

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

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**TABLE OF CONTENTS**

<b>8-13.0.0</b>	<b>SPECIAL SPECIFICATIONS &amp; STANDARD SPECIFICATIONS AND DETAILS .....</b>	<b>2</b>
8-13.1.0	GENERAL.....	2
1.1	<i>Purpose</i> .....	2
1.2	<i>Definitions</i> .....	2
1.3	<i>Applicability</i> .....	2
8-13.2.0	CONSTRUCTION SPECIFICATIONS .....	2
2.1	<i>Document Relationships</i> .....	2
A.	Construction Documents.....	2
B.	Bid Document.....	3
C.	Bid Package.....	3
D.	Contract Documents .....	3
2.2	<i>Standard General Conditions of the Construction Contract</i> .....	3
A.	Sections.....	3
B.	Subsections .....	4
C.	Procurement Department Revisions.....	4
2.3	<i>Standard Specifications</i> .....	4
A.	Purpose .....	4
B.	Source Documents .....	5
C.	Revision Process, Tucson Water Standard Specifications .....	5
2.4	<i>Special Specifications, Project Specific</i> .....	5
A.	Purpose .....	6
B.	Revision Process, Tucson Water Special Specifications.....	6
C.	Format Requirements.....	6
D.	Content Requirements.....	7
8-13.3.0	CONSTRUCTION DETAILS .....	8
3.1	<i>General</i> .....	8
A.	Construction Details .....	8
B.	Construction Plans .....	8
3.2	<i>Standard Details</i> .....	8
A.	Purpose .....	8
B.	Source Documents .....	8
C.	Revision Process, Tucson Water Standard Details .....	9
3.3	<i>Sections &amp; Details, Project Specific</i> .....	9
A.	Sections & Details .....	9
B.	Sections & Details, Sheet Specific.....	9
3.4	<i>Submittals by Contractor</i> .....	9
A.	Drawings Received from the Contractor.....	9
B.	Submittal Requirements.....	9
C.	Certain Submittals Not Required .....	10
8-13.4.0	EXHIBITS .....	10
	Exhibit 13-1, List of Items Defining the Contract Documents.....	11
	Exhibit 13-2, Table of Contents, Standard General Conditions, Tucson Water Contract .....	13
	Exhibit 13-3, Table of Contents, Tucson Water Standard Specifications and Details .....	16
	Exhibit 13-4, Section Names Format, Special Specifications, For Water Projects .....	19
	Exhibit 13-5, Subsection Format, Special Specifications .....	25
	Exhibit 13-6, Table of Contents Format, Special Specifications .....	27

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

**SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

- 8-13.1.0      General**
  - 8-13.2.0      Construction Specifications**
  - 8-13.3.0      Construction Details**
  - 8-13.4.0      Exhibits**
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**8-13.0.0      SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

**8-13.1.0      General**

1.1      Purpose

This section describes the standards and requirements for the Special Specifications portion of the contract for public water projects and for Tucson Water's Standard Specifications and Details.

1.2      Definitions

Section 8-18 contains a list of definitions, abbreviations, and acronyms.

1.3      Applicability

The requirements listed herein apply to all types of public water projects.

**8-13.2.0      Construction Specifications**

Construction specifications are text documents that describe legal, administrative and project construction requirements and address the following major topics:

- Document Relationships
- Standard General Conditions of the Construction Contract
- Standard Specifications
- Special Specifications

2.1      Document Relationships

This subsection on document relationships will address the following major topics:

- Construction Documents
- Bid Document
- Bid Package
- Contract Documents

A. Construction Documents

Project construction requirements are contained in the following construction documents:

1. Standard General Conditions of the Construction Contract

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

2. Construction Specifications, which include:
  - a. Standard Specifications
  - b. Special Specifications

**B. Bid Document**

1. Construction specifications, which include the Standard Specifications and the Special Specifications, are just one part of a document referred to as the bid document.
2. For a complete list of items in the Bid Document, refer to Exhibit 13-1, List of Items Defining the Contract Documents, page 13-11 at the end of this standard.
3. The bid document is prepared during the design of the project.

**C. Bid Package**

1. The bid document and plans are referred to as the bid package.
2. The plans include the Project Plans and the Standard Specifications and Details, by reference.
3. The bid package is prepared during the design of the project.

**D. Contract Documents**

1. Additional items are also prepared during the bidding period and during the construction period. All of these items and those listed above are referred to as the Contract Documents.
2. For a complete list of items in the Contract Documents, refer to Exhibit 13-1, List of Items Defining the Contract Documents, page 13-11 at the end of this standard.
3. This standard does not address the entire list of items that constitute the Contract Documents.

**2.2 Standard General Conditions of the Construction Contract**

This subsection addresses the following topics regarding Standard General Conditions, of the Construction Contract:

- Sections
- Subsections
- Procurement Department Revisions

The Standard General Conditions are not to be revised without approval by the Procurement Department.

**A. Sections**

The following sections within the Standard General Conditions, of the Construction Contract, contain legal, administrative and construction requirements:

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

Section 0101 - Abbreviations And Terms  
Section 0102 - Bidding Requirements And Conditions  
Section 0103 - Award And Execution Of Contract  
Section 0104 - Scope Of Work  
Section 0105 - Control Of Work  
Section 0106 - Control Of Material  
Section 0107 - Legal Relations & Responsibility To Public  
Section 0108 - Prosecution And Progress  
Section 0109 - Measurement And Payment  
Section 0110 - Project Signs

**B. Subsections**

For a detailed list of subsections of the Standard General Conditions, of the Construction Contract, refer to Exhibit 13-2, Table of Contents, Standard General Conditions, Tucson Water Contract, page 13-13.

