CITY OF RIVERBANK

REGULAR CITY COUNCIL AND LOCAL REDEVELOPMENT AUTHORITY MEETING

(The City Council also serves as the LRA Board)
City Hall North Council Chambers
6707 Third Street, Suite B• Riverbank • CA 95367

choose civility

AGENDA

TUESDAY, OCTOBER 14, 2014 – 6:00 P.M.

(THE AGENDA PACKET IS POSTED AT THE CITY CLERK'S OFFICE AND AT WWW.RIVERBANK.ORG)

CALL TO ORDER: Mayor/Chair Richard D. O'Brien

FLAG SALUTE: Mayor/Chair Richard D. O'Brien

INVOCATION: Riverbank Ministerial Association

ROLL CALL: Mayor/Chair Richard D. O'Brien
Vice Mayor/Chair Cal Campbell
Council/Authority Member Darlene Barber-Martinez
Council/Authority Member Leanne Jones Cruz
Council/Authority Member Jeanine Tucker

CONFLICT OF INTEREST
Any Council/Authority Member or Staff who has a direct Conflict of Interest on any scheduled agenda item to be considered is to declare their conflict at this time.

1. PRESENTATIONS

Item 1.1: Presentation of Lights On After School Proclamation.

Item 1.2: Acknowledge the 2014 Teacher of the Year Nominees.

Item 1.3: Strategic Plan Update.

2. PUBLIC COMMENTS (No Action Can Be Taken)

At this time, members of the public may comment on any item not appearing on the agenda, and within the subject matter jurisdiction of the City Council/LRA Board. Individual comments will be limited to a **maximum of 5 minutes** per person and each person may speak once during this time; time cannot be yielded to another person. Under State Law, matters presented during the public comment period cannot be discussed or acted upon. For record purposes, state your name and City of residence. Please make your comments directly to the City Council/LRA Board.

3. CONSENT CALENDAR

All items listed on the Consent Calendar are to be acted upon by a single action of the City Council/LRA Board unless otherwise requested by an individual Council/Authority Member for special consideration. Otherwise, the recommendation of staff will be accepted and acted upon by roll call vote.

Item 3.A: Waive Readings. All Readings of ordinances and resolutions, except by title, are waived.

Item 3.B: Adjustments to City Council Meeting Schedule for Holiday Observances.

Item 3.C: A **Resolution** of the City Council of the City of Riverbank, California, Adopting by Reference FPPC Title 2, Division 6, California Administrative Code Sections 18730 and 18730.1, the 2014 Conflict of Interest Code List of Designated City Positions, and the Economic Interest Disclosure Categories.

Item 3.D: City Council to Consider the following: (1) Award Bid for the Central Avenue Pavement Resurfacing and Rehabilitation Project and Authorize the City Manager to Execute Future Change Orders, and (2) Authorize an Additional Appropriation of $20,000 from the Storm Drainage System Development Fee Fund 208 for the Construction of a French Drain.

Recommendation: It is recommended that City Council/LRA Board approve the Consent Calendar items by roll call vote.

4. UNFINISHED BUSINESS

Item 4.1: **Second Reading by Title Only of Ordinance No. 2014-009 of the City Council of the City of Riverbank, California, Amending Title III: Administration; Chapter 32: Commissions and Authorities; By Repealing Environmental Review Committee (ERC), Sections 32.70 Through 32.83, and Adding ERC Sections 32.70 Through 32.81, of the City of Riverbank Code of Ordinances** - It is recommended that the City Council conduct the second reading by title only of Ordinance No. 2014-009 and consider its adoption.

5. PUBLIC HEARINGS

There are no items to consider.

6. NEW BUSINESS

Item 6.1: **A Resolution of the City Council of the City of Riverbank, California, to Replace in its Entirety Section 5 – CITY OF RIVERBANK DESIGN STANDARDS WATER and SECTION 6 – CITY OF RIVERBANK DESIGN STANDARDS WASTEWATER of the City Of Riverbank Standard Specifications with New Specifications and Drawings –** It is recommended that the City Council adopt a Resolution to replace in its

entirety Section 5 – City of Riverbank DESIGN STANDARDS WATER and Section 6 – City of Riverbank DESIGN STANDARDS WASTEWATER of the City of Riverbank Standard Specifications with new specifications and drawings, which have been updated to represent the current industry and design parameters.

Item 6.2: **Recommend City Council Review and Provide Feedback on the Patterson Road Concept Plan –** It is recommended that the City Council receive a presentation and provide feedback on the Patterson Road Concept Plan.

Item 6.3: **Recommend City Council Receive a Presentation on the Status of the Nexus Fee Study –** It is recommended that the City Council receive an update on the status of the Nexus Fee Study.

Item 6.4: **Review of the Draft 2010 Urban Water Management Plan (UWMP) -** The 2010 Public DRAFT UWMP has been prepared for review and comment by the City Council, as well as the public.

7. COMMENTS (Information only – No action)

Item 7.1: Staff Comments

Item 7.2: Council/Authority Member Comments

Item 7.3: Mayor/Chair Comments

8. CLOSED SESSION

The public will have a limit of 5 minutes to comment on Closed Session item(s) as set forth on the agenda prior to the City Council/LRA Board recessing into Closed Session.

LRA Item 8.1: **CONFERENCE WITH REAL PROPERTY NEGOTIATORS**
Government Code Section 54956.8
Property: APN #062-031-007; 062-031-006; 062-008-009
Agency Negotiator: Jill Anderson, City Manager
Property Negotiator: U.S. Army
Under Negotiation: Price, terms of payment, or both

LRA Item 8.2: **CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION** Significant exposure to litigation pursuant to subdivision (b) of Government Code § 54956.9: 1 potential case

Item 8.3: **CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION**

Pursuant to Government Code § 54956.9(a)
Name of Case: Andria Allen and Frances Allen v. City of Riverbank
Stanislaus County Superior Court Case No. 670739

Recommendation: It is recommended that City Council /LRA Board provide direction to Staff on the Closed Session item(s).

9. REPORT FROM CLOSED SESSION

LRA Item 9.1: Report from Closed Session LRA Item 8.1: **CONFERENCE WITH REAL PROPERTY NEGOTIATORS**

LRA Item 9.2: Report from Closed Session LRA Item 8.2: **CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION**

Item 9.3: Report from Closed Session Item 8.3: **CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION**

10. INFORMATIONAL ITEMS (Information Only – No Action)

Item 10.1: Warrant Register for 09/18/2014, 09/29/2014, and 10/02/2014.

ADJOURNMENT (The next regular City Council meeting –Tuesday, October 28 @ 6:pm)

UPCOMING EVENTS:

October 21	▪ **Planning Commission Meeting: 6:00 pm Riverbank Council Chambers**
November 10	▪ **Special City Council and Local Redevelopment Authority Meeting – 5:30 p.m. Riverbank Council Chambers, to discuss the Riverbank Industrial Park Conveyance.**
Open Until Filled	▪ **Budget Advisory Committee:** Applications are currently being accepted. Visit www.riverbank.org or Contact Marisela Garcia at 863-7110.
Open Until Filled	▪ **Housing Authority Commission:** Applications are currently being accepted for two openings. Visit www.riverbank.org or Contact the City Clerk's office at 863-7198.
Ongoing	▪ **City Hall Office Hours:** Mondays – Thursdays; 7:30 am to 5:30 pm Alternating Fridays 8:00 am – 5:00 pm; Closed **Friday, Oct. 24** **For a calendar and time schedule visit www.riverbank.org**
Ongoing	▪ **Regular City Council Meetings: 2nd and 4th Tuesday of each month at 6:00 pm**

AFFIDAVIT OF POSTING

I hereby certify under penalty of perjury, under the laws of the State of California that the foregoing agenda was posted on the exterior City Hall bulletin board, next to the City Council Chamber entrance, 72 hours prior to the meeting pursuant to the Brown Act.

Posted this 9th day of October, 2014
/s/Annabelle H. Aguilar, CMC, City Clerk /LRA Recorder

Notice Regarding Americans with Disabilities Act: In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the City Clerk's Office at (209) 863-7122. Notification 48-hours before the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting [28 CFR 35.102-35.104 ADA Title II].

Notice Regarding Non-English Speakers: Pursuant to California Constitution Article III, Section IV, establishing English as the official language for the State of California, and in accordance with California Code of Civil Procedures Section 185, which requires proceedings before any State Court to be in English, notice is hereby given that all proceedings before the City of Riverbank City Council/LRA Board shall be in English and anyone wishing to address the Council is required to have a translator present who will take an oath to make an accurate translation from any language not English into the English language.

GENERAL INFORMATION

Meeting Schedule	The City Council Members also serve as the LRA Board Members. The Riverbank City Council/LRA Board meets in the City Hall North Council Chambers. Regular City Council meetings are held on the 2nd and 4th Tuesdays of each month at 6:00 p.m. The Local Redevelopment Authority Board meets on an "as needed" basis. Meetings are held as indicated, unless otherwise noticed.
City Council / LRA Agenda & Reports	The City Council/LRA Board agenda is posted pursuant to the California Brown Act, which only requires these agenda title pages to be posted near the entrance of the location where the meeting is to be held and, if available, on the City's website. Additional documents may be provided by the City in its efforts of transparency to keep the public well informed. **The agenda packet (agenda plus supporting documents) are posted for public review at the City Clerk's Office**, **6707 Third Street, Riverbank, CA and at www.riverbank.org upon distribution to a majority of the City Council/LRA Board.** A subscription to receive the agenda can be purchased for a nominal fee through the City Clerk's Office.
Public Hearings	In general, a public hearing is an open consideration within a regular meeting of the City Council or a meeting of the LRA, for which special notice has been given and may be required. During a specified portion of the hearing, any resident or concerned individual is invited to present protests or offer support for the subject under consideration.
Televised / Video of Meetings	City Council/LRA meetings are televised on Charter Channel 2 and AT&T Uverse Channel 99. Video of the meeting and the schedule of replays may be seen on the City's website, under the "Action 2" Icon. (Note: Technical difficulty occurs on occasion preventing the televising or recording of the meeting.)
Questions	Contact the City Clerk at (209) 863-7122 or aaguilar@riverbank.org

Any documents that are not privileged or part of a Closed Session provided to a majority of the City Council/LRA Board after distribution of the agenda packet, regarding any item on this agenda, will be made available for public inspection at North City Hall, 6707 Third Street, Riverbank, CA, during normal business hours.

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 1.1

SECTION 1: PRESENTATIONS

Meeting Date:	October 14, 2014
Subject:	Presentation of Lights On After School Proclamation
From:	Jill Anderson, City Manager
Submitted by:	Luanne Bain, Administrative Assistant

RECOMMENDATION

It is recommended that the City Council read and present the Proclamation to Riverbank Unified School District Superintendent Dr. Daryl Camp, Project ACTION students, and staff.

SUMMARY

During the month of October, more than a million people in thousands of communities nationwide will come together to celebrate the 15th annual Lights On After School effort. In Riverbank, the event is organized by the students to highlight the importance of after school programs. This year, Riverbank will be one of more than 7,500 sites across the Nation sending the message that after school is vital to our children's present and future success and that we must work as a community to keep the lights on and doors open for our children.

ATTACHMENT

1. Proclamation

CITY OF RIVERBANK

PROCLAMATION

WHEREAS, After School Programs provide safe, challenging, engaging, and fun learning experiences to help children and youth develop their social, emotional, physical, cultural, and academic skills; and

WHEREAS, After School Programs support working families by ensuring their children are safe and productive after the regular school day has ended; and

WHEREAS, such programs help build stronger communities by involving families, schools, and diverse community partners in the lives of our young people, thereby promoting positive relationships and advancing the welfare of our children; and

WHEREAS, Riverbank Unified School District's Project A.C.T.I.O.N., Afterschool Care Together In Our Neighborhoods, has provided significant leadership in the area of community involvement in the education and well-being of our youth, grounded in the principle that quality After School Programs are key to helping our children become successful adults; and

WHEREAS, Lights On After School is a national celebration of After School Programs and promotes the critical importance of quality After School Programs in the lives of children, their families, and their communities.

NOW, **THEREFORE, LET IT BE PROCLAIMED** by the City Council of the City of Riverbank that Friday, October 24, 2014, is "Lights On After School Day" within the City of Riverbank.

October 14, 2014

_____
Richard D. O'Brien, Mayor

_____
Cal Campbell, Vice Mayor

_____
Darlene Barber-Martinez, Councilmember

_____
Leanne Jones Cruz, Councilmember

_____
Jeanine Tucker, Councilmember

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 1.2

SECTION 1: PRESENTATIONS

Meeting Date:	October 14, 2014
Subject:	Acknowledge the 2014 Teacher of the Year Nominees
From:	Jill Anderson, City Manager
Submitted by:	Luanne Bain, Administrative Assistant

RECOMMENDATION

Present certificates and copies of the book "Images of America – Riverbank" to Jackie Withrow, Stacy Blevins, and Jon Gianelli, nominees for the 2014 Teacher of the Year Award.

SUMMARY

Annually, the Stanislaus County Office of Education (SCOE) and the Modesto Rotary Club recognize teachers that are nominated by their School Principal to be considered for the prestigious Teacher of the Year Award. For the 2014 Teacher of the Year Award, 87-teachers from 14-school districts were nominated and of those 87-teachers, three came from the City of Riverbank. Those teachers are: Jackie Withrow, California Avenue Elementary; Stacy Blevins, Riverbank High School; and Jon Gianelli, Cardozo Middle School. To be considered, nominees must be full-time teachers of grades K-12, be fully credentialed, and have taught a minimum of eight-years. All nominees are recognized at a Modesto Rotary Luncheon. The top 12 finalists have an opportunity to receive the Jane Johnston Civility Award which is presented by the Education Foundation of Stanislaus County.

The top 12 finalists included Jon Gianelli, and although Mr. Gianelli did not receive the coveted Teacher of the Year Award, he and fellow teachers, Ms. Withrow and Ms. Blevins, are Riverbank's Teachers of the Year. When Mr. Gianelli was nominated he was teaching at Cardozo Middle School; he is now teaching at Riverbank High.

ATTACHMENT

There are no attachments to this report.

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 1.3

SECTION 1: PRESENTATIONS

Meeting Date:	October 14, 2014
Subject:	Strategic Plan Update
From:	Jill Anderson, City Manager

RECOMMENDATION

It is recommended that the City Council consider a presentation on the City's Strategic Plan and provide comment as it deems appropriate.

SUMMARY

On September 30, 2014, the City Council met with the management team to update the City's Strategic Plan in order to focus resources toward the accomplishment of the City's key goals. The September session included a review of the City's vision, mission, and values, as well as the City's three year goals.

Vision Statement

The City of Riverbank will be recognized as a premier community where individuals, families, and businesses thrive in a safe and beautiful environment.

Mission Statement

The City of Riverbank is committed to providing exceptional municipal services in a fiscally sound and professionally responsible manner for our community.

Core Values

Professionalism	***Transparency***
Teamwork	***Respectful Behavior***
Fiscal Responsibility	***Integrity and Ethical Behavior***

Three-Year Goals (2013-2016)

Enhance Public Safety
Improve and maintain infrastructure and facilities
Enhance professionalism and customer service
Achieve and maintain financial stability and sustainability
Retain and attract businesses

For each goal, specific, measurable objectives have been established for the six-month planning period. Reports on the progress being made toward accomplishing those goals will be provided to the City Council on a regular basis. These reports will provide the City Council and staff an opportunity to monitor progress, as well as revise objectives and timelines as conditions warrant.

FINANCIAL IMPACT

There is no financial impact associated with the presentation of the Strategic Plan.

ATTACHMENTS

There are no attachments to this report.

RIVERBANK CITY COUNCIL / LRA AGENDA ITEM NO. 3.A

SECTION 3: CONSENT CALENDAR

Meeting Date:	October 14, 2014
Subject:	Waiver of Readings
From:	Jill Anderson, City Manager
Submitted by:	Annabelle Aguilar, CMC, City Clerk / LRA Recorder

RECOMMENDATION

It is recommended that the City Council/LRA Board approve the waiver of readings of Ordinances and Resolutions, except by title.

SUMMARY

The approval of the waiver of readings will allow Ordinances and Resolutions to be introduced by title only and acted upon without the need to read the entire text of the item into the public record. The documents related to proposed Ordinances and Resolutions are available for review by the public on the City's website and in the City Clerk's office at City Hall (North).

FINANCIAL IMPACT

There is no financial impact to this item.

ATTACHMENTS

There are no attachments to this report.

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 3.B

SECTION 3: CONSENT CALENDAR

Meeting Date:	October 14, 2014
Subject:	Adjustments to City Council Meeting Schedule for Holiday Observances
From:	Jill Anderson, City Manager

RECOMMENDATION

It is recommended that the City Council cancel the City Council meetings scheduled for Veterans' Day, Tuesday, November 11, 2014 and Tuesday, December 23, 2014.

SUMMARY

It is proposed that the City Council cancel the City Council Meetings scheduled for Tuesday, November 11, 2014 and Tuesday, December 23, 2014 in order to minimize conflicts with holiday activities.

In previous years, the City Council has adjusted the meeting schedule for holiday observances. This year, the first meeting in November falls on Veterans' Day and the second meeting in December falls on the day before Christmas Eve. In addition, City Hall will be closed from Monday, December 22, 2014 through Friday, January 2, 2015 reopening on Monday, January 5, 2015. Therefore it is proposed that these meetings be cancelled. As always, in the event that issues arise that need to be attended to between regularly scheduled meetings, a special meeting can be held.

FINANCIAL IMPACT

There is no direct financial impact.

STRATEGIC PLAN

While the proposed schedule adjustments are not directly related to the goals of the City, holding meetings on or near holidays makes it more difficult for the public to be aware of City business and/or attend City Council meetings. Therefore, the proposed adjustments support the City's value of transparency in how it conducts its business.

ATTACHMENT

There are no attachments to this report.

REVISED

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 3.C

SECTION 3: CONSENT CALENDAR

Meeting Date:	October 14, 2012
Subject:	A **Resolution** of the City Council of the City of Riverbank, California, Adopting by Reference FPPC Title 2, Division 6, California Administrative Code Sections 18730 and 18730.1, the 2014 Conflict of Interest Code List of Designated City Positions, and the Economic Interest Disclosure Categories
From:	Jill Anderson, City Manager
Submitted by:	Annabelle Aguilar, CMC, City Clerk

RECOMMENDATION

It is recommended that City Council adopt the Resolution to amend the City's Conflict of Interest Code:

1) to accurately designate all City positions, including City Boards or Commissions not covered under Government Code Section 87200, that make or participate in the making of governmental decisions that may foreseeably be affected materially by those holding the position,
2) to establish the disclosure requirements when reporting on their economic interests, and
3) to adopt the FPPC Conflict of Interest Code by reference.

SUMMARY

The Political Reform Act (Government Code Sections 81000-91014) requires local governmental officials and certain employees to publicly disclose their personal assets and income. They must also disqualify themselves from participating in decisions which may affect their personal economic interests. The Fair Political Practices Commission (FPPC) is the state agency responsible for issuing the Statement of Economic Interests, Form 700, and for interpreting the law's provisions.

Local government agencies must adopt and carry forth a local Conflict of Interest Code ("Code"). This Code must designate positions that make or participate in the making of decisions which may foreseeably have a material effect on any financial interest. This Code must be reviewed biennially to determine if it is accurate or if it requires amending.

The City's existing Code currently requires updating to reflect organizational changes made over the course of the last two years, to include certain City positions that have

been determined by the City Attorney to be at a level of which recommendations and/or decisions made by these positions may foreseeably have a material effect on economic interests, and at the direction of the FPPC, include any Board Members representing the City of Riverbank that resulted from the dissolution of the Local Redevelopment Agency.

The following positions are recommended for removal indicated by a strikeout and added/changed positions are highlighted and underscored.

DESIGNATED POSITIONS:	DISCLOSURE CATEGORY NUMBER(S) (**Refer to Exhibit-B)
Accounting Manager	**2**
Administrative Analyst II	**2**
City Clerk	2
Chief of Police	1, 2, & 3
City Attorney	GC § 87200
City Manager	GC § 87200
City Mechanic	**2**
Consultants	1, 2, & 3
***Development Services Administration Manager**	**2 & 3**
Director of Finance (City Treasurer)	GC § 87200
Director of Parks and Recreation	1, 2 & 3
Executive Director of the Local Redevelopment Authority	1, 2, & 3
Housing & Economic Development Specialist II	**2**
Human Resources Manager	**2**
Human Resources Analyst	**2**
Parks and Facilities Supervisor	**2 & 3**
Project Coordinator	**2**
~~Project Management Specialist~~	~~1, 2, & 3~~
~~Deputy Development Services Director of Operations~~ *** Public Works Superintendent**	**1, 2, & 3**
Public Works Supervisor	**2 & 3**
Wastewater Treatment Plant Supervisor	**2 & 3**
Water Supervisor	**2 & 3**
Riverbank Designated Local Authority	**1, 2, & 3**
Riverbank Successor Oversight Board	**1, 2 & 3**

REVISED

*****Reorganization of the Development Services Department created a new position and title change for an existing position per the FY 2014/2015 approved City budget.

**Exhibit-B, provided as part of the Resolution, is the Economic Interest Disclosure Categories that correspond to the numbers in the column above. This indicates the level of disclosure of that position.

FINANCIAL IMPACT

There is no financial impact.

ATTACHMENTS

1. Resolution
2. Exhibit-A and Exhibit-B
3. FPPC Title 2, Division 6, California Administrative Code

CITY OF RIVERBANK

RESOLUTION NO. 2014-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RIVERBANK, CALIFORNIA, ADOPTING BY REFERENCE FPPC TITLE 2, DIVISION 6, CALIFORNIA ADMINISTRATIVE CODE SECTIONS 18730 AND 18730.1, AND THE 2014 CONFLICT OF INTEREST CODE LIST OF DESIGNATED CITY POSITIONS, AND THE ECONOMIC INTEREST DISCLOSURE CATEGORIES

WHEREAS, under the Political Reform Act ("Act") all public agencies are required to adopt and publicize a Conflict of Interest Code ("Code"); and,

WHEREAS, the Act provides the main body of the Code and includes such provisions as the manner to report financial interests, the disqualification procedures, and when to file a report; and,

WHEREAS, the Act provides that the Code must designate City positions for which a Statement of Economic Interests, Form 700, must be filed; and,

WHEREAS, the Form 700 is a public document intended to alert public officials and members of the public to the type of financial interests that may create conflicts of interests; and,

WHEREAS, the Act provides that the Code must assign disclosure categories specifying the types of interests to be reported by employees serving in the designated positions; and,

WHEREAS, the City of Riverbank will continue to incorporate by reference the standard Conflict of Interest Code model adopted by the Fair Political Practices Commission (FPPC), Title 2, Division 6, California Administrative Code Sections 18730 and 18730.1, and amendments to it, which will minimize the actions required by the City Council to keep its Code in conformity with the Political Reform Act; and

WHEREAS, the designated positions in **Exhibit A**, is hereby amended to remove, change, and include the current designated City positions as determined by the City Attorney; and,

WHEREAS, the disclosure categories in **Exhibit B** shall be used by the employees serving in those designated positions to determine the level of disclosure required in filing a Statement of Economic Interests, Form 700.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Riverbank does hereby declare, determine, and order as follows:

1. The terms of Title 2, Division 6, Sections 18730 and 18730.1 of the California Administrative Code and any amendments to it duly adopted by the FPPC, along with the attached **Exhibit A and Exhibit B** in which designated positions and disclosure categories are set forth, are hereby incorporated by reference and constitute the Conflict of Interest Code of the City of Riverbank.

2. Persons holding designated positions shall file Statements of Economic Interests, Form 700, pursuant to the Code with the City Clerk, who shall be deemed the Filing Officer and who shall make the statements available to the public for inspection or reproduction.

PASSED AND ADOPTED by the City Council of the City of Riverbank at a regular meeting held on the 14th day of October, 2014; motioned by Councilmember _____, seconded by Councilmember _____, and upon roll call was carried by the following City Council vote of ___:

AYES:
NAYS:
ABSENT:
ABSTAINED:

ATTEST:

_____
Annabelle H. Aguilar, CMC
City Clerk

APPROVED:

_____
Richard D. O'Brien
Mayor

Attachments: Copy of FPPC Title 2, Division 6, California Code of Regulations § 18730 and § 18730.1
Exhibit A – COI Designated Positions
Exhibit B – COI Disclosure Categories

REVISED

EXHIBIT-A

CITY OF RIVERBANK
2014 CONFLICT OF INTEREST CODE
DESIGNATED POSITIONS

DESIGNATED POSITIONS:	DISCLOSURE CATEGORY NUMBER(S) (Refer to Exhibit-B)
Accounting Manager	2
Administrative Analyst II	2
City Clerk	2
Chief of Police	1, 2, & 3
City Attorney	GC § 87200
City Manager	GC § 87200
City Mechanic	2
Consultants	1, 2, & 3
Development Services Administration Manager	2 & 3
Director of Finance (City Treasurer)	GC § 87200
Director of Parks and Recreation	1, 2 & 3
Executive Director of the Local Redevelopment Authority	1, 2, & 3
Housing & Economic Development Specialist II	2
Human Resources Manager	2
Human Resources Analyst	2
Parks and Facilities Supervisor	2 & 3
Project Coordinator	2
Public Works Superintendent	1, 2, & 3
Public Works Supervisor	2 & 3
Wastewater Treatment Plant Supervisor	2 & 3
Water Supervisor	2 & 3
Riverbank Designated Local Authority	**1, 2, & 3**
Riverbank Successor Oversight Board	**1, 2 & 3**

EXHIBIT-B

CONFLICT OF INTEREST CODE
ECONOMIC INTEREST DISCLOSURE CATEGORIES

An investment, interest in real property, or income (including gifts, loans, and travel payments) is reportable if the business entity in which the investment is held the interest in real property, or the income or source of income may foreseeably be affected materially by any decision made or participation in by the designated employee by virtue of the employee's position.

City employees serving in the designated positions as listed in Exhibit-A must disclose their economic interest(s) pursuant to the corresponding category/categories as indicated in the Disclosure Categories column.

DISCLOSURE CATEGORIES

Disclosure Category – 1:

a) All interest in real property, which are located in whole or in part within the City.

b) Investment in or incomes from persons or business entities engaged in the business of acquisition or disposal of real property within the City.

Disclosure Category – 2:

a) Investments in any business entity, which within the last two (2) years, has contracted, or disposal of real property within the City.

b) Income from any source which, within the last two (2) years has contracted, or foreseeably in the future may contract with the City of Riverbank to provide services, supplies, materials, machinery, or equipment to the City of Riverbank.

c) Status as a director, officer, sole owner, partner, trustee, employee, or holder of a position of management in any contracted or in the foreseeable future, may contract with the City of Riverbank to provide services, supplies, materials, machinery, or equipment to the City of Riverbank.

d) Investments and income otherwise reportable under paragraphs a) and b) of category 2, shall not be reportable unless the total amount or all contracts by the business entity to provide services, supplies, materials, machinery, or equipment to the City of Riverbank was more than $1,000.00 in the prior calendar year, or unless the total amount of all foreseeable contracts by the business entity to provide services, supplies, materials, machinery, or equipment to the City of Riverbank will be more than $1,000.00 in the next calendar year.

EXHIBIT-B

Disclosure Category – 3:

a) Investment in any business entity, which within the last calendar year has been regulated by the City of Riverbank or foreseeably, may be regulated by the City of Riverbank in the next calendar year.

b) Each source of income, provided that the income was furnished by or on behalf of any business entity, which within the last calendar year has been regulated the City of Riverbank or foreseeably may be regulated by the City of Riverbank in the next calendar year.

c) Status as a director, officer, sole owner, partner, trustee, employee, or any position of management in any business entity, which within the last calendar year has been regulated by the City of Riverbank, in the next calendar year.

(Regulations of the Fair Political Practices Commission, Title 2, Division 6, California Code of Regulations)

§ 18730. Provisions of Conflict of Interest Codes.

(a) Incorporation by reference of the terms of this regulation along with the designation of employees and the formulation of disclosure categories in the Appendix referred to below constitute the adoption and promulgation of a conflict of interest code within the meaning of Section 87300 or the amendment of a conflict of interest code within the meaning of Section 87306 if the terms of this regulation are substituted for terms of a conflict of interest code already in effect. A code so amended or adopted and promulgated requires the reporting of reportable items in a manner substantially equivalent to the requirements of article 2 of chapter 7 of the Political Reform Act, Sections 81000, et seq . The requirements of a conflict of interest code are in addition to other requirements of the Political Reform Act, such as the general prohibition against conflicts of interest contained in Section 87100, and to other state or local laws pertaining to conflicts of interest.

(b) The terms of a conflict of interest code amended or adopted and promulgated pursuant to this regulation are as follows:

(1) Section 1. Definitions.

The definitions contained in the Political Reform Act of 1974, regulations of the Fair Political Practices Commission (Regulations 18110, et seq.), and any amendments to the Act or regulations, are incorporated by reference into this conflict of interest code.

(2) Section 2. Designated Employees.

The persons holding positions listed in the Appendix are designated employees. It has been determined that these persons make or participate in the making of decisions which may foreseeably have a material effect on economic interests.

(3) Section 3. Disclosure Categories.

This code does not establish any disclosure obligation for those designated employees who are also specified in Section 87200 if they are designated in this code in that same capacity or if the geographical jurisdiction of this agency is the same as or is wholly included within the jurisdiction in which those persons must report their economic interests pursuant to article 2 of chapter 7 of the Political Reform Act, Sections 87200, et seq .

In addition, this code does not establish any disclosure obligation for any designated employees who are designated in a conflict of interest code for another agency, if all of the following apply:

(A) The geographical jurisdiction of this agency is the same as or is wholly included within the jurisdiction of the other agency;

(B) The disclosure assigned in the code of the other agency is the same as that required under article 2 of chapter 7 of the Political Reform Act, Section 87200; and

(C) The filing officer is the same for both agencies.1

Such persons are covered by this code for disqualification purposes only. With respect to all other designated employees, the disclosure categories set forth in the Appendix specify which kinds of economic interests are reportable. Such a designated employee shall disclose in his or her statement of economic interests those economic interests he or she has which are of the kind described in the disclosure categories to

which he or she is assigned in the Appendix. It has been determined that the economic interests set forth in a designated employee's disclosure categories are the kinds of economic interests which he or she foreseeably can affect materially through the conduct of his or her office.

(4) Section 4. Statements of Economic Interests: Place of Filing.

The code reviewing body shall instruct all designated employees within its code to file statements of economic interests with the agency or with the code reviewing body, as provided by the code reviewing body in the agency's conflict of interest code.2

(5) Section 5. Statements of Economic Interests: Time of Filing.

(A) Initial Statements. All designated employees employed by the agency on the effective date of this code, as originally adopted, promulgated and approved by the code reviewing body, shall file statements within 30 days after the effective date of this code. Thereafter, each person already in a position when it is designated by an amendment to this code shall file an initial statement within 30 days after the effective date of the amendment.

(B) Assuming Office Statements. All persons assuming designated positions after the effective date of this code shall file statements within 30 days after assuming the designated positions, or if subject to State Senate confirmation, 30 days after being nominated or appointed.

(C) Annual Statements. All designated employees shall file statements no later than April 1. If a person reports for military service as defined in the Servicemember's Civil Relief Act, the deadline for the annual statement of economic interests is 30 days following his or her return to office, provided the person, or someone authorized to

represent the person's interests, notifies the filing officer in writing prior to the applicable filing deadline that he or she is subject to that federal statute and is unable to meet the applicable deadline, and provides the filing officer verification of his or her military status.

(D) Leaving Office Statements. All persons who leave designated positions shall file statements within 30 days after leaving office.

(5.5) Section 5.5. Statements for Persons Who Resign Prior to Assuming Office.

Any person who resigns within 12 months of initial appointment, or within 30 days of the date of notice provided by the filing officer to file an assuming office statement, is not deemed to have assumed office or left office, provided he or she did not make or participate in the making of, or use his or her position to influence any decision and did not receive or become entitled to receive any form of payment as a result of his or her appointment. Such persons shall not file either an assuming or leaving office statement.

(A) Any person who resigns a position within 30 days of the date of a notice from the filing officer shall do both of the following:

(1) File a written resignation with the appointing power; and

(2) File a written statement with the filing officer declaring under penalty of perjury that during the period between appointment and resignation he or she did not make, participate in the making, or use the position to influence any decision of the agency or receive, or become entitled to receive, any form of payment by virtue of being appointed to the position.

(6) Section 6. Contents of and Period Covered by Statements of Economic Interests.

(A) Contents of Initial Statements.

Initial statements shall disclose any reportable investments, interests in real property and business positions held on the effective date of the code and income received during the 12 months prior to the effective date of the code.

(B) Contents of Assuming Office Statements.

Assuming office statements shall disclose any reportable investments, interests in real property and business positions held on the date of assuming office or, if subject to State Senate confirmation or appointment, on the date of nomination, and income received during the 12 months prior to the date of assuming office or the date of being appointed or nominated, respectively.

(C) Contents of Annual Statements. Annual statements shall disclose any reportable investments, interests in real property, income and business positions held or received during the previous calendar year provided, however, that the period covered by an employee's first annual statement shall begin on the effective date of the code or the date of assuming office whichever is later, or for a board or commission member subject to Section 87302.6, the day after the closing date of the most recent statement filed by the member pursuant to Regulation 18754.

(D) Contents of Leaving Office Statements.

Leaving office statements shall disclose reportable investments, interests in real property, income and business positions held or received during the period between the closing date of the last statement filed and the date of leaving office.

(7) Section 7. Manner of Reporting.

Statements of economic interests shall be made on forms prescribed by the Fair Political Practices Commission and supplied by the agency, and shall contain the following information:

(A) Investment and Real Property Disclosure.

When an investment or an interest in real property3 is required to be reported,4 the statement shall contain the following:

1. A statement of the nature of the investment or interest;

2. The name of the business entity in which each investment is held, and a general description of the business activity in which the business entity is engaged;

3. The address or other precise location of the real property;

4. A statement whether the fair market value of the investment or interest in real property equals or exceeds $2,000, exceeds $10,000, exceeds $100,000, or exceeds $1,000,000.

(B) Personal Income Disclosure. When personal income is required to be reported,5 the statement shall contain:

1. The name and address of each source of income aggregating $500 or more in value, or $50 or more in value if the income was a gift, and a general description of the business activity, if any, of each source;

2. A statement whether the aggregate value of income from each source, or in the case of a loan, the highest amount owed to each source, was $1,000 or less, greater than $1,000, greater than $10,000, or greater than $100,000;

3. A description of the consideration, if any, for which the income was received;

4. In the case of a gift, the name, address and business activity of the donor and any intermediary through which the gift was made; a description of the gift; the amount or value of the gift; and the date on which the gift was received;

5. In the case of a loan, the annual interest rate and the security, if any, given for the loan and the term of the loan.

(C) Business Entity Income Disclosure. When income of a business entity, including income of a sole proprietorship, is required to be reported,6 the statement shall contain:

1. The name, address, and a general description of the business activity of the business entity;

2. The name of every person from whom the business entity received payments if the filer's pro rata share of gross receipts from such person was equal to or greater than $10,000.

(D) Business Position Disclosure. When business positions are required to be reported, a designated employee shall list the name and address of each business entity in which he or she is a director, officer, partner, trustee, employee, or in which he or she holds any position of management, a description of the business activity in which the business entity is engaged, and the designated employee's position with the business entity.

(E) Acquisition or Disposal During Reporting Period. In the case of an annual or leaving office statement, if an investment or an interest in real property was partially or wholly acquired or disposed of during the period covered by the statement, the statement shall contain the date of acquisition or disposal.

(8) Section 8. Prohibition on Receipt of Honoraria.

(A) No member of a state board or commission, and no designated employee of a state or local government agency, shall accept any honorarium from any source, if the member or employee would be required to report the receipt of income or gifts from that source on his or her statement of economic interests. This section shall not apply to any part-time member of the governing board of any public institution of higher education, unless the member is also an elected official.

Subdivisions (a), (b), and (c) of Section 89501 shall apply to the prohibitions in this section.

This section shall not limit or prohibit payments, advances, or reimbursements for travel and related lodging and subsistence authorized by Section 89506.

(8.1) Section 8.1. Prohibition on Receipt of Gifts in Excess of $440.

(A) No member of a state board or commission, and no designated employee of a state or local government agency, shall accept gifts with a total value of more than $440 in a calendar year from any single source, if the member or employee would be required to report the receipt of income or gifts from that source on his or her statement of economic interests. This section shall not apply to any part-time member of the governing board of any public institution of higher education, unless the member is also an elected official.

Subdivisions (e), (f), and (g) of Section 89503 shall apply to the prohibitions in this section.

(8.2) Section 8.2. Loans to Public Officials.

(A) No elected officer of a state or local government agency shall, from the date of his or her election to office through the date that he or she vacates office, receive a personal loan from any officer, employee, member, or consultant of the state or local government agency in which the elected officer holds office or over which the elected officer's agency has direction and control.

(B) No public official who is exempt from the state civil service system pursuant to subdivisions (c), (d), (e), (f), and (g) of Section 4 of Article VII of the Constitution shall, while he or she holds office, receive a personal loan from any officer, employee, member, or consultant of the state or local government agency in which the public official holds office or over which the public official's agency has direction and control. This subdivision shall not apply to loans made to a public official whose duties are solely secretarial, clerical, or manual.

(C) No elected officer of a state or local government agency shall, from the date of his or her election to office through the date that he or she vacates office, receive a personal loan from any person who has a contract with the state or local government agency to which that elected officer has been elected or over which that elected officer's agency has direction and control. This subdivision shall not apply to loans made by banks or other financial institutions or to any indebtedness created as part of a retail installment or credit card transaction, if the loan is made or the indebtedness created in the lender's regular course of business on terms available to members of the public without regard to the elected officer's official status.

(D) No public official who is exempt from the state civil service system pursuant to subdivisions (c), (d), (e), (f), and (g) of Section 4 of Article VII of the Constitution shall,

while he or she holds office, receive a personal loan from any person who has a contract with the state or local government agency to which that elected officer has been elected or over which that elected officer's agency has direction and control. This subdivision shall not apply to loans made by banks or other financial institutions or to any indebtedness created as part of a retail installment or credit card transaction, if the loan is made or the indebtedness created in the lender's regular course of business on terms available to members of the public without regard to the elected officer's official status. This subdivision shall not apply to loans made to a public official whose duties are solely secretarial, clerical, or manual.

(E) This section shall not apply to the following:

1. Loans made to the campaign committee of an elected officer or candidate for elective office.

2. Loans made by a public official's spouse, child, parent, grandparent, grandchild, brother, sister, parent-in-law, brother-in-law, sister-in-law, nephew, niece, aunt, uncle, or first cousin, or the spouse of any such persons, provided that the person making the loan is not acting as an agent or intermediary for any person not otherwise exempted under this section.

3. Loans from a person which, in the aggregate, do not exceed five hundred dollars ($500) at any given time.

4. Loans made, or offered in writing, before January 1, 1998.

(8.3) Section 8.3. Loan Terms.

(A) Except as set forth in subdivision (B), no elected officer of a state or local government agency shall, from the date of his or her election to office through the date

he or she vacates office, receive a personal loan of $500 or more, except when the loan is in writing and clearly states the terms of the loan, including the parties to the loan agreement, date of the loan, amount of the loan, term of the loan, date or dates when payments shall be due on the loan and the amount of the payments, and the rate of interest paid on the loan.

(B) This section shall not apply to the following types of loans:

1. Loans made to the campaign committee of the elected officer.

2. Loans made to the elected officer by his or her spouse, child, parent, grandparent, grandchild, brother, sister, parent-in-law, brother-in-law, sister-in-law, nephew, niece, aunt, uncle, or first cousin, or the spouse of any such person, provided that the person making the loan is not acting as an agent or intermediary for any person not otherwise exempted under this section.

3. Loans made, or offered in writing, before January 1, 1998.

(C) Nothing in this section shall exempt any person from any other provision of Title 9 of the Government Code.

(8.4) Section 8.4. Personal Loans.

(A) Except as set forth in subdivision (B), a personal loan received by any designated employee shall become a gift to the designated employee for the purposes of this section in the following circumstances:

1. If the loan has a defined date or dates for repayment, when the statute of limitations for filing an action for default has expired.

2. If the loan has no defined date or dates for repayment, when one year has elapsed from the later of the following:

a. The date the loan was made.

b. The date the last payment of $100 or more was made on the loan.

c. The date upon which the debtor has made payments on the loan aggregating to less than $250 during the previous 12 months.

(B) This section shall not apply to the following types of loans:

1. A loan made to the campaign committee of an elected officer or a candidate for elective office.

2. A loan that would otherwise not be a gift as defined in this title.

3. A loan that would otherwise be a gift as set forth under subdivision (A), but on which the creditor has taken reasonable action to collect the balance due.

4. A loan that would otherwise be a gift as set forth under subdivision (A), but on which the creditor, based on reasonable business considerations, has not undertaken collection action. Except in a criminal action, a creditor who claims that a loan is not a gift on the basis of this paragraph has the burden of proving that the decision for not taking collection action was based on reasonable business considerations.

5. A loan made to a debtor who has filed for bankruptcy and the loan is ultimately discharged in bankruptcy.

(C) Nothing in this section shall exempt any person from any other provisions of Title 9 of the Government Code.

(9) Section 9. Disqualification.

No designated employee shall make, participate in making, or in any way attempt to use his or her official position to influence the making of any governmental decision which he or she knows or has reason to know will have a reasonably foreseeable

material financial effect, distinguishable from its effect on the public generally, on the official or a member of his or her immediate family or on:

(A) Any business entity in which the designated employee has a direct or indirect investment worth $2,000 or more;

(B) Any real property in which the designated employee has a direct or indirect interest worth $2,000 or more;

(C) Any source of income, other than gifts and other than loans by a commercial lending institution in the regular course of business on terms available to the public without regard to official status, aggregating $500 or more in value provided to, received by or promised to the designated employee within 12 months prior to the time when the decision is made;

(D) Any business entity in which the designated employee is a director, officer, partner, trustee, employee, or holds any position of management; or

(E) Any donor of, or any intermediary or agent for a donor of, a gift or gifts aggregating $440 or more provided to, received by, or promised to the designated employee within 12 months prior to the time when the decision is made.

(9.3) Section 9.3. Legally Required Participation.

No designated employee shall be prevented from making or participating in the making of any decision to the extent his or her participation is legally required for the decision to be made. The fact that the vote of a designated employee who is on a voting body is needed to break a tie does not make his or her participation legally required for purposes of this section.

(9.5) Section 9.5. Disqualification of State Officers and Employees.

In addition to the general disqualification provisions of section 9, no state administrative official shall make, participate in making, or use his or her official position to influence any governmental decision directly relating to any contract where the state administrative official knows or has reason to know that any party to the contract is a person with whom the state administrative official, or any member of his or her immediate family has, within 12 months prior to the time when the official action is to be taken:

(A) Engaged in a business transaction or transactions on terms not available to members of the public, regarding any investment or interest in real property; or

(B) Engaged in a business transaction or transactions on terms not available to members of the public regarding the rendering of goods or services totaling in value $1,000 or more.

(10) Section 10. Disclosure of Disqualifying Interest.

When a designated employee determines that he or she should not make a governmental decision because he or she has a disqualifying interest in it, the determination not to act may be accompanied by disclosure of the disqualifying interest.

(11) Section 11. Assistance of the Commission and Counsel.

Any designated employee who is unsure of his or her duties under this code may request assistance from the Fair Political Practices Commission pursuant to Section 83114 and Regulations 18329 and 18329.5 or from the attorney for his or her agency, provided that nothing in this section requires the attorney for the agency to issue any formal or informal opinion.

(12) Section 12. Violations.

This code has the force and effect of law. Designated employees violating any provision of this code are subject to the administrative, criminal and civil sanctions provided in the Political Reform Act, Sections 81000-91014. In addition, a decision in relation to which a violation of the disqualification provisions of this code or of Section 87100 or 87450 has occurred may be set aside as void pursuant to Section 91003.

_____

1 Designated employees who are required to file statements of economic interests under any other agency's conflict of interest code, or under article 2 for a different jurisdiction, may expand their statement of economic interests to cover reportable interests in both jurisdictions, and file copies of this expanded statement with both entities in lieu of filing separate and distinct statements, provided that each copy of such expanded statement filed in place of an original is signed and verified by the designated employee as if it were an original. See Section 81004.

2 See Section 81010 and Regulation 18115 for the duties of filing officers and persons in agencies who make and retain copies of statements and forward the originals to the filing officer.

3 For the purpose of disclosure only (not disqualification), an interest in real property does not include the principal residence of the filer.

4 Investments and interests in real property which have a fair market value of less than $2,000 are not investments and interests in real property within the meaning of the Political Reform Act. However, investments or interests in real property of an individual include those held by the individual's spouse and dependent children as well as a pro rata share of any investment or interest in real property of any business entity or trust in

which the individual, spouse and dependent children own, in the aggregate, a direct, indirect or beneficial interest of 10 percent or greater.

5 A designated employee's income includes his or her community property interest in the income of his or her spouse but does not include salary or reimbursement for expenses received from a state, local or federal government agency.

6 Income of a business entity is reportable if the direct, indirect or beneficial interest of the filer and the filer's spouse in the business entity aggregates a 10 percent or greater interest. In addition, the disclosure of persons who are clients or customers of a business entity is required only if the clients or customers are within one of the disclosure categories of the filer.

Note: Authority cited: Section 83112, Government Code. Reference: Sections 87103(e), 87300-87302, 89501, 89502 and 89503, Government Code.

HISTORY

1. New section filed 4-2-80 as an emergency; effective upon filing (Register 80, No. 14). Certificate of Compliance included.

2. Editorial correction (Register 80, No. 29).

3. Amendment of subsection (b) filed 1-9-81; effective thirtieth day thereafter (Register 81, No. 2).

4. Amendment of subsection (b)(7)(B)1. filed 1-26-83; effective thirtieth day thereafter (Register 83, No. 5).

5. Amendment of subsection (b)(7)(A) filed 11-10-83; effective thirtieth day thereafter (Register 83, No. 46).

6. Amendment filed 4-13-87; operative 5-13-87 (Register 87, No. 16).

7. Amendment of subsection (b) filed 10-21-88; operative 11-20-88 (Register 88, No. 46).

8. Amendment of subsections (b)(8)(A) and (b)(8)(B) and numerous editorial changes filed 8-28-90; operative 9-27-90 (Reg. 90, No. 42).

9. Amendment of subsections (b)(3), (b)(8) and renumbering of following subsections and amendment of Note filed 8-7-92; operative 9-7-92 (Register 92, No. 32).

10. Amendment of subsection (b)(5.5) and new subsections (b)(5.5)(A)-(A)(2) filed 2-4-93; operative 2-4-93 (Register 93, No. 6).

11. Change without regulatory effect adopting Conflict of Interest Code for California Mental Health Planning Council filed 11-22-93 pursuant to title 1, section 100, California Code of Regulations (Register 93, No. 48). Approved by Fair Political Practices Commission 9-21-93.

12. Change without regulatory effect redesignating Conflict of Interest Code for California Mental Health Planning Council as chapter 62, section 55100 filed 1-4-94 pursuant to title 1, section 100, California Code of Regulations (Register 94, No. 1).

13. Editorial correction adding History 11 and 12 and deleting duplicate section number (Register 94, No. 17).

14. Amendment of subsection (b)(8), designation of subsection (b)(8)(A), new subsection (b)(8)(B), and amendment of subsections (b)(8.1)-(b)(8.1)(B), (b)(9)(E) and Note filed 3-14-95; operative 3-14-95 pursuant to Government Code section 11343.4(d) (Register 95, No. 11).

15. Editorial correction inserting inadvertently omitted language in footnote 4 (Register 96, No. 13).

16. Amendment of subsections (b)(8)(A)-(B) and (b)(8.1)(A), repealer of subsection (b)(8.1)(B), and amendment of subsection (b)(12) filed 10-23-96; operative 10-23-96 pursuant to Government Code section 11343.4(d) (Register 96, No. 43).

17. Amendment of subsections (b)(8.1) and (9)(E) filed 4-9-97; operative 4-9-97 pursuant to Government Code section 11343.4(d) (Register 97, No. 15).

18. Amendment of subsections (b)(7)(B)5., new subsections (b)(8.2)-(b)(8.4)(C) and amendment of Note filed 8-24-98; operative 8-24-98 pursuant to Government Code section 11343.4(d) (Register 98, No. 35).

19. Editorial correction of subsection (a) (Register 98, No. 47).

20. Amendment of subsections (b)(8.1), (b)(8.1)(A) and (b)(9)(E) filed 5-11-99; operative 5-11-99 pursuant to Government Code section 11343.4(d) (Register 99, No. 20).

21. Amendment of subsections (b)(8.1)-(b)(8.1)(A) and (b)(9)(E) filed 12-6-2000; operative 1-1-2001 pursuant to the 1974 version of Government Code section 11380.2 and Title 2, California Code of Regulations, section 18312(d) and (e) (Register 2000, No. 49).

22. Amendment of subsections (b)(3) and (b)(10) filed 1-10-2001; operative 2-1-2001. Submitted to OAL for filing pursuant to *Fair Political Practices Commission v. Office of Administrative Law*, 3 Civil C010924, California Court of Appeal, Third Appellate District, nonpublished decision, April 27, 1992 (FPPC regulations only subject to 1974 Administrative Procedure Act rulemaking requirements) (Register 2001, No. 2).

23. Amendment of subsections (b)(7)(A)4., (b)(7)(B)1.-2., (b)(8.2)(E)3., (b)(9)(A)-(C) and footnote 4. filed 2-13-2001. Submitted to OAL for filing pursuant to *Fair Political Practices Commission v. Office of Administrative Law*, 3 Civil C010924, California Court

of Appeal, Third Appellate District, nonpublished decision, April 27, 1992 (FPPC regulations only subject to 1974 Administrative Procedure Act rulemaking requirements) (Register 2001, No. 7).

24. Amendment of subsections (b)(8.1)-(b)(8.1)(A) filed 1-16-2003; operative 1-1-2003. Submitted to OAL for filing pursuant to *Fair Political Practices Commission v. Office of Administrative Law*, 3 Civil C010924, California Court of Appeal, Third Appellate District, nonpublished decision, April 27, 1992 (FPPC regulations only subject to 1974 Administrative Procedure Act rulemaking requirements) (Register 2003, No. 3).

25. Editorial correction of History 24 (Register 2003, No. 12).

26. Editorial correction removing extraneous phrase in subsection (b)(9.5)(B) (Register 2004, No. 33).

27. Amendment of subsections (b)(2)-(3), (b)(3)(C), (b)(6)(C), (b)(8.1)-(b)(8.1)(A), (b)(9)(E) and (b)(11)-(12) filed 1-4-2005; operative 1-1-2005 pursuant to Government Code section 11343.4 (Register 2005, No. 1).

28. Amendment of subsection (b)(7)(A)4. filed 10-11-2005; operative 11-10-2005 (Register 2005, No. 41).

29. Amendment of subsections (a), (b)(1), (b)(3), (b)(8.1), (b)(8.1)(A) and (b)(9)(E) filed 12-18-2006; operative 1-1-2007. Submitted to OAL pursuant to *Fair Political Practices Commission v. Office of Administrative Law*, 3 Civil C010924, California Court of Appeal, Third Appellate District, nonpublished decision, April 27, 1992 (FPPC regulations only subject to 1974 Administrative Procedure Act rulemaking requirements) (Register 2006, No. 51).

30. Amendment of subsections (b)(8.1)-(b)(8.1)(A) and (b)(9)(E) filed 10-31-2008; operative 11-30-2008. Submitted to OAL for filing pursuant to *Fair Political Practices Commission v. Office of Administrative Law*, 3 Civil C010924, California Court of Appeal, Third Appellate District, nonpublished decision, April 27, 1992 (FPPC regulations only subject to 1974 Administrative Procedure Act rulemaking requirements and not subject to procedural or substantive review by OAL) (Register 2008, No. 44).

31. Amendment of section heading and section filed 11-15-2010; operative 12-15-2010. Submitted to OAL for filing pursuant to *Fair Political Practices Commission v. Office of Administrative Law*, 3 Civil C010924, California Court of Appeal, Third Appellate District, nonpublished decision, April 27, 1992 (FPPC regulations only subject to 1974 Administrative Procedure Act rulemaking requirements and not subject to procedural or substantive review by OAL) (Register 2010, No. 47).

32. Amendment of section heading and subsections (a)-(b)(1), (b)(3)-(4), (b)(5)(C), (b)(8.1)-(b)(8.1)(A) and (b)(9)(E) and amendment of footnote 1 filed 1-8-2013; operative 2-7-2013. Submitted to OAL for filing pursuant to *Fair Political Practices Commission v. Office of Administrative Law*, 3 Civil C010924, California Court of Appeal, Third Appellate District, nonpublished decision, April 27, 1992 (FPPC regulations only subject to 1974 Administrative Procedure Act rulemaking requirements and not subject to procedural or substantive review by OAL) (Register 2013, No. 2).

(Regulations of the Fair Political Practices Commission, Title 2, Division 6, California Code of Regulations)

§ 18730.1. Conflict of Interest Code: Reporting of Gifts.

Nothing contained in an agency's conflict of interest code shall be interpreted to require the reporting of gifts from outside the agency's jurisdiction if the purpose of disclosure of the source of the gift does not have some connection with or bearing upon the functions or duties of the position for which the reporting is required. Nothing in this language is intended to create an inference that all gifts within the jurisdiction are reportable.

Note: Authority cited: Section 83112, Government Code. Reference: Sections 82028, 87100, 87103, 87207, 87300, 87302, 87309 and 89503, Government Code.

HISTORY

1. New section filed 10-3-2012; operative 11-2-2012. Submitted to OAL for filing pursuant to *Fair Political Practices Commission v. Office of Administrative Law*, 3 Civil C010924, California Court of Appeal, Third Appellate District, nonpublished decision, April 27, 1992 (FPPC regulations only subject to 1974 Administrative Procedure Act rulemaking requirements and not subject to procedural or substantive review by OAL) (Register 2012, No. 40).

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 3.D

SECTION 3: CONSENT CALENDAR

Meeting Date:	October 14, 2014
Subject:	City Council to Consider the following: (1) Award Bid for the Central Avenue Pavement Resurfacing and Rehabilitation Project and Authorize the City Manager to Execute Future Change Orders, and (2) Authorize an Additional Appropriation of $20,000 from the Storm Drainage System Development Fee Fund 208 for the Construction of a French Drain.
From:	Jill Anderson, City Manager
Submitted by:	Marisela H. Garcia, Director of Finance/City Treasurer Kathleen Cleek, Development Services Administration Manager Laura Graybill, Project Coordinator

RECOMMENDATION

It is recommended that City Council:

1. Award the lowest responsible bidder, George Reed, Inc. to contract to construct the Central Avenue Pavement Resurfacing and Rehabilitation Project and authorize the City Manager to execute change orders within total project budget, and
2. Authorize an additional appropriation of $20,000 from the Storm Drainage System Development Fee Fund 208 for the construction storm drain improvements on Central Ave.

SUMMARY

The Central Avenue Pavement Resurfacing and Rehabilitation Project is on Central Avenue between California Avenue and Kentucky Avenue. The project intends to reconstruct the existing deteriorated asphalt concrete surface into a 24 foot wide roadway. The existing road surface would be ground in place and used as base rock, with additional base rock added to achieve a uniform roadway. Base rock will be added to both sides of the pavement to create five foot shoulders. Drainage will be directed to one side of the road and collected in a roadside ditch. A French drain will be constructed below the road side ditch to dissipate storm water. A 12 inch PVC water line will be extended in Central Avenue from California Avenue to Kentucky Avenue.

Fire hydrants will be placed at 400 foot intervals. The waterline trenching will consist of excavation for a 12 inch waterline. The trench will be backfilled with native materials that meets City Specifications. The roadside ditch will be protected with rock lining.

A bid opening was held on Monday, October 6, 2014, to consider the bids for the Central Avenue Pavement Resurfacing and Rehabilitation Project. The following bids were received:

George Reed, Inc.	$321,455.00
Ross F. Carroll, Inc.	$323,375.00
Taylor Backhoe Service Inc.	$352,336.64
MCI Engineering, Inc.	$378,077.70
Knife River Construction	$421,271.85

Work on the project includes, but is not limited to, furnishing all labor, materials, equipment, transportation, and incidentals necessary for all demolition, asphalt removal, paving, striping, raise structures to grade, roadway compaction, traffic control, storm drainage, SWPPP, traffic control signs, water line, fire hydrants and water valves and all other facilities shown on the plans.

Bids have been reviewed and George Reed, Inc. has been identified as the lowest responsible bidder for the project.

BACKGROUND

The Regional Surface Transportation Program (RSTP) was established by California State Statute utilizing Surface Transportation Program (STP) Funds that are identified in Section 133 of Title 23 of the United States Code. This program provided flexible funding that may be used by local agencies for projects to preserve and improve the transportation system consistent with regional priorities.

The funds may be utilized for construction, reconstruction, rehabilitation, resurfacing, restoration, and operational improvements on any Federal-aid highway including the National Highway System (NHS), bridge projects on any public road, transit capital projects, and intercity bus terminals and facilities.

The Stanislaus Council of Governments (StanCOG) is responsible for the distribution of RSTP funds. Each agency within StanCOG's jurisdiction receives a fixed funding allocation for the local agency use. StanCOG works with the local agencies to identify and program projects that adhere to the funding allocation for the agency and meet the RSTP project eligibility guidelines.

In the Stanislaus region, RSTP is utilized primarily for roadway rehabilitation.

FINANCIAL IMPACT

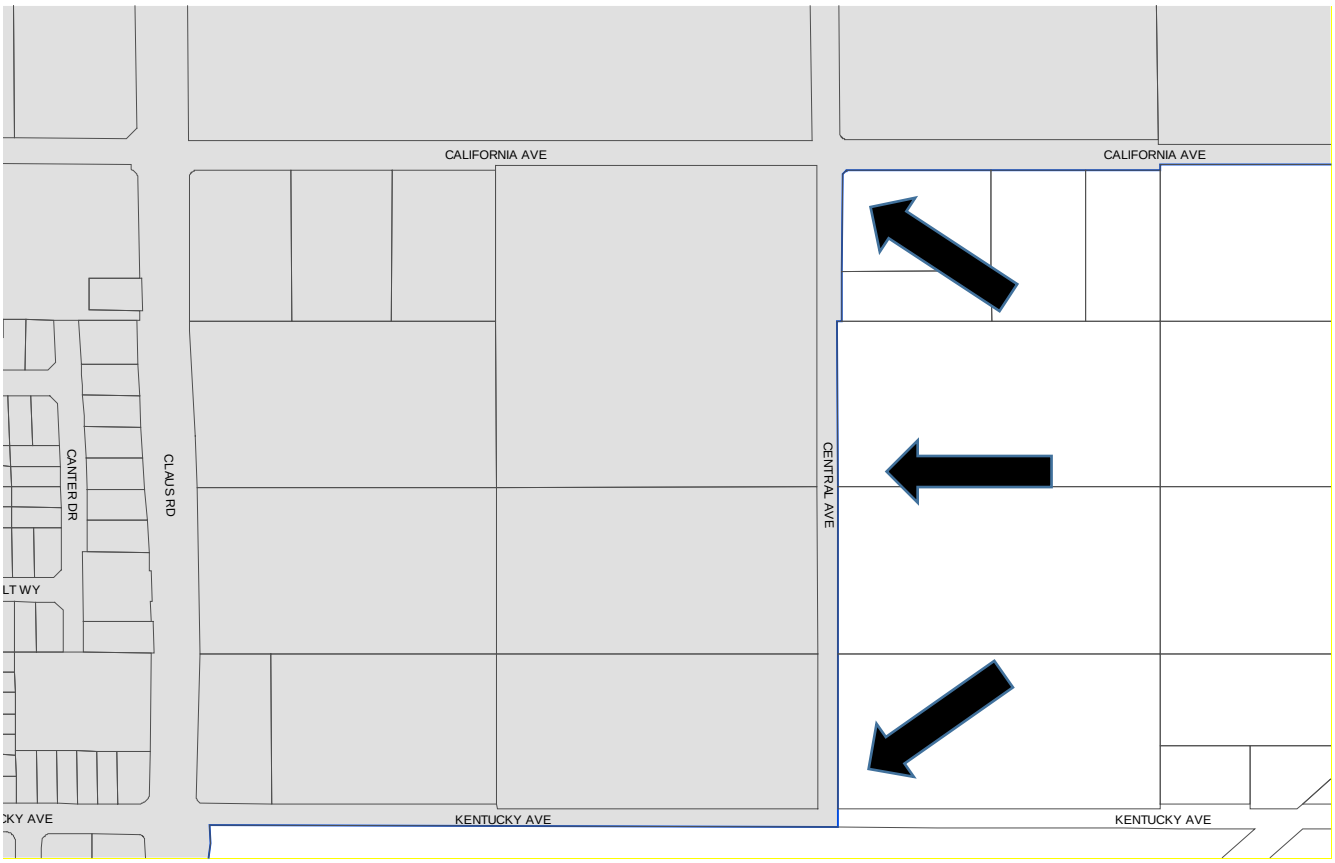
The project is programmed in the Federal Transportation Improvement Plan (FTIP) under the Regional Surface Transportation Program (RSTP) as follows:

Construction - RSTP Funds		$149,200.00
Non-Participating Costs (Storm) Fund 208		$ 80,000.00
Non-Participating Costs (Water) Fund 206		$113,000.00
Local Transportation Funds (LTF)		$ 25,000.00
	TOTAL	$367,200.00

ATTACHMENT

1) Site Map

SITE MAP



Central Avenue

between California and Kentucky

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 4.1

SECTION 4: UNFINISHED BUSINESS

Meeting Date:	October 14, 2014
Subject:	Second Reading by Title Only of **Ordinance No. 2014-009** of the City Council of the City of Riverbank, California, Amending Title III: Administration; Chapter 32: Commissions and Authorities; By Repealing Environmental Review Committee (ERC), Sections 32.70 Through 32.83, and Adding ERC Sections 32.70 Through 32.81, of the City of Riverbank Code of Ordinances
From:	Jill Anderson, City Manager
Submitted by:	John B. Anderson, Consulting Community Development Director Annabelle Aguilar, CMC, City Clerk

RECOMMENDATION

It is recommended that the City Council conduct the second reading by title only of Ordinance No. 2014-009 and consider its adoption.

SUMMARY

A Public Hearing was conducted at the regular City Council meeting on September 25, 2014, to introduce by title only **Ordinance No. 2014-009** and give it its first reading. The City Council approved the Ordinance for its second reading to consider its adoption at the October 14, 2014, regular City Council meeting.

BACKGROUND & SUMMARY

In 2007 the City Council created the Environmental Review Committee (ERC) whose members consisted of the Mayor, the Chairperson of the Planning Commission, the City Manager, the Director of Public Works, the Director of Community Development or their designated alternates. The purpose of the ERC was to allow early consultation and review of development projects as it relates to environmental review pursuant to the California Environmental Quality Act (CEQA). This early consultation would assist in identifying impacts and associated methods of mitigation on larger development projects that are subject to CEQA. While the Development Services Department has not seen any significant recent development activity since 2007, planning applications and inquiries appear to be on the rise. This has prompted a concern about the possible delays associated with organizing meetings with key City Leaders. The preparation

necessary for such meetings, which includes the formality of preparing agendas, staff reports, minutes, and the issuance of public notices for ERC activities can add to the delays in being able to promptly address development concerns. As the ERC currently stands, the requirements add time and frustration to the development process and ultimately may not be fulfilling the original intent of its formation.

The proposed revisions to the ERC Ordinance are intended to create a less burdensome process on key City leaders and transfer the review authority to key City Staff members who can bring forth their expertise in the various City disciplines. The basic function of the ERC will remain unchanged, but the ERC will conduct business in a more user-friendly manner and who can react to changes in the development environment in a much more time-friendly manner.

ENVIRONMENTAL DETERMINATION

The proposed Ordinance is not considered to be a project as defined by Section 15378 of the CEQA Guidelines, therefore CEQA is not required.

STRATEGIC PLAN

This report has been prepared to accomplish the following Strategic Plan Three Year Goal: "Enhance Professionalism and Customer Service"

FINANCIAL IMPACT

This will not have fiscal impact on the City.

ATTACHMENT

1. Proposed Ordinance No. 2014-009
2. Copy of existing Ordinance 2007-005

CITY OF RIVERBANK

ORDINANCE NO. 2014-009

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF RIVERBANK AMENDING TITLE III: ADMINISTRATION; CHAPTER 32: COMMISSIONS AND AUTHORITIES; BY REPEALING ENVIRONMENTAL REVIEW COMMITTEE (ERC), SECTIONS 32.70 THROUGH 32.83, AND ADDING ERC SECTIONS 32.70 THROUGH 32.81, OF THE CITY OF RIVERBANK CODE OF ORDINANCES

Section 1: Summary

WHEREAS, on August 13, 2007, the City of Riverbank ("City") City Council ("Council") adopted Ordinance 2007-005, establishing the Environmental Review Committee ("ERC") consisting of the City's mayor, planning commission chairperson, city manager, city manager, director of public works, and the director of community development; and

WHEREAS, the six (6) members of the ERC was tasked with the responsibility of reviewing every initial study for proposed projects requiring City approval to determine whether a Negative Declaration or Environmental Impact Report should be prepared; and

WHEREAS, once the ERC makes a determination, the Riverbank Municipal Code (R.M.C.) provides that the ERC will forward a recommendation to another decision making body and, pursuant to the Guidelines of the California Environmental Quality Act, the R.M.C. provides that this determination can be appealed to the City's Planning Commission; and

WHEREAS, the existing structure requires participation of the City's Mayor and Planning Commission Chair, which is often difficult due to the impacted schedules and commitments of both; and

WHEREAS, typically the determination of whether a Negative Declaration or Environmental Impact Report is appropriate can be made at a staff level; and

WHEREAS, several procedures in the existing R.M.C. related to the ERC can be modified to make the ERC more efficient and more productive.

Section 2: Ordinance

The City Council of the City of Riverbank does ordain as follows:

Amend Title III: Administration; Chapter 32: Commissions and Authorities, by repealing Environmental Review Committee (ERC), Section 32.70 through 32.83, and adding ERC Sections 32.70 through 32.81, to the Riverbank Code of Ordinances, which shall read as follows:

Environmental Review Committee

Section

32.70 Established–Composition
32.71 Terms of office
32.72 Meetings–Quorum
32.73 Records
32.74 Duties–Powers–Responsibilities
32.75 Environmental Impact Report Preparation Thresholds
32.76 City Responsibility for Environmental Assessment
32.77 Guidelines–California Environmental Quality Act
32.78 Appeals
32.79 Fees
32.80 Effect
32.81 Severability

§ 32.70 ESTABLISHED–COMPOSITION.

The Environmental Review Committee or ERC of the City is established. ERC shall consist of, the City Manager, the Director of Public Works, the Director of Community Development, the Police Chief, and the Director of Parks and Recreation or their designated alternates. The Director of Community Development shall serve as the Chairperson for the Environmental Review Committee.

§ 32.71 TERMS OF OFFICE.

The terms of staff members are ongoing unless changed by action of the City Council.

§ 32.72 MEETINGS–QUORUM.

A. The Environmental Review Committee shall meet on an as needed basis to insure the timely review of projects as defined by the California Environmental Quality Act.

B. A majority of the Environmental Review Committee shall constitute a quorum for the purpose of transacting the business of the Environmental Review Committee.

§ 32.73 RECORDS.

The Committee shall record the results of its proceedings and transactions and shall share the opinions of the Committee with the applicant/project proponent. The opinions of the Committee shall be disclosed in reports to the Planning Commission and City Council as may be required.

§ 32.74 DUTIES–POWERS–RESPONSIBILITIES.

A. All discretionary projects which are not categorically exempt or otherwise exempted from further environmental assessment, shall be forwarded to the Environmental Review Committee for evaluation under the California Environmental Quality Act.

B. The Environmental Review Committee shall evaluate the initial study of a proposed project to determine whether the project may or may not have a significant effect on the environment.

C. If a determination is made that the project will not have a significant impact on the environment, the Environmental Review Committee will recommend that the final reviewing authority (decision-maker) grant a negative declaration.

D. If a determination is made that the project may have a significant impact on the environment, the Environmental Review Committee shall require preparation of an environmental impact report (EIR). The major areas of concern, the selection of the preparer, and the preparation of the EIR shall be coordinated by the ERC.

§ 32.75 ENVIRONMENTAL IMPACT REPORT PREPARATION THRESHOLDS.

The Environmental Review Committee shall determine which projects require the preparation of an environmental impact report, based on the magnitude or complexity of a project. Unless it can be demonstrated through extensive technical studies that no significant impacts are anticipated, the following projects are presumed to be sufficiently large and/or complex so as to require the preparation of an environmental impact report.

A. Annexations over one hundred fifty (150) acres;

B. Commercial development projects proposing more than one hundred thousand (1,000) square feet of gross building floor area;

C. Other development projects (i.e., tentative subdivision maps, specific plans, general plan amendments, etc.) which contain more than one hundred (100) acres or propose more than two hundred (200) dwelling units.

D. Notwithstanding the above thresholds, projects involving significant controversy or complexity may require the preparation of an environmental impact report based on the findings of the Environmental Review Committee. Further, even if it is determined that an environmental impact report is not necessary, an action or approval by the City may still require a different environmental analysis under the California Environmental Quality Act.

§ 32.76 CITY RESPONSIBILITY FOR ENVIRONMENTAL ASSESSMENT

A. The City has responsibility for, and control over, the form, scope and contents of all documents comprising environmental assessment of a project. All reports, studies, or other documents prepared by or under direction of an applicant, intended for inclusion in the environmental documents, shall be clearly identified as "Proponent's Environmental Assessment" and shall set forth in detail the assumptions, and methodologies supporting any conclusions reached, or upon which any recommendations may be based.

B. The Environmental Review Committee, at its sole discretion, may decide to utilize the services of a private consulting firm to prepare or review all studies, reports, and other documents required or permitted by the guidelines, including those submitted by the proponent or any other party. In all cases, the consultant shall enter into a contract with, and is responsible directly to, the City. All contract services shall be performed to the satisfaction of the Environmental Review Committee.

C. All costs incurred in the preparation of the environmental documents, including the costs of services performed under subsection (B) of this section and costs incurred by the Environmental Review Committee, including City staff time, shall be borne by the project proponent.

§ 32.77 GUIDELINES–CALIFORNIA ENVIRONMENTAL QUALITY ACT.

A. As permitted by Section 15022(d) of the Guidelines for California Environmental Quality Act (California Code of Regulations, Title 14, Chapter 3, Section 15022(d) as promulgated by the California Natural Resources Agency and as subsequently amended are adopted by this reference. Whenever any provisions of the California Environmental Quality Act or the Guidelines for the California Environmental Quality Act conflict with any provision of this Chapter, the California Environmental Quality Act and the Guidelines for the California Environmental Quality Act shall supersede this chapter.

B. The Environmental Review Committee shall review all Notices of Exemption for residential development projects, within specific plan areas to insure that the project implements and is consistent with the applicable specific plan and certified environmental impact report. When making said determination the Environmental Review Committee shall take into account all mitigation measures, mitigation monitoring

program and provisions of Section 15162 of the Guidelines for the California Environmental Quality Act.

§ 32.78 APPEALS.

The project sponsor may appeal a decision to prepare an environmental impact report to the Planning Commission. The appeal shall be filed in writing with the City Clerk within five (5) working days of the Environmental Review Committee's decision. If the Planning Commission determines that an environmental impact report is not necessary, the project shall be returned to the Environmental Review Committee for further consideration.

§ 32.79 FEES.

The City Council may, by resolution, establish an environmental assessment fee.

§ 32.80 EFFECT.

Nothing in this chapter shall be construed as restricting or curtailing any powers of the City Council, Planning Commission, or City officers.

§ 32.81 SEVERABILITY.

If any section, subsection, subdivision, paragraph, sentence, clause or phrase in this article is for any reason held to be unconstitutional or invalid or ineffective by any court of competent jurisdiction, such decision shall not affect the validity or effectiveness of the remaining portions of this article. The City Council hereby declares that it would have passed each section, subsection, subdivision, paragraph, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, subdivisions, paragraphs, sentences, clauses or phrases be declared unconstitutional, invalid or ineffective.

Section 3: Effective and Adoption

This Ordinance shall become effective thirty (30) days from and after its final passage and adoption, provided it is published in a newspaper of general circulation at least fifteen (15) days prior to its effective date.

The foregoing ordinance was introduced at a regular meeting of the City Council of the City of Riverbank on September 9, 2014. Said ordinance was given a second reading at the regular City Council meeting on September 23, 2014.

