TOWN OF ELIZABETH

BOARD OF TRUSTEES REGULAR MEETING
Tuesday, April 8, 2025, at 7:00 PM
Town Hall, 151 S. Banner Street

Conferencing Access Information: This is viewing-only access.
https://us02web.zoom.us/j/86747395723?pwd=TiSZQRHChhMrqJbLPnaxhXUzY1zD7G.1
Join via phone at 1 669 900 9128 **Meeting ID:** 867 4739 5723
Meeting Passcode: 660243

CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

PUBLIC COMMENT

This is a meeting of the Board of Trustees held in public. We welcome you here and thank you for your time and concerns. When you are recognized, please stand and state your name and address to the Board. Your comments will be limited to 5 minutes. If many speakers are anticipated, the Mayor may (a) shorten the time limit; (b) ask speakers to limit themselves to new information and points of view not already covered by previous speakers; and/or (c) limit the total time of public comment to allow the Board to proceed to consider items set on the regular meeting agenda. The Board of Trustees may not respond to your comments during this meeting, but rather take your comments and suggestions under advisement and your questions will be directed to the appropriate person or department for follow-up. Personal attacks against Board Members, Administrative Staff, or Employees will not be recognized. If a response from Staff is requested, the Mayor will direct Staff to have a response at the next regularly scheduled Board meeting.

AGENDA CHANGES

CONSENT AGENDA

1. Minutes of the Regular Meeting of March 25, 2025

PRESENTATIONS

2. Eagle Scout Project - Mathew Webster

NEW BUSINESS

3. Discussion and possible action on Resolution 25R17, a Resolution authorizing the Mayor to execute an amended License Agreement between the Town of Elizabeth Colorado and Elizabeth Brewing Company For Year 2025 – Patrick Davidson

4. Discussion and possible action on authorization of the Elizabeth Brewing Company Festival Permit Application – Michelle Oeser
5. Todd Leopold 2025 Strategic Plan Report
6. Discussion on Water and Sewer Standards - Mike DeVol
7. Discussion and possible action on the reinstatement of Michael Hussey and Brandon Jeffress to the Main Street Board of Directors for a term of three years through April 30, 2028. – Alex Cramer

MANAGEMENT MONITORING REPORTS

8. Management Monitoring Reports

STUDENT LIAISON REPORT

9. Student Liaison Report – Landen Sherlock

BOARD OF TRUSTEES REPORTS

10. Board Reports

ADJOURNMENT

MEETING PROTOCOL AND STANDARDS OF CONDUCT

Public Participation

Public comment is encouraged and will be listed as an agenda item at every regular Board meeting.

Each individual wishing to be heard during the public comment period will be given up to three (3) minutes to make a comment.

The public comment period will not be used to make political endorsements or for political campaign purposes.

Questions from the Board will be for clarification purposes only. Public comment will not be used as a time for problem solving or reacting to comments made but, rather, for listening to the comments of citizens without taking any formal action.

The Board may direct the Town Administrator to provide information requested by a speaker during the public comment period.

Speakers are not allowed to make belligerent, accusatory, impertinent, slanderous, threatening, abusive, or disparaging comments.

The Mayor may elect to defer public comment on a specific issue that appears on the regular agenda until that specific item is addressed.

The Mayor may call for order when sidebar conversations occur in the audience. Those conversations are distracting from the Board addressing the topics at hand.

Members of the public who do not follow proper conduct after a warning in a public meeting may be barred from further participation at that meeting or removed from the Board Chambers pursuant to the Elizabeth Municipal Code and Colorado Revised Statutes.

BOARD OF TRUSTEES – RECORD OF PROCEEDINGS
MARCH 25, 2025

CALL TO ORDER
The Regular Meeting of the Board of Trustees of the Town of Elizabeth was called to order on Tuesday, March 25, 2025, at 7:00 p.m. by Mayor Angela Ternus.

ROLL CALL
Mayor Angela Ternus, Mayor Pro Tem Tracy Hutchins, and Trustees Loren Einspahr, Shannon Downs, Dave Conley, Michael Schroder, and Steve Gaither were present. There was a quorum to do business.