**C. Procurement Department Revisions**

1. Before proposing a section revision, thoroughly review the Standard General Conditions to verify that these existing documents appear inadequate for the needs of the project.
2. Each section shall be cross-referenced numerically to the section being revised in the Standard General Conditions.
3. Each section shall state the purpose of the revision.
4. The Procurement Department must approve all revisions to the contract Standard General Conditions.

**2.3 Standard Specifications**

This subsection contains the following major topics:

- Purpose
- Source Documents
- Revision Process - Tucson Water Standard Specifications

**A. Purpose**

1. Standard specifications of construction are specifications of a general nature approved for repetitive use describing details of construction that are applicable to a variety of works.
2. They are included in the contract documents by reference in the Standard General Conditions.

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

B. Source Documents

The following are source documents that contain additional requirements for these standards:

1. Standard Specifications for Public Improvements, current Edition, City of Tucson/Pima Co.:
  - Division 100 – General Provisions (not part of contract)
  - Division 200 – Grading
  - Division 300 – Subgrade, Subbases and Bases
  - Division 400 – Surface Treatments and Pavements
  - Division 500 – Drainage Facilities
  - Division 600 – Structures
    - Section 510 – Potable Water Systems
    - Section 511 – Reclaimed Water Systems
  - Division 700 – Traffic Control Facilities
  - Division 800 – Roadside Development
  - Division 900 – Incidentals
  - Division 1000 – Materials
  
2. Standard Specifications and Details, Tucson Water:
  - Section 0200 – Sitework
  - Section 0300 – Concrete And Reinforcing Steel
  - Section 1200 – Pumps
  - Section 1400 – Piping, Valves And Appurtenances

For a list of subsections of the Tucson Water standards, see Exhibit 13-2, Table of Contents, Standard General Conditions, Tucson Water Contract, p. 13-13 at the end of this section.

C. Revision Process, Tucson Water Standard Specifications

Revisions to the Standard Specifications must meet the same requirements and review as applied to the original document.

Revisions to the Standard Specifications that would be applicable to all or most projects should be accomplished using the same process as in Section 8-02, Administration of Water Design Standards Manual.

2.4 Special Specifications, Project Specific

This subsection contains the following major topics:

- Purpose
- Revision Process - Tucson Water Special Specifications
- Format Requirements
- Content Requirements

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

A. Purpose

Special Specifications encompass conditions that are unique to a specific project, and shall be used to interpret, clarify, and supplement the standard specifications. When a special specification becomes standard for each project, the special specification should be incorporated into the standard specification.

B. Revision Process, Tucson Water Special Specifications

1. Revisions to the Standard Specifications that would be applicable to all or most projects should be accomplished using the same process as in Section 8-02, Administration of Water Design Standards Manual.
2. If the revisions are only applicable to a particular project, they can be listed in the Special Specifications for this project's document.
3. Before proposing a new special specification or a revision, thoroughly review all existing special specifications to verify that these existing documents appear inadequate for the needs of the project thus requiring use of the Special Specifications, or revisions to existing Special Specifications.
4. Each section shall be cross-referenced numerically to the section being revised in the standard specifications.
5. Each section shall state the purpose of the revision.
6. The Construction Section of Tucson Water must approve each revised section of the standard specifications that will be included in the Special Specifications.
7. Obtain additional approvals as required in Section 8-04.

C. Format Requirements

1. Master Format

The format of the Special Specifications shall be consistent with The CSI, 1995 edition of MasterFormat (trademark).

2. Section Format

a. Section Names

Each section of the Special Specifications shall be named and numbered in accordance with the CSI format. For section names to be used for water projects, refer to Exhibit 13-4, Section Names Format, Special Specifications, For Water Projects, page 13-19, at the end of this standard.

The section name and number shall appear centered at the top of the first page of each section.

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

b. Section Part Names

Each section of the Special Specifications shall be divided into the following parts; however, if a part is not used, the words "(Not Used)" shall appear to the right of the part name:

- PART 1 - GENERAL
- PART 2 - MATERIALS (Not Used)
- PART 3 - CONSTRUCTION DETAILS
- PART 4 - METHOD OF MEASUREMENT
- PART 5 - BASIS OF PAYMENT

c. Subsection Format

The subsection format shall be in accordance with Exhibit 13-5, Subsection Format, Special Specifications, page 13-25, at the end of this standard.

d. End of Section

At the end of each section, the words "END OF SECTION \_\_\_\_ (type in appropriate section number)" shall appear centered below the last paragraph.

e. Section Page Footnotes:

Footnotes at the end of each Section in the Special Specifications shall appear as follows:

- Left: date of last page revision, i.e., 032202
- Center: section and page number, i.e., 01440-2
- Right: section name, i.e., Work Restrictions

D. Content Requirements

1. Table of Contents

A table of contents is required and shall be in accordance with Exhibit 13-6, Table of Contents Format, Special Specifications, page 13-27 at the end of this standard.

2. Mandatory Sections

The following shall be required in all Special Specifications:

- 01110 Summary of Work
- 01140 Work Restrictions
- 01310 Project Management And Coordination
- 01320 Construction Progress Documentation

3. Mandatory Subsections

The following subsections are required in each section of the Special Specifications:

- a. a list of the section contents including a list of related sections,
- b. the submittal requirements for the section, and
- c. any new definitions applicable only to the section.

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

**8-13.3.0 Construction Details**

This subsection contains the following major topics:

- General
- Standard Details
- Sections & Details
- Submittals by Contractor

3.1 General

Construction details are drawing documents that visually depict project construction requirements.

A. Construction Details

Project construction requirements are contained in the following details:

- Standard Details
- Sections & Details, Project Specific
- Submittals by Contractor

B. Construction Plans

1. Sections & details are one part of a bound document referred to as the plans.
2. The plans are prepared during the design of the project.
3. For requirements of water plans, refer to Section 8-07.