PASSED AND ADOPTED by the City Council of the City of Riverbank at a regular meeting on _____, 2014; motioned by Councilmember _____, seconded by Councilmember _____; moved the ordinance for adoption by a roll call vote of ___:

AYES:
NAYS:
ABSENT
ABSTAINED:

ATTEST:

_____
Annabelle H. Aguilar, CMC
City Clerk

APPROVED:

_____
Richard D. O'Brien
Mayor

APPROVED AS TO FORM:

_____
Tom P. Hallinan
City Attorney

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 6.1

SECTION 6: NEW BUSINESS

Meeting Date:	October 14, 2014
Subject:	A **Resolution** of the City Council of the City of Riverbank, California, to Replace in its Entirety Section 5 – CITY OF RIVERBANK DESIGN STANDARDS WATER and SECTION 6 – CITY OF RIVERBANK DESIGN STANDARDS WASTEWATER of the City Of Riverbank Standard Specifications with New Specifications and Drawings
From:	Jill Anderson, City Manager
Submitted by:	Marisela Garcia, Director of Finance Michael Riddell, Public Works Superintendent Kathleen Cleek, Development Services Administration Manager

RECOMMENDATION

It is recommended that the City Council adopt a Resolution to replace in its entirety Section 5 – City of Riverbank DESIGN STANDARDS WATER and Section 6 – City of Riverbank DESIGN STANDARDS WASTEWATER of the City of Riverbank Standard Specifications with new specifications and drawings, which have been updated to represent the current industry and design parameters.

BACKGROUND

The existing City Standards for both water and wastewater were adopted by Resolution on May 29, 2007. The document consists of the following 8 Sections: Section 1 – Preface, Section 2 – Safety, Section 3 – Streets, Section 4 – Lighting, Section 5 – Water, Section 6 – Wastewater, Section 7 – Storm Drains, and Section 8 – Parking. These standards were adopted to aid all persons engaged in construction of public works projects within the city limits of Riverbank. All construction work in the public right-of-way within the City of Riverbank shall conform to these standards. As the construction industry and design parameters change, revisions to these standards must be adopted.

Over the past six months, City staff has been in the process of reviewing each section of standards. Staff has completed the review of the water and wastewater standards, which have been updated to meet industry standards and the City's required design parameters.

Tonight staff is recommending that the City Council adopt a Resolution to replace Section 5 – City of Riverbank DESIGN STANDARDS WATER and Section 6 – City of Riverbank DESIGN STANDARDS WASTEWATER of the City of Riverbank Standard Specifications with new specifications and drawings.

The review process for the remaining sections is still underway and will be brought to Council for consideration as Sections are completed.

FINANCIAL IMPACT

No identifiable cost impact to the City.

ATTACHMENTS

1. Resolution
2. Section 5 – City of Riverbank DESIGN STANDARDS WATER
3. Section 6 – City of Riverbank DESIGN STANDARDS WASTEWATER

CITY OF RIVERBANK

RESOLUTION NO. 2014-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RIVERBANK, CALIFORNIA, TO REPLACE IN ITS ENTIRETY SECTION 5 – CITY OF RIVERBANK DESIGN STANDARDS WATER AND SECTION 6 – CITY OF RIVERBANK DESIGN STANDARDS WASTEWATER OF THE CITY OF RIVERBANK STANDARD SPECIFICATIONS WITH NEW SPECIFICATIONS AND DRAWINGS

WHEREAS, the City Council of the City of Riverbank directed staff to review and update City standard specifications and drawings to represent the current industry and design parameters; and

WHEREAS, City staff reviewed Section 5 – DESIGN STANDARDS WATER AND Section 6 – DESIGN STANDARDS WASTEWATER and determined both Sections needed to be replaced; and

WHEREAS, Section 5 – DESIGN STANDARDS WATER AND Section 6 – DESIGN STANDARDS WASTEWATER are replaced in their entirety to reflect industry standards and the City's required design parameters.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Riverbank hereby approves the replacement of Section 5 – City of Riverbank DESIGN STANDARDS WATER and Section 6 – City of Riverbank DESIGN STANDARDS WASTEWATER, in its entirety, with amended Section 5 and Section 6 attached hereto as **Exhibit A,** and incorporated herein to the City of Riverbank Standard Specifications.

PASSED AND ADOPTED by the City Council of the City of Riverbank at a regular meeting held on the 14th day of October, 2014; motioned by Councilmember _____, seconded by Councilmember _____, and upon roll call was carried by the following City Council vote of ___:

AYES:
NAYS:
ABSENT:
ABSTAINED:

ATTEST:

_____
Annabelle H. Aguilar, CMC
City Clerk

APPROVED:

_____
Richard D. O'Brien
Mayor

Attachments: Exhibit A: Section 5 – City of Riverbank DESIGN STANDARDS WATER (Attached)
Section 6 – City of Riverbank DESIGN STANDARDS WASTEWATER (Attached)

City of Riverbank
DESIGN STANDARDS

WATER

TABLE OF CONTENTS

5.100 General
5.101 Scope

5.200 Design Flow
5.201 Flow Demand
5.202 Design Pressure

5.300 Pipe Design
5.301 Minimum Size
5.302 Vertical Alignment
5.303 Horizontal Alignment
5.304 Pipe Materials
5.305 Fittings and Thrust Blocking
5.306 Separation Requirements

5.400 Services
5.401 General
5.402 Domestic Services
5.403 Fire Services
5.404 Backflow Prevention

5.500 Valves, Fire Hydrants and Other Appurtenances
5.501 Valves
5.502 Fire Hydrants
5.503 Blow-offs and Temporary Connections
5.504 Water Sampling Stations
5.505 Tracer Wire

SECTION 5: WATER

5.100 General

5.101 Scope

These standards apply to all public water facilities designed for installation within a public right-of-way or PUE in the City, and are limited to mains and services 12" or less in diameter. Standards and requirements for larger sizes will be determined by the City Engineer on a case-by-case basis. In residential developments, on-site mains and hydrants for fire protection shall be public. Other on-site facilities, unless specifically noted in these Standards or as required as part of project approval, shall be private and shall be designed and constructed in accordance with the provisions of these Standards and the Uniform Plumbing Code, as adopted by the City.

5.200 Design Flow

5.201 Flow Demand

Unless actual field measurements or metering data are available, the following water demands shall be used:

		Peaking Factors	
Land Use	Unit Demand	Peak Day	Peak Hour
Residential	285 gpcd	2.24	3.28
Commercial/Office	2,750 gpad (floor area)	2.24	3.28
Parking Lots	200 gpad	2.24	3.28
Industrial	(detailed information regarding industrial water demand to be submitted)		

(gpcd = gallons per capita per day ; gpad = gallons per acre per day)

Per capita and density figures per Section 5.201 shall be used unless specific project information is available.

Fire flow for specific projects shall be based on the Insurance Services Organization (ISO) Guidelines for a Class I City, or as otherwise approved by the Stanislaus Consolidated Fire District. In lieu of the ISO guidelines, the following conservative minimum criteria may be used:

Land Use	Fire Flow
Low-Density Residential	1,000 gpm from each of 2 adjacent hydrants flowing simultaneously, or 2,000 gpm available
Multi-Family	1,500 gpm from each of 2 adjacent hydrants flowing simultaneously, or 3,000 gpm available at building service point (not simultaneously with hydrant flow)
Commercial	1,500 gpm from each of 2 adjacent hydrants flowing simultaneously, or 4,000 gpm available at building service point (not simultaneously with hydrant flow)
Industrial	Fire flow for industrial projects shall be based on a site-specific investigation using ISO guidelines. 4,000 gpm may be used for preliminary studies.

Fire flow for low-density residential areas can generally be obtained using the following guidelines for water main sizing:

a) 12" mains –1/2 mile looped grid
b) 8" mains –1/4 mile looped grid
c) 8" looped distribution system (internal to ½ mi and ¼ mi grids mentioned above)

5.202 Design Pressure

The system shall be designed to maintain a minimum residual pressure of 20 psi at the service point or fire hydrant under the worst case of either:

- Peak Day flow plus fire flow, or:
- Peak Hour flow

Calculations shall be based on actual flow tests performed by the Stanislaus Consolidated Fire District, or as otherwise approved by the City Engineer.

The Hazen-Williams formula should be used to calculate design flow, pressure loss, velocity and pipe diameter relationships. The coefficient of friction, "C", shall be 100 for pipes 6" and smaller, 120 for 8" and 10", and 130 for 12" and larger pipes. If losses due to fittings are calculated separately using equivalent length or other approved methods, a "C" of 130 may be used.

5.300 Pipe Design

5.301 Minimum Size

Minimum pipe sizing for public water mains shall be based on an approved Water Master Plan, regional modeling analysis, or similar document. Typically, these documents are prepared either at the Specific Plan or Tentative Mapping phases of a project, and are intended to provide sizing information for a relatively large region.

For new public water mains in areas that are not already covered by a regional water study or analysis (i.e. smaller "infill" projects), minimum sizing for public water mains shall be based on requirements as described in Section 5.200, or as otherwise directed by the City Engineer.

New onsite private water main sizing shall be based on the required fire flow and pressure, as described in section 5.200.

In addition to the above requirements, minimum pipe sizes for new water mains shall be as per the following table:

Location/Use	Min. Size
Fire hydrant laterals, max. length =100'	6"
Public water mains –1/2 mi. looped grid	12"
All other public water mains	8"
Residential dead end with fire hydrant*	8"
Residential dead end with no fire hydrant*	6"

* Looping of water mains is typically required on all projects, unless specifically approved otherwise by the City Engineer.

5.302 Vertical Alignment

There are no slope requirements for water mains. However, inverts of new public water mains shall be shown on the drawings. Combination air & vacuum release valves shall be placed at all substantial high points in newly constructed water mains.

Minimum cover on water mains shall be 36". In special circumstances, minimum cover may be reduced below 36" using special backfill and/or special pipe materials. The requirements for reduced cover below 36" shall be considered on a case-by-case basis, and approved by the City Engineer.

When practical, new water mains shall be installed above wastewater or storm drain pipes with a minimum vertical clearance of 1' at crossing locations. However, if this is not a practical option, water main crossings shall be constructed using special construction in accordance with DHS

Guidelines. Refer to Section 5.306 for vertical separation requirements for new public water mains.

5.303 Horizontal Alignment

Public water mains shall be installed within street rights of way unless an easement installation is specifically approved by the City Engineer. Alignment shall be parallel to the street centerline wherever possible.

Curved water mains may be constructed provided that joint deflections or pipe curvature does not exceed the pipe manufacturer's recommendations.

See Section 5.306 regarding horizontal separation requirements from other utilities.

5.304 Pipe Materials

The following pipe materials shall be used for water main construction, and shall conform to the appropriate American Water Works Association (AWWA) standards (latest revision):

Pipe Material

1. Polyvinyl Chloride (PVC) as per AWWA C900, Class 150 minimum.

2. Ductile Iron Pipe (DIP) as per AWWA C151, Class 50, with cement mortar lining in accordance with AWWA C104 and polyethylene encasement in conformance with AWWA C105.

These approved pipe materials apply to water mains up to 12" in diameter. Service materials shall be polyethylene tubing CTS or copper. The material for new water mains greater than 12" shall be determined be on a case-by-case basis as approved by the City Engineer.

5.305 Fittings and Thrust Blocking

Pipe fittings shall conform to AWWA C110 for flange fittings and AWWA C111 for mechanical joint fittings, and shall be cast iron or ductile iron, class 150. Joints in fittings and adapters shall be of the type with a seal ring groove for positively holding the rubber gaskets in place against the water pressure, and shall be similar to the specified joint for the pipe used.

Thrust blocking shall be installed at all bends, tees, dead ends, and changes in pipe diameter, and installed per City Standard Details. Thrust blocking shall be placed so that the joints of the pipe and fittings will be accessible for repair.

5.306 Separation Requirements

Public water mains shall have the required separation, both horizontal and vertical, from other utilities as per the current California Department of Health Services (DHS) Guidelines, as adopted by the City of Riverbank. The following are excerpts from the DHS Guidelines for separation requirements of public water mains from other utilities:

- 10' horizontal separation, and 1' vertically above parallel sanitary sewer lines, or pipelines carry other hazardous fluids (fuel, industrial wastes, etc..)
- 4' horizontal separation, and 1' vertically above parallel storm drain lines or disinfected tertiary recycled water.
- 4' horizontal separation, and 1' vertically above parallel new supply lines conveying raw water to be treated for drinking purposes.
- The vertical separation mentioned above for parallel pipelines does not apply if an 11' horizontal separation is maintained.
- Water mains crossing other utilities shall be 1' vertically above the other utility. If this is not attainable, then special construction shall be required in accordance with the April 14, 2003 guidance memorandum from DHS contained in the Appendix of these Standards.

The aforementioned requirements are excerpts from the DHS Guidelines, and are listed only as a convenience for common situations in water main layout and design. Refer to the Appendix for the April 14, 2003 memorandum from DHS for additional separation requirements for water mains and non-potable pipelines.

All separation requirements indicated above and in the April 14, 2003 DHS memorandum are to the outside edges of the pipe. If these separation requirements are not attainable, special construction shall be required in accordance with DHS guidelines, and as approved by the City Engineer.

5.400 Services

5.401 General

Each individual lot or parcel shall have a separate water service complete from the water main to the property. Larger parcels with multiple buildings may require additional services, as approved by the City Engineer. All water services from the public water main shall be metered in accordance with the standards contained herein, with the exception of dedicated fire service lines.

5.402 Domestic Services

The minimum size service is 1 inch polypropylene, and is to be installed in accordance with City Standard Details. Larger diameter services shall be per Standard Plan 406 (1 ½" & 2") and Standard Plan 407 (4" & larger). The size of service is to be determined by the design engineer for the parcel/land use being served, subject to requirements contained in these Design Standards.

Backflow prevention devices shall be provided as specified in these Standards, and as per the appropriate Standard Detail. Refer to Section 5.404 for additional information regarding backflow prevention.

All domestic service meter boxes shall be placed outside of driveways. Exceptions to this rule will be granted only when it is not feasible or practical to place service meter boxes outside driveways. Such exceptions will require specific approval by the City Engineer.

The preferred horizontal separation of water services and sewer laterals is 10'. However, sewer laterals and water services may have a minimum of 5' separation given prior approval by the City Engineer.

5.403 Fire Services

Private on-site fire protection systems include hydrants and building sprinkler systems, and shall be installed per the requirements of the City Building Code, these Standard Specifications, and the requirements of the Stanislaus Consolidated Fire District. Fire and domestic systems shall be kept separate on-site, and shall be valved such that either system can be shut-down without affecting the other. These Standards cover requirements imposed by the Public Works Department in its role as a water utility, mainly as they apply to maintenance and backflow prevention required by State Law. In addition, the Stanislaus Consolidated Fire District may have other design requirements pertaining to fire protection.

1. General: All on-site improvements shall conform to City Standards for public water mains, unless additional design or construction requirements are stipulated by the Stanislaus Consolidated Fire District. In addition, automatic sprinkler systems shall be installed in accordance with NFPA #13, or as required by the Stanislaus Consolidated Fire District.

2. Backflow Prevention: All private fire systems shall have backflow prevention as described in section 5.404.

3. Fire Hydrants: refer to Section 5.502 of these Standards

4. Domestic Services: It is preferable to keep domestic services separate from fire systems. However, given the approval of the City Engineer, domestic services may be taken from the fire service lateral provided that an additional backflow prevention device is installed and sufficient valving is in place to isolate the two systems.

5. Fire District Approval: The location and layout of all fire protection system components including, but not limited to: piping, fire department connections, indicator valves, detector check valves, booster pumps, fire hydrants and service risers shall be approved by the Stanislaus Consolidated Fire District.

6. Fire Department Connections (FDC) and Post-Indicator Valves (PIV): FDC's and PIV's shall be installed as per City Standard Details, in locations approved by the Stanislaus Consolidated Fire District.

7. Inspection: All private fire systems shall be inspected by the Fire District prior to backfill of trench. Testing shall also be performed in accordance with current NFPA standards, and as required by the Fire District, prior to acceptance.

5.404 Backflow Prevention

General: Backflow prevention devices shall be installed at new connections to the public water main as specified in these Standards. All backflow prevention assemblies shall be approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC Foundation), and installed according to the manufacturer's specifications.

Domestic Services: New water services for potable uses, as well as landscape irrigation uses, shall require installation of a Reduced Pressure Principle Backflow Prevention Assembly (RPBP) as stated herein. Requirements for fire service lines are listed in a separate topic within this section.

Residential Uses: An RPBP, installed in accordance with City Standards, shall be required for water services that serve residential uses in each of the following cases:

- All services for multi-family dwellings of 2 units or more
- Services for single family dwellings of 3 stories or more.
- Separate water services used specifically for landscape irrigation in new residential developments.
- At service connections to the public main for private water systems serving 2 or more residential units.
- Water services for residential lots that use water from sources other than the City of Riverbank system, including reclaimed water, irrigation water (O.I.D., M.I.D.), or private on-site wells that have not been abandoned.
- Residential uses not specified above where a high hazard for contamination of the public water main is present, as deemed necessary by the City Public Works Department.

1" water services for standard single-family dwellings in the City will typically not require installation of a separate backflow prevention device, unless one of the aforementioned conditions is met.

Non-Residential Uses: All domestic and landscape water services for new commercial, industrial, public, institutional, or other non-residential uses shall require installation of an RPBP in accordance with City Standards.

Fire Services: Dedicated fire service lines 2" and under, including those serving single-family residences, shall require installation of an RPBP in accordance with City Standard Details.

Dedicated fire service lines 3" and above shall require installation of a Double Detector Check Assembly (DCDA) with Outside Stem and Yoke (OS&Y) valves in accordance with City Standard Details. This requirement includes private on-site water systems serving only fire hydrants.

RPBP's with detectors shall be required for fire service lines in the following instances:

a) Systems in which chemical additives may be used such as antifreeze or fire suppressants
b) Any building where a high hazard exists, as required by the City Engineer.

5.500 Valves, Fire Hydrants, and Other Appurtenances

5.501 Valves

Valves on mains shall be spaced and located in conformance with the following criteria:

- Valves shall have a minimum spacing of 500 ft.
- Valves shall be placed on each side of a water main crossing a separate right-of-way. Examples would include, but not be limited to: Canal crossings, aqueduct crossings, Caltrans highway crossings, and railroad crossings.
- At tees and crosses in public mains, valves shall be required at all legs. If there are minimal connections in between valves, valves may be eliminated at certain legs given the approval of the City Engineer.
- Private services extending from a tee in a public main shall require a valve on the service leg of the tee, and do not require valves on public main legs of the tee.
- At ends of mains or on stubs such that future extensions will not interrupt service.
- At fire hydrant laterals

5.502 Fire Hydrants

Fire hydrants shall be installed per City Standard Details. Where the main is located within 15 ft. of the hydrant location, the valve on the hydrant lateral shall be located at least 10 feet offset from the hydrant station and the lateral installed with 90 deg. elbows.

Fire hydrants shall be supplied from the largest available main, and shall be fed from 2 directions unless specifically approved otherwise by the City Engineer and the Stanislaus Consolidated Fire District. The exception to this would be hydrants placed at the end of cul-de-sacs.

Public fire hydrant spacing and distribution shall be as follows:

- 300 feet maximum spacing in high density, commercial, or industrial zoning.
- 500 feet maximum spacing in low density residential areas
- A fire hydrant shall be located within the bulb of all cul-de-sacs
- Hydrants shall be spaced as described above on both sides of an arterial street. On streets that are separated from buildings by a 6' restrictive wall, hydrants shall be placed at all street intersections with a maximum spacing of 1000' on both sides of the street.

Hydrant locations on all new projects, both public and private, shall be approved by the Stanislaus County Consolidated Fire District.

5.503 Blow-offs and Temporary Connections

Blow-offs per Standard Plan 511 shall be located at the ends of all dead-end mains, or as otherwise required by the City Engineer.

The location and type of temporary connections to the public main shall be approved by the City Engineer, and be installed as per the appropriate Standard Detail. The meter/backflow assembly shall be located to provide optimal flow for main flushing and to minimize disruption of public traffic upon device removal. The meter/backflow assembly is not required on new systems with less than 150 feet of 6" or smaller pipe.

5.504 Water Sampling Stations

Sampling stations shall be installed in new developments at the discretion of the City Engineer, and shall be constructed as per Standard Detail 512.

5.505 Tracer Wire

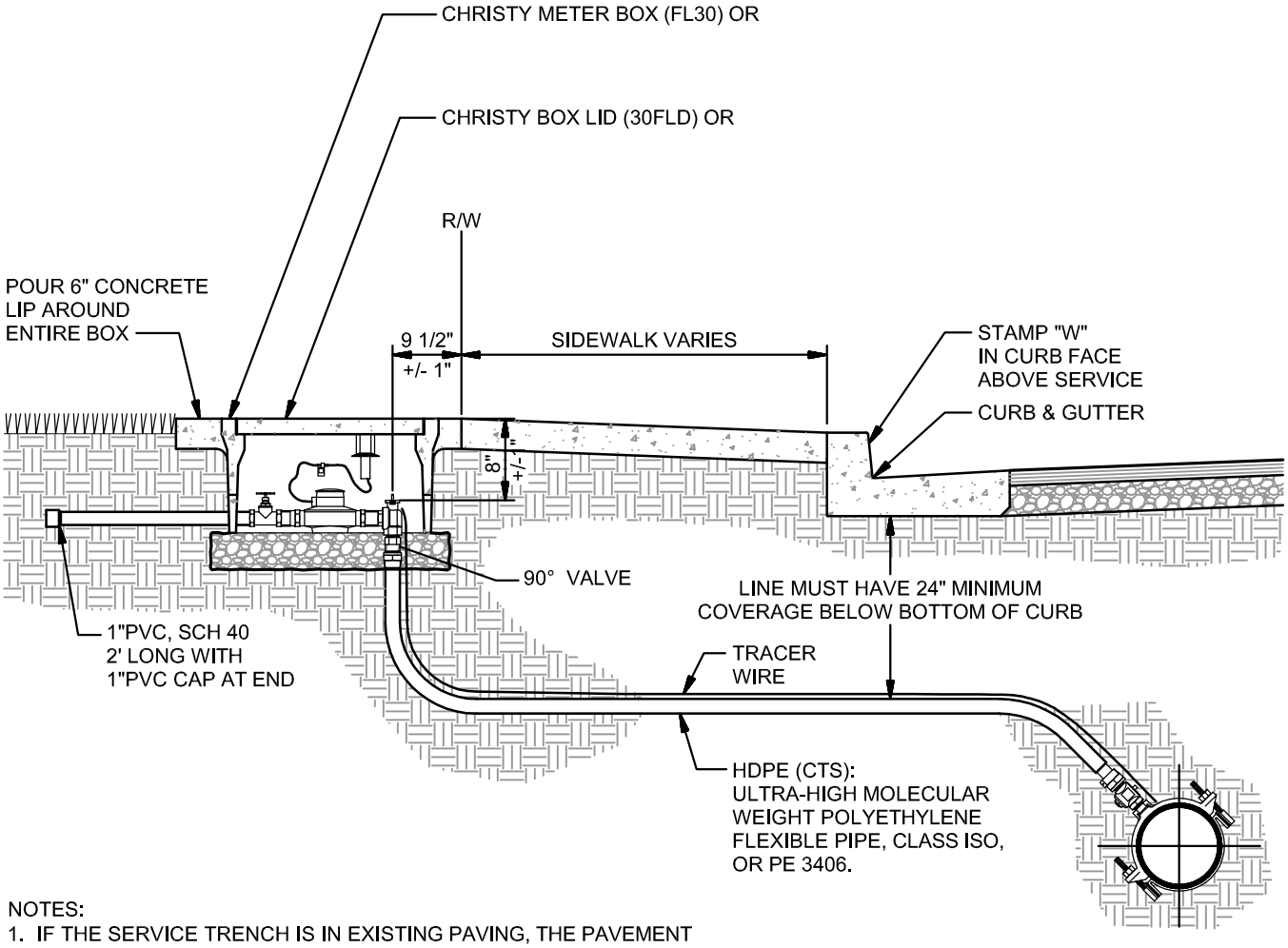
All non-conductive water mains shall be installed with tracer wire in accordance with the Standard Details. The locating wire is to be laid at the top of the pipe, and bare wire shall not touch valves or fittings.

City of Riverbank
STANDARD PLANS

WATER

TABLE OF CONTENTS

Drawing No.	Description
501	1” Water Service Residential
502	1” Water Service Residential (Detail)
503	1” Water Service Meter Box Location
504	1” Water and Fire Service Residential
505	2” Water Service
506	Water Service 4” and Larger
507	Fire Service Double Detector Check Valve
508	Fire Service Double Detector Check Valve with P.I.V. and F.D.C.
509	Fire Service Double Detector Check Valve with F.D.C.
510	Fire Hydrant Installation
511	Fire Hydrant Location
512	Reduced Pressure Principle Backflow Prevention Assembly 1” to 2 1/2” Size
513	Reduced Pressure Principle Backflow Prevention Assembly for 3” & Larger
514	Temporary Backflow Prevention Assembly for 3” & Larger
515	Water Valve Installation
516	Thrust Block Requirements
517	Water Main Lowering
518	Water Main Over Structure
519	Air and Vacuum / Air Release Valve
520	Water Blowoff
521	Water Sampling Station
522	Tee & Gate Valve Installation on Existing Main
523	Tapping Sleeve Installation
524	Tracer Wire Installation
525	Water Hydrostatic Pressure / Loss
526	Water Hydrostatic Pressure / Loss (Cont)
527	Water Main Separation Regulations
528	Excavation Requirements for Construction
529	4” Ductile Iron Multi-Service Manifold



REFER TO (STD 502)

NOTES:

1. IF THE SERVICE TRENCH IS IN EXISTING PAVING, THE PAVEMENT SHALL BE REPLACED AS PER SPECIFICATIONS FOR MAIN LINE TRENCH.
2. CONTRACTOR/OWNER SHALL BE RESPONSIBLE FOR DAMAGE TO THE CURB, GUTTER AND SIDEWALK, INCLUDING DRAINAGE FROM SETTING THE TRENCH, IF THEY ARE INSTALLED PRIOR TO TRENCHING.
3. CURB, GUTTER AND SIDEWALK TO BE INSTALLED AFTER WATER SERVICE INSTALLATION, UNLESS OTHERWISE NOTED.
4. SERVICE LINE SHALL BE A MINIMUM OF 24" BELOW BOTTOM OF CURB.
5. ALL FITTINGS TO BE BRASS.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

SIGNATURE

NEW 1" WATER SERVICE RESIDENTIAL

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	__-__-__	501
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 501.DWG		

VENDOR:

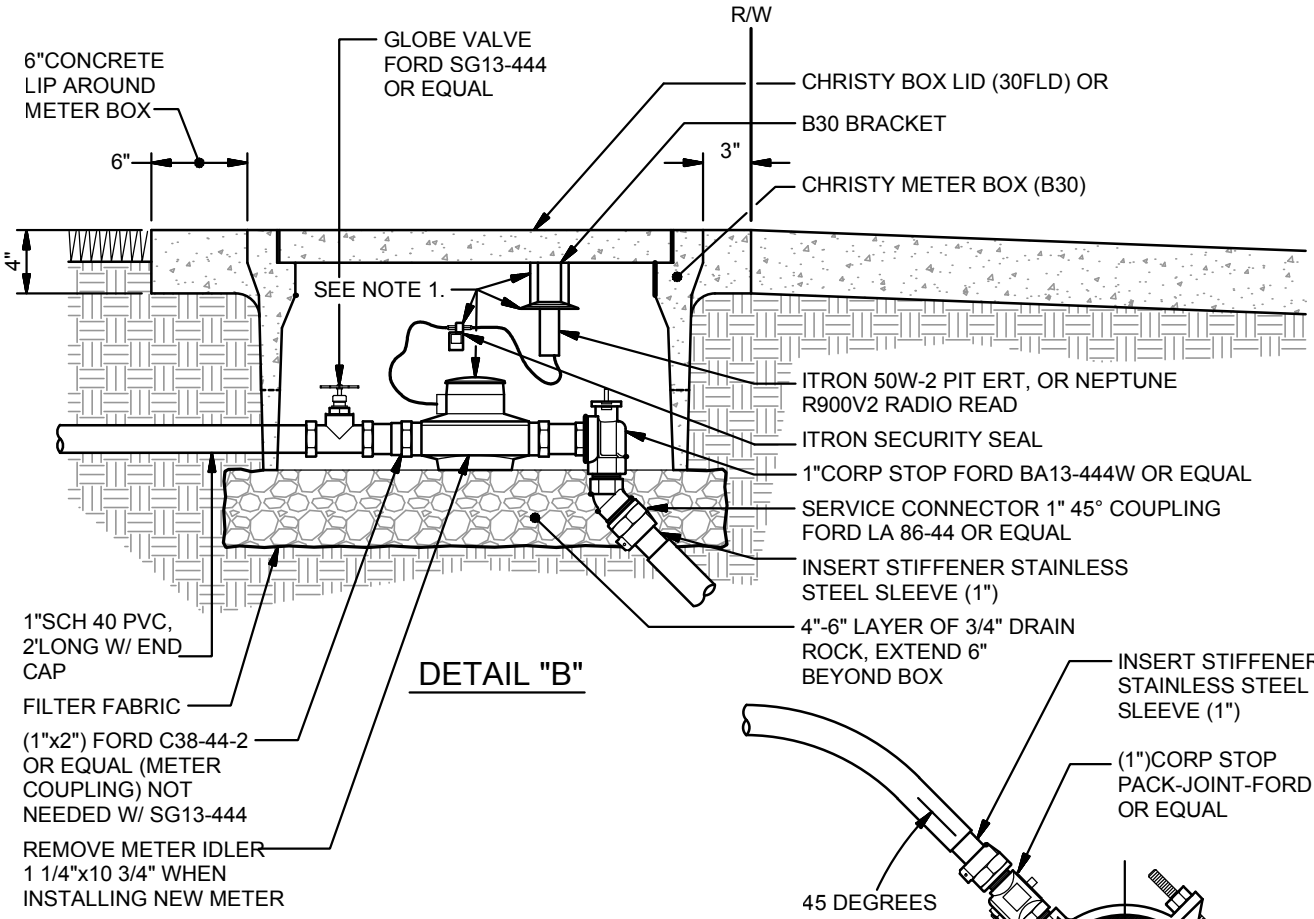
CONTACT THE WATER SUPERVISOR
FOR VENDOR INFORMATION:
CITY OF RIVERBANK
6707 THIRD ST (MAILING)
2901 HIGH ST
RIVERBANK, CA 95367
PHONE (209)869-7128

METER INFORMATION:

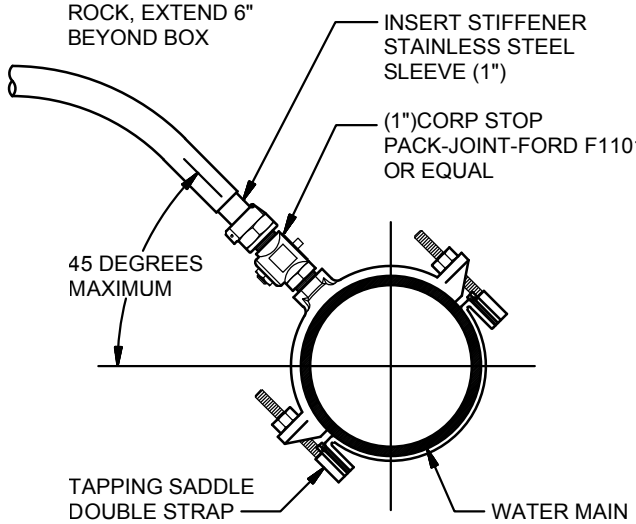
1"BADGER METER MODEL 70
ADE 67 DIAL CUBIC FEET OR
1" NEPTUNE T-10 PRO-READ/
6-WHEEL

NOTES:

1. CONTRACTOR/OWNER TO FURNISH AND INSTALL NEW 1" WATER METER, SENDING UNIT, BRACKET AND SECURITY SEAL PER METER INSTALLATION MANUALS. REFER TO ATTACHED DETAILS.
2. CITY TO INSPECT INSTALLATION OF METER AND SENDING UNIT, VERIFY METER NUMBER TO HOUSE ADDRESS PRIOR TO HOUSE OCCUPANCY.
3. CONTRACTOR TO TAKE SPECIAL CARE AS NOT TO CROSS THREAD BRASS FITTINGS ONTO PLASTIC METER. THIS WILL DAMAGE THE METER. PLEASE CONTACT THE PUBLIC WORKS DEPARTMENT AT (209)869-7128, IF YOU HAVE ANY INSTALLATION QUESTIONS.



DETAIL "B"



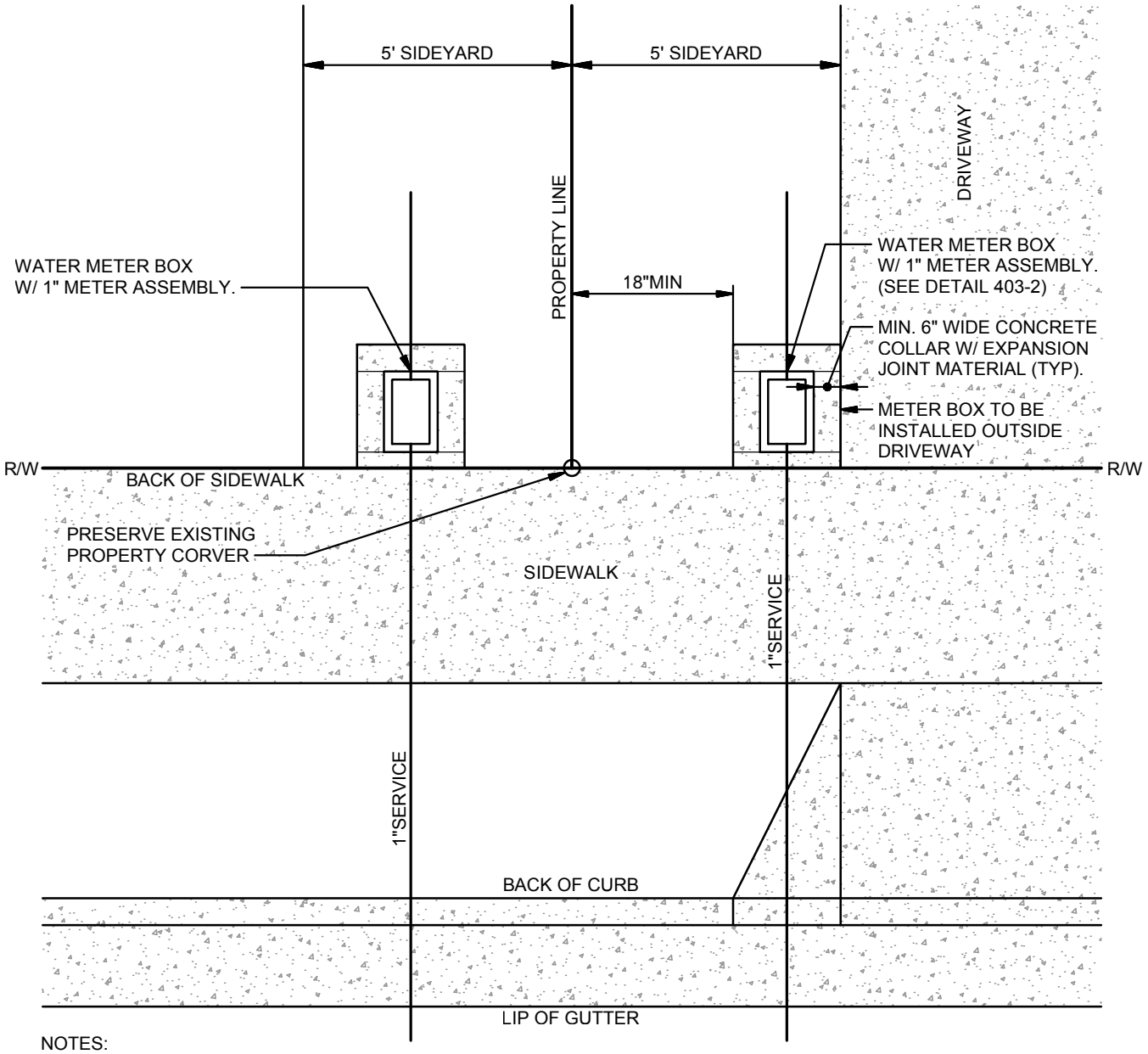
DETAIL "A"

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

NEW 1" WATER SERVICE RESIDENTIAL

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	09/02/14	NTS	___-___-___	502
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 502.DWG		



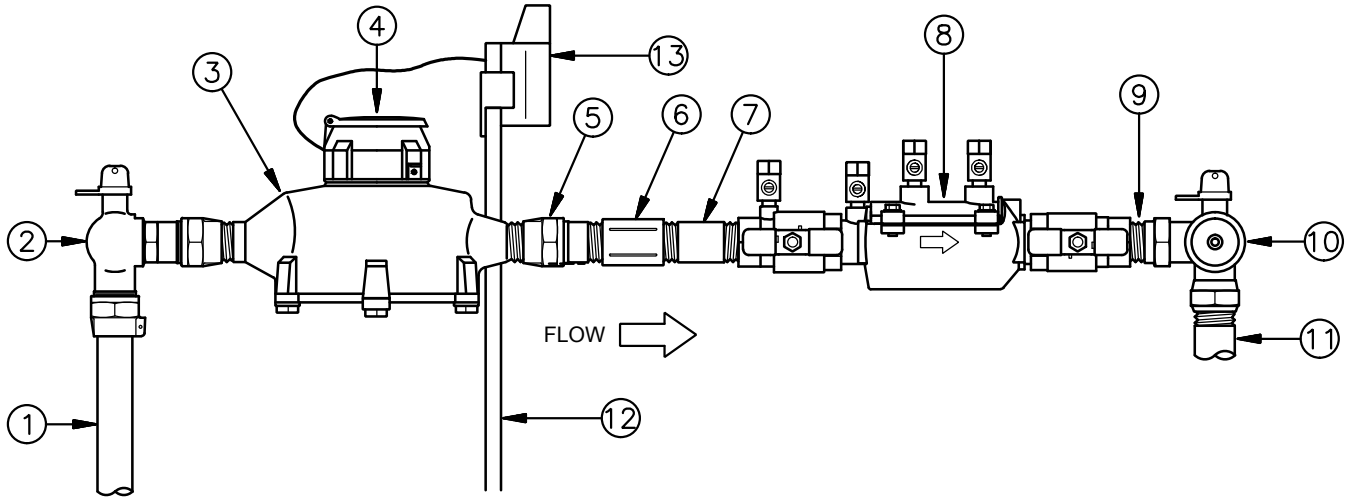
NOTES:

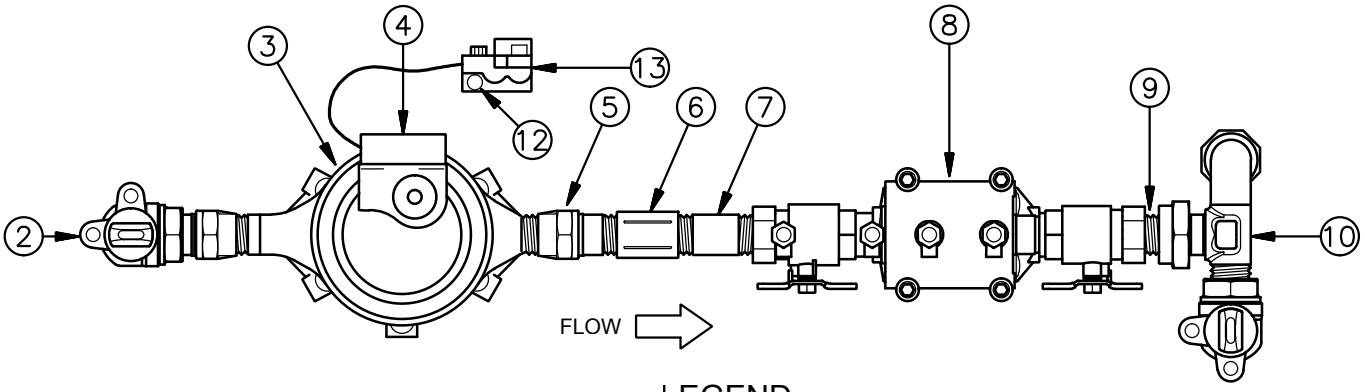
1. THE PREFERRED LOCATION FOR THE NEW RESIDENTIAL WATER SERVICE IS 18" TO 5 FEET OFF THE PROPERTY CORNER AND ON THE OPPOSITE SIDE OF THE LOT FROM JOINT TRENCH SERVICES (CABLE, GAS, ELECTRIC PHONE, AND SEWER). HOWEVER, THIS STANDARD LOCATION MAY BE SHIFTED FURTHER FROM THE PROPERTY LINE AS NECESSARY TO AVOID CONFLICTS WITH OTHER UTILITIES.

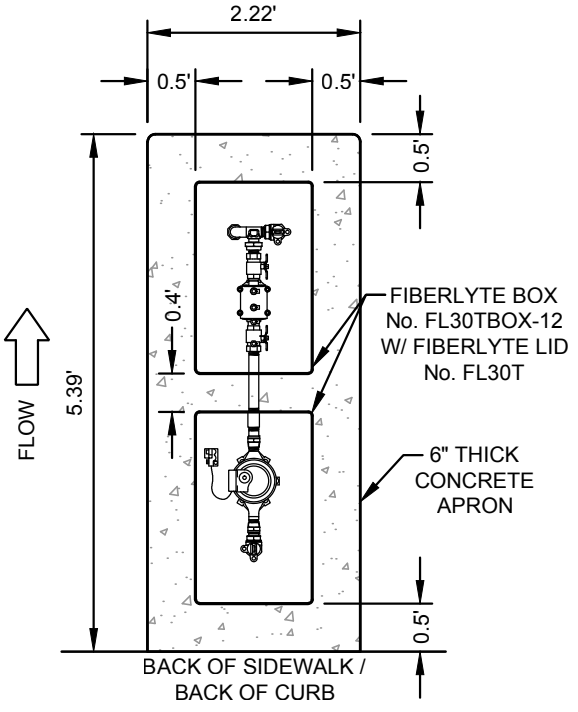
2. IN NO CASE SHALL A WATER SERVICE BOX BE LOCATED WITHIN DRIVEWAY, OR WITHIN OTHER AREAS OF ONSITE CONCRETE (i.e. SLABS, SIDEWALKS, DECORATIVE). EXCEPTIONS TO THIS RULE WILL BE GRANTED ONLY WHEN IT IS NOT PRACTICAL OR FEASIBLE TO KEEP THE SERVICE BOX OUT OF THE DRIVEWAY, AND SHALL REQUIRE SPECIFIC APPROVAL BY THE CITY ENGINEER. SERVICES WITHIN DRIVEWAYS, IF ALLOWED, WILL REQUIRE A TRAFFIC RATED BOX AND CAST IRON LID.

3. THE CONTRACTOR IS TO PRESERVE ALL PROPERTY CORNERS. DAMAGED OR REMOVED CORNERS WILL REQUIRE REPLACEMENT BY A LICENSED LAND SURVEYOR, AT THE CONTRACTOR'S EXPENSE.

CITY OF RIVERBANK DEPARTMENT OF PUBLIC WORKS			1" WATER SERVICE METER BOX LOCATION	
SIGNATURE				
DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 503
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 503.DWG		







LEGEND

1. 1" CTS(POLY PIPE) SUPPLY LINE FROM WATER MAIN.
2. FORD 1" ANGLE BALL VALVE - MODEL BA43-444W-NL.
3. BADGER METER - MODEL 55, 1" RECORDALL COLD WATER BRONZE DISC METER WITH BRASS BOTTOM.
4. BADGER METER - ADE 6-DAIL ENCODER REGISTER WITH ITRON IN-LINE CONNECTOR, CU FT.
5. FORD METER COUPLING - MODEL C38-44-2-NL.
6. 1" BRASS COUPLING
7. 1"SCH-80 PVC NIPPLE (ADJUST LENGTH TO SPAN SERVICE BETWEEN TWO FIBERLYTE BOXES)
8. WILKINS - DOUBLE CHECK VALVE ASSEMBLY - MODEL 950XLT2 OR 350XLT2.
9. 1" THREADED BRASS NIPPLE.
10. FORD ELL TEE FOR FIRESETTER,1"IN X 1"OUTLETS - MODEL LTBA 113-444W-AWT-NL, OR EQUIVALENT.
11. (2)1"SCH-40 SUPPLY LINES TO RESIDENCE - WATER SERVICE AND FIRE SERVICE, OR EQUIVALENT.
12. 18" FIBERGLASS MOUNTING ROD.
13. 100W ERT® COMMUNICATION MODULE, SHOULD BE MOUNTED ABOUT 2" BELOW FIBERLYTE, COMPOSITE OR PLASTIC (RADIO FRIENDLY) LID.

NOTE: WATER & FIRE SERVICE ASSEMBLY TO BE SET WITHIN TWO FIBERLYTE BOXES - No. FL30TBOX-12, WITH FIBERLYTE LIDS No. FL30T. BOXES TO BE INSTALLED IN LINE AND ALLOW ACCESS TO ALL VALVES. BLOCK BELOW BOX CUTOUTS WITH PRESSURE TREATED 2x'S.

CITY OF RIVERBANK

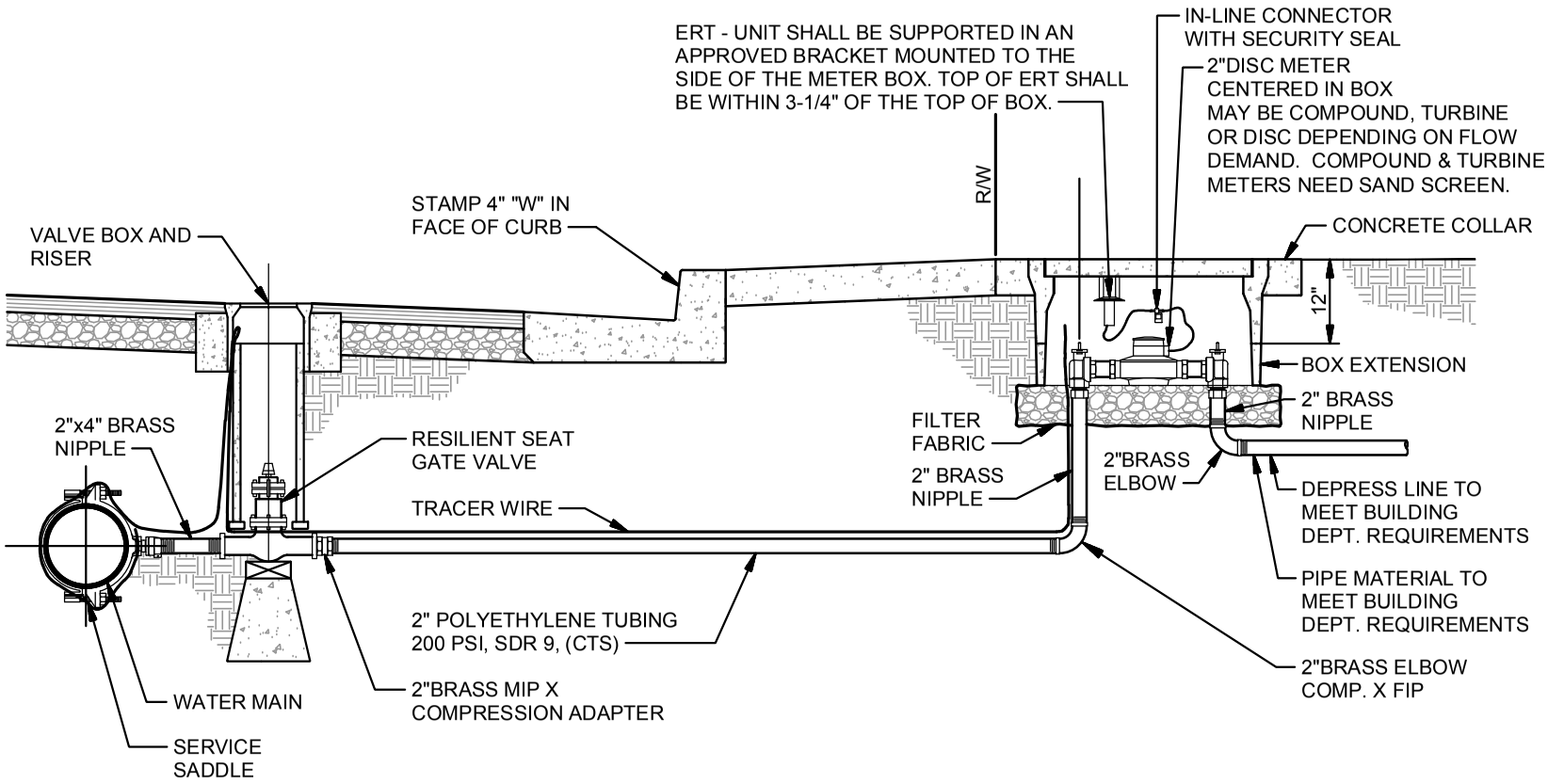
NEW 1" WATER & FIRE SERVICE - RESIDENTIAL

SIGNATURE

DRAWN BY:	DATE:	SCALE:		DRAWING NO.
GK	9/02/14	NTS		504
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 504.DWG	___-___-___	

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

2" WATER SERVICE



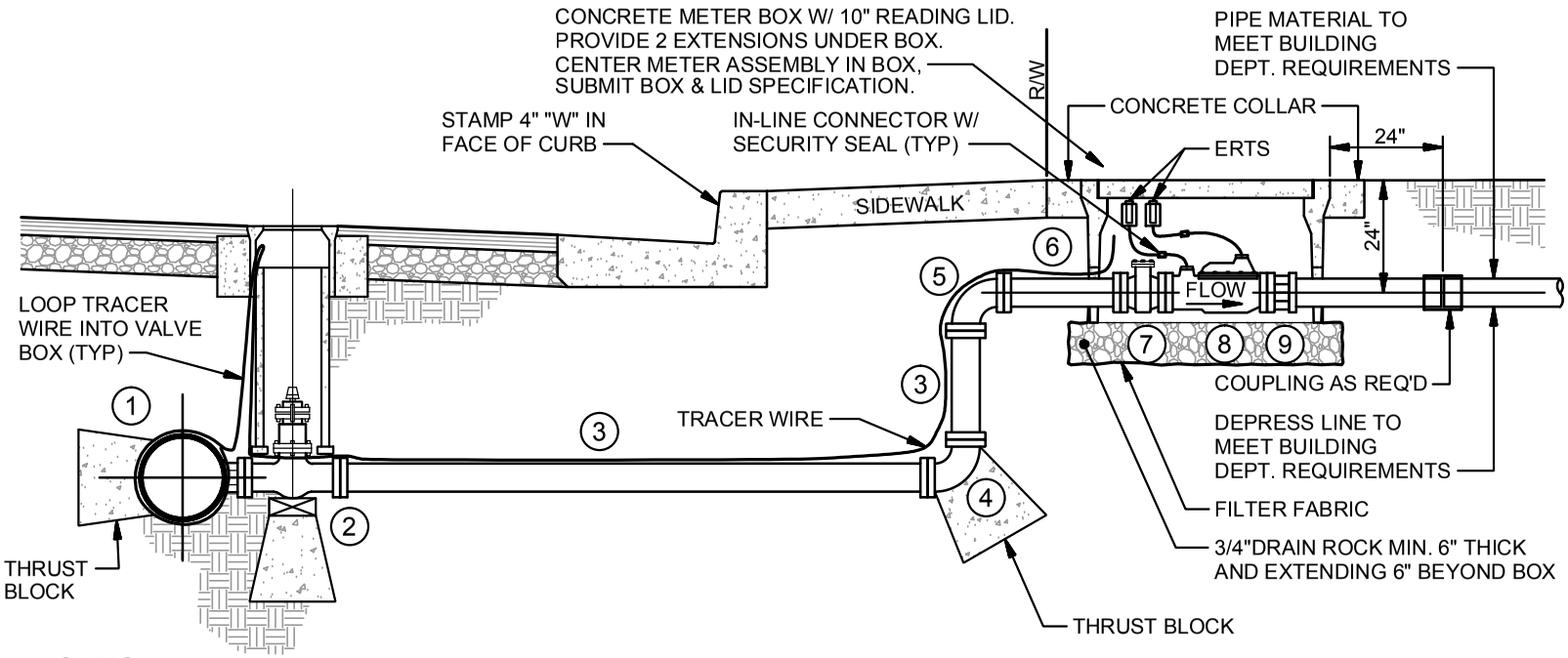
NOTES:

1. ALL COMPRESSION FITTINGS SHALL HAVE STAINLESS STEEL INSERTS.
2. METER SHALL BE FURNISHED AND SET BY CONTRACTOR. PROVIDE ERT AND TRANSMITTING REGISTER WITH 5' LEAD.
3. SERVICE LATERAL AND BUILDING SUPPLY LINE SHALL BE INSTALLED UNDER BOX.
4. EXTEND BUILDING SERVICE LINE TO A MINIMUM OF EITHER 12" BEYOND BACK OF METER BOX OR 12" BEYOND BACK OF SIDEWALK AND CAP.
5. REFER TO CITY WATER STANDARDS FOR CONSTRUCTION STANDARDS, SPECIFICATIONS AND ENGINEERS LIST OF APPROVED MATERIALS.
6. NO FENCING SHALL BE INSTALLED BETWEEN STREET AND METER BOX.
7. DISTANCE BETWEEN BOX ENDS AND ANGLE BALL METER VALVES TO BE EQUAL.
8. CONNECT SERVICE TRACER WIRE TO THE TRACER WIRE ON THE MAIN. IN ABSENCE OF MAIN TRACER WIRE, WRAP SERVICE TRACER WIRE AROUND THE MAIN. RUN CONTINUOUS FROM MAIN TO METER BOX WITH LOOPS INTO EACH VALVE BOX.

DRAWN BY: GK
DATE: 9/02/14
SCALE: NTS
DRAWING NAME: 505.DWG
REVISIONS: NONE
SECTION: WATER
SIGNATURE
ADOPTED BY THE CITY COUNCIL: __ - __ - __
DRAWING NO. 505

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

WATER SERVICE
4" AND LARGER



NOTES:

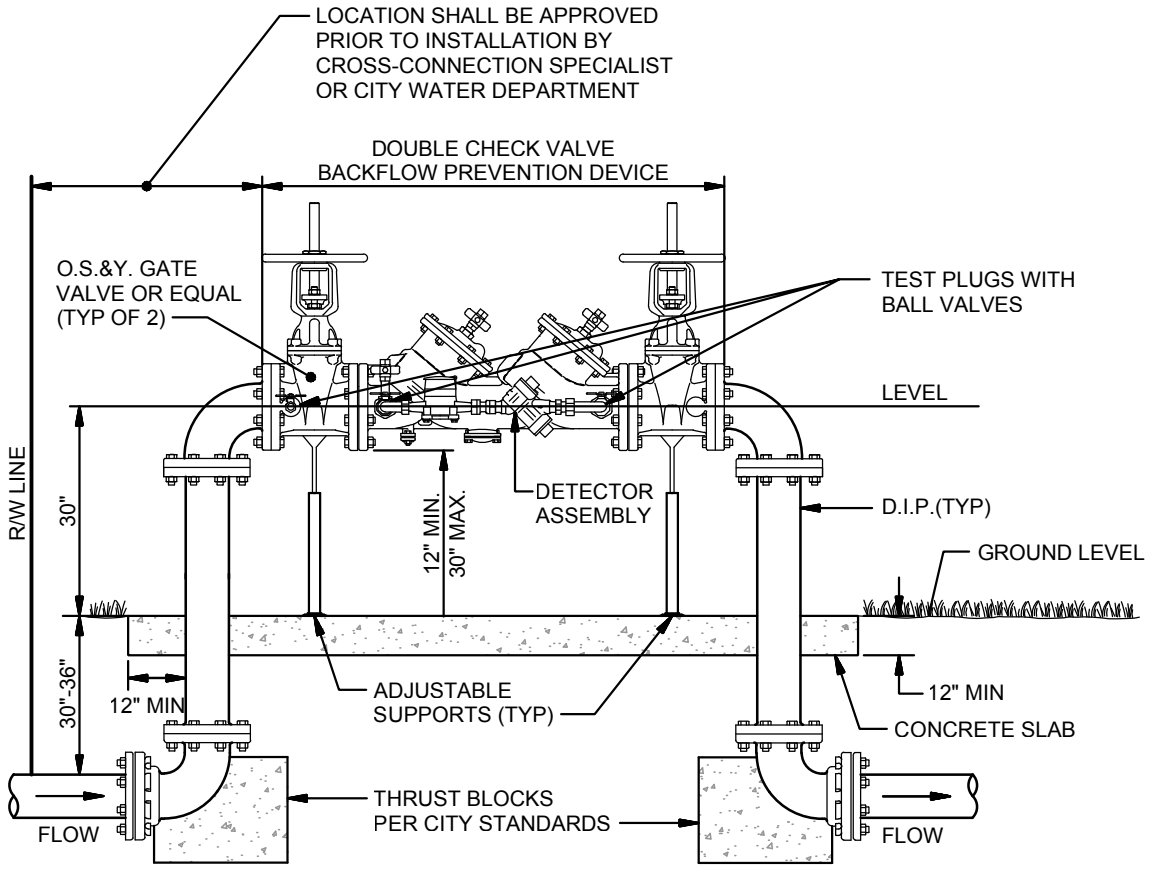
1. SET METER BOX FLUSH WITH FINISHED SURFACE.
2. METER ASSEMBLY SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR. PROVIDE ERTS AND TRANSMITTING REGISTERS WITH 5 FT. LEADS.
3. REFER TO CITY STANDARD 515FOR GATE VALVE INSTALLATION DETAILS. VALVES MAY BE INSTALLED IN SIDEWALK WHERE SPACE LIMITATIONS EXIST.
4. REFER TO CITY WATER STANDARDS FOR CONSTRUCTION STANDARDS, SPECIFICATIONS AND ENGINEER'S LIST OF APPROVED MATERIALS.
5. PIPE OPENINGS IN METER BOX SHALL BE CUT - DO NOT USE HAMMER. PRIOR TO BACKFILLING, PIPE OPENINGS AND BOX JOINTS SHALL BE GROUTED.
6. CONNECT SERVICE TRACER WIRE TO THE TRACER WIRE ON THE MAIN. IN ABSENCE OF MAIN TRACER WIRE, WRAP SERVICE TRACER WIRE AROUND THE MAIN. RUN CONTINUOUS FROM MAIN TO METER BOX WITH LOOPS INTO EACH VALVE BOX.
7. ERTS TO BE MOUNTED IN APPROVED BRACKET ATTACHED TO BOX WITH STAINLESS STEEL ANCHORS. THE TOP OF ERTS SHALL BE NO MORE THAN 3-1/4" BELOW TOP OF BOX.
8. NO FENCING SHALL BE INSTALLED BETWEEN STREET AND METER BOX.

NO	ITEM DESCRIPTION
①	TEE OR TAPPING TEE WITH FLANGED OUTLET
②	GATE VALVE, FLG X MJ
③	DIP, PVC (LENGTH AS REQUIRED, INTERMEDIATE JOINTS RESTRAINED)
④	90° ELL, MJ W/ MEGA-LUG RETAINER GLANDS
⑤	90° ELL, MJ W/ MEGA-LUG RETAINER GLAND X FLG
⑥	DIP SPOOL, FLG (24" MIN. LENGTH)
⑦	PLATE STRAINER
⑧	COMPOUND METER W/ 2 TRANSMITTING REGISTERS AND 2 ERTS
⑨	FLANGED COUPLER ADAPTER

DRAWN BY: GK
DATE: 9/02/14
SCALE: NTS
DRAWING NAME: 506.DWG
REVISIONS: NONE
SECTION: WATER
SIGNATURE

ADOPTED BY THE CITY COUNCIL:
___ - ___ - ___

DRAWING NO.
506

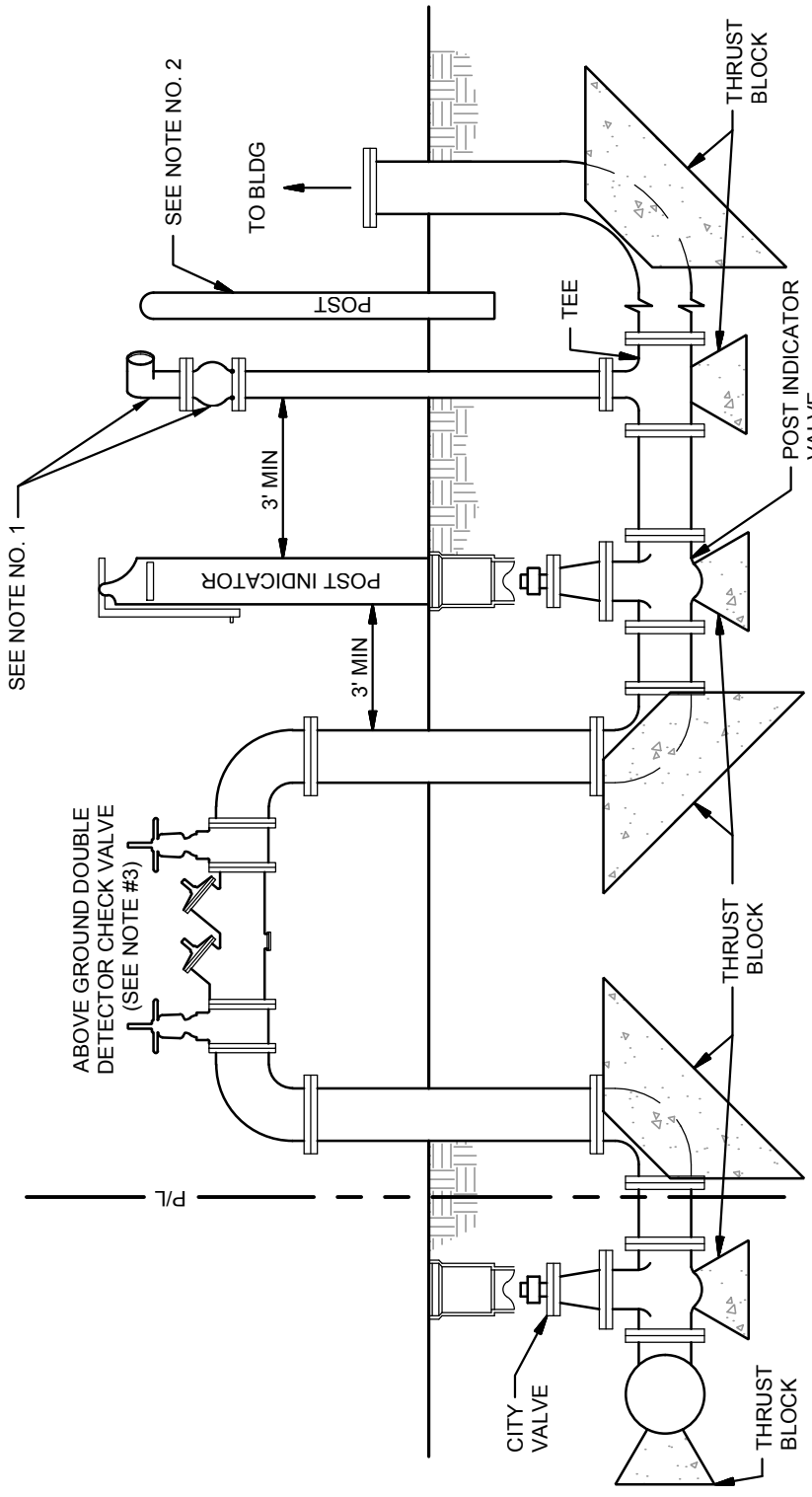


FIRE SERVICE-DOUBLE CHECK DETECTOR ASSEMBLY

NOTES:
1. REQUIRED BY TITLE 17 OF THE CALIF. DEPT OF HEALTH SERVICES, MODEL OF BACKFLOW DEVICE TO BE DETERMINED FOR EACH INSTALLATION DEPENDING ON THE TYPE OF HAZARD AND UPON ALLOWABLE HEAD LOSS.
2. BARRIER POST SHALL BE LOCATED TO PROTECT PIPING AND VALVES. CURB AND PARKING BARRIERS CAN BE CONSIDERED PROTECTION IF EFFECTIVELY LOCATED.
3. DEVICE SHALL BE ACCESSIBLE FOR TESTING AND MAINTENANCE.
4. CERTIFICATION REQUIRED PRIOR TO ACCEPTANCE.
5. ALL DESIGN PLANS ARE TO BE SUBMITTED TO THE CROSS-CONNECTION SPECIALIST FOR APPROVAL AND A CROSS CONNECTION SURVEY IS TO COMPLETED TO EVALUATE HAZARDS THAT POSSIBLY EXIST.
6. ELECTRONICALLY MONITORED TAMPER SWITCHES ARE BE REQUIRED IN ACCORDANCE WITH NFPA72.

MATERIALS:
1. ALL STEEL PIPE SHALL BE AS PER AWWA C-200 WITH 1/4" WALL COATED AND LINED BY FUSION BONDED EPOXY AS PER AWWA C-213, 20 MILS MINIMUM
2. ALL STEEL FLANGES SHALL BE CLASS D AS PER AWWA C-207
3. ALL DUCTILE IRON FITTINGS SHALL MEET AWWA C-153 CLASS 150. THE INTERIOR SHALL BE MORTAR LINED AS PER AWWA C-104 AND BELOW GROUND EXTERIOR SHALL HAVE A COAL TAR COATING AS PER AWWA C-203.
4. ALL NUTS AND BOLTS BELOW GROUND SHALL BE POLYETHYLENE ENCASED AS PER AWWA C-105 AT TAPE WRAPPED AS PER AWWA C-209. 20 MILS MINIMUM IN BOTH CASES.
5. STEEL CAGE & BLANKET REQUIRED.

CITY OF RIVERBANK DEPARTMENT OF PUBLIC WORKS			FIRE SERVICE DOUBLE DETECTOR CHECK VALVE	
SIGNATURE				
DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 507
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 507.DWG		



NOTES:

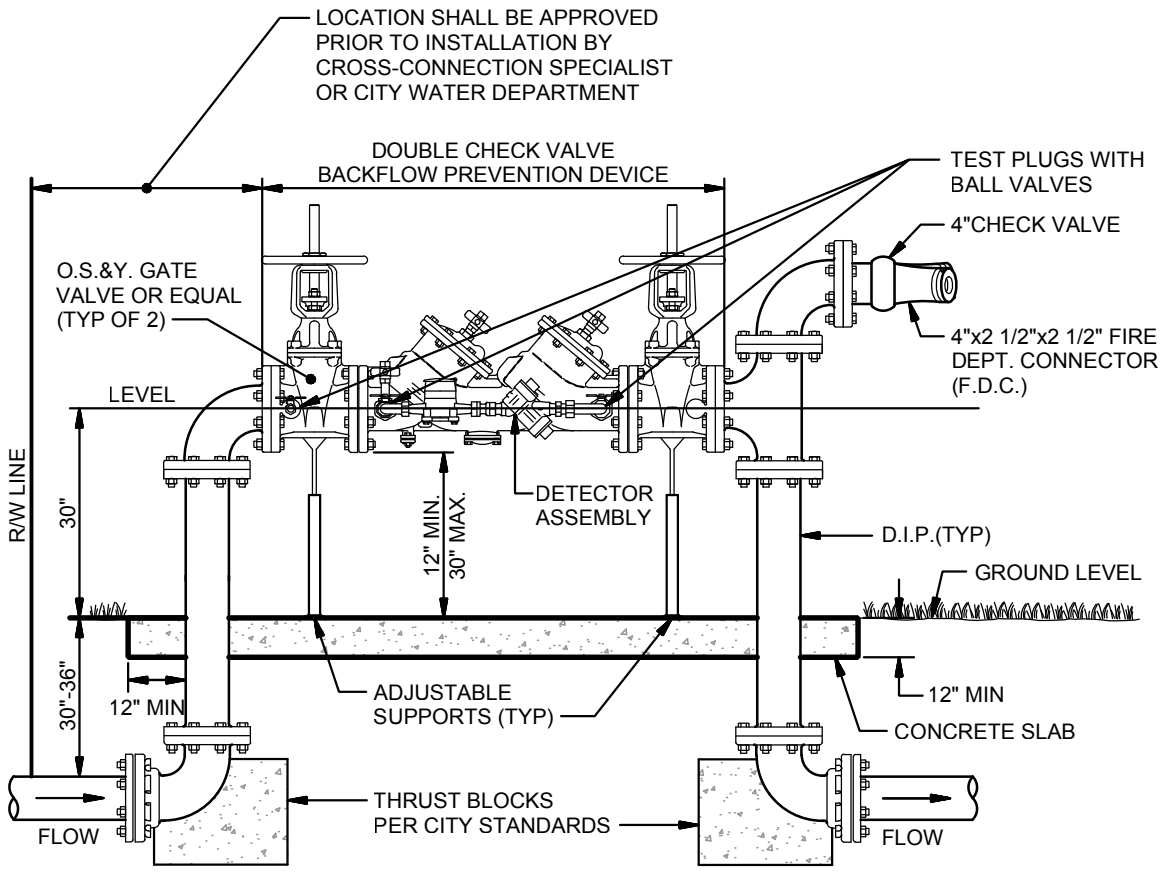
1. LISTED AND APPROVED FIRE DEPT. CONNECTION WITH CHECK VALVE PER CITY OF MODESTO FIRE DEPT. REQUIREMENTS.
2. GUARD POSTS AS REQUIRED.
3. DOUBLE CHECK VALVE WITH VALVES DETERMINED BY FIRE SPRINKLER DESIGNER WITH APPROVAL BY THE CITY CROSS CONNECTION SPECIALIST. ALSO REQUIRED FOR FIRE HYDRANTS ON PRIVATE PROPERTY.
4. CLASS 3-6 FIRE SPRINKLER SYSTEMS SHALL REQUIRE A REDUCED PRESSURE DEVICE. PLANS SHALL BE APPROVED BY THE CROSS CONNECTION SPECIALIST.
5. CLASS 200, C-900 PIPE.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

FIRE SERVICE DOUBLE DETECTOR CHECK VALVE WITH P.I.V. AND F.D.C.

