Operation and Maintenance Data

No Modifications

SECTION 01 78 39 Project Record Documents

Modified as follows:

2. For all construction (including developer projects) within 100 feet of any privately or publicly owned structure, Contractor shall provide pre-construction photography to the City. This information shall be provided at pre-construction conference.
3. Contractor may submit construction photography, video or still imagery, in a commonly used electronic format on CD, DVD or flash drive.
4. Modify paragraph on page 155-6 as follows:
1.4 **DOCUMENTS ON SITE**

Ivins City Standard Specifications for Design and Construction
Part 3 Standard Specifications for Construction

- A. Keep at job site 1 copy of each of the following, if issued for the Work.
1. Contract Drawings.
 2. Project Manual.
 3. Addenda.
 4. Reviewed Shop Drawings, Product Data and Samples.
 5. Modifications to the Contract Documents.
 6. Field test records.
 7. Inspection certificates.
 8. Manufacturer's certificates.
 9. Survey documentation.
 10. Storm Water Pollution Prevention Plan (SWPPP).
 12. Permits (as required).

SECTION 01 78 50 Closeout Procedures

No Modifications

DIVISION 02 EXISTING CONDITIONS

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 02 41 13 Selective Site Demolition

No Modifications

SECTION 02 41 14 Pavement Removal

Modified as follows:

1. When colored concrete is removed, it must be replaced with a best possible match of colored concrete.
2. When removing concrete curb and gutter adjacent to asphalt pavement, if the asphalt is damaged, an additional strip of asphalt approximately 12 inches wide must be saw cut, removed and replaced.

SECTION 02 41 15 Pavement Pulverizing

Modified as follows:

1. Modify paragraph on page 171 as follows:
 - 1.5 **ACCEPTANCE**
 - A. Gradation: Random measure each 15,000 square feet.
 - B. Depth: Random measure each 5,000 square feet. All measurements shall not be deficient by more than 1-inch. The average measurement shall not be less than the design thickness. If there is insufficient material to match design, supplement with crushed aggregate base unless directed by ENGINEER otherwise.
 - C. Density: Nuclear gage or proof roll. See Section 32 05 10 for proof rolling requirements.
 - D. Quantity of stabilizer added matches submittal data.

SECTION 02 41 19 Selective Building Demolition

No Modifications

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DIVISION 03 CONCRETE

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 03 11 00 Concrete Forming

No Modifications

SECTION 03 20 00 Concrete Reinforcing

No Modifications

SECTION 03 30 04 Concrete

Modified as follows:

1. All concrete in contact with soils shall be sulfate resistive in accordance with paragraph 2.5 A. 1.
2. Class 2000 concrete shall not be used except in special nonstructural cases, but never without prior approval by City Engineer.
3. Class 3000 concrete shall only be used for minor semi-nonstructural items such as thrust blocks, anchors, and mass concrete, unless specifically waived prior to delivery by the City Engineer.
4. Concrete color shall be in accordance with Part 2 Engineering and Design Standards, paragraph 2.6.12 A.
5. Modify Table 3 – Mix Properties and Limitations as follows:
 - a. Slump shall not exceed 4-inches as measured prior to any admixtures without prior approval of City Engineer.
 - b. Entrained air shall be 5 percent plus or minus 1 percent.
6. Modify paragraph on page 196 as follows:

2.5 MIX DESIGN

E. Selection of Mix Properties:

 1. Cold Weather: ACI 306. Unless allowed otherwise by ENGINEER, increase cement content in the mix design by 1 bag when low temperatures are predicted to be less than 20 degrees, i.e. 5.5 becomes 6.5, or 6.5 becomes 7.5, etc.