Also present were Town Administrator Patrick Davidson, Town Clerk Michelle Oeser, Public Works Director Mike DeVol, Assistant Public Works Director James McErnie, and Planner Project Manager Alex Cramer.

PLEDGE OF ALLEGIANCE
Mayor Ternus led the Board in the Pledge of Allegiance.

PUBLIC COMMENT
Bill Mock – Elbert County Resident.
Don Means – Elizabeth Business Owner, Elbert County Resident.

AGENDA CHANGES
No agenda changes from the Administration.

No Agenda changes from the Board.

Agenda set.

CONSENT AGENDA
1. Minutes of the Regular Meeting of March 11, 2025

Motion by Trustee Einspahr, seconded by Trustee Downs, to approve the consent agenda as presented.
The vote of those Trustees present was 7 in favor and 0 opposed. The motion passed unanimously.

PROCLAMATION
2. National Volunteer Month – Mayor Angela Ternus

Mayor Ternus read the National Volunteer Month Proclamation.

NEW BUSINESS

3. Discussion and possible action on the appointment of David Cox to the Main Street Board of Directors for a term through December 31, 2027

Ms. Cramer provided a Staff report.
Mr. Cox introduced himself to the Board.

Motion by Trustee Schroder, seconded by Trustee Conley, to approve the appointment of David Cox to the Main Street Board of Directors for a term through December 31, 2027.
The vote of those Trustees present was 7 in favor and 0 opposed. The motion passed unanimously.

4. Kevin Whitacre – Stampede Rodeo President

Mr. Whitacre provided the Board with Stampede Rodeo plans and updates.
Discussion followed.

5. Discussion and possible action on sponsorships of the 2025 Stampede Rodeo

Ms. Oeser provided a Staff report.

Motion by Mayor Pro Tem Hutchins, seconded by Trustee Schroder, to approve a sponsorship of $600 to the Elizabeth Stampede Rodeo.
The vote of those Trustees present was 7 in favor and 0 opposed. The motion passed unanimously.

6. Discussion and possible action on Resolution 25R16, a Resolution approving the Direct Service Agreement between the Town and the East Central Council of Local Governments regarding the Public Transit Services

Ms. Oeser provided a Staff report.

Motion by Mayor Pro Tem Hutchins, seconded by Trustee Downs, to approve Resolution 25R16, a Resolution approving the Direct Service Agreement between the Town and the East Central Council of Local Governments regarding the Public Transit Services.
The vote of those Trustees present was 7 in favor and 0 opposed. The motion passed unanimously.

MANAGEMENT REPORTS

- Town Administrator Patrick Davidson:
  - Ms. Cramer confirmed with CDOT that there are no permits necessary to move forward with the Mural on 86 and Main.
  - The Town of Kiowa is working with Kiowa Fire, and Elbert County to provide fireworks on the first day of the County Fair.
  - Discussion on moving forward with reductions in the Police Department Grant Fund application.
  - Trustee Einspahr asked about the cost to replace the parking lot without solar heating.

- Discussion on the possibility of having the Police Department building appraised.
- Mayor Ternus asked for clarification on changes to the Student Police Academy.

- Planning / Project Manager Alex Cramer:
  - Update on upcoming PROST Master Plan Workshop.

- Public Works Director Mike DeVol:
  - Discussion on the Town's Water and Sewer Standards.
  - Discussion on the Town's Street Standards.
  - Discussion on a letter received from CDPHE.
  - Mayor Ternus asked about the cleaning of the well mentioned in Mr. DeVol's Manager's report.
  - Discussion on sidewalk repairs.
  - Mayor Ternus inquired about determining the capacity of the waste treatment plant in the future.
  - Trustee Schroder asked about the new wellhouse open house.

- Town Clerk Michelle Oeser:
  - Ms. Oeser informed the Board of Ms. Malikowski's accomplishment in earning her NAGARA Certificate.
  - Ms. Oeser discussed Elizabeth Fire Department's involvement with the Senior Luncheons.
  - The Elizabeth Birthday Bash and Movie Night have been scheduled for Saturday September 20th.
  - Discussion on the Board's participation in Elizabash.
  - Mayor Ternus asked about proposed Election Legislation.
  - Discussion on the Flower Sale during Elizabash.
  - Discussion on the new planter boxes on Main Street.