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	508
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 508.DWG		

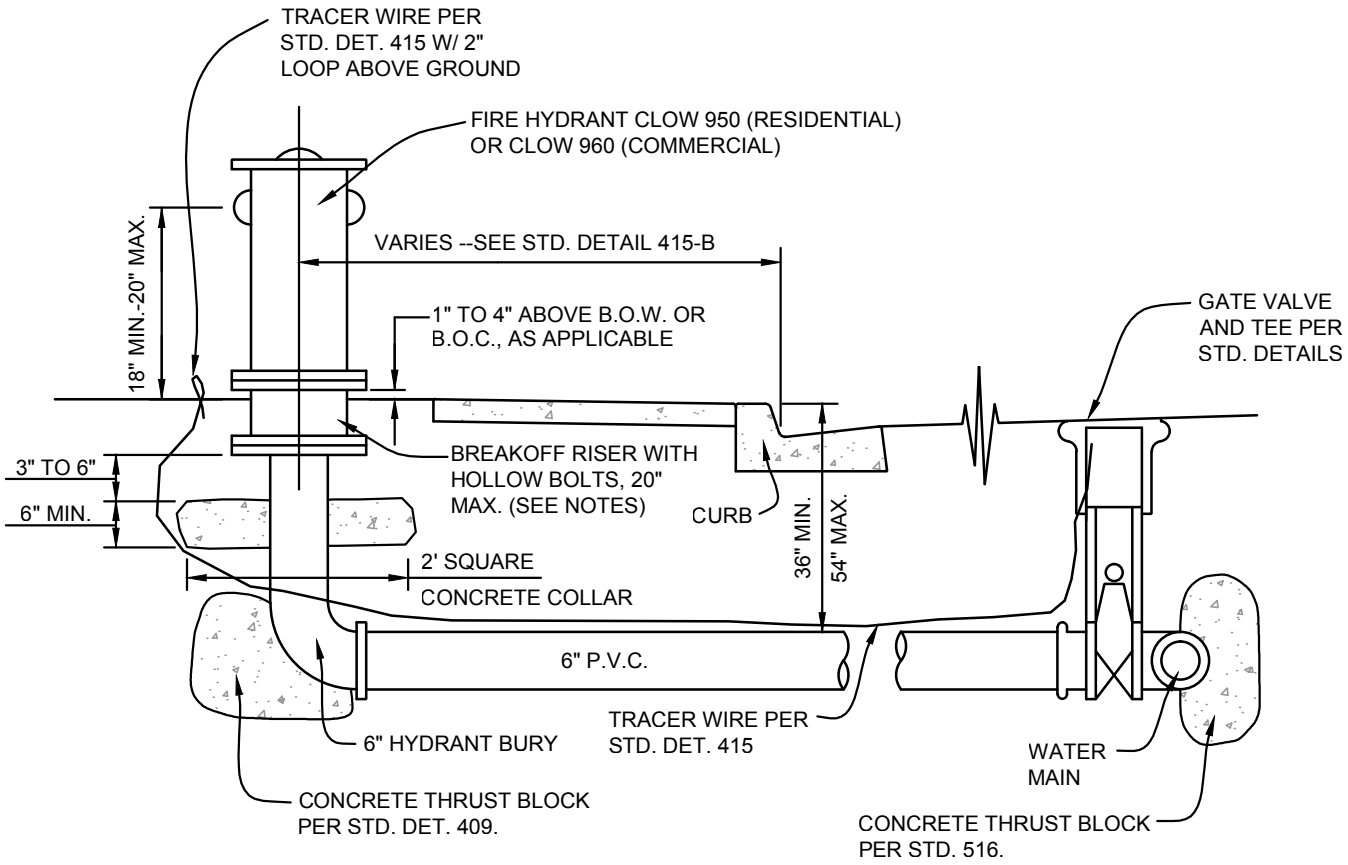


FIRE SERVICE-DOUBLE DETECTOR CHECK VALVE WITH FIRE DEPARTMENT CONNECTION

NOTES:
1. REQUIRED BY TITLE 17 OF THE CALIF. DEPT OF HEALTH SERVICES, MODEL OF BACKFLOW DEVICE TO BE DETERMINED FOR EACH INSTALLATION DEPENDING ON THE TYPE OF HAZARD AND UPON ALLOWABLE HEAD LOSS.
2. BARRIER POST SHALL BE LOCATED TO PROTECT PIPING AND VALVES. CURB AND PARKING BARRIERS CAN BE CONSIDERED PROTECTION IF EFFECTIVELY LOCATED.
3. DEVICE SHALL BE ACCESSIBLE FOR TESTING AND MAINTENANCE.
4. CERTIFICATION REQUIRED PRIOR TO ACCEPTANCE.
5. ALL DESIGN PLANS ARE TO BE SUBMITTED TO THE CROSS-CONNECTION SPECIALIST FOR APPROVAL AND A CROSS CONNECTION SURVEY IS TO COMPLETED TO EVALUATE HAZARDS THAT POSSIBLY EXIST.
6. ELECTRONICALLY MONITORED TAMPER SWITCHES ARE REQUIRED IN ACCORDANCE WITH NFPA72.

MATERIALS:
1. ALL STEEL PIPE SHALL BE AS PER AWWA C-200 WITH 1/4" WALL COATED AND LINED BY FUSION BONDED EPOXY AS PER AWWA C-213, 20 MILS MINIMUM
2. ALL STEEL FLANGES SHALL BE CLASS D AS PER AWWA C-207
3. ALL DUCTILE IRON FITTINGS SHALL MEET AWWA C-153 CLASS 200. THE INTERIOR SHALL BE MORTAR LINED AS PER AWWA C-104 AND BELOW GROUND EXTERIOR SHALL HAVE A COAL TAR COATING AS PER AWWA C-203.
4. ALL NUTS AND BOLTS BELOW GROUND SHALL BE POLYETHYLENE ENCASED AS PER AWWA C-105 AT TAPE WRAPPED AS PER AWWA C-209. 20 MILS MINIMUM IN BOTH CASES.
5. STEEL CAGE AND BLANKET REQUIRED.

CITY OF RIVERBANK DEPARTMENT OF PUBLIC WORKS			FIRE SERVICE DOUBLE DETECTOR CHECK VALVE WITH F.D.C.	
SIGNATURE				
DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 509
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 509.DWG		



NOTES:

1. ALL FIRE HYDRANTS ARE TO HAVE HOLLOW BOLTS LOCATED THROUGH THE FIRE HYDRANT FLANGE WITH THEM POINTING DOWN.

2. ALL FIRE HYDRANTS WILL BE INSTALLED SO THAT THE DISTANCE BETWEEN THE CENTER OF THE 4 1/2" OUTLET AND THE TOP OF SIDEWALK OR CURB IN ALL ZONES WILL BE NO LESS THAN 18" AND NO GREATER THAN 20".

3. ALL HYDRANTS SHALL BE PAINTED SAFETY YELLOW AT THE FACTORY AND FURNISHED WITH NATIONAL STANDARD HOSE THREAD OUTLETS AND CAST IRON CAPS.

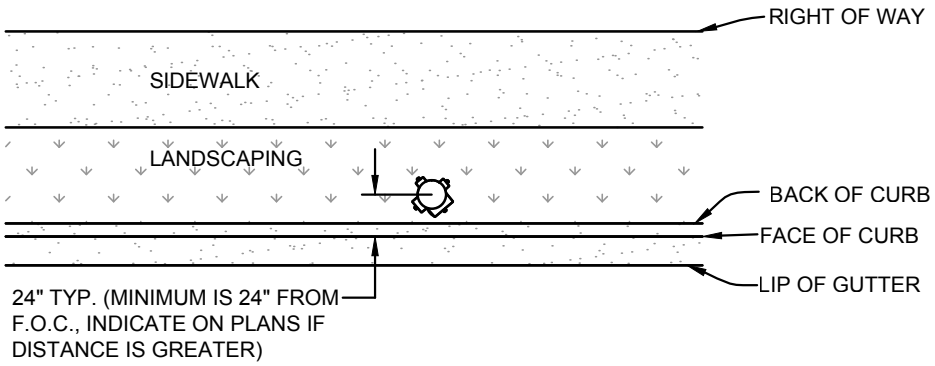
4. INSTALL GUARD POSTS WHERE HYDRANTS ARE INSTALLED IN PAVED AREAS ACCESSIBLE TO TRAFFIC, OR AS OTHERWISE DIRECTED BY THE CITY ENGINEER.

5. ALL FIRE HYDRANTS WHEN INSTALLED, POSITIONED OR REPOSITIONED SUCH THAT THE 4 1/2" DISCHARGE IS 45 DEGREES FROM THE RUN OF THE STREET. IF LOCATED ON A CORNER, 4 1/2" DISCHARGE SHALL BE 45 DEGREES FROM RUN OF NEAREST STREET.

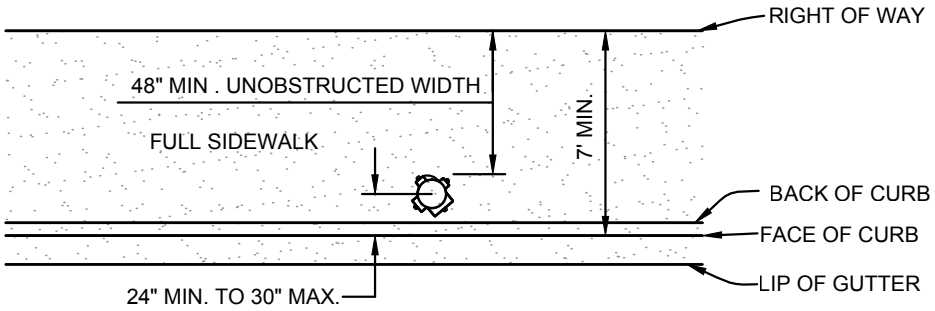
6. HYDRANTS SHALL HAVE ONE 4-1/2" OUTLET, AND TWO 2-1/2" OUTLETS MINIMUM, AND SHALL BE OF A TYPE APPROVED BY THE STANISLAUS CONSOLIDATED FIRE DISTRICT.

7. EACH HYDRANT SHALL BE INSTALLED WITH A BLUE RETROREFLECTIVE PAVEMENT MARKER, INSTALLED 6" FROM THE ADJACENT CENTERLINE OF THE ROADWAY. IF ON A CORNER, MARKERS WILL BE PLACED ON BOTH ADJACENT STREETS.

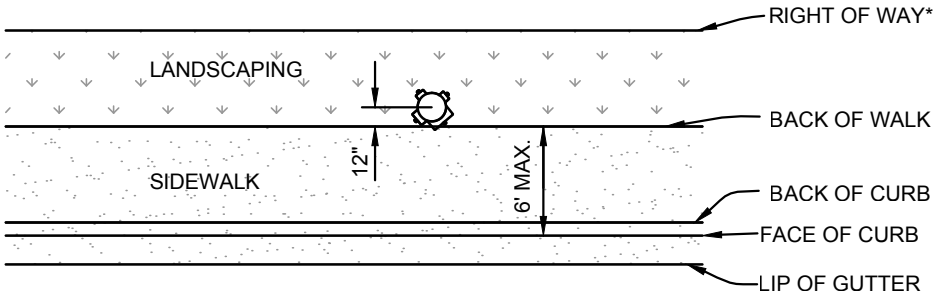
CITY OF RIVERBANK DEPARTMENT OF PUBLIC WORKS			FIRE HYDRANT INSTALLATION	
SIGNATURE				
DRAWN BY: GK	DATE: 09/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 510
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 502.DWG		



SPLIT LANDSCAPE / SIDEWALK



FULL SIDEWALK



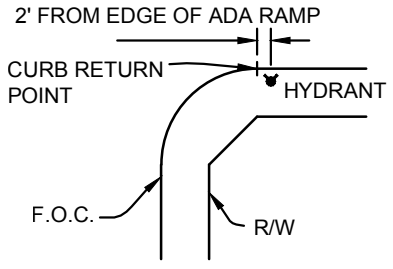
SIDEWALK ADJACENT TO CURB

* NOTE: EASEMENT OR ADDITIONAL R/W DEDICATION WILL BE REQUIRED IF SUFFICIENT LANDSCAPE AREA IS NOT AVAILABE WITHIN R/W FOR INSTALLATION OF HYDRANT.

NOTES:
1. MAINTAIN 48" MIN. CLEAR UNOBSTRUCTED TRAVEL WAY ON SIDEWALKS AND 24" MIN. CLEARANCE FROM F.O.C. IN LOCATIONS WITH DIFFERENT WIDTHS THAN SHOWN ABOVE.

2. HYDRANTS SHALL BE INSTALLED A MIN. OF 5' FROM THE EDGE OF RESIDENTIAL DRIVEWAYS, AND 10' FROM COMMERCIAL DRIVEWAYS. (DISTANCE TAKEN FROM DRIVEWAY THROAT)

3. THE PREFERRED LOCATION FOR HYDRANTS ARE ON CURB RETURNS. HYDRANTS ON STRAIGHT RUNS SHALL BE LOCATED ON PROPERTY LINES WHENEVER POSSIBLE.



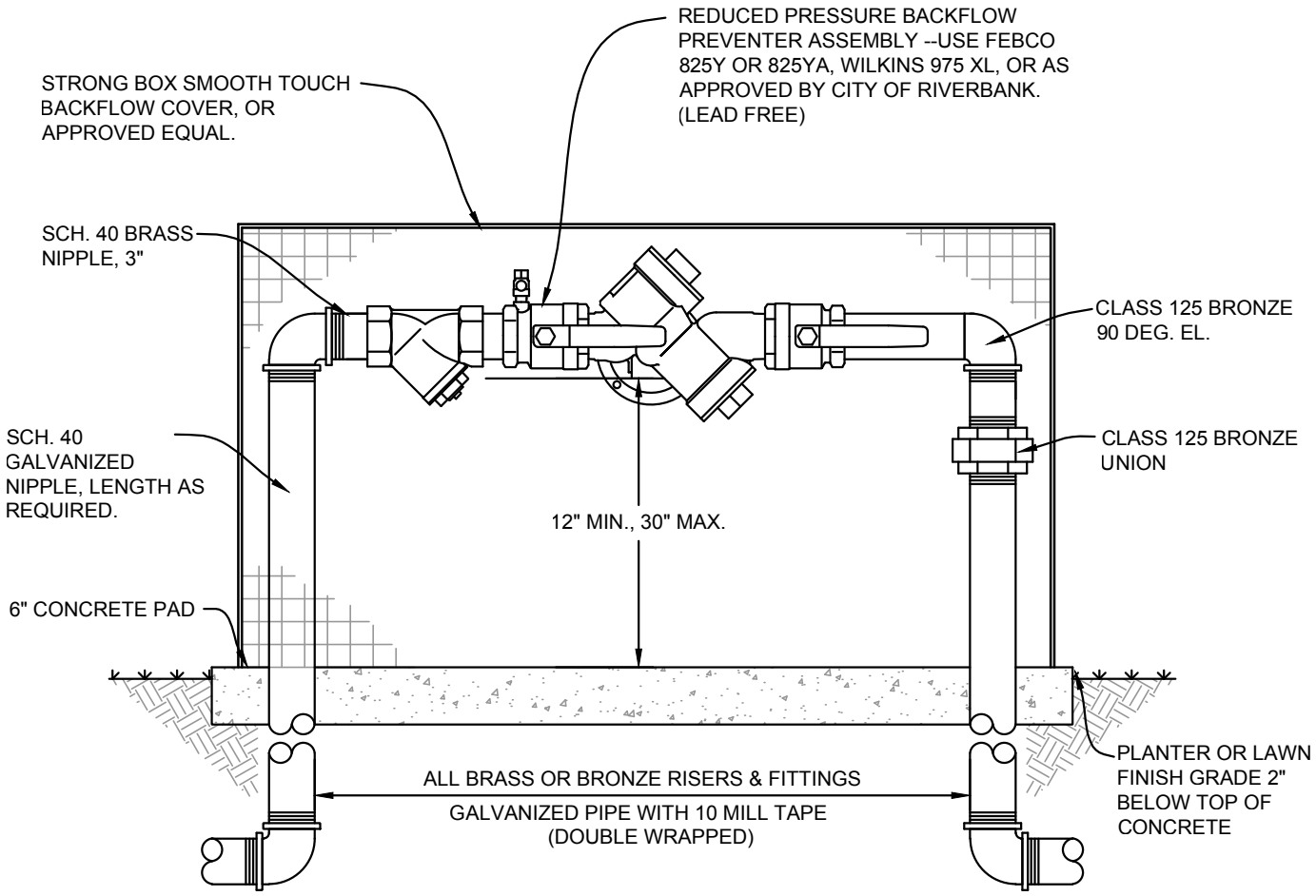
CURB RETURN LOCATION

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

SIGNATURE

FIRE HYDRANT LOCATION

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	511
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 511.DWG		



NOTES:

1. INSTALL APPROPRIATELY SIZED WEATHER BLANKET AND CAGE TO ALL BACKFLOW PREVENTION DEVICES.

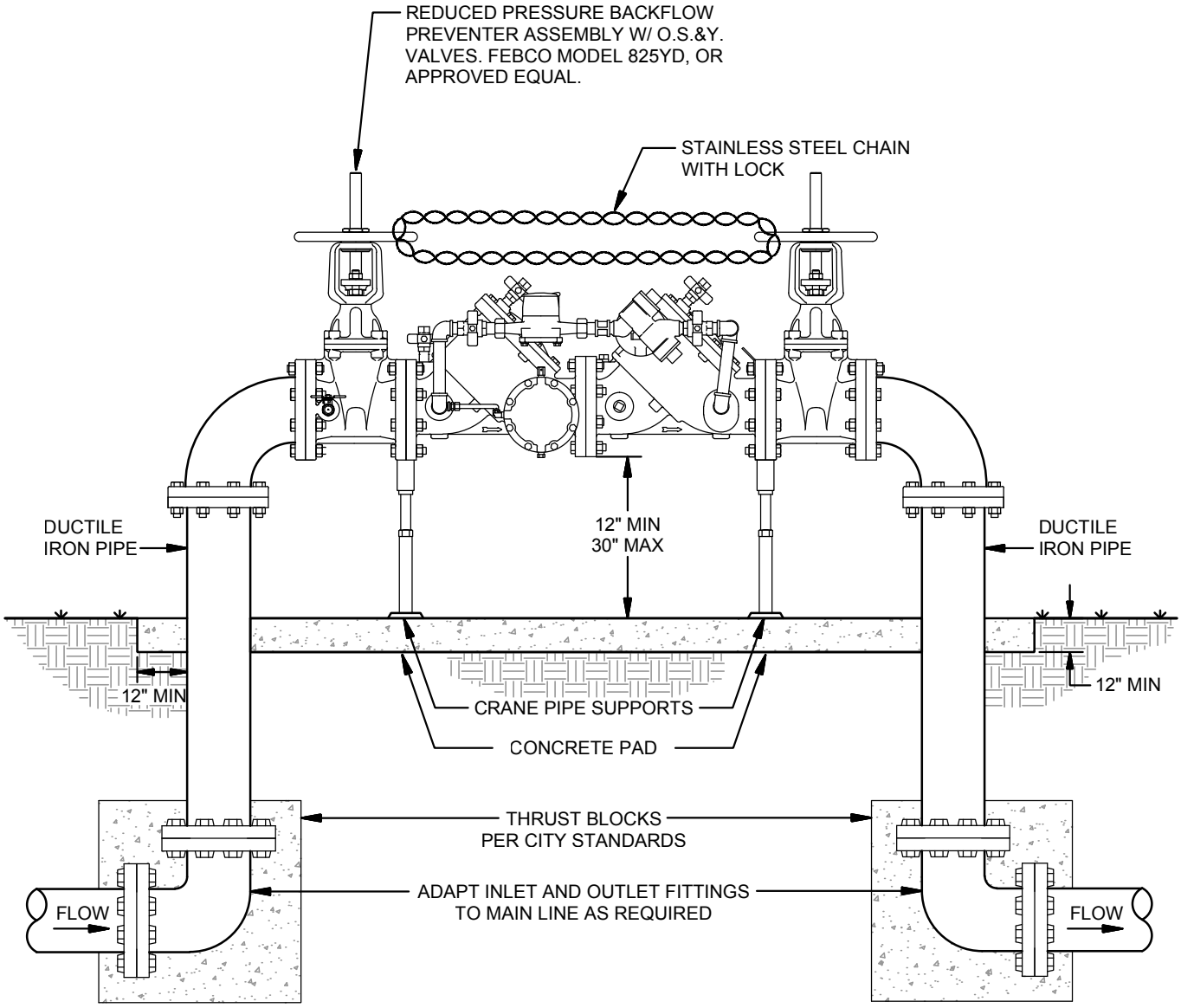
2. BACKFLOW PREVENTERS SHALL BE PLACED IN LANDSCAPE AREAS, A MIN. OF 24" CLEAR FROM ADJACENT CURBS. BACKFLOW PREVENTERS NOT PLACED IN CURBS SHALL REQUIRE GUARD POSTS TO THE SATISFACTION OF THE CITY ENGINEER.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

SIGNATURE

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY 1" TO 2 1/2" SIZE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS		
REVISIONS:	SECTION:	DRAWING NAME:	___-___-___	512
NONE	WATER	512.DWG		



NOTES:

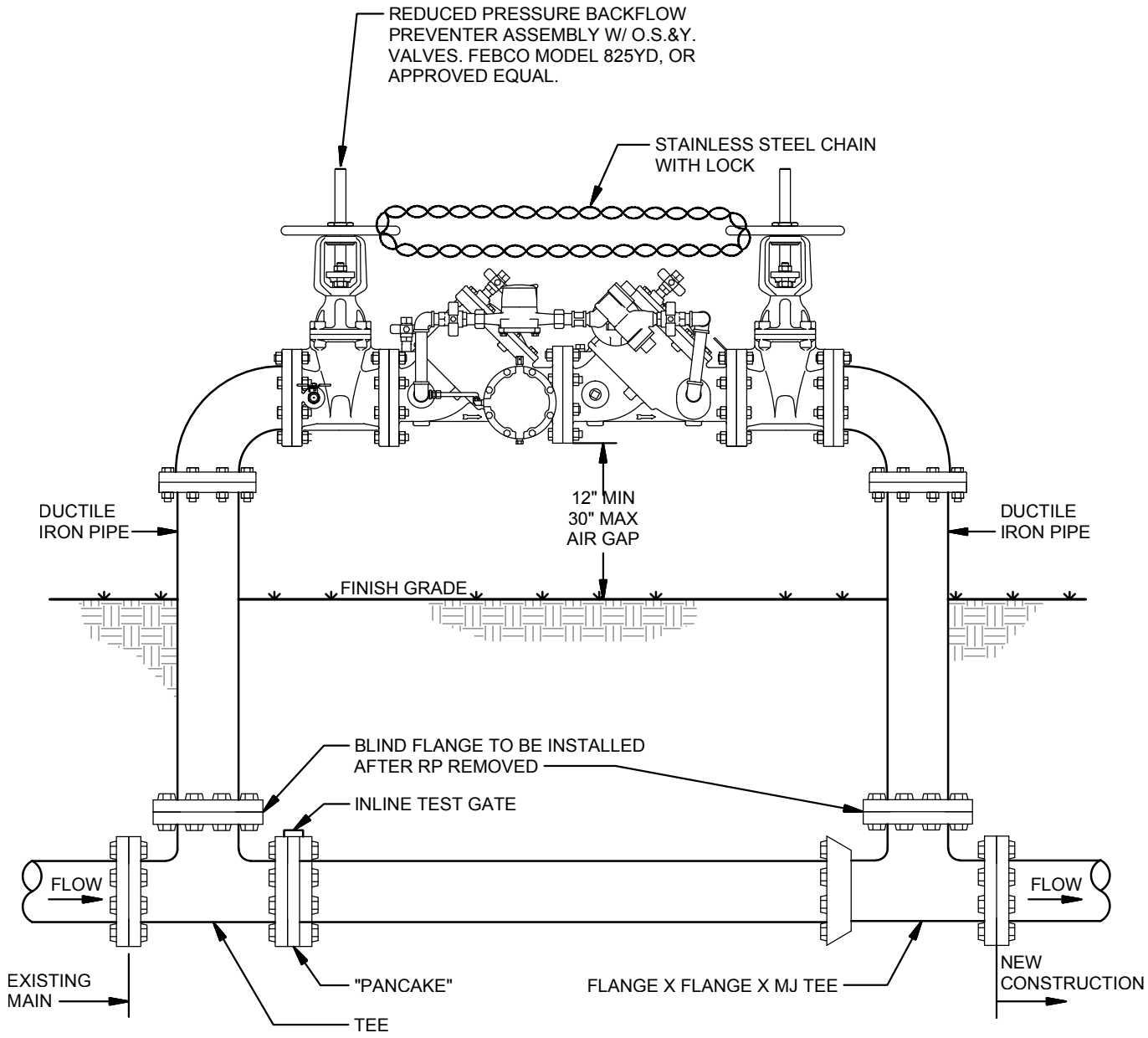
1. INSTALL 12" AIR GAP MINIMUM (CONSULT LOCAL CODE)
2. ALL CONNECTIONS ON ASSEMBLY TO BE FLANGED.
3. BACKFLOW ASSEMBLY SHOULD BE PLACED IN A PLANTER SO THAT PLAN MATERIAL WILL SCREEN VIEW OF THE ASSEMBLY FROM THE STREET.
4. INSTALL APPROPRIATELY SIZED WEATHER BLANKET AND CAGE.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY FOR 3" & LARGER

SIGNATURE

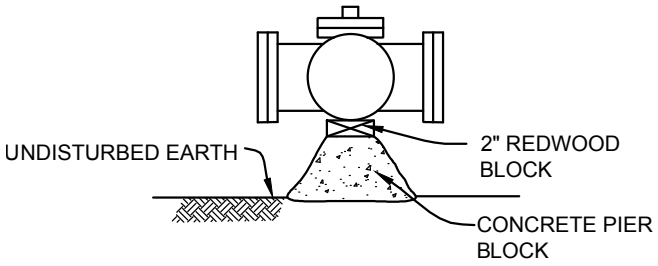
DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	513
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 513.DWG		



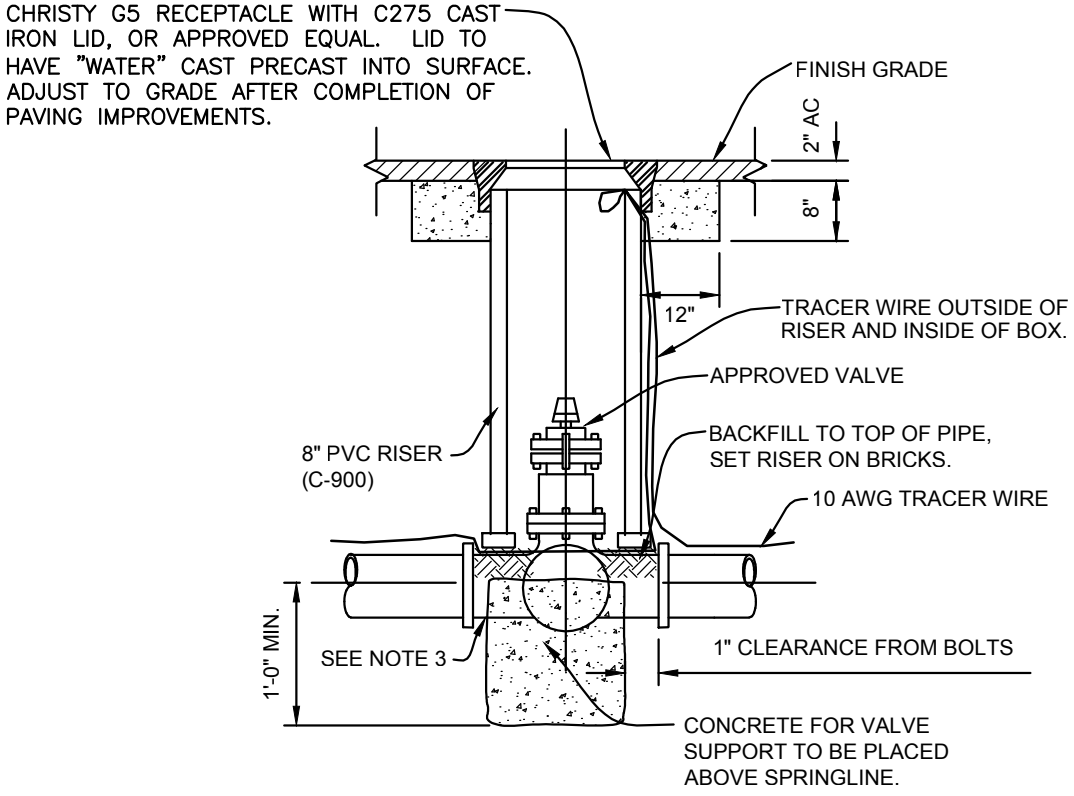
NOTES:

1. BACKFLOW DEVICE TO BE SAME SIZE AS EXISTING MAIN.
2. CONTRACTOR TO PROVIDE INLINE METER IF REQUIRED BY CITY.

CITY OF RIVERBANK DEPARTMENT OF PUBLIC WORKS			TEMPORARY BACKFLOW PREVENTION ASSEMBLY FOR 3" & LARGER	
SIGNATURE				
DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 514
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 514.DWG		



HOT TAP VALVE SUPPORT



NOTES:

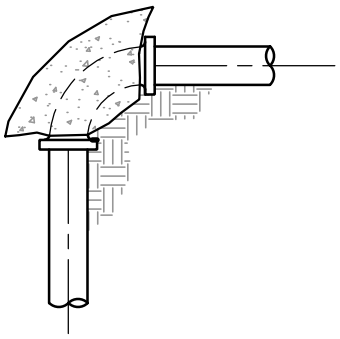
1. INSTALL EXTENSION STEM WHEN DISTANCE FROM VALVE COVER TO OPERATING NUT IS GREATER THAN 48"

2. VALVES SHALL HAVE FLANGED FITTINGS AT ALL TEES AND CROSSES UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

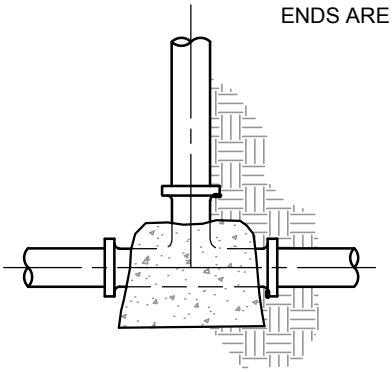
3. PLACE VISQUEEN AROUND VALVES BEFORE PLACEMENT OF CONCRETE SUPPORTS.

4. VALVES SHALL BE RESILIENT SEAT GATE FOR LINES 12" OR LESS, AND BUTTERFLY VALVES FOR LINES GREATER THAN 12".

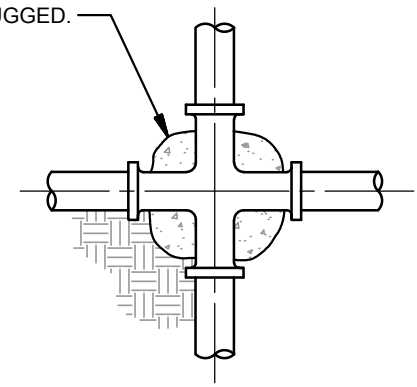
CITY OF RIVERBANK DEPARTMENT OF PUBLIC WORKS			WATER VALVE INSTALLATION	
SIGNATURE				
DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 515
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 408.DWG		



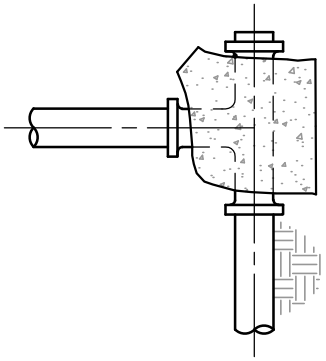
90° BEND



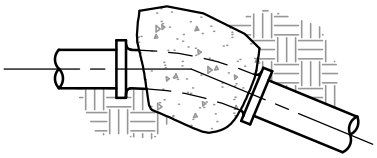
TEE



CROSS

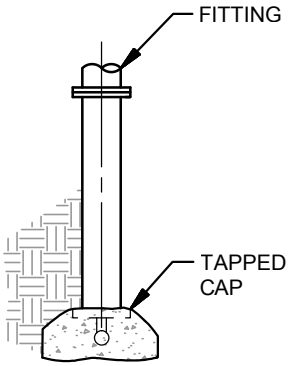


PLUGGED TEE



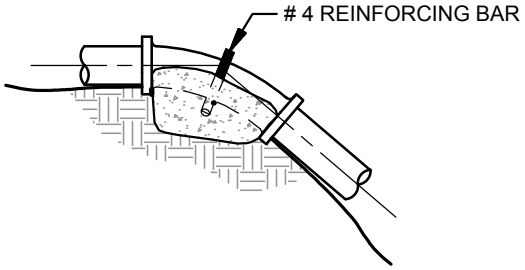
45° OR 22 1/2°

HORIZONTAL BEND



BLOW OFF

MINIMUM THRUST BLOCK BEARING AREAS IN SQUARE FEET				
PIPE SIZES	90°	45°	22 1/2°	TEES & BLOWOFF
6"	3	2	2	2
8"	4	3	2	3
10"	6	4	3	4
12"	8	5	3	6
14"	12	7	4	8



VERTICAL BEND

NOTES:

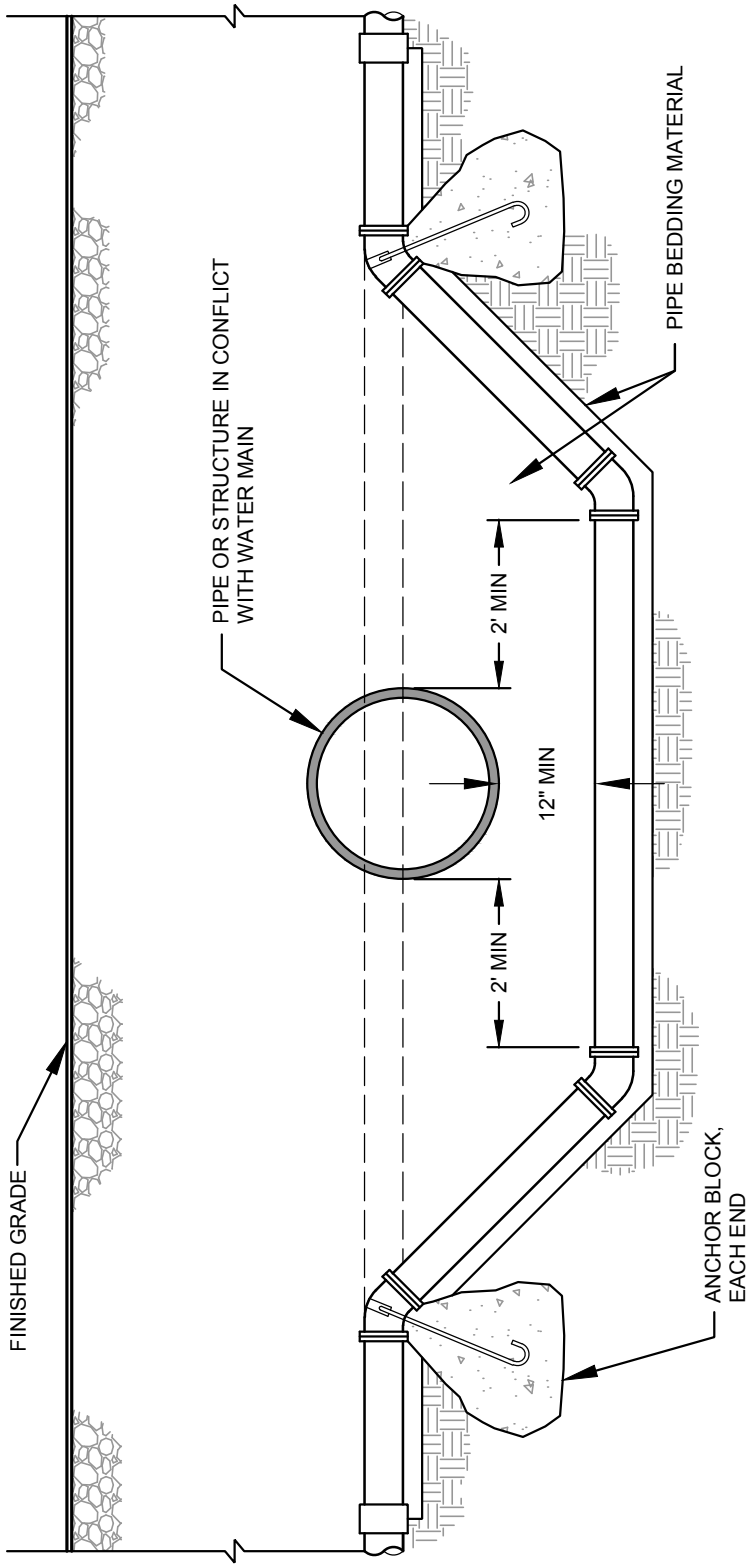
1. CONCRETE SHALL BE 2000 PSI MINIMUM AT 28 DAYS.
2. THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED EARTH.
3. ALL FITTINGS SHALL BE SUPPORTED IN CONCRETE.
4. FOR FIRE HYDRANT THRUSTING SEE STD. 510.
5. DON'T COVER FLANGE BOLTS WITH CONCRETE.
6. WRAP ALL FITTINGS AND FLANGES WITH VISQUEEN.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

THRUST BLOCK REQUIREMENTS

SIGNATURE

DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 516
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 516.DWG		



NOTES:

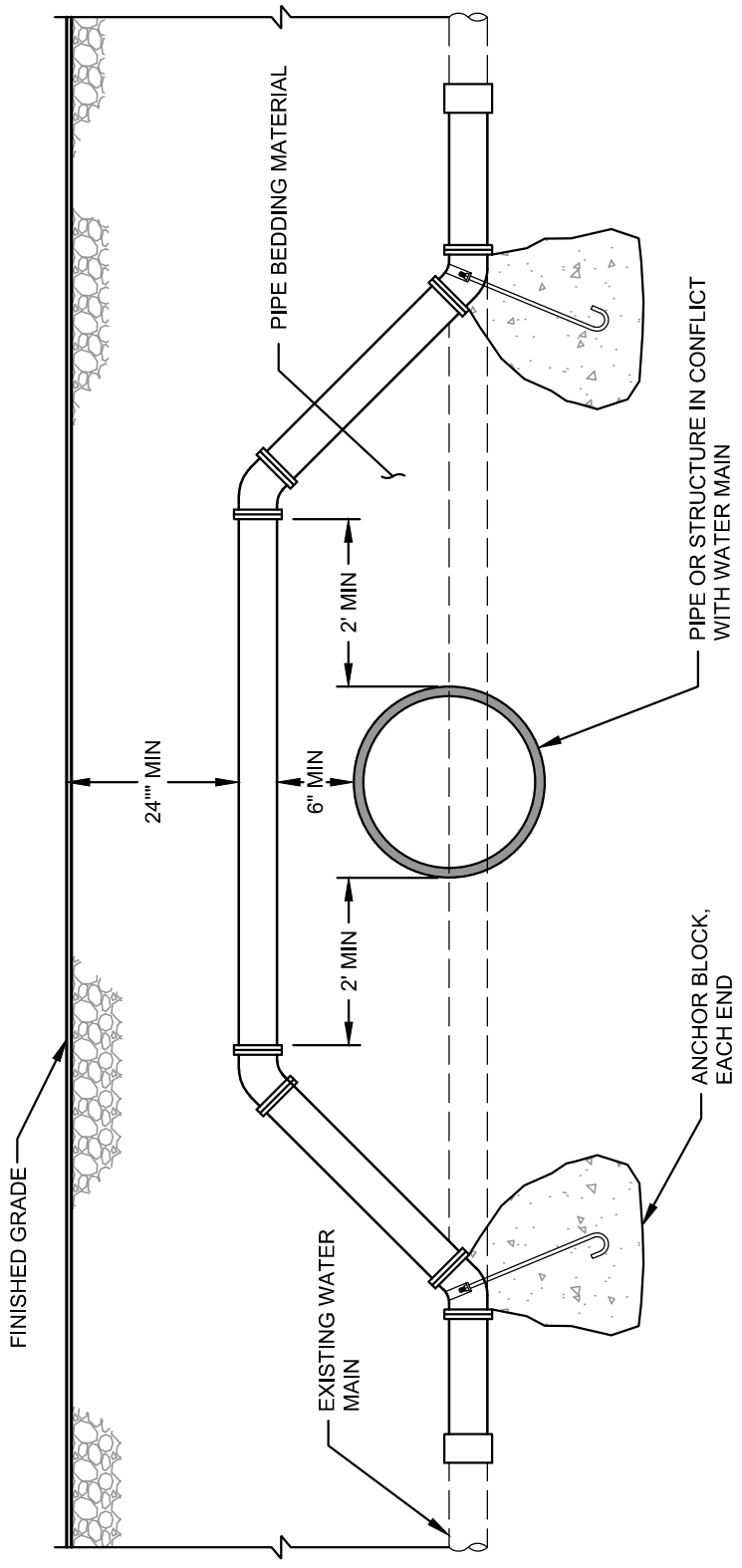
1. ALL PIPE AND FITTINGS SHALL BE DUCTILE IRON & SHALL BE WRAPPED IN POLYETHYLENE - PER CITY OF RIVERBANK STD CONSTRUCTION SPECIFICATIONS.
2. ONLY MECHANICAL JOINT FITTINGS WITH RESTRAINED JOINTS MAY BE USED.
3. ALL BENDS SHALL BE 45° OR 22-1/2° FITTINGS.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

WATER MAIN LOWERING

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	517
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 517.DWG		



NOTES:

1. ALL PIPE AND FITTINGS SHALL BE DUCTILE IRON & SHALL BE WRAPPED IN POLYETHYLENE - PER CITY OF RIVERBANK STD CONSTRUCTION SPECIFICATIONS.
2. ONLY MECHANICAL JOINT FITTINGS WITH RESTRAINED JOINTS MAY BE USED.
3. ALL BENDS SHALL BE 45° OR 22-1/2° FITTINGS. - NO 90° BENDS ALLOWED.
4. TO BE USED ONLY AT THE DIRECT APPROVAL OF THE DIRECTOR OF UTILITIES.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

WATER MAIN
OVER STRUCTURE

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	518
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 518.DWG		

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

AIR AND VACCUM / AIR RELEASE VALVE

DRAWN BY:	DATE:	SCALE:	DRAWING NAME:
GK	9/02/14	NTS	519.DWG

REVISIONS: NONE

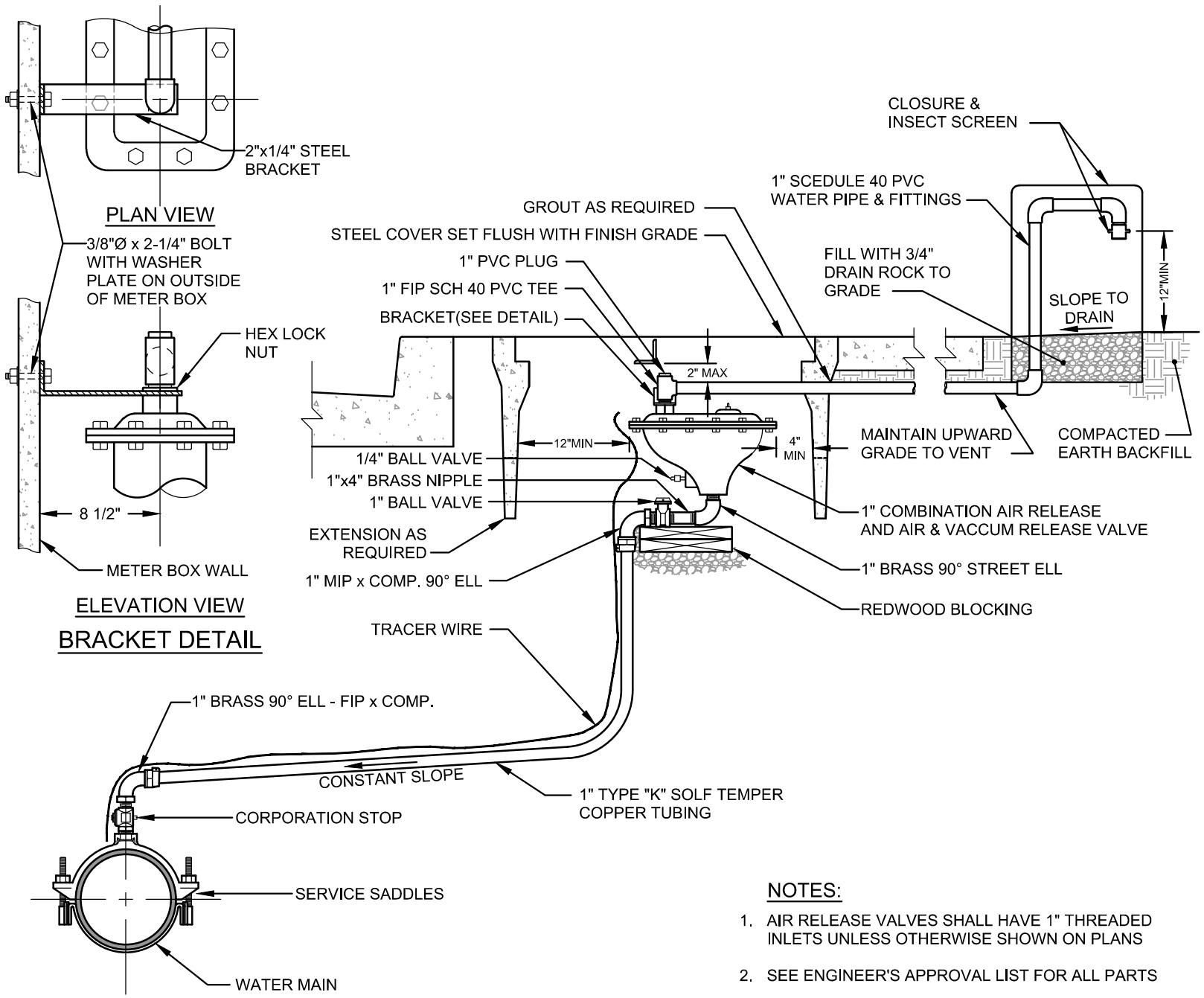
SECTION: WATER

SIGNATURE

ADOPTED BY THE CITY COUNCIL:

___ - ___ - ___

DRAWING NO. 519



NOTES:

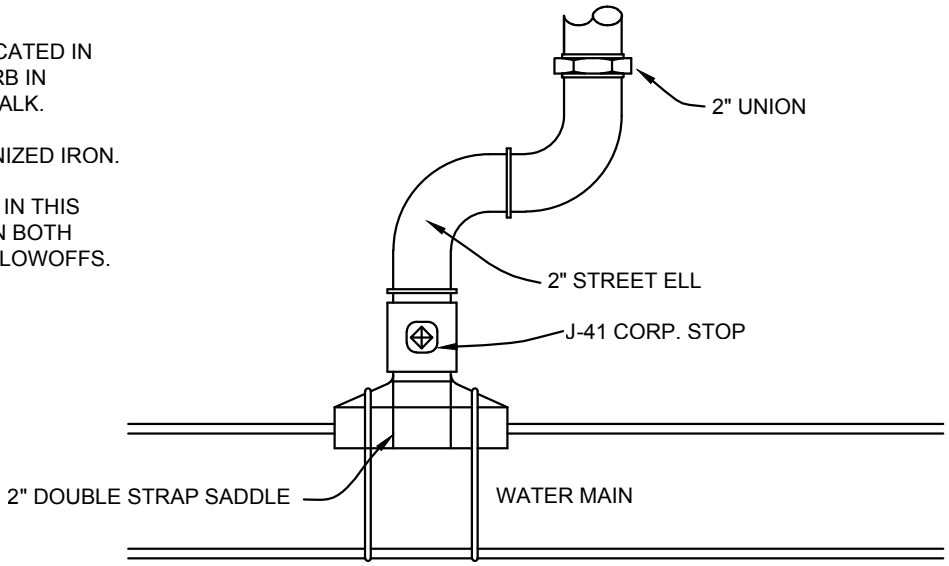
1. AIR RELEASE VALVES SHALL HAVE 1" THREADED INLETS UNLESS OTHERWISE SHOWN ON PLANS
2. SEE ENGINEER'S APPROVAL LIST FOR ALL PARTS

NOTES:
1. BLOW-OFF SHALL NOT BE LOCATED IN SIDEWALK. LOCATE BEHIND CURB IN LANDSCAPING IF IN SPLIT SIDEWALK.

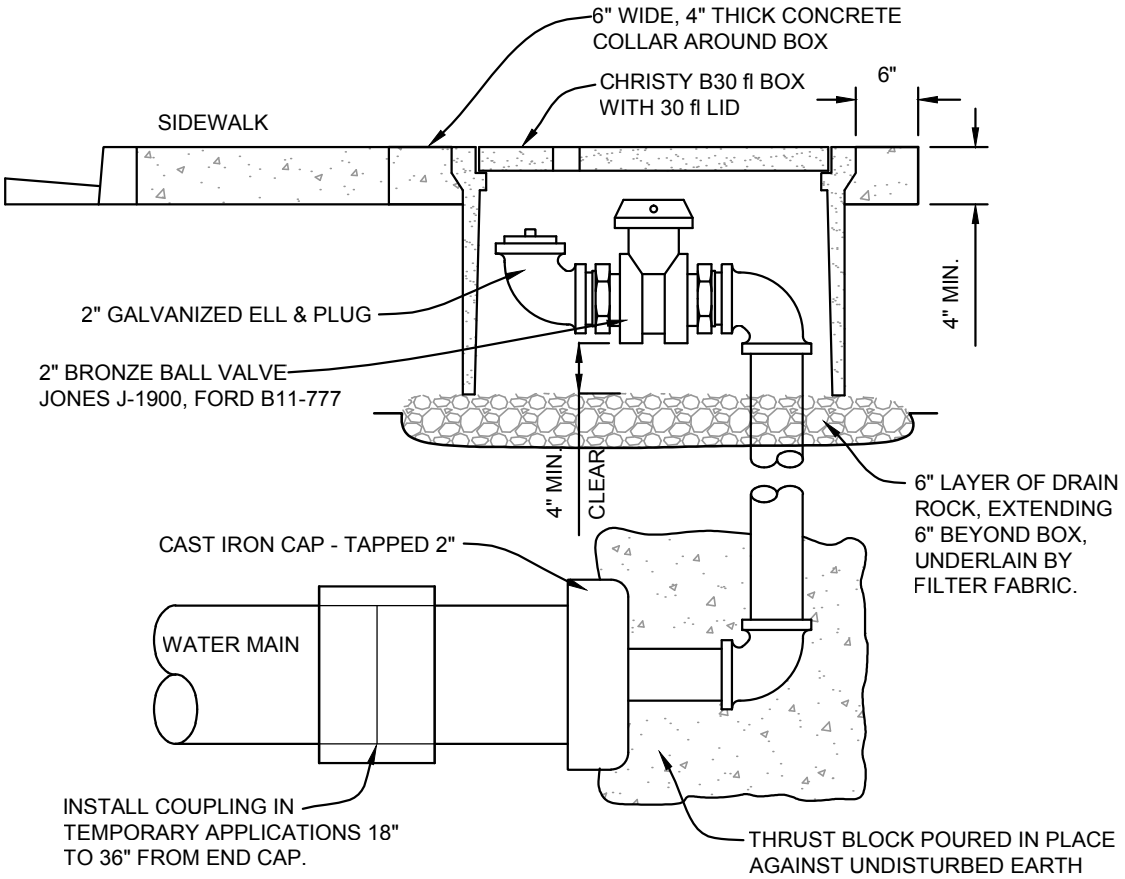
2. ALL FITTINGS TO BE 2" GALVANIZED IRON.

3. ALL APPURTENANCES SHOWN IN THIS DETAIL ARE TO BE INSTALLED ON BOTH TEMPORARY AND PERMANENT BLOWOFFS.

4. TRACER WIRE REQUIRED.



INLINE INSTALLATION



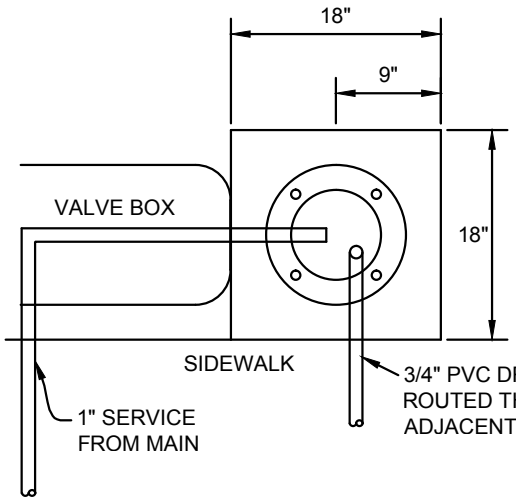
END OF PIPE INSTALLATION

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

WATER BLOWOFF

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	520
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 520.DWG		



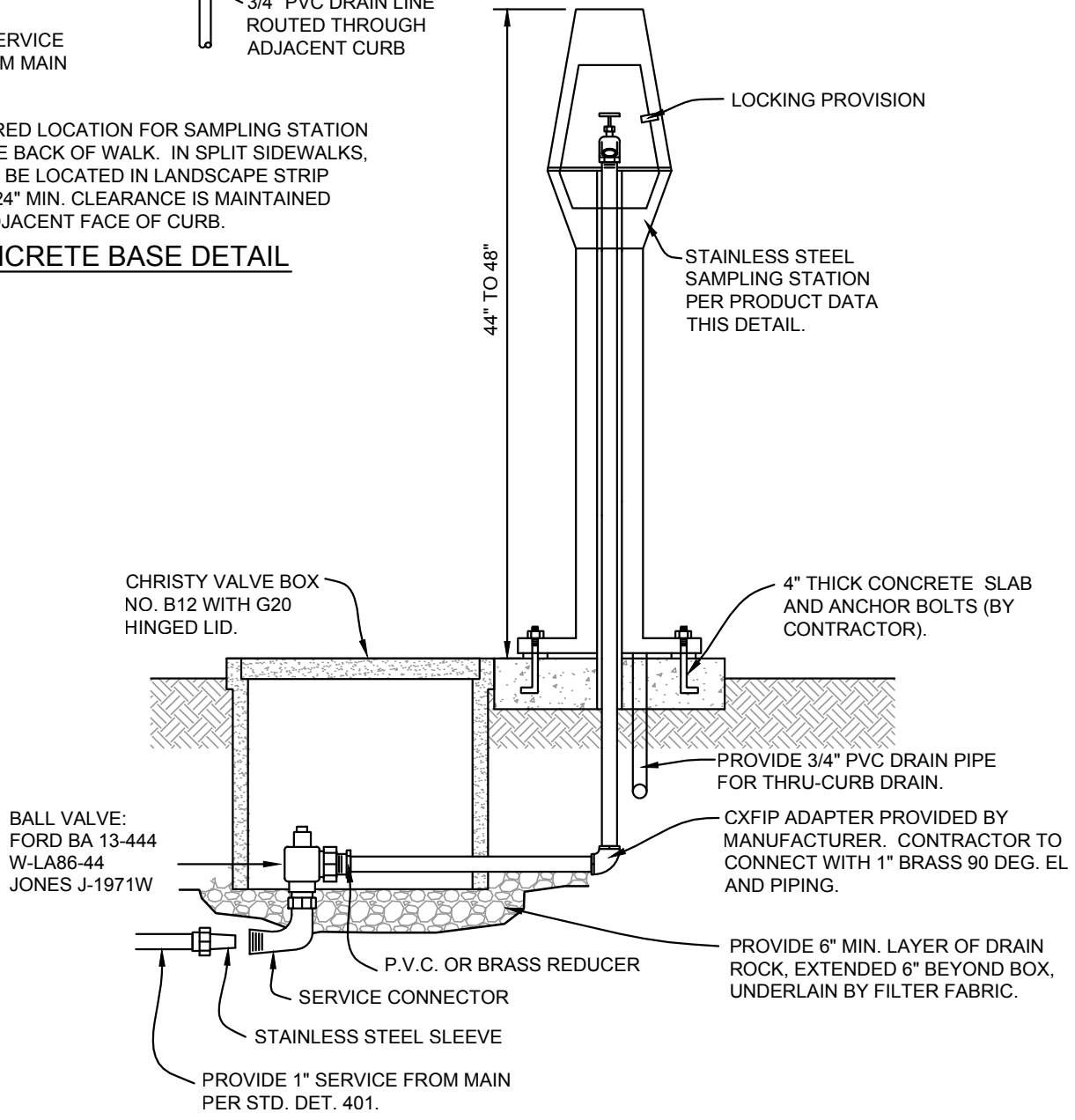
THE PREFERRED LOCATION FOR SAMPLING STATION IS BEHIND THE BACK OF WALK. IN SPLIT SIDEWALKS, STATION MAY BE LOCATED IN LANDSCAPE STRIP PROVIDED A 24" MIN. CLEARANCE IS MAINTAINED FROM THE ADJACENT FACE OF CURB.

CONCRETE BASE DETAIL

PRODUCT DATA

MODEL: MX 3000 SAMPLING STATION
VENDOR: STEEL SOURCE CONSTRUCTION
ADDRESS: 20885 REDWOOD RD.
CASTRO VALLEY, CA 94546
PHONE: 510-582-2700
FAX: 510-582-2750
www.steelsourceco.com

NOTE: ALTERNATE MANUFACTURERS AND MODELS MAY BE SUBSTITUTED GIVEN THE APPROVAL OF THE CITY PUBLIC WORKS DEPT.

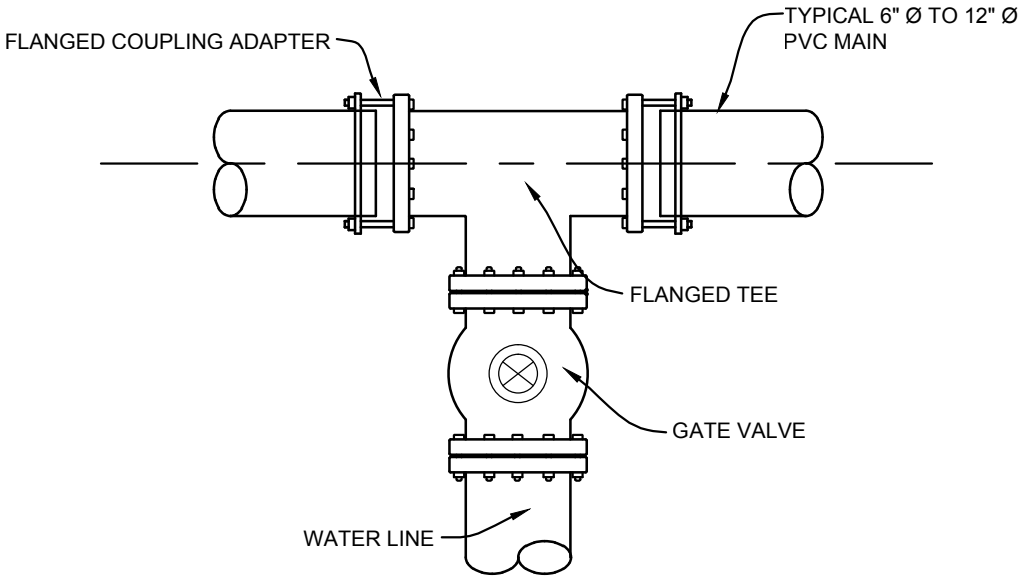


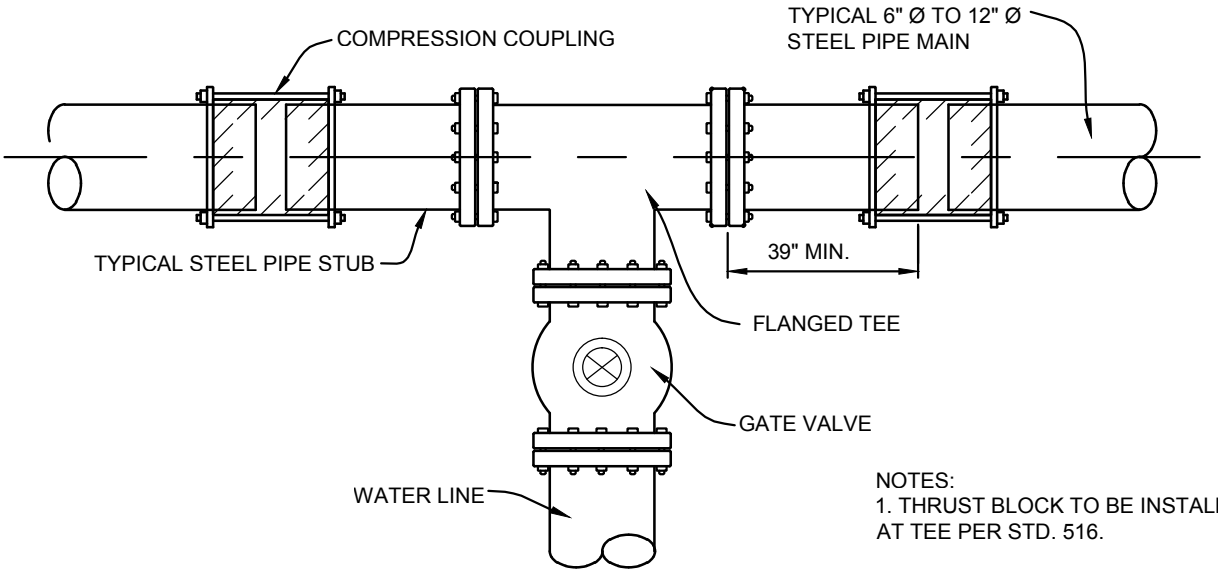
CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

WATER SAMPLING STATION

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	521
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 521.DWG		





NOTES:
1. THRUST BLOCK TO BE INSTALLED AT TEE PER STD. 516.

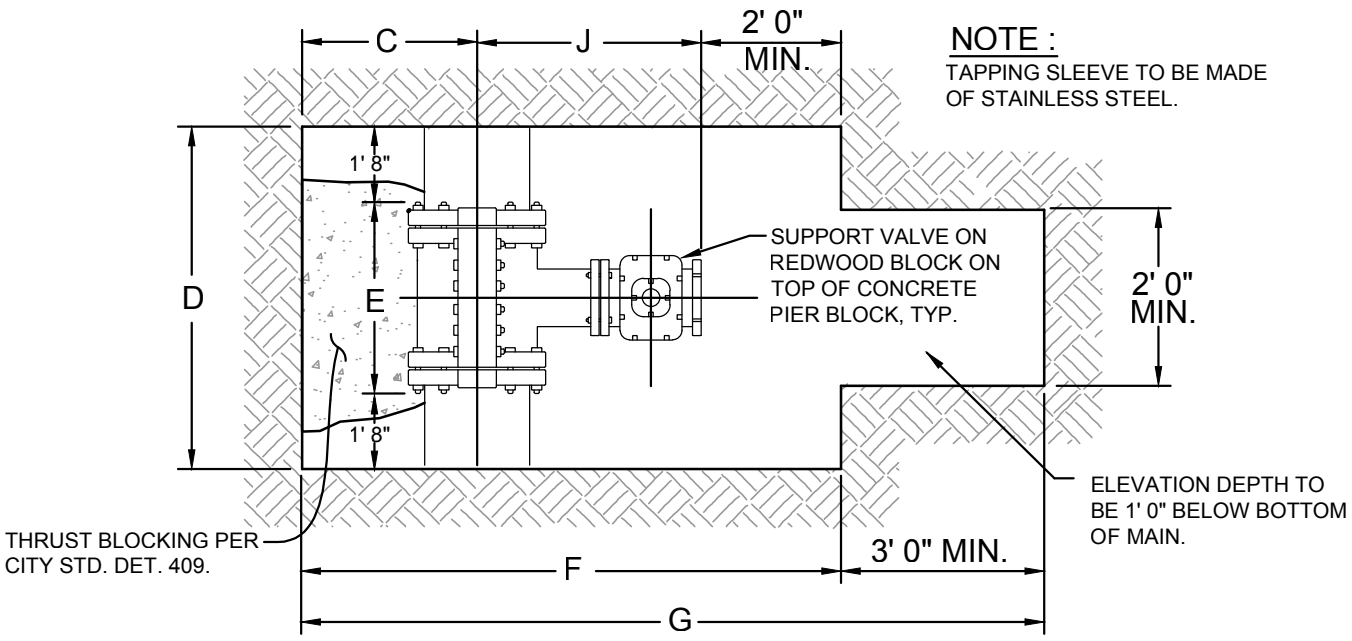
2. GATE VALVE TO BE SUPPORTED ON CONCRETE PIER BLOCK PER STD.515.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

TEE & GATE VALVE INSTALLATION ON EX. MAIN

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	522
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 522.DWG		



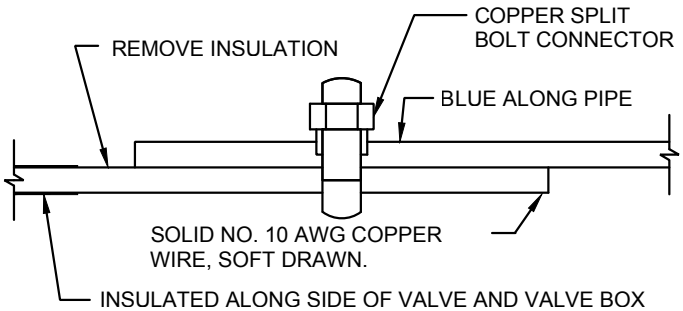
TAPPING SLEEVE SIZE	C	D	E	F	G	J
4 X 2"	1' 3"	4' 9"	16 1/2"	4' 5"	7' 5"	14 1/32"
4 X 3"	1' 3"	4' 9"	16 1/2"	4' 6"	7' 6"	14 3/4"
4 X 4"	1' 3"	4' 9"	16 1/2"	4' 10"	7' 10"	18 9/16"
6 X 2"	1' 4"	4' 10"	18 3/8"	4' 7"	7' 7"	15 5/32"
6 X 3"	1' 4"	4' 10"	18 3/8"	4' 8"	7' 8"	15 7/8"
6 X 4"	1' 4"	4' 10"	18 3/8"	5' 0"	8' 0"	20 3/8"
6 X 6"	1' 4"	4' 10"	18 3/8"	5' 1"	8' 1"	21 7/16"
8 X 2"	1' 5"	4' 11"	19 1/4"	4' 10"	7' 10"	16 17/32"
8 X 3"	1' 5"	4' 11"	19 1/4"	4' 10"	7' 10"	17 1/4"
8 X 4"	1' 5"	4' 11"	19 1/4"	5' 2"	8' 2"	21 1/16"
8 X 6"	1' 5"	4' 11"	19 1/4"	5' 4"	8' 4"	22 13/16"
8 X 8"	1' 5"	5' 1"	21 1/4"	5' 6"	8' 6"	24 5/8"
10 X 2"	1' 6"	4' 11"	19"	5' 0"	8' 0"	17 25/32"
10 X 3"	1' 6"	4' 11"	19"	5' 1"	8' 1"	18 1/2"
10 X 4"	1' 6"	4' 11"	19"	5' 5"	8' 5"	22 9/16"
10 X 6"	1' 6"	5' 11"	19"	5' 6"	8' 6"	23 13/16"
10 X 8"	1' 6"	5' 3"	23"	5' 7"	8' 7"	25 5/16"
10 X 10"	1' 6"	5' 3"	23"	5' 9"	8' 9"	26 3/8"
12 X 2"	1' 7"	4' 11"	19"	5' 2"	8' 2"	18 29/32"
12 X 3"	1' 7"	4' 11"	19"	5' 3"	8' 3"	19 5/8"
12 X 4"	1' 7"	4' 11"	19"	5' 7"	8' 7"	23 9/16"
12 X 6"	1' 7"	4' 11"	19"	5' 8"	8' 8"	24 13/16"
12 X 8"	1' 7"	5' 1"	21"	5' 9"	8' 9"	25 5/16"
12 X 10"	1' 7"	5' 5"	25"	5' 10"	8' 10"	27 3/8"
12 X 12"	1' 7"	5' 5"	25"	5' 11"	8' 11"	27 1/2"
14 X 4"	1' 8"	5' 8"	27 3/4"	5' 9"	8' 9"	24 5/8"
14 X 6"	1' 8"	5' 8"	27 3/4"	5' 10"	8' 10"	25 7/16"
14 X 8"	1' 8"	5' 8"	27 3/4"	6' 0"	9' 0"	27 15/16"
14 X 10"	1' 8"	5' 8"	27 3/4"	6' 1"	9' 1"	29"
14 X 12"	1' 8"	5' 8"	27 3/4"	6' 1"	9' 1"	29 1/8"
14 X 14"	1' 8"	6' 2"	33 1/2"	6' 2"	9' 2"	30 1/4"

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

TAPPING SLEEVE INSTALLATION

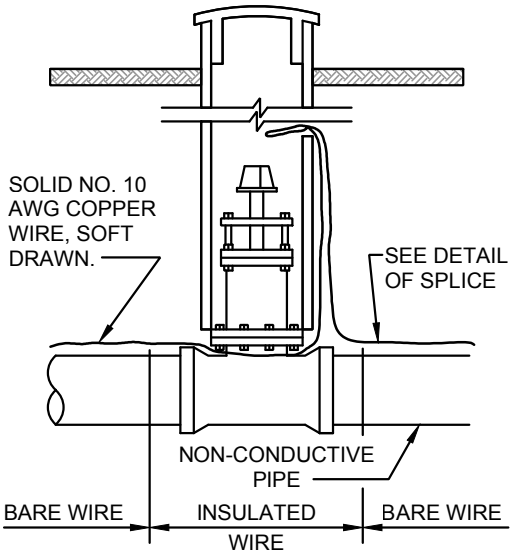
SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	523
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 523.DWG		

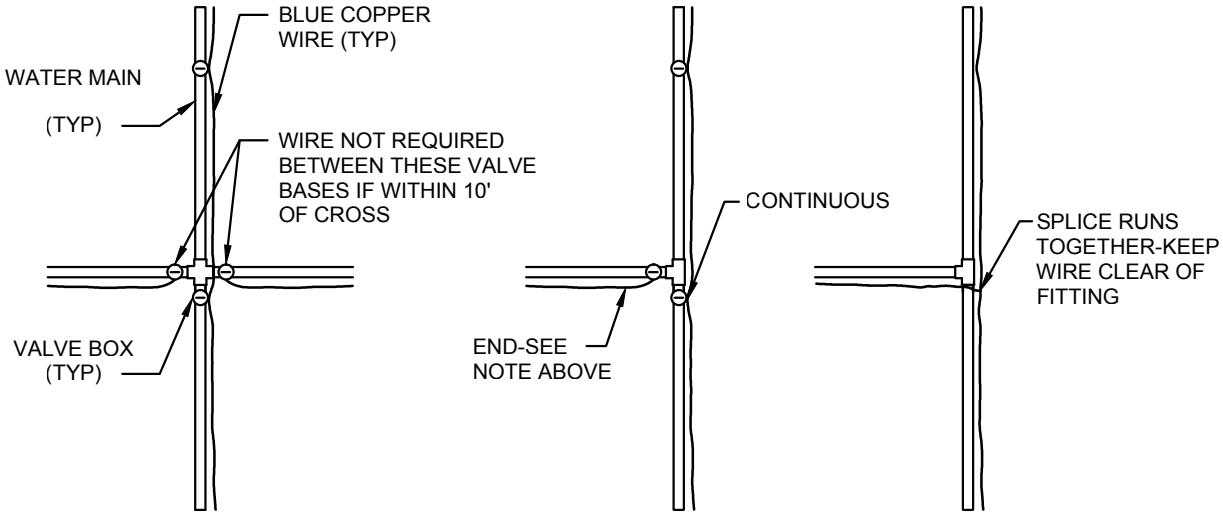


NOTE: IF WIRE ENDS AT VALVE BOX, RUN SINGLE INSULATED LEAD UP TO 10' BELOW GROUND.

DETAIL OF CONNECTION



INSTALLATION AT VALVE BOX



TYPICAL PLACING AT MAIN INTERSECTIONS

NOTES:

1. WIRE TO BE CONTINUOUS BETWEEN VALVE BOXES, EXCEPT WHERE BOXES ARE WITHIN TEN (10') FEET OF PIPE INTERSECTION.
2. BLUE WIRE NOT TO TOUCH VALVE OR FITTINGS. (COATED WIRE ONLY)
3. LOCATING WIRE TO BE LAID AT TOP OF PIPE.