SECTION 03 30 05 Concrete Testing

No Modifications

SECTION 03 30 10 Concrete Placement

No Modifications

SECTION 03 35 00 Concrete Finishing

No Modifications

SECTION 03 39 00 Concrete Curing

No Modifications

SECTION 03 40 00 Precast Concrete

No Modifications

SECTION 03 61 00 Cementitious Grouting

No Modification

DIVISION 04 MASONRY

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 04 05 16 Masonry Mortar and Grout

No Modifications

SECTION 04 21 00 Clay Unit Masonry

No Modifications

SECTION 04 05 16 Concrete Unit Masonry

No Modifications

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DIVISION 05 METALS

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 05 05 10 Metal Galvanizing

No Modifications

SECTION 05 05 23 Bolts, Nuts and Accessories

No Modifications

SECTION 05 12 00 Structural Steel Framing

No Modifications

SECTION 05 51 00 Metal Stairs

No Modifications

SECTION 05 53 00 Gratings and Floor Plates

No Modifications

SECTION 05 56 00 Metal Castings

No Modifications

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DIVISION 06 WOOD, PLASTICS AND COMPOSITES

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 06 10 00 Rough Carpentry

No Modifications

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DIVISION 07 THERMAL AND MOISTURE PROTECTION

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 07 19 00 Water Repellent

No Modifications

SECTION 07 21 00 Insulation

No Modifications

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DIVISION 09 FINISHES

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 09 91 00 Painting

Modified as follows:

1. Color coding may not be required if specified otherwise.

SECTION 09 96 23 Graffiti Resistant Coating

No Modifications

SECTION 09 97 14 Coatings for Steel Bridges

No Modifications

SECTION 09 97 15 Coatings for Steel Water Storage Tank

No Modifications

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DIVISION 13 SPECIAL CONSTRUCTION

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 13 34 19 Metal Building

No Modifications

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DIVISION 22 PLUMBING

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 22 05 00 Mechanical General Requirements

No Modifications

SECTION 22 11 13 Facility Water Distribution Piping

No Modifications

SECTION 22 11 23 Water Pump

No Modifications

SECTION 22 12 19 Water Storage Tank

No Modifications

SECTION 22 13 33 Submersible Pump

No Modifications

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DIVISION 26 ELECTRICAL

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

SECTION 26 05 00 Electrical General Requirements

No Modifications

SECTION 26 05 13 Conductors and Cables

No Modifications

SECTION 26 05 33 Raceway

No Modifications

SECTION 26 05 34 Electrical Boxes and Fittings

No Modifications

SECTION 26 09 26 Panelboard

No Modifications

SECTION 26 13 13 Circuit Breaker

No Modifications

SECTION 26 56 19 Roadway Lighting

Modified as follows:

1. See Part 2, Section 2.10 Lighting Design for fixture, photocell, and pole requirements for streetlights and bollards.
2. Modify paragraph on p 3.74 as follows:

2.4 JUNCTION BOXES

B. Cover stencil: "*Ivins City* Street Lighting". *Voltage greater than 600 V not allowed.*

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DIVISION 31 EARTHWORK

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

Section 31 05 10 Boundary Markers and Survey Monuments

No modifications

Section 31 05 13 Common Fill

Modified as follows:

1. All material proposed to be imported shall be subject to the review and approval of the City Engineer prior to starting of hauling operations.

Section 31 05 15 Cement Treated Fill

No modifications

Section 31 05 19 Geotextiles

No modifications

Section 31 05 21 Geogrids/Geocomposites

No modifications

Section 31 11 00 Site Clearing

No modifications

Section 31 23 16 Excavation

No modifications

Section 31 23 17 Rock Removal

No modifications

Section 31 23 23 Backfilling for Structures

Modified as follows:

1. When backfilling with common fill, no material larger than 3-inches will be allowed unless otherwise approved by the City.
2. Table 1 –
 - a. Lot Size for Structural Backfilling Operations (p418) has been modified (refer to the Ivins City Minimum Field Testing Checklist in Appendix A).

- b. Test Criteria shall use Modified Proctor Density (ASTM D1557)
- 3. Compaction (Paragraph 3.6): See Section 31 23 26 modifications.