3.2 Standard Details

This subsection contains the following major topics:

- Purpose
- Source Documents
- Revision Process, Tucson Water Standard Details

A. Purpose

1. Standard details of construction are drawings of a general nature approved for repetitive use showing details of construction that are applicable to a variety of works.
2. They are included by reference in the Standard General Conditions. They are not to be drawn on the plan sheets.

B. Source Documents

The following are source documents also contain additional requirements for these standards:

1. Standard Details for Public Improvements, current Edition, City of Tucson/Pima Co.
2. Standard Specifications and Details, Tucson Water, which includes a section titled Standard Water Details.

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

C. Revision Process, Tucson Water Standard Details

Revisions to the Standard Details must meet the same requirements and review as applied to the original document.

1. Revisions to the Standard Details that would be applicable to all or most projects should be accomplished in accordance with Section 8-02, Administration of Water Design Standards Manual.
2. If the changes are only applicable to this project, changes can be included on the plans for the project.
3. Before proposing a new or revised detail, thoroughly review all the standard details to verify that these existing documents appear inadequate for the needs of the project; thus, requiring use of the new or revised detail.
4. Each detail shall be cross-referenced numerically to the detail being revised, if applicable, in the standard details.
5. Each new or revised detail shall state the purpose of the revision.
6. The Construction Section of Tucson Water must approve each new or revised section of the standard details.

3.3 Sections & Details, Project Specific

A. Sections & Details

1. Project specific Sections & Details are unique to the project, may apply to numerous sheets within the project and are not included as part of any standard details.
2. A "Section Indicator Cross Referencing" system shall be defined.

B. Sections & Details, Sheet Specific

1. Sheet specific Sections & Details are unique to the plan sheet on which they appear and are not included in any standard details.
2. They usually are a unique detail to a specific project location.

3.4 Submittals by Contractor

A. Drawings Received from the Contractor

Working drawings/cut sheets are furnished by the Contractor during construction for detailed control of the work and are not to be included in the plans.

B. Submittal Requirements

1. Working/shop drawings and associated submittal requirements are described in the Water Department project construction contract, Standard General Conditions (General Provisions), Section 0105.0200.

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

2. GIS Database Information Tracking. Detailed equipment design information shall be submitted for each project. The GIS VMDB and Synergen work order fields are updated to describe features such as the number of turns on valves, size and location of facilities, and other equipment details, for the purposes of proper operation, and incorporating data into the MMP.

C. Certain Submittals Not Required

Submittals are not required for products contained in the approved material list, Appendix A, Tucson Water Standard Specifications and Details.

**8-13.4.0**

**Exhibits**

Exhibit 13-1, List of Items Defining the Contract Documents

Exhibit 13-2, Table of Contents, Standard General Conditions, Tucson Water Contract

Exhibit 13-3, Table of Contents, Tucson Water Standard Specifications and Details

Exhibit 13-4, Section Names Format, Special Specifications, For Water Projects

Exhibit 13-5, Subsection Format, Special Specifications

Exhibit 13-6, Table of Contents Format, Special Specifications

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

Exhibit 13-1, List of Items Defining the Contract Documents

- **ITEMS DURING DESIGN PERIOD**
  1. Advertisement For Bids, a.k.a. – Announcement, Notice Inviting Sealed Bids, Notice Of Invitation For Bid, Notice Of Intention To Receive Sealed Bids
  2. Bid Document
    - Cover Page
    - Interior Cover Page
    - Notice
    - Notice Of Invitation For Bid
    - Table of Contents
    - Construction Agreement
    - Forms, for low bidder
      - Substitute Securities
      - Consent Of Surety To Final Payment...
      - Escrow Instructions And Agreement
      - General Contractor's Certification...
      - SubContractor's Statement...
      - Contract Bonds
      - Payment Bond
      - Performance Bond
      - Standard General Conditions (a.k.a. General Provisions)
      - Construction Specifications
      - Special Specifications
      - Standard Specifications, And Supplemental Specifications (revisions since publication of Standard Spec.)
    - Bid Opening Submittal (required bid pages)
      - Invitation for Bid Amendment, No. 2, MWBE Provisions (signed)
      - MWBE Affidavit (signed)
      - Invitation for Bid amendment, No. 1, Standard Conditions (signed)
        - Item 1 – refund of deposit
        - Item 2 – mod. To Standard Conditions, Section 0108.0900
        - Item 3 – mod. To Standard Conditions, Section 0105.0400
      - Proposal, including
        - Bid Summary Sheet and/or Bid Schedule, a.k.a. bid sheets, bid form
        - Bid Security (check or surety bond (signed), with power of attorney form (signed) for signing official)
      - Forms, to be signed
        - Non-Collusion Affidavit
        - Receipt of Addenda, a.k.a. certification
        - Receipt of Bid Document (form not provided)
  3. Plans (Project Plans, Standard Details (included by reference)  
Note: All references to “days” are “calendar days.”

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

- ITEMS DURING BIDDING PERIOD
  1. Invitation for Bid Amendments, a.k.a. Contract Amendment, Contract Supplement (after advertisement, before bid opening)
  2. Bid Opening
  3. Notice of Intent to Award, to be sent within 60 days after bid opening
  4. Items from the Successful Bidder
    - a. MWBE Items  
Bidder's Statement of Proposed MWBE Plan (submit within one day after bid opening)  
Affidavit of Good Faith Efforts, MWBE (submit within 1 day of bid)
    - b. Certificates Of Insurance, within 10 days of Notice of Intent to Award
    - c. Bonds  
Payment Bond, with power of attorney form (signed) for signing official, within 10 days of Notice of Intent to Award  
Performance Bond, with power of attorney form (signed) for signing official, within 10 days of Notice of Intent to Award  
Return of Bid Bond, within one day of receipt of Payment Bond and Performance Bond
    - d. Substitute Securities  
Consent Of Surety To Final Payment...  
Escrow Instructions And Agreement (Substitute Securities)  
General Contractor's Certification As To Substitute Securities  
SubContractor's Statement As To Substitute Securities
  5. Items regarding Notice of Award
    - a. Notice of Award  
(acceptance of bid and all requested documents), by certified letter
    - b. Contract Agreement (executed)  
By Contractor, within 10 days of Notice of Intent to Award  
By City, within 45 days of Notice of Intent to Award
    - c. Affirmative action items, due prior to Notice To Proceed  
Federal Minority Employment Utilization Report  
City Affirmative Action Questionnaire  
Affirmative Action Plan, or submit annually
- ITEMS DURING CONSTRUCTION PERIOD
  1. Working Drawings
  2. Supplemental Agreement a.k.a., Change Authorization/Change Order