CITY OF RIVERBANK DEPARTMENT OF PUBLIC WORKS			TRACER WIRE INSTALLATION	
SIGNATURE				
DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 524
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 524.DWG		

ALLOWABLE GALLONS LOST IN ONE HOUR AT 150 PSI

PIPE LENGTH (FT)	PIPE DIAMETER					
	4"	6"	8"	10"	12"	15"
25	0.03	0.04	0.05	0.06	0.08	0.09
50	0.05	0.08	0.10	0.13	0.15	0.19
75	0.08	0.11	0.15	0.19	0.23	0.28
100	0.10	0.15	0.20	0.25	0.30	0.38
125	0.13	0.19	0.25	0.31	0.38	0.47
150	0.15	0.23	0.30	0.38	0.45	0.56
175	0.18	0.26	0.35	0.44	0.53	0.66
200	0.20	0.30	0.40	0.50	0.60	0.75
225	0.23	0.34	0.45	0.56	0.68	0.84
250	0.25	0.38	0.50	0.63	0.75	0.94
275	0.28	0.41	0.55	0.69	0.83	1.03
300	0.30	0.45	0.60	0.75	0.90	1.13
325	0.33	0.49	0.65	0.81	0.98	1.22
350	0.35	0.53	0.70	0.88	1.05	1.31
375	0.38	0.56	0.75	0.94	1.13	1.41
400	0.40	0.60	0.80	1.00	1.20	1.50
425	0.43	0.64	0.85	1.06	1.28	1.59
450	0.45	0.68	0.90	1.13	1.35	1.69
475	0.48	0.71	0.95	1.19	1.43	1.78
500	0.50	0.75	1.00	1.25	1.50	1.88
525	0.53	0.79	1.05	1.31	1.58	1.97
550	0.55	0.83	1.10	1.38	1.65	2.06
575	0.58	0.86	1.15	1.44	1.73	2.16
600	0.60	0.90	1.20	1.50	1.80	2.25
625	0.63	0.94	1.25	1.56	1.88	2.34
650	0.65	0.98	1.30	1.63	1.95	2.44
675	0.68	1.01	1.35	1.69	2.03	2.53
700	0.70	1.05	1.40	1.75	2.10	2.63
725	0.73	1.09	1.45	1.81	2.18	2.72
750	0.75	1.13	1.50	1.88	2.25	2.81
775	0.78	1.16	1.55	1.94	2.33	2.91
800	0.80	1.20	1.60	2.00	2.40	3.00

NOTE:

IN ACCORDANCE WITH CITY CONSTRUCTION STANDARDS, NEW WATERLINES SHALL BE HYDROSTATICALLY TESTED TO A MINIMUM OF 150 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS. NO PIPE INSTALLATION SHALL BE ACCEPTED IF LEAKAGE FOR THE SECTION EXCEEDS A RATE IN GALLONS PER HOUR PER ONE THOUSAND FEET (GPH/1000') OF 0.25 MULTIPLIED BY THE PIPE DIAMETER IN INCHES. (GPH/1000' < 0.25xPIPE DIA.) THIS CHART COMPUTES MAXIMUM ALLOWABLE LEAKAGE RATES FOR VARIOUS LENGTHS OF PIPE BASED ON THIS STANDARD, AND IS INTENDED AS A CONVENIENCE, ONLY.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

WATER HYDROSTATIC PRESSURE / LOSS

SIGNATURE

DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 525
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 525.DWG		

ALLOWABLE GALLONS LOST IN ONE HOUR AT 150 PSI

PIPE LENGTH (FT)	PIPE DIAMETER					
	4"	6"	8"	10"	12"	15"
825	0.83	1.24	1.65	2.06	2.48	3.09
850	0.85	1.28	1.70	2.13	2.55	3.19
875	0.88	1.31	1.75	2.19	2.63	3.28
900	0.90	1.35	1.80	2.25	2.70	3.38
925	0.93	1.39	1.85	2.31	2.78	3.47
950	0.95	1.43	1.90	2.38	2.85	3.56
975	0.98	1.46	1.95	2.44	2.93	3.66
1000	1.00	1.50	2.00	2.50	3.00	3.75
1025	1.03	1.54	2.05	2.56	3.08	3.84
1050	1.05	1.58	2.10	2.63	3.15	3.94
1075	1.08	1.61	2.15	2.69	3.23	4.03
1100	1.10	1.65	2.20	2.75	3.30	4.13
1125	1.13	1.69	2.25	2.81	3.38	4.22
1150	1.15	1.73	2.30	2.88	3.45	4.31
1175	1.18	1.76	2.35	2.94	3.53	4.41
1200	1.20	1.80	2.40	3.00	3.60	4.50
1225	1.23	1.84	2.45	3.06	3.68	4.59
1250	1.25	1.88	2.50	3.13	3.75	4.69
1275	1.28	1.91	2.55	3.19	3.83	4.78
1300	1.30	1.95	2.60	3.25	3.90	4.88
1325	1.33	1.99	2.65	3.31	3.98	4.97
1350	1.35	2.03	2.70	3.38	4.05	5.06
1375	1.38	2.06	2.75	3.44	4.13	5.16
1400	1.40	2.10	2.80	3.50	4.20	5.25

NOTE:

IN ACCORDANCE WITH CITY CONSTRUCTION STANDARDS, NEW WATERLINES SHALL BE HYDROSTATICALLY TESTED TO A MINIMUM OF 150 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS. NO PIPE INSTALLATION SHALL BE ACCEPTED IF LEAKAGE FOR THE SECTION EXCEEDS A RATE IN GALLONS PER HOUR PER ONE THOUSAND FEET (GPH/1000') OF 0.25 MULTIPLIED BY THE PIPE DIAMETER IN INCHES. (GPH/1000' < 0.25xPIPE DIA.) THIS CHART COMPUTES MAXIMUM ALLOWABLE LEAKAGE RATES FOR VARIOUS LENGTHS OF PIPE BASED ON THIS STANDARD, AND IS INTENDED AS A CONVENIENCE, ONLY.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

WATER HYDROSTATIC PRESSURE / LOSS

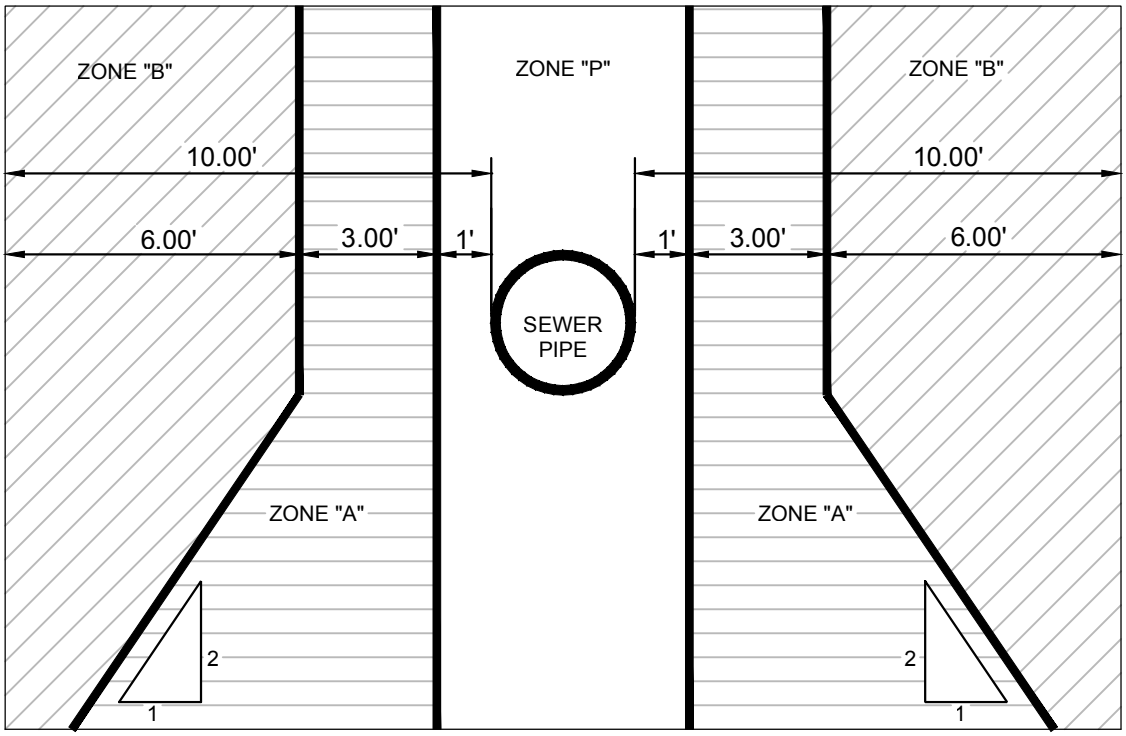
SIGNATURE

DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 526
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 526.DWG		

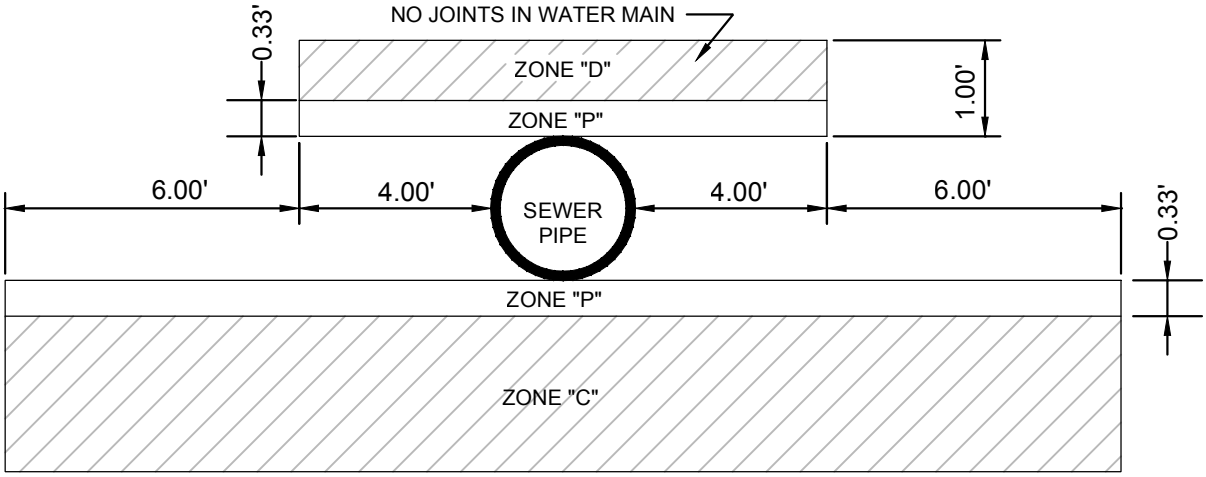
ALTERNATE DESIGN FOR REDUCED SEPERATION

(TO BE USED ONLY WHERE REQUIRED 10 FT. SEPARATION CANNOT BE OBTAINED)

NEW WATER LINE BEING INSTALLED



PARALLEL CONSTRUCTION

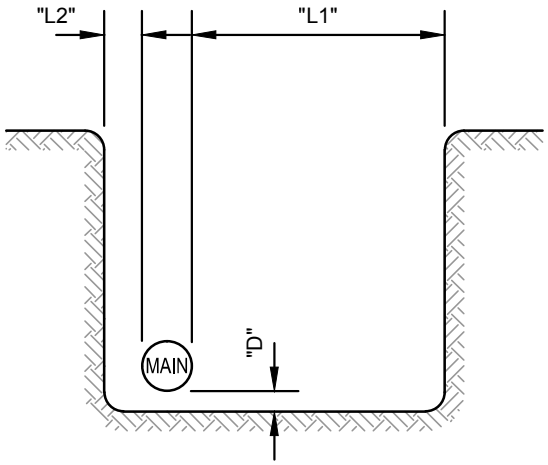


PERPENDICULAR CONSTRUCTION

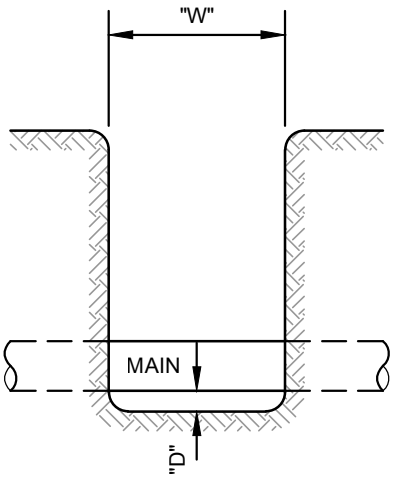
NOTES:

1. ZONE "A" REQUIRES SPECIAL PIPE AND SPECIAL PERMISSION FROM THE PUBLIC HEALTH AGENCY
2. ZONE "B" REQUIRES SPECIAL PIPE
3. ZONE "C" REQUIRES SPECIAL PIPE AND PIPE JOINTS ARE NOT ALLOWED
4. ZONE "D" REQUIRES STANDARD PIPE AND PIPE JOINTS ARE NOT ALLOWED
5. ZONE "P" IS A PROHIBITED ZONE.

CITY OF RIVERBANK DEPARTMENT OF PUBLIC WORKS			WATER MAIN SEPARATION REGULATIONS	
SIGNATURE				
DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 527
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 527.DWG		



PERPENDICULAR TO EXISTING MAIN



PARALLEL TO EXISTING MAIN

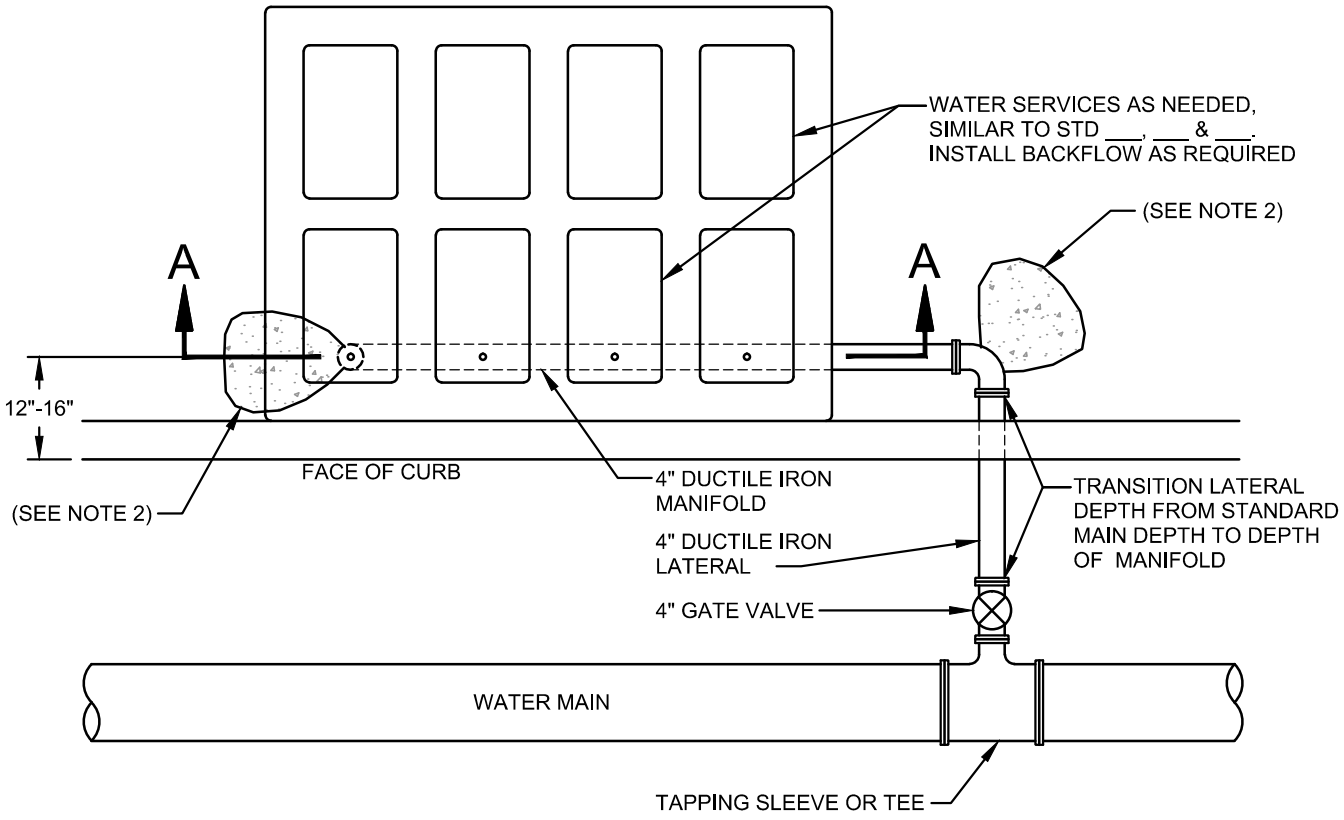
EXCAVATION REQUIREMENTS FOR CONNECTIONS TO EXISTING WATER MAINS				
EXISTING PIPE SIZE	W	D	L1	L2
4"	3'-0"	0'-6"	7'-0"	1'-0"
6"	4'-0"	1'-0"	7'-0"	1'-0"
8"	5'-0"	1'-6"	7'-0"	1'-0"
10"	6'-0"	2'-0"	7'-0"	1'-6"
12" OR LARGER	6'-0"	2'-0"	7'-0"	1'-6"

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

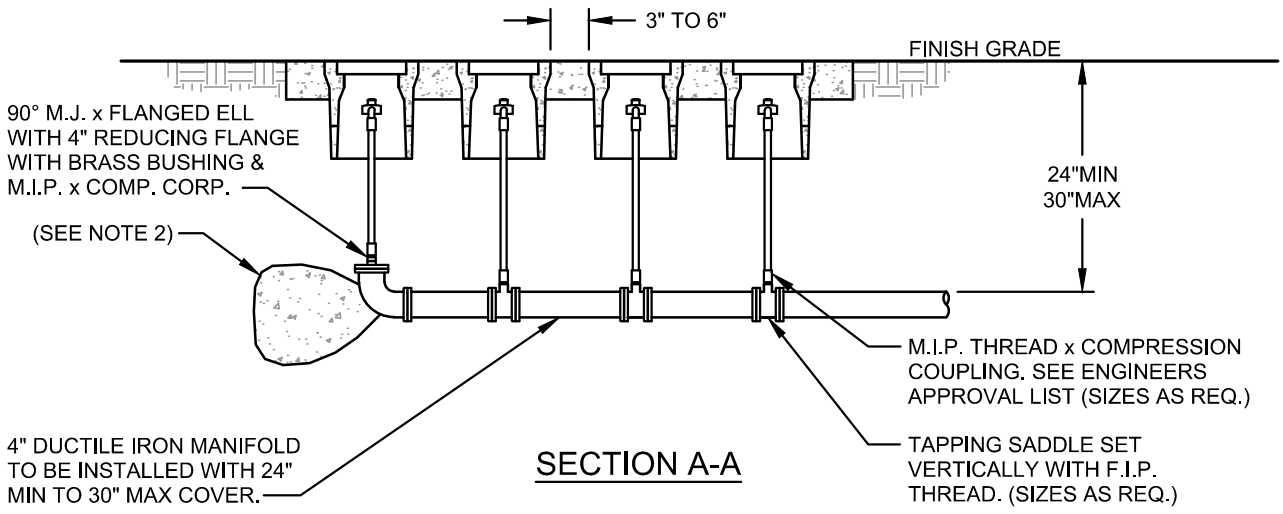
SIGNATURE

EXCAVATION REQUIREMENTS FOR CONSTRUCTION

DRAWN BY: GK	DATE: 9/02/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: ___-___-___	DRAWING NO. 528
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 528.DWG		



PLAN VIEW



SECTION A-A

NOTES:

1. THIS STANDARD MAY BE ADAPTED FOR CONNECTION TO A COMBINATION WATER SERVICE PER STD ___.
2. RESTRAINED JOINTS ARE REQUIRED FOR ALL NEW CONSTRUCTION FROM GATE VALVE TO END OF 4" MANIFOLD. THRUST BLOCKS ARE ONLY REQUIRED WHERE EXISTING SERVICES ARE BEING MODIFIED AND RESTRAINED JOINTS ARE NOT USED.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

SIGNATURE

4" DUCTILE IRON MULTI-SERVICE MANIFOLD

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/02/14	NTS	___-___-___	529
REVISIONS: NONE	SECTION: WATER	DRAWING NAME: 529.DWG		

City of Riverbank
CONSTRUCTION STANDARDS

WATER

SECTION 5: DOMESTIC WATER FACILITIES

General: Domestic water facilities shall be furnished and installed in accordance with these Construction Specifications and as shown on the plans.

Payment: Full compensation for furnishing all labor, materials, tools, equipment, excavating, backfilling, testing, disinfecting and flushing and for doing all work involved in installing the water system shown on the plans and as specified in these Construction Specifications shall be included in the appropriate contract item and no additional compensation will be allowed therefore.

TABLE OF CONTENTS

5.100 Materials

A. Water Main Pipe
B. Miscellaneous Fittings
C. Valves
D. Service Lines & Fittings
E. Fire Hydrants
F. Backflow Prevention Devices

5.200 Installation

A. General Requirements
B. Inspection
C. Disinfection
D. Connections to Existing Water Mains
E. Connection Details
F. PVC Pipe

5.300 Testing

A. Pressure Test
B. Bacteriological Test
C. Final Connections to Existing Mains
D. Backflow Certification

5.100 Materials

A) Water Main Pipe 4" through 12" shall be either ductile iron pipe (DIP) conforming to the requirements of AWWA Standard C-151, Class 51 (4") or Class 50 (6" thru 12") with cement-mortar lining or polyvinyl chloride (PVC) pipe conforming to the requirements of AWWA Standard C-900, Cast Iron (CI) O.D. Class 150 (DR18) with elastomeric gasket (solvent weld is unacceptable). DIP shall have "Tyton" joints, "Tyseal" joints, or approved equal.

In addition to the above, the following requirements apply to all pipe joints:

- Solvent welded PVC is not allowed
- Mechanical joints are only allowed at fittings
- Cast-iron repair/adapter couplings may be used where approved by the City Engineer
- Water service lines shall be per Section D of these specifications

B) Miscellaneous Fittings: Pipe fittings shall conform to AWWA Standard C110, latest revision, and shall be of cast iron, match the make of pipe used, and be as specified by the manufacturer for use with the pipe specified. Joints in fittings and adapters shall be of the type with a seal ring groove for positively holding the rubber gaskets in place against the water pressure and shall be similar to the specified joint for the pipe used.

All cast iron fittings shall be coated outside and inside with a bituminous coating as per Section 10-3 of AWWA Standard C110, latest revision.

Flanged fittings are allowed, and shall be used where shown on the plans. Mechanical joint fittings are allowed provided the Contractor follows proper assembly procedures.

Not all pipe fittings required to do the work are shown on the plans. The Contractor shall furnish and install all fittings as necessary to accomplish grade and adjustment changes in conformance with the pipe manufacturer's recommendations and as approved by the Engineer.

C) Valves: 2" through 12" valves shall be resilient seated gate valves or butterfly valves. Resilient seated gate valves shall be Mueller RS, American Darling CRS-80, Clow RS or approved equal and shall conform to the requirements of AWWA Standard C509, latest revision.

Butterfly valves shall be MH 450, Mueller Lineseal III, Clow 450 or approved equal and shall conform to the requirements of AWWA Standard C504, latest revision.

All valves shall open left (clockwise to close) and be equipped with a 2-inch AWWA operating nut. All valves shall be coated for buried service per AWWA Standards. All valves shall be Class 150 minimum.

Valves requiring operating wrenches exceeding 2 feet in length shall have extensions and guides as provided by the valve manufacturer installed in the valve riser.

The valve boxes shall be Christy G5 with cast iron cover and extensions and shall conform to City of Riverbank Standard Details. Cover shall have a free fit in the box. All valve boxes shall be adjusted to grade by the paving contractor as per the appropriate Standard Plan.

D) Service Lines and Fittings shall be polyethylene CTS or copper for services 3 inches and smaller and ductile iron or polyethylene for services 4 inches and larger. All

water services shall conform to the requirements shown on the appropriate Standard Details.

E) Fire Hydrants shall be furnished and installed in accordance with the Standard Details.

F) Backflow Prevention Devices, including double detector checks and reduced pressure principle devices, shall be of a type approved by University of Southern California Foundation for Cross-Connection Control and Hydraulic Research Foundation (USC Foundation), and installed according to the manufacturer's specifications.

5.200 Installation Water main pipe shall be installed in accordance with the manufacturer's recommendations, City Standard Plans, these Special Provisions and the improvement plans.

A) General Requirements: Water mains shall be installed with due regard for protection from sanitary hazards, including current spacing and crossing requirements of the California Administrative Code, Title 22. Minimum pipe cover shall be 3 feet.

Thrust blocking shall be installed per City Standard Details at all bends, tees, dead ends, and changes in pipe diameter. Thrust blocking shall be placed so that the joints of the pipe and fittings will be accessible for repair.

The Contractor shall also take the necessary precautions to protect workers from asbestos fiber hazards. Reference is made to AWWA Manual M-16, "Work Practices for Asbestos-Cement Pipe." Use of any "non-recommended work practices" such as cutting any AC pipe with abrasive disc-dry tools is strictly forbidden.

Reference is made to AWWA Manual M23 "PVC Pipe - Design and Installation" and AWWA Standards C603 "Installation of Asbestos Cement Water Pipe", C600 "Installation of Gray and Ductile Cast-Iron Water Mains and Appurtenances", and C601 "Disinfecting Water Mains", and applicable California Department of Health Waterworks Standards.

The pipe must be kept exceptionally clean during installation since the use of calcium hypochlorite tablets prevents flushing before disinfection.

The City takes no responsibility for water quality downstream of temporary connections to the water system.

Hydrants installed but not in service shall be wrapped with burlap and wired and remain so until such time as the hydrants are in service. Holes may be cut in the burlap in order that the hydrant may be used for construction water.

B) Inspection: All water lines shall be inspected for proper installation by the City Engineer, prior to backfilling of trenches. If work is to be completed after normal business hours, Contractor shall call 869-3671 to arrange for an inspection to be made after normal business hours.

C) Disinfection: The preferred method of disinfection is continuous feed injection with a 24 hour contact time. The continuous feed method may be delayed until completion of the pressure test. The continuous feed method shall provide a dose of 100 parts per million.

If calcium hypochlorite tablets are used, the number shall be in accordance with the following table and disinfection shall be prior to pipe flushing, and after pressure testing.

	Diameter of Pipe (in.)			
Length of Section (ft)	6	8	10	12
13 or less	4	6	8	12
18 or 20	4	8	12	16

The table is based on 5 gram tablets per ounce (3.25 grams available chlorine per tablet), which is equal to 100 parts per million.

Residual chlorine ppm will be verified prior to flushing the line, at the direction of the City Engineer.

D) Connections to Existing Water Mains: Under no circumstances shall anyone other than a representative of the City of Riverbank Public Works Department open or close any valve in the existing City water system. Requests for valve operation shall be made to the Engineer at least 48 hours in advance. In cases where customer service will be interrupted, the request shall be made at least 48 hours in advance and the Contractor shall make satisfactory preparation for the planned work to minimize the interruption. The procedure shall be reviewed and approved by the City prior to the start of construction.

E) Connection Details: Shall be made per the appropriate Standard Detail(s). The number and location of temporary connections with meter assembly shall be approved by the City Engineer.

Upon request, the City will open its valve to the new pipe after the mains and services have been installed and backfilled and thrust blocks have cured for 48 hours.

F) PVC Pipe: Shall not be bent more than as recommended by the manufacturer. Joint deflections are not allowed. The Contractor shall take extra precautions to follow the pipe manufacturer's recommendations regarding rubber rings, fittings, tapping and installation practices.

5.300 Testing: Official test for acceptance shall normally be conducted after compaction has been completed.

A) Pressure Test: All piping shall be tested to a pressure of 150 pounds per square inch (psi). All material, equipment and labor for testing shall be approved by the City prior to testing and shall be furnished without cost to the City of Riverbank. The system will be tested as directed by the Engineer as a unit or in sections not to exceed 1,000 lineal feet. Each unit tested shall successfully meet the requirements herein specified. The water services shall be considered as part of the main for test purposed and no allowance for additional leakage shall be made.

Unless otherwise directed by the Engineer, testing shall be accomplished by opening hydrants and service line cocks at the high points of the system and blowoffs at all dead ends. The valve controlling the admission of water into the section of pipe to be tested should be opened slowly and fully before closing the hydrants or blowoffs. After the system has been filled with water and all air expelled, all the valves controlling the section to be tested shall be closed, and the line remain in this condition for a period of not less than 24 hours.

The pipe shall then be refilled, if necessary, and subjected to a maintained pressure of not less than 150 pounds per square inch (psi) for a period of one hour.

Allowable leakage shall not exceed a rate in gallons per hour per 1000' lineal feet of pipeline of 0.25 multiplied by the pipe diameter in inches.
(gph per 1000' < 0.25 * pipe dia).

All leaks that are found shall be immediately corrected and the system again subjected to the same test.

All repairs of any damage to the pipes and their appurtenances, or to any other structures, resulting from or caused by these tests, shall be performed by the Contractor as the Engineer may direct, all without cost to the City of Riverbank.

B) Bacteriological Test: After the successful completion of the pressure tests, bacteriologic samples shall then be taken at locations and times specified by the City Engineer. Bacteriologic testing shall be performed at the expense of the contractor and will comply with the current AWWA standards. See AWWA website for current standards and requirements.

C) Final Connections to Existing Mains: After notification of passing bacteriological tests, the connections to the existing mains shall be completed by the Contractor per Standard Plan 507-B. Requests for City valve operation shall be made per these specifications.

Removal of the meter assembly and replacement with the flanged spool shall be accomplished is a sanitary manner. The nearest valves on the newly installed main shall be closed to minimize the amount of water that will enter the excavation. No water shall be allowed to reenter the main.

As each connection is made, the main shall be flushed such that the flow is away from the existing water system. Each connection shall be flushed in this manner until the entire new water system is flushed, all under the direction of the Engineer. Burlap wrapping shall be removed from all hydrants. At this point, the City will take over operation of the water system. The contractor will be responsible for the cost of repairing any damage to the system until acceptance by the City Council.

D) Backflow Certification: All backflow prevention devices installed shall be certified and tested in accordance with current regulations of the California-Nevada Section of the American Water Works Association (AWWA). Certification shall be provided to the City Public Works Department prior to acceptance of new backflow prevention devices.

In addition, the location of any backflow prevention device shall be field verified with the City Public Works Department, or their appointed representative, prior to installation.

City of Riverbank
DESIGN STANDARDS

WASTEWATER

TABLE OF CONTENTS

6.100 General
- 6.101 Scope

6.200 Design Flow
- 6.201 Average Wastewater Flowrate
- 6.202 Peaking Factor
- 6.203 Infiltration and Inflow

6.300 Pipe Design
- 6.301 Minimum Size
- 6.302 Design Depth of Flow
- 6.303 Slope
- 6.304 Vertical Alignment
- 6.305 Horizontal Alignment
- 6.306 Pipe Materials
- 6.307 Joints and Fittings

6.400 Services
- 6.401 General
- 6.402 Monitoring Structures
- 6.403 Traps and Waste Interceptors

6.500 Manholes and Miscellaneous Structures
- 6.501 Manholes
- 6.502 Drop Manholes

6.600 Lift Stations
- 6.601 General
- 6.602 Design
- 6.603 Force Main

SECTION 6: WASTEWATER

6.100 General

6.101 Scope

These standards apply to all public wastewater facilities designed for installation within a public right-of-way or PUE in the City and are limited to sewer mains and laterals 18 inches or less in diameter. Standards and requirements for larger sizes will be determined by the City Engineer on a case-by-case basis. Except where specifically noted in these Standards, or as required as part of project approval, all wastewater facilities installed on private property for private use and ownership shall be designed and constructed in accordance with the provisions of the Uniform Plumbing Code, as adopted by the City.

Wastewater lines shall be designed in accordance with acceptable engineering principles, California OSHA Standards (legal min.), and State of California Title 22 requirements (legal min,), and shall conform to City Standards. Storm water collection facilities shall not be connected to a wastewater line. Industrial waste sources may be connected or discharged into a wastewater line with approval of the City Engineer.

These Standards do **not** cover all the applicable City, State and Federal requirements for wastewater quality and monitoring

6.200 Design Flow

Wastewater facilities shall be designed on a peak flow basis in accordance with the following formula:

$Q_D = (P_F * Q_A) + I$

Where:
Q_D = Design Wastewater Flowrate
Q_A = Average Wastewater Flowrate –See section 2.201
P_F = Peaking Factor –See section 2.202
I = Infiltration --See section 2.203

6.201 Average Wastewater Flowrate

Average wastewater flows for residential areas shall be based on 100 gallons per capita per day (gpcpd), with an assumed population of 3.0 capita per single family dwelling unit, and 2.0 capita per multifamily dwelling unit. (Note: duplexes, "patio" homes, condominiums and townhomes shall be considered multifamily dwellings when determining wastewater flowrates).

For studies in which the exact unit count has not yet been determined, the average wastewater flowrate shall be determined based on gross area, as summarized in the following table:

Zoning	Land Use	Units/Acre	Avg. Flow (gal./acre/day)
R1	Single Family Residential	5	1500
R2	Duplex Residential	12.5	2500
R3	High Density Residential	20	4000
C1 and C2	Commercial	--	1760
CM, M1, M2	Industrial (See Note 1)	--	1500

Notes:
1. The average flows listed for industrial areas shall be used in preliminary studies, only. Additional data on anticipated wastewater flows for industrial projects shall be provided and considered on a case-by-case basis prior to the final design/improvement plan phase of the project.
2. Wastewater flows for areas of Planned Development (PD) zoning shall be based on the underlying zoning and land uses as indicated in the project's Master Plan, if exact unit counts are not yet known.
3. Average wastewater flows from schools shall be based on 20 gallons per attendant per day.

6.202 Peaking Factor

Peak flow shall be based on land use, and obtained by multiplying the average flow by the following peak factors:

- Commercial: 3.0
- Industrial: 2.0
- Residential: 3.0, for upstream service populations up to 10,000 persons. For populations greater than 10,000, the following formula may be used to determine the peaking factor:

$P_F = (18+x^{1/2}) / (4 + x^{1/2})$

Where "x" = population in thousands

6.203 Infiltration and Inflow

Infiltration and inflow shall be determined on a gross acreage basis, at a rate of 1000 gals. per acre per day.

6.300 Pipe Design

6.301 Minimum Size

New gravity wastewater lines shall be 8 inches or greater in nominal diameter. Terminal runs that have no potential for further extension, such as in cul-de-sacs, may be 6" in diameter.

6.302 Design Depth of Flow

All gravity wastewater lines shall be designed to flow at a maximum of 70% full under the design flow conditions.

6.303 Slope

All sewers shall be designed to provide a minimum velocity of 2.0 feet per second at the flowing full condition, using Manning's equation with an "n" of 0.013. Summarized below are minimum slopes, design capacities and flowing full capacities for different pipe sizes:

Size	Minimum Slope (ft/ft}	Design Cap. (gpm)	Full Cap. (gpm)
6	0.005	149	178
8	0.0035	269	320
10	00025	412	492
12	0.002	599	715
15	0 0015	940	1123

Designs in which downstream mains do not meet these velocity standards shall be specifically approved by the City Engineer.

Maximum velocity shall not exceed 10 feet per second at the design flowrate. Sewers shall be designed with uniform slope between manholes.

6.304 Vertical Alignment

The minimum cover for wastewater lines shall be 3 feet from the existing or planned final grade, whichever is lower, to the top of the sewer pipe. Laterals shall have a nominal cover of 30 inches at the property line or at a point 5 feet outside the curb face or edge of paving, whichever is the greater distance from the roadway centerline. Minimum cover requirements may be reduced if special backfill and/or special piping are used. See §2.401 for additional information regarding service lateral cover and §5 701 for structural considerations.

When crossing a water main, the wastewater line shall be installed below the water main with a clearance of at least 12 inches Where this separation cannot be maintained, the City Engineer may approve reduced clearances based on the California Dept. of Health Services Guidelines. A minimum vertical clearance of at least 3 inches shall be maintained between a wastewater line and a storm drain. Separation distances shall be measured from the nearest edges of the facilities

At points of convergence of pipes of various sizes, the pipe crown of the inflowing pipe(s) shall be no lower in elevation than the crown of the outflowing pipe. Exceptions to this may be granted at the discretion of the City Engineer if this is not practical (cover requirements, clearance issues, etc…) See §2.502 regarding drop manholes for additional information.

6.305 Horizontal Alignment

Wastewater Lines shall be placed within street rights-of-way unless placement in an easement is specifically approved by the City Engineer. Alignment shall be parallel to the street centerline whenever possible.

The horizontal alignment of wastewater lines in new streets, easements and private streets shall be as shown on the appropriate City of Riverbank Standard Plan. In existing streets and other special cases (such as looped streets in which the utilities may be located concentrically to avoid crossings), the alignment may vary from the Standard Plans, but in no case shall there be less than 10 feet horizontal clearance to a water main, except as specifically approved by the City Engineer in accordance with State Department of Health Services policies.

Curved sewers are allowed. However, joint deflections or pipe curvature shall not exceed the pipe manufacturer's recommendations. The following table may be used as a conservative guide. If a shorter radius is desired, the appropriate design information (i.e. short pipe lengths, radius fittings, etc) shall be shown on the plans.

Minimum Radius of Bending Circle (ft.)

Pipe Size	Ductile Iron	PVC	VCP
4	190	160	200
6	190	160	200
8	190	210	200
10	190	270	200
12	190	320	200
15	n/a	390	260

Wastewater lines, including laterals, or other sanitary hazards shall not be constructed adjacent to any existing or proposed well site. California State Department of Health Services requirements shall be the minimum required separation, however these may be increased where the well location is not fixed or redrilling is planned.

6.306 Pipe Materials

The following standard pipe materials shall be used for gravity flow wastewater line construction and shall conform to the appropriate American Society of Testing and Materials (ASTM) and American Water Works Association (AWWA) specifications (latest revision):

Pipe Material	Specification
Ductile iron pipe	ASTM A746
w/polyethylene lining &	ASTM D1248, Class C, 30 mil thickness
polyethylene encasement*	AWWA C105
PVC sewer pipe and fittings	ASTM D3034 SDR 26
Vitrified clay pipe	ASTM C700 (extra strength)
laterals only:	
Cast iron soil pipe (4" & 6")	ASTM A74, service weight

* polyethylene encasement may be omitted if a corrosivity soils report provided per Appendix A of AWWA C105 indicates encasement is not needed. Alternate linings may be approved on a case-by-case basis,

New main sewers and/or laterals servicing exclusively industrial and commercial development may be limited to vitrified clay pipe depending on the proposed use.

Trench and pipe strength design shall be shown on the improvement plans per §5.700.,

6.307 Joints and Fittings

Joints and fittings shall be selected and installed to minimize infiltration and to prevent the entrance of roots throughout the life of the system. Ductile iron pipe joints and fittings shall conform to AWWA C110 or other approved joint for wastewater applications. Joints for PVC pipe shall be flexible elastomeric type conforming to ASTM D3212, Solvent welded joints for PVC pipe are not permitted. Joints for vitrified clay pipe shall conform to ASTM C425.

Joining of pipe sections of unlike materials shall be accomplished using approved flexible band seals. Other joining methods shall not be used unless approved by the City Engineer.

6.400 Services

6.401 General

One service is typically allowed per parcel being served. Additional services may be specifically approved by the City Engineer in order to eliminate the need for on-site pumps, excessive trenching, or in other circumstances.

The minimum diameter for services (lateral sewers) shall be 4 inches.

A lateral sewer installed concurrently with a main sewer shall be of the same type and class of pipe material as the sewer main except where land use, cover or water main separation requirements indicate otherwise. For new services on existing mains, the lateral sewer may be of any approved pipe material as specified in §2,306,,

Size and depth of services is to be determined by the design engineer for the parcel being served subject to minimums contained in City Standards. Particular attention should be given to large, deep parcels.

Storm drainage shall not be permitted to discharge into the sanitary sewer system.

6.402 **Monitoring Structures**

Sanitary sewer monitoring structures and/or sampling manholes shall be installed on new development projects if so directed by the City Engineer. Typically, monitoring structures will not be required on residential developments, but may be necessary on industrial and commercial projects. Monitoring structures shall be in a location that is accessible to City personnel at all times, and may be considered a cleanout in lieu of a separate required cleanout.

6.403 **Traps and Waste Interceptors**

Appropriate traps and waste interceptors shall be installed on services on-site as required by the City Engineer in conformance with the Uniform Plumbing Code, as adopted by the Riverbank Municipal Code, and the Standard Plans. Grease traps and/or sand/oil interceptors shall be installed on sewer services for any facility whose operation will result in oil, grease, sand or other solids being discharged into the City's sanitary sewer system.

6.500 Manholes and Miscellaneous Structures

6.501 Manholes

Manholes shall be located in areas accessible to cleaning equipment and at:

- the end of each line
- all changes in pipe grade, size, or alignment
- all junctions of sewer mains and/or laterals 6 inches or greater in diameter
- distances not greater than 400 feet

24" diameter risers may be used in lieu of standard 48" manholes where the depth to the invert is less than 42 inches.

Manholes/risers may be required for inspection purposes at the end of stubs exceeding 25 feet in length

6.502 Drop Manholes

Drop manholes per City Standard Details shall be provided where the inflowing pipe crown elevation is more than 2 feet above the crown elevation of the outflowing pipe.

6.600 Lift Stations

6.601 General

All lift stations shall be specifically approved by the City Engineer after consideration of all reasonable gravity flow alternatives, and shall be designed in accordance with the standards contained herein.

Lift station structures, electrical, and mechanical equipment shall be located and designed such that they are protected from physical damage by the 100-year flood and will remain fully operational and accessible during the design storm.

The lift station shall be located off the traveled way of streets and alleys, and shall be provided with paved vehicular access and appropriate security as required by the City Engineer.

6.602 Design

Lift stations shall be designed to be compatible with current City equipment, systems, and operational/maintenance practices. As each lift station will be a unique design, developers and design engineers are highly recommended to consult with the City Engineer prior to final design of the new lift station

In areas of corrosive soils, impressed current cathodic protection is required and shall be designed by a qualified corrosion control engineer.

California OSHA standards shall be observed in the design of all pumping station access structures

Pumps:
Pumps in all new lift stations shall be of a manufacturer and model approved by the City Engineer.

At least two pumps shall be provided for each pumping station. If only two units are provided (duplex), they shall have the same capacity, and each be capable of handling the design flow. Where three or more units are provided, they shall be of such capacity that with any one unit out of service, the remaining units will have capacity to handle maximum design flows.

Design pumping rate shall be the design wastewater flowrate (see section 2.200) for the ultimate tributary area. For lift stations that are intended to serve a relatively large, phased tributary area, initial lower flow rates shall be considered in the design. It may be necessary to provide an interim design with fewer or smaller capacity pumps. In these instances, the plans shall indicate what the ultimate pumps shall be, as well as the ultimate design discharge flowrate and total dynamic head. The station and site should be designed for ultimate conditions, and for maximum ease of transition from interim to ultimate design.

Wetwells:

The wetwell size and control setting shall be appropriate to avoid heat buildup in the pump motors due to frequent starting, and to avoid septic conditions due to excessive detention time. Wetwells and controls shall be such that sewage detention time is limited to 2 hours. Detention time in excess of 2 hours shall require provisions for odor control. Total pump starts shall be limited to no more than 10 per hour. Volume available in upstream sewer mains may not be considered to be part of the available wet well storage volume.

Wetwells shall be reinforced concrete and lined in accordance with the Construction Specifications. The type of lining shall be indicated on the plans.

The wetwell floor shall have a minimum slope of 1 to 1 to a hopper bottom The horizontal area of the hopper bottom shall not be greater than necessary for proper installation and function of the pump inlet.

Wetwell covers and access hatches shall be H-20 traffic rated.

Valving:

Each pump discharge shall be equipped with the following valves:

Gate Valves: Gate valves shall be resilient wedge, flanged joints. All resilient wedge gate valves shall conform to the applicable requirements of ANSI/AWWA C509, and shall be handled and installed in accordance with the recommendations set forth in the appendix to ANSI/AWWA C509, and the recommendations of the manufacturer. All interior and exterior ferrous metal surfaces of valves and accessories shall be shop coated for corrosion protection. Approved manufacturers: Clow F-6100, Mueller A-2370, Kennedy 4561/4701, and American Flow Control –Series 2500

Check Valves: Check valves shall be installed immediately downstream of the gate valves, and shall be swing type with an external lever and minimum pressure rating of 250 psi. Approved manufacturers: Clow F5345, Mueller #2600-6-01, Kennedy IBBM Swing Check Valve, American "50" Line with Weight and Lever

Valves shall be contained underground in a separate precast concrete box, with a traffic rated lid.

Electrical Equipment:

All wetwell electrical equipment shall be explosion proof and meet National Electrical Code Class 1, Division 2, Group D requirements. All drywell electrical equipment shall be NEMA 4.

Telemetry and level sensing equipment compatible with the City's latest SCADA equipment shall be provided. Alarms shall be activated in cases of high water, power failure, pump failure, use of the lag pump, unauthorized entry, or any cause of pump station malfunction.

Standby Power:

Pump stations of greater than 1.0 mgd peak flow capacity shall include permanent installation of an emergency standby power generator with an automatic transfer switch. Engines shall be provided with silencing equipment appropriate for the adjacent land use per zoning and General Plan requirement. The location and tank design of the generator fuel tank shall be reviewed and approved by the fire department.

Smaller capacity stations, where approved, shall provide dual, manually switchable electrical feeds from a separate transformer.

Potable Water Service:

A potable water service with a reduced pressure backflow prevention device (Febco Model 825) is required for all pump stations.

Site / Location:

Lift stations shall not be located within the traveled way of streets, and shall be easily accessible for maintenance personnel. All lift stations shall be fenced, and lift station items within the fenced area shall be set back per the appropriate code, or as required for site access.

Lift station sites shall be paved with a durable surface as required for access by maintenance vehicles, as approved by the City Engineer. Storm drainage shall be provided for the lift station site, as required.

Instructions and Equipment

Three complete sets of operational instructions (including emergency procedures and maintenance schedules), special tools, and such spare parts (i.e., mechanical seals, wear rings, filters, etc.) as may be necessary shall be provided for all pump station equipment.

6.603 Force Mains

At average pump flow, a velocity of at least 2 feet per second shall be maintained. Maximum velocity shall be limited to 8 feet per second.

To maximize pump efficiency, it is preferable to provide a force main design that gradually slopes upward from the pump station discharge, to the point of downstream connection. Low points or sumps in the force main are not allowed. High points in the force main shall be avoided. An automatic air relief valve shall be placed at high points in the force main to prevent air locking.

Force mains shall enter the gravity sewer system at a point not more than 1 foot above the flow line of the receiving manhole.

The force main and fittings, including thrust blocking, shall be designed to withstand normal pressure and pressure surges (water hammer).

The following standard pipe materials shall be used for force-main construction and shall conform to the applicable ASTM or AWWA specification (latest revision)

Pipe Material	Specification
Ductile iron pipe	AWWA C151
w/polyethylene lining &	ASTM D1248, Class C, 30 mil thickness
polyethylene encasement*	AWWA C105
PVC Plastic Pipe	AWWA C900

* polyethylene encasement may be omitted if a corrosivity soils report provided per Appendix A of AWWA C105 indicates encasement is not needed Alternate linings may be approved on a case-by-case basis.

Pipe strength (Class) shall be determined by accepted engineering principles and the pipe specification based on the design pressure.

Friction losses through force mains shall be based on the Hazen-Williams' formula with a value for "C" equal to 120.

Separation from Water Mains

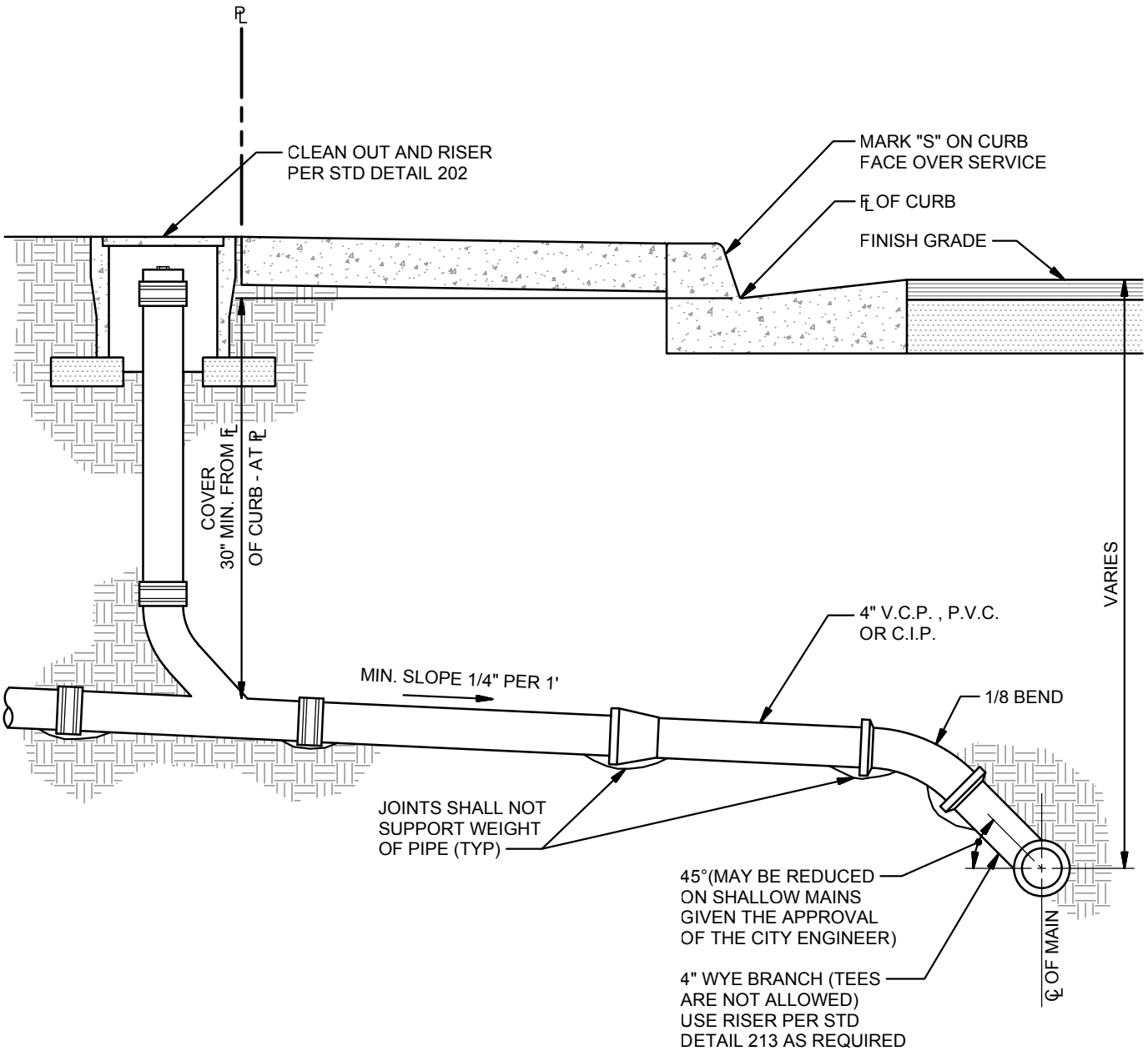
Force main separation from water mains shall conform to applicable State Dept. of Health Services regulations (legal min), and City Standards. The appropriate construction details shall be shown on the plans.

City of Riverbank
STANDARD PLANS

WASTEWATER

TABLE OF CONTENTS

Drawing No.	Description
601	Sewer Lateral
602	Cleanout
603	Cut – In - Wye
604	Lamphole
605	Standard Manhole
606	Manhole Cone
607	Manhole Base
608	Sanitary Sewer Drop In Existing Manhole & Drop Manhole
609	Sampling Manhole
610	Terminal Manhole
611	Manhole Cover to New Grade
612	Sewer Riser
613	Sand and Grease Interceptor



NOTES:

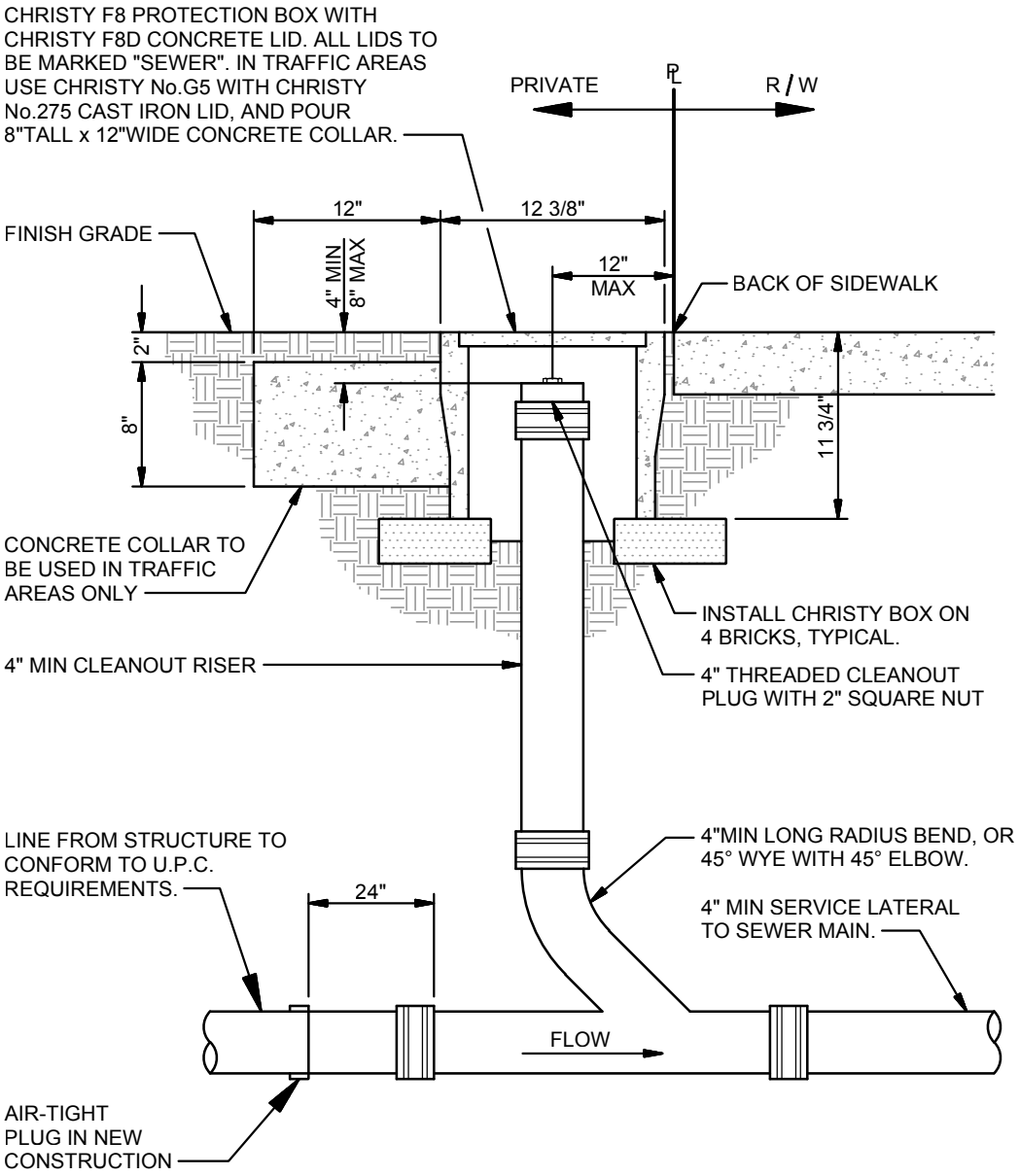
1. IN STREETS WHERE FLOWLINE OF MAIN SEWER IS MORE THAN 5 FEET BELOW FINISHED GRADE, A RISER WITH A 45° ELBOW MAY BE USED UP TO A POINT 5 FEET BELOW CURB GRADE, OR HOUSE CONNECTION MAY BE PLACED ON A UNIFORM SLOPE UP TO A POINT 5'-0" BELOW TOP OF CURB.
2. IF COVER IS LESS THAN 2'-6", ENCASE PIPE IN CONCRETE MINIMUM OF 4" THICK.
3. SEE SECTION 500 REGARDING BEDDING AND BACKFILL REQUIREMENTS.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

SEWER LATERAL

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	___-___-___	601
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 601.DWG		



NOTES:

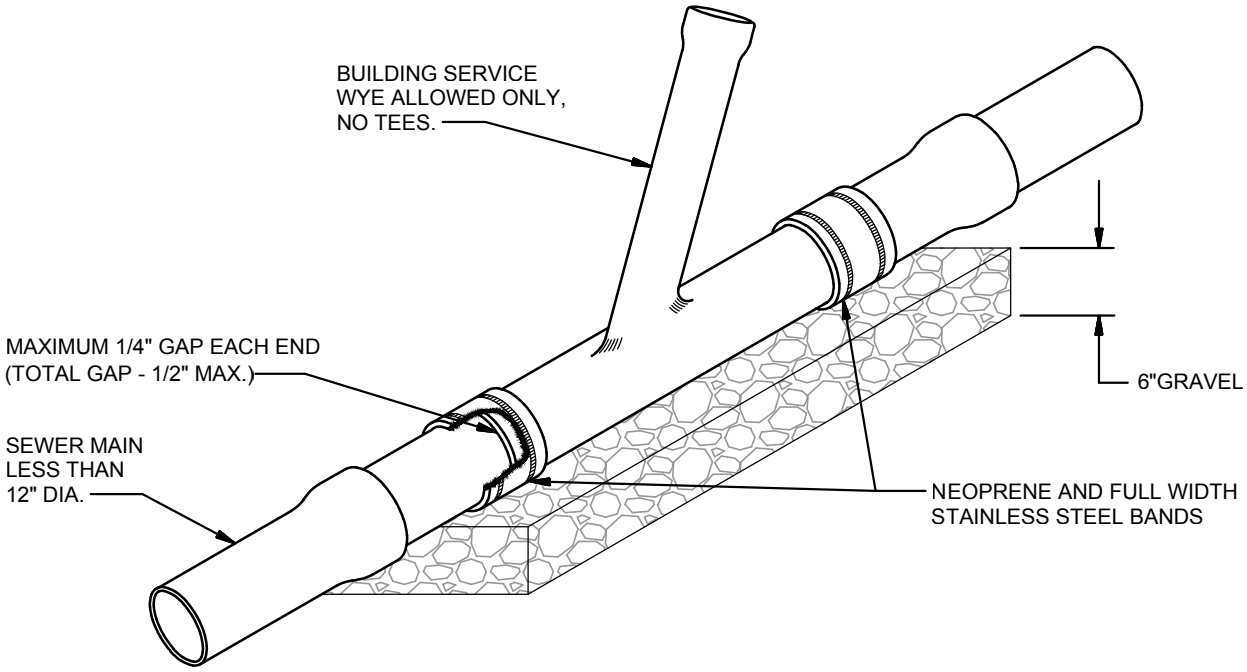
1. CLEANOUT RISER SHALL BE THE SAME SIZE AS THE SEWER LATERAL.
2. CLEANOUT SHALL BE LOCATED JUST BEHIND THE R/W LINE OUTSIDE THE R/W.
3. WYE AND CLEANOUT RISER COMBINATION MAY BE CAST IRON, PVC OR VITRIFIED CLAY PIPE.
4. ALL COUPLINGS SHALL HAVE STAINLESS STEEL BANDS.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

CLEANOUT

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	—-—-—	602
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 602.DWG		



NOTES:

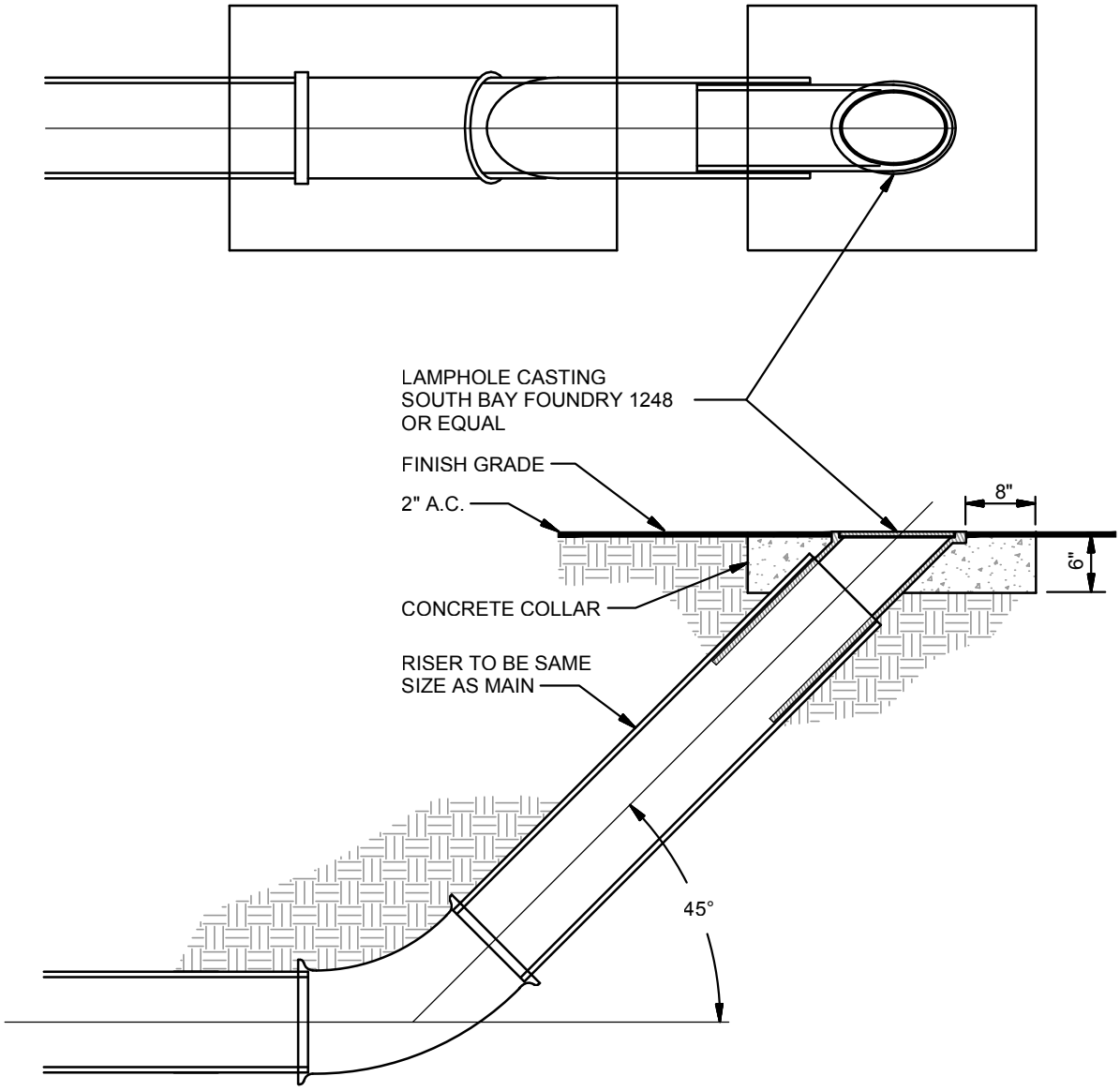
1. CUTS ARE TO BE MADE WITH A PIPE CUTTING TOOL.
2. SHEAR RINGS OF A TYPE APPROVED BY THE CITY ENGINEER SHALL BE INSTALLED ON ALL JOINTS.
3. TO BE USED ON EXISTING MAINS ONLY.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

CUT - IN - WYE

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	___-___-___	603
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 603.DWG		



NOTE:

1. LAMPHOLE TO BE USED AT DISCRETION OF CITY ENGINEER AT THE ENDS OF SHORT MAINS OR WHEN A SMALL NUMBER OF SERVICES ARE CONNECTED TO MAIN.

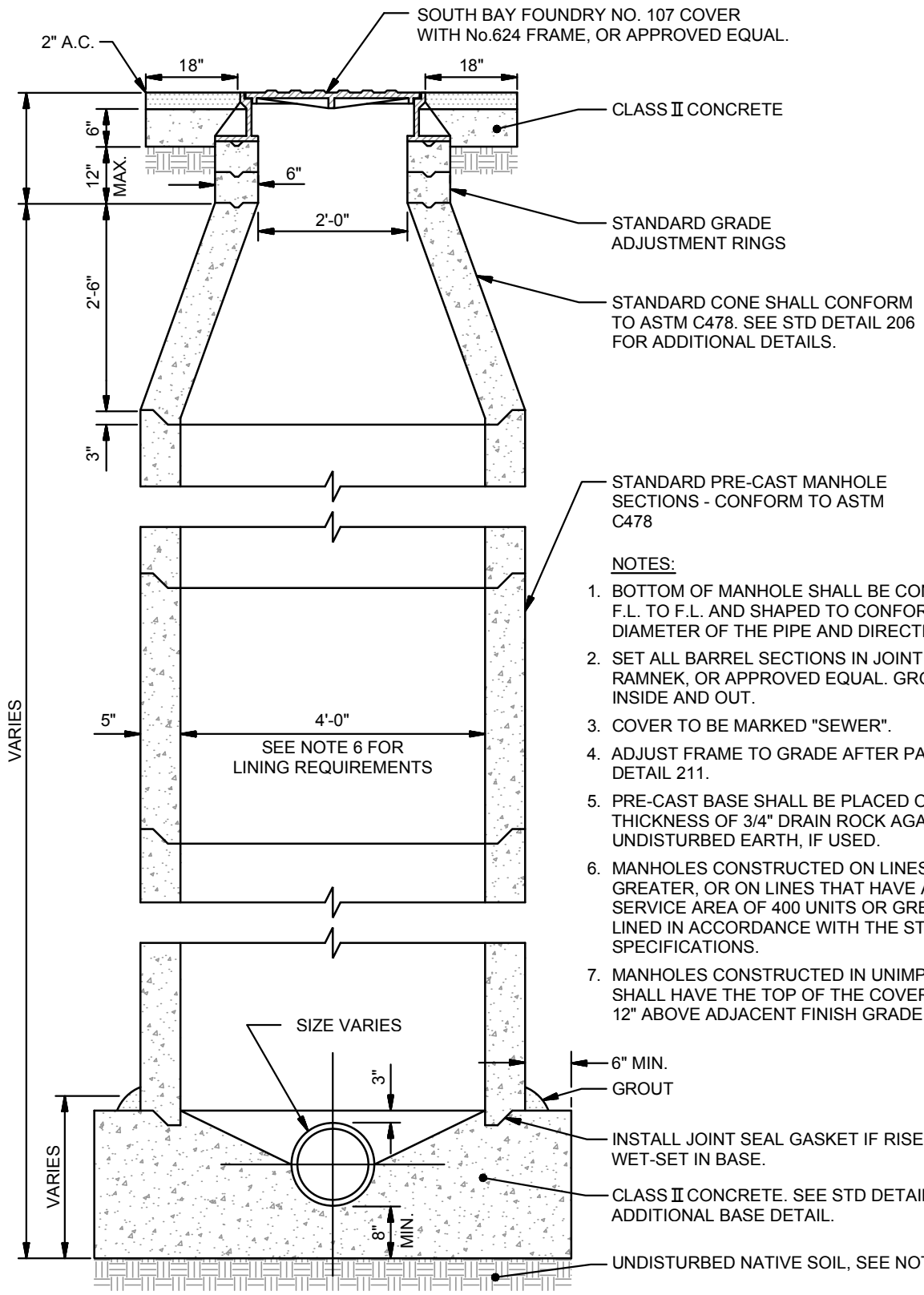
2. LAMPHOLES MAY BE INSTALLED AT SEWER LINES STUBBED FOR FUTURE EXTENSION.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

LAMPHOLE

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	—-—-—	604
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 604.DWG		



NOTES:

1. BOTTOM OF MANHOLE SHALL BE CONSTRUCTED FROM F.L. TO F.L. AND SHAPED TO CONFORM WITH THE DIAMETER OF THE PIPE AND DIRECTION OF FLOW.
2. SET ALL BARREL SECTIONS IN JOINT GASKETS, RAMNEK, OR APPROVED EQUAL. GROUT ALL JOINTS INSIDE AND OUT.
3. COVER TO BE MARKED "SEWER".
4. ADJUST FRAME TO GRADE AFTER PAVING, PER STD DETAIL 211.
5. PRE-CAST BASE SHALL BE PLACED ON 6" MINIMUM THICKNESS OF 3/4" DRAIN ROCK AGAINST UNDISTURBED EARTH, IF USED.
6. MANHOLES CONSTRUCTED ON LINES OF 12"DIA OR GREATER, OR ON LINES THAT HAVE AN UPSTREAM SERVICE AREA OF 400 UNITS OR GREATER, SHALL BE LINED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
7. MANHOLES CONSTRUCTED IN UNIMPROVED AREAS SHALL HAVE THE TOP OF THE COVER APPROXIMATELY 12" ABOVE ADJACENT FINISH GRADE.

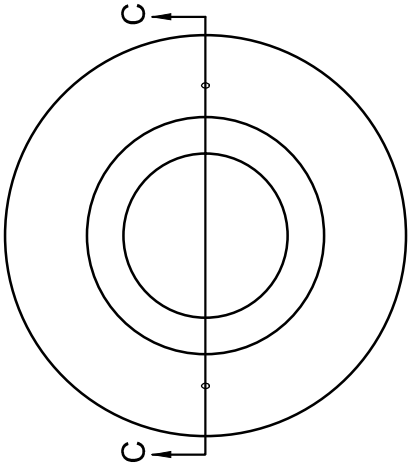
CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

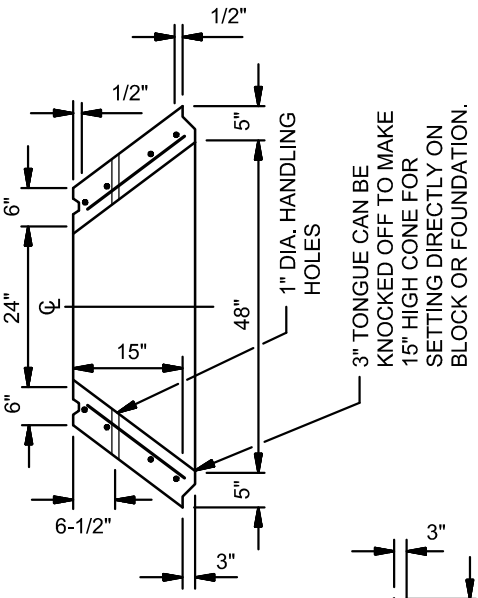
STANDARD MANHOLE

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	—-—-—	605
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 605.DWG		

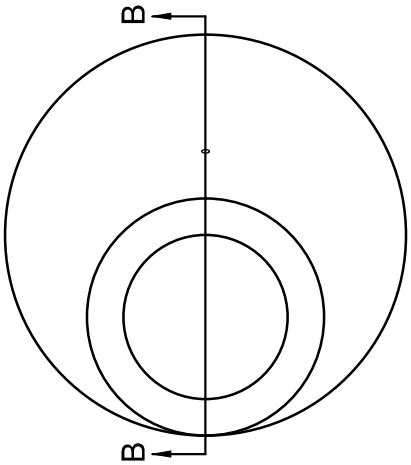
CONCENTRIC SHORT CONE

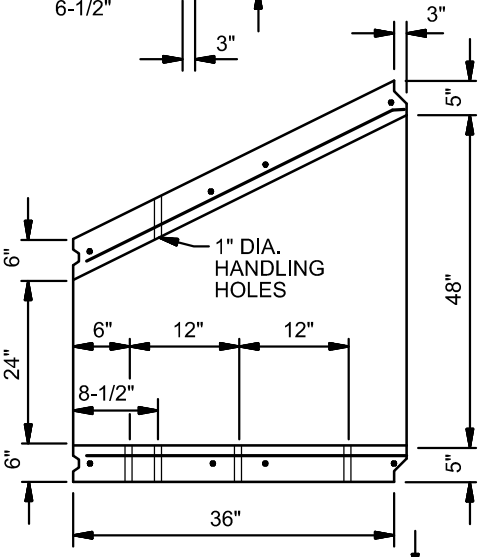




SECTION C-C

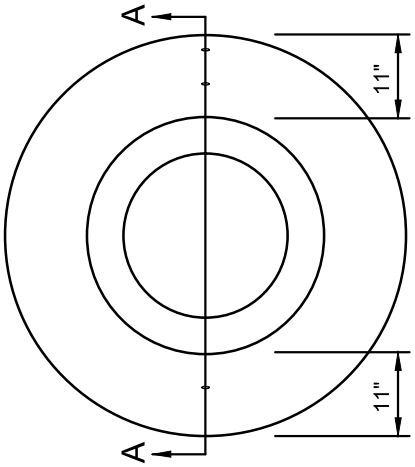
ECCENTRIC CONE

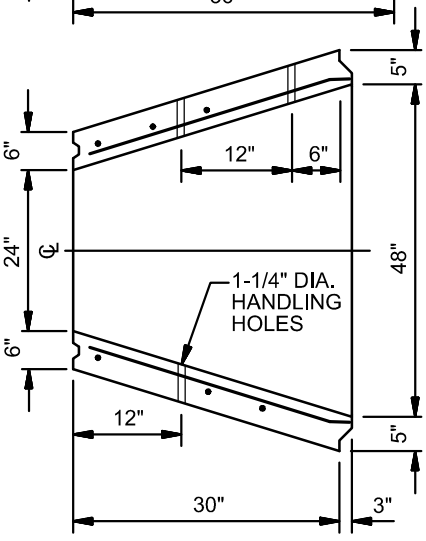




SECTION B-B

CONCENTRIC CONE





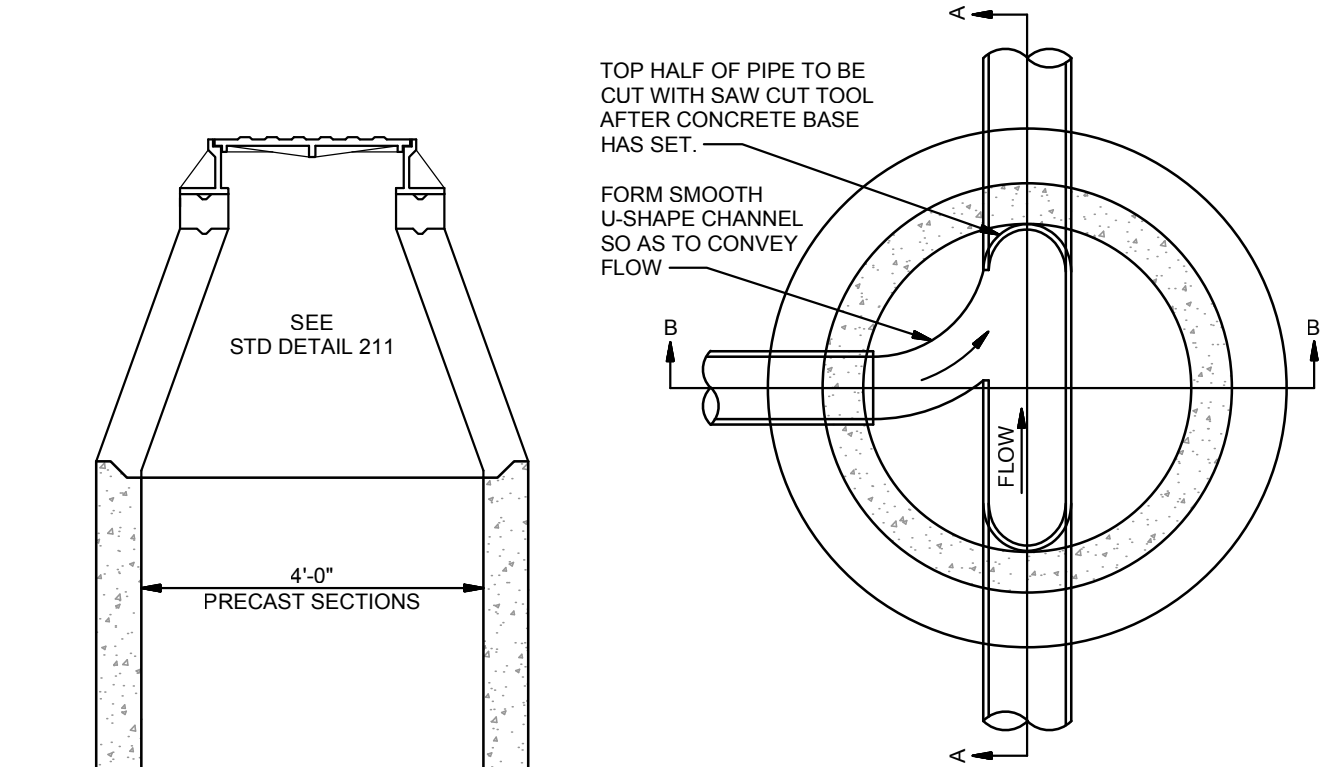
SECTION A-A

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

MANHOLE CONE

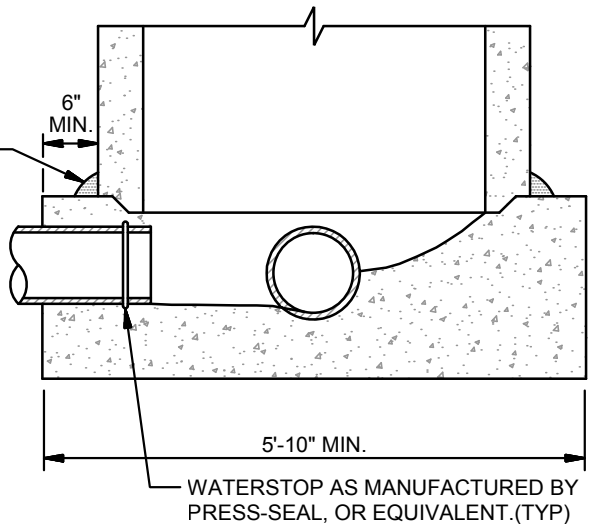
SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	— - — - —	606
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 606.DWG		



PLAN

SECTION A-A



SECTION B-B

NOTES:

1. PIPE TO BE LAID THROUGH MANHOLE AND TOP HALF REMOVED AFTER CONCRETE HAS SET.
2. POUR IN PLACE BASES TO BE POURED AGAINST UNDISTURBED NATIVE SOIL. PRE CAST BASES SHALL BE SET ON A 6"MIN LAYER OF 3/4" DRAIN ROCK ON UNDISTURBED NATIVE SOIL.
3. FLEXIBLE RUBBER MANHOLE GASKETS SHALL BE INSTALLED AT ALL PIPE PENETRATIONS INTO THE BASE. USE PRESS-SEAL WATERSTOPS, OR SIMILAR.