STUDENT LIAISON REPORT

- Student Liaison Landen Sherlock
  - Students (seniors) were not too excited to be back after Spring Break.
  - The High School Track team likes the new coaches that have come this year.
  - The High School Girls Soccer team is 3 and 2.
  - The High School Boys Baseball team is 5 and 0.
  - Prom is scheduled for April 25th.

BOARD OF TRUSTEE REPORTS

- Ward 1: Tracy Hutchins:
  - Thanked Mike DeVol for providing her with a tour.

- Mayor Ternus:
  - Discussion on Ward options.
  - Discussion on the Board Retreat.
  - Mayor Ternus would like to set up a workshop to further discuss the Board retreat results.
  - Mr. DeVol reminded everyone of the date change for the Town Clean Up Day.

- Ward 3: Dave Conley:
  - Trustee Conley is working to meet with the Elizabeth School District Superintendent to discuss partnering with them.

MINUTES

10. Minutes of the Main Street Board of Directors Meeting of February 10, 2025.

ADJOURNMENT

Motion by Mayor Pro Tem Hutchins, seconded by Trustee Conley, to adjourn the meeting at 8:16 p.m. The vote of those Trustees present was unanimously in favor. Motion carried.

_____ _____

Town Clerk Michelle Oeser Mayor Angela Ternus

TO: Honorable Mayor, Mayor Pro Tem, and Board of Trustees
FROM: Patrick Davidson, Town Administrator
DATED: April 8, 2025
SUBJECT: Amendment to the Licensing Agreement with EBC for Friday Night Markets

BACKGROUND
For several years the Board of Trustees has entered into an agreement with the Elizabeth Brewing Company to host the "Friday Night Markets" at Running Creek Park. On September 24, 2024, the Board of Trustees approved the requisite license agreement for 2025, which encompasses a total of ten (10) Friday evenings through 2025.

For purposes of the liquor license involved for the event, it is a Special Event Permit, held in the name of the Town Administrator. Due to this licensing scheme, it substantially constrains the nature and types of vendors that may participate in the event; removes event control from EBC although they remain the lessee for the event space; and places liability on the Town Administrator for issues arising from the event.

Through discussions with the Town Attorney, EBC, and the Town Clerk, the use of a Festival Permit appears to provide solutions for these concerns. Under this scenario, The first event of the season will remain under the Town Administrator, and EBC will hold the Special Event Permit for a total of nine (9) Friday evenings, in compliance with Colorado Law. Consequently, all ten (10) evenings allow for alcohol beverages.

ANALYSIS
The proposed Amendment clearly identifies that the Town Administrator, on behalf of the Town, will hold a Special Event Permit for the first event of the summer and EBC will seek and obtain a Festival Permit for a total of nine (9) events during the summer of 2025, covering all ten (10) events.

STAFF RECOMMENDATION
Staff recommend the amendment be approved.

BUDGET CONSIDERATIONS
N/A

ATTACHMENTS
A Resolution Authorizing the Mayor to Execute and Amended License Agreement Between the Town of Elizabeth Colorado and Elizabeth Brewing Company for Year 2025.

AMENDED LICENSE AGREEMENT BETWEEN THE TOWN OF ELIZABETH COLORADO AND ELIZABETH BREWING COMPANY

THIS LICENSE was originally made and entered into on this 24th day of September 2024 and is otherwise amended and restated this _____ day of _____, 2025, by and between the TOWN OF ELIZABETH, Colorado whose address is 151 S. Banner Street, P.O. Box 159, Elizabeth, CO 80107 (the "Town") and THE ELIZABETH BREWING COMPANY, whose address is 239 South Main Street, Elizabeth, CO 80107 ("Licensee").

AGREEMENT

NOW, THERFORE, it is hereby agreed as follows.