Section 31 23 26 Compaction

Modified as follows:

- 1. All compaction shall be as follows:
 - a. Landscape Areas: 90 percent
 - b. Under Footings: 95 percent
 - c. Under Roadways (Pavement, Curbs, Gutters, Sidewalks, Driveways): 95 percent
 - d. Exception for fine grained soils: 91 percent
- 2. Modify paragraph on page 422 as follows:

2.1 FIELD QUALITY CONTROL

C. Optimum Soil Density: Use ASTM D2216 and ASTM D1557 Method A or D (Modified Proctor) for all soils.

Section 31 25 00 Erosion and Sedimentation Control

No modifications

Section 31 31 19 Vegetation Control

No modifications

Section 31 36 00 Gabions

No modifications

Section 31 37 00 Rip Rap or Rock Lining

No modifications

Section 31 41 00 Shoring

No modifications

DIVISION 32 EXTERIOR IMPROVEMENTS

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

Section 32 01 05 Information, Regulatory, and Warning Signs

No modifications

Section 32 01 06 Post Mounted Signs

No modifications

Section 32 01 07 Relocate Post Mounted Signs and Mail Boxes

No modifications

Section 32 01 10 Relocate Fences and Gates

No modifications

Section 32 01 13 Slurry Seal

Modified as follows:

1. Modify paragraph on page 453 as follows:

- 2.1 **PAVING ASPHALT**

- B. Emulsified Asphalt: Use a polymer modified emulsion CQS-1HP, meeting CQS-1H specifications identified in AASHTO M 208 and ISSA A 105, using solid synthetic rubber or latex material.

1. Combine the polymer modifier with the base asphalt or asphalt emulsion at a minimum rate of 3 percent solids by weight of asphalt, prior to loading at the manufacturing plant.
 2. Use a polymer modified emulsion compatible with the mix design developed for the conventional slurry seal.

(Note: sourced from UDOT Standard Specification 02789)

Section 32 01 14 Chip Seal

No modifications

Section 32 01 15 Micro Surface Seal

No modifications

Section 32 01 16 Recycled Asphalt Paving

No modifications

Section 32 01 17 Pavement Crack Seal

No modifications

Section 32 01 18 Fog Seal

As attached. Required on all new pavements in the first year prior to release of warranty bonds.

Section 32 01 19 Asphalt Emulsion Seal Coat

As attached.

Section 32 01 26 White Top Inlay

No modifications

Section 32 01 29 Concrete Paving Raising

No modifications

Section 32 01 90 Plant Maintenance

No modifications

Section 32 01 91 Tree Root Cutting

No modifications

Section 32 01 93 Pruning Trees

No modifications

Section 32 05 10 Backfilling Roadways

Modified as follows:

1. Table 1 – Lot Sizes (p498) has been modified refer to the Ivins City Minimum Field Testing Checklist in Appendix A.
2. Compaction (Paragraph 3.6): See Section 31 23 26 modifications.
3. Proof Rolling (Paragraph 3.8): In addition to following the APWA specifications.
 - a. Verify no deflections.
 - b. Measure amount of deflection and where occurring.
 - c. Correct any areas that deflect in accordance with geotechnical recommendations.
 - d. Retest at no additional cost to City.

Section 32 11 23 Crushed Aggregate Base

Modified as follows:

1. Table 1 – Placement Type and Sub-lot Size (p7 of 2007 Supplement) has been modified (refer to the Ivins City Minimum Field Testing Checklist in Appendix A).
2. Modify paragraph on Page 7 of 2007 Supplement as follows:

1.6 ACCEPTANCE

C. Gradation: Lot size is 15,000 square feet. Collect samples from grade prior to compaction. Conduct at least 1 gradation test for each Lot. Material not within tolerance may remain in-place at ENGINEER's discretion provided density requirements are met. Tolerance deficiency must be corrected before placement continues.

F. Thickness: Measure at least twice every 9,000 square feet. All measurements shall not be deficient by more than 1-inch. The average measurement shall not be deficient by more than 1/4-inch of the design thickness.

3. Modify paragraph on Page 10 of 2007 Supplement as follows:

1.6 PLACEMENT

D. Finish: Uniform with surface deviation no more than 3/8 of an inch from line and grade in 10 feet in any direction. Measure in two locations per a lot size of 1000 square feet.