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

Exhibit 13-2, Table of Contents, Standard General Conditions, Tucson Water Contract

**0101 ABBREVIATIONS AND TERMS**

- 0101.0100 ABBREVIATIONS
- 0101.0200 TERMS
  - 0101.0201 Repetition of Expressions.
  - 0101.0202 Interpretation of terms.
  - 0101.0203 Titles; Headings.
  - 0101.0204 Referenced Documents.

**0102 BIDDING REQUIREMENTS AND CONDITIONS**

- 0102.0100 ADVERTISEMENTS FOR BIDS
- 0102.0200 PREQUALIFICATION OF BIDDERS
- 0102.0300 SUSPENSION FROM BIDDING
- 0102.0400 CONTENTS OF BID DOCUMENT
- 0102.0500 ISSUANCE OF BIDS
- 0102.0600 INTERPRETATION OF QUANTITIES IN BIDDING SCHEDULE
- 0102.0700 EXAMINATION OF PLANS, SPECIFICATIONS, SITE OF WORK
- 0102.0800 PREBID CONFERENCE
- 0102.0900 PREPARATION OF BID
- 0102.1000 AFFIDAVIT AND CERTIFICATION FORMS
- 0102.1100 REJECTION OF BIDS
- 0102.1200 DELIVERY OF BIDS
- 0102.1300 BID BOND
- 0102.1400 WITHDRAWAL OF BIDS
- 0102.1500 COMBINATION OR CONDITIONAL BIDS
- 0102.1600 PUBLIC OPENING OF BIDS

**0103 AWARD AND EXECUTION OF CONTRACT**

- 0103.0100 CONSIDERATION OF BIDS
- 0103.0200 NOTICE OF INTENT TO AWARD
- 0103.0300 RIGHT TO PROTEST
- 0103.0400 RETURN OF BID BOND
- 0103.0500 BONDS
- 0103.0600 CONTRACTOR'S INSURANCE; INDEMNIFICATION
- 0103.0700 HUMAN RELATIONS
- 0103.0800 AMERICANS WITH DISABILITIES ACT (ADA)
- 0103.0900 EXECUTION OF CONTRACT
- 0103.1000 FAILURE TO EXECUTE CONTRACT

**0104 SCOPE OF WORK**

- 0104.0100 INTENT OF CONTRACT
- 0104.0200 ALTERATIONS OF CONTRACT
  - 0104.0201 By the Agency
  - 0104.0202 Due to Work not Conforming to Requirements of Contract
  - 0104.0203 Due to Failure to Prosecute the Work
- 0104.0300 EXTRA WORK
- 0104.0400 NOT USED
- 0104.0500 NOT USED

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

0104.0600 NOT USED  
0104.0700 NOT USED  
0104.0800 COST REDUCTION INCENTIVE

**0105 CONTROL OF WORK**

0105.0100 AUTHORITY OF THE ENGINEER  
0105.0200 PLANS AND WORKING DRAWINGS  
0105.0300 CONFORMITY WITH PLANS AND SPECIFICATIONS  
0105.0400 COORDINATION OF PLANS, SPECS., AND SPECIAL SPECS.  
0105.0500 COOPERATION BY CONTRACTOR  
0105.0600 COOPERATION WITH UTILITY COMPANIES  
0105.0700 COOPERATION BETWEEN CONTRACTORS  
0105.0800 NOT USED  
0105.0900 NOT USED  
0105.1000 DUTIES OF THE INSPECTOR  
0105.1100 INSPECTION OF WORK  
0105.1200 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK  
0105.1300 NOT USED  
0105.1400 MAINTENANCE DURING CONSTRUCTION  
0105.1500 FAILURE TO MAINTAIN THE WORK  
0105.1600 NOT USED  
0105.1700 ACCEPTANCE  
0105.1800 CLAIMS  
0105.1900 LEGAL AND CONTRACTUAL REMEDIES

**0106 CONTROL OF MATERIAL**

0106.0100 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS  
0106.0200 ITEMS OF SPECIAL MANUFACTURE  
0106.0300 TESTS AND ACCEPTANCE OF MATERIALS  
0106.0400 CERTIFICATES  
0106.0500 NOT USED  
0106.0600 PROPRIETARY PRODUCTS, TRADE NAMES, SUBSTITUTIONS  
0106.0700 STORAGE OF MATERIALS  
0106.0800 HANDLING MATERIALS  
0106.0900 UNACCEPTABLE MATERIALS  
0106.1000 AGENCY FURNISHED MATERIAL  
0106.1100 WARRANTIES AND GUARANTEES

**0107 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

0107.0100 LAWS TO BE OBSERVED  
0107.0200 PERMITS, LICENSES AND TAXES  
0107.0300 PATENTED DEVICES, MATERIALS AND PROCESSES  
0107.0400 RESTORATION OF SURFACES OPENED BY PERMIT  
0107.0500 FEDERAL AID PARTICIPATION  
0107.0600 ARCHAEOLOGICAL FEATURES  
0107.0700 SANITARY, HEALTH, AND SAFETY PROVISIONS  
0107.0800 PUBLIC CONVENIENCE AND SAFETY  
0107.0900 RAILROAD PROVISIONS  
0107.1000 NOT USED