1. LICENSED PROPERTY, TERM.

a. The property that is licensed for use and the term provided for in this license is commonly described as Running Creek Park, Elizabeth, Colorado ("Licensed Property"). The Licensed Property is for the use described herein and is subject to all easements and rights-of-way of record.

b. The term of this License shall commence on June 13, 2025, and shall continue each Friday through and including August 22, 2025, from 3:00 p.m. until 10:00 p.m.

2. COMPENSATION. Upon execution of this Agreement, the Town will tender a one-time payment to the Licensee to assist in meeting the contractual obligations further set forth herein. The total compensation due and owing by the Town to the Licensee is seventeen thousand dollars ($17,000.00). These funds are tendered to the Licensee to offset the booking of bands, to offset vendor fees, marketing, and assist in the management and oversight of the "Friday Night Market".

3. INSURANCE. Licensee shall obtain for itself, its agents, successors, assigns, lessees, licensees and agents, necessary and adequate workman's compensation insurance, personal injury insurance, and property damage insurance, with limits commensurate with the hazards and risks associated with the use of the Property Licensed, but in no event less than the liability limits established by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as now in effect or as hereinafter amended. Neither Licensee nor its agents, successors and assigns shall commence any construction, placement, operation or maintenance of the fixture or structure on the Property Licensed until it has obtained all insurance required under this section and shall have filed a certificate of insurance or a certified copy of the insurance policy with the Town. Each insurance policy shall list the Town as an additional named insured and shall contain a clause providing that coverage shall not be cancelled by the insurance company without thirty (30) days written notice to the Town of intention to cancel.

4. USE. Licensee covenants and agrees that it shall utilize the Property Licensed as follows:

a. Licensee shall provide live music each Friday during the term of the License to include

ten (10) regularly scheduled events. August 22, 2025, is reserved for a "make-up" event in the case that a regularly scheduled Friday Night Market is cancelled during the season.

b. Licensee shall use the Town's branding for the event and shall receive approval through Town of Elizabeth before releasing new event market materials.

c. Licensee shall provide an alcohol vendor on each Friday during the term of the License.

d. Licensee will use the Town's special event permit for the initial June 13, 2025, event. Licensee shall apply for, and make use of, a Festival Permit for the remaining Friday Night Markets in 2025. This process, for 2025, will ensure that appropriate licensing is in place for all ten (10) regularly scheduled events. In the event a "make-up" event is required, as detailed in Section 4(a), the Town shall provide the use of its special event permit for this specific date.

e. Licensee will be allowed to use Town's supplied power and will not be obligated to remit payment to Town for the use of the electric box during the market. Licensee maynot require payment to be remitted by vendors for electric hookup specifically. Food and other vendors who choose to make use of a portable generator shall be located away from the electrical hookups so as to minimize noise levels near the adjacent apartment building.

f. Licensee shall facilitate the inclusion of food, merchandise, and produce vendors from 5:00 p.m. until 9:00 p.m. on each Friday during the term of the License. Licensee shall be responsible for ensuring that any vendor has obtained a permit from the Town of Elizabeth. Under no circumstances may live animals be sold, gifted, or exchanged during such events.

g. The Town reserves the right to have one (1) booth space at each market as may be determined by the Town. The Town will coordinate with Licensee regarding the location of the booth space.

h. Licensee shall coordinate with vendors and bands to keep vehicle traffic to the designated areas as outlined on Exhibit B. Furthermore, Licensee shall be solely responsible to ensure that no unauthorized vehicle, golf cart, 4-wheeler or motorcycle shall be operated on the Licensed Property.

i. The Town will provide bandstand lighting and three (3) light poles in Running Creek Park. The Town anticipates increasing lighting during the effective dates of this license.

j. The Town will provide power directly to the bandstand.

k. The Town will provide seven (7) portable restrooms and shall incur the costs for the same.

l. The Town will provide seeding throughout Running Creek Park during the Farmers Market season.

m. The Town will provide a dumpster to be utilized during the Farmers Market season. Depending on soil conditions and weather, the dumpster shall be located on Running Creek Park or as reasonably close as may be practical.