Section 32 12 03 Paving Asphalts

No modifications

Section 32 12 05 Asphalt Concrete

No modifications

Section 32 12 06 Superpave

No modifications

Section 32 12 13 Prime Coat

No modifications

Section 32 12 14 Tack Coat

No modifications

Section 32 12 16 Plant-Mix Asphalt Paving

Modified as follows:

1. No surface course shall be placed less than 1 inch in thickness.
2. Profilograph only required to be used on arterial streets.
3. Modify paragraph on Page 13-14 of 2007 Supplement as follows:

1.6 ACCEPTANCE

E. Compaction: Basis for acceptance is core density, non-destructive density, or control strip density with visual observation. Use non-destructive density testing by gage unless specified otherwise.

1. **Core Density:** This method compares the average density of cores extracted from a pavement surface to maximum theoretical density.
 - a. Lot: 7,000 square feet or part thereof. A lot is acceptable if average core density does not exceed pay factor 1.00 limits.
 - b. Sampling Protocol: ASTM D 3665 for random test location selection with at least 2 test locations per Lot. ASTM D 5361 for collection and 1 core sample per test location. Samples are full depth or overlay depth in overlay construction.
CONTRACTOR may take additional cores at no additional cost to the City and with prior approval by the ENGINEER.
 - d. Repair core hole with at least 4-inch thick concrete within two days of sample.
2. Non-Destructive Density (Marshall) Testing by Gage:
 - a. Lot: One days' production with 7,000 square feet sub-lots.

Table 1.5 Density Testing Acceptance			
Maximum Laboratory Density (Marshall), Percent		Air Voids, Percent	Acceptance
Average	Lowest Test		
96 or greater	92 or greater	Test not required	Pass
93 to 96	92 or greater	3 to 5	Pass
93 to 96	92 or greater	5 to 7	Add Type II Slurry Seal
91 to 93	90 or greater	Test not required	Mill edges near concrete and install 1" asphalt overlay
Less than 91	Less than 90	Test not required	Remove and replace

- b. Sampling Protocol: ASTM D3665 for random test location selection with at least 1 test location per sub-lot.
- c. Testing Protocol: ASTM D2950 (nuclear gage) or AASHTO TP 68 (Non-nuclear gage) and ASTM D2041 for maximum theoretical density.

G. Thickness:

1. Lot Size: 7,000 square feet or part thereof.
2. Sampling Protocol: ASTM D 3665 and ASTM D 5361 with at least 2 test locations per Lot and 1 core sample per test location. Samples are full depth. Thickness not measured in overlay construction. CONTRACTOR may take additional cores at no additional cost to the City and with prior approval by the ENGINEER.
3. Coring requirement may be waived if City inspector determines that sufficient inspection verifying the pavement thickness was provided during the installation.

4. Modify paragraph on Page 540 as follows:

1.6 TOLERANCES

E. Roughness: Profilograph only arterial streets unless the ENGINEER requests it due to suspicion of a roughness defect.

Section 32 12 17 Cold-Mix Asphalt Paving

No modifications

Section 32 13 13 Concrete Paving

No modifications

Section 32 13 73 Concrete Paving Joint Sealants

No modifications

Section 32 14 13 Precast Concrete Unit Paving

No modifications

Section 32 14 16 Brick Unit Paving

No modifications

Section 32 16 13 Driveway, Sidewalk, Curb, Gutter

Modified as follows:

1. Sidewalk contraction joints should be spaced as close to the width of the sidewalk as possible. In no instance should the width to length ratio of a single square created by the contraction joints exceed 1.2:1 in either direction. (i.e. a 5 foot wide sidewalk should have contraction joints spaced between 4.2 and 6.0 feet.).

Section 32 16 14 Curb Ramp

Modified as follows:

1. Refer to standard drawings for additional information.
2. Truncated domes shall be either plastic composite or uncoated cast iron with an earth tone color contrasting with the concrete curb ramp.
3. Modify paragraph on page 580 as follows:

3.3 LAYOUT

A. Curb Cut (excluding flare or curb radius measurement):

1. Width: 5 feet for each crosswalk served.

4. Modify paragraph on page 578 as follows:

3.9 PROTECTION AND REPAIRS

C. Repair: 03 30 10

1. Correct all humps or depressions
2. Replace all cracked sidewalks.
3. Seal all cracked curb and gutters if crack is smaller than width of dime, otherwise replace cracked curb and gutters.
4. Secure ENGINEER's acceptance of method of correction.