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

- 0107.1100 USE OF EXPLOSIVES
- 0107.1200 PROTECTION, RESTORATION OF PROPERTY, LANDSCAPE
- 0107.1300 NOT USED
- 0107.1400 PREVENTION OF AIR AND NOISE POLLUTION
- 0107.1500 PREVENTION OF LANDSCAPE DEFAACEMENT; PROTECTION OF STREAMS, LAKES AND RESERVOIRS
- 0107.1600 NOT USED
- 0107.1700 RESPONSIBILITY FOR DAMAGE CLAIMS
- 0107.1800 INSURANCE
- 0107.1900 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 0107.2000 DAMAGE BY STORM, FLOOD, OR EARTHQUAKE
- 0107.2100 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY
- 0107.2200 FURNISHING EASEMENTS
- 0107.2300 PERSONAL LIABILITY OF PUBLIC OFFICIALS
- 0107.2400 NO WAIVER OF LEGAL RIGHTS
- 0107.2500 CONTRACTOR AND SUBCONTRACTOR RECORDS
  
- 0108 PROSECUTION AND PROGRESS**
  - 0108.0100 NOT USED
  - 0108.0200 START OF WORK
  - 0108.0300 PRECONSTRUCTION CONFERENCE
  - 0108.0400 PROSECUTION AND PROGRESS
  - 0108.0500 LIMITATION OF OPERATIONS
  - 0108.0600 CHARACTER OF WORKERS
  - 0108.0700 METHODS AND EQUIPMENT
  - 0108.0800 TERMINATION AND EXTENSION OF CONTRACT TIME
  - 0108.0900 FAILURE TO COMPLETE THE WORK ON TIME
    - A. Liquidated Damages
    - B. Engineering Charges
  - 0108.1000 TERMINATION OF CONTRACT FOR DEFAULT
  - 0108.1100 TERMINATION OF CONTRACT FOR CONVENIENCE
  
- 0109 MEASUREMENT AND PAYMENT**
  - 0109.0100 MEASUREMENT OF QUANTITIES
  - 0109.0200 SCOPE OF PAYMENT
  - 0109.0300 COMPENSATION FOR MODIFICATIONS TO WORK
  - 0109.0400 NOT USED
  - 0109.0500 EXTRA AND FORCE ACCOUNT WORK
  - 0109.0600 ELIMINATED ITEMS
  - 0109.0700 PARTIAL PAYMENTS
  - 0109.0800 PARTIAL PAYMENT FOR MATERIAL ON HAND
  - 0109.0900 PAYMENT OF WITHHELD FUNDS
  - 0109.1000 ACCEPTANCE AND FINAL PAYMENT
  - 0109.1100 LUMP SUM PAYMENT FOR BUILDINGS AND STRUCTURES
  
- 0110 PROJECT SIGNS**
  - 0110.0100 SIGNS

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

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Exhibit 13-3, Table of Contents, Tucson Water Standard Specifications and Details

**SITWORK**

0201	MOBILIZATION .....	1
0202	MAINTENANCE .....	2
0203	SITE CLEARING .....	3
0204	REMOVAL OF WATERMANS AND OBSTRUCTIONS .....	5
0205	EARTHWORK .....	8
0209	INSTALLATION OF WATERLINES .....	15
0210	PIPE MARKING AND DETECTING TAPE .....	22
0213	SURFACE RESTORATION .....	24
0214	FENCE .....	25
0215	CONSTRUCTION SURVEYING AND LAYOUT .....	30

**CONCRETE AND REINFORCING STEEL**

0301	PORTLAND CEMENT CONCRETE .....	35
0302	CONCRETE STRUCTURES .....	41
0303	STEEL REINFORCEMENT .....	49
0401	MASONRY .....	52
0501	METALS .....	55
0502	WORKMANSHIP .....	60

**PUMPS**

1201	VERTICAL TURBINE BOOSTER PUMPS .....	61
1202	VERTICAL TURBINE LINESHAFT WELL PUMP & MOTOR .....	68
1203	CENTRIFUGAL BOOSTER PUMP & MOTOR .....	76
1204	SUBMERSIBLE PUMPS .....	82

**PIPING, VALVES AND APPURTENANCES**

1401	DUCTILE IRON PIPE .....	84
1402	CONCRETE CYLINDER PIPE .....	85
1403	HIGH DENSITY POLYETHYLENE (HDPE) PIPE .....	88
1404	POLYVINYL CHLORIDE PIPE .....	92
1405	GALVANIZED STEEL PIPE .....	93
1406	THRUST RESTRAINT .....	94
1407	TAPS INTO WATERLINES .....	97
1409	TAPPING SLEEVE AND VALVE .....	99
1410	RESILIENT-SEATED GATE VALVE .....	101
1411	BUTTERFLY VALVE .....	103
1413	AIR RELEASE VALVE .....	107
1414	REGULATING VALVE .....	109
1416	COPPER SERVICE MATERIALS .....	111
1425	VALVE NUT EXTENSION .....	113
1426	VALVE BOX AND COVER .....	114
1430	FIRE HYDRANTS .....	115

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

**PIPING, VALVES AND APPURTENANCES (cont.)**

1431	HYDROSTATIC PRESSURE TESTING OF WATER FACILITIES.....	118
1433	RECLAIMED WATERLINES.....	122
1440	FITTINGS, FLEXIBLE COUPLINGS AND REPAIR CLAMPS .....	124
1446	WATER METERS.....	126
1447	PRESSURE GAUGES .....	128
1448	SODIUM HYPOCHLORITE ADDITION FACILITIES .....	130
1450	MEASUREMENT AND PAYMENT .....	136