n. Licensee, at the end of each Friday evening event shall ensure that Running Creek Park is reasonably free from waste, including but not limited to, food waste, wrappers, cups, bottles, and cigarette butts. In the event Town staff is required to perform excess clean-up after the event, the Town reserves the right to seek reasonable compensation for time spent in removing waste.

o. During each event, the Licensee shall specifically name one or more individuals to be directly responsible for management and oversight of the event. The name and cellular telephone number for the individual(s) shall be provided to the Elizabeth Police Department prior to the start of the event each evening. Furthermore, said individual(s) shall be reasonably identified through the use of a specific and distinct shirt, hat, or other garment, allowing for the ready identification of the Licensee's event manager in the event of an emergency.

p. Licensee shall be responsible for making use of TIPS trained individuals to check identifications and issue wrist bands for those over the age of twenty-one (21) years of age. Licensee shall also ensure that no outside alcoholic beverages are allowed within the event, or that alcoholic beverages sold at the event are not to leave Running Creek Park.

5. NOTICE OF NAME OF EVENT. Licensee, in entering into this Agreement, knows and acknowledges that the name of the Friday night event is known as the "Friday Night Market" and will advertise the same as such.

6. RE-ENTRY. Licensee covenants and agrees to permit the Town or its duly authorized representatives to enter upon the Property Licensed, at any reasonable hour of any Friday during the term hereof, for the purpose of inspecting the same, making surveys, showing the Property Licensed to prospective licensees and to do such other acts and things as it deems necessary for the protection of its interests therein.

7. NOTICE. Any notice required under this License shall be in writing and hand-delivered to the respective parties at the address hereinabove given. The Community Development Director shall be the representative of the Town to accept or give any approval, notice or the like provided hereunder. In the event Licensee should change the address hereinabovegiven during the term of this License, Licensee shall notify the Town in writing of such change of address:

The Town: The Town of Elizabeth
Attn: Elizabeth Town Administrator
151 S. Banner Street, P.O. Box 151
Elizabeth, CO 80107

Licensee: The Elizabeth Brewing Company
239 S. Main Street

Elizabeth, CO 80107

8. NO COVENANT OF TITLE OR QUIET POSSESSION. The rights granted herein are without covenant of title or warranty of quiet possession of the Property Licensed.

9. SUCCESSORS AND ASSIGNS. This License shall insure to the benefit of, and be binding upon, the respective legal representatives, heirs, successors and assigns of the parties.

10. ASSIGNMENT OR SUB-LEASE. Licensee covenants and agrees not to assign this License or to sublet any part of the Property Licensed without first obtaining the written consent of the Town.

11. PROPERTY LICENSED TAKEN "AS IS." Licensee understands and agrees that the Property Licensed is licensed "as is." The Town makes no warranty, written or implied, that the Property Licensed is fit for any purpose or that it meets any federal, state, county or local law, ordinance or regulation applying to the Property Licensed.

12. LIABILITY AND INDEMNIFICATION. The Town shall not be liable for any loss, injury, death or damage to any person or personal property which may arise from the use or condition of the Property Licensed including, but not limited to, loss, injury, death, or damage resulting from ice, water, rain, snow, gas, electrical wires, or fire, during the term of the License or any renewal thereof. Licensee hereby expressly agrees to defend, indemnify and hold harmless the Town, its officers, agents, employees and insurers against any liability, loss, damage, demand, action, cause of action or expense of whatever nature (including court costs and attorney fees) which may result from any loss, injury, death or damage allegedly sustained by any person, firm, corporation or other entity which arises out of or is caused by reason of Licensee's use of the Property Licensed or Licensee's failure to fulfill the terms and conditions of the License.

13. RESERVATION FOR BOARD USE. This License is made under and conformable to the provisions of all Town of Elizabeth regulations insofar as applicable. Said provisions are incorporated herein and made part hereof by this reference and shall supersede any apparently conflicting provisions otherwise contained in the License. The Town reserves the right to make full use of the Property Licensed as may be necessary or convenient in the operation of the public streets, drainage infrastructure, or drainageways under the control of the Town and theTown retains all rights to operate, maintain, install, repair, remove or relocate any of its facilities located within the Property Licensed at any time and in such a manner as it deems necessary.