Section 32 17 23 Pavement Markings

No modifications

Section 32 31 13 Chain Link Fences and Gates

No modifications

Section 32 31 16 Welded Wire Fences and Gates

No modifications

Section 32 32 26 Crib Walls

No modifications

Section 32 84 23 Underground Irrigation Systems

No modifications

Section 32 91 19 Landscape Grading

No modifications

Section 32 92 00 Turf and Grasses

No modifications

Section 32 93 13 Ground Cover

No modifications

Section 32 93 43 Tree

No modifications

DIVISION 33 UTILITIES

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

Section 33 05 01 Acrylonitrile-Butadiene-Styrene (ABS) Pipe

No modifications

Section 33 05 02 Concrete Pipe and Culvert

No modifications

Section 33 05 03 Copper Pipe

No modifications

Section 33 05 04 Corrugated Metal Pipe

No modifications

Section 33 05 05 Ductile Iron Pipe

Modified as follows:

1. Ductile Iron Pipe must be double bagged with polyethylene materials per manufacturer recommendations for corrosive soils.

Section 33 05 06 Polyethylene Pipe

No modifications

Section 33 05 07 Polyvinyl Chloride Pipe

Modified as follows:

1. Modify paragraph on page 648 as follows:
 - 1.3 **PRESSURE PIPE SYSTEMS**
 - D. Fittings: Ductile Iron and Grey Cast Iron
 1. In accordance with AWWA C110 and C153
 2. Lined with cement mortar in accordance with AWWA C104.
 3. Provide flange adapter designed for AWWA C900 and AWWA C905 when connecting PVC pressure pipe to flanged fittings or flanged valves.
 4. Restrain joints with ductile iron joint restraints as manufactured by EBAA, Romac, Star or approved equal.

Section 33 05 08 Pre-Stressed Concrete Pipe

No modifications

Section 33 05 09 Steel Pipe – Lined and Coated

No modifications

Section 33 05 10 Vitrified Clay Pipe

No modifications

Section 33 05 14 Utility Grade Adjustments

Modified as follows:

1. Modify paragraph on page 667 as follows:
 - 3.4 **INSTALLING COVER COLLAR**
 - B. Set concrete collar to 1/8 inch minimum to 1/4 inch maximum below asphalt concrete pavement surface and 1/4 inch below Portland cement concrete pavement surface.

Section 33 05 20 Backfilling Trenches

Modified as follows:

1. Table 1 – Lot Sizes for Trench Backfilling Operation (p 670) has been modified (refer to Ivins City Minimum Field Testing Checklist in Appendix A).
2. Compaction (Paragraph 3.6): See Section 31 23 26 modifications.
3. Table 2 – (as shown below) shall be associated with paragraph 3.3 Pipe Zone.

Table 2 Foundation and Pipe Zone Backfill Material			
Sieve Size	Foundation Material (if required)	Bedding/Pipe Zone Material	Final Backfill Material
	Percentage Passing		
12"	--	--	Native material which contains no sod, vegetation, rocks larger than 6" diameter, asphalt or concrete chunks, etc. No clays without prior approval.
6"	--	--	
3"	100	--	
2"	90-100	--	
1"	70-90	100	
1/2"	51-75	90-100	
#4	31-65	50-80	
#16	16-40	30-42	
#200	2-12	9-25*	
*Must be non-plastic backfill material (Class I or Class II) when installed with flexible pipe systems (i.e. PVC, HDPE, and other plastic pipes)			

4. Continuous plastic line markers are not required as indicated in paragraph 3.4D.

Section 33 05 23 Trenchless Utility Installation

No modifications

Section 33 05 25 Pavement Restoration

No modifications

Section 33 08 00 Commissioning of Water Utilities

Modified as follows:

1. Modify paragraph on page 686 as follows:

1.3 PRESSURE TEST

A. Air Test: Per pipe manufacturer's recommendation.

1. Required for all gravity drain (sewer and storm drain) pipes.

2. Follow ASTM F1417 or UNI-B-6 (by Uni-bell) for plastic gravity drain pipes.

3. Follow ASTM C924 for concrete pipes.

E. If any leakage is detected, even if within acceptable limits, contractor shall check all pipe fittings (tees, bends, service taps, etc.) for leakage and tighten fittings to stop all leaks at these locations.