**STANDARD WATER DETAILS**

SD 105	GENERAL CONSTRUCTION NOTES
SD 106	GENERAL SEWER/WATER CROSSING DETAILS
SD 107	DRAINAGE FACILITY CROSSING DETAILS
SD 108	JOINT USE TRENCH
SD 110	CUSTOMER NOTIFICATION
SD 115	PIPE BEDDING AND TRENCH BACKFILL
SD 300	VALVE BOX INSTALLATION
SD 305	VALVE NUT EXTENSION
SD 309	WATER SERVICE NOTES
SD 310	WATER SERVICE CONNECTIONS 3/4 INCH AND 1 INCH SINGLE
SD 311	1 INCH SPLIT SERVICE CONNECTIONS
SD 312	WATER SERVICE CONNECTIONS 1-1/2 INCH AND 2 INCH SINGLE
SD 313	STANDARD LARGE TURBINE, COMPOUND, ELECTRIC METER INSTALLATIONS
SD 314	STANDARD LARGE METER ENCLOSURE
SD 315	NOTES FOR BORING SERVICE LINES
SD 316	SERVICE RENEWALS AND TIE OVERS
SD 317	PURGING OF SERVICE LINES
SD 318	METER BOXES
SD 330	AIR RELEASE VALVE INSTALLATION 3/4 INCH OR 1 INCH
SD 331	AIR RELEASE VALVE INSTALLATION 2 INCH
SD 335	STANDARD VAULT
SD 340	SYSTEM INSTALLATION OUTSIDE PUBLIC RIGHT-OF-WAY
SD 350	SYSTEM ABANDONMENT
SD 400	DRIVE VALVE ASSEMBLY
SD 405	MODIFIED DRAIN VALVE ASSEMBLY
SD 500	FIRE HYDRANT INSTALLATION
SD 600	RESTRAINED JOINTS
SD 610	CONCRETE THRUST BLOCKS
SD 650	UTILITY TRENCH PAVEMENT PATCH
SD 700	CORROSION MONITORING SYSTEM NOTES
SD 701	TEST LEAD PLACEMENT
SD 702	PIPE JOINT BONDING
SD 703	EXOTHERMIC WELDING
SD 704	FLANGE INSULATING KIT
SD 705	CORROSION TEST STATION BELOW GRADE INSTALLATION
SD 706	CORROSION TEST STATION ABOVE GRADE INSTALLATION

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

SD 707	SPLICING DETAIL
SD 708	PERMANENT REFERENCE ELECTRODE INSTALLATION
SD 709	JUNCTION BOX
SD 710	TYPES OF CORROSION TEST STATIONS
SD 800	BORING AND CASING
SD 900	CONCRETE CYLINDER PIPE TAP
SD 1610	COMBINATION BLOCK WALL AND FENCE ENCLOSURE AND GATES
SD 1615	FENCE INSTALLATION
SD 1620	SODIUM HYPOCHLORITE ADDITION FACILITIES
SD 1700	CONSTRUCTION SITE SIGN
SD 1705	CONSTRUCTION SITE SIGN (RECLAIMED)
SD 1800	AIR GAP SEPERATION INSTALLATION
SD 1801	BACKFLOW PREVENTION FOR POTABLE WATER FIRE HYDRANT OR STANDPIPE WATER SERVICE
SD 1802	REDUCED PRESSURE ASSEMBLY (RPA) INSTALLATION
SD 1803	PRESSURE VACUUM BREAKER ASSEMBLY (PVB) INSTALLATION
SD 1805	DOUBLE CHECK VALVE ASSEMBLY (DCVA) INSTALLATION
SD 1850	PLAN SYMBOLS

APPENDIX

A.	APPROVED LIST OF MATERIALS AND COMPONENTS
B.	RELATED SPECIFICATIONS
C.	ABBREVIATIONS AND TERMS
D.	METRIC CONVERSION CHART

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

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Exhibit 13-4, Section Names Format, Special Specifications, For Water Projects

**Construction Specifications Institute (CSI)  
1995 edition of MasterFormat**

Division 1 - General Requirements

01100 Summary

01110 Summary Of Work

01111 Summary Of Work, By Contract Documents \*

01112 Summary Of Work, By Owner \*

01113 Description Of Provisions For Future Construction \*

01114 Construction Sequence \*

01140 Work Restrictions (Access, Coordination, Traffic, Utilities)

01180 Project Utility Sources

01200 Price And Payment Procedures

01210 Allowances

01230 Alternates (Procedures For Alternate Bids)

01250 Contract Modification Procedures

01270 Unit Prices

01290 Payment Procedures

01300 Administrative Requirements

01310 Project Management And Coordination

Coordination, Meetings, Site Administration

01320 Construction Progress Documentation

Progress Reporting

Progress Schedules

Scheduling Of Construction

Survey And Layout Data

01330 Submittal Procedures

Certificates

Field Test Reports

Shop Drawings, Product Data, Samples

Source Quality Control Reports

01350 Special Procedures

01400 Quality Requirements

01410 Regulatory Requirements (Codes, Fees)

01420 References (Abbreviations, Definitions, Reference Standards)

01430 Quality Assurances

Fabricator, Installer, Manufacturer Qualifications

Manufacturer's Field Services, Testing Agency Qualifications

01450 Quality Control

Contractor's Quality Control, Field Quality Control, Field

Samples

Source Quality Control, Testing Laboratory Services

01500 Temporary Facilities And Controls

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

- 01510 Temporary Utilities
- 01530 Temporary Construction Related To Access By Owner
- 01535 Temporary Construction Related To General Access \*
- 01560 Temporary Barriers

- 01600 Product Requirements
  - 01640 Owner-Furnished Products
- 01700 Execution Requirements
  - 01720 Surveying, Construction Layout
  - 01750 Manufacturer's Field Services For Startup
  - 01770 Final Site Review
  - 01780 Final Site Survey, Closeout Documentation
- 01800 Facility Operation
- 01900 Facility Decommissioning