14. HAZARDOUS WEATHER / STORM EVENT. The Licensee acknowledges that Running Creek Park is an unimproved park event facility, which may be impacted by rains, flooding, or related storm events. The Town of Elizabeth will take all steps reasonably necessary to ensure the Licensed Property is available for the Friday Night Market. However, the Town also reserves the right to cancel the event on the Licensed Property if, in the Town's sole determination, it finds that holding of any Friday Night Market on the Licensed Property may result in substantial damage to the park lands. In such circumstances, the Town of Elizabeth will provide notice to the Licensee as soon as possible and will work in good faith to obtain an

alternative location in a timely manner.

15. TERMINATION. This License Agreement may be terminated by the Town at any time upon thirty (30) days written notice to Licensee. If default shall be made in any of the covenants or agreements herein contained to be kept by Licensee, it shall be lawful for the Town to enter into the said Property Licensed, or any part thereof, either with or without process of law, to terminate the interest of Licensee or of any person or persons occupying the same, and to expel, remove or put out such person or persons, using such force as may be necessary in so doing, without being liable to prosecution or to damages therefor, and the said Property Licensed again to repossess and enjoy as in the first and former estate of the Town. If at any time the License shall be terminated as aforesaid, or by any other means, Licensee agrees to surrender and deliver up said Property Licensed peaceably to the Town immediately upon the termination, and if Licensee shall remain in possession after termination, Licensee shall be deemed guilty of a forcible detainer on said property Licensed, and waiving all notice, shall be subject to eviction and removal, forcibly or otherwise, with or without process of law.

16. VENUE. For the resolution of any dispute arising hereunder, venue shall be in the courts of Elbert County, State of Colorado.

IN WITNESS WHEREOF, the parties hereto each herewith subscribe the same in triplicate.

TOWN OF ELIZABETH, COLORADO

_____
Angela Ternus, Mayor

ATTEST

_____
Michelle Oeser, Town Clerk

_____
Owner/Representative,
Elizabeth Brewing Company

RESOLUTION 25R17

A RESOLUTION AUTHORIZING THE MAYOR TO EXECUTE AN AMENDED LICENSE AGREEMENT BETWEEN THE TOWN OF ELIZABETH COLORADO AND ELIZABETH BREWING COMPANY FOR YEAR 2025

WHEREAS, On September 24, 2024, the Town of Elizabeth previously entered into a License Agreement with Elizabeth Brewing Company regarding the "Friday Night Market" to be held at Running Creek Park; and

WHEREAS, the parties have sought to amend the agreement to allow the Elizabeth Brewing Company to make use of a Festival Permit for a total of nine (9) events in 2025, with the Town of Elizabeth holding a Special Event Permit for one (1) event in 2025.

NOW THEREFORE BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ELIZABETH, COLORADO AS FOLLOWS:

SECTION 1. The Board of Trustees hereby authorizes the Mayor of the Town of Elizabeth to execute an Amended License Agreement, attached hereto as **Exhibit A**, between the Town of Elizabeth and Elizabeth Brewing Company for 2025.

PASSED, APPROVED, and ADOPTED this 8th day of April 2025, by the Board of Trustees of the Town of Elizabeth, Colorado, on first and final reading, by a vote of _____ for and _____ against.

_____
Angela Ternus, Mayor

ATTEST:

_____
Michelle M. Oeser, Town Clerk

AMENDED LICENSE AGREEMENT BETWEEN THE TOWN OF ELIZABETH COLORADO AND ELIZABETH BREWING COMPANY

THIS LICENSE was originally made and entered into on this 24th day of September 2024 and is otherwise amended and restated this _____ day of _____, 2025, by and between the TOWN OF ELIZABETH, Colorado whose address is 151 S. Banner Street, P.O. Box 159, Elizabeth, CO 80107 (the "Town") and THE ELIZABETH BREWING COMPANY, whose address is 239 South Main Street, Elizabeth, CO 80107 ("Licensee").

AGREEMENT

NOW, THERFORE, it is hereby agreed as follows.