2. Modify paragraph on page 687 as follows:

3.4 PIPE TESTING SCHEDULE

B. Deflections:

2. Maximum reduction of internal diameter in any plane measured full length of installation and not less than 30 days after installation as follows.

a. Polyvinyl chloride pipe, 5 percent

3. Modify paragraph on page 687 as follows:

3.5 INFILTRATION TEST

A. Maximum is 25 gallons per inch diameter per mile per 24 hours.

4. Add the following paragraphs on page 687:

3.6 VIDEO INSPECTION

A. Run water through gravity system prior to video inspection

B. Conduct at least 30 days after backfill and prior to installation of pavements.

C. City inspector shall be present during video inspection.

D. Video shall be color and in an electronic format viewable with any standard computer with standard video playback software.

E. The date, identification of pipe reach, upstream and downstream manhole numbers, and manhole to manhole footage shall be displayed on the video data at all times.

F. Provide video inspection log as a computerized data report with a map of the system inspected with appropriate identification labels as referenced in the video.

3.7 TRACER WIRE CONTINUITY TEST

A. Test all tracer wire sections for continuity.

5. Modify paragraph on page 687-688 as follows:

3.7 PIPE TESTING SCHEDULE

A. Irrigation (for landscaping) - Gravity System:

1. Grade test: All circuits drain.
- B. Irrigation (*for landscaping*) – Pressure System:
1. Grade test: All circuits drain.
 2. Pressure test.
 3. Operational Testing:
 - a. Perform operational testing after hydrostatic test is complete; backfill is in place and sprinkler heads adjusted to final coverage.
 - b. Demonstrate system meets coverage requirements and automatic controls function properly.
 - c. Coverage requirements are based on operation of 1 circuit at a time.
- C. Sanitary Sewers:
1. Alignment and grade test.
 2. Obstructions and deflection test.
 3. Infiltration test for gravity pipeline systems.
 4. Pressure test for pressure pipeline systems.
 5. Video inspection.
 6. Air test.
- D. Subdrains:
1. Grade test: All circuits drain.
 2. Obstructions and deflection test.
- E. Storm Drains:
1. Alignment and grade test.
 2. Obstructions and deflection test.
 3. Infiltration test for gravity pipeline systems.
 4. Pressure test for pressure pipeline systems.
 5. Video inspection.
 6. Air test.
- E. Potable Water System:
1. Obstruction and deflection test.
 2. Pressure test.
 3. Disinfection (Section 33 13 00)
 4. Tracer wire continuity test.
- F. Secondary Water System
1. Obstruction and deflection test.
 2. Pressure test.
 3. Flushing (See Section 33 13 00 disinfection not required)
 4. Tracer wire continuity test.

1. Modify paragraph on page 689 as follows:

1.3 PERFORMANCE REQUIREMENTS

- A. Depth of Cover:

1. 30 inches minimum to top of pipe, service line. 48 inches minimum where final street grades are undetermined. 72 inches maximum unless ENGINEER authorizes otherwise.

2. Modify paragraph on page 691 as follows:

2.7 SERVICE CONNECTION

- A. Polyethylene Pipe (Iron Pipe Size)

3. Add paragraph on page 691 as follows:

2.8 TRACER WIRE

- A. Wire must be at least 14 AWG in size with THWN insulation.

- B. Provide wire coils in valve boxes, fire hydrants, and meter services such that wire can be lifted at least 3 feet above the ground surface.

- C. No splices allowed unless approved by City. (Do not splice in laterals to main line tracer wire.)

1. If splice is allowed, must use an approved water tight splicing system.

- D. Place wire under haunch of pipe prior to trench backfill and compaction.

- E. When reasonably possible, loop tracer wire into valve box with appropriate length of coil and continue along main without cutting the wire.

- F. All wire ends shall be terminated with a greased wire nut.