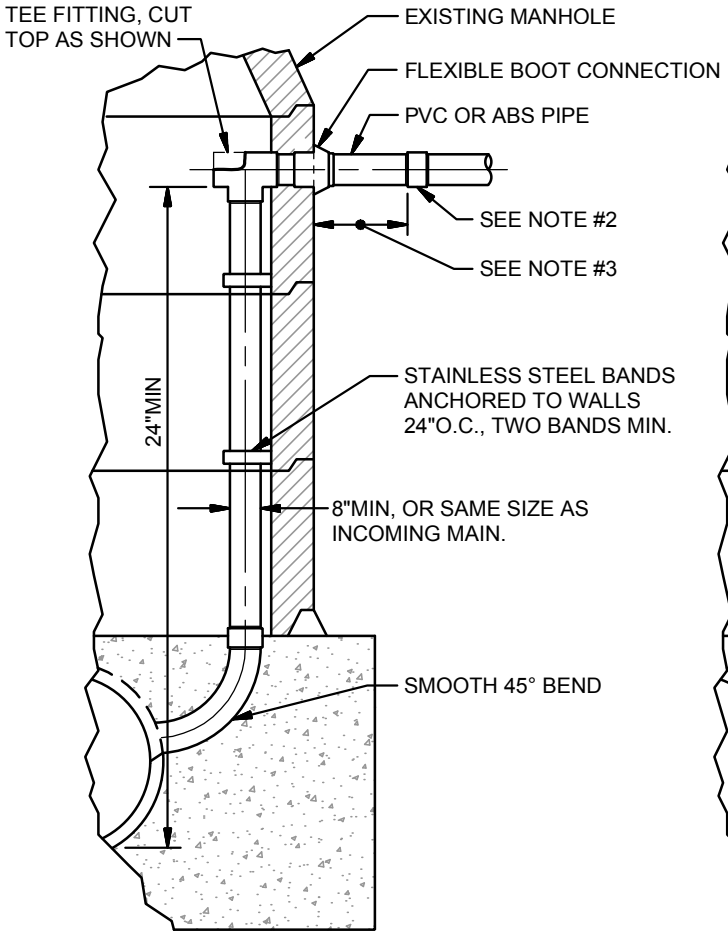
CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

MANHOLE BASE

SIGNATURE

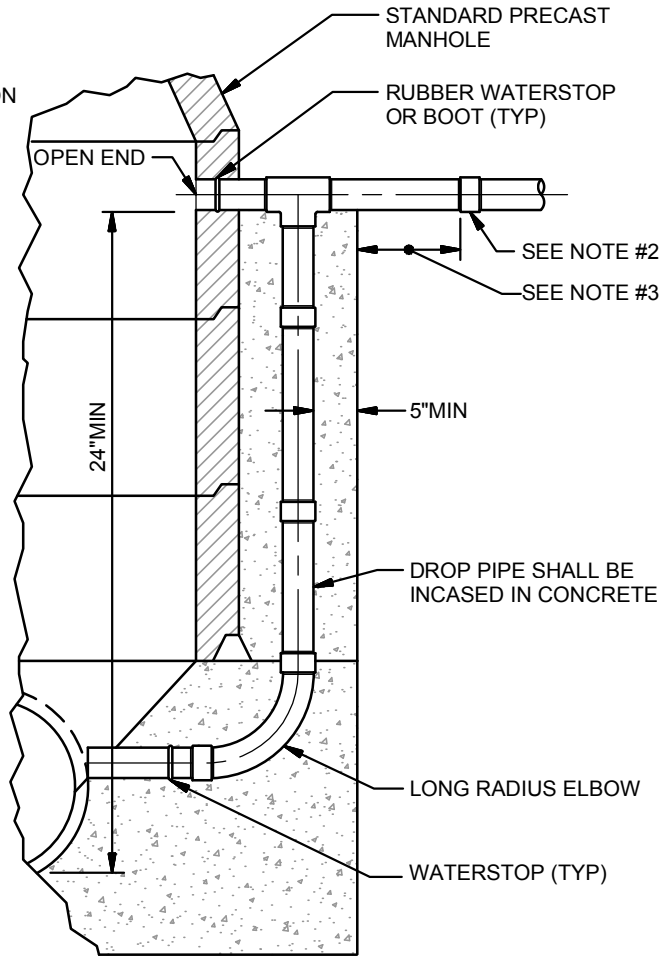
DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	—-—-—	607
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 607.DWG		

SANITARY SEWER DROP IN EXISTING MANHOLE



THIS TYPE OF DROP CONNECTION SHOULD BE USED ONLY ON EXISTING MANHOLES, AS APPROVED BY THE CITY ENGINEER.

SANITARY SEWER DROP MANHOLE



THIS TYPE MANHOLE SHALL BE USED WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE OUTLET PIPE AND THE INVERT OF THE FEEDER OR COLLECTOR SEWER EXCEEDS 24"

NOTES:

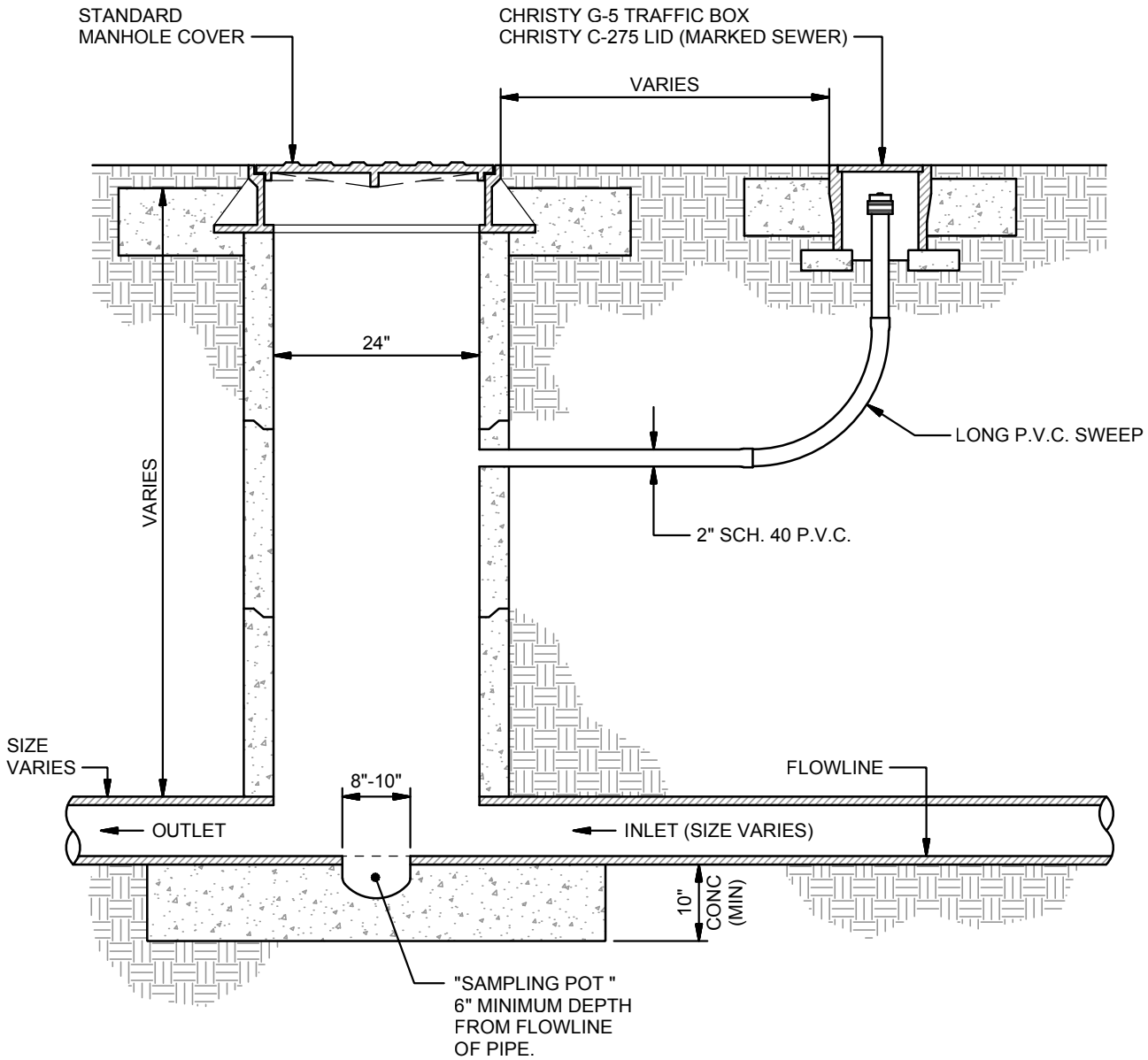
1. MORE THAN A 2' DROP FOR AN INCOMING PIPE SHALL REQUIRE A DROP CONNECTION.
2. FLEXIBLE JOINT-BELL & SPIGOT OR ADJUSTABLE REPAIR COUPLING (ARC). SOLVENT WELDED NOT PERMITTED.
3. 12" MAX. FOR 8" OR LARGER PIPE. 24" MAX. FOR PIPES LESS THAN 8".
4. INSIDE DROP CONNECTIONS NOT PERMITTED ON NEW MANHOLES.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

SIGNATURE

SANITARY SEWER DROP IN EXISTING MANHOLE & DROP MANHOLE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	—-—-—	608
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 608.DWG		

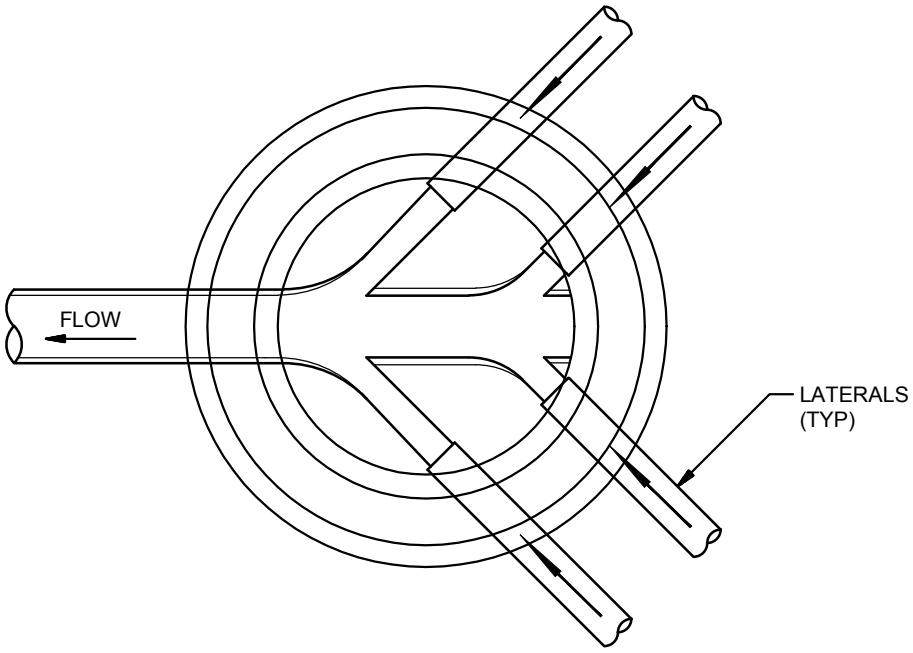


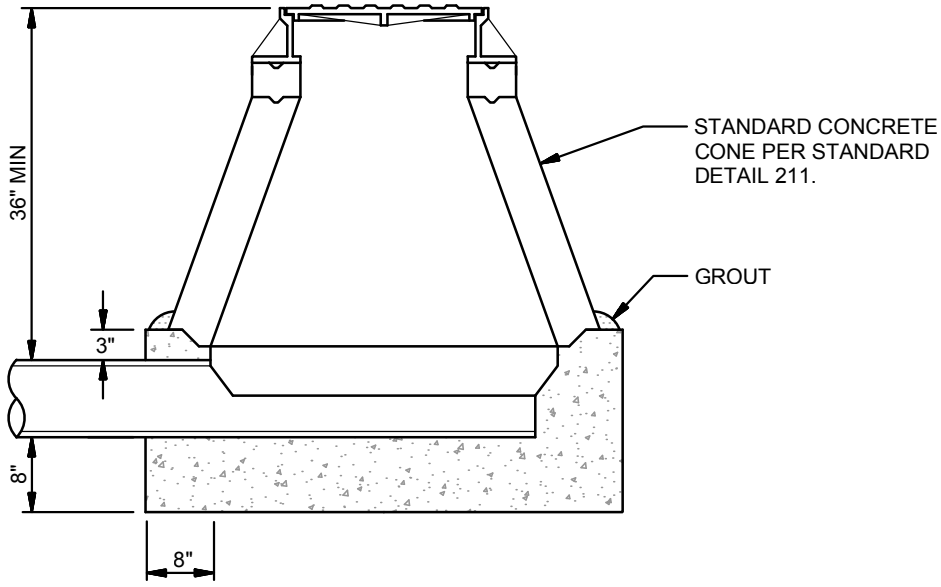
CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

SAMPLING MANHOLE

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	—-—-—	609
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 609.DWG		





NOTES:

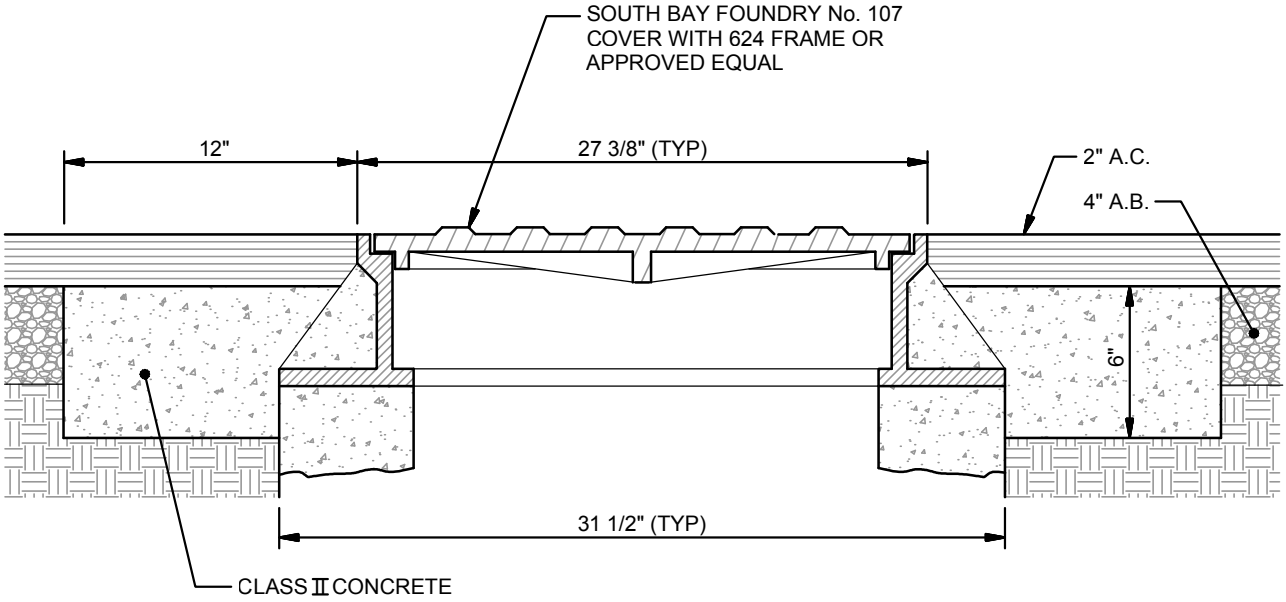
1. ALL SEWER LATERALS SHALL BE CONNECTED TO THE MAIN.
2. A MAXIMUM OF 4 LATERALS SHALL CONNECT INTO A TERMINAL MANHOLE.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

TERMINAL MANHOLE

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	—-—-—	610
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 610.DWG		

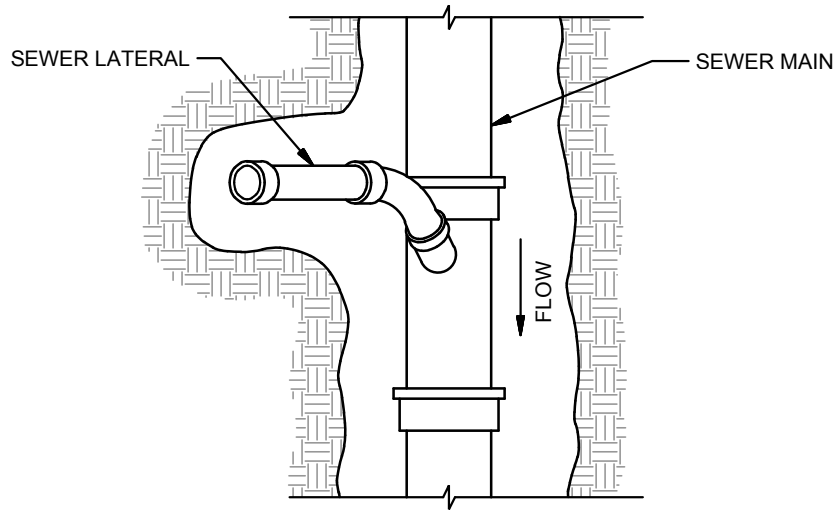


CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

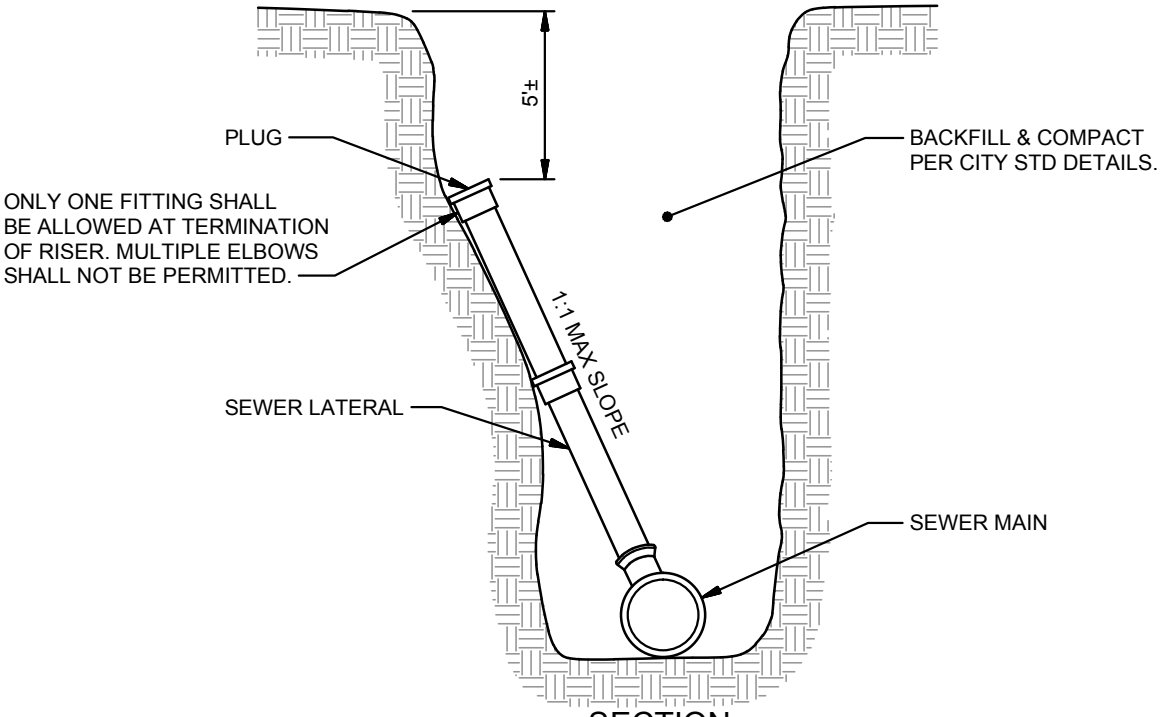
SIGNATURE

MANHOLE COVER TO NEW GRADE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	—-—-—	611
REVISIONS:	SECTION:	DRAWING NAME:		
NONE	SEWER	611.DWG		



PLAN



SECTION

NOTE:

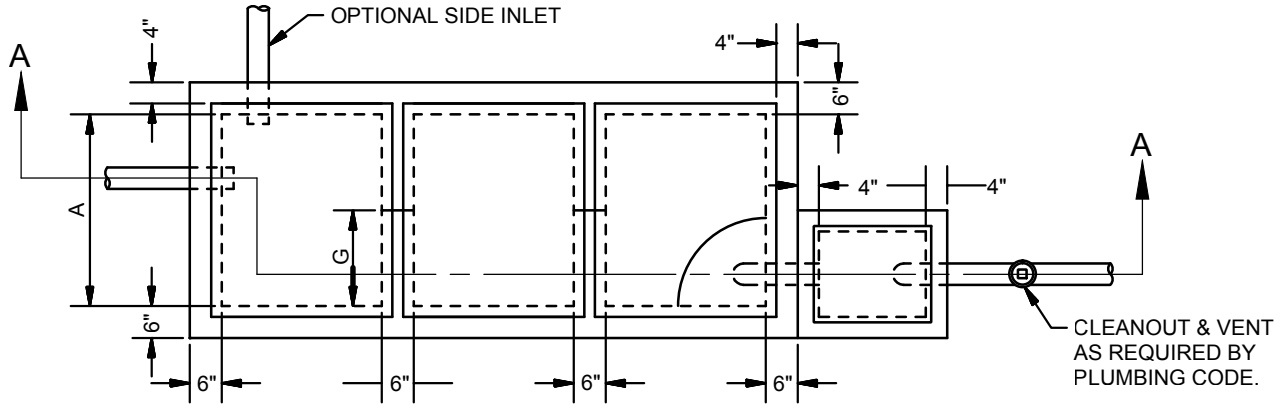
SEWER RISER TO BE USED IN CONJUNCTION WITH SEWER LATERAL PER STD DETAIL 201 AS NECESSARY. MAINS EXCEEDING 12' OF COVER SHALL REQUIRE A FLYLINE FOR LATERALS.

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

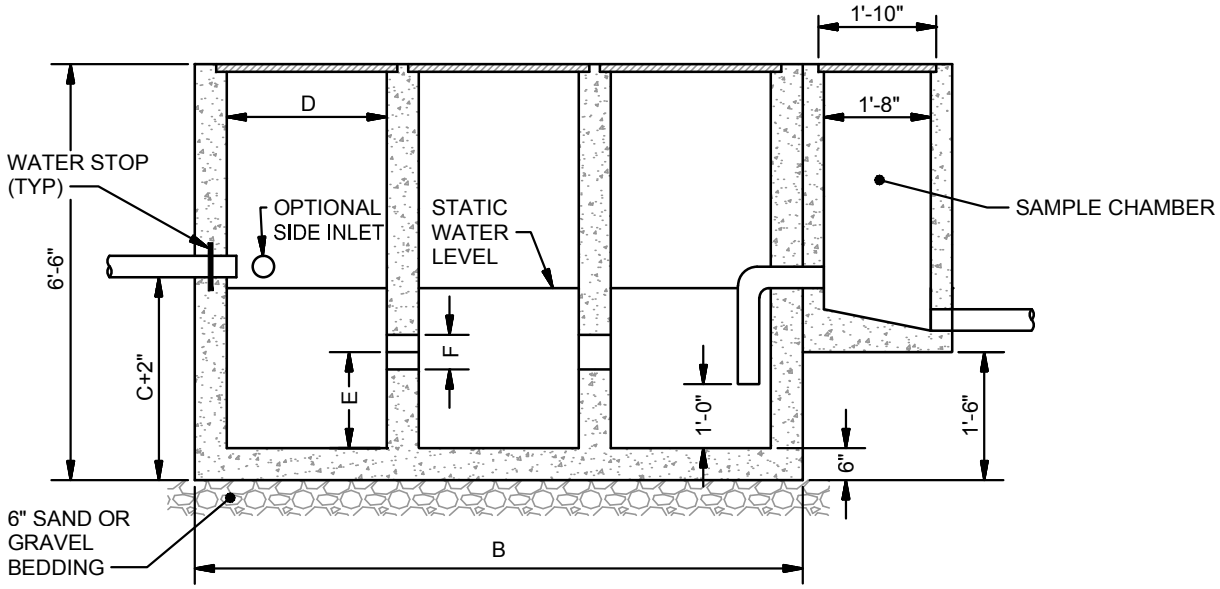
SEWER RISER

SIGNATURE

DRAWN BY:	DATE:	SCALE:	ADOPTED BY THE CITY COUNCIL:	DRAWING NO.
GK	9/18/14	NTS	—-—-—	612
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 612.DWG		



PLAN VIEW



SECTION A-A

NOTES:

1. AN ACCEPTED ALTERNATE IS P&L CONCRETE PRODUCTS PRECAST GREASE TRAP WITH ADDED SAMPLE CHAMBER ON OUTLET AS SHOWN ON THIS DRAWING.
2. ALL LIDS TO WITHSTAND H-20 LOADING. STANDARD MANHOLE FRAMES, COVERS AND GRADE RINGS ARE ACCEPTABLE FOR ACCESS. ACCESS TO BE PROVIDED TO EACH CHAMBER.
3. INTERCEPTORS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SECTIONS 1009 THROUGH 1017 AND APPENDIX H OF THE UNIFORM PLUMBING CODE, AS APPLICABLE.
4. INTERCEPTORS SHALL BE OF THE THREE-STAGE TYPE WITH A SAMPLING CHAMBER, AS SHOWN IN THIS DRAWING
5. CONTRACTOR IS TO PROVIDE SUBMITTAL DATA TO CITY PUBLIC WORKS DEPARTMENT OF PRE MANUFACTURED UNITS FOR REVIEW PRIOR TO CONSTRUCTION.

CAPACITY GALLONS	DIMENSIONS							COVER SIZE	METAL COVERS	PIPE SIZE
	A	B	C	D	E	F	G			
510	3'-0"	9'-6"	3'-0"	2'-6"	1'-6"	4 1/2"	1'-6"	2'-10"x3'-4"	1/4" STEEL PLATE	4"
866	3'-5"	10'-3"	4'-0"	2'-5"	2'-0"	0'-6"	1'-9"	3'-10"x3'-10"	3/8" ALUMINUM PLATE	4"
1260	4'-0"	12'-6"	4'-0"	3'-6"	2'-0"	0'-6"	2'-0"	3'-10"x4'-4"	3/8" ALUMINUM PLATE	4"

CITY OF RIVERBANK
DEPARTMENT OF PUBLIC WORKS

SIGNATURE

SAND AND GREASE INTERCEPTOR

DRAWN BY: GK	DATE: 9/18/14	SCALE: NTS	ADOPTED BY THE CITY COUNCIL: —-—-—	DRAWING NO. 613
REVISIONS: NONE	SECTION: SEWER	DRAWING NAME: 613.DWG		

City of Riverbank
DESIGN STANDARDS

WASTEWATER

TABLE OF CONTENTS

6.100 Materials

A. General
B. Gravity Sewer Pipe
C. Service Laterals
D. Manholes
E. Castings
F. Cleanouts
G. Carrier or Casing Pipe
H. Pipe to Manhole Connections

6.200 Installation

A. Sanitary Sewer Installation
B. Service Connections
C. Manholes

6.300 Testing

A. Cleaning and Flushing
B. Low Pressure Air Test
C. Televised Inspection
D. Deflection Testing

6.400 Measurement & Payment

A. Pipe
B. Structures & Manholes

SECTION 6: SANITARY SEWER

6.100 MATERIALS

A. General

The City Engineer shall approve the source and supply of materials.

B. Gravity Sewer Pipe

1. Vitrified Clay Pipe shall be extra strength, bell and spigot end compression joint pipe, conforming to ASTM C700 as it applies to unglazed vitrified clay pipe.

2. Ductile Iron Pipe shall be Pressure Class 350 and shall conform to ANSI/AWWA C151. All DIP shall be protected by a polyethylene encasement meeting the requirements of ANSI/AWWA C105. Fittings shall conform to ANSI/AWWA C110.

   Ductile Iron Pipe for use in gravity sewer systems shall be lined with Protecto 401 Ceramic Epoxy Liner or equal.

3. Polyvinylchloride Pipe (PVC) shall be SDR 26, conforming to the requirements of ASTM D3034. Joints shall be gasketed, bell-and-spigot, push-on type with elastomeric seals conforming to ASTMD3212. Gaskets may be factory installed or field installed, as recommended by pipe manufacturer.

C. Service Laterals

Pipe shall be the same type and class as that used for the main.
Joints and Couplings for laterals shall be the same type and specifications as those used for the main.

D. Manholes

1. Standard Precast :

Sanitary sewer section manholes shall be precast reinforced concrete conforming to ASTM C 478. The manhole base, risers and cone shall have a minimum compressive strength of 3,000 psi at 28 days. Manholes shall be constructed in accordance with the Standard Details.

2. Lined Manholes:

When required by City Standards or indicated on the plans, manholes shall be SuperCoat or Polyurethane lined. The scope of the lining shall include, unless otherwise shown on the plans, all unlined interior concrete surfaces of the manhole. The Contractor shall provide submittal data for review and approval by the Public Works Department prior to application.

Polyurethane Lining: The lining material shall be an epoxy base coat under a polyurethane finish coat. The material shall be Sancon 100, or equivalent. The epoxy base coating shall be applied to a minimum thickness of 3 mils. The polyurethane shall be applied to a thickness of 125 mils (1/8”) in one (1) continuous coat, without seams, free from any holes or defects.

SuperCoat Lining:

SuperCoat lining by Lafarge aluminates. The lining shall be applied by a licensed SuperCoat applicator and in accordance to the product recommendations. The depth of the application shall be ¾" to 1" minimum.

Lining System Warranty:
Lining System shall be warranted for five (5) years against any type of failure. The Contractor shall remove and replace all failures at his expense.

I. Castings

Iron castings for manhole covers and frames shall conform to ASTM A 48, Class 25 and be of the dimensions and makes/models shown on the Standard Details.

All castings shall be sound and free from shrinkage cracks, blowholes, and other defects. All fins and burnt sand must be removed. Excessive porosity and spongy surfaces will constitute causes for rejection.

The manhole cover shall seat evenly and firmly in the frame. Cast iron frames and covers shall be dipped or painted with asphalt, which will form a tough, tenacious, non-scaling coating which does not have a tendency to become brittle when cold or sticky when hot.

F. Cleanouts

Cleanout frames and covers shall be manufactured, tested and otherwise furnished in accordance with the Standard Specification of Fray Iron Castings ASTM A 48, Class 30. The contact surfaces of frames and cover shall be machine surfaced to eliminate rattling and other movement under traffic. Castings shall be equal in materials and construction to Christy F14, or equal. Concrete shall be Class II and have a 28-day compressive strength of 3,000 psi.

G. Carrier or Casing Pipe

Pipe used as a conductor pipe under a highway or railroad shall be welded steel pipe. The Pipe shall conform to the Standard Specifications for Public Works Construction (Greenbook) Section 207-10, "Steel Pipe". The protective lining and coating, if any, shall be as shown on the plans or specified in the Special Provisions.

When the conductor pipe is to be installed by boring and jacking, the wall thickness shall be ¼" for sizes up to and including 24" in diameter, and 5/16" for sizes 27" to 36" in diameter, unless otherwise specified.

H. Pipe to Manhole Connections:

A Waterstop grouting ring or seal shall be used for pipe penetrations into cast-in-place manhole bases. Flexible rubber boot connections with stainless steel components shall be used for pipe penetrations into the walls of the manhole, or into pre-cast bases. Connections shall be installed as per the manufacturer's recommendations, and shall meet the requirements of ASTM C 923.

6.200: INSTALLATION

A. Sanitary Sewer Installation

1. All sanitary sewer pipe installations shall be accomplished as specified herein except where modified by the requirements specific to the various types of pipeline materials specified under Section 5.03.

2. All pipes shall be laid to conform to the prescribed line and grade as shown on the plans and each pipe length checked to the grade line, which the Contractor establishes from the grade stakes.

3. Each length of pipe shall be laid on compacted, approved bedding material as specified and shall have full bearing for its entire length between bell holes excavated in said bedding material to allow for unobstructed assembly of all bell and spigot joints. “Stabbing”, “Swinging In”, or “Popping On” spigot ends of pipe into bell ends will not be permitted. After jointing is accomplished, all spaces between pipe and bell holes shall be packed with bedding material, taking care not to damage, move or lift the pipe from its bedding support.

4. Adjustments of pipe to line and grade shall be made by scraping away or filling in and tamping approved material under the body of the pipe. No wedging or blocking to support the pipe will be permitted.

5. A sewer line, unless otherwise approved by the Inspector, shall be laid, without break, upgrade from point of connection to existing sewer and with the bell end forward or upgrade. Pipe shall not be laid when the Inspector determines that the condition of the trench or the weather is unsuitable. When pipe laying is not in progress, the forward end of the pipe shall be kept effectively closed with an approved temporary plug or cap.

6. Sewer pipes, branches, stubs, or other open ends which are not to be immediately connected, shall be plugged or capped with a standard watertight plug or cap, as approved by the Inspector for use in the particular installation. The plug or cap shall be placed on a standard end.

7. Pipe entering or leaving manholes or other structures shall have joints within 2½'of the manhole base.

8. In all cases, flexibility of joints at the manhole base shall be preserved to prevent damage to the pipe by differential settlement.

9. All sewer line connections to manholes, trunk sewers, main sewers, or side sewers shall be left uncovered until after the inspection has been made. After approval of the connection, the trench shall be backfilled as specified.

10. If the sewer is to be laid in an area that is to be filled, and the cover prior to filling is less than 5', the pipe shall not be laid until the area has been filled to a level 5' above the proposed pipe and compacted to 90% relative compaction, unless otherwise authorized by the City Engineer.

B. Service Connections

Attention is directed to the Standard Details for additional requirements pertinent to lateral installations.

1. Where indicated on the plans, a cut-in wye shall be used with plain ends along the "run" of the pipe. Tees shall not be used. Cut-in wyes shall be allowed on existing mains, only. For new mains under construction, the wyes shall be connected to the main using standard bell-and-spigot joints. The first pipe segment downstream from the wye shall then be cut (beveled) to the required length so as to fit into the bell of the next downstream pipe end.

2. Cut-in wye connections are only allowed in mains less than 12", otherwise a manhole in accordance with the Standard Details is required.

3. When cutting in a wye, make three (3) initial cuts in the main, 2" to 6" inches apart, and remove the rings. Cut the main to the required length to insert wye.

4. Use well graded, crushed stone or crushed gravel, meeting the requirements of ASTM C 33, Gradation 67 (3/4 to No. 4) shall be placed under the main line and the sewer service lateral within the right-of-way.

5. When joining the cut ends of the existing main to the wye, a "BAND SEAL" with stainless steel shear type sewer repair couplings, or equal; shall be used. Calder couplings, No-Hub couplings or plastic will not be permitted on the "run" of the pipe.

6. Whenever possible, all connections at new and existing manholes shall be made with matching crowns.

7. That portion of any lateral line to be placed under an existing curb and gutter and/or sidewalk shall be done by boring or cutting and replacing the existing curb and gutter and/or sidewalk.

8. The lateral line shall have a clean-out at back edge of sidewalk as shown on the Standard Details. A box shall be installed as noted on detail. Said cleanout shall consist of a combination wye and eighth bend. Laterals and cleanouts shall not be located in the driveway, unless specifically approved by the City Engineer.

9. The wye branches, unless otherwise specified, shall be inclined at an angle of 45 degrees from the horizontal. In no case shall the springline of the lateral be lower than the springline of the main line.

10. The end of the lateral service shall extend a minimum of 24" beyond cleanout wye/riser combination.

11. The location of every sewer service shall be marked with an “S” directly above the service on the face of the curb; the “S” shall be 2" in height and ¼" in depth.

C. Manholes

1. Precast Manhole Construction -Excavation and backfill for all precast manholes shall be in conformance with the requirements of Section 19-3 of the State Specifications and installed as specified herein. All embedment materials under, around and at least 3" over all pipelines located within five feet of structure bases shall be compacted without jetting prior to section placements. All precast manholes shall be constructed to subgrade prior to adjoining sewer pipeline trench and/or structure backfill where such method of compaction is permitted and used.

2. Manholes installed in areas outside of developed areas shall have bolted manhole covers. Rim elevations shall be a minimum of 1'above ground. The exposed manhole above existing ground shall be constructed entirely of grade rings and noted on the plan sheets. If the manhole outside an existing street is in a future street area, then grade rings shall extend below ground at least 18".

3. All joint surfaces of precast sections and face of manhole base shall be thoroughly clean prior to setting precast sections. These various sections shall be set in preformed plastic sealing gaskets of material conforming to the requirements of FEDERAL SPECIFICATION SS-S-00210.

    a. Installation of gaskets -Apply one (1) coat of primer to clean, dry joint surface (both tongue and groove) and of the two-piece wrapper on the gasket. The outside paper will protect the gasket and assure against stretching. Before setting the manhole section in the trench, attach the plastic gasket strips end-to-end to the tongue or groove of each joint, forming a continuous gasket around the entire circumference of the manhole joint.

    b. Handling of barrel sections after the plastic gasket has been affixed shall be carefully controlled to avoid bumping the gasket and thus displacing it or contaminating it with dirt or other foreign material. Any gaskets so disturbed shall be removed and replaced if damaged and repositioned if displaced.

    c. Care shall be taken to properly align the manhole section with the previously set section before it is lowered into position.

    d. During cold or wet weather, pass direct heat over the concrete joint surface lightly until ice, frost and moisture are removed and surface to be primed is dry and warm immediately before application of primer. Direct heat shall also be passed over plastic gasket strips immediately prior to attaching them to joint surfaces and immediately prior to insertion of tongue into groove.

e. After manhole section has been set, the excess joint gasket shall be neatly trimmed away, and each joint shall be neatly grouted along the manhole wall, inside and out.

4. The cast-in-place base shall be Class II, 3,000 psi, 28-day concrete with 1½" maximum size aggregate. It shall rest on firm, undisturbed soil, and shall be the dimensions shown on the Standard Details. Where sewer lines pass through manholes, the pipe shall be laid continuously as a whole pipe. Waterstop gaskets, or equivalent, flexible rubber gaskets shall be installed at each pipe penetration into the manhole base. After the manhole base and precast sections have been placed and sufficient time has elapsed to allow all concrete and grout to set, the top half of pipe within the manhole shall be carefully cut off and the sides mortared. All channels so formed form a smooth flowing channel at all flow depths.

5. Temporary covers of 3/8" steel plate of sufficient size to adequately cover the opening shall be placed on the cone until the base is complete and the manhole casting shall then be installed. Suitably located ribs shall be welded to the underside of the cover to hold it in place during any grading operations.

6. The throat of the manhole shall be made of precast concrete rings of the proper inside diameter. The minimum depth of throat permitted shall be one 3" ring between the cone and the frame. The maximum depth permitted shall be 12" of rings between the cone and frame.

7. When adjusting the manhole frame and cover to grade, the frame shall be wired to a 2" x 4" of sufficient length to span the excavation and the throat completed to the right level. Whenever the space between the bottom of the frame and the top of a ring is less than 3" inches, the void may be filled with concrete, poured against a suitable form on the inside of the structure.

8. When adjusting an existing manhole to grade and the total depth of the throat from the top of the frame to the bottom of the throat exceeds 18", the upper portion of the manhole shall be removed to the first full-size manhole section. The upper portion shall then be reconstructed as outlined above.

9. Penetrations for connections to existing manholes shall be core drilled or neatly sawcut by the contractor. Use of a pneumatically powered chipping hammer for use in the removal of the sections of the manhole wall or base shall l be on a case-by-case basis and only with the prior approval of the on site inspector. The surface edge of the opening shall be ground or milled as necessary, with all reinforcing wire ground to the level of the surrounding concrete wall of the opening. Reinforcing wire shall be removed and not be permitted to remain in the cut. Bent wire left in cut shall not be permitted.

10. Sealing the pipe shall be accomplished through the use of either a mechanically installed, flexible watertight boot connection, a cast-in-place watertight flexible boot connection, or a similar flexible sealing gasket. Boot connections shall use stainless steel bands and components, and shall conform to the requirements of

ASTM C923. Contractor shall provide submittal data prior to construction for review and approval by the onsite inspector. All sealing gaskets and/or boot connections shall be installed in accordance with the manufacturer's recommendations.

11. Before any work is started on adjusting or repairing a manhole, the channels in the base shall be covered with strips of wood, and the entire base covered with a heavy piece of canvas. This cover shall be kept in place during all work. Upon completion of the work the wood strips and the canvas shall be removed from the manhole, allowing no debris to fall or remain in the manhole.

12. Lined Manholes

Installation of the SuperCoat, or Polyurethane lining shall conform to the requirements as specified by manufacturer.

a. Field Joints: All joints between lined pipe and lined structures shall be either Type C-1 or Type C-2 as defined in Section 311-1 of the Standards Specifications for Public Works Construction (SSPWC). Field joints between sections of lined pipe shall be Type P-1 as defined in Section 311-1 of the SSPWC specifications. When transitioning between lined and unlined pipe, a factory "turn back" shall be used or a type 316 stainless steel band and neoprene gasket/termination secured with type 316 stainless steel wedge anchors provided at the transition for the full pipe circumference. Contractor shall provide transition details to the Engineer for review prior to installation. Unless shown otherwise, field joints in lined structures shall be one (1) of the following types defined in the SSPWC: Type C-1, Type C-2 or Type C-3.

b. Field Welding and Testing:
Field welding and testing of the lining of structures and between pipe and structures shall be made in strict conformance with lining manufacturer's instructions and recommendations. All tests shall be performed by the contractor in the presence of the City inspector. The inspector shall be notified at least 24 hours in advance of a scheduled test.

c. Polyurethane Lining Surface Preparation:
The Contractor shall furnish all labor, material and equipment necessary for the preparation of surfaces, application of lining, safety procedures, protection of existing surfaces, equipment and cleanup.

All new concrete surfaces shall be grit blasted to provide proper adhesion of coating system. All debris produced from the blasting operation shall be removed from the structure prior to coating. No debris shall be allowed to enter the sewer system. The concrete surfaces shall be air dried prior to installation of the liner.

All unnecessary holes in structure shall be sealed prior to lining with acid resistant sealant recommended for surfaces being sealed.

d. Lining Installation:
The lining application shall be performed only by workmen trained and experienced with the specified material. The lining shall be applied by high pressure airless equipment approved by the lining manufacturer. The equipment shall be in good working order to insure correct proportioning and mixing of the components.

The polyurethane shall be applied to a thickness of 125 mils (1/8") in one (1) continuous coat, without seams, free from any holes or defects. The lining shall be installed over dry concrete below the water level by using appropriate bypass equipment.

During the lining application the Contractor shall take wet gage thickness readings as required to insure correct lining thickness.

The finished coating shall be free from porosity, without bubbles or pinholes and uniform in color. All areas in question shall be removed and reworked to the satisfaction of the Engineer.

Application of the lining shall not take place when exposed to rain, fog or high winds. It is the Contractor's responsibility to insure protection of the work from the above-mentioned conditions.

e. Lining System Warranty:
Lining System shall be warranted for five (5) years against any type of failure. Contractor shall remove and replace all failures at his expense.

6.300: Inspection and Testing of Sewer Lines

All testing indicated herein shall be performed after backfill and compaction of the trench, grading and compaction of subgrade, after installation of curb and gutter, and prior to placement of aggregate base and AC paving. Compacted subgrade shall have passed the applicable compaction tests required by these Construction Specifications prior to sewer line testing. All tests shall be performed under the supervision of the City Public Works Department, or their appointed representative. Testing, and any required re-testing, shall be at the expense of the Contractor.

A. Cleaning and Flushing:
Prior to performing a leakage test, the pipe installation shall be thoroughly cleaned. Cleaning shall be performed by the Contractor by means of an inflatable rubber ball. The ball shall be of a size that will fit snugly into the pipe to be flushed. The ball shall be placed in the last cleanout or manhole on the pipe to be cleaned, and water introduced behind it. The ball shall pass through the pipe with only the pressure of the water impelling it. All debris flushed out ahead of the ball shall be removed at the first manhole where its presence is noted. If any wedged debris or damaged pipe shall stop the ball, the Contractor shall remove the obstruction. When a new sewer is connected to an existing line, cleaning and flushing shall be carried out to the first existing manhole downstream from the point of connection.

B. Low-Pressure Air Test:

After completing backfill of a section of sewer line, the Contractor shall at his/her expense, conduct a Line Acceptance Test using low-pressure air. The test shall be performed using the equipment listed below, according to stated procedures and under the supervision of the City Engineer.

PROCEDURE: The section of pipe to be tested shall be isolated by completely blocking all outlets in the section under test. Careful attention must be given to the bracing of all plugs, as the line will be under pressure. One (1) of the plugs used at the manhole must be equipped for an air inlet to fill the line from the air compressor. The air compressor which feeds air into the pipe section must be equipped to control the air entry rate and to prevent the pressure from exceeding 5.0 psig. The air compressor shall be fitted with a blow-off valve to operate at 5.0 psig to prevent an increase in pressure, which could be hazardous to the pipeline.

After the pipe has been wetted, the air shall be allowed to slowly fill the pipeline until a constant pressure of 4.0 psig is maintained. At this point, the air compressor shall be controlled so that the internal pressure in the line is maintained between 4.0 and 3.5 psig for at least two (2) minutes to permit the temperature of the entering air to equalize with the temperature of the pipe wall. If it is necessary to bleed off the air to repair a faulty plug, a new two (2) minute interval must be allowed when the line has been refilled.

When the temperature of the air has reached equilibrium with that of the pipe wall, the air source shall be disconnected. Before disconnecting the air supply, the pressure shall be at 4.0 psig. The gauge is then watched until the air pressure reaches 3.5 psig. When the pressure has reached 3.5 psig, a stopwatch will be started and stopped when the pressure has reached 2.5 psig. The portion of line being tested shall be considered “Acceptable” if the time required in minutes for the pressure to decrease from 3.5 to 2.5 psig is not less than the time shown for the given diameters in the following table:

SPECIFICATION TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP FOR SIZE AND LENGTH OF PIPE INDICATED

Pipe Dia. (in)	Min. Time (min:sec)	Length for Min. time (ft)	Time for Longer Length(ft)	Specification Time for Length Shown Length (ft), Time (min:sec)						
				100	150	200	250	300	350	400
4	3:46	597	.360L	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	396	.854L	5:40	5:40	5:40	5:40	5:40	5:40	5:42
8	7:34	296	1.520L	7:34	7:34	7:34	7:34	7:36	8:52	10:08
10	9:26	239	2.374L	9:26	9:26	9:26	9:53	11:52	13:51	15:50
12	11:20	199	3.418L	11:20	11:20	11:23	14:14	17:05	19:56	22:47
15	14:10	159	5.342L	14:10	14:10	17:49	22:16	26:43	31:10	35:37
18	17:00	133	7.692L	17:00	19:14	25:38	32:03	38:28	44:52	51:17

The air test shall be performed after the completion of backfill and compaction and prior to final paving and pouring of the curbs, gutters and sidewalks.

The Contractor shall furnish all equipment needed to complete this test.

If the installation fails to meet this requirement, the Contractor shall, at his/her own expense, determine the source of leakage. He/she shall then repair or replace all

defective materials and/or workmanship and perform the air test as many times as necessary to achieve an acceptable test.

C. Televised Inspection:

The Contractor shall inspect all new pipelines with closed circuit television and furnish a CD/DVD of the inspection, along with a hard copy report to the City. The Contractor shall give the City Engineer at least two (2) working days notice prior to performing the TV work so a city representative can verify the work.

The Contractor shall clean all lines of dirt and other debris, clean manholes, remove broken pipe, compact trench, raise manhole rims to grade, and pass the air test prior to television inspection. Areas adjacent to manholes shall be leveled and made accessible to the television trailer.

Defects such as high and low spots, joint separations, offset joints, chipped ends, cracked or damaged pipe, infiltration points and debris in lines shall be corrected by the contractor at their expense. For joint separations, low spots and chipped ends, the following maximum acceptable limits will apply for new sanitary sewer lines:

Joint separations -½"

Low spots:

Pipe size	Depth tolerance of trapped water
6"	0.93 in.
8"	1.25 in.
10"	1.50 in
12"	1.87 in.
15”	2.25 in.
18”	2.75 in.

Chipped ends – ¼" (VCP, only)

Prior to the end of the one-year warranty period, the City may require televised inspection of the new sanitary sewer laterals for the project at the Contractor’s expense.

D. Deflection Testing:

A deflection test on all new gravity sewer mains 6” and larger shall be performed using a pre-sized, rigid mandrel device approved by the City Engineer. The mandrel shall be clearly labeled and sized so as to provide a diameter of at least 95% of the Base Internal Diameter as defined in ASTM D-3034 for PVC SDR 26 gravity sewer pipe.

The mandrel shall be drawn through the pipe using only the force that can be exerted by one man on the end of a rope, using no mechanical advantage. Under no circumstances shall the mandrel device be attached to the cleaning ball.

Pipe exceeding 5% deflection shall be repaired or replaced, and shall be remandreled in the presence of the City Engineer (or appointed representative). Mechanical re-rounding will not be acceptable.

6.400 MEASUREMENT AND PAYMENT

A. Pipe: Payment for sanitary sewer pipe complete in place shall be per linear foot measured from center of manhole to center of manhole following a line parallel to the grade of the sewer. Payment shall include the furnishing of all labor, materials, water, tools, and equipment required to construct and complete the installation of the sewer pipe in accordance with the plans and these specifications.

B. Structures & Manholes: The unit of measure for payment shall be per each unit. Payment shall be made at the bid price per item for each structure complete in place and shall include the cost of excavation, backfill, frames, covers, plates, or reinforcing steel where required.

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 6.2

SECTION 6: NEW BUSINESS

Meeting Date:	October 14, 2014
Subject/ Title:	Recommend City Council Review and Provide Feedback on the Patterson Road Concept Plan
From:	Jill Anderson, City Manager
Submitted by:	Marisela H. Garcia, Director of Finance John Anderson, Consultant Community Development Director Kathleen Cleek, Development Services Administration Manager

RECOMMENDATION:

It is recommended that the City Council receive a presentation and provide feedback on the Patterson Road Concept Plan.

SUMMARY:

This evening, Development Services staff will present and request comments from the City Council on the Patterson Road Concept Plan which details proposed future improvement plans along Patterson Road from Roselle Avenue to Claus Road.

BACKGROUND

The March 3, 2014 Strategic Plan identifies an objective for staff to "Recommend to the City Council for action, Patterson Road Improvement Concepts" This objective is listed as one of the items to achieve the Three-Year Goal to "*IMPROVE AND MAINTAIN INFRASTRUCTURE AND FACILITIES"*. The assignment given to staff was to complete a concept plan and present the plan to the City Council for review and recommendation.

One of the main obstacles along Patterson Road is the Burlington Northern Santa Fe (BNSF) and Sierra Pacific Railroad tracks to the North. From First Street to Claus the area north of Patterson Road currently has no pedestrian access and is aesthetically challenging, especially during the winter months when this area holds water. A meeting was held with members of BNSF and Sierra Pacific Railroad to discuss the possibility of requiring future right-of-way that would allow the City to make improvements along this route. Staff was informed by BNSF that the railroad would not consider providing any right-of-way in this area and that any improvements the City would propose would need to be within the constraints of our existing right of way. Not discouraged from the

objective, staff went back to the drawing board and, using existing right-of-way, developed a proposed plan alignment that includes Class 1 bike lanes and continual sidewalk on the southern side of Patterson Road from Roselle Avenue to Claus Road.

Due to the constraints in the existing right-of-way there are variations in the number of proposed lanes that ranges from 3 lanes to 5 lanes. In order to achieve the maximum use of the current right-of-way held by the City there is a proposal to include no parking along Patterson Road.

The Patterson Road Concept Plan begins at Roselle Avenue and ends at Claus Road. The plan includes projects identified in the current CIP and development driven projects, which are identified below and are segregated between "CIP Projects" and "Development Driven Projects".

The project list is as follows:

CIP PROJECTS

STR-035 Signal Light Patterson Road @ Roselle Avenue: Project includes sidewalk infill along Roselle & Patterson Roads and a pedestrian railroad crossing. Project is funded through Congestion Mitigation Air Quality (CMAQ) funds totaling $923,000. Tentative construction date 2015/2016.

STR-054 Railroad Crossing Improvements – crossing on Patterson Road between Third Street and Terminal Avenue. Project will be funded through System Development Fees/Public Works. Estimated project cost is $243,000. Tentative construction date 2016/2017.

STR-046 Sidewalk infill from First Street to Terminal (South Side). Project funding is to be determined. Estimated project cost is $100,000. Scheduled in CIP for 2015/2016.

STR-057 Sidewalk infill from Terminal Avenue to Claus Road (South Side). Project funding is to be determined. Estimated project cost is $70,000. Scheduled in CIP for 2016/2017.

STR-047 Bioretention Area & Class I Bike Path from First Street to Terminal (North Side). Project funding is to be determined. Estimated project cost is $250,000. Scheduled in CIP for 2015/2016.

STR-055 Bioretention Area & Class I Bike Path from Terminal Avenue to Eighth Street (North Side). Project funding is to be determined. Estimated project cost is $250,000. Scheduled in CIP for 2016/2017.

STR-056 Bioretention Area & Class I Bike Path from Eighth Street to Claus Road (North Side). Project funding is to be determined. Estimated project cost is $250,000. Scheduled in CIP for 2017/2018.

DEVELOPMENT DRIVEN PROJECTS

These projects are not yet scheduled in the 5 year CIP. These projects are identified in the Downtown Specific Plan EIR and are strictly development driven and years out for construction.

STR-068 Intersection reconstruct at First Street. Project identified in Downtown Riverbank SP EIR. Project funding to be determined. Estimated project cost is $1,686,000.

STR-069 Intersection reconstruct at Third Street. Project identified in Downtown Riverbank SP EIR. Project funding is to be determined. Estimated project cost is $1,431,000.

STR-070 Intersection reconstruct at Eighth Street. Project identified in Downtown Riverbank SP EIR. Project funding is to be determined. Estimated project cost is $1,541,000.

STR-071 Widen Patterson Road to 5 lanes from Roselle Avenue to First Street. Project identified in Downtown Riverbank SP EIR. Project funding and estimated cost to be determined.

STR-072 Widen Patterson Road to 4 lanes from First Street to Terminal Avenue. Project identified in Downtown Riverbank SP EIR. Project funding and estimated cost to be determined.

STR-073 Widen Patterson Road to 4 lanes from Terminal to Eighth Street. Project identified in Downtown Riverbank SP EIR. Project funding and estimated cost to be determined.

STR-074 Widen Patterson Road to 3 lanes from Eighth Street to Tina Lane. Project identified in Downtown Riverbank SP EIR. Project funding and estimated cost to be determined.

STR-075 Widen Patterson Road to 5 lanes from Tina Lane to Claus Road. Project identified in Downtown Riverbank SP EIR. Project funding and estimated cost to be determined.

FISCAL IMPACT:

There is no financial impact associated with this presentation. Each project and respective funding sources will be presented to Council for review and approval.

ATTACHMENTS:

There are no attachments to this report.

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 6.3

SECTION 6: NEW BUSINESS

Meeting Date:	October 14, 2014
Subject/ Title:	Recommend City Council Receive a Presentation on the Status of the Nexus Fee Study
From:	Jill Anderson, City Manager
Submitted by:	Marisela Garcia, Director of Finance John Anderson, Consultant Community Development Director Kathleen Cleek, Development Services Administration Manager

RECOMMENDATION:

It is recommended that the City Council receive an update on the status of the Nexus Fee Study.

SUMMARY:

With the passage of Proposition 13 in 1978, development impact fees became a more common tool for local agencies to help fund the costs of new infrastructure and facilities that could no longer be paid for by an increase in property taxes. Today, local jurisdictions across the State collect impact fees to mitigate various impacts that new development has on the local community, enabling the financing of streets, storm drainage facilities, parks, and streetlights.

Development impact fees are subject to the Mitigation Fee Act, which imposes significant procedural restrictions on the use of those fees. For example, development impact fees can only be spent for public facilities, public services, and/or community amenities. In order to impose a development impact fee, the city must: (1) identify the purpose and use of a proposed impact fee; (2) show that there is a reasonable relationship (i.e., a nexus) between the fee's use and the type of development project on which the fee is imposed; (3) determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed; and (4) demonstrate the relationship between the amount of the fee and the cost of the public facility.

A development impact fee may not be used to remedy existing deficiencies in public facilities, although it may include the costs attributable to the increased demand for public facilities reasonably related to the development project. In order to meet these constitutional and statutory requirements that apply to development impact fees, cities prepare a nexus study to determine whether the required reasonable relationships exist to justify the fees.

The first step in determining a development impact fee is to complete a nexus study to examine the impacts of residential development in the City. The nexus study is only the first step in considering this fee. In the event a fee can be justified, the actual adoption of such an impact fee can only occur after several steps have taken place including adoption of an impact fee ordinance by Council. Also, once the study has determined what fee amount is justified for various development types, then the amount of fee can be reduced if needed to respond to policy considerations. Some of these policy considerations could be the amount of housing impact fees charged by surrounding communities and the economic feasibility of how much can be absorbed by different product types.

After the consultant produces an administrative draft of the Study, staff will create opportunities for stakeholders and the public to provide input by hosting additional meetings with the development community. At these meetings, staff will present on the initial findings of the nexus study, and will provide the public, residential developers and affordable housing advocates with an opportunity to discuss/comment on the draft including what adjustments should be made to the fee based on policy considerations. The public will also have the opportunity to provide feedback in front of the Planning Commission and City Council.

CURRENT STATUS:

The City of Riverbank's current System Development Fees have been in place since April of 2006. On October 8, 2012 the City Council authorized AECOM to complete a nexus study to update the City's current development fees. City staff received a Nexus Fee Study Administrative Draft for review on October 1, 2013. After reviewing the draft staff realized that the product AECOM produced did not represent an accurate picture of the City's future infrastructure needs. Staff met with AECOM and determined that the direction they were given by staff did not represent the intent of the agreement.

Since that time there have been numerous meetings and discussions between staff and AECOM to gather and provide the most accurate information to AECOM so the missing data and discrepancies are corrected. The goal established in the Strategic Plan was to "Complete and present to the public the draft document of the Nexus Study Update of SDF (System Development Fees) for public comment". Staff has been working diligently to have the plan ready for public comment in September, but additional time was needed to make sure the information in the draft plan is accurate and correctly represents the future improvement needs of the City. The draft study is very close to being ready for public comment. Once the draft study is available, copies will be available for all interested parties and a public meeting will be planned.

FINANCIAL IMPACT:

No fiscal impact at this time.

ATTACHMENTS:

No Attachments

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 6.4

SECTION 6: NEW BUSINESS

Meeting Date:	October 14, 2014
Subject:	Review of the Draft 2010 Urban Water Management Plan (UWMP)
From:	Jill Anderson, City Manager
Submitted by:	Michael Riddell, Public Works Superintendent

RECOMMENDATION:

The 2010 Public DRAFT UWMP has been prepared for review and comment by the City Council, as well as the public.

INTRODUCTION

The purpose of this item is to provide the City Council and the public the opportunity to receive an overview of the Draft Urban Water Management Plan and review the document in further detail prior to a public hearing planned for the City Council Meeting on November 25, 2014. Once the 2010 Public DRAFT UWMP is reviewed by City Council and the public, revisions can be considered for inclusion in the document at the formal Public Hearing on November 25th. At that time, the City Council will be asked to consider adoption of the document for submittal to the Department of Water Resources (DWR).

If approved the at the November 25th public hearing the FINAL (adopted) 2010 UWMP will be sent to the DWR, the California State Library, and Stanislaus County within 30 days of adoption by the City of Riverbank City Council as per California Water Code Section 10644(a).

BACKGROUND

The preparation of the Public DRAFT 2010 UWMP has included work with a consultant, Stantec, and consultation with the DWR. The City received comments from DWR staff and worked with Stantec to address DWR staff concerns in the Public DRAFT 2010 UWMP. At this point, the document is being released for public review and comment prior to the final submittal to the DWR.

Per California Water Code Section 10644(a) an Urban Water Supplier (municipalities that supply water to more than 3,000 users) must have adopt and implement an UWMP

every 5 years in order to be eligible for State funding assistance on water and wastewater projects. This process began in 2005 and involves public review of the UWMP, any revisions, and adoption by the governing body of the agency. This process is in addition to local and/or regional Water Master Planning efforts and it is intended to supply information to the State on various water use and planning information. The State typically issues a guidance document in July of years that end in 0 or 5, and plans are due by the end of the following year. Ultimately these documents are intended to serve as benchmarks in assessing if Urban Water Suppliers can meet the 20% by 2020 conservation mandates.

The UWMP document contains various sections of data and information regarding the production and uses of potable water for the City, and its management of that potable water. There are sections that talk about ground water management, availability of ground water, and the conservation of ground water throughout the City. There are also sections that talk about landscape irrigation conservation and monitoring, and other conservation measures as well as water shortage contingency planning requirements that are intended to address droughts and other emergencies such as earthquakes such that water for at least basic needs will be available at such times.

The UWMP must be reviewed by the City Council and general public during the public hearing meeting. The UWMP shall be reviewed and/or revised as needed to address comments and concerns prior to adoption by the City Council. Once adopted by the City, the UWMP shall be submitted to the Department of Water Resources (DWR) within 30 days for final approval by the State.

While the City had initiated work on a UWMP in the past, there is no record of an adopted document on file with the State of California. Therefore, the 2010 Draft UWMP will be the City's first submittal and will set the stage for the City to provide regular updates consistent with State requirements. In order to ensure the City qualifies for all available State water funding opportunities the UWMP has been prepared to comply with the 2010 (and subsequent) State guidance policies so it can be adopted as soon as practical. It is expected this document will be updated as necessary for the 2015, and 2020 plan submittal dates.

FINANCIAL IMPACT

The contract amount to create the Draft Urban Water Management Plan was $20,000.00 budgeted and paid for out of the Water Fund.

Once adopted by the City Council, there will be a need in the future to implement water conservation education and outreach programs to the community, inspect irrigation and landscape installations as required per irrigation and water efficiency regulations. The costs associated with these proposed programs have not yet been determined, pending final review and approval by DWR staff. The Public DRAFT UWMP includes economic analysis of 14 Demand Management Measures (DMMs); however, unless the law

requires adoption, the City is not committed to all of the measures if it determines that it is too costly, relative to the value of the water that may be conserved.

STRATEGIC PLAN

The development of an Urban Water Management Plan is consistent with the City's goal of "improving and maintaining infrastructure and facilities," as well as the values of professionalism and fiscal responsibility because the document is required by the State and is a prerequisite to any application for grant funds that might become available in the future.

ATTACHMENTS

1. Draft Urban Water Management Plan

City of Riverbank
2010 Urban Water Management Plan (UWMP)

DRAFT for PUBLIC REVIEW

September 10, 2014

Table of Contents

SECTION 1 INTRODUCTION 1.1
1.1 CONTACT 1.1
1.2 PURPOSE 1.1
1.3 PUBLIC PARTICIPATION 1.2
1.3.1 Agency Coordination 1.2
1.4 OTHER NOTIFICATION AND SUBMITTAL REQUIREMENTS 1.3

SECTION 2 SUPPLIER SERVICE AREAS 2.1
2.1 SERVICE AREA 2.1
2.2 CLIMATE 2.1
2.3 POPULATION GROWTH 2.1

SECTION 3 SYSTEM DEMANDS 3.1
3.1 BASELINES AND TARGETS 3.1
3.1.1 Gross Water Use Service Area Population 3.2
3.1.2 Service Area Population 3.3
3.1.3 Base Daily Per Capita Water Use 3.3
3.1.4 Base Daily Per Capita Water Use Targets 3.6
3.2 WATER USE 3.6
3.2.1 Water Use by Sector 3.7
3.2.2 Low Income Projected Water Demands 3.10
3.2.3 Sales to Other Water Agencies 3.10
3.2.4 Additional Water Uses and Losses 3.11
3.2.5 Total Water Use 3.11
3.3 WATER USE REDUCTION PLAN 3.12

SECTION 4 SYSTEM SUPPLIES 4.1
4.1 DESCRIPTION OF EXISTING FACILITIES 4.1
4.2 TRANSFER AND EXCHANGE OPPORTUNITIES 4.5
4.3 WATER QUALITY 4.5
4.4 CURRENT AND PROJECTED NORMAL WATER SUPPLIES 4.5
4.5 FUTURE WATER SUPPLY PROJECTS 4.6
4.5.1 Future Groundwater Extractions 4.6
4.5.2 Future Groundwater Extractions – Implementation Strategies 4.6
4.6 CITY OF RIVERBANK GROUNDWATER SYSTEM (MODESTO GROUNDWATER BASIN) 4.7
4.6.1 City of Riverbank Well System 4.7
4.6.2 Hydrogeologic Setting 4.8
4.6.3 City of Riverbank Groundwater System and Usage 4.13
4.6.4 Modesto Subbasin Groundwater Storage and Budget 4.17
4.6.5 Groundwater Level Trends 4.17
4.6.6 Conclusions 4.21

SECTION 5 WATER RECYCLING 5.1
5.1 WASTEWATER COLLECTION AND TREATMENT 5.1
5.2 WATER REUSE 5.2
5.3 GRAY WATER AND RAINWATER HARVESTING 5.3

SECTION 6 WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING 6.1
6.1 WATER MANAGEMENT TOOLS – MAXIMIZE RESOURCES AND MINIMIZE IMPORT 6.1
6.2 WATER SUPPLY RELIABILITY 6.1
6.3 WATER SUPPLY VERSUS DEMAND COMPARISONS 6.3
6.4 WATER SHORTAGE CONTINGENCY PLANNING 6.5
6.4.1 Water Shortage Contingency Plan 6.5
6.5 WATER SUPPLY RELIABILITY/DROUGHT CONTINGENCY ORDINANCE/RESOLUTION 6.6
6.5.1 Rationing Stages and Reduction Goals 6.6
6.5.2 Priority by Use 6.8
6.5.3 Health and Safety Requirements 6.8
6.6 MANDATORY PROHIBITIONS ON WATER WASTING 6.8
6.7 CONSUMPTION REDUCTION METHODS 6.9
6.8 EXCESSIVE USE PENALTIES 6.9
6.9 REVENUE AND EXPENDITURE IMPACTS AND MEASURES TO OVERCOME IMPACTS 6.10
6.10 MECHANISMS TO DETERMINE REDUCTIONS IN WATER USE 6.10

SECTION 7 WATER DEMAND MANAGEMENT MEASURES 7.1
7.1 INTRODUCTION 7.1
7.2 DEMAND MANAGEMENT MEASURES 7.3
7.2.1 DMM A – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers 7.4
7.2.2 DMM B – Residential Plumbing Retrofit 7.7
7.2.3 DMM C – System Water Audits, Leak Detection, and Repair 7.8
7.2.4 DMM D – Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections 7.10
7.2.5 DMM E – Large Landscape Conservation Programs and Incentives 7.13
7.2.6 DMM F – High-efficiency Washing Machine Rebate Program 7.15
7.2.7 DMM G – Public Information Programs 7.17
7.2.8 DMM H – School Education Programs 7.19
7.2.9 DMM I – Conservation Programs for Commercial, Industrial, and Institutional Accounts 7.21
7.2.10 DMM J – Wholesale Agency Programs 7.22
7.2.11 7.2.11 DMM K – Conservation Pricing 7.22
7.2.12 7.2.12 DMM L – Water Conservation Coordinator 7.23
7.2.13 DMM M– Water Waste Prohibition 7.24

7.2.14 DMM N – High Efficient Toilet Replacement 7.25

SECTION 8 REFERENCES 8.27

LIST OF TABLES

Table 1.1 (SWR Table 1)..... 1.2
Table 2.1 (DWR Table 2) Population Projections of the City of Riverbank..... 2.1
Table 3.1 (DWR Table 18) Groundwater Pumped..... 3.2
Table 3.2 (DWR Table 13) Base Period Ranges..... 3.4
Table 3.3 (DWR Table 14) Base daily per capita water use — 10- to 15-year range 3.5
Table 3.4 (DWR Table 15) Base daily per capita water use — 5-year range 3.5
Table 3.5 (DWR Table 3) Water deliveries — actual, 2006 ..... 3.7
Table 3.6 (DWR Table 4) Water Deliveries — Actual, 2010..... 3.8
Table 3.7 (DWR Table 5) Water Deliveries — Projected, 2015 ..... 3.9
Table 3.8 (DWR Table 6) Water Deliveries — Projected, 2020 ..... 3.9
Table 3.9 (DWR Table 7) Water Deliveries — Projected 2025, 2030, and 2035..... 3.9
Table 3.10 (DWR Table 8) Low-Income Projected Water Demands, AFY..... 3.10
Table 3.11 (DWR Table 10) Additional Water Uses and Losses, AFY 3.11
Table 3.12 (DWR Table 11) Total Water Use, AFA 3.11
Table 4.1 Existing Groundwater Wells 4.2
Table 4.2 (DWR Table 16 and 19) Water Supplies — Current and Projected, AFY 4.5
Table 4.3 Future Water Supply Needs..... 4.6
Table 4.4 City of Riverbank Well Construction Data (1)..... 4.11
Table 4.5 City of Riverbank Well Production Well Data by Month 4.14
Table 4.6 City of Riverbank Production Data by Well 4.16
Table 6.1 (DWR Table 27) Basis of Water Year Data 6.2
Table 6.2 (DWR Table 28) Supply Reliability — Historic Conditions, AFA 6.2
Table 6.3 (DWR Table 31) Supply Reliability — Current Water Sources..... 6.2
Table 6.4 (DWR Table 32) Supply and Demand Comparison — Normal Year 6.3
Table 6.5 (DWR Table 33) Supply and Demand Comparison — Single Dry Year 6.3
Table 6.6 (DWR Table 34) Supply and Demand Comparison — Multiple Dry-Year Events..... 6.4
Table 6.7 (DWR Table 35) Water Shortage Contingency — Rationing Stages to Address Water Supply Shortages..... 6.7
Table 6.8 Estimated Per Capita Health and Safety Water Consumption 6.8
Table 6.10 (DWR Table 36) Water Shortage Contingency — Mandatory Prohibitions... 6.9
Table 7.1 Summary of Demand Management Measures 7.2
Table 7.2 City of Riverbank Water Connections Meter Information 7.10
Table 7.3 2014 Domestic Water Billing Rates..... 7.11

LIST OF FIGURES

Figure 2.1 Vicinity Map 2.3
Figure 2.2 Riverbank City Limits and SOI 2.4
Figure 4.1 Existing Water Supplies 4.3
Figure 4.2 Planned Water Supplies 4.4
Figure 4.3 Location Map 4.10
Figure 4.4 - Comparison of average rainfall (RF) and depth to groundwater in Modesto Irrigation District monitoring wells (MID). 4.18
Figure 4.5 Well Hydrographs 4.19
Figure 4.6 Well Hydrographs 4.19
Figure 4.7 Annual Depth to Water Measurements for City of Riverbank Wells 4.20
Figure 5.1 (DWR Table 21) Recycled Water — Wastewater Collection and Treatment (AF/Y) 5.2

LIST OF APPENDICES

APPENDIX A RESOLUTION TO ADOPT THE URBAN WATER MANAGEMENT PLAN – TO BE PROVIDED BY CITY A.1

APPENDIX B NOTICE OF PUBLIC HEARING – TO BE PROVIDED BY CITY B.1

APPENDIX C URBAN WATER MANAGEMENT PLAN CHECKLIST C.1

APPENDIX D INTEGRATED REGIONAL GROUNDWATER MANAGEMENT PLAN (CD COPY) – TO BE PROVIDED BY CITY D.1

APPENDIX E CITY OF RIVERBANK WATER ORDINANCES E.1

APPENDIX F SAMPLE RESOLUTION TO DECLARE A WATER SHORTAGE EMERGENCY F.1

APPENDIX G DMM COST BENEFIT ANALYSIS DATA G.1

SECTION 1 INTRODUCTION

The City of Riverbank prepared this update of its Urban Water Management Plan (UWMP) during the spring of 2013. The updated plan was adopted by the City Council on INSERT DATE, and submitted as adopted to the California Department of Water Resources (DWR) on INSERT DATE. A copy of the signed resolution of plan adoption is included as Appendix A.