1. LICENSED PROPERTY, TERM.

a. The property that is licensed for use and the term provided for in this license is commonly described as Running Creek Park, Elizabeth, Colorado ("Licensed Property"). The Licensed Property is for the use described herein and is subject to all easements and rights-of-way of record.

b. The term of this License shall commence on June 13, 2025, and shall continue each Friday through and including August 22, 2025, from 3:00 p.m. until 10:00 p.m.

2. COMPENSATION. Upon execution of this Agreement, the Town will tender a one-time payment to the Licensee to assist in meeting the contractual obligations further set forth herein. The total compensation due and owing by the Town to the Licensee is seventeen thousand dollars ($17,000.00). These funds are tendered to the Licensee to offset the booking of bands, to offset vendor fees, marketing, and assist in the management and oversight of the “Friday Night Market”.

3. INSURANCE. Licensee shall obtain for itself, its agents, successors, assigns, lessees, licensees and agents, necessary and adequate workman’s compensation insurance, personal injury insurance, and property damage insurance, with limits commensurate with the hazards and risks associated with the use of the Property Licensed, but in no event less than the liability limits established by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as now in effect or as hereinafter amended. Neither Licensee nor its agents, successors and assigns shall commence any construction, placement, operation or maintenance of the fixture or structure on the Property Licensed until it has obtained all insurance required under this section and shall have filed a certificate of insurance or a certified copy of the insurance policy with the Town. Each insurance policy shall list the Town as an additional named insured and shall contain a clause providing that coverage shall not be cancelled by the insurance company without thirty (30) days written notice to the Town of intention to cancel.

4. USE. Licensee covenants and agrees that it shall utilize the Property Licensed as follows:

a. Licensee shall provide live music each Friday during the term of the License to include

ten (10) regularly scheduled events. August 22, 2025, is reserved for a "make-up" event in the case that a regularly scheduled Friday Night Market is cancelled during the season.

b. Licensee shall use the Town's branding for the event and shall receive approval through Town of Elizabeth before releasing new event market materials.

c. Licensee shall provide an alcohol vendor on each Friday during the term of the License.

d. Licensee will use the Town's special event permit for the initial June 13, 2025, event. Licensee shall apply for, and make use of, a Festival Permit for the remaining Friday Night Markets in 2025. This process, for 2025, will ensure that appropriate licensing is in place for all ten (10) regularly scheduled events. In the event a "make-up" event is required, as detailed in Section 4(a), the Town shall provide the use of its special event permit for this specific date.

e. Licensee will be allowed to use Town's supplied power and will not be obligated to remit payment to Town for the use of the electric box during the market. Licensee maynot require payment to be remitted by vendors for electric hookup specifically. Food and other vendors who choose to make use of a portable generator shall be located away from the electrical hookups so as to minimize noise levels near the adjacent apartment building.

f. Licensee shall facilitate the inclusion of food, merchandise, and produce vendors from 5:00 p.m. until 9:00 p.m. on each Friday during the term of the License. Licensee shall be responsible for ensuring that any vendor has obtained a permit from the Town of Elizabeth. Under no circumstances may live animals be sold, gifted, or exchanged during such events.

g. The Town reserves the right to have one (1) booth space at each market as may be determined by the Town. The Town will coordinate with Licensee regarding the location of the booth space.

h. Licensee shall coordinate with vendors and bands to keep vehicle traffic to the designated areas as outlined on Exhibit B. Furthermore, Licensee shall be solely responsible to ensure that no unauthorized vehicle, golf cart, 4-wheeler or motorcycle shall be operated on the Licensed Property.

i. The Town will provide bandstand lighting and three (3) light poles in Running Creek Park. The Town anticipates increasing lighting during the effective dates of this license.

j. The Town will provide power directly to the bandstand.

k. The Town will provide seven (7) portable restrooms and shall incur the costs for the same.

l. The Town will provide seeding throughout Running Creek Park during the Farmers Market season.

m. The Town will provide a dumpster to be utilized during the Farmers Market season. Depending on soil conditions and weather, the dumpster shall be located on Running Creek Park or as reasonably close as may be practical.