Division 2 - Site Construction

- 02050 Basic Site Materials And Methods
  - 02055 Soils
  - 02060 Aggregate
  - 02065 Cement And Concrete
  - 02080 Utility Material (Hydrants, Manholes, Meters, Piping, Valves)

- 02100 Site Remediation
- 02200 Site Preparation
  - 02230 Tree Pruning
  - 02240 Dewatering
  - 02260 Excavation Support
  - 02280 Grade Adjustments For Existing Sewer Structures

- 02300 Earthwork
  - 02315 Trenching, Excavation, Fill And Backfilling
  - 02330 Soil Embankment
  - 02370 Erosion And Sedimentation Control

- 02400 Tunneling, Boring, And Jacking

- 02500 Utility Services
  - 02510 Water Distribution
    - Disinfection
    - Fire Suppression
    - Water Supply
  - 02520 Wells
    - Monitor Wells
    - Recharge Wells
    - Water Supply
    - Well Abandonment
  - 02580 Electrical And Communication Structures
  - 02590 Site Grounding

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

02600 Drainage And Containment

02700 Bases, Ballasts, Pavements, And Appurtenances

02740 Flexible Pavement

02750 Rigid Pavement

02800 Site Improvements And Amenities

02810 Irrigation Systems

02820 Fences And Gates

02830 Retaining Walls

02860 Screening Devices

02900 Planting

02905 Transplanting

02910 Plant Preparation

02930 Exterior Plants

02935 Plant Maintenance

02950 Site Restoration And Rehabilitation

02955 Restoration Of Underground Piping

Division 3 - Concrete

03000 Water Systems \*

03001 Portland Cement Concrete \*

03002 Concrete Structures \*

03003 Steel Reinforcement \*

03050 Basic Concrete Materials And Methods

03100 Concrete Forms And Accessories

03200 Concrete Reinforcement

03300 Cast-In-Place Concrete

03400 Precast Concrete

03600 Grout

03900 Concrete Restoration And Cleaning

Division 4 - Masonry

04000 Water Systems \*

04001 Masonry \*

04050 Basic Masonry Materials And Methods

04400 Stone

Division 5 - Metals

05000 Water Systems \*

05001 Metals \*

05002 Workmanship \*

05050 Basic Metal Materials And Methods

05500 Metal Fabrications

05600 Hydraulic Fabrications

Division 6 - Wood And Plastics

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

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Division 7 - Thermal And Moisture Protection

- 07050 Basic Thermal And Moisture Protection Materials And Methods
- 07100 Dampproofing And Waterproofing
- 07200 Thermal Protection
- 07300 Shingles, Roof Tiles, And Roof Coverings
- 07400 Roofing And Siding Panels
- 07500 Membrane Roofing
- 07600 Flashing And Sheet Metal
- 07700 Roof Specialties And Accessories
- 07800 Fire And Smoke Protection
- 07900 Joint Sealers

Division 8 - Doors And Windows

- 08050 Basic Door And Window Materials And Methods
- 08100 Metal Doors And Frames
- 08500 Windows
- 08700 Hardware

Division 9 - Finishes

- 09050 Basic Finish Materials And Methods
- 09100 Metal Support Assemblies
- 09500 Ceilings
- 09600 Flooring
- 09700 Wall Finishes
- 09800 Acoustical Treatment
- 09900 Paints And Coatings

Division 10 - Specialties

- 10200 Louvers And Vents
- 10240 Grilles And Screens
- 10270 Access Flooring
- 10520 Fire Protection Specialties
- 10670 Storage Shelving
- 10700 Exterior Protection
- 10750 Telephone Specialties

Division 11 - Equipment

- 11200 Water Supply And Treatment Equipment
  - 11210 Supply And Treatment Pumps
    - 11211 Vertical Turbine Booster Pumps \*
    - 11212 Vertical Turbine Lineshaft Well Pump & Motor \*
    - 11213 Centrifugal Booster Pump & Motor \*
    - 11214 Submersible Pumps \*
  - 11280 Hydraulic Gates And Valves
- 11600 Laboratory Equipment

Division 12 - Furnishings

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

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Division 13 - Special Construction

13080 Sound, Vibration, And Seismic Control

13100 Lightning Protection

13110 Cathodic Protection

13200 Storage Tanks

13220 Filter Underdrains And Media

13400 Measurement And Control Instrumentation

13500 Recording Instrumentation

13700 Security Access And Surveillance

13850 Detection And Alarm

13900 Fire Suppression

Division 14 - Conveying Systems

14000 Water Systems \*

14001 Ductile Iron Pipe

14002 Concrete Cylinder Pipe

14003 High Density Polyethylene Pipe

14004 Polyvinyl Chloride Pipe

14005 Galvanized Steel Pipe

14006 Thrust Restraint

14007 Taps Into Waterlines

14009 Tapping Sleeve And Valve

14010 Resilient-Seated Gate Valve

14011 Butterfly Valve

14013 Air Release Valve

14014 Regulating Valve

14016 Copper Service Materials

14025 Valve Nut Extension

14026 Valve Box And Cover

14030 Fire Hydrants

14031 Hydrostatic Pressure Testing Of Water Facilities

14033 Reclaimed Waterlines

14040 Fittings, Flexible Couplings And Repair Clamps

14046 Water Meters

14047 Pressure Gauges

14048 Sodium Hypochlorite Addition Facilities

14050 Measurement And Payment

14100 Steel Pipe

14101 Steel Pipe, Modified

14600 Hoists And Cranes

14800 Scaffolding

14900 Transportation

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

Division 15 - Mechanical

- 15050 Basic Mechanical Materials And Methods
- 15100 Building Services Piping
- 15200 Process Piping
- 15300 Fire Protection Piping
- 15400 Plumbing Fixtures And Equipment
- 15500 Heat-Generation Equipment
- 15600 Refrigeration Equipment
- 15700 Heating, Ventilating, And Air Conditioning Equipment
- 15800 Air Distribution
- 15900 Hvac Instrumentation And Controls
- 15950 Testing, Adjusting, And Balancing