This plan includes information necessary to meet the requirements of the California Water Code Division 6, Part 2.6: Urban Water Management Planning, and Division 6, Part 2.55: Water Conservation, with guidance from the CA Department of Water Resources guidance document, Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan.

1.1 CONTACT

The City of Riverbank, the retail water supplier, is a Municipality, and is not a Bureau of Reclamation Contractor or State Water Project Contractor.

The name of the person to contact at the City of Riverbank regarding this 2010 Urban Water Management Plan is:

Michael Riddell, Deputy Development Services Director
6707 Third St. (mailing)
2901 High St.
Riverbank, CA 95367
Phone: (209) 869-7128
After Hours Phone: 1-800-672-9068
Email address: mriddell@riverbank.org
Web page address: http://www.riverbank.org/Depts/PublicWorks/default.aspx

1.2 PURPOSE

The City of Riverbank's Urban Water Management Plan (UWMP) is prepared in accordance with California Water Code Division 6, Part 2.6: Urban Water Management Planning (10610 et. seq.) and Division 6, Part 2.55: Water Conservation (10608 et. seq.). Through this legislation, the State of California is promoting the managed use of water for urban and municipal purposes. The UWMP Act requires municipalities, which supply water to more than 3,000 customers (or supplying more than 3,000 acre-feet annually) to prepare an UWMP. Under the Act, urban water suppliers are required to submit a complete plan to the DWR in years ending in zero (0) and (5). An UWMP is required in order for a water supplier to be eligible for State grants and loans associated with water system planning and capital improvement projects.

In November 2007, The Water Conservation Act of 2009 was signed into law as part a comprehensive water legislation package. The Water Conservation Act sets a goal to achieve a 20% reduction in urban per capita water use in California by December 31, 2020, and directs urban retail water suppliers to set interim (2015) and final (2020) water use targets to achieve this reduction.

The purpose of this plan is to describe and evaluate system water demands; sources of water supply; efficient uses of water; water conservation demand management measures; and implementation, strategy and schedule to meet the requirements of the Urban Water Management Planning and Water Conservation acts.

1.3 PUBLIC PARTICIPATION

The City has actively encouraged community participation in its urban water management planning efforts. The City held a public meeting on INSERT DATE for review and comments on the draft plan prior to adoption by the City Council. In accordance with Section 6066 of the Government Code, notices of a public hearing were placed in the Riverbank News at least two weeks prior to the public hearing and the UWMP was made available to the public for review and comment before the City Council adoption (notice attached in Appendix B). Copies of the draft UWMP were available at City offices and the library. Additionally, community input was sought during the development of the City's Water Ordinances initially adopted in 1967 and subsequently amended.

1.3.1 Agency Coordination

The City of Riverbank is an independent water supplier and does not purchase from, nor wholesale water, to other agencies. The development of this UWMP was coordinated with City Development Services Department staff. Development Services is responsible for maintaining statistical data regarding water consumption and overseeing all development activities in the City. The Finance Department is responsible for utility billing.

Table 1.1 provides a summary of coordination and public involvement actions during the preparation of the 2010 UWMP.

Table 1.1 (SWR Table 1)
Summary of Coordination Efforts to Include
Agencies and Citizens in Planning and Notification

Coordination and Public Involvement Actions						
Entities	Plan Writing	Contacted	Attended Meeting	Given Copy	Comments Received	Noticed of Adoption
Consultant	X	X		X	X	X
City of Riverbank	X	X	X	X	X	X
Development Services	X	X	X	X	X	X
Library		X		X		X

1.4 OTHER NOTIFICATION AND SUBMITTAL REQUIREMENTS

In addition to submittal to the DWR, the City also submitted the UWMP to the California State Library within 30 days of the adoption hearing pursuant to Section 10644(a). The City will also make the plan available for public review during normal business hours within 30 days following filing with the DWR.

SECTION 2 SUPPLIER SERVICE AREAS

2.1 SERVICE AREA

The City of Riverbank is located adjacent and south of the Stanislaus River, approximately 4 miles to the southwest of the City of Oakdale, and just northeast of the City of Modesto as depicted in Figure 2-1. The City, and its General Plan area, is located within the Stanislaus and San Joaquin Basins of the Great Central Valley. The City supplies potable water to all the residential, commercial, and institutional / governmental water users within City limits. The City also supplies water to several residential locations and complexes outside of the city limits, but within the Sphere of Influence. Figure 2-2 portrays the City limits, Sphere of Influence, and General Plan boundary.

2.2 CLIMATE

The Riverbank area is considered semi-arid, characterized by hot, dry summers and mild, wet winters. Average winter temperatures range from the mid-40s to the high-60s and average summer temperatures from the 50s to the 90s. Per information from Western Regional Climate Center and CIMIS station observations the annual rainfall amounts range from 5.7 inches to 27.4 inches per year for the period between 1906 and 2010. In the region, average rainfall is approximately 12.15 inches per year.

2.3 POPULATION GROWTH

The City's annual population growth rate has varied widely during the past decade. From 2000 to 2010, the population increased by approximately 6,375 residents per the State of California, Department of Finance. Growth rates during this period have been as high as 8.4% between 2004-2005 and as low as 0.73% between 2008-2009. For purposes of this plan, the City has a future projected average population growth rate of 3.3% growth rate based on historical average growth data from 2001 through 2010. Table 2-2 summarizes the projected population growth of the City to the year 2030, including the projected build-out population based on the City's General Plan 2005-2025.

Table 2.1 (DWR Table 2)
Population Projections of the City of Riverbank

	2010	2013 (actual)	2015	2020	2025	2030	Build-out (b)
City Population (a)	22,201	23,149	25,860	29,520	33,179	36,839	52,500

(a) Population estimates using a 3.3% growth rate based on historical growth data from 2001 through 2008 from *State of California, Department of Finance, E-4 Population Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Riverbank, California.*

(b) *City of Riverbank General Plan 2005-2025*

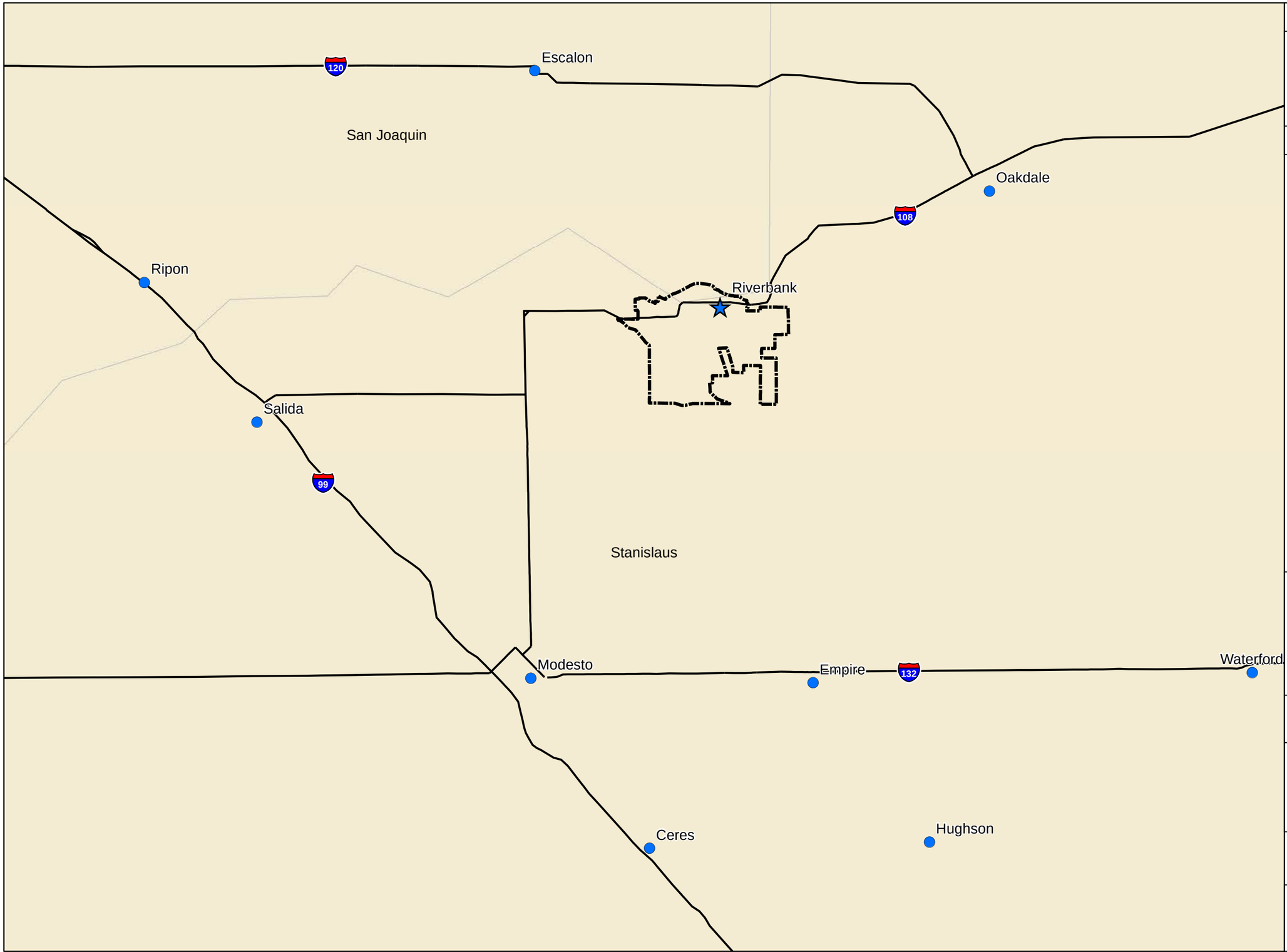
Supplier Service Areas

The City's current actual distribution area substantially overlaps the city limits as shown in Figure 2.2. The City provides water service to the developed areas within the sphere of influence, which consists of single-family and multifamily residential units; commercial establishments; and industrial, private, and governmental institutions. The City's sphere of influence will expand over time to serve the General Plan boundary area as a result of economic and population growth.

Figure 2.1

City of Riverbank
Water Supply Study and
Water Master Plan Update

Vicinity Map



Legend:

- Riverbank City Limits
- Surrounding Cities
- City of Riverbank
- Highways

N

9,000 0 9,000

Scale Feet

Stantec Consulting Inc.
6980 Sierra Center Pkwy. #100
Reno, Nevada 89511
Tel: (775) 850-0777
Fax: (775) 850-0787
stantec.com

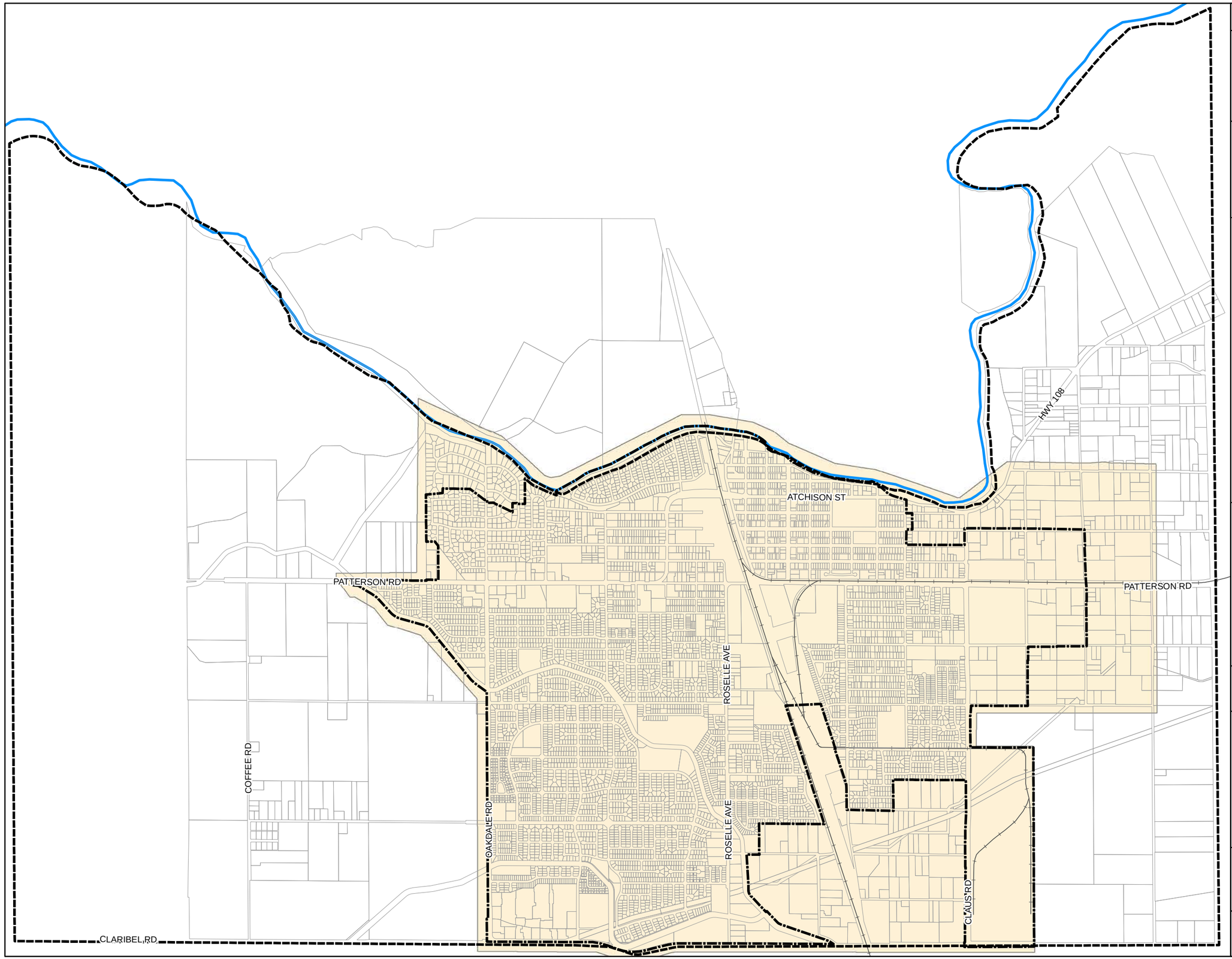


Figure 2.2

City of Riverbank
Water Supply Study and
Water Master Plan Update

Riverbank City Limits, Sphere of Influence, and General Plan Boundaries

Legend:

- Gen. Plan Study Area (2008)
- City Limits
- Sphere of Influence
- Parcels
- Railroad
- Stanislaus River

Notes: Sphere of Influence is assumed to be extent of the parcels.

N

1,000 0 1,000 2,000

Scale Feet

Stantec Consulting Inc.
6980 Sierra Center Pkwy. #100
Reno, Nevada 89511
Tel: (775) 850-0777
Fax: (775) 850-0787
stantec.com

SECTION 3 SYSTEM DEMANDS

This section describes the City's water system demands, including calculating its baseline (base daily per capita daily) water use and interim and urban water use targets. It quantifies the City's current water system demand by category and projects them over the planning horizon of the UWMP. The projections also include system water losses and water use target compliance.

When calculating future water demands, the projected demands were based on the assumed reduction in per capita daily use determined from planning for and implementing actions associated with the Water Conservation Bill of 2009.

This section also includes a description of how the City calculated its baseline and targets, following the technical methods and methodologies described in Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Bill of 2009) (DWR 2010a).

3.1 BASELINES AND TARGETS

Beginning with the 2010 UWMPs, SBX7-7 (CWC §10608 (e)) requires each urban retail water supplier to include the following in its UWMP.

- **Baseline daily per capita water use** — how much water is used within an urban water supplier's distribution system area on a per capita basis. It is determined using water use and population estimates from a defined range of years.
- **Urban water use target** — how much water is planned to be delivered in 2020 to each resident within an urban water supplier's distribution system area, taking into account water conservation practices that currently are, and planned to be, implemented.
- **Interim urban water use target** — the planned daily per capita water use in 2015, a value halfway between the baseline daily per capita water use and the urban water use target.

In 2015 and 2020, each water supplier will also determine compliance daily per capita water use to assess progress toward meeting interim and 2020 urban water use targets. Determining and tracking use levels and targets will support the goal of reducing the state's per capita urban water consumption by 20 percent.

The steps required to calculate the City's urban water use targets include developing the gross water use, the current and estimated service area population, followed by calculating the baseline daily per capita water use.

3.1.1 Gross Water Use Service Area Population

Gross water use is a measure of water supplied to the distribution system over 12 months and adjusted for changes in distribution system storage and deliveries to other water suppliers that pass through the distribution system. Recycled water deliveries are to be excluded from the calculation of Gross Water Use. Water delivered through the distribution system for agricultural use may be deducted from the calculation of Gross Water Use. Under certain conditions, industrial process water use also may be deducted from Gross Water Use.

Section 10608.12(g) of the Water Code defines "Gross Water Use" as:

The total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier

(2) The net volume of water that the urban retail water supplier places into long-term storage

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24

The historical annual metered groundwater production for the City's water system is presented in DWR Table 18. Per Methodology 1: Gross Water Use in the DWR guidance, the City's gross water use is equivalent to the annual groundwater production as there is no import/export of water and no recycled water use within the system.

Table 3.1 (DWR Table 18)
Groundwater Pumped

Year	Quantity, AFY
1995	2889
1996	3582
1997	3485
1998	2976
1999	3291
2000	3299
2001	3383
2002	3778
2003	3842
2004	4168
2005	4664
2006	6350
2007	5187
2008	5044
2009	4740
2010	4351

System Demands

Year	Quantity, AFY
2011	4220
2012	4220
2013	4094

3.1.2 Service Area Population

Section 10608.20(f) of the Water Code indicates that when calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections. To obtain an accurate estimate of daily per capita water use, water suppliers must estimate population of the areas that they actually serve, which may or may not coincide with either their jurisdictional boundaries or with the boundaries of cities. Customers may be in the distribution area with a wholly private supply during the baseline and compliance years, and new areas may be annexed into a water supplier's distribution system over time. The area used for calculating Service Area Population shall be the same as the distribution system area used in calculating the gross water use.

The City's current and estimated population is presented in DWR Table 2 in Section 2 of this UWMP. The City's actual distribution area substantially overlapped with the City boundaries during the baseline years. As population and economic growth continue in the future, the actual distribution area will geographically expand into the General Plan build-out areas.

3.1.3 Base Daily Per Capita Water Use

Baseline per capita water use must be calculated for a water system to define their 2015 interim and 2020 water use targets. Base Daily Per Capita Water Use is defined as average gross water use, expressed in GPCD, for a continuous, multiyear base period. The Water Code specifies two different base periods for calculating Base Daily Per Capita Water Use under Section 10608.20 and Section 10608.22:

- The first base period is a 10- to 15-year continuous period, and is used to calculate baseline per capita water use per Section 10608.20.
- The second base period is a continuous five-year period, and is used to determine whether the 2020 per capita water use target meets the legislation's minimum water use reduction requirement per Section 10608.22.

Unless the urban retail water supplier's five year Base Daily Per Capita Water Use per Section 10608.12 (b) (3) is 100 GPCD or less, Base Daily Per Capita Water Use must be calculated for both baseline periods.

In calculating Base Daily Per Capita Water Use one of the following base periods must be used:

- If recycled water made up less than 10 percent of 2008 retail water delivery, use a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
- If recycled water made up 10 percent or more of 2008 retail water delivery, use a continuous 10- to 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

The base period ranges selected for calculating the baseline daily per capita water use are presented in DWR Table 13. DWR Table 14 presents the calculated base daily per capita water use for the 10-year and 5-year ranges. The maximum allowable 2020 per capita water use target is the lower of either 95% of the 5-year baseline daily per capita water use or the target determined by one of the DWR target methods discussed in the following section.

Table 3.2 (DWR Table 13)
Base Period Ranges

Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	5,044	*AFY*
	2008 total volume of delivered recycled water	0	*AFY*
	2008 recycled water as a percent of total deliveries	0	percent
	Number of years in base period[1]	10	years
	Year beginning base period range	1996	
	Year ending base period range[2]	2005	
5-year base period	Number of years in base period	5	years
	Year beginning base period range	2003	
	Year ending base period range[3]	2007	

Table 3.3 (DWR Table 14)
Base daily per capita water use — 10- to 15-year range

Base period year		Distribution System Population	Daily system gross water use (gpd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	1996	13,352	3,197,578	239
Year 2	1997	13,987	3,110,988	222
Year 3	1998	14,323	2,657,507	185
Year 4	1999	14,552	3,229,714	222
Year 5	2000	15,826	2,944,950	186
Year 6	2001	16,193	3,022,613	187
Year 7	2002	17,107	3,371,650	197
Year 8	2003	17,388	3,430,567	197
Year 9	2004	18,386	3,715,332	202
Year 10	2005	20,077	4,164,350	207
Year 11				
Year 12				
Year 13				
Year 14				
Year 15				
			Base Daily Per Capita Water Use	**207**

Table 3.4 (DWR Table 15)
Base daily per capita water use — 5-year range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2003	17,388	3,430,567	197
Year 2	2004	18,386	3,715,332	202
Year 3	2005	20,077	4,164,350	207
Year 4	2006	21,271	4,365,203	205
Year 5	2007	21,575	4,630,328	215
			Base Daily Per Capita Water Use	**207**

3.1.4 Base Daily Per Capita Water Use Targets

The City must set a 2020 water use target and a 2015 interim target using one of four methods. Three of these are defined in Section 10608.20(a)(1), with the fourth developed by DWR by the end of 2010. The 2020 water use target will be calculated using one of the following four methods:

- **Method 1**: 80% of the water supplier's baseline per capita water use
- **Method 2**: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and commercial, industrial, and institutional uses
- **Method 3**: 95% of the applicable state hydrologic region target as stated in the State's April 30, 2009, draft 20x2020 Water Conservation Plan. The Modesto Groundwater Subbasin is located in the San Joaquin River Hydrologic Region. This region has a year 2015 conservation target of 211 gpcd and a year 2020 target of 174 gpcd. A reduction to 95% for this region makes the urban water target 165 gpcd.
- **Method 4**: This is a provisional method (will be revised and updated in 2014) developed by DWR to account for climate and population density and differences in regions related to levels of per capita water use according to plant water needs and levels of commercial, industrial, and institutional water use. Water savings are calculated using a BMP Calculator tool provided by DWR.

The target may need to be adjusted further to achieve a minimum reduction in water use regardless if the 95% of the 5-year baseline range defined above is greater than the selected urban water use target. The Water Code directs that water suppliers must compare their actual water use in 2020 with their calculated targets to assess compliance. In addition, water suppliers will report interim compliance in 2015 as compared to an interim target (generally halfway between the baseline water use and the 2020 target level). The years 2015 and 2020 are referred to in the methodologies as compliance years. All baseline, target, and compliance-year water use estimates must be calculated and reported in gallons per capita per day (GPCD).

The City of Riverbank has selected Method 3 for establishing their interim 2015 and final 2020 urban water use targets. Based on this, the City's targets are as follows:

- Final 2020 Target = 165 gpcd
- Interim 2015 = 187 gpcd

Current 2013 water use is approximately = 167 gpcd.

3.2 WATER USE

This section quantifies the City's past and current water use, and projected water use, identifying the uses among water use sectors, based on available water supply and metered usage data.

3.2.1 Water Use by Sector

DWR Tables 3 and 4 present the City's past water use (2006) and current water use based on 2010 metered data. The City categorizes metered water use sectors by Single Family Residential, Commercial/Institutional/Governmental, Industrial, and Other. Past water use data for 2006 is presented because itemized volume used per land use classification was not available for years prior to 2006.

Table 3.5 (DWR Table 3)
Water deliveries — actual, 2006

	2006				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume, AFY	# of accounts	Volume, AFY	Volume
Single family	6,168	4,056	6		4,056
Multi-family	N/A	N/A[2]			N/A[2]
Commercial	254	395	17		330
Institutional/governmental					
Industrial	6	65	2		65
Landscape		67			67
Agriculture					0
Other					0
Total	6,428	4,518	25	0	4,518

[1] 2006 data used instead of 2005 because itemized volume used per land use classification not available for years prior to 2006,
[2] Volume included in single family sector value.

Table 3.6 (DWR Table 4)
Water Deliveries — Actual, 2010

	2010				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume, AFY	# of accounts	Volume, AFY	Volume, AFY
Single family	6,846	3,906			3,906
Multi-family	14	N/A[1]			N/A[1]
Commercial	247	270			270
Institutional/governmental					
Industrial	13	117			117
Landscape					0
Agriculture					0
Other	28	77			77
Total	7,148	4,370	0	0	4,370

[1] Multi-family volume included in single family residential sector.

DWR Tables 5 through 7 provide projected water demands for 2015, 2020, 2025, 2030 and 2035. In calculating the estimated number of accounts and water usage by sector (the historical 2000 – 2010 population growth of 3.3%), a straight-line projection was made through 2035. Estimated usage was developed for 5-year time increments based on the projected population, the baseline daily per capita usage of 207 gpcd and 2.97 capita per equivalent residential unit. Based on 2006 and 2010 metered data, residential usage represents approximately 90% of the total usage. The remaining 10% is for commercial/institutional, industrial and other use categories.

The following formula was used to project the number of equivalent residential units (ERU):

$$\text{ERUs} = \frac{\text{Water use (GPD)} \times 90\%}{207\ (\text{GPD/capita}) \times 2.97\ (\text{capita/ERU})}$$

2.97 capita / ERU represents the weighted average of the capita/RU for each residential land use classification, i.e. MDR, LDR, HDR, etc. (Per capita info from General Plan). Weighting is proportional to the total projected average day demand at build-out for each residential land use type for the General Plan area plus the unbuilt MDR within the existing City limits. See Table 4-3 and 4-4 from 2007 UWMP.

To project future water use, a 10% and 20% conservation factor was applied to the 2015 and 2020-2035 population based demand projections.

Table 3.7 (DWR Table 5)
Water Deliveries — Projected, 2015

	2015				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume, AFY	# of accounts	Volume, AFY	Volume, AFY
Single family	7,824	4,588			4,588
Multi-family	14	N/A[1]			N/A[1]
Commercial	270	296			296
Institutional/governmental					0
Industrial	14	127			127
Landscape					0
Agriculture					0
Other	32	87			87
Total	8,154	5,098	0	0	5,098

[1] Multi-family volume included in single family residential sector.

Table 3.8 (DWR Table 6)
Water Deliveries — Projected, 2020

	2020				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume, AFY	# of accounts	Volume	Volume, AFY
Single family	8,948	4,930			4,930
Multi-family	N/A[1]	N/A[1]			N/A[1]
Commercial	291	318			318
Institutional/governmental					0
Industrial	15	137			137
Landscape					0
Agriculture					0
Other	34	93			93
Total	9,288	5,478	0	0	5,478

[1] Multi-family accounts and volume included in single family residential sector.

Table 3.9 (DWR Table 7)
Water Deliveries — Projected 2025, 2030, and 2035

	2025		2030		2035 - optional	
	metered		metered		metered	
Water use sectors	# of accounts	Volume, AFY	# of accounts	Volume, AFY	# of accounts	Volume, AFY
Single family	10,058	5,541	11,168	6,153	12,278	6,765
Multi-family	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]
Commercial	327	357	363	397	399	436
Institutional/governmental						
Industrial	17	154	19	171	21	188
Landscape						
Agriculture						
Other	38	105	42	116	46	128
Total	10,440	6,157	11,592	6,837	12,744	7,517

[1] Multi-family accounts and volume included in single family residential sector.

3.2.2 Low Income Projected Water Demands

The current UWMP requirement includes projections of lower income household water use projections. DWR Table 8 provides these projections. These demands are included as part of DWR tables 5-8. The City of Riverbank's low income households make up 12.3% of the population based on economic and housing data for the City. This percentage of low income population was then applied to the residential water demand projections to estimate "low income water demand".

Table 3.10 (DWR Table 8)
Low-Income Projected Water Demands, AFY

Low Income Water Demands	2015	2020	2025	2030	2035 - opt
Single-family residential	564	606	681	757	832
Total	564	606	681	757	832

3.2.3 Sales to Other Water Agencies

The City does not currently sell water to any neighboring agencies and has no plans to do so in the future.

3.2.4 Additional Water Uses and Losses

Additional water use and losses are defined in DWR Table 10. System losses could include system leaks, meter inaccuracies, construction water, distribution system flushing, and unauthorized connections. For the purpose of this UWMP, the City has estimated a 5% system loss based on an analysis of previous metered supply and delivery data.

Table 3.11 (DWR Table 10)
Additional Water Uses and Losses, AFY

Water use[1]	2006	2010	2015	2020	2025	2030	2035 -opt
Saline barriers							
Groundwater recharge							
Conjunctive use							
Raw water							
Recycled water							
System losses[1]	372	107	255	274	308	342	376
Other (define)							
Total	372	107	255	274	308	342	376
[1] System Losses for 2006 and 2010 based on metered supply and delivery data. System losses for 2015 based on a 5% system loss estimate.							

3.2.5 Total Water Use

The total past, current and projected water use for the City is presented in DWR Table 11 and is based on total water deliveries from DWR Tables 3-7 and the estimated water system losses from DWR Table 10.

Table 3.12 (DWR Table 11)
Total Water Use, AFA

Water Use	2006	2010	2015	2020	2025	2030	2035 - opt
Total water deliveries (from DWR Tables 3 to 7)	4518	4370	5098	5478	6157	6837	7517
Sales to other water agencies (from DWR Table 9)	0	0	0	0	0	0	0
Additional water uses and losses (from DWR Table 10)	372	107	255	274	308	342	376
Total	4,890	4,477	5,353	5,752	6,465	7,179	7,893

3.3 WATER USE REDUCTION PLAN

Part 10608.36 of the Water Code requires the City to provide an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions. As a retail water supplier, the City is required to develop an implementation plan for compliance with the Water Conservation Bill of 2009. The plan provides a general description of how the City intends to reduce per capita water use to meet its urban water use target. In developing the plan, the City also needs to consider any potential economic impacts that may result from the water use reduction program. The implementation plan must also be discussed at the urban water management plan public hearing.

The City's plan to help achieve water use reductions include:

- Continued implementation of all cost effective DMMs
- Implementation of DMMs not currently being implemented or scheduled for implementation
- Develop DMM implementation tracking program to better be able to assess effectiveness of DMMs
- Describe steps necessary to properly implement the DMMs:
  - Marketing strategy for customer enrollment
  - Tracking of participation and results of participation
  - Schedule strategy
- Discuss potential revenue impacts associated with reduced system water use including potential impact to water rates ability to cover fixed costs:
  - Future rate analysis will include revenue and cost projections with projected reduced use and propose a rate/financing structure to ensure operational costs are adequately funded under such circumstances.
- Assess in the 2015 UWMP the effectiveness of the steps being taken to meet the urban water use target and make adjustments to the City's program as necessary to meet the 20% by 2020 reduction goal
- Use of recycled water and rain water harvesting
- Turf limitation and removal ordinances
- Model home ordinance
- Amend subdivision ordinance to mandate new homes not exceed per capita water use targets
- Enforce Green Building Code requirements including implementation of SB 407/Civil Code Sections 1101.1 - 1101.8 fixture retrofit requirements.

SECTION 4 SYSTEM SUPPLIES

This section describes the City's sources of water. It includes a description of City's groundwater source(s), source limitations (physical or political), water quality, and water exchange opportunities. Also included is a short discussion regarding planned future water supply projects to meet future water system demands. A detailed analysis of the City's groundwater supply and supply reliability issues are discussed in Section 5 of this UWMP.

4.1 DESCRIPTION OF EXISTING FACILITIES

The City relies exclusively on groundwater as a potable water supply. Surface water applications are limited to natural recharge to the groundwater supply. An urban recycled wastewater program is not planned at this time.

The City supplies potable water through a pressurized distribution system. The City water supply and distribution system is comprised of ten wells with pumps, two 1 million gallon (MG) storage tanks with booster pumping stations, and over 44 miles of pipeline 8 inches to 12 inches in diameter. There are also several miles of 4-inch and 6-inch diameter pipelines.

The inventory of ten wells includes new Well No. 9 (Prospector), constructed by the Crossroads residential development; Well No. 10, located on City property north of the Crossroads commercial development near Oakdale Road, south of the MID Lateral #6 Canal; and Well #12 located on the east side of Riverbank, south of Patterson Road and adjacent to Chief Tucker Avenue . Well No. 10 began operating in May 2008 and has a pumping capacity of approximately 1,500 gpm (depending on groundwater levels). Well #12 was completed in 2009 and has a pumping capacity of 1,500 gpm. An eleventh well, Well No. 11 has been designed and is planned for the south side of Santa Fe Street, east of Central Avenue in rural northeastern Riverbank. The locations of existing and planned water supply wells are shown in Figures 4-1 and 4-2. A summary of the production capacity of the existing groundwater wells is presented in Table 4.1. A summary of the amount of groundwater pumped in the previous years is provided in Table 3.1 (DWR Table 18) in Section 3 of this UWMP.

Table 4.1
Existing Groundwater Wells

Well Number	Location	Pump Capacity, gpm
1	2nd Street	Abandoned
2	8th Street	660
3	Jackson	625
4	Pioneer	900
5	River Heights	900
6	Whorton	1,000
7	Crossroads	1,200
8	Novi	1,200
9	Prospector	1,300
10	Oakdale Road	1,500
12	Chief Tucker Ave.	1,500
	Total Pumping Capacity	**10,785**

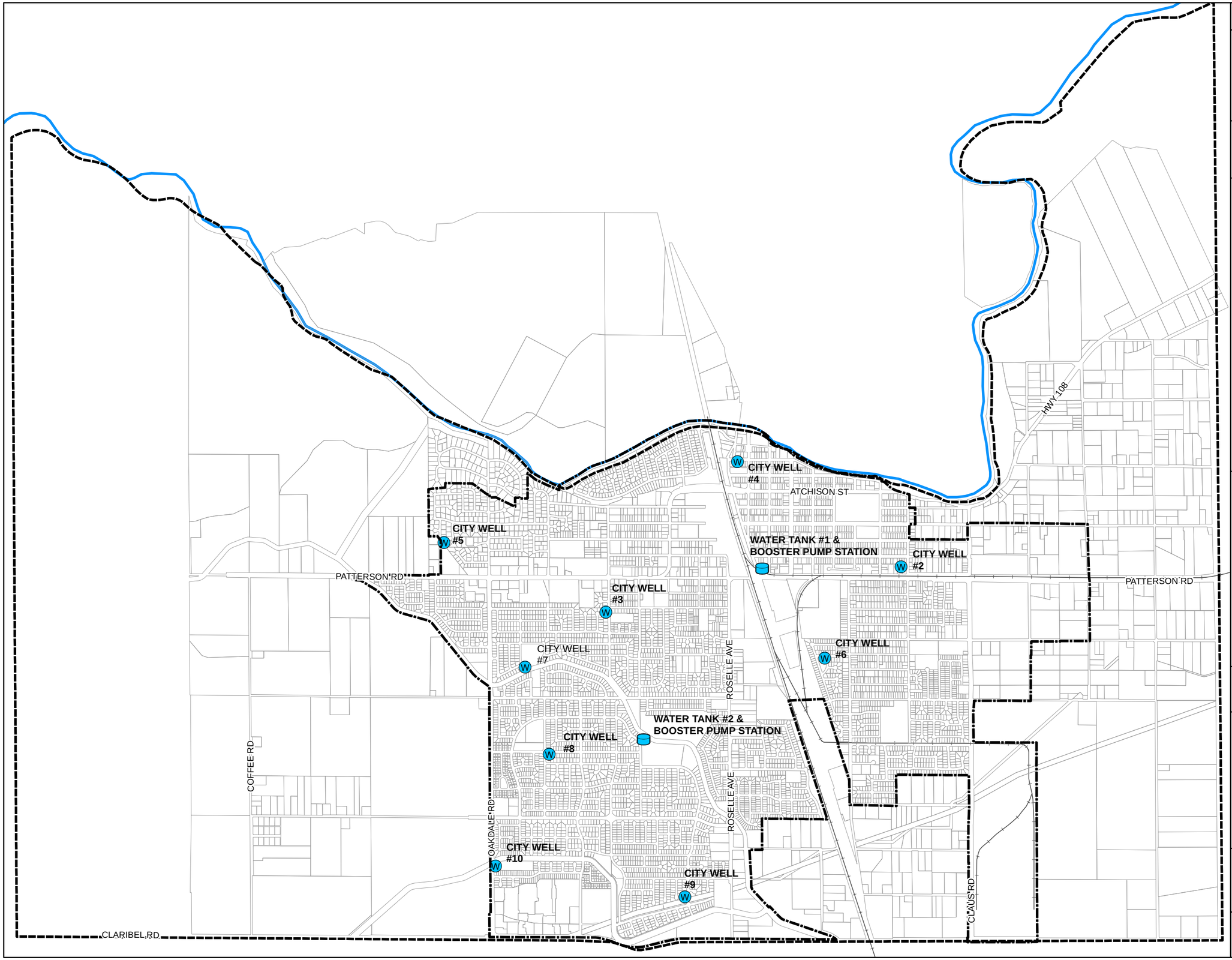


Figure 4.1

City of Riverbank
Water Supply Study and
Water Master Plan Update

Existing Water Supply Facilities

Legend:

- Gen. Plan Study Area (2008)
- City Limits
- Existing Water Storage Tank
- Existing Well
- Parcels
- Railroad
- Stanislaus River

Notes: Sphere of Influence is assumed to be extent of the parcels.

N

1,000 0 1,000 2,000

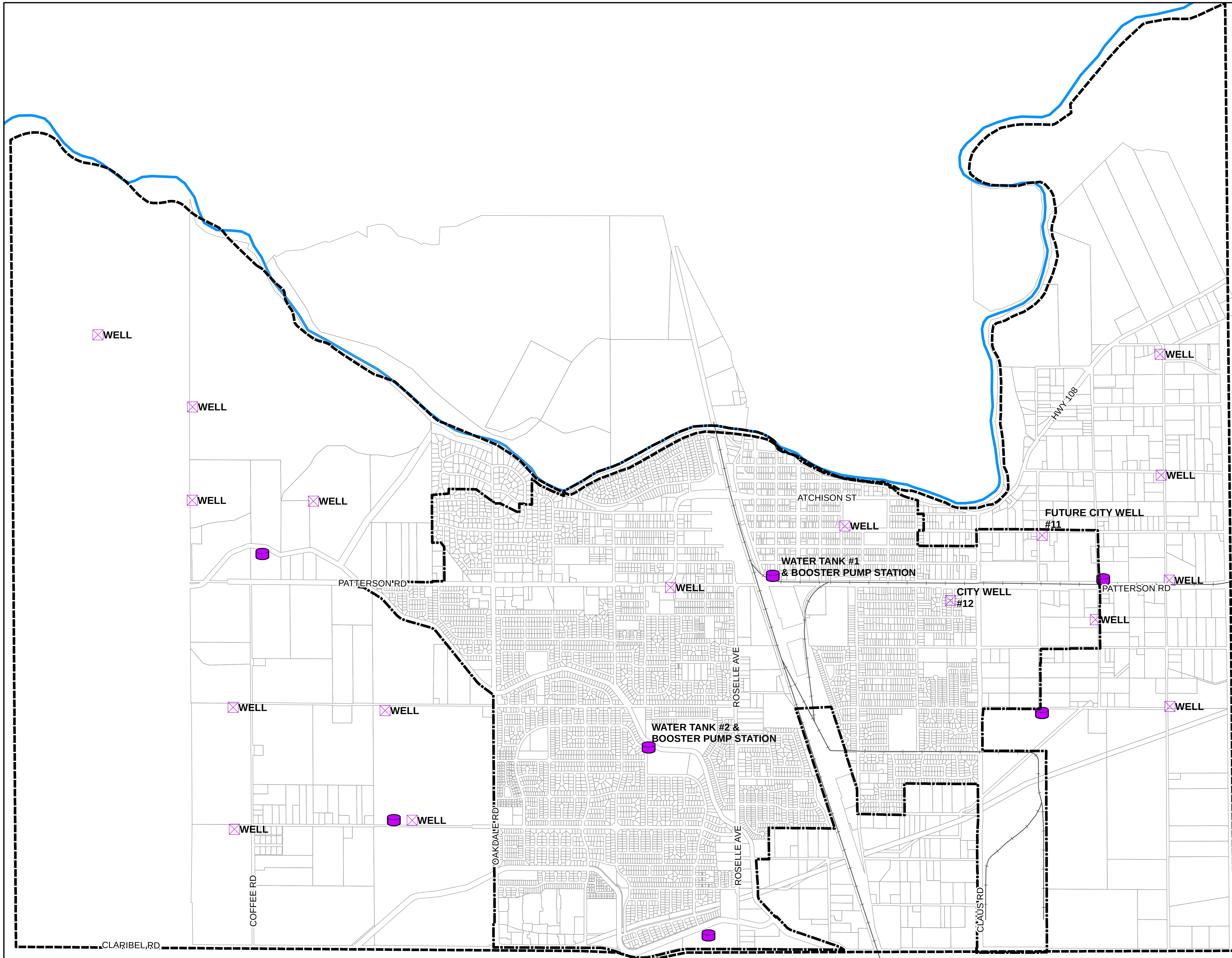
Scale Feet

Stantec Consulting Inc.
6980 Sierra Center Pkwy. #100
Reno, Nevada 89511
Tel: (775) 850-0777
Fax: (775) 850-0787
stantec.com

Figure 1

City of Riverbank
Water Supply Study and
Water Master Plan Update

Planned Water Supply Facilities



Legend:

- Gen. Plan Study Area (2008)
- City Limits
- Potential Storage Tank
- Potential Well
- Parcels
- Railroad
- Stanislaus River

Notes: Sphere of Influence is assumed to be extent of the parcels.

N

1,000 0 1,000 2,000

Scale Feet

Stantec

Stantec Consulting Inc.
6980 Sierra Center Pkwy. #100
Reno, Nevada 89511
Tel: (775) 850-0777
Fax: (775) 850-0787
stantec.com

For reference purposes only. Stantec assumes no liability for the accuracy or correctness of the data contained hereon.

4.2 TRANSFER AND EXCHANGE OPPORTUNITIES

Proposed water supply strategies for the City do not consider the use of surface water from the Stanislaus River. At present, conjunctive (surface water) uses are limited to natural groundwater recharge from surface water. Should Oakdale Irrigation District embark on a program of supplying treated surface water for municipal uses, opportunities to purchase water may become available.

4.3 WATER QUALITY

Regional water quality is generally very good, with total dissolved solids, nitrate, and DBCP (a soil fumigant) being the only potential concerns. There are a number of possible contaminating activities within the Riverbank General Plan area, including the Thunderbolt Wood Processing facility and the Riverbank Army Ammunitions Plant. Neither of these, or any other potential contaminating activities, has shown a water quality impact to the City's production wells. Historically, water quality at the City's wells has been excellent, with no safe Drinking Water Act violations to date. There are no projected water supply changes due to water quality for the duration of the current UWMP planning horizon.

4.4 CURRENT AND PROJECTED NORMAL WATER SUPPLIES

The City's current (2010) and projected water supplies are provided in Table 4.2. As mentioned previously, the City relies exclusively on groundwater for their water supply. The City does not anticipate using a wholesale supply source to meet future needs. The projected water supplies are based on the total water use defined in Section 3 of this UWMP.

Table 4.2 (DWR Table 16 and 19)
Water Supplies — Current and Projected, AFY

Water Supply Sources		2010	2013	2015	2020	2025	2030	2035 - opt
Water purchased from:	**Wholesaler supplied volume (yes/no)**							
Wholesaler 1								
Wholesaler 2								
Wholesaler 3								
Supplier-produced groundwater		4,351	4.095	5,353	5,752	6,465	7,179	7,893
Supplier-produced surface water								
Transfers in								
Exchanges In								
Recycled Water								
Desalinated Water								
Other								
Other								
Total		**4,351**	**4,095**	**5,353**	**5,752**	**6,465**	**7,179**	**7,893**

4.5 FUTURE WATER SUPPLY PROJECTS

The City prepared their Water Supply Study and Water Master Plan in 2007 to ensure the required infrastructure will be in place to provide a reliable water source for existing and future City residents. The following summary includes a description of the build-out facilities. Development within the General Plan study area is anticipated to occur over an extended period of time (in excess of 20-30 years). Figure 4.2 highlights the proposed water supply wells and tanks as shown in the master plan.

The City has no future water supply projects planned at this time. Existing water supplies are more than adequate to satisfy existing system demands and future water supplies will be brought on as necessary to satisfy specific development needs as discussed below.

4.5.1 Future Groundwater Extractions

The ten existing City wells (Well No. 2-10, 12) have an approximate total capacity of 10,785 gpm as summarized previously in Table 4.1. In order to meet future water demands, the City's master plan suggested the addition of sixteen new groundwater wells (including Well No. 11 and Well No. 12), each at a capacity of 1,500 gpm, to meet 20% reserve capacity provisions and maximum day demands, as well as emergency storage requirements at build-out conditions. Besides Wells No. 11 and 12, which will be located within the City's current sphere of influence, most of these new water supply wells will be located outside of the City's current sphere of influence and within the General Plan areas east and west of the current City limits. A summary of the anticipated wells by area is presented in Table 4.3.

Table 4.3
Future Water Supply Needs

Buildout Area[1]	Existing Wells	New Wells Needed	New Wells Needed
West Riverbank	0	8	8
Central Riverbank	9	11	2
East Riverbank	0	6	6
Total	9	25	16

1. Central Riverbank includes the City's current sphere of influence. East and West Riverbank include the General Plan build-out areas.

4.5.2 Future Groundwater Extractions – Implementation Strategies

As noted, sixteen new municipal wells are proposed to meet build-out water demands. Planning, design, construction, and startup of these wells will require a collaborative effort between City staff and development interests. Timing of well construction is critical to ensure that water supply facilities are on-line well in advance of increased demands. For this to occur, the City has initiated the following implementation strategy:

1. A water supply master plan has been prepared including a recommended phasing plan for capital facilities. The phasing plan establishes priorities based on likely development scenarios and provides a framework for City-developer financing of proposed wells through impact fees.

2. Siting and design criteria have been established for new municipal wells. The criteria allows for early-on identification of superior well sites, particularly in areas proposed for development. The City expectation is that property developers will reserve well sites based on the approved criteria as part of the entitlement process.

3. Triggers for new well construction will be established based on an annual review of well production versus water demands. Master plan recommendations will be updated on a bi-annual basis to reflect current demand trends and development plans. Where a specific development triggers the need for additional wells, the development agreement between the property owner and the City will include provisions for financing and construction of required wells. Development will not be allowed to proceed without consideration of water supply facilities.

4.6 CITY OF RIVERBANK GROUNDWATER SYSTEM (MODESTO GROUNDWATER BASIN)

This section describes the Modesto groundwater subbasin from which the City's groundwater sources are located. Based on the Integrated Regional Groundwater Management Plan for the Modesto Subbasin, 2005 (CD copy attached as Appendix D) and various groundwater investigations performed on groundwater availability in the subbasin, this section provides the supporting information in determining the reliability of the City's groundwater sources during normal, single dry, and multiple dry year events.

4.6.1 City of Riverbank Well System

The City of Riverbank is located within the San Joaquin Valley and the Modesto Ground Water Subbasin (see Figure 4.3). The subbasin lies between the Stanislaus River to the north and the Tuolumne River to the south, and between the San Joaquin River on the west and crystalline basement rock of the Sierra Nevada foothills on the east (source: California Bulletin 118, updated 2/27/04).

The City's water supply is provided by ten production wells. As shown in Table 4.4, the wells range in depth from 240 feet to 830 feet and average 440 feet deep. Yields from the wells range from 625 gallons per minute (gpm) at Well No. 3, to 1,500 gpm at Well No. 10 and Well No. 12. The average yield per well is about 1,000 gpm, while the total available yield from all wells is 10,785 gpm. The minimum specific capacity of the wells ranges from a low of about 25 gallons per minute per foot of drawdown (gpm/ft) at Well No. 3, to more than 120 gpm/ft at Well No. 6. The average of the minimum specific capacities for all wells is about 60 gpm/ft.

4.6.2 Hydrogeologic Setting

Groundwater in the Modesto subbasin is produced from several sedimentary units that are Pleistocene to Miocene in age. The younger formations, known as the Turlock Lake, Riverbank, Modesto and Laguna Formations, are typically unconsolidated deposits of poorly-sorted gravel, sand, silt and clay. The units host predominantly unconfined to semi-confined aquifers that support high yielding wells. Transmissivities range from 60,000 to 280,000 gpd/ft, while storage coefficients range from 7 to 17 percent (source: California Bulletin 118, updated 2/27/04).

Underlying these formations is the older Mehrten Formation, which is comprised of semi-consolidated claystone, siltstone, sandstone, and agglomerate. The Mehrten is also an important aquifer and supports high-yielding wells. The Mehrten Formation surfaces in the eastern part of the Basin and dips to the southwest at a slope of about 0.006 (Burow, 2004). Transmissivities for the Mehrten Formation range between 28,000 and 250,000 gpd/ft while storage coefficients range from 1x10-4 to 1x10-6. The Mehrten Formation is underlain by the Valley Springs and Ione Formations. Because these deep formations may contain saline water, they are typically not a source of groundwater.

Most of the City of Riverbank wells are completed in the upper unconsolidated aquifers, although the deepest wells penetrate the Mehrten Formation.

4.6.2.1 Pumping Test Data

Dunn Environmental (2007) completed pumping tests on two City of Riverbank wells, No. 7 and No. 9. The testing included both step tests and 10-hour constant discharge tests, and utilized other nearby wells as monitoring wells. Dunn Environmental also completed a pumping test on Well No. 12 in 2009 which included a 24-hour constant discharge test.

At Well No. 7, the step tests were completed at rates of 240 gpm, 650 gpm and 1,300 gpm. The specific capacity at each rate was 74 gpm/ft. At Well No. 9, the step tests were completed at rates of 1,000 gpm, 1,750 gpm and 2,400 gpm. The well was slightly less efficient and the specific capacity ranged from 50 to 47 gpm/ft of drawdown. At Well No. 12, the step tests were completed at rates of 1,000 gpm, 1,700 gpm, and 2,700 gpm with a specific capacity at each rate of approximately 43 gpm/ft. These values are similar to the average specific capacity value of 56 gpm/ft reported by Burow (2004) for wells in the unconfined aquifer above and east of the Corcoran Clay (p. 31). All Riverbank wells are located east of the Corcoran Clay.

For the constant-discharge tests, Well No. 7 was pumped at 1,500 gpm, well No. 9 was pumped at 2,400 gpm, and Well No. 12 was pumped at 2,500 gpm. For Well No. 7, Dunn Environmental calculated the transmissivity at 530,000 to 588,000 gpd/ft, while for Well No. 9, it ranged between 290,000 gpd/ft and 313,000 (using recovery data). Well No. 12 transmissivity ranged from 93,000 to 123,000 gpd/ft. Storage coefficients for the wells were calculated to be in the range of 1x10-3 and 7x10-4, indicating semi-confined conditions.

System Supplies

These specific capacity values, and others previously reported for the remaining City of Riverbank wells are provided in Table 4.4, and can be used to estimate the maximum pumping rate that can be attained without dewatering the aquifer to the top of the well screen or the depth of the pump bowls. In the case of Well No. 7, the well drillers report indicated that a seal was set at 216 feet bgs, and that most groundwater was produced from sand, gravel and cobbles located between that depth and 314 feet bgs. At the above specific capacity, and with a maximum drought-year depth to static water level of about 66 feet bgs, the well should be able to produce significantly more than its rated capacity of 1,200 gpm (potentially up to 150 ft times 74 gpm/ft) without drawing water levels below the depth of the well seal. Other infrastructure likely constrains the output.

In the case of Well No. 9, the well drillers report indicated that a seal was set to 148 feet bgs, and that most groundwater was produced from coarse sand located between 152 and 174 feet, 293 and 307 feet, and 382 and 392 feet bgs. At the above specific capacity of 47 gpm/ft, and with a maximum drought-year depth to static water level of about 66 feet bgs, this well should also be able to produce significantly more than its rated capacity of 1,300 gpm (potentially up to 82 ft times 47 gpm/ft) without drawing water levels below the depth of the well seal.

Calculations for the other city wells are provided in Table 4.4. As shown, using the maximum dry year depth to water, all of the City wells should be easily able to provide water at their maximum pumping rates without drawing water levels below the reported depth of the pump bowls or the top of the well screen (base of the seal) with the exception of Well No. 2 which has a shallow seal and is open hole below 25 feet bgs.

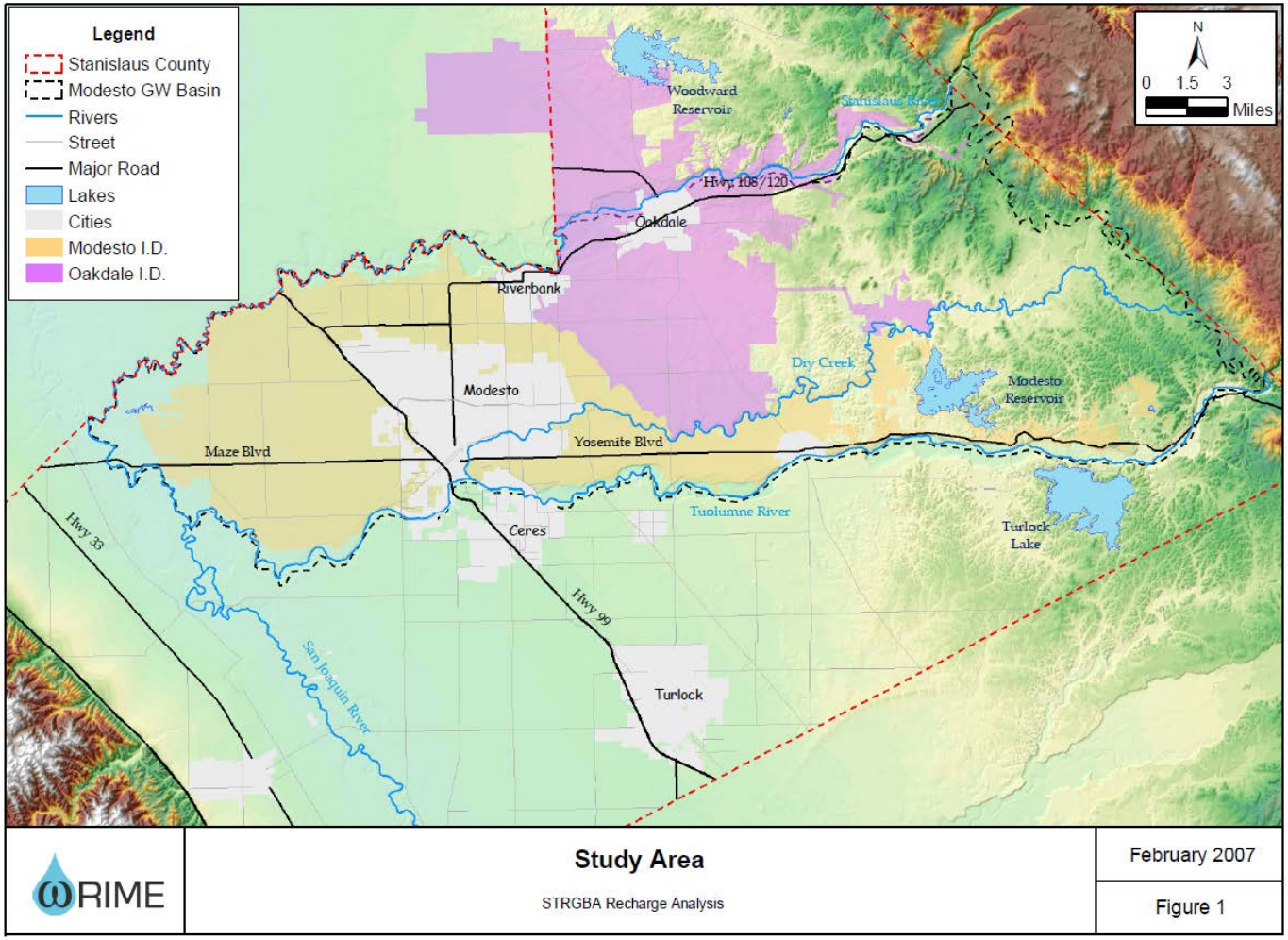


Figure 4.3 Location Map showing City of Riverbank and the Modesto Groundwater Subbasin Source: Water Resources & Information Management Engineering, Inc. Memo entitled: Recharge Characterization for Stanislaus and Tuolumne Rivers Groundwater Basin Association. Available online at: http://gis.stancounty.com/wateratlas/pdf/Stanislaus%20and%20Tuolumne%20River%20Groundwater%20Basin%20Assoc%20Recharge%20Anaylsis.pdf

Table 4.4 City of Riverbank Well Construction Data (1)

Well No.	8th St (Well No. 2)		Jackson (Well No. 3)		Pioneer (Well No. 4)		River Hghts (Well No. 5)		Whorton (Well No. 6)		Crossroads (Well No. 7)		Novi (Well No. 8)		Prospector (Well No. 9)		Oakdale Rd (Well No. 10)		Chief Tucker Ave (Well No. 12)	
Date Constructed	1956		1965		1972		1978		1981		1990		2001		2004		2007		2010	
Boring Depth	375		420		436		503		608		537		265		600		845		560	
Completed Depth	240		420		436		385		560		NA		260		392		830		602	
	From	**To**	**From**	**To**	**From**	**To**	**From**	**To**	**From**	**To**	**From**	**To**	**From**	**To**	**From**	**To**	**From**	**To**	**From**	**To**
Well Seal	0	25	NA		0	92	0	50	0	65	0	216	0	200	0	148	0	145	0	180
Gravel pack		None		None	0	92	0	220	0	560		None	200	265	148	392	145	360	180	350
					92	436											520	845		
Open hole		135		0		None		165		None		None		None		None		None		None
Approx. Sand and Gravel thickness in open hole		NA		0		0		15		0		0		0		0				0
Well Screen		NA		NA	132	160	130	220	225	315	209	341	210	250	152	174	164	184	239	259
					175	250		225	315	345					293	307	210	230	299	319
					275	431			345	495					382	392	255	265	339	389
									495	555							300	330	409	419
																	595	605	489	499
																	740	760	529	549
																	810	820		
Total screen length		NA		NA		259		315		270		132		40		46		120		130
Approx. gravel and sand thickness @ screened intervals (feet)		NA		NA		201		31		76		66		40		56				315
Well Capacity (GPM)		660		625		900		900		1000		1200		1200		1300		1500		1500
Depth to bowls		unk		unk		145		unk		unk		150		178		130				130
Well Specific Capacity Range (GPM/ft drawdown)	45	47	24	35		74	56	81		122		75		unk		50				43

System Supplies

Well No.	8th St (Well No. 2)		Jackson (Well No. 3)		Pioneer (Well No. 4)		River Hghts (Well No. 5)		Whorton (Well No. 6)		Crossroads (Well No. 7)		Novi (Well No. 8)		Prospector (Well No. 9)		Oakdale Rd (Well No. 10)		Chief Tucker Ave (Well No. 12)	
Minimum Specific Capacity (GPM/ft Drawdown)		45		24		74		56		122		75		24		50				43
Historic Max Static DTW (Date/DTW)	1956	70	1994	64	1996	63	1978/ 2005	74	1994	68	1994	66	2005	66	2004	63		unk	2009	85
Historic Min Static DTW (Date/DTW)	1968	52	1972	50	1998	60	1995	61	1981/ 2005	57	1998	57.6	2006	66	2006	61		unk		unk
Estimated Drawdown (feet) at Max Production = (Capacity / Minimum Specific Capacity)		15		26		12		16		8		16		50		26				35
Estimated Pumping Level (feet bgs) at Max Production and Max Static DTW		85		90		75		90		76		82		116		89				120
Height of Max pumping level above pump bowls or the top of well screen (for wells without reported pump depth).		-60		35		57		40		149		68		62		41				10

[1] Source: Dunn Environmental, 2007 and 2009; and Nolte Associates, Inc., 2008. NA = Not available. Unk = unknown.

4.6.3 City of Riverbank Groundwater System and Usage

As shown in Table 4.5, for the year 2010, the City produced about 4,351 acre-feet (AF) of groundwater from the nine active wells (Well No. 1 has been removed from service). Table 4.6 shows the annual production for each well. Table 4.6 also shows how production has steadily increased over the past twenty years through 2007, which was the maximum groundwater pumped by the City at 5,187 ac-ft. From 2007 through 2013, the City has seen a noticeable decrease in annual pumping, even though there has been a steady population increase within the City's sphere of influence.

City staff believes the reduction in annual pumping is due to conservation efforts and the effect of the economic downturn.

The maximum daily use typically occurs in July or August. The largest monthly volume pumped was in July 2007, when 720 ac-ft of ground water was produced. This is equal to about 23 ac-ft /day or 5,260 gpm (7.6 million gallons per day).

It is estimated that at full build-out, for the entire plan area (i.e. future demand within the City limits and General Plan areas), the projected water demand will be 14,610 AFY, or 3.4 times the 2010 production. Suggested facilities in the area Master Plan include the addition of sixteen new groundwater wells (including Well No. 11), each at a capacity of 1,500 gpm, to meet 20% reserve capacity provisions and maximum daily demands, as well as emergency storage requirements at buildout conditions (Nolte Engineering, 2008).

Table 4.5 - City of Riverbank Well Production Well Data by Month

CITY OF RIVERBANK HISTORICAL GROUNDWATER PUMPING BY MONTH													
	Groundwater Pumping, ac-ft/month												
Year	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Totals, ac-ft/yr**
1980	60	61	68	91	119	146	165	158	136	118	78	55	1,254
1984	67	66	88	131	178	215	222	219	193	99	66	67	1,611
1985	68	71	77	120	181	215	218	199	150	110	61	58	1,528
1986	64	61	71	107	178	230	242	212	160	86	86	71	1,568
1988	60	78	141	100	159	210	201	219	183	152	83	64	1,650
1989	70	70	96	130	198	219	215	220	98	120	95	70	1,601
1991	132	104	92	160	218	242	298	264	258	218	138	138	2,262
1992	126	126	126	196	282	285	298	328	295	255	169	117	2,602
1993	114	135	160	187	255	261	322	316	307	224	172	138	2,590
1995	124	133	153	161	247	350	375	382	334	287	194	149	2,889
1996	166	197	230	232	319	385	434	507	502	290	184	137	3,582
1997	122	129	241	299	378	393	442	415	380	318	210	158	3,485
1998	156	146	192	217	250	350	443	385	300	212	126	199	2,976
1999	156	146	170	234	353	432	488	460	377	344	249	208	3,618
2002	179	162	190	320	386	443	546	449	392	325	195	191	3,777
2003	164	157	227	236	357	463	572	437	468	372	188	201	3,842
2004	182	172	269	335	494	504	551	506	396	324	232	199	4,166
2005	206	177	214	289	461	510	643	718	483	419	312	232	4,664
2006	228	223	231	220	528	626	716	663	516	395	302	240	4,890
2007	240	215	311	438	536	618	720	640	479	382	349	270	5,187
2008	217	230	331	460	491	589	635	611	525	429	308	209	5,044

System Supplies

CITY OF RIVERBANK HISTORICAL GROUNDWATER PUMPING BY MONTH

Groundwater Pumping, ac-ft/month

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Totals, ac-ft/yr
2009	198	201	264	303	541	560	681	529	537	370	344	212	4,740
2010	229	191	298	312	385	362	481	556	563	549	258	167	4,351
2011	234	226	244	324	525	484	523	611	466	30	285	268	4,220
2012	241	254	257	291	453	425	650	561	419	381	191	207	4,220
2013	113	211	314	398	381	517	542	371	490	376	231	150	4,094

Source: Nolte Associates, Inc., 2008, City staff

Table 4.6 - City of Riverbank Production Data by Well

CITY OF RIVERBANK HISTORICAL GROUNDWATER PUMPING BY WELL Annual Groundwater Pumping, ac-ft/yr												
Years	**8th Street (Well 2)**	**Jackson (Well 3)**	**Pioneer (Well 4)**	**River Heights (Well 5)**	**Whorton (Well 6)**	**Crossroads (Well 7)**	**Novi (Well 8)**	**Prospector (Well 9)**	**Heartland (Well 10)**	**Chief Tucker (Well 12)**	**Totals, AFY**	**Ave. GPM**
2002	444	50	508	171	1,393	305	906	-			3,777	2,341
2003	230	258	527	532	1,178	357	760	-			3,842	2,382
2004	438	161	1,184	103	1,169	366	744	-			4,166	2,583
2005	430	104	824	394	735	140	826	1,210			4,664	2,892
2006	505	97	895	352	321	184	622	1,914			4,890	3,032
2007	302	156	972	499	887	372	855	1,155			5,187	3,222
2008	498	110	718	626	959	409	337	832	533		5,044	3,127
2009	284	130	678	437	816	886	174	684	689		4,740	2,938
2010	157	233	302	338	479	247	926	117	1000	554	4,351	2,697
2011	271	46	831	128	262	763	924	182	449	1008	4,864	3,016
2012	433	310	32	85	358	170	35	506	717	157	2,803	1,738
2013	226	196	442	616	495	238	83	374	368	1054	4,092	2,537

4.6.4 Modesto Subbasin Groundwater Storage and Budget

According to California's Groundwater Bulletin 118, updated 2/27/04, the estimated specific yield for the Modesto Subbasin is 8.8 percent. The estimated storage capacity to a depth of 300 feet is approximately 6,500,000 acre-feet. The annual water demand for the basin was estimated at 590,000 AF in 2000. Groundwater accounted for 206,500 AF of the total supply (Nolte Engineers, 2008). Total annual recharge to the basin was estimated at 310,000 acre-feet, the largest component of which is from irrigation followed by precipitation.

Assuming no recharge, the current City of Riverbank groundwater usage of 4,351 AFY is less than 1% of the total annual subbasin withdrawals, and less than 1/10th of 1% of the total estimated storage capacity of the basin.

As discussed previously, at full build-out, it is anticipated that the City of Riverbank annual groundwater requirements will be 3.4 times the current volume. It is uncertain when the full build-out scenario would occur, but the anticipated groundwater requirements would amount to less than 0.2% of the total amount of subbasin groundwater storage and less than 5% of the total annual basin recharge.

4.6.5 Groundwater Level Trends

4.6.5.1 Subbasin Trends

According to California's Groundwater Bulletin 118, updated 2/27/04, groundwater levels in the subbasin "declined nearly 15 feet from 1970 through 2000. The period 1970 through 1978 showed steep declines totaling about 12 feet. The six-year period from 1978 through 1984 saw stabilization and rebound of about 7 feet. 1984 through 1995 again showed steep declines, bottoming out in 1995 at nearly 20 feet below the 1970 level. Water levels then rose about 5 feet from 1996 to 2000. Water level declines have been more severe in the eastern portion of the subbasin, but have risen faster in the eastern subbasin between 1996 and 2000 than in any other portion of the subbasin".

Recovery of the aquifer was enhanced by the opening of the Modesto Irrigation District's surface water treatment plant in 1994, as use of surface water from the Tuolumne River has allowed the City of Modesto to reduce pumping from its water supply wells.

As shown in Figure 4.4, in addition to water level declines from increasing pumping, there is also a positive correlation between water levels and annual precipitation in Modesto Irrigation District wells. A known drought occurred between the years 1987 and 1992, and water levels dropped significantly during that period. Above average precipitation and groundwater recharge then occurred in 1993, 1996 and 1998, and groundwater levels rebounded almost to the pre-drought elevations, although there is somewhat of a lag period in the response of the aquifer to precipitation. Precipitation was also less than normal in 2002 and 2003, and regional ground water levels again declined, although not as severely as during the earlier drought period. The smaller decline is likely the result of the use of surface water as discussed above.

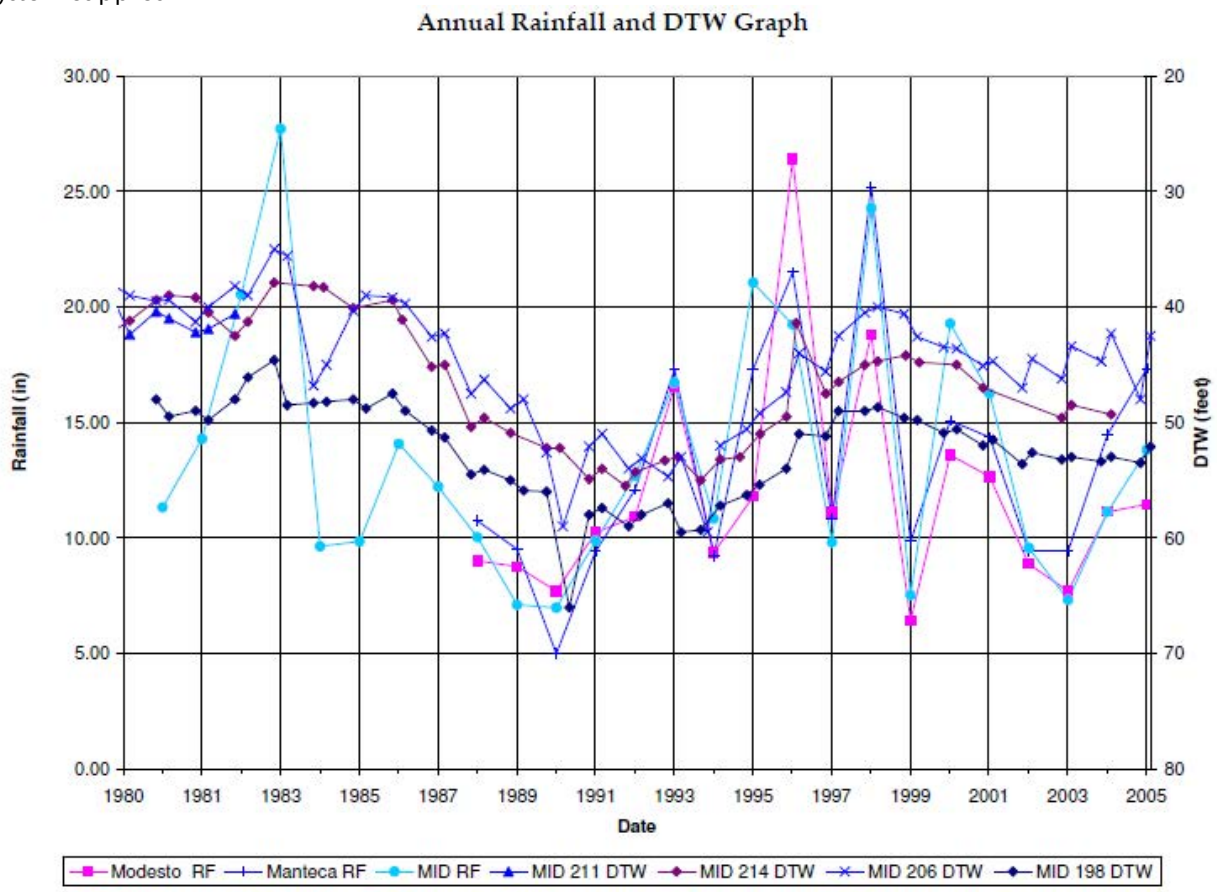


Figure 4.4 - Comparison of average rainfall (RF) and depth to groundwater in Modesto Irrigation District monitoring wells (MID).
Source: Dunn Environmental, 2007.