Section 33 11 11 Relocate Water Meters and Fire Hydrants

No modifications

Section 33 12 16 Water Valves

Modified as follows:

1. For regular distribution or transmission system valves, use direct buried gate valves for sizes 3-inches through 12-inches. For larger sizes, may use butterfly valves.
2. Gate Valves, use:
 - a. Mueller
 - b. M&H
 - c. Kennedy
 - d. AVK
 - e. Or approved equal.
3. Butterfly Valves, use:
 - a. Pratt
 - b. M&H
 - c. Crispin, K-flow series
 - d. Or approved equal.
4. Check Valves, use:
 - a. Crispin

- b. Kennedy
 - c. Val-matic
 - d. Or approved equal.
5. Pressure Reducing Valve – Main Line, use:
- a. Cla-Val Co., 90 Series
 - b. Watts
 - c. Or approved equal.
6. Corporation Stops
- a. A.Y. McDonald
 - b. Mueller Co.
 - c. Ford Meter Box Co.
 - d. Or approved equal.
7. Air Release
- a. ARI Flow Control Accessories, D-040
 - b. Crispin / Multiplex Manufacturing Co., PL Series
 - c. Or approved equal.
8. Air & Vacuum
- a. Crispin
 - b. Vent-o-mat, RBX
 - c. Valve and Primer Corp. (Apco/Willamette), 1604/152
 - d. Or approved equal.
9. Combination Air Valves
- a. Crispin
 - b. Valve and Primer Corp. (Apco/Willamette), APCO 143C – 151C
 - c. Val-Matic Valve and Mfg. Corp., 200C Series
 - d. Golden Anderson Industries, Series 945E Kinetic
 - e. Or approved equal.

Section 33 12 19 Hydrants

Modified as follows:

- 1. Hydrants shall be mechanical joint without foot valve as follows:
 - a. Mueller, Modern Centurion, Model A-423;
 - b. Kennedy, Model K-81A
 - c. AVK, Series 2780
 - d. Or equal
- 2. Modify paragraph on page 703 as follows:
 - 2.1 **INSTALLATION**
 - B. Install so bottom of hydrant flange is 2 to 4 inches above final grade. Verify final grade with survey equipment prior to installation.
- 3. Paint materials as follows:
 - a. Primer: as delivered by manufacturer.
 - b. Final Coat: as recommended by manufacturer after installation.

Section 33 12 33 Water Meters

Modified as follows:

1. All service lines 1-inch or less shall use smooth wall polyethylene pipe, IPS, SDR 9 per Section 33 05 06.
 - a. Fitting connectors shall be brass compression type with pipe stiffeners.
 - b. Use of pipe sealing compounds, pipe dope, and detergent type lubricants are not permitted.
2. Meters, (provided by City):
 - a. Badger,
 - b. No substitutions.
3. AMR transmitter, (provided by City)
 - a. Itron
 - b. No substitutions.
4. Meter Box, use:
 - a. For 3/4" or 1" meters outside of traffic areas, use 18 – 21 inch diameter corrugated polyethylene pipe.
5. Meter Box Ring and Lid, use:
 - a. D&L Supply, L-2240
 - b. Culinary water – Cast with 1-3/4" hole and marked with lid casting "WATER"
 - c. Secondary water – No holes or text markings.
 - d. No substitutions
6. Meter Setters (Meter Yoke), use:
 - a. Mueller H-1404
 - b. Ford
 - c. Or approved Equal

Section 33 13 00 Disinfection

No modifications

Section 33 31 00 Sanitary Sewer Systems

Modified as follows:

1. Pipe 8 inches in diameter, and larger, shall be laid with the use of an electronic laser or equivalently precise method of establishing line and grade.

Section 33 41 00 Storm Drainage Systems

Modified as follows:

1. Pipe shall be laid with the use of an electronic laser or equivalently precise method of establishing line and grade.

Section 33 47 00 Ponds

No modifications

Section 33 71 73 Electrical Utility Services

This specification does not apply to Ivins City. Refer to Rocky Mountain Power.

DIVISION 34 TRANSPORTATION

APWA Utah Chapter's *Manual of Standard Specifications*, most recent edition, published by the Utah T2 Center are incorporated as listed with modifications noted:

Section 34 41 13 Traffic Signals

No modifications

Section 34 71 13 Vehicle Barriers

No modifications

Section 34 71 19 Vehicle Delineators

No modifications

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