Division 16 - Electrical

- 16050 Basic Electrical Materials And Methods
- 16100 Wiring Methods
- 16200 Electrical Power
- 16500 Lighting
  - 16520 Site Lighting
- 16700 Communications

“\*” - Added By Tucson Water

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

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Exhibit 13-5, Subsection Format, Special Specifications

**SECTION 01140**

**WORK RESTRICTIONS**

**PART 1 – GENERAL**

**1.01 SUMMARY OF SECTION CONTENTS**

- A. Section includes:
  - 1.01 Summary of Section Contents
  - 1.02 Submittals for This Section
  - 1.03 Definitions for This Section
  - 1.04 Interruption Of Utility Services
  - 1.05 Vehicular Traffic
  - 1.06 Construction In The Vicinity Of Schools And Bus Routes
  
- B. Related Sections
  - 1. Section 0107.0800, Public Convenience And Safety
  - 2. Section 0107.2100, Contractor's Responsibility For Utility Property And Services
  - 3. Section 0108.0500, Limitation of Operations
  - 4. Section 0202.0101(A), Maintenance and Protection of Traffic

**1.02 SUBMITTALS FOR THIS SECTION (not used)**

**1.03 DEFINITIONS FOR THIS SECTION (not used)**

**1.04 INTERRUPTION OF UTILITY SERVICES**

- A. Purpose of Revision – increase responsibilities regarding interruption of service.
  
- B. Modify Contract Standard General Conditions, Section 0107.2100, Contractor's Responsibility For Utility Property And Services, to include:
  - 1. Maintain in continuous service all existing culverts, underground power, telephone or communication cable, water mains, irrigation lines, sewers, poles and overhead power, and all other utilities encountered along the line of work, unless other arrangements satisfactory to owners of said utility and perform all work to their satisfaction.
  
  - 2. Do not impair operation of existing sewer systems. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, or other sewer structures.

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

**1.05 VEHICULAR TRAFFIC**

- A. Purpose of Revision – quantify limits of road blockage.
- B. Modify Contract Standard General Conditions, Section 0108.0500, Limitation of Operations, to include:
  - 1. No residence or business shall be cut off from vehicular traffic for a period exceeding 4 hours unless special arrangements have been made.
  - 2. Provide continuous access for livestock through farm areas. Do not cut off ready access to portions of farmlands in which livestock are pastured. Maintain existing fences required to restrain livestock. Keep gates closed and secured.

**1.06 CONSTRUCTION IN THE VICINITY OF SCHOOLS AND BUS ROUTES**

- A. Purpose of Revision – add responsibilities regarding work near schools.
- B. Modify Contract Standard General Conditions, Section 0108.0500, Limitation of Operations, to include:
  - 1. The Contractor shall exercise caution during construction in the vicinity of schools or school bus routes. Safe access to schools and school bus routes must be maintained at all times.
  - 2. The allowable length of open trench shall be limited to 200 feet for a period of one day in the vicinity of schools and school bus routes.
  - 3. The Contractor shall notify any effected school at least two (2) weeks prior to construction adjacent to the school. All reasonable accommodation in construction methods and schedules shall be made to avoid adverse impact to school operations and/or school bus routes.

**PART 2 – MATERIALS (not used)**

**PART 3 – DETAILS OF CONSTRUCTION (not used)**

END OF SECTION

032202

01140-2

Work Restrictions

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

Exhibit 13-6, Table of Contents Format, Special Specifications

**(PROJECT NAME)**

**SPECIAL SPECIFICATIONS**

**TABLE OF CONTENTS**

<u>Section</u>	<u>Content</u>
<b>DIVISION 1 – GENERAL REQUIREMENTS</b>	
01100	Summary
01110	Summary Of Work
01114	Construction Sequence
01140	Work Restrictions
01200	Price And Payment Procedures
01210	Allowances
01230	Alternates (Procedures For Alternate Bids)
01300	Administrative Requirements
01310	Project Management And Coordination
01320	Construction Progress Documentation
01330	Submittal Procedures
01400	Quality Requirements
01410	Regulatory Requirements (Codes, Fees)
01430	Quality Assurances
01450	Quality Control
01500	Temporary Facilities And Controls
01535	Temporary Construction Related To General Access *
01600	Product Requirements
01640	Owner-Furnished Products
01641	Project Signs
01800	Facility Operation
<b>Division 2 – Site Construction</b>	
02200	Site Preparation
02230	Tree Pruning
02260	Excavation Support
02300	Earthwork
02315	Trenching, Excavation, Fill And Backfilling
02370	Erosion And Sedimentation Control

**CITY OF TUCSON, WATER DEPARTMENT  
DESIGN STANDARD NO. 8-13  
SPECIAL SPECIFICATIONS & STANDARD SPECIFICATIONS AND DETAILS**

---

02400 Tunneling, Boring, And Jacking

02500 Utility Services  
02510 Water Distribution  
02511 Disinfection \*

02800 Site Improvements And Amenities  
02810 Irrigation Systems

**Division 14 – Conveying Systems**

14000 Water Systems \*  
14001 Ductile Iron Pipe  
14006 Thrust Restraint  
14007 Taps Into Waterlines  
14009 Tapping Sleeve And Valve  
14010 Resilient-Seated Gate Valve  
14011 Butterfly Valve  
14013 Air Release Valve  
14031 Hydrostatic Pressure Testing Of Water Facilities  
14100 Steel Pipe  
14101 Steel Pipe