4.6.5.2 Riverbank Wells

Hydrographs for Riverbank area monitoring wells, obtained online from the California Division of Water Resources, Water Data Library, are provided in Figures 4.4 and 4.5. Most hydrographs show a relatively small, but steady decline in water levels beginning in the 1950's, which accelerated somewhat through the mid-1980s. Similar to the MID wells in Figure 4.4, the most severe period of aquifer drawdown occurred during the drought years of 1987 to 1992. During this period, more than 20 feet of additional drawdown occurred in many area wells and a portion of the ground water storage within the basin was depleted. Although the data sets are incomplete, a strong rebound in water levels is again associated with years of increased precipitation. In general, Dunn Environmental (2007) believed that wells further from the Stanislaus River experienced larger drawdown than wells closer to the river, as a result of aquifer recharge to shallow aquifers from river infiltration, as the river near Riverbank is a losing stream. However, the amount of drawdown in a given monitoring location is likely related to the depth of the well, the aquifer from which it produces, and the proximity of the well to other large municipal or irrigation wells.

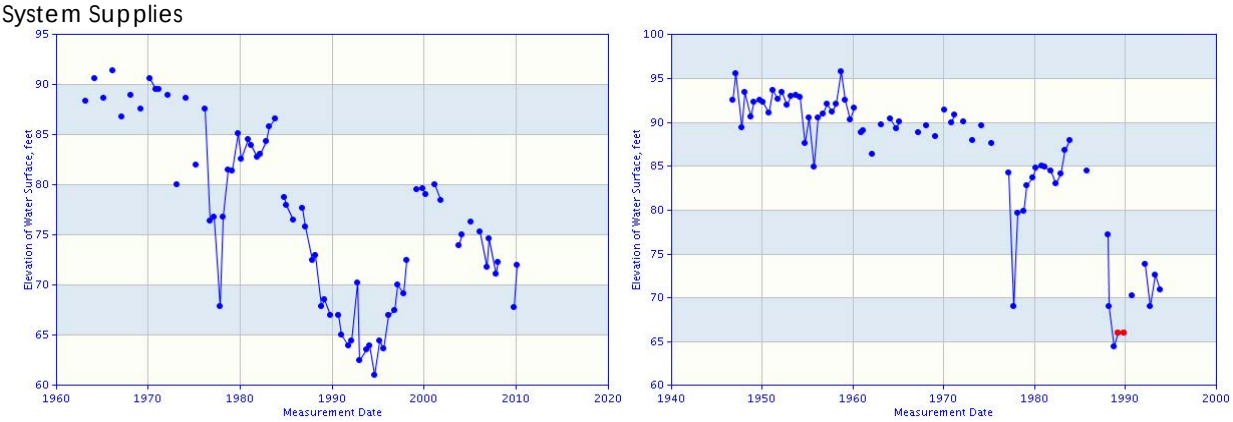


Figure 4.5
Well Hydrographs

Left - Hydrograph of a well located in Township 02 South, Range 09 East, Section 36. This well is located about 1.5 miles south of downtown Riverbank just east of City Well No. 9. Ground surface elevation 125 ft amsl. Right - Hydrograph of a well located in Township 02 South, Range 9 East, Section 25. This well is located about 0.5 miles southeast of downtown Riverbank, southeast of City Well No. 2. Ground surface elevation 142 ft amsl.

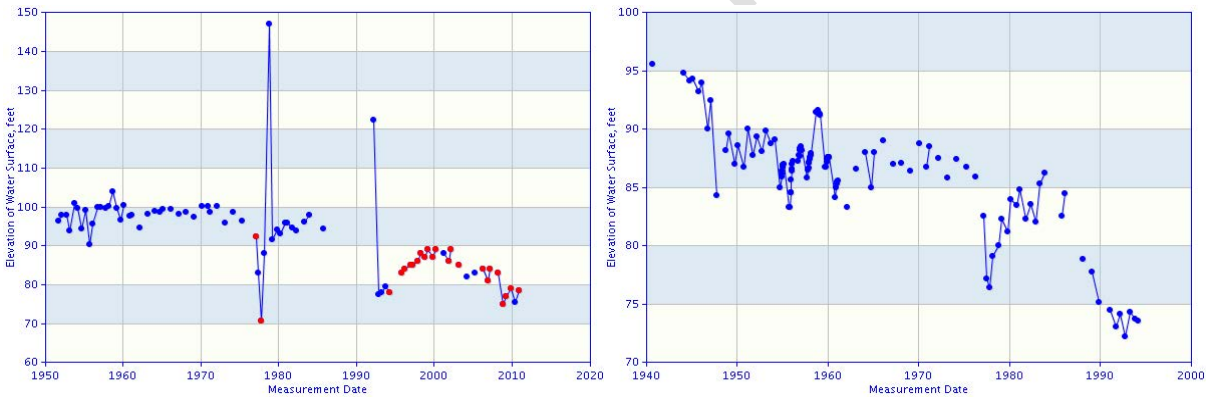


Figure 4.6 Well Hydrographs

Left - Hydrograph of a well located in Township 02 South, Range 10 East, Section 29. This well is located about 1.5 miles east of downtown Riverbank. Right - Hydrograph of a well located in Township 02 South, Range 10 East, Section 30. This well is located about 0.5 miles east of downtown Riverbank, east of City Well No. 2. Ground surface elevation 143 ft amsl.

System Supplies

Dunn Environmental (2007) prepared a chart of available water level data for City of Riverbank production wells during the period from 1989 to 1998 (see Figure 4.7). This data set only includes the latter part of the five-year drought that occurred between 1987 and 1992. In general, water levels in the City of Riverbank wells range from 60 to 65 feet bgs, which is similar to, or a few feet higher than, the depths to water for nearby monitoring wells indicated in Figures 4.5 and 4.6.

During the drought years of 1989 to 1992, most wells show relatively small water level declines of a few feet in that period, similar to the declines shown in Figure 4.4 for the MID wells. Water levels reached their lowest point in 1994 and then began to rebound during the following years of above average precipitation. This rebound occurred despite an increase in groundwater pumping during the period shown in Table 4.5. As previously described, a portion of the recovery is also likely due to the opening of the Modesto Irrigation District's surface water treatment plant in 1994 and their subsequent decrease in groundwater usage.

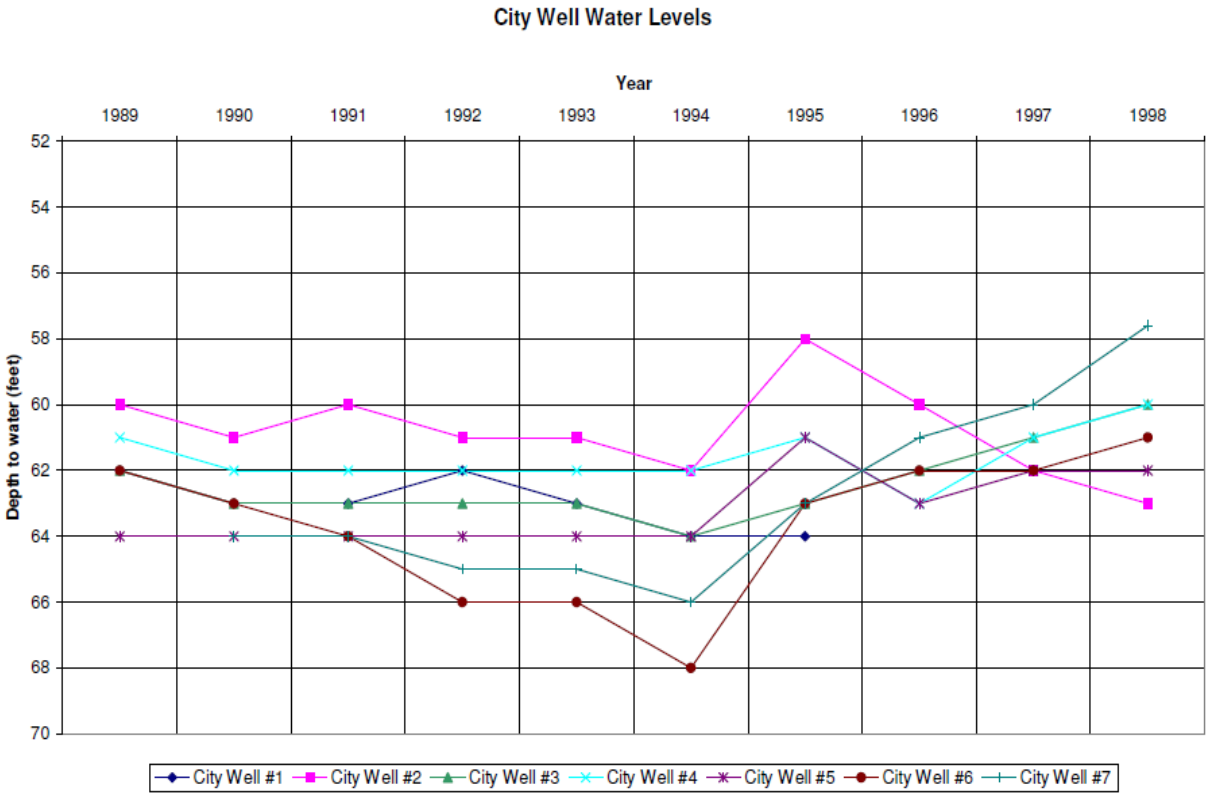


Figure 4.7
Annual Depth to Water Measurements for City of Riverbank Wells

Source: Dunn Environmental, 2007.

System Supplies

The data in the chart from 1989 to 1994 represent the lowest known water levels for City wells after both the five year drought period and prior to use of surface water by the City of Modesto. As previously discussed in Section 4.6.2.1, the pumping test data from the wells and the specific capacity calculations, coupled with the well construction information, indicates that all of the City wells should easily be able to provide water at their maximum pumping rates without drawing water levels below the reported depth of the pump bowls or the top of the well screen (base of the seal) with the exception of Well No. 2 which has a shallow seal and is open hole below 25 feet bgs.

4.6.6 Conclusions

Long-term pumping has impacted the aquifer in the Modesto subbasin and in the vicinity of the City of Riverbank. During the extended drought years from 1987 to 1992, water levels dropped up to 30 feet, when compared to water levels that existed in the 1950's. However, increases in annual precipitation, coupled with reduction of groundwater pumping by the City of Modesto, has allowed water levels to recover somewhat up into 2013.

Even at the water levels that existed at the end of the drought period and prior to implementation of Modesto's surface water facility, the City of Riverbank wells and the aquifer had the capacity to supply additional production. Only a small percentage of the storage capacity in the upper 300 feet of the aquifer is tapped and it appears that properly spaced wells will be able to provide the required capacity at full build out.

SECTION 5 WATER RECYCLING

This chapter provides a description of the wastewater collection and treatment system for the City as well as information on recycled wastewater.

5.1 WASTEWATER COLLECTION AND TREATMENT

The City owns and operates a wastewater treatment plant (WWTP) on the north bank of the Stanislaus River. The WWTP consists of a headworks facility equipped with a mechanical screen, a screenings compactor, a flow metering device, a parallel channel for overflow protection and a future additional screen, four mechanically aerated treatment ponds, and seven evaporation/percolation ponds. The City WWTP receives wastewater from residential, commercial, and industrial sources.

Influent flows to the WWTP were analyzed and summarized in the 2006 Annual Report for the City of Riverbank. The 2006 monthly average was 1.82 mgd.

The City WWTP is subject to Waste Discharge Requirements Order No. 94-100 (WDR) adopted by the Regional Board in April 1994. The WDR permitted the WWTP for flows up to 7.9 mgd.

In April 2001, the, Regional Board issued Cleanup and Abatement Order No. 5-01-703 (C&A) for the City WWTP. The City has subsequently implemented all operational and facility improvements ordered in the C&A, including completion of the pond expansion project, berm remediation work, and other physical improvements.

Following a Regional Board staff inspection of the facility, the City was determined to be in violation of its WDR and was subsequently issued a Notice of Violation (NOV) in March 2003. As part of its commitment to address sludge management at the WWTP and satisfy requirements of the NOV, the City has constructed lined treatment ponds and essentially reconfigured the plant layout. The plan, which was approved by the Regional Board, significantly upgraded the plant and provided increased treatment capabilities and environmental protection. Phase 1 of the project converted Ponds P-1 and P-2 to treatment ponds through deepening and installing a dual liner system of 1-ft compacted clay and a 60 mil HDPE geomembrane liner system, which is protected by a 2-ft layer of soil on the pond bottoms. The project was constructed according to a Construction Quality Assurance Plan as required by the Regional Board and with geotechnical reports confirming the construction details of the liner.

Phase 1 also included new piping, control gates, inlet and outlet structures, and a new pipeline from the existing headworks structure to the new treatment ponds; relocation of six 75 hp aerators to each pond; and construction of a new parallel headwords structure to increase the inflow capacity and prevent potential spillage during peak flows coupled with rain events. The new ponds operate in series and the treated wastewater flows through Pond T-4 to the percolation ponds. This provides more thorough treatment and control of the sludge generated in the lined ponds. Phase 2 included sludge removal from Pond P-2. Phase 2 was completed in the Summer of 2008. As required by the Regional Board, two new monitoring wells have been constructed near the new lined treatment ponds.
The City continues to expend considerable time and resources in its on-going efforts to operate and maintain the WWTP in compliance with the current WDR.

Estimates of wastewater flow within the City for the present and future conditions are shown in Table 5.1.

Figure 5.1 (DWR Table 21)
Recycled Water — Wastewater Collection and Treatment (AF/Y)

Type of Wastewater	2006	2010	Buildout (a)
Wastewater collected & treated in service area	2,040	1,938	7,400(b)
Volume that meets recycled water standard	0	0	0

(a) *City of Riverbank General Plan 2005-2025*

(b) *City of Riverbank 2007 Sewer Collection System Master Plan*

Total Wastewater flow (Million gallons)			
	2011	**2012**	**2013**
Total Year	**619.43**	**604.29**	**592.68**
Avg. Monthly	**51.62**	**50.36**	**49.39**
Avg. Daily	**1.70**	**1.66**	**1.62**

No new permit developments (as of February 2014).

5.2 WATER REUSE

In an effort to implement the City's General Plan policy on recycled water, the City of Riverbank General Plan 2005-2025, Conservation element, Policy CONS-6.6 directs that "The City will encourage the use of recycled water for appropriate use, including but not limited to outdoor irrigation, toilet flushing, fire hydrants, and commercial and industrial processes."

The City WWTP incorporates secondary treatment through a pond system. Effluent disposal occurs through a series of percolation ponds. The plant is not currently configured for the production of recycled wastewater. An urban recycled wastewater program is not planned at this time. No salinity management plans, as would be required for large water reuse implementation, have been performed.

5.3 GRAY WATER AND RAINWATER HARVESTING

The City may consider gray and rainwater collection and reuse in larger, new development areas in the future.

SECTION 6 WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

This section describes the City's water supply reliability and water shortage contingency planning efforts and includes:

- Comparison of projected water supplies and demands
- Assessment of the overall reliability of future supplies regardless of drought or emergency conditions
- Discussion of how an urban water suppliers water sources can vary as a result of emergency or other external influences such as system or other limitations, as well as the water supplier's planned response
- Description of the drought contingency plan—the water supplier's response and planning for changes or shortages in water supplies

6.1 WATER MANAGEMENT TOOLS – MAXIMIZE RESOURCES AND MINIMIZE IMPORT

The City uses its own local groundwater supply and does not rely on imported water use to satisfy system demands. The City completed their most recent update to the Water Supply Study and Water Master Plan in 2007. This plan outlines the projected water demands within the existing City sphere of influence as well as the City's 2005-2025 General Plan area. The plan evaluates the current and future water demands for the City based on projected growth within the existing service area and future General Plan build-out area. The plan was prepared by the City to identify; needed water system improvements to the existing infrastructure, expansion necessary to accommodate anticipated growth and methods to maximize available resources and minimize the need to import water.

The City has also prepared a number of reports addressing the reliability of the City's groundwater supply, including a Source Sufficiency Report for the City of Riverbank General Plan Update, 2007.

In a continuing effort to provide a safe and reliable supply of water to the City now and into the future, the water master plan will be updated in 2016.

6.2 WATER SUPPLY RELIABILITY

Table 6.1 provides the basis of water year data for defining average, single dry and multiple dry water years to develop water supply reliability.

Table 6.1 (DWR Table 27)
Basis of Water Year Data

Water Year Type	Base Year(s)
Average Water Year	2008
Single-Dry Water Year	1976/1977
Multiple-Dry Water Years	1989-1992

Table 6.2 and 6.3 show the historic and current water supply reliability conditions for the City groundwater supply. The average/normal water year groundwater supply is based on the reliable expected water supply from the City's existing 10 wells, which provide a reliable pumping capacity of 10,785 gpm, or approximately 17,400 AFA. Based on the groundwater basin discussion presented in Section 5 of this UWMP, it was concluded that the City's water supply is firm and would not see a reduction in available pumping capacity during single and multiple dry year conditions. Also, the City currently sees no impacts on the current and projected water supply based on legal, environmental, water quality or climatic factors.

Table 6.2 (DWR Table 28)
Supply Reliability — Historic Conditions, AFA

Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
17,400	17,400	17,400	17,400	17,400	17,400
Percent of Average/Normal Year:	100%	100%	100%	100%	100%

Table 6.3 (DWR Table 31)
Supply Reliability — Current Water Sources

Water supply sources	Average / Normal Water Year Supply	Multiple Dry Water Year Supply		
		Year 1	Year 2	Year 3
City produced groundwater	17,400	17,400	17,400	17,400
Percent of normal year:	100%	100%	100%	100%

6.3 WATER SUPPLY VERSUS DEMAND COMPARISONS

This section provides an assessment of the reliability of the City's water service to its customers during normal, dry, and multiple dry water years. The supply totals are based on Table 6.2 above and the groundwater supply discussion in Section 5 of this UWMP. Demand totals are detailed in Section 3 of this UWMP. In projecting future water use for the City, interim and final urban water use targets were applied. Table 6.4 (DWR Table 32), 6.5 (DWR Table 33) and 6.6 (DWR Table 34) provide the City's water supply and demand comparisons for normal, single dry, and multiple dry year scenarios.

Table 6.4 (DWR Table 32)
Supply and Demand Comparison — Normal Year

	2015	2020	2025	2030	2035 - opt
Supply totals	17,400	17,400	17,400	17,400	17,400
Demand totals	5,353	5,752	6,465	7,179	7,893
Difference	12,047	11,648	10,935	10,221	9,507
Difference as % of Supply	69.2%	66.9%	62.8%	58.7%	54.6%
Difference as % of Demand	225%	202%	169%	142%	120%

Table 6.5 (DWR Table 33)
Supply and Demand Comparison — Single Dry Year

	2015	2020	2025	2030	2035 - opt
Supply totals	17,400	17,400	17,400	17,400	17,400
Demand totals	5,353	5,752	6,465	7,179	7,893
Difference	12,047	11,648	10,935	10,221	9,507
Difference as % of Supply	69.2%	66.9%	62.8%	58.7%	54.6%
Difference as % of Demand	225%	202%	169%	142%	120%

Table 6.6 (DWR Table 34)
Supply and Demand Comparison — Multiple Dry-Year Events

		2015	2020	2025	2030	2035 - opt
Multiple-dry year - first year supply	**Supply totals**	17,400	17,400	17,400	17,400	17,400
	Demand totals	5,353	5,752	6,465	7,179	7,893
	Difference	12,047	11,648	10,935	10,221	9,507
	Difference as % of Supply	69.2%	66.9%	62.8%	58.7%	54.6%
	Difference as % of Demand	225%	202%	169%	142%	120%
Multiple-dry year - second year supply	**Supply totals**	17,400	17,400	17,400	17,400	17,400
	Demand totals	5,353	5,752	6,465	7,179	7,893
	Difference	12,047	11,648	10,935	10,221	9,507
	Difference as % of Supply	69.2%	66.9%	62.8%	58.7%	54.6%
	Difference as % of Demand	225%	202%	169%	142%	120%
Multiple-dry year - third year supply	**Supply totals**	17,400	17,400	17,400	17,400	17,400
	Demand totals	5,353	5,752	6,465	7,179	7,893
	Difference	12,047	11,648	10,935	10,221	9,507
	Difference as % of Supply	69.2%	66.9%	62.8%	58.7%	54.6%
	Difference as % of Demand	225%	202%	169%	142%	120%

6.4 WATER SHORTAGE CONTINGENCY PLANNING

6.4.1 Water Shortage Contingency Plan

In accordance with the City of Riverbank's emergency response procedures, the City has developed a comprehensive water shortage contingency plan. The plan is consistent with the provisions of the City's emergency response procedures to implement during an interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

6.4.1.1 Water Shortage Emergency Response

The City of Riverbank has two water storage tanks totaling 2 million gallons of system storage. Each of the storage tanks is equipped with a booster pumping station with backup power. These tanks will supply water for essential needs in the case of emergencies. The City has chlorination pumps at each well site that may be put into operation when needed. Seven of the City's wells have diesel engine electric generators with enough fuel to run 12 to 24 hours without refueling.

The City can contact bottled water companies in cases of emergencies. Canals containing non-portable water traverse the community. Local trucking firms can transport water along with the City's fire tanker trucks. Residents would need to boil or disinfect non-potable water.

The City recognizes the importance of water demand management measures in reducing water demand and will continue to implement these measures. Also, the City would increase media attention to the water supply situation during a shortage and would step up public water education programs.

When a water shortage appears imminent, a City water shortage response team would be activated by the City Council, City Manager, and Director of Development Services. The team includes the City Manger's Office, Development Services Department, Public Safety Department (Emergency Services and Sheriff), and Finance Department.

6.4.1.2 Preparation Actions for a Catastrophe

Below is an example of actions the City would undertake if a catastrophe were imminent or declared.

1. Determine extent of water shortage
2. Activate the water shortage response team
3. Monitor existing storage
4. Obtain additional water supplies
5. Develop alternative water supplies
6. Determine where immediate funding will come from
7. Contact and coordinate with other agencies
8. Put employees and contractors on-call
9. Communicate with the public

6.4.1.3 Supplemental Water Supplies

To offset future potential water shortages due to a drought or disaster, the City will keep communication open with adjacent communities, MID, and OID to deliver additional water, if needed.

6.4.1.4 Long Term Additional Water Supply Options

To meet future long-term water demand beyond 2020, the City will continue working on the possibility of bringing in surface water to supplement groundwater. Recycled water opportunities will also be studied further.

6.5 WATER SUPPLY RELIABILITY/DROUGHT CONTINGENCY ORDINANCE/RESOLUTION

The Water Code requires a water supplier to develop a water supply reliability/drought contingency plan to identify the thresholds for implementation of various actions to support conservation during water supply shortages. The City adopted a no waste ordinance in 1991, which is currently being revised to meet new guidelines. Along with the Water Shortage Contingency Plan, a draft resolution to declare a Water Shortage Emergency will be presented to council for adoption.

6.5.1 Rationing Stages and Reduction Goals

The City has developed a four-stage action plan (Table 6.7) to invoke during a declared water shortage. The plan includes voluntary and mandatory rationing; depending on the causes, severity, and anticipated duration of water supply shortages, if known. Action stages may be triggered by a shortage at any time of the year. If it appears that it may be a dry year, mainly due to insufficient precipitation and further dropping of the groundwater table, the City can take action in advance of a crisis. Any combination of at least three of the criteria will institute the Stage actions.

Table 6.7 (DWR Table 35)
Water Shortage Contingency — Rationing Stages to Address Water Supply Shortages

Stage No.	Water Supply Conditions	% Shortage	Program Type
Stage 1 – Minimal	• Below average rainfall in the previous 12-24 months • 10% or more of City wells out of service due to noncompliance with drinking water standards or drop in static ground water levels* • Irrigation allotments by local irrigation districts reduced by 15% • Extended warm weather patterns typical of summer	15	Voluntary / Mandatory
Stage 2 - Moderate	• Below average rainfall in the previous 24-36 months • Prolonged periods of low water pressure • 10% or more of City wells out of service due to noncompliance with drinking water standards or drop in groundwater • Irrigation allotments by local irrigation districts reduced by 25% • Extended warm weather patterns typical of summer	25	Voluntary / Mandatory
Stage 3 – Severe	• Below average rainfall in the previous 36-48 months • Prolonged periods of low water pressure. • 10% or more of City wells out of service due to noncompliance or drop in groundwater levels • Irrigation allotments by local irrigation reduced by 35% • Extended warm weather patterns typical of summer	35	Voluntary / Mandatory
Stage 4 - Critical	• Below average rainfall in the previous 48-60 months. • Prolonged periods of low water pressure • 10% or more of City wells out of service due to noncompliance with drinking water standards or drop in groundwater levels • Irrigation allotments by local irrigation districts reduced by 50% • Extended warm weather patterns typical of summer	50	Voluntary / Mandatory

6.5.2 Priority by Use

Priorities for use of available water during shortages are listed below according to ranking.

1. Minimum health and safety allocations - for interior residential needs (includes single family, multifamily, mobile homes and convalescent facilities); and firefighting and public safety needs;
2. Commercial, industrial, institutional/governmental operations - for maintaining economic base of community;
3. Existing landscaping - trees and shrubs;
4. New demand - proposed construction projects.

6.5.3 Health and Safety Requirements

Based on information provided by the California Department of Water Resources, commonly accepted estimates of interior residential water use in the United States are presented in Table 6.8. These water use estimates indicate per capita health and safety water requirements for various appliances and fixtures. A health and safety allotment of 68 gallons per capita per day (gpcd) is essential for basic interior water use with no habit or plumbing fixture change. However, if there is prolonged water shortage or a disaster, then customers would be required to make changes in their interior water use habits (for instance, not flushing toilets unless necessary or taking less frequent showers). These reductions will be reinforced through a public awareness campaign during periods of threatened water supply.

Table 6.8
Estimated Per Capita Health and Safety Water Consumption

	Non-Conserving Fixtures			Habit Changes			Conserving Fixtures[2]		
Unit	Daily Use	Unit Use	gal/day	Daily Use	Unit Use	gal/day	Daily Use	Unit Use	gal/day
Toilets	5 flushes	5.5 gpf	27.5	3 flushes	5.5 gpcd	16.5	5 flushes	1.5 gpf	7.5
Shower	5 min	4.0 gpm	20.0	4 min	3.0 gpm	12.0	5 min	2.0 gpm	10.0
Washer[1]	12.5 gpcd		12.5	11.5 gpcd		11.5	11.5 gpcd		11.5
Kitchen	4 gpcd		4.0	4 gpcd		4.0	4 gpcd		4.0
Other	4 gpcd		4.0	4 gpcd		4.0	4 gpcd		4.0
Total (gpcd)			68.0			48.0			37.0
					Reduction (%)	*29.4*			*22.9*

1 Reduced washer use results from larger loads.
2 Fixtures include ULF 1.6 gpf toilets, 2.0 gpm showerheads, and efficient clothes washers.

6.6 MANDATORY PROHIBITIONS ON WATER WASTING

As previously mentioned, a no waste ordinance has been in effect. The City Water Shortage Contingency Plan will prohibit various wasteful water uses identified in Table 6.9 below. Warnings and penalties are levied for infractions to the ordinance.

Table 6.9 (DWR Table 36)
Water Shortage Contingency — Mandatory Prohibitions

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Using potable water for street washing	Stage 4
Washing Cars	Stage 2
Outdoor water use restrictions	Stage 4
Sidewalk/street cleaning	Stage 2
Plumbing leaks	Stage 1
No new service connections	Stage 4

6.7 CONSUMPTION REDUCTION METHODS

Examples of consumption reduction methods that could be instituted during a drought period include: use prohibitions (especially for landscape irrigation); additional water conservation enforcement; voluntary rationing, mandatory rationing; reduction of water pressure in water lines where feasible; flow restrictions; expansion of leak detections and repair programs; installation of water kits, plumbing fixture replacements; restriction on building permits; and installation of pool covers. Water shortage pricing is not considered feasible due to Proposition 218 requirements.

6.8 EXCESSIVE USE PENALTIES

Any customer violating the regulations and restrictions on water use set forth in the City's no waste ordinance shall receive a written warning for the first such violation. Upon a second violation, the customer shall receive another warning. A third violation within a twelve-month period triggers the levy of a $20 fine. A fourth violation triggers a $50 fine; a fifth violation triggers a $100 fine; and a sixth violation triggers a $200 fine. At this point, the City may install a water meter at the customer's expense (if a meter is not present). Subsequent fines are levied at $200 each.

6.9 REVENUE AND EXPENDITURE IMPACTS AND MEASURES TO OVERCOME IMPACTS

Water rates need to be set up to enable water suppliers to cover the costs in pumping, storing, treating, and delivering water. Revenues need to be collected to build reserves for future water system repairs, maintenance, and replacement. Water shortages increase costs to the water supplier by increasing expenses for public educational campaigns, stricter conservation efforts, and facility development. Likewise, water shortages impact the operations cash flow as water use falls. Other costs for repairs, maintenance, and replacement are fixed.

6.10 MECHANISMS TO DETERMINE REDUCTIONS IN WATER USE

With normal water supply conditions, water production is recorded daily at each wellhead. Totals are reported weekly to the Water Services Supervisor, and monthly to the Director of Municipal Utilities.

Reporting escalates with advanced stages of water shortages. During water emergency shortages, production figures would be reported to the Domestic Water Supervisor hourly, and to the Development Services Director and City Manager daily. Reports would also be provided to the City Council and the Public Safety Department. If reduction goals are not met, the City Council would be notified so that additional action may be taken (water shortage emergency).

SECTION 7 WATER DEMAND MANAGEMENT MEASURES

7.1 INTRODUCTION

The City of Riverbank is committed to the implementation of the most feasible water conservation measures appropriate for the City to produce the greatest reduction in water use practicable. The City of Riverbank is not signatory to the Memorandum of Understanding regarding Urban Water Conservation in California (MOU) and is therefore not a member of the California Urban Water Conservation Council (CUWCC).

Water Code Section 10631(f) requires the City to implement to the extent practicable 14 enumerated Demand Management Measures (DMMs) intended to lessen demands on the State's water resources through increased conservation and efficient water use. This section presents the City's program to implement and monitor the practicable DMMs; as well as the required cost benefit analyses (CBAs) for those that are not currently feasible to be implemented, or scheduled to be implemented.

A summary of the 14 existing demand management measures is presented in Table 7-1.

Table 7.1
Summary of Demand Management Measures

DMM	Description	Riverbank Implementation Status
A	Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers	Not currently feasible
B	Residential Plumbing Retrofit	Not currently feasible
C	System Water Audits, Leak Detection, and Repair	Implemented
D	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	Implemented
E	Large Landscape Conservation Programs and Incentives	Not currently feasible
F	High Efficiency Washing Machine Rebate Program	Not currently feasible
G	Public Information Programs	Implemented
H	School Education Programs	Not currently feasible
I	Conservation Programs for Commercial, Industrial, and Institutional Accounts	Not currently feasible
J	Wholesale Agency Programs	N/A
K	Conservation Pricing	Implemented
L	Water Conservation Coordinator	Not currently feasible
M	Water Waste Prohibition	Implemented
N	High Efficient Toilet Replacement	Not currently feasible

7.2 DEMAND MANAGEMENT MEASURES

The City is committed to providing safe and reliable water to its customers in the most efficient and cost-effective manner; therefore, in response to the Water Code, the City will address the 14 DMMs to the extent feasible.

In general, feasibility is based primarily on a cost benefit analysis comparing the value of the water saved versus the costs to implement the DMM. Certain costs have been determined which applies to multiple DMM cost benefit analyses (CBA) which are summarized as follows:

Cost of incremental water supplied: This is the electrical cost for pumping and chemical costs per AF of water delivered. It does not include fixed operational costs. Data (rounded) from a 1.5 year period are utilized as follows:

Beginning of period	8/16/2012
End of period	2/6/2014
Total Energy Costs	$551,000
Total Chemical Costs	$4,000
Total Water delivered	5,600 AF
Incremental Cost per AF	$100
Incremental cost per million gallons	$325

Cost of City Staff: This is the approximate cost per hour for City staff to administer and/or conduct field audits or outreach programs. For the CBA it is assumed the costs would be limited to staff that would cost $50/hour, including benefits.

Cost of Vehicle Use: For the CBA it is assumed the costs would be at least $0.60/mile, including depreciation, registration, insurance, maintenance, and fuel.

Number of Residences built before 1993: Greater water savings can be attained in older houses that were completed before 1993 when water conserving fixtures were mandated in the building code. It is presumed of the 6,614 residences currently served less than 3,000 are older than 1993.

Water Use Per household: Current population is reported to be 23,149, which averages to 3.5 persons per household. Although recent water use averages about 160 gpcd, for water savings CBA, a value of 200 gpcd (closer to historic average), or 700 gallons per household per day is utilized as a conservative estimate.

For each DMM, an overall outline of the City's schedule for DMM implementation is provided with a means of tracking and evaluating DMM implementation and effectiveness. Specific tasks will be summarized and reported in UWMP updates for each DMM; therefore, a reporting period is defined as the five-year period between UWMP updates.

7.2.1 DMM A – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

Many residential customers unknowingly use water inefficiently and take for granted this limited resource. Additionally, many customers do not understand the amount of water wasted by overwatering their landscape. A water survey program is intended to educate City customers on efficient landscape water use, test fixtures for leaks, provide information on other services available to them (other DMMs) such as rebates and free water efficient fixtures and as such requires City staff and transportation costs as well as costs for rebates or water saving fixtures if offered.

DMM Description

The Water Survey Program for Single-Family Residential and Multi-Family Residential Customers consists of the following actions:

- Define the funding source and allocate appropriate funds for this DMM
- Assign Water Conservation staff
- Target high use customers and market water use surveys to single-family residential and multi-family residential customers through the following actions.
    - On an annual basis, compile single-family and multi-family residential user account information and water use data. This information will be analyzed to prioritize the marketing efforts described below. High volume water use customers as identified as being the top five percent (5%) highest water consumers will be the focus for initial marketing efforts followed by the remaining 15 percent (15%) as determined by water use ranking priority to make up the target 20 percent (20%) marketing effort as outlined in this measure.
- Develop or identify marketing material to be used for initial contact, during surveys and follow-up to surveys.
    - Compile DMM specific materials/equipment such as educational materials, tools for minor irrigation system repair, flow and measurement equipment, replacement sprinkler equipment and other applicable materials and equipment.
- Directly contact via letter or telephone, not less than 1% of single-family residential customers and 1% of multi-family residential customers each year with an offer to conduct a water survey.
    - Priority in contact shall be given to those high volume use customers identified above.
    - Telephone followed by letter contact shall be conducted for users identified above as high volume use customers.

- Letter correspondence and telephone contact shall include information on other DMM services available to the customer such as high efficient toilets, high efficient washing machines, and free water conserving retrofit devices.

- Conduct surveys of all positive respondents to survey offer and other interested customers becoming aware of the survey through DMM 7. Surveys shall include indoor and outdoor components, and at minimum shall have the following elements:

Indoor

- Check for leaks, including toilets, faucets, and water meter;
- Check showerhead flow rates, aerator flow rates, and offer to replace (see DMM B) or recommend replacement, as necessary;
- Check toilet flushing rating and recommend installation of displacement device or direct customer to HET rebate program, as necessary; replace leaking toilet flapper, as necessary;
- Check and document any other water use appliances that may exist in the residence such as dishwasher, evaporative cooler, spa and so on.

Outdoor

- Check irrigation system for leaks, use of irrigation timers, and proper irrigation times;
- Review or develop customer irrigation schedule.

- Provide customer with evaluation results and water saving recommendations; leave information packet with customer.
- For those customers who are reluctant to having staff conduct an onsite survey, offer a self survey kit. The self survey kit will include the City forms and a description to walk the customer through the water audit process. The form enclosed in the kit will allow the customer to record their fixture flow rates for comparison to currently available low water use fixtures and allow the customer to return the completed form for a free water conservation kit distributed under DMM B. The self survey kit will include the following:
  - Toilet tabs to detect toilet leaks,
  - Shower flow rate detector bag,
  - Self Water Audit instructions and forms,
  - Educational material such as water savings tips, the significance of the EPA Water Sense certification, and
  - Promotional material for incentives and rebates the City provides.

- Maintain survey information and track monthly customer use and information to ensure accuracy and for use in evaluating DMM effectiveness.

Schedule and Steps for Implementation

The City currently does offer educational materials to households as part of its education and outreach program but has no plans to implement a formal water survey program at this time as the costs would be a burden on current City finances and the costs far exceed the benefits expected. The required CBA summary table follows, with calculation details provided in Appendix G:

CBA Table DMM A – W.C. 10631(g)(2)	
Cost Effectiveness Summary	
Total Annual Costs	$ 64,400
Total Annual Benefits	$ 2,600
Discount Rate	N/A
Time Horizon	5 years
Cost of Water ($ /AF)	100
Water Savings (AF/Y)	26.0

A summary of the non-economic factors affecting the Water Survey Program and taken into consideration in this Cost-Benefit analysis is provided in the following paragraphs.

Environmental

The environmental effects of implementing a Water Survey Program in the City would be minimal. As stated previously, the City uses groundwater wells as its potable water source. Surface waters would not be measurably affected by implementing or not implementing the program.

There would be an environmental benefit to implementing the program in the form of reduced electrical power consumption for the production, treatment and distribution of water.

Social

There is a societal benefit in implementing the Water Survey Program. A reduction in the amount of water produced and distributed means a reduction in the amount of money spent on its production. The publicly owned system would see a reduction in power required to pump, treat, and distribute the water.

Implementing the program would also convey to the water users the message that the City is working to conserve water. The extent to which the program would be socially beneficial is not quantifiable, however.

Health

There are no measurable health benefits to either implementing or not implementing the Water Survey Program.

Customer Impact

Water customers that participate in the Water Survey Program would be educated on sources of potential leaks in their system and will know how to prevent them or fix them. They may also be better informed of irrigation practices and landscaping options to reduce their water consumption. Participants may also talk with friends and neighbors about what they have learned, which may have an effect on how they manage water at their own homes.

Technological Factors

There are several technological advances in residential irrigation practices that are available to the average homeowner to reduce the amount of water used. Automatic sprinkling and drip irrigation systems can be equipped with timers. Soil moisture probes and rain sensors can be used to adjust irrigation schedules. Internet websites are devoted to appropriate landscaping plant choices given sun exposure, soil types, and climate. All of this information can be provided as part of a Water Survey Program. It is also available to anyone with internet access that is interested in conserving water, even without the Program.

Conclusion

While there are some non-economic benefits to implementing a Water Survey Program, the costs of the Program are too excessive to justify it at this time. At a minimum a City employee (assumed ½ time) and vehicle would have to be dedicated to properly running the program. There would also be advertising and material costs associated with the Program. The sum of these costs makes implementing the Program prohibitive given current City budget constraints.

7.2.2 DMM B – Residential Plumbing Retrofit

This DMM replaces high water use fixtures with low-volume retrofit plumbing devices. These devices range from toilet water displacement bags to faucet aerators. The devices are typically installed during a water survey; however, are available to the public upon request.

The City adopted the 2013 California Green Building Standards Code, and the 2013 California Plumbing Code, which will conform to the legal requirements for maximum water usage for fixture retrofits and replacements for residential uses, including 1.28 gallon water closets and 0.5 gallon urinals. In addition the City will conform to the requirements SB 407/Civil Code Sections 1101.1 - 1101.8 which require the eventual retrofit of residential (and commercial) non-compliant fixtures by 2019.

However the City has no plans to implement a fixture retrofit incentive program (i.e.; offer rebates) to residences constructed before 1994, as the costs to fund and administer such a program is not cost effective for much the same reasons as a high efficiency toilet replacement program is not cost effective (Reference DMM N). A general fixture retrofit program may provide somewhat more water savings than toilet replacements alone (i.e.; 15%, Reference American Water Works Association Research Foundation, Residential End Uses of Water, 1999,

Table 5.4); however, even without associated additional rebate costs, the costs far exceed the value of water savings reasonably attainable.

The below table uses the same participation assumptions as stated in DMM N and assumes an additional 15% savings in water as a general fixture rebate program would include faucet and showerhead replacements in addition to low flow toilet rebates and incentives.

CBA Table DMM B– W.C. 10631(g)(2)	
Cost Effectiveness Summary	
Total yearly Costs	$ 12,500
Total yearly Benefits	$ 1,060
Discount Rate	N/A
Time Horizon	5 years
Cost of Water ($ per AF)	100
Water Savings (AFY)	10.6

7.2.3 DMM C – System Water Audits, Leak Detection, and Repair

The goals of modern water loss control methods include both an increase in water use efficiency in the utility operations and proper economic valuation of water losses to support water loss control activities. In May 2009 the American Water Works Association (AWWA) published the 3rd Edition M36 Manual Water Audits and Loss Control Programs. BMP 1.2 will incorporate these new water loss management procedures and apply them in California. Agencies are expected to use the AWWA Free Water Audit Software ("AWWA Software") to complete their standard water audit and water balance.

The City currently evaluates consumption reports for extreme variations. If a variation is noted, the City checks the meter for leaks. If a leak is detected, the City notifies the consumer and the leak is repaired. The City will maintain water audit books on an annual basis to help estimate system losses.

DMM Description

The System Water Audit, Leak Detection, and Repair DMM will consist of the following with implementation as described below:

- System tracking of water production and use, and an assessment of water losses as a percentage of production

Schedule and Steps for Implementation

If the annual prescreening audit indicates that unaccounted water is greater than 10 percent, the City will complete a water audit of its distribution system using methodology consistent with that described in *Water Audit and Leak Detection Guidebook* by the AWWA.
Implementation shall consist of at least the following actions:

1. Annually (April) complete a prescreening system audit to determine the need for a full-scale system audit. The prescreening system audit shall be calculated as follows:
   - o Determine total metered sales for previous year;
   - o Determine other verifiable water uses from previous year, e.g., construction water, hydrant flushing, fire suppression uses, etc.;
   - o Determine total annual production into the distribution system;
   - o Divide metered sales plus other verifiable uses by total supply into the system. If this quantity is less than 0.9, a full scale system audit is indicated.
2. When indicated by the above analysis, the City will perform a complete water audit of the distribution system using methodology consistent with that described in AWWA M36: Water Audit and Leak Detection.
3. Advise customers whenever it appears possible that leaks exist on the customer's side of the meter.

Tracking and Documentation

To assess the progress of the DMM the following information should be gathered. This information will be summarized in the UWMP updates.

1. The completed AWWA Standard Water Audit and Water Balance worksheets.
2. City shall maintain in-house records of audit results, methodologies, and worksheets for each completed audit period.
3. City keeps records of each component analysis performed, and incorporates results into future annual standard water balances.
4. City, for the purpose of setting the Benchmark:
   - a) Keeps records of intervention(s) performed, including standardized reports on leak repairs, pressure reduction undertaken for loss reduction, infrastructure rehabilitation and renewal, volumes of water saved, and costs of intervention(s); and
   - b) Prepares a yearly summary of this information for use in tracking DMM effectiveness.

Method to Evaluate Effectiveness

The City will collect the following information to track the effectiveness of this DMM:

1. Prescreening audit results and supporting documentation
2. Maintain in-house records of audit results or the completed American Water Works Association (AWWA) Audit Worksheets for each completed audit period

Effectiveness of this DMM is verified by maintaining unaccounted water losses to less than 10% as indicated by the prescreened water audits.

Estimate of Current Conservation Savings

Estimate of water conservation savings will be calculated based on the reduction of unaccounted for water losses as data becomes available.

7.2.4 DMM D – Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

All new and existing water service connections are metered and billed by volume of use in the City. The City completed a meter replacement program and increased the water accountability to 92% in 2006. Therefore, the City does not need to retrofit any existing connections. The use of water meters allows for better tracking and monitoring of water conservation data. A summary of the number of meter connections per account classification for the year 2010 is provided in Table 7.2.

Table 7.2
City of Riverbank Water Connections Meter Information

Account Classifications	Number of Potable Connections Metered
Residential	6,860
Commercial/Institutional/Government	247
Industrial	13
Other	28
Total Connections	**7,148**

The 2013 billing rate for domestic water use is presented in Table 7.3.

Table 7.3
2014 Domestic Water Billing Rates

Quantity of Water/Type of User/Size of Meter	Rate
Minimum Charge for First 1000 cu ft (bimonthly)	$29.29
Residential	
Apartments, Commercial, and Industrial	
1-1/2-inch meter	$29.29
2-inch meter	$36.70
3-inch meter	$55.16
4-inch meter	$76.23
8-inch meter	$144.87
Outside City Limits	
1-inch meter	$33.91
2-inch meter	$49.81
Rates for Water Exceeding First 1,000 cu ft	
Next 4,000 cu ft	$0.34 per 100 cu ft
Next 34,000 cu ft	$0.33 per 100 cu ft
Next 40,000 cu ft	$0.30 per 100 cu ft

DMM Description

For consistency with California Water Code (Section 525b), this DMM refers to potable water systems. A water meter is defined as a device that measures the actual volume of water delivered to an account in conformance with the guidelines of the American Water Works Association.

Schedule and Steps for Implementation

The City will continue to install and read meters on all new services, and will continue to conduct its meter calibration and replacement program.

Implementation shall consist of at least the following actions:

1. Require meters for all new service connections.
2. Establish a program for retrofitting existing unmetered service connections when identified.
3. Read meters and bill customers by volume of use.
    a) Establish and maintain billing intervals that are no greater than bi-monthly (every two months) for all customers.
    b) For each metered connection, perform at least five actual meter readings (including remotely sensed) per twelve month period.
4. Prepare a written plan, policy or program that includes:
    a) A census of all meters, by size, type, year installed, customer class served and manufacturer's warranty accuracy when new;
    b) A currently approved schedule of meter testing and repair, by size, type and customer class;
    c) A currently approved schedule of meter replacement, by size, type, and customer class; and
5. Identifying intra- and inter-agency disincentives or barriers to retrofitting mixed use commercial accounts with dedicated landscape meters, and conducting a feasibility study(s) to assess the merits of a program to provide incentives to switch mixed use accounts to dedicated landscape meters.

Tracking and Documentation

This DMM allows the City to track use on a per account basis, and analyze savings for each sector and the City as a whole. Additionally this data will allow the City to perform full-scale water audits. This section outlines the recommended minimum use data necessary for tracking sector, seasonal and annual water use and describes how each relates to the proposed DMMs.

1. Confirmation that all new service connections are metered and are being billed by volume of use and provide:
    a) Number of metered accounts;
    b) Number of metered accounts read;
    c) Number of metered accounts billed by volume of use;
    d) Frequency of billing (i.e. six or twelve times per year) by type of metered customer (e.g. single family residential, multiple family residential, commercial, industrial, and landscape irrigation); and
    e) Number of estimated bills per year by type of metered customer (e.g. single family residential, multiple family residential, commercial, industrial, and landscape irrigation) vs. actual meter readings.
2. Estimated number of CII accounts with mixed-use meters

3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period

Estimate of Current Conservation Savings

As the City of Riverbank is 100% metered and bills all customers by volume of use, no further reduction of demand is expected. Further reductions may be seen in conjunction with water audits performed under DMM C.

7.2.5 DMM E – Large Landscape Conservation Programs and Incentives

The City does not currently perform large landscape water use surveys or assign evapotranspiration water use budgets and a formal program and incentives are not feasible at this time. However, as the City grows and more parks are developed, the City will consider certifying staff to perform large landscape audits.

As required by the Water Conservation in Landscaping Act of 2006, the City has adopted DWR's model ordinance, Model Water Efficient Landscape Ordinance. Use of this model ordinance will help the City meet their urban water management goals by limiting the water use per acre for large landscape accounts.

Irrigation accounts for a large portion of urban water use in California. Irrigation water use varies dramatically depending on water pricing and availability, plant choice, geographic locations, seasonal conditions, and the level of commitment to sound water efficiency practices. The goal of this DMM is that irrigators, with assistance from the City, will achieve a higher level of water use efficiency consistent with the actual irrigation needs of the plant materials. Reaching this goal would reduce overall demands for water, reduce demands during the peak summer months, and still result in a healthy and vibrant landscape for the City.

DMM Description

This DMM consists of developing, tracking, and accounting for irrigation water use at these large landscape accounts through on site surveys with follow-up visits. Water conservation is achieved through this DMM by increasing irrigation efficiency at large landscape accounts and reducing water waste.

Schedule and Steps for Implementation

Implementation of large landscape conservation program shall consist of at least the following actions:

1. Promoting the use of the Model Water Efficient Landscape Ordinance
2. Maintain and distribute the list of suggested plants and efficient irrigation systems
3. Maintain and distribute City Standard Plans for landscape irrigation plans
4. Continue to work with large landscape irrigation users on water conservation measures

Tracking and Documentation

To assess the progress of the DMM the following information should be gathered. This information will be summarized in the UWMP updates.

1. Number of dedicated irrigation meter accounts.
2. Number of surveys offered.
3. Number of surveys accepted.
4. Estimated annual water savings by customers receiving surveys and implementing recommendations.

Evaluation of Effectiveness of DMM

As a means of evaluating the effectiveness of this measure, large landscape meter records will be reviewed on an annual basis for the peak irrigation month water use. A database will be developed showing peak month landscape irrigation water use for the major landscape irrigation connections and will indicate which have existing budgets and will indicate the last survey date.

Water Savings Assumptions

Assuming fully implementing large landscape BMPs will result in a 15%-20% reduction in demand for landscape irrigation by affected accounts. In 2010 the total water consumed by all non-residential accounts was approximately 400 AF/year. Assuming 50% of that water involves landscape irrigation the total water that may be saved by fully implementing this program with current users totals less than 40 AF/yr. Most of those savings will occur just by implementing the water efficient ordinance. Additional savings by site surveys and incentives are likely to be less than 25% of the total possible savings or 10 AF/yr, over a five year time horizon.

Cost Benefit Analysis

Costs to fully implement the program for City staff time, transportation, and incentive costs are estimated to be require about 10% of those incurred to implement DMM A (assumes 1/20 of a full time employee) and would be approximately $6,400/year with a potential benefit of approximately $200/yr as summarized in the table below:

Table DMM E – W.C. 10631(g)(2)	
Cost Effectiveness Summary	
Total Annual Costs	$ 6,400
Total Annual Benefits	$ 200
Discount Rate	N/A
Time Horizon	5 years
Cost of Water ($ /AF)	100
Water Savings (AF/Y)	2.0

7.2.6 DMM F – High-efficiency Washing Machine Rebate Program

Washing machines make up 21.7% of the total indoor residential water use (Mayer et al, 1999). Replacing conventional top load high volume washing machines with horizontal axis front loading washing machines have been found to conserve water by as much as 38% per load (Vickers, 2001). Although high efficiency washing machines save the consumer more money over the life of the appliance when compared to conventional washing machines, initial sticker price and unfamiliarity tend to be main barriers withholding consumer from purchasing High Efficiency Washing Machines (HEWMs). Because of the sticker price rebates must be substantial (i.e.; $100) to be effective. Due to the high costs this program is not currently feasible at this time.

DMM Description

This DMM is based on providing a financial incentive for customers in the City's utility service area to switch to HEWMs. The incentive would allow customers to upgrade existing conventional washing machines to high efficient washing machines to benefit both the customer and utility through reduced water use.

Schedule and Steps for Implementation

PG&E currently offers rebates on energy efficient appliances to their customers. The City does not currently provide additional rebates for HEWMs but supports the use of high-efficiency washing machines and will support local, state, and federal legislation to improve efficiency standards for washing machines. The City will also advertise the PG&E rebate program to its customers through its website. The City will re-evaluate implementation of this program in the 2015 UWMP.

Tracking and Documentation

The City will track the installation of HEWMs to customers within their service territory through the PG&E rebate program.

Estimate of Current Conservation Savings

The City will develop a database to track the installation of high-efficiency washing machines based on the PG&E rebate program. With this information, the City will have the ability to track if there is a measurable decrease in metered water usage.

Cost Benefit Analysis

The CBA for this DMM is detailed in Appendix G and costs are limited to rebate costs only, administrative costs would be in addition to those presented.

Table DMM F - 10631(g)(2)	
Cost Effectiveness Summary	
Total Annual Costs	$ 26,500
Total Annual Benefits	$ 688
Discount Rate	N/A
Time Horizon	5 years
Cost of Water ($ per AF)	100
Water Savings (AFY)	6.9

7.2.7 DMM G – Public Information Programs

A public information program is a powerful channel of communication between the public and the message the City delivers. The key goal to a public information program is to educate the public: on the necessity of conservation; the benefits of conservation; and actions needed to achieve water conservation goals. Secondary benefit is the ability to convey specific DMM information and if possible conduct business through certain channels such as a processing a rebate application on the City website. There is a variety of medium available to choose from to keep the public informed; however, at a minimum, a conservation webpage should be made available to promote conservation and support DMM activities.

DMM Description

An informed public tends to be more responsive to City services and more understanding to the needs of rate adjustments when warranted. This DMM includes communication with the public through various means as described below to promote water conservation, involvement in the UWMP update process, and general awareness of water use and conservation. This program includes development of outreach materials for each targeted DMM effort, providing educational sessions for interested parties, and providing conservation displays and information via community events, bill stuffers and other forms of communication.

Schedule and Steps for Implementation

The City currently implements the following public information programs:

1. Bi-monthly City newsletters are provided with customers' bills
2. The City maintains an internet website that posts public information to promote water conservation practices
3. Annual consumer confidence reports are distributed to the City's water customers and contain water conservation information
4. The City Water Conservation Coordinator, or other assigned City staff attends public events, such as Beyond Earth Day

The City will continue to implement similar programs over the next five years. One area that may be considered is information regarding water softeners that during regeneration, discharge solids back into the sewer system. This practice can contribute to increases in total dissolved solids (salt) concentrations in wastewater which in turn may be regulated in the future by the Regional Water Quality Control Board (Regional Board).

Implementation shall consist of at least the following actions:

Tracking and Documentation

The City will set up a database to include the following:

1. Number of public speaking and media events relating to conservation during reporting period.
2. Number of paid or public service announcements relating to conservation produced or sponsored during reporting period.
3. Types of information relating to conservation provided to customers.
4. Annual budget for public information programs directly related to conservation. Currently the City spends approximately $1,000 per year on coloring books, brochures, and water conservation information for distribution at this event and other venues, such as the Farmers' Market.

Beyond Earth Day Outreach Event

Evaluation of Effectiveness of DMM

As a customer calls, e-mails, or comes in to the City offices and inquiries about a water conservation program, the person receiving the inquiry should ask how the customer heard about the program. This information should be noted for use in evaluating the communication effectiveness of this DMM. This will allow the City the ability to evaluate which forms of communication are most prevalent.

Estimate of Current Conservation Savings

No specific method of evaluating the effectiveness of this DMM has been identified by the City.

7.2.8 DMM H – School Education Programs

Education programs inform younger generations on the life cycle of water and benefits of conservation. Implementing an ongoing education campaign on the K-12 grade level using educational materials (which meet education standards) allows children to learn methods of conservation to apply at home and to reinforce behavioral changes within the household. Additionally, learning about conservation leaves a long lasting impression on the students with the potential of improving their conservation awareness as an adult.

DMM Description

The School Education Programs DMM consists of developing and presenting water conservation materials to K-12 grade classes in the City. This DMM would be coordinated with other related DMMs and would be implemented according to the steps described below.

Schedule and Steps for Implementation

The City has implemented school education programs in the past, providing educational videos and associated curriculum to local schools to teach children about the importance of water and water conservation practices, but due to budgetary considerations it intends to focus on broader public education initiatives (DMM G) and does not intend to implement this DMM.

Programs would include working with school districts and private schools in the water suppliers' service area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Educational materials shall meet the state education framework requirements and grade-appropriate materials shall be distributed.

Tracking and Documentation

At minimum, the City would report on the following:

1. Curriculum materials developed and/or provided by agency (including confirmation that materials meet state education framework requirements and are grade-level appropriate)
2. Number and type of materials developed and/or provided by the City
3. Number of students reached
4. Annual budget for school education program
5. Description of all other water supplier education programs

Evaluation of Effectiveness of DMM

There are no methods of measuring effectiveness for this DMM.

Estimate of Current Conservation Savings

No specific method of evaluating the effectiveness of this DMM has been identified by the City.

Cost Benefit Analysis

Details of the CBA are included in Appendix G and summarized as follows:

Table DMM H - 10631(g)(2)	
Cost Effectiveness Summary	
Total Annual Costs	$ 7,900
Total Benefits	Not Available
Discount Rate	N/A
Time Horizon	5 years
Cost of Water ($ per AF)	100
Water Savings (AFY)	N/A

7.2.9 DMM I – Conservation Programs for Commercial, Industrial, and Institutional Accounts

This DMM establishes conservation programs implemented on the Commercial, Industrial, and Institutional (CII) sectors.

DMM Description

Conservation programs should be established for CII accounts and will parallel residential measures in such that surveys (indoor/outdoor), and incentive programs may be made available for the CII sector and will be the focus of this measure. Some CII customers may maintain landscaped areas, which require a more exhaustive outdoor survey therefore; in those instances, the survey effort will be coordinated with DMM E Large Landscape Conservation Programs.

Schedule and Steps for Implementation

However, for the same rationale as presented in DMM A, the City does not intend to implement a staffed conservation program for commercial and industrial users for the foreseeable future because the cost of such a program cannot be justified by the potential water savings. Commercial and Industrial accounts account for approximately 6% of the total City water use and with about the 3 % of connections. This indicates there is no significant difference in the CBA from that presented in DMM A except for a proportionate reduction in cost of 3% and benefit of 6%, with the following adjustments: The cost of the program is approximately 5% of that presented in DMM A (which is probably low given the generally higher costs of commercial fixtures), and the potential water savings for those that participate is twice as great as assumed for DMM A (26% instead of 13%). The result summarized in the table below show that the program would not be cost effective.

Table DMM I - 10631(g)(2)		
Cost Effectiveness Summary		
Total Costs	$	3,220
Total Benefits	$	200
Discount Rate	N/A	
Time Horizon	5 years	
Cost of Water ($ per AF)	100	
Water Savings (AF/Y)	2.0	

7.2.10 DMM J – Wholesale Agency Programs

The City of Riverbank is not a wholesale agency. Therefore, this DMM does not apply.

7.2.11 DMM K – Conservation Pricing

DMM Description

This DMM promotes water conserving retail water rate structures. When creating a rate case, professional judgments are made to determine whether costs are accounted to a variable or fixed cost center by the staff of the agency. The final water rate case is an accumulation of all the decisions and judgments made by staff and supplemented by the financial projections leading an agency to establish its final water rate recommendation.

In a water, sewer or refuse collection rate increase case, the final rates as recommended by staff must go through ballot approval at a Proposition 218 hearing. Proposition 218 contains requirements for the imposition of a fee or charge for property related services. Procedures for fees and charges are contained in Section 6 of Article XIII D and must be implemented during a rate increase. Paragraph (b) describes the requirements for new, existing, or increased fees and charges, as:

1. Revenues from fees or charges shall not exceed the funds required to provide the service.
2. Revenues from fees or charges shall not be used for any other purpose.
3. The amount of the fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.
4. No fee or charge may be imposed unless the service is actually used by or immediately available to the owner of the property in question.
5. No fee or charge shall be imposed for general governmental services, i.e., police, ambulance, library, where the service is available to the public at large in substantially the same manner as it is to the property owners.

This DMM is not intended to supplant this rate setting process, but rather to reinforce the need to establish a strong nexus between volume-related system costs and volumetric commodity rates. Conservation pricing requires volumetric rate(s). The goal of this DMM is to recover the maximum amount of water sales revenue from volumetric rates that is consistent with utility costs (which may include utility long-run marginal costs), financial stability, revenue sufficiency, and customer equity.

The City's water customers are billed based on their metered water use. Water fees and charges are established by Section 52.61 of the City of Riverbank Code of Ordinances. A summary of the rates is provided in Table 7.4.

Schedule and Steps for Implementation

The City will adjust rates periodically as deemed necessary.

7.2.12 DMM L – Water Conservation Coordinator

DMM Description

To actively manage the DMM measures outlined in this Section, a water conservation coordinator (WCC) and supporting staff must be identified. The WCC will be charged with overseeing and developing the strategies and procedures of all steps and procedures listed in each DMM. This person must be personable and maintain a friendly and professional image as a representative of the City as the WCC will be in direct contact with the public. Additionally, the WCC must be able to communicate effectively by relaying complex concepts to upper management and City Council as the administrator of the Water Conservation Program.

Schedule and Steps for Implementation

DMM implementation activities are to be distributed among a variety of City employees.

The currently designated water conservation coordinator is:

Kathleen Cleek, Senior Administrative Analyst
6707 Third Street
Riverbank, CA 95367
(209) 863-7120.

Implementation shall consist of at least the following actions:

1. Designation of a water conservation coordinator and support staff (if necessary), whose duties shall include the following:
   - Coordination and oversight of conservation programs and DMM implementation;
   - Compilation of data necessary for preparation of the DMM Implementation Status Report to be included in UWMP updates;
   - Communication and promotion of water conservation issues to agency senior management; coordination of agency conservation programs with operations and planning staff; preparation of annual conservation budget; and preparation of the conservation elements of the agency's Urban Water Management Plan.

Evaluation of Effectiveness of DMM

Evaluation of effectiveness will consider the goals met under each DMM implementation and schedule and ultimately the overall volume of water savings produced by the active management of the program by the coordinator.

The duties of water conservation coordinator require approximately 80 hours per year. Other staff time to implement water conservation programs require approximately 100 hours per year.

Estimate of Current Conservation Savings

The City has no method to determine conservation savings associated with this DMM.

7.2.13 DMM M– Water Waste Prohibition

The most visual forms of wasteful practices occur during residential irrigation and outdoor water use. To combat wasteful use, water waste prohibition in the form of an ordinance informs the customer that water waste is prohibited.

DMM Description

Section 52.34 of the City of Riverbank Code of Ordinances outlines restricted water use during peak periods. The Code of Ordinances states, "These provisions shall apply to all persons using water in the City regardless of whether any person using water shall have a contract for water service with the City. Failure to comply with any provision, requirement, rules or regulation under this chapter shall be unlawful and punishable as an infraction".

Schedule and Steps for Implementation

The City has permanently incorporated implementation of this DMM into their ordinances.

The prohibitions under the ordinance are follows:

1. Washing cars, without the use of a quick-acting positive shut-off nozzle on the hose. Furthermore, there shall be no washing of building exteriors, mobile home exteriors, recreational vehicle exteriors, sidewalks, patios, driveways, gutters or other exterior surfaces, unless permitted by the Public Works Director and done with the use of a quick-acting positive shut-off nozzle on the hose.
2. Outdoor water use in violation of the following schedule:
    a. No outdoor water use will be allowed between 12:00 p.m. and 7:00 p.m.
    b. Dwellings or establishments with odd-numbered street addresses shall water only on Mondays, Wednesdays and Fridays subject to the time restrictions set forth above.
    c. Dwellings or establishments with even-numbered street addresses shall water only on Tuesdays, Thursdays and Saturdays subject to the time restrictions set forth above.
    d. Anyone may water on Sundays subject to the time restrictions set forth above.
    e. For new construction, developer shall set timers for landscape irrigation as detailed above, prior to home sale.
    f. Rain sensors and automatic shut-offs shall be included in all new construction.

3. Violations. All fines are payable with the next water bill.
    a. First violation - Warning
    b. Second violation - $20 fine
    c. Third violation - $50 fine
    d. Fourth violation - $100 fine
    e. Fifth violation and each violation thereafter - $200 fine
    f. The City shall set and enforce a fine for the developer if irrigation timers are not set and operating properly prior to the sale of the house

Evaluation of Effectiveness of DMM

The City will collect the following information to determine the effectiveness of this DMM:

1. Number of customers contacted about water waste violations
2. Number of customers cited for repeat water waste violations

Estimate of Current Conservation Savings

The City has no method to determine conservation savings associated with this DMM.

However the City has Tracking Information (number of warnings and citation issued):

Year	Warnings	Citations
2011	19	0
2012	37	1
2013	27	0

7.2.14 DMM N – High Efficient Toilet Replacement

All new toilets sold in California after January 1, 1994 must be ultra low-flush toilets, which use a maximum of 1.6 gallons per flush (gpf). These ultra low-flush toilets (ULFT) save approximately 60% to 75% of water when compared to their high water use counterparts at 3.5 and 5.0 gpf. In this measure, older 3.5 and 5.0 (gpf) toilet fixtures in residences are replaced with 1.6 gpf fixtures. Implementation of this DMM is intended to accelerate the replacement of non-conserving toilets at a faster pace than “natural replacement”.

DMM Description

This DMM is based on implementing a financial incentive program for customers in the City's utility service area for replacement of higher water use toilets with ULFTs. The incentive will allow customers to upgrade existing high water use toilets to high efficient toilets to benefit both the customer and utility through reduced water use.

Schedule and Steps for Implementation

Due to the City's current budget constraints, a financial incentive for toilet replacement is not offered. The City will continue to consider offering a rebate for installation of ULFTs as budget allows. The City will, through its public education program, continue to encourage the installation of ULFTs.

Cost benefit Analysis

The details of the CBA are presented in Appendix G and presume this program will focus on the pre-1993 households and includes rebate costs of $100 per household. Administrative costs are not included. The CBA is summarized in the following table:

Table - DMM N 10631(g)(2)	
Cost Effectiveness Summary	
Total Annual Costs	$ 12,500
Total Annual Benefits	$ 917
Discount Rate	N/A
Time Horizon	5 years
Cost of Water ($ per AF)	100
Water Savings (AFY)	9.2

SECTION 8 REFERENCES

Stanislaus and Tuolumne Rivers Groundwater Basin Association, 2005. Integrated Regional Groundwater Management Plan for the Modesto Subbasin

Burow, K. R., Shelton, J. L., Hevesi, J. A., and Weissmann G. S., 2004: Hydrologic Characterization of the Modesto Area, San Joaquin Valley, California. USGS Scientific Investigations Report, 2004-5232. 54 pages.

California's Groundwater – Bulletin 118, San Joaquin River Hydrologic Region, San Joaquin Valley Groundwater Basin, Last Update 2/27/04. California Department of Water Resources, http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/5-22.02.pdf

California Department of Water Resources, Water Data Library. http://www.water.ca.gov/waterdatalibrary/ or http://www.water.ca.gov/waterdatalibrary/groundwater/hydrographs/index.cfm

Dunn Environmental, Inc., 2007: Source Sufficiency Report for the City of Riverbank General Plan Update. Unpublished report prepared for the City of Riverbank, dated June 2007. 63 pages.

Garcia-Davis Ringler Engineering, 2001: Draft City of Riverbank Water System Study and Master Plan. Unpublished report prepared for the City of Riverbank Staff dated September 2001.

Nolte Associates, Inc., 2007: City of Riverbank, SB 610 Water Supply Assessment Report for 2007 General Plan September 2007 Update. Unpublished report prepared for the City of Riverbank, dated November 2007.

Nolte Associates, Inc., 2008: City Of Riverbank 2007 Urban Water Management Plan. Unpublished report prepared for the City of Riverbank, dated October 2008.

Appendix A

RESOLUTION TO ADOPT THE URBAN WATER MANAGEMENT PLAN – TO BE PROVIDED BY CITY

Appendix B

NOTICE OF PUBLIC HEARING – TO BE PROVIDED BY CITY

Appendix C

URBAN WATER MANAGEMENT PLAN CHECKLIST

Table I-2 Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)		Section 1
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Section 1
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		Appendix A
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)	Water supplier is in the City in which it serves	
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		Section 1 Appendix B
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Section 1 Appendix B
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Appendix A
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Inclusive throughout UWMP

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		Section 1
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Section 1
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Section 2.1
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Section 2.2
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Section 2.3
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 2.3
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Section 2.3
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		Section 3.1
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	Section 3.3

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Section 3.2
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	N/A
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		Section 3.2
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Section 4.4
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Section 4
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		Section 4.6
16	Describe the groundwater basin.	10631(b)(2)		Section 4.6
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		N/A

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		N/A
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		Section 4.6
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		Section 4.6
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	Section 4.4
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Section 4.2
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Section 4.5
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		N/A
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Section 5
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		Section 5.1

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		Section 5
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Section 5
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Section 5
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633(e)		Section 5
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		Section 5
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		Section 5
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		Section 6.1
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Section 6.2
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		N/A
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Section 6.5

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)		Section 6.2
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		Section 6.4
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		Section 6.6
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		Section 6.7
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Section 6.8
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)		Section 6.9
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Appendix F
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		Section 6.10
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	Section 4.3

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		Section 6.2
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Section 7.2
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Section 7.2
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		Section 7.2
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	Section 7.2, Appendix I
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Section 7.2

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

Appendix D

INTEGRATED REGIONAL GROUNDWATER MANAGEMENT PLAN (CD COPY) – TO BE PROVIDED BY CITY

Appendix E

CITY OF RIVERBANK WATER ORDINANCES

CHAPTER 52: WATER

Section

General Provisions

52.01 Definitions
52.02 City to own and operate water system
52.03 Installation at owner's expense
52.04 Application for service
52.05 When city will or will not furnish water
52.06 Equipment property of city; maintenance of lines
52.07 Easements on private property
52.08 Unauthorized turn-on
52.09 Damage to system
52.10 Tampering with fire hydrants
52.11 Multiple users
52.12 Maintenance of fixtures and boilers; new plumbing
52.13 Standby fire protection service
52.14 Wells
52.15 New subdivisions
52.16 Falsifying information
52.17 Pre-metered water usage

Water Use Regulations

52.30 Responsibility of users
52.31 Use of water by other than supplied person
52.32 Irrigating
52.33 Prohibited acts
52.34 Restricted water use during peak periods
52.35 Backflow and cross-connection control

Meters

52.45 Use of meters required
52.46 Installation of meters
52.47 Damaging or interfering with meters
52.48 Meter failures; testing
52.49 Change of meter location or meter size

Rates and Charges

52.60 Water Fund
52.61 Fees and charges established by ordinance
52.62 When charges due
52.63 Water charges as a lien
52.64 Payment of bills
52.65 Deposits
52.66 Disconnection for late payment

Administration

52.75 Management of system
52.76 Access to be provided to city
52.77 Right of entry

52.78 Right to shut off water mains
52.79 Termination of service
52.80 Correction of violation
52.81 Violation an infraction

Cross-reference:

Systems Development Fees, see § 150.30 through 150.36

GENERAL PROVISIONS

§ 52.01 DEFINITIONS.

For the purpose of this chapter, the following definitions shall apply:

APPLICANT. An individual or agency applying for utility service.

COMMERCIAL SERVICE. Provision of water to premises where the customer is engaged in trade.

CROSS-CONNECTION. When used herein, all applicable sections of the City Code shall apply.

CUSTOMER, CONSUMER. An individual or agency of record receiving utility service from the utility.

DEVELOPER. A person or corporation requesting water service from the city regardless of the number of services.

DEVELOPMENT. The improving of developed and/or undeveloped land to more fully use the available land and/or structures. A development may be a subdivision.

DOMESTIC SERVICE. Provisions of water for household residential purposes, including water for sprinkling lawns, gardens and shrubbery, watering livestock, washing vehicles and other similar and customary purposes.

EMPLOYEE. Any person designated by the City Manager or the Director of Public Works to perform work and labor for the utility department, excluding contractors and their employees.

FIRE PROTECTION SERVICE. Provision of water to premises for automatic fire protection.

FLAT RATE. A fixed periodic charge for an unmetered service.

FLAT RATE SERVICE. Provision of water in unmeasured quantities.

IDLER. That piece of pipe used to conduct water in place of a meter in flat rate service.

INDUSTRIAL SERVICE. Provision of water to a customer for use in manufacturing, processing activities, or other uses as described in the Zoning Ordinance.

IRRIGATION SERVICE. Provision of water for commercial, agricultural, floricultural or horticultural use.

MAINS. Distribution pipelines located in streets, highways, public ways, or public utility easements which are used to serve the general public.

METER. The device used to measure water consumption, such as, water meter.

METER RATE SERVICE. Provision of water in measured quantities.

MUNICIPAL or ***PUBLIC USE.*** Provision of water to a municipality or other public body.

PRE-METERED WATER USAGE. Use of city water prior to city water meters being installed by the property owner.

RENTABLE UNIT. A rentable unit is any building or portion thereof that can be used as a completely independent unit.

SERVICE CONNECTIONS. The pipe, valves, and other facilities by which means the utility conducts water from its distribution mains to and through the meter; or, to the curb-stop or shut-off valve on an unmetered service connection.

SENIOR CITIZEN. All persons who have reached the age of 65 years and classed as “head of household” and who earn not over $7,000 annually.

SUBDIVIDER. A person, firm, corporation, partnership, or association who proposes to divide, divides, or causes to be divided real property into a subdivision for himself or for others, except that employees and consultants of such persons or entities acting in such capacity are not “subdividers”.

SUBDIVISION. The division, by any subdivider, of any unit or units of improved or unimproved land, or any portion thereof, shown on the latest equalized county assessment roll as a parcel or as contiguous parcels.

TEMPORARY SERVICE. A service for circuses, bazaars, fairs, construction work, irrigation of vacant property, and similar uses, that because of their nature will not be used steadily or permanently.

UTILITY. The public utility or publicly owned utility named herein.

UTILITY SERVICE. Includes water and/or sewer and/or refuse service.

WATER WASTING. The use of water in such a manner that excess water is used and not effectively

utilized for the lawfully intended purpose. Water wasting includes, but is not limited to the following:

(1) Watering lawns or gardens such that excess water leaves property or area being watered.

(2) Washing vehicles, equipment or boats in driveways or streets using open hose.

(3) Having leaky faucets or plumbing fixtures on premises.

(`67 Code, § 4-6-1) (Am. Ord. 2000-09, passed 12-11-00)

§ 52.02 CITY TO OWN AND OPERATE WATER SYSTEM.

The city shall own and operate a water system serving designated areas within and without the corporate limits of the city and may purchase existing systems or construct new works as may be necessary to supply to the people within the areas an adequate and safe domestic water supply. The City Council shall designate the area within and without the corporate limits of the city which shall receive water service from the city water system. The city shall endeavor to supply safe, potable, continuous and sufficient water at proper pressure to all consumers at all times.

(`67 Code, § 4-6-2)

§ 52.03 INSTALLATION AT OWNER'S EXPENSE.

All on-site and off-site water lines, connections, valves, plumbing and accessory water facilities shall be constructed and installed at the owner's expense, and shall be to city standards and approved by the city prior to water service turn-on.

(`67 Code, § 4-6-6)

§ 52.04 APPLICATION FOR SERVICE.

(A) All applications for water service shall be made on the forms furnished by the city. Every customer obtaining water service shall sign an application. In addition to any other information required, such application shall show a true and accurate description of the area served, purpose for which water shall be used, and the applicant's interest in the property served.

(B) Owners of property will be held responsible for water used on their premises, although payments will be accepted from tenants. In case tenants do not pay, the service may be disconnected and shall not be restored until the delinquent water charges, including the cost of water delivered as well as the cost of reconnection services, have been paid.

(`67 Code, § 4-6-7)

§ 52.05 WHEN CITY WILL OR WILL NOT FURNISH WATER.

(A) When laterals are in place or within a reasonable distance from a particular parcel, the city will furnish water service from such line to the back of the curbline if the pipeline is located in the street or to the back of the sidewalk if a sidewalk is in place (except when there is a parkway between the curb and sidewalk) or to the property line if the pipeline is located in an easement, or alley.

(`67 Code, § 4-6-8)

(B) Water will not be furnished where there are defective or leaking faucets, closets, or other fixtures, or where there are water closets or urinals without self-closing valves, or tanks without self-acting float valves, and when such may be discovered the supply may be shut off.

(`67 Code, § 4-6-9)

§ 52.06 EQUIPMENT PROPERTY OF CITY; MAINTENANCE OF LINES.

(A) All pipelines and appurtenant facilities constructed in or under city streets, easements, or alleys shall become the property of the city upon completion of the installation, and upon final inspection and acceptance of the lines by the Director of Public Works.

(`67 Code, § 4-6-16)

(B) The city will maintain all mains, laterals, and appurtenances within the city right-of-way, on city property or easements. It shall be the responsibility of all water users to maintain the water service line from, but not including the water meter, to the outlets of the line, inclusive of city easements.

(`67 Code, § 4-6-18)

§ 52.07 EASEMENTS ON PRIVATE PROPERTY.

When a line is to be constructed across private property to serve one or more parcels of land, a utility easement shall be granted to the city and the easement line, size and installation approved by the Director of Public Works.

(`67 Code, § 4-6-17)

§ 52.08 UNAUTHORIZED TURN-ON.

No person or water user shall turn on or reconnect a water meter or water connection that has been turned

off or disconnected by the city.
(`67 Code, § 4-6-20) Penalty, see § 10.99

§ 52.09 DAMAGE TO SYSTEM.

Any person, including a public utility, who damages any city water line or fire hydrant, shall immediately report the location and extent of damage to the city. The city shall thereupon repair the damage and charge the cost of such repair to the person or utility who caused the damage.
(`67 Code, § 4-6-22)

§ 52.10 TAMPERING WITH FIRE HYDRANTS.

It is unlawful for any person to operate, alter, change, remove, disconnect, connect with, or interfere in any manner with any fire hydrant owned or used by the city without first obtaining written permission from the Chief of the Fire Department or his designated officer in charge.
(`67 Code, § 4-6-29) Penalty, see § 10.99

§ 52.11 MULTIPLE USERS.

If more than one consumer is served from one service connection, the owner of the property or his agent shall be required to sign for and guarantee payment for water service thereat, and the owner shall be liable for all water served through such connection.
(`67 Code, § 4-6-23)

§ 52.12 MAINTENANCE OF FIXTURES AND BOILERS; NEW PLUMBING.

(A) The city shall not be liable for any damage to the property of the consumer or others caused by broken, damaged, or leaky fixtures upon the premises of the consumer. The city may charge for all water supplied the consumer through a meter, even though the water is wasted because of broken, damaged, leaky or open fixtures. The city shall in no case be liable for damages occasioned by water running from open fixtures in or on premises to which it has turned on the water. All consumers having an arrangement for hot water shall have a tank from which to feed the boiler. The city shall not be responsible for the safety of boilers on the premises of any consumer.
(`67 Code, § 4-6-24)

(B) When old plumbing is being repaired or remodeled, or new plumbing is being installed, the owner shall install a stopcock or valve on the pipe between the property line and the first fixture on his premises. Unless such stopcock or valve is installed, the city shall not be required to turn on the water or to install a service connection.
(`67 Code, § 4-6-25)

(C) No plumber or other person will be allowed to make any alteration to any conduit, pipe, or other fixture connecting with the city mains, or to connect pipes when they have been disconnected, or to turn water off or on at the premises without the permission from the city.
(`67 Code, § 4-6-26)

§ 52.13 STANDBY FIRE PROTECTION SERVICE.

Whenever fire protection water service on a standby basis is furnished to a customer, a charge of $2 per month per each inch of standby service shall be made and billed bi-monthly while such service is being furnished. Check valves are required and shall be tested and certified for correct operation annually at owner's expense.
(`67 Code, § 4-6-32)

§ 52.14 WELLS.

(A) No person may drill, dig, install or operate a water well within the city for any purpose without the consent of the City Council.
(`67 Code, § 4-6-34) (Ord. 83-1, passed 3-28-83)

(B) No person owning or operating an existing well within the city may furnish water for sale or gift.

(C) If a request is received to connect the city water system from an owner having a well on his property, that well shall be properly abandoned in accordance with city standards, or an approved backflow prevention device shall be installed before the connection can be made.
(`67 Code, § 4-6-35) (Ord. 83-1, passed 3-28-83) Penalty, see § 10.99

§ 52.15 NEW SUBDIVISIONS.

Any new subdivision or development which will receive water service from the city water system shall, at the subdivider's expense, install and construct the necessary main lines, laterals, meter boxes, service connections, and fire hydrants in accordance with city specifications. The subdivider or developer shall

convey ownership thereof to the city and pay to the city connection fees for each lot or parcel to be served in the subdivision or development. The mains shall extend to the farthest limits of the subdivision or development as approved by the City Engineer. Water mains shall be looped unless otherwise approved by the City Engineer.
(`67 Code, § 4-6-37) (Ord. 83-1, passed 3-28-83)

§ 52.16 FALSIFYING INFORMATION.

No person shall knowingly make any false statement, representation, record, report, plan or other document filed with, or to be filed with or taken by, the city.
(`67 Code, § 4-6-44) Penalty, see § 10.99

§ 52.17 PRE-METERED WATER USAGE.

(A) Any land owner using pre-metered water as defined in § 52.01 shall be required to pay a fee equal to the minimum monthly rate for metered water as established from time to time by the City Council. The pre-metered water usage fee shall be paid at the time of the issuance of a building permit. The minimum fee collected shall be a two month billing cycle of the established minimum metered rate. The pre-metered rate shall continue until the land owner installs an approved water meter. Failure to cause the installation of a water meter may result in disconnection of water service.

(B) The City Council finds that this section is enacted in order to off-set the loss of water revenue and to establish city criteria in the regulation of pre-metered water usage.
(Ord. 2000-09, passed 12-11-00)

WATER USE REGULATIONS

§ 52.30 RESPONSIBILITY OF USERS.

It shall be the responsibility of all water users to prevent contamination of or damage to water meters or water systems by reason of their operation of the water outlets and water equipment, and if required by the city, the water users shall install, at their expense, check valves, surge tanks, backflow prevention devices, or other devices as prescribed by the Director of Public works in order to avoid damage to or contamination of the meters or systems. Check valves and back flow prevention devices must be tested when installed and annually thereafter at customer's expense.
(`67 Code, § 4-6-5)

§ 52.31 USE OF WATER BY OTHER THAN SUPPLIED PERSON.

No water user using water supplied by the city, shall supply any other person with such water or allow any other person the use of such water from the water user's water connection or permit a further connection to be made to the water user's connection on his or any other premises unless authorized by the city.
(`67 Code, § 4-6-21) Penalty, see § 10.99

§ 52.32 IRRIGATING.

No water shall be used for irrigation purposes by means of an open hose without a sprinkler, and no water shall be wasted or used except for some useful and necessary purpose.
(`67 Code, § 4-6-27)

§ 52.33 PROHIBITED ACTS.

(A) No person shall make connection with the system without first obtaining a permit from the city.

(B) No unauthorized person shall turn on or off or otherwise interfere with any water line or appurtenant facility.

(C) No person shall waste water.

(D) No person shall install or maintain any pipe, faucet, hose bib, fixture or appliance connected to the water system in such condition or state of disrepair that water may be or is lost or wasted.

(E) No person shall supply city water to anyone without city authorization. The city shall have the right, upon five days' written notice to cease, to disconnect the water service for the person supplying the water.

(F) No person shall construct a bypass around any meter or service.
(`67 Code, § 4-6-36) (Ord. 83-1, passed 3-28-83) Penalty, see § 10.99

§ 52.34 RESTRICTED WATER USE DURING PEAK PERIODS.

In addition to all other provisions and requirements of this chapter, the following additional rules and regulations for the use of water are hereby established. These provisions shall apply to all persons using water in the city regardless of whether any person using water shall have a contract for water service with the city. Failure to comply with any provision, requirement, rules or regulation under this chapter shall be unlawful and punishable as an infraction.

(A) Washing cars, without the use of a quick-acting positive shut-off nozzle on the hose. Furthermore, there shall be no washing of building exteriors, mobile home exteriors, recreational vehicle exteriors, sidewalks, patios, driveways, gutters or other exterior surfaces, unless permitted by the Public Works Director and done with the use of a quick-acting positive shut-off nozzle on the hose.

(B) Outdoor water use in violation of the following schedule:

(1) No outdoor water use will be allowed between 12:00 p.m. and 7:00 p.m.

(2) Dwellings or establishments with odd-numbered street addresses shall water only on Mondays, Wednesdays and Fridays subject to the time restrictions set forth above.

(3) Dwellings or establishments with even-numbered street addresses shall water only on Tuesdays, Thursdays and Saturdays subject to the time restrictions set forth above.

(4) Anyone may water on Sundays subject to the time restrictions set forth above.

(C) Violations. All fines are payable with the next water bill.

(1) First violation - Warning.

(2) Second violation - $20 fine.

(3) Third violation - $50 fine.

(4) Fourth violation - $100 fine.

(5) Fifth violation and each violation thereafter - $200 fine.

(`67 Code, § 4-6-48) (Ord. 91-03, passed 3-11-91)

§ 52.35 BACKFLOW AND CROSS-CONNECTION CONTROL.

(A) *Public water supply protection required.* In accordance with the requirements of 17 Cal. Code of Regs. §§ 7583 through 7622 and Cal. Health & Safety Code §§ 116800 *et seq.*, no water service connection to any premises shall be installed or maintained by the city unless the public water supply is protected as required by state regulations and the requirements stated below. This section supplements and does not supersede local plumbing regulations, codes or ordinances or state Department of Public Health Regulations relating to water supply.

(B) *Where protection is required*. In general, backflow prevention devices shall be installed on the service connection to any premises having:

(1) Any service connection having an auxiliary water supply, or internal systems containing water of deteriorating quality.

(2) Any service connection to any sewage treatment plant, sewage pumping station, or any premises which handle or transport sewage;

(3) Any service connection where any substance is handled under pressure in such fashion as to permit entry into the water system;

(4) Any service connection where material dangerous to health or toxic substance that might possibly be introduced into the water system;

(5) Any premises which is served by more than one meter connection.

(6) Any service where lawn or garden sprinkling systems are present shall have a backflow prevention device installed on the lawn or garden sprinkler supply line.

(7) The type of protection required for each type of premises shall be as stipulated in the city standards.

(C) *Private wells prohibited.* No person may drill, dig, install or operate a water well within the city for any purpose without the consent of the city.

(D) *Existing wells.* No person owning or operating an existing well within the city may furnish water for sale or gift to any other premises. If request is received to connect to the city water system, from an owner having a well on his property, that well shall be properly abandoned in accordance with state and city standards, or an approved reduced pressure principle backflow prevention device shall be installed before the connection can be made.

(E) *Responsibility for installation, inspection and maintenance.* Backflow prevention devices required herein shall be installed in accordance with city standards at the expense of the customer.

(1) All backflow preventers shall be inspected, tested, and maintained by a certified backflow prevention device tester, on a regular basis and a report of such activity shall be submitted to the city on forms provided by the city.

(2) In general, the backflow prevention device shall be inspected and tested at time of installation and thereafter according to the following schedule:

Type of	***Frequency of***

Device	*Test*
Air Gap	Annually
Reduced Pressure Principle	Annually
Double Check Valve	Annually

(3) All inspections, testing, maintenance and reporting shall be done at the expense of the customer.

(F) *Discontinuance of service.* The city may shut off service to any premises and may physically disconnect the customer's piping from the city's water distribution system if a backflow prevention device required by this section is not installed, tested, and maintained as required, or if any defect is found in an installed backflow prevention device, or if it is found that a backflow prevention device has been removed or bypassed, or if unprotected cross-connection exist on the premises; and service will not be restored until such conditions or defects are corrected.

(`67 Code, § 4-6-47) (Ord. 85-03, passed 6-24-85)

METERS

§ 52.45 USE OF METERS REQUIRED.

The quantity of water furnished by the city to all water users shall be determined and ascertained by a meter.

(`67 Code, § 4-6-10)

§ 52.46 INSTALLATION OF METERS.

All water meters shall be installed adjacent to and on the property owner's side of the curbline if installed along a street, and on the property line if installed in an alley.

(`67 Code, § 4-6-11)

§ 52.47 DAMAGING OR INTERFERING WITH METERS.

(A) Water meters and meter boxes are the property of the city and it shall be unlawful to damage or interfere with them or to place dirt, trash, or other obstructions on or over the meter boxes.

(`67 Code, § 4-6-12)

(B) If a meter or appurtenances are damaged by the carelessness or negligence of the owner or occupant of the premises, the Public Works Department will repair the meter and the cost of such repairs shall be charged against the owner of the property, and if not paid within 30 days, shall become a lien against said property.

(`67 Code, § 4-6-15)

§ 52.48 METER FAILURES; TESTING.

(A) In the event any meter fails to operate properly or to correctly register the water used, the charge for the period during which the meter fails to operate properly or fails to register water, shall be based upon the average daily consumption for the same period of the prior year by the same user. If such a reading is not available, the city shall estimate the amount of such consumption from all information available and the consumer shall be charged on the basis of such estimate for water consumed.

(`67 Code, § 4-6-13)

(B) When any water consumer makes a complaint that the bill for any particular period is excessive, the Public Works Department will, upon request, have such meter re-read and the service inspected for leaks. Should such consumer then desire that the meter be tested, he will be required to make a deposit of $10 to cover the cost of making such test. The meter will then be changed or tested. Should the meter be found to register over 3% more water than actually passes through it, another meter will be substituted therefor, and the fee of $10 shall be refunded to the person making the request. If the meter is found to register not over 3% the $10 deposit shall be forfeited to the city and the water bill paid as rendered.

(`67 Code, § 4-6-14)

§ 52.49 CHANGE OF METER LOCATION OR METER SIZE.

Any person desiring to change the location or size of a service that has already been installed shall make an application to the city, and, upon payment in advance of the cost as determined by the city, the city may cause said change to be made. No such change will be made unless such change is determined to be feasible

and can be done at a reasonable cost.
(`67 Code, § 4-6-19)

RATES AND CHARGES

§ 52.60 WATER FUND.

(A) The Director of Finance shall collect all monies that shall become due to the city for water services, connection fees, payments for extensions, and all other costs, charges, penalties, and fees as provided herein and shall pay them into the city treasury and account for them in the same manner as the Director of Finance pays into the city treasury and accounts for all other sums received in his official capacity.

(B) All monies so collected shall be placed in a special fund to be known as the Water Fund and such money shall thereafter be expended for the administration, engineering, operation, maintenance and expansion, including the purchase of land and/or easements, of the city water system.
(`67 Code, § 4-6-4)

§ 52.61 FEES AND CHARGES ESTABLISHED BY ORDINANCE.

The amounts of all charges provided for herein, including but not limited to, water rates, connection fees, deposits, turn-on charges, penalties, and reconnection fees, shall be established from time to time by ordinance of the City Council. The failure to pay any fee or charge established by ordinance adopted pursuant to this chapter shall constitute a violation of this code and shall be subject to fines and penalties set forth in the city code.
(`67 Code, § 4-6-38)

(A) *Water service charges.* Minimum charge for 1,000 cubic feet for two months (bimonthly) is established as follows:

(1) Residential:

Meter Size	***Rate***
5/8" meter	$ 29.29
3/4" meter	29.29
1" meter	29.29

(2) Apartments, commercial, and industrial users with meters 1-1/2" or larger:

Meter Size	***Rate***
1-1/2" meter	$ 29.29
2" meter	36.70
3" meter	55.16
4" meter	76.23
8" meter	144.87

(3) Outside city limits:

Meter Size	***Rate***
1" meter	$ 33.91
2" meter	49.81

(4) Quantity rates for water exceeding the 1,000 cubic foot minimum charge for the particular meter size shall be:

Rate

Next 4,000 cubic feet	$ 0.34 per 100 cubic feet
Next 34,000 cubic feet	0.33 per 100 cubic feet
Next 40,000 cubic feet	0.30 per 100 cubic feet

(5) The minimum charge will entitle the customer to the quantity of water that the minimum charge will purchase at the quantity rates.

(6) Quantity rates for public schools for irrigation shall be $ 0.30 per 100 cubic feet.

(7) The water rates will increase annually at 75% of the Consumer Price Index for the West B/C region as of April 30 of each calendar year.

(B) *Connection fees.* Connection fees for water service for properties in the city shall be as follows:

(1) Connection fee in a subdivision shall be determined at the time of recording the final map.

(2) Connection fee not in a subdivision (infill) shall be as follows:

Rate

Residential – with no existing stubout	$ 1,700.00
Residential – with existing stubout	800.00
Commercial/Industrial – with no existing stubout	1,700.00
Commercial/Industrial – with existing stubout	800.00

(C) *Inspection fee.* A $75 water meter inspection fee will be required per inspection.

(D) *Well destruction permit.* Any property owner seeking to abandon their well must first obtain a well destruction permit from the City of Riverbank Public Works Department. The fee for the permit shall be $75.

(Ord. 83-1, passed 3-28-83; Am. Ord. 2005-005, passed 4-25-05; Am. Ord. 2005-008, passed 5-9-05; Am. Ord. 2005-012, passed 7-11-05; Am. Ord. 2006-010, passed 7-10-06; Am. Ord. 2007-003, passed 7-9-07; Am. Ord. 2008-007, passed 7-14-08; Am. Ord. 2010-001, passed 6-28-10)

§ 52.62 WHEN CHARGES DUE.

All water charges, fees and deposits shall be paid at the time service is requested. No building, plumbing or electrical permit shall be issued until said water charges, fees and deposits are paid.

(`67 Code, § 4-6-39) (Ord. 83-1, passed 3-28-83)

§ 52.63 WATER CHARGES AS A LIEN.

Each charge levied by or pursuant to this chapter or any resolution adopted pursuant to this chapter, is hereby made a lien upon the property which received the benefit of the service or facility for which the charge was made, and any steps authorized by law may be taken by the city to enforce payment of such lien.

(`67 Code, § 4-6-40) (Ord. 83-1, passed 3-28-83)

§ 52.64 PAYMENT OF BILLS.

(A) Water bills shall be rendered on a bimonthly basis and are due and payable on the first day of the month following the billing period, and shall be delinquent on the last day of the month if not paid by that date.

(B) Any bill which is not paid on or before the delinquent date shall be subject to a 10% penalty. If the bill is not paid within ten days after it becomes delinquent, the water service may be discontinued and an additional charge for the subsequent turn-on shall be paid by the consumer.

(C) When a service is discontinued due to nonpayment of bills, service shall not be resumed until all charges and penalties are paid pursuant to the procedures set forth in § 52.66 herein. All charges and penalties which are not paid shall become a lien on the property. Termination of service shall not be effective to a residential dwelling for nonpayment while an investigation of a customer dispute or complaint is pending or in progress by the city. Termination of water service shall not be effected on any Saturday, Sunday, legal holiday, or at any time during which the business offices of the city are not open to the public.

(`67 Code, § 4-6-41) (Ord. 83-1, passed 3-28-83; Am. Ord. 93-06, passed 11-22-93; Am. Ord. 2005-012, passed 7-11-05)

§ 52.65 DEPOSITS.

(A) A deposit of $60 will be required for all new consumers as a guarantee for the payment of future bills.

(B) If a consumer who has made a cash deposit fails to pay a bill for metered service, the Water Department may apply the deposit insofar as necessary to liquidate the bill and may require that the deposit be restored to its original amount before the next bill is due.

(C) After a cash deposit to guarantee payment for metered or measured service has stood unimpaired for 12 months, such deposit shall be applied to the depositor's current account balance. Upon closing any account, the balance of any deposit remaining, after the closing bill for service has been paid, shall be returned promptly to the depositor.

(`67 Code, § 4-6-42) (Ord. 83-1, passed 3-28-83; Am. Ord. 2000-04, passed 4-10-00; Am. Ord. 2005-005, passed 4-25-05)

§ 52.66 DISCONNECTION FOR LATE PAYMENT.

(A) It is the policy of the city to discontinue utility service to customers by reason of nonpayment of bills only after notice and a meaningful opportunity to be heard on disputed bills. The city's form for application for utility service and all bills shall contain, in addition to the title, address, room number, and telephone number of the official in charge of billing, clearly visible and easily readable provisions to the effect:

(1) That all bills are due and payable on or before the date set forth on the bill; and

(2) That if any bill is not paid by or before that date, a second bill will be mailed containing a cutoff notice that if the bill is not paid within ten days of the mailing of the second bill, service will be discontinued for nonpayment; and

(3) That any customer disputing the correctness of his bill shall have a right to a hearing at which time he may be represented in person and by counsel or any other person of his choosing and may present orally or in writing his complaint and contentions to the city official in charge of utility billing. This official shall be authorized to order that the customer's service not be discontinued and shall have the authority to make a final determination of the customer's complaint.

(B) Requests for delays or waiver of payment will not be entertained; only questions of proper and correct billing will be considered. In the absence of payment of the bill rendered or resort to the hearing procedure provided herein, service will be discontinued at the time specified, but in no event until the charges have been due and unpaid for at least 30 days.

(C) When it becomes necessary for the city to discontinue utility service to a customer for nonpayment of bills, service will be reinstated only after all bills for service then due have been paid, along with a turn-on charge, the amount of which shall be set by ordinance of the City Council.

ADMINISTRATION

§ 52.75 MANAGEMENT OF SYSTEM.

The management, control and care of the city water system shall be vested in the City Manager under the direction of the City Council.

(`67 Code, § 4-6-3)

§ 52.76 ACCESS TO BE PROVIDED TO CITY.

Access to service connections, turn-off valves and meters must be provided for the city at all times.

(`67 Code, § 4-6-28)

§ 52.77 RIGHT OF ENTRY.

Any authorized agent of the city shall have the right at all times during reasonable hours to enter any premises being supplied with water for the purpose of examining the condition of water pipes, water closets, and other plumbing, and in case a leak is found, to shut off the water until the leak is repaired by the consumer.

(`67 Code, § 4-6-30)

§ 52.78 RIGHT TO SHUT OFF WATER MAINS.

The city shall have the right at any time to shut off, ration, or apportion water by reason of an emergency, shortage or water supply, or for making repairs, modifications, changes or other work in city water service facilities.

(`67 Code, § 4-6-31)

§ 52.79 TERMINATION OF SERVICE.

Whenever the Water Department receives a written request from any property owner to terminate or

discontinue water service to any property for the reason that the property is unoccupied and does not require such service, the Water Department shall terminate water and sewer services as of the date such notice is received, and shall make no further charges for water or sewer services until the owner requests resumption of service. Until such request is received, all such charges as provided shall be due and payable.
(`67 Code, § 4-6-33)

§ 52.80 CORRECTION OF VIOLATION.

In order to enforce the provisions of this chapter, the city may correct any violation of this chapter. The cost of such correction, including attorney's fees, may be added to any water service charge payable by the person occupying the property upon which the violation occurred, and the city shall have such remedies for the collection of such costs as it has for the collection of water service charges.
(`67 Code, § 4-6-43)

§ 52.81 VIOLATION AN INFRACTION.

Any person violating the provisions of this chapter is guilty of an infraction.
(`67 Code, § 4-6-46) (Ord. 83-1, passed 3-28-83)

Appendix F

SAMPLE RESOLUTION TO DECLARE A WATER SHORTAGE EMERGENCY

RESOLUTION NO. _

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RIVERBANK DECLARING AN EMERGENCY AND AN IMMEDIATE NEED TO CURTAIL ALL NON-ESSENTIAL WATER USE

WHEREAS, on [DATE/TIME], there was an event [to be specified] resulting sudden and unexpected impact to the community water system that has [or will] limit the ability of the City to obtain and distribute the customary amount of water to [all/some] of our citizens; and

WHEREAS, City staff's attempts to mitigate the effect of [specified event] have been unsuccessful, and City staff advises that there is an immediate need to limit all non-essential water use to mitigate the loss or impairment of public health, safety, property, and essential public services.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Riverbank finds:

1. The above-referenced recitals are true and correct and incorporated herein by reference.

2. That the public interest and necessity demand the immediate curtailment of non-essential water usage including but not limited to: [specify, ie street washing, landscape/yard irrigation, fountain or water feature use, vehicle washing, pool use…]

3. That the City Manager or his designee is authorized to expend an amount not to exceed $ to facilitate notification of the affected citizens and enforcement and monitoring compliance with this resolution.

4. Violation of this ordinance is considered a waste of water as specified by City Code 52.33.

5. That the City Council shall review the emergency action at its next regular meeting scheduled for _ to determine whether the emergency situation has been eliminated and whether there is a need to take further action as a result of the emergency.

PASSED AND ADOPTED on this _ day of _ , 20_ by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Mayor

Attest:

_____

City Clerk

Appendix G DMM COST BENEFIT ANALYSIS DATA

City of Riverbank
2010 Urban Water Management Plan

Demand Management Measure Cost-Benefit Analysis

DMM A - Water Survey Programs for Single-Family and Multi-Family Residential Customers

Unit Cost of Water	325	$/MG[a]
	100	$/AF

Cost

Employee	$	50.00	per hour[b]
(Salary and Benefits)	$	52,000	per year (half time)
Vehicle Cost	$	6,000	per year[c]
(capital depreciation, insurance, fuel, etc.)			
Materials	$	6,000	per year[d]
(faucets aerators, shower heads, etc.)			
Advertisement	$	400	per year
(flyers, web page development, etc.)			
Sub-Total of Annual Cost of Program	**$**	**64,400**	

Benefit

Single-Family Residence

Number of Single Family Residences	6,614	Units[e]
Number of Persons/Residence	3.5	Persons[f]
Per Capita Daily Water Consumption	200	gallons[g]
Estimated Water Savings per Residence	13	%[h]
Estimated Water Savings per Residence	33,200	gallons

	Predicted Participation		Water Savings	
year 1[i]	8	%	17,567,000	gallons
year 2	7	%	15,371,000	gallons
year 3	3	%	6,588,000	gallons
year 4	1	%	2,196,000	gallons
year 5	1	%	2,196,000	gallons

Sub-Total of Predicted Water Savings	43,918,000	gallons
(Water Savings expected over the 5-year horizon window)	130	acre*feet

Sub-Total of Cost Savings (5-year Horizon)	$	13,000
Average Annual Cost Savings	$	2,600

Total Predicted (5 year) Water Savings	130	acre*feet

Total of Cost Savings (5-year Horizon)	$	13,000
Average Annual Cost Savings	**$**	**2,600**

Annual Program Budget (Deficit)	**$**	**(61,800)**

Footnotes to DMM A Calculations Worksheet

a. Unit Cost of Water: $325/Million Gallons

b. City Employee Compensation: $50/hour
Based on an estimated $37/hour + 33% of hourly wage for fringe benefits

c. Annual Vehicle Cost: $ 6,000 per year
Presumes 10,000 miles per year

d. Materials Cost: $ 6,000 per year
Annual budget set aside for purchasing and providing faucet aerators and low-flow shower heads to program participants.

Cost of facet aerator:	$ 10	
Cost of shower head:	$ 15	
No. of participating houses:	1200	(total no. of houses over time horizon)
Time horizon	5	years
Annual materials cost:	$ 6,000	

e. Single-family Residences: 6614

f. Number of Persons per residence: 3.5

g. Water Consumtion: 200 gallons per capita per day

h. Estimated Water Savings: 13% per residence
Assumed typical value based off data provided in City of San Diego's Residential Water Survey Program. Water savings for single-family residences are expected to be larger than multi-family residences due to the large portion of water use dedicated to exterior irrigation.

i. Program Time Horizon: 5 years
A 5-year time horizon is considered in this study, which coincides with the period between UWMP updates. It is assumed that the maximum program participation during this 5-year period is 20%. All calculations of program costs and water savings are based on a 20% participation rate.

Demand Management Measure Cost-Benefit Analysis

DMM F - High Efficiency Washing Machine Rebate Program

Unit Cost of Water 325 $/MG[(a)]
100 $/AF

Washing machine cash rebate: $ 100

Number of residences	6400	
Number of persons per residence	3.5	
Average water use in washer	15	gallons per day per capita[(b)]
High-efficiency machine water use	6.75	gallons per day per capita[(c)]
Water savings	8.25	gallons per capita per day

Program participation

Time horizon **5 years**

Predicted Participation		Water Use (Normal)	Water Use (High Efficency)	Water Saved
Year 1	260 res.	13650 gpd	7508 gpd	6143 gpd
Year 2	260 res.	13650 gpd	7508 gpd	6143 gpd
Year 3	260 res.	13650 gpd	7508 gpd	6143 gpd
Year 4	260 res.	13650 gpd	7508 gpd	6143 gpd
Year 5	260 res.	13650 gpd	7508 gpd	6143 gpd

Total water saved: 6143 gpd
2,242,000 gallons per year
6.9 AF per year

Annual cost savings: **$ 688**

Cost

Time horizon **5 years**

	Predicted Participation	Rebate (Individual)	Rebate (Annual)	Other Costs (Disposal fees, advertisement, administrative, etc.)
Year 1	260 res.	$ 100	$ 26,000	$ 500
Year 2	260 res.	$ 100	$ 26,000	$ 500
Year 3	260 res.	$ 100	$ 26,000	$ 500
Year 4	260 res.	$ 100	$ 26,000	$ 500
Year 5	260 res.	$ 100	$ 26,000	$ 500

Expected annual cost: **$ 26,500**

Footnotes

a. Unit Cost of Water

b. Average Water Use — Amercian Water Works Association Research Foundation, *Residential End Uses of Water* , 1999, pp 104 -7

c. High-efficiency machine use — Based on an average per load reduction in water use of 40%

Demand Management Measure Cost-Benefit Analysis

DMM H - School Education Programs

Unit Cost of Water	325	$/MG[(a)]
	100	$/AF

Program Participation

School	**Enrollment**
Elementary	1618
Middle	556
High	537
Total	2711

Cost

Brochure creation	$	2,500	
Reproduction/distribution	$	2	per pamphlet
	$	5,400	total distribution
Total Annual Cost	**$**	**7,900**	

Benefit

There is no quantifiable benefit to the program

Footnotes

a. Unit Cost of Water

Demand Management Measure Cost-Benefit Analysis

DMM N - Residential Ultra-Low-Flush Toilet Replacement Program

Unit Cost of Water 325 $/MG[(a)]
100 $/AF

Ultra-Low-Flush Toilet Rebate $ 100

Number of eligible residences	3000	
Number of persons per residence	3.5	
Average number of flushes per person	5	per day[(b)]
Volumer per flush, standard toilet	5.5	gallons
Volumer per flush, ULF toilet	1.6	gallons
Water savings	3.9	gallons per flush

Program participation

Time horizon **5 years**

Predicted Participation		Water Use (Normal)	Water Use (High Efficency)	Water Saved
Year 1	120 res.	11550 gpd	3360 gpd	8190 gpd
Year 2	120 res.	11550 gpd	3360 gpd	8190 gpd
Year 3	120 res.	11550 gpd	3360 gpd	8190 gpd
Year 4	120 res.	11550 gpd	3360 gpd	8190 gpd
Year 5	120 res.	11550 gpd	3360 gpd	8190 gpd

Total water saved: 8190 gpd
2,989,000 gallons per year
9.2 AF per year

Annual cost savings: **$ 917**

Cost

Time horizon **5 years**

	Predicted Participation	Rebate (Individual)	Rebate (Annual)	Other Costs (Disposal fees, advertisement, administrative, etc.)
Year 1	120 res.	$ 100	$ 12,000	$ 500
Year 2	120 res.	$ 100	$ 12,000	$ 500
Year 3	120 res.	$ 100	$ 12,000	$ 500
Year 4	120 res.	$ 100	$ 12,000	$ 500
Year 5	120 res.	$ 100	$ 12,000	$ 500

Expected annual cost: **$ 12,500**

Footnotes

a. Unit Cost of Water

b. Average Water Use — Amercian Water Works Association Research Foundation, *Residential End Uses of Water* , 1999, pp 96 -7

RIVERBANK CITY COUNCIL AGENDA ITEM NO. 10.1

SECTION 10: INFORMATIONAL ITEM

Meeting Date: October 14, 2014

Subject: Warrant Register for 09/18/2014, 09/29/2014, and 10/02/2014

From: Jill Anderson, City Manager

Submitted by: Marisela H. Garcia, Director of Finance/City Treasurer

RECOMMENDATION

It is recommended that the City Council review as an informational item the warrant registers for 09/18/2014, 09/29/2014, and 10/02/2014

SUMMARY

The warrant register presented to the City Council is a listing of all expenditures paid. Major expenditures presented on the warrant register include the following:

09/18/2014 Warrant

Check No.	Vendor & Description	Funding Source	Amount
43483	Dawn Barrett: Social Media Consulting	General Fund 101	$100.00
43487	Central San Joaquin Valley Risk Management Association: Worker's Comp & General Liability Insurance	Risk Management Funds 137/138	$77,690.00
43504	R&S Erection Tri-County, Inc: ADA Door Upgrade at Sheriff's Office	General Fund 101	$14,175.00

09/29/2014 Warrant

Check No.	Vendor & Description	Funding Source	Amount
43521	Chris Ricci Presents: Reimbursement of Cheese & Wine Expenses	Cheese & Wine Fees	$4,174.16
43545	San Joaquin Engineering: LRA Transformer Upgrades	LRA Tenant Fees 197	$192,187.50

43552	SWRCB Accounting Office: Annual Water System Fee Permit	Water Fund 114	$13,150.01
43554	Tresetti's World Caffe: Cheese & Wine Appetizers	Cheese & Wine Fees	$3,000.00

10/02/2014 Warrant

Check No.	Vendor & Description	Funding Source	Amount
43586	N&S Tractor: STX Tractor Repair for WWTP	Sewer Capital Imp. 108	$32,749.42
43600	Union Bank: Assmt Bond Admin Fees	Bond Fund 156 & 170	$3,175.00

FINANCIAL IMPACT

Reductions in various funds for payment of expenses.

ATTACHMENTS

1. Warrant Registers: 09/18/2014, 09/29/2014, and 10/02/2014

WARRANT REGISTER

Date: 09/18/2014

City of Riverbank

Vendor Name	Invoice Description	GL Number	Check No.	Check Date	Check Amount
ADVANCED INFO SYSTEM	MAILING OF UTILITY BILLS	101-401-000-702-032	43479	09/18/2014	**1,418.54**
ADVANCED INFO SYSTEM	MAILING OF UTILITY BILLS	101-412-000-702-032	43479		**1,360.04**
ADVANCED INFO SYSTEM	MAILING OF UTILITY BILLS	101-403-000-702-032	43479		**1,394.24**
				Vendor Total:	**4,172.82**
ALPHA NUMERIC	COPY COUNTS	101-401-000-703-025	43480	09/18/2014	**52.59**
ALPHA NUMERIC	COPY COUNTS	101-402-000-703-025	43480		**50.72**
ALPHA NUMERIC	COPY COUNTS	101-403-000-703-025	43480		**127.62**
ALPHA NUMERIC	COPY COUNTS	101-405-000-703-025	43480		**9.87**
ALPHA NUMERIC	COPY COUNTS	101-406-000-703-025	43480		**47.81**
ALPHA NUMERIC	COPY COUNTS	101-408-000-703-025	43480		**58.45**
ALPHA NUMERIC	COPY COUNTS	101-412-000-703-025	43480		**6.44**
ALPHA NUMERIC	COPY COUNTS	101-403-000-703-025	43480		**0.02**
ALPHA NUMERIC	COPY COUNTS	134-459-000-702-031	43480		**0.16**
ALPHA NUMERIC	COPY COUNTS	197-439-000-702-053	43480		**2.19**
				Vendor Total:	**355.87**
ARROWHEAD	BOTTLED WATER	197-439-000-704-021	43481	09/18/2014	**115.46**
				Vendor Total:	**115.46**
AT&T-CALNET 2	COMMUNICATIONS	101-405-000-704-022	43482	09/18/2014	**99.86**
AT&T-CALNET 3	COMMUNICATIONS	101-406-000-704-022	43482		**33.29**
AT&T-CALNET 4	COMMUNICATIONS	101-407-000-704-022	43482		**266.30**
AT&T-CALNET 5	COMMUNICATIONS	101-409-000-704-022	43482		**233.01**
AT&T-CALNET 6	COMMUNICATIONS	101-412-000-704-022	43482		**66.57**
AT&T-CALNET 7	COMMUNICATIONS	101-414-000-704-022	43482		**33.29**
AT&T-CALNET 8	COMMUNICATIONS	134-459-000-704-022	43482		**66.57**
AT&T-CALNET 9	COMMUNICATIONS	106-423-000-704-022	43482		**66.57**
AT&T-CALNET 10	COMMUNICATIONS	119-442-000-704-022	43482		**33.30**
				Vendor Total:	**898.76**
DAWN BARRETT	SOCIAL MEDIA CONSULTI	101-408-000-706-047	43483	09/18/2014	**100.00**
				Vendor Total:	**100.00**
BAY ALARM COMPANY	ALARM SERVICE	102-418-000-702-032	43484	09/18/2014	**31.67**
BAY ALARM COMPANY	ALARM SERVICE	106-423-000-702-032	43484		**31.67**
BAY ALARM COMPANY	ALARM SERVICE	114-433-000-702-032	43484		**31.66**
				Vendor Total:	**95.00**
BEV MO	DEPOSIT REFUND	125-000-000-210-008	43485	09/18/2014	**9,371.36**
				Vendor Total:	**9,371.36**
CALIFORNIA C.A.D. SOLUTIONS	GIS WELL LOCATION MAP	114-433-000-702-032	43486	09/18/2014	**500.00**
				Vendor Total:	**500.00**
CENTRAL SAN JOAQUIN VALLEY	WORKERS'/LIABILITY	137-460-000-706-035	43487	09/18/2014	**53,198.00**
CENTRAL SAN JOAQUIN VALLEY	WORKERS'/LIABILITY	138-461-000-706-035	43487		**24,451.00**
CENTRAL SAN JOAQUIN VALLEY	WORKERS'/LIABILITY	138-461-000-706-035	43487		**41.00**
				Vendor Total:	**77,690.00**
CHARTER COMMUNICATIONS	COMMUNICATIONS - POLI	101-409-000-706-026	43488	09/18/2014	**53.05**
				Vendor Total:	**53.05**
CITY OF OAKDALE	ANIMAL CONTROL SERVIC	101-411-000-702-034	43489	09/18/2014	**12,821.37**
				Vendor Total:	**12,821.37**
ALICIA ELSHOLZ	DEPOSIT REFUND	118-000-000-200-150	43490	09/18/2014	**100.00**
				Vendor Total:	**100.00**
FAR WEST	LAB SAMPLES - LRA	197-439-000-706-029	43491	09/18/2014	**290.00**
				Vendor Total:	**290.00**
FASTENAL COMPANY	VEHICLE MAINTENANCE	119-442-000-705-040	43492	09/18/2014	**6.51**
				Vendor Total:	**6.51**
FRANZEN-HILL CORPORATION	CNG MAINTENANCE	119-442-000-702-044	43493	09/18/2014	**85.00**
				Vendor Total:	**85.00**
BLANCA GALDAMEZ	DEPOSIT REFUND	118-000-000-200-150	43494	09/18/2014	**150.00**
				Vendor Total:	**150.00**

WARRANT REGISTER

Date: 09/18/2014

City of Riverbank

Vendor Name	Invoice Description	GL Number	Check No.	Check Date	Check Amount
GIULIANI & KULL, INC.	UPGRADE TO POND P-9	106-424-000-702-032	43495	09/18/2014	**2,275.00**
				Vendor Total:	**2,275.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	220-590-000-706-029	43497	09/18/2014	**1,325.51**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	101-414-000-706-081	43497		**268.45**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	177-590-000-706-029	43497		**1,315.49**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	175-590-000-706-029	43497		**294.82**
				Vendor Total:	**3,204.27**
ANNETTE GUTIERREZ	DEPOSIT REFUND	118-000-000-672-005	43498	09/18/2014	**100.00**
				Vendor Total:	**100.00**
INTERNATIONAL CODE COUNCIL	MEMBERSHIP DUES	101-406-000-706-036	43499	09/18/2014	**125.00**
				Vendor Total:	**125.00**
MAILFINANCE	POSTAGE LEASE 7/10-10/(	106-423-000-702-031	43500	09/18/2014	**110.41**
MAILFINANCE	POSTAGE LEASE 7/10-10/(	114-433-000-702-031	43500		**110.40**
MAILFINANCE	POSTAGE LEASE 7/10-10/(	101-403-000-702-031	43500		**110.40**
				Vendor Total:	**331.21**
OCAT INC.	DEPOSIT REFUND	125-000-000-210-008	43501	09/18/2014	**5,523.85**
				Vendor Total:	**5,523.85**
DEBBIE OLSON	TRAVEL ALLOWANCE	197-439-000-702-053	43502	09/18/2014	**159.00**
DEBBIE OLSON	TRAVEL ALLOWANCE	197-439-000-706-037	43502		**82.74**
				Vendor Total:	**241.74**
PETTY CASH	LRA	197-439-000-706-037	43503	09/18/2014	**39.80**
PETTY CASH	LRA	197-439-000-706-029			**21.70**
				Vendor Total:	**61.50**
R & S ERECTION TRI COUNTY, INC	INSTALLATION OF NEW D(	101-000-000-200-175	43504	09/18/2014	**14,175.00**
				Vendor Total:	**14,175.00**
RIVERBANK ROTARY CLUB	PURCHASE OF RIGHTS	163-459-000-702-034	43505	09/18/2014	**3,000.00**
				Vendor Total:	**3,000.00**
CARLOS RODRIGUEZ	DEPOSIT REFUND	118-000-000-200-150	43506	09/18/2014	**200.00**
				Vendor Total:	**200.00**
TABATHA SLATER	DEPOSIT REFUND	118-000-000-200-150	43507	09/18/2014	**100.00**
				Vendor Total:	**100.00**
ELISABETH SMALLWOOD	OVERPAYMENT REFUND	101-000-000-450-010	43508	09/18/2014	**10.00**
				Vendor Total:	**10.00**
STANISLAUS CO. SHERIFF'S DEPT.	LAW ENFORCEMENT - AU	101-409-000-702-060	43509	09/18/2014	**302,663.19**
STANISLAUS CO. SHERIFF'S DEPT.	LAW ENFORCEMENT - AU	101-409-000-702-034			**10,071.95**
				Vendor Total:	**312,735.14**
STANISLAUS FOUNDATION	DENTAL LIABILITY	201-000-000-200-082	43510	09/18/2014	**317.00**
				Vendor Total:	**317.00**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	134-459-000-703-025	43511	09/18/2014	**195.58**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	118-441-000-706-026	43511		**460.21**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	196-496-000-707-003	43511		**387.43**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	101-403-000-706-037	43511		**358.00**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	198-439-505-702-053	43511		**12.50**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	101-412-000-706-001	43511		**133.00**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	106-424-000-702-032	43511		**858.46**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	114-433-000-706-050	43511		**792.56**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	114-433-000-703-067	43511		**553.91**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	114-433-000-702-032	43511		**47.40**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	106-423-000-702-030	43511		**76.55**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	119-442-000-703-025	43511		**229.23**

WARRANT REGISTER

Date: 09/18/2014

City of Riverbank

Vendor Name	Invoice Description	GL Number	Check No.	Check Date	Check Amount
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	114-433-000-706-036	43511		**174.00**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	106-423-000-702-032	43511		**210.00**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	102-418-000-706-026	43511		**96.84**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	114-433-000-706-026	43511		**25.33**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	119-442-000-702-030	43511		**268.66**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	106-424-000-706-026	43511		**188.98**
U.S. BANK CORPORATE PAYMENT	CREDIT CARD RECEIPTS	106-423-000-706-036	43511		**245.00**
				Vendor Total:	**5,313.64**
WINTON,IRELAND,STROM &	POLICY RENEWAL	101-408-000-706-035	43512	09/18/2014	**318.00**
				Vendor Total:	**318.00**
				Grand Total:	**454,836.55**
				Less Credit Memos:	**0.00**
Total Invoices:	**51**			Net Total:	**454,836.55**
				Less Hand Check Total:	**0.00**
				Outstanding Invoice Total :	**454,836.55**

WARRANT REGISTER

Date: 09/29/2014

City of Riverbank

Vendor Name	Invoice Description	GL Number	Check No.	Check Date	Check Amount
ARROWHEAD	BOTTLED WATER	106-424-000-706-026	43513	09/29/2014	**29.52**
ARROWHEAD	BOTTLED WATER	114-433-000-702-032	43513		**68.72**
ARROWHEAD	BOTTLED WATER	102-418-000-706-026	43513		**68.72**
ARROWHEAD	BOTTLED WATER	101-414-000-706-029	43513		**68.71**
				Vendor Total:	**235.67**
AT&T-CALNET 2	COMMUNICATIONS - LRA	198-439-505-702-053	43514	09/29/2014	**374.86**
AT&T-CALNET 3	COMMUNICATIONS - LRA	101-407-000-704-022	43514		**76.46**
				Vendor Total:	**451.32**
BAY ALARM COMPANY	ALARM SERVICE	114-433-000-702-032	43515	09/29/2014	**1,217.67**
BAY ALARM COMPANY	ALARM SERVICE	102-418-000-702-032	43515		**468.67**
BAY ALARM COMPANY	ALARM SERVICE	101-407-000-702-032	43515		**464.35**
BAY ALARM COMPANY	ALARM SERVICE	106-423-000-702-032	43515		**138.66**
				Vendor Total:	**2,289.35**
BEST BUY BUSINESS ADVANTAGE	OFFICE EXPENSE	101-406-000-703-024	43516	09/29/2014	**223.83**
BEST BUY BUSINESS ADVANTAGE	OFFICE EXPENSE	101-412-000-703-025	43516		**223.83**
				Vendor Total:	**447.66**
BIA OF THE GREATER VALLEY	REGISTRATION	101-402-000-706-037	43517	09/29/2014	**40.00**
				Vendor Total:	**40.00**
CACEO	MEMBERSHIP DUES	117-411-000-706-036	43518	09/29/2014	**75.00**
				Vendor Total:	**75.00**
JEFF CARELLA	DEPOSIT REFUND	118-000-000-200-150	43519	09/29/2014	**100.00**
				Vendor Total:	**100.00**
CHARTER COMMUNICATIONS	COMMUNICATIONS - TEEN	101-407-000-702-032	43520	09/29/2014	**79.99**
CHARTER COMMUNICATIONS	COMMUNICATIONS - TEEN	101-412-000-704-021	43520		**37.23**
CHARTER COMMUNICATIONS	COMMUNICATIONS - TEEN	101-408-000-702-032	43520		**147.99**
				Vendor Total:	**265.21**
CHRIS RICCI PRESENTS INC	CHEESE & WINE EVENT 2014	163-459-000-706-008	43521	09/29/2014	**3,374.16**
CHRIS RICCI PRESENTS INC	CHEESE & WINE EVENT 2015	163-459-000-702-034	43521		**800.00**
				Vendor Total:	**4,174.16**
ZORAN DJURISIC	FENCING INSTRUCTOR	118-441-000-703-030	43522	09/29/2014	**220.50**
				Vendor Total:	**220.50**
DON'S MOBILE GLASS	VEHICLE MAINTENANCE	119-442-000-705-040	43523	09/29/2014	**85.00**
				Vendor Total:	**85.00**
E.R. VINE & SONS, INC.	VEHICLE FUEL	119-442-000-705-041	43524	09/29/2014	**703.60**
				Vendor Total:	**703.60**
EXPERIAN	CREDIT CHECK	153-479-000-702-053	43525	09/29/2014	**100.00**
				Vendor Total:	**100.00**
SUE FITZPATRICK	TRAVEL ALLOWANCE	196-496-000-707-003	43526	09/29/2014	**97.20**
				Vendor Total:	**97.20**
GEORGE REED, INC.	BUILDING MAINTENANCE	101-413-000-706-029	43527	09/29/2014	**966.13**
				Vendor Total:	**966.13**
GIULIANI & KULL, INC.	OAKDALE RD & MORRILL RD	197-439-000-706-029	43528	09/29/2014	**630.00**
GIULIANI & KULL, INC.	OAKDALE RD & MORRILL RD	106-424-000-702-032	43528		**3,650.00**
GIULIANI & KULL, INC.	OAKDALE RD & MORRILL RD	125-000-000-210-008	43528		**1,000.00**
GIULIANI & KULL, INC.	OAKDALE RD & MORRILL RD	101-412-000-702-032	43528		**750.00**
GIULIANI & KULL, INC.	OAKDALE RD & MORRILL RD	101-412-000-702-035	43528		**2,492.50**
GIULIANI & KULL, INC.	OAKDALE RD & MORRILL RD	151-477-000-707-101	43528		**5,290.00**
GIULIANI & KULL, INC.	OAKDALE RD & MORRILL RD	151-477-000-707-123	43528		**1,990.00**
				Vendor Total:	**15,802.50**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENANCE	177-590-000-706-029	43529	09/29/2014	**40.95**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENANCE	101-414-000-706-081	43529		**126.45**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENANCE	178-590-000-706-029	43529		**35.84**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENANCE	177-590-000-706-029	43529		**269.47**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENANCE	175-590-000-706-029	43529		**187.87**
				Vendor Total:	**660.58**

WARRANT REGISTER

Date: 09/29/2014

City of Riverbank

Vendor Name	Invoice Description	GL Number	Check No.	Check Date	Check Amount
HETCH HETCHY WATER & POWER	UTILITIES - LRA	197-439-000-704-021	43530	09/29/2014	**78,124.79**
				Vendor Total:	**78,124.79**
HOME DEPOT CREDIT SERVICES	BUILDING MAINTENANCE	102-418-000-702-030	43531	09/29/2014	**16.08**
HOME DEPOT CREDIT SERVICES	BUILDING MAINTENANCE	102-418-000-706-029	43531		**81.35**
HOME DEPOT CREDIT SERVICES	BUILDING MAINTENANCE	106-423-000-706-026	43531		**27.93**
HOME DEPOT CREDIT SERVICES	BUILDING MAINTENANCE	101-413-000-706-029	43531		**65.80**
HOME DEPOT CREDIT SERVICES	BUILDING MAINTENANCE	102-418-000-706-026	43531		**21.39**
HOME DEPOT CREDIT SERVICES	BUILDING MAINTENANCE	106-424-000-706-029	43531		**1,354.77**
				Vendor Total:	**1,567.32**
INDUSTRIAL AUTOMATION GROUP	CNG MAINTENANCE	119-442-000-702-044	43532	09/29/2014	**287.50**
				Vendor Total:	**287.50**
DAVID MCDANIEL	BOOT ALLOWANCE	101-414-000-706-027	43533	09/29/2014	**108.43**
				Vendor Total:	**108.43**
ANA MENDEZ	DEPOSIT REFUND	118-000-000-200-150	43534	09/29/2014	**89.00**
				Vendor Total:	**89.00**
MID	UTILITIES	220-590-000-704-021	43535	09/29/2014	**2,605.40**
MID	UTILITIES	173-590-000-704-021	43535		**11.75**
MID	UTILITIES	114-433-000-704-021	43535		**14,252.97**
MID	UTILITIES	101-414-000-704-021	43535		**1,149.29**
MID	UTILITIES	101-412-000-704-021	43535		**270.82**
MID	UTILITIES	101-407-000-704-021	43535		**543.83**
MID	UTILITIES	102-418-000-704-021	43535		**48.91**
MID	UTILITIES	119-442-000-704-021	43535		**1,627.65**
MID	UTILITIES	177-590-000-704-021	43535		**132.29**
				Vendor Total:	**20,642.91**
CRISTA NOAKES	DEPOSIT REFUND	118-000-000-200-150	43536	09/29/2014	**100.00**
				Vendor Total:	**100.00**
ONTEL SECURITY SERVICES, INC.	SECURITY SERVICES	118-441-000-703-066	43537	09/29/2014	**1,814.50**
				Vendor Total:	**1,814.50**
PACIFIC GAS & ELECTRIC	UTILITIES	106-424-000-704-021	43538	09/29/2014	**284.89**
PACIFIC GAS & ELECTRIC	UTILITIES	101-414-000-704-021	43538		**4.74**
PACIFIC GAS & ELECTRIC	UTILITIES	102-418-000-704-021	43538		**538.39**
PACIFIC GAS & ELECTRIC	UTILITIES	118-441-000-704-021	43538		**391.71**
PACIFIC GAS & ELECTRIC	UTILITIES	114-433-000-704-021	43538		**8,512.00**
				Vendor Total:	**9,731.73**
PACIFIC PLAN REVIEW	6618 CYPRESS WOODS DR	101-000-000-600-090	43539	09/29/2014	**1,870.00**
				Vendor Total:	**1,870.00**
PAPA	MEMBERSHIP DUES	106-424-000-706-036	43540	09/29/2014	**45.00**
				Vendor Total:	**45.00**
PLAY IT AGAIN SPORTS	RECREATIONAL EQUIPMENT	134-459-000-703-027	43541	09/29/2014	**154.81**
				Vendor Total:	**154.81**
PRIME SHINE EXPRESS CAR WASH	VEHICLE WASHES	101-413-000-702-030	43542	09/29/2014	**7.00**
PRIME SHINE EXPRESS CAR WASH	VEHICLE WASHES	119-442-000-702-030	43542		**14.00**
PRIME SHINE EXPRESS CAR WASH	VEHICLE WASHES	106-424-000-702-030	43542		**3.50**
PRIME SHINE EXPRESS CAR WASH	VEHICLE WASHES	114-433-000-702-030	43542		**7.00**
PRIME SHINE EXPRESS CAR WASH	VEHICLE WASHES	101-414-000-706-029	43542		**3.50**
PRIME SHINE EXPRESS CAR WASH	VEHICLE WASHES	101-406-000-703-025	43542		**3.50**
PRIME SHINE EXPRESS CAR WASH	VEHICLE WASHES	117-411-000-703-025	43542		**3.50**
				Vendor Total:	**42.00**
R & T POWER EQUIPMENT	BUILDING MAINTENANCE	101-414-000-706-029	43543	09/29/2014	**10.00**
				Vendor Total:	**10.00**
RIVERBANK UNIFIED SCHOOL	UTILITIES-SPLIT COST JUNE 2014	134-459-000-706-052	43544	09/29/2014	**8,320.25**
				Vendor Total:	**8,320.25**
SAN JOAQUIN ENGINEERING	BUILDING MAINTENANCE	197-439-000-706-029	43545	09/29/2014	**192,187.50**
				Vendor Total:	**192,187.50**

WARRANT REGISTER

Date: 09/29/2014

City of Riverbank

Vendor Name	Invoice Description	GL Number	Check No.	Check Date	Check Amount
SHANNI IMPORTS	CHEESE & WINE VENDOR REFUND	163-000-000-675-400	43546	09/29/2014	**340.00**
				Vendor Total:	**340.00**
SHERIFF'S EXPLORER	POSTING OF FLAGS	101-401-000-706-033	43547	09/29/2014	**50.00**
				Vendor Total:	**50.00**
STANISLAUS CO. CLERK	RECONVEYANCE RECORDING FEE	154-480-000-702-053	43548	09/29/2014	**14.00**
				Vendor Total:	**14.00**
STANISLAUS FOUNDATION	DENTAL LIABILITY	201-000-000-200-082	43549	09/29/2014	**335.40**
				Vendor Total:	**335.40**
STAPLES ADVANTAGE	OFFICE SUPPLIES	114-433-000-706-026	43550	09/29/2014	**20.33**
				Vendor Total:	**20.33**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	134-459-000-703-027	43551	09/29/2014	**73.23**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	101-414-000-703-025	43551		**45.16**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	101-406-000-703-025	43551		**195.48**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	101-403-000-703-025	43551		**70.45**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	101-401-000-703-025	43551		**68.72**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	101-408-000-703-025	43551		**49.77**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	106-424-000-703-025	43551		**200.02**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	101-405-000-703-025	43551		**253.56**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	101-412-000-703-025	43551		**180.10**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	117-411-000-703-025	43551		**100.32**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	106-423-000-703-025	43551		**100.32**
STAPLES CREDIT PLAN	OFFICE SUPPLIES	102-418-000-706-026	43551		**100.00**
				Vendor Total:	**1,437.13**
SWRCB ACCOUNTING OFFICE	WATER SYSTEM FEES	114-433-000-706-056	43552	09/29/2014	**13,150.01**
				Vendor Total:	**13,150.01**
THE PRACTICAL SOLUTIONS	MANAGEMENT CONSULTING SERVICE	101-402-000-706-037	43553	09/29/2014	**582.50**
				Vendor Total:	**582.50**
TRESETTI'S WORLD CAFFE	CATERING SERVICE	163-459-000-702-032	43554	09/29/2014	**3,000.00**
				Vendor Total:	**3,000.00**
KERRIE WEBB	TRAVEL ALLOWANCE	196-496-000-707-003	43555	09/29/2014	**97.20**
				Vendor Total:	**97.20**
				Grand Total:	**360,836.19**
				Less Credit Memos:	**0.00**
Total Invoices: **90**				Net Total:	**360,836.19**
				Less Hand Check Total:	**0.00**
				Outstanding Invoice Total :	**360,836.19**

WARRANT REGISTER

Date: 10/02/2014

City of Riverbank

Vendor Name	Invoice Description	GL Number	Check No.	Check Date	Check Amount
A & A PORTABLES INC.	PORTABLE RESTROOM - I	197-439-000-704-021	43557	10/02/2014	**49.76**
				Vendor Total:	**49.76**
AMERICAN WATER WORKS	MEMBERSHIP DUES	114-433-000-702-034	43558	10/02/2014	**413.00**
				Vendor Total:	**413.00**
APPLIED POWER SYSTEMS INC.	BUILDING MAINTENANCE	197-439-000-706-029	43559	10/02/2014	**12,504.50**
				Vendor Total:	**12,504.50**
ASSOCIATION OF DEFENSE	2014 BASE REDEVELOPM	198-439-000-706-037	43560	10/02/2014	**495.00**
				Vendor Total:	**495.00**
BOHANNON INSURANCE GROUP	INSURANCE ADMIN. - SEP	201-000-000-200-080	43561	10/02/2014	**1,716.44**
				Vendor Total:	**1,716.44**
CDFA 90361	WEIGHMASTER FEE - LRA	197-439-000-706-029	43562	10/02/2014	**20.00**
				Vendor Total:	**20.00**
CHRIS RICCI PRESENTS INC	CHEESE & WINE CONSUL	163-459-000-702-032	43563	10/02/2014	**5,000.00**
				Vendor Total:	**5,000.00**
CHURCHWELL WHITE	LEGAL SERVICES	101-404-000-702-033	43564	10/02/2014	**7,803.59**
				Vendor Total:	**7,803.59**
GEORGE COLLIER	TENNIS INSTRUCTOR	118-441-000-703-030	43565	10/02/2014	**168.00**
				Vendor Total:	**168.00**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	101-401-000-702-031	43566	10/02/2014	**62.48**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	101-402-000-702-031	43566		**241.93**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	101-403-000-702-031	43566		**194.77**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	101-405-000-702-031	43566		**2.57**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	101-406-000-703-025	43566		**69.65**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	101-408-000-702-031	43566		**139.49**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	101-412-000-702-031	43566		**0.24**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	114-433-000-702-031	43566		**0.04**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	101-403-000-703-025	43566		**0.08**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	134-459-000-702-031	43566		**0.04**
DE LAGE LANDEN FINANCIAL	COPIER LEASE	197-439-000-702-053	43566		**0.05**
				Vendor Total:	**711.34**
DENAIR LUMBER COMPANY, INC.	BUILDING MAINTENANCE	101-414-000-706-029	43567	10/02/2014	**8.59**
				Vendor Total:	**8.59**
DUGO SIGNS	DOOR LETTERING	101-000-000-200-175	43568	10/02/2014	**300.00**
				Vendor Total:	**300.00**
AGNES DURGUN	DEPOSIT REFUND	118-000-000-200-150	43569	10/02/2014	**100.00**
				Vendor Total:	**100.00**
FIRST RIVERBANK L.P.	REISSUE - DEPOSIT REFU	125-000-000-210-008	43570	10/02/2014	**9,371.36**
				Vendor Total:	**9,371.36**
MARISELA GARCIA	REIMBURSEMENT	101-403-000-706-037	43571	10/02/2014	**120.00**
				Vendor Total:	**120.00**
GEORGE REED, INC.	BUILDING MAINTENANCE	101-413-000-706-029	43572	10/02/2014	**262.88**
				Vendor Total:	**262.88**
GHX INDUSTRIAL, LLC	EQUIPMENT MAINTENANC	101-413-000-702-030	43573	10/02/2014	**37.09**
				Vendor Total:	**37.09**
GIULIANI & KULL, INC.	SILVA PARK IMPROVEME	151-477-000-707-125	43574	10/02/2014	**500.00**
GIULIANI & KULL, INC.	SILVA PARK IMPROVEME	101-412-000-702-035	43574		**750.00**
				Vendor Total:	**1,250.00**
GRAINGER	BUILDING MAINTENANCE	106-424-000-706-029	43575	10/02/2014	**275.14**
GRAINGER	BUILDING MAINTENANCE	106-424-000-703-025			**195.77**
				Vendor Total:	**470.91**
LAURA GRAYBILL	NOTARY FILING OF OATH	101-412-000-706-036	43576	10/02/2014	**24.00**
				Vendor Total:	**24.00**

WARRANT REGISTER

Date: 10/02/2014

City of Riverbank

Vendor Name	Invoice Description	GL Number	Check No.	Check Date	Check Amount
GROENIGER #1423	EQUIPMENT MAINTENAN(	114-433-000-702-030	43577	10/02/2014	**81.88**
				Vendor Total:	**81.88**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	175-590-000-706-029	43578	10/02/2014	**2,650.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	173-590-000-706-029	43578		**1,075.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	177-590-000-706-029	43578		**200.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	178-590-000-706-029	43578		**50.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	101-413-000-706-029	43578		**625.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	179-590-000-702-032	43578		**50.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	101-413-000-702-032	43578		**275.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	172-590-000-706-029	43578		**425.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	171-590-000-706-029	43578		**300.00**
GROVER LANDSCAPE SERVICES,	LANDSCAPE MAINTENAN(	220-590-000-706-029	43578		**11,193.60**
				Vendor Total:	**16,843.60**
HAJOCA CORPORATION	BUILDING MAINTENANCE	106-424-000-706-029	43579	10/02/2014	**304.52**
				Vendor Total:	**304.52**
HOME DEPOT CREDIT SERVICES	BUILDING MAINTENANCE	102-418-000-706-029	43580	10/02/2014	**18.94**
HOME DEPOT CREDIT SERVICES	BUILDING MAINTENANCE	102-418-000-703-028	43580		**53.72**
				Vendor Total:	**72.66**
HOWK SYSTEMS	SCADA MAINTENANCE	114-433-000-702-032	43581	10/02/2014	**1,995.00**
HOWK SYSTEMS	SCADA MAINTENANCE	114-433-000-702-030	43581		**177.99**
				Vendor Total:	**2,172.99**
HUB INTERNATIONAL INSURANCE	RENTAL INSURANCE	118-441-000-706-035	43582	10/02/2014	**148.68**
				Vendor Total:	**148.68**
PATRICIA HUGHES	PLANNING COMMISSION I	101-405-000-701-005	43583	10/02/2014	**100.00**
				Vendor Total:	**100.00**
ANTHONY D. MCKINNEY	PLANNING COMMISSION I	101-405-000-701-005	43584	10/02/2014	**100.00**
				Vendor Total:	**100.00**
JESUS MOLINA	REFUND OF DOG LICENSI	101-000-000-450-010	43585	10/02/2014	**50.00**
				Vendor Total:	**50.00**
N & S TRACTOR	STX TRACTOR REPAIR	108-427-000-707-003	43586	10/02/2014	**32,749.42**
				Vendor Total:	**32,749.42**
CARLOS NAVARRO	DEPOSIT REFUND	118-000-000-200-150	43587	10/02/2014	**200.00**
				Vendor Total:	**200.00**
PACIFIC GAS & ELECTRIC	UTILITIES - LRA	102-418-000-704-021	43588	10/02/2014	**3.24**
PACIFIC GAS & ELECTRIC	UTILITIES - LRA	101-407-000-704-021	43588		**1.23**
PACIFIC GAS & ELECTRIC	UTILITIES - LRA	118-441-000-704-021	43588		**2.14**
PACIFIC GAS & ELECTRIC	UTILITIES - LRA	101-409-000-704-021	43588		**933.39**
PACIFIC GAS & ELECTRIC	UTILITIES - LRA	119-442-000-704-021	43588		**113.67**
PACIFIC GAS & ELECTRIC	UTILITIES - LRA	197-439-000-704-021	43588		**8.66**
				Vendor Total:	**1,062.33**
PACIFIC PLAN REVIEW	INSPECTIONS	101-405-000-702-032	43589	10/02/2014	**170.00**
				Vendor Total:	**170.00**
PLAY IT AGAIN SPORTS	RECREATIONAL SUPPLIE!	134-459-000-703-027	43590	10/02/2014	**347.43**
				Vendor Total:	**347.43**
JESSE RIOS	DEPOSIT REFUND	118-000-000-200-150	43591	10/02/2014	**276.00**
				Vendor Total:	**276.00**
SAFE T LITE	OFFICE SUPPLIES	102-418-000-703-062	43592	10/02/2014	**1,430.44**
SAFE T LITE	OFFICE SUPPLIES	101-414-000-706-029	43592		**183.67**
SAFE T LITE	OFFICE SUPPLIES	119-442-000-705-040	43592		**18.69**
SAFE T LITE	OFFICE SUPPLIES	106-423-000-706-050	43592		**8.38**
SAFE T LITE	OFFICE SUPPLIES	114-433-000-706-050	43592		**8.37**
				Vendor Total:	**1,649.55**
SNIDER AND ASSOCIATES	AGENDA PLANNING	101-401-000-702-032	43593	10/02/2014	**2,553.60**
				Vendor Total:	**2,553.60**

WARRANT REGISTER

Date: 10/02/2014

City of Riverbank

Vendor Name	Invoice Description	GL Number	Check No.	Check Date	Check Amount	
SNIDER EDUCATION AND	GRAPHIC RECORDING	101-401-000-702-032	43594	10/02/2014	**1,300.00**	
				Vendor Total:	**1,300.00**	
SPOK INC.	STAND-BY PAGER	114-433-000-706-026	43595	10/02/2014	**22.79**	
				Vendor Total:	**22.79**	
JOAN STEWART	PLANNING COMMISSION I	101-405-000-701-005	43596	10/02/2014	**100.00**	
				Vendor Total:	**100.00**	
STRAND ACE HARDWARE INC.	BUILDING MAINTENANCE	106-424-000-706-029	43597	10/02/2014	**649.39**	
				Vendor Total:	**649.39**	
THE LINCOLN NATIONAL LIFE	LIFE INSURANCE	201-000-000-200-086	43598	10/02/2014	**432.88**	
				Vendor Total:	**432.88**	
DAISY E. TORRES	BALLET FOLKLORICO INS	118-441-000-703-030	43599	10/02/2014	**427.00**	
				Vendor Total:	**427.00**	
UNION BANK	REVENUE BONDS	156-555-000-706-061	43600	10/02/2014	**2,136.78**	
UNION BANK	REVENUE BONDS	170-555-000-706-061	43600		**1,038.22**	
				Vendor Total:	**3,175.00**	
UNITED STATES POST OFFICE	POSTAGE FOR LATE NOT	114-433-000-703-024	43556	10/02/2014	**220.07**	H
UNITED STATES POST OFFICE	POSTAGE FOR LATE NOT	101-403-000-703-024	43556		**220.07**	
UNITED STATES POST OFFICE	POSTAGE FOR LATE NOT	106-423-00-703-024	43556		**220.08**	
				Vendor Total:	**660.22**	
USC FOUNDATION FOR CROSS	MEMBERSHIP RENEWAL	114-433-000-706-036	43601	10/02/2014	**300.00**	
				Vendor Total:	**300.00**	
VISION SERVICE PLAN	VISION PREMIUM	201-000-000-200-084	43602	10/02/2014	**822.48**	
				Vendor Total:	**822.48**	
				Grand Total:	**107,630.19**	
				Less Credit Memos:	**-31.31**	
Total Invoices:	**71**			Net Total:	**107,598.88**	
				Less Hand Check Total:	**660.22**	
				Outstanding Invoice Total :	**106,938.66**	