n. Licensee, at the end of each Friday evening event shall ensure that Running Creek Park is reasonably free from waste, including but not limited to, food waste, wrappers, cups, bottles, and cigarette butts. In the event Town staff is required to perform excess clean-up after the event, the Town reserves the right to seek reasonable compensation for time spent in removing waste.

o. During each event, the Licensee shall specifically name one or more individuals to be directly responsible for management and oversight of the event. The name and cellular telephone number for the individual(s) shall be provided to the Elizabeth Police Department prior to the start of the event each evening. Furthermore, said individual(s) shall be reasonably identified through the use of a specific and distinct shirt, hat, or other garment, allowing for the ready identification of the Licensee's event manager in the event of an emergency.

p. Licensee shall be responsible for making use of TIPS trained individuals to check identifications and issue wrist bands for those over the age of twenty-one (21) years of age. Licensee shall also ensure that no outside alcoholic beverages are allowed within the event, or that alcoholic beverages sold at the event are not to leave Running Creek Park.

5. NOTICE OF NAME OF EVENT. Licensee, in entering into this Agreement, knows and acknowledges that the name of the Friday night event is known as the "Friday Night Market" and will advertise the same as such.

6. RE-ENTRY. Licensee covenants and agrees to permit the Town or its duly authorized representatives to enter upon the Property Licensed, at any reasonable hour of any Friday during the term hereof, for the purpose of inspecting the same, making surveys, showing the Property Licensed to prospective licensees and to do such other acts and things as it deems necessary for the protection of its interests therein.

7. NOTICE. Any notice required under this License shall be in writing and hand-delivered to the respective parties at the address hereinabove given. The Community Development Director shall be the representative of the Town to accept or give any approval, notice or the like provided hereunder. In the event Licensee should change the address hereinabovegiven during the term of this License, Licensee shall notify the Town in writing of such change of address:

The Town: The Town of Elizabeth
Attn: Elizabeth Town Administrator
151 S. Banner Street, P.O. Box 151
Elizabeth, CO 80107

Licensee: The Elizabeth Brewing Company
239 S. Main Street

Elizabeth, CO 80107

8. NO COVENANT OF TITLE OR QUIET POSSESSION. The rights granted herein are without covenant of title or warranty of quiet possession of the Property Licensed.

9. SUCCESSORS AND ASSIGNS. This License shall insure to the benefit of, and be binding upon, the respective legal representatives, heirs, successors and assigns of the parties.

10. ASSIGNMENT OR SUB-LEASE. Licensee covenants and agrees not to assign this License or to sublet any part of the Property Licensed without first obtaining the written consent of the Town.

11. PROPERTY LICENSED TAKEN "AS IS." Licensee understands and agrees that the Property Licensed is licensed "as is." The Town makes no warranty, written or implied, that the Property Licensed is fit for any purpose or that it meets any federal, state, county or local law, ordinance or regulation applying to the Property Licensed.

12. LIABILITY AND INDEMNIFICATION. The Town shall not be liable for any loss, injury, death or damage to any person or personal property which may arise from the use or condition of the Property Licensed including, but not limited to, loss, injury, death, or damage resulting from ice, water, rain, snow, gas, electrical wires, or fire, during the term of the License or any renewal thereof. Licensee hereby expressly agrees to defend, indemnify and hold harmless the Town, its officers, agents, employees and insurers against any liability, loss, damage, demand, action, cause of action or expense of whatever nature (including court costs and attorney fees) which may result from any loss, injury, death or damage allegedly sustained by any person, firm, corporation or other entity which arises out of or is caused by reason of Licensee's use of the Property Licensed or Licensee's failure to fulfill the terms and conditions of the License.

13. RESERVATION FOR BOARD USE. This License is made under and conformable to the provisions of all Town of Elizabeth regulations insofar as applicable. Said provisions are incorporated herein and made part hereof by this reference and shall supersede any apparently conflicting provisions otherwise contained in the License. The Town reserves the right to make full use of the Property Licensed as may be necessary or convenient in the operation of the public streets, drainage infrastructure, or drainageways under the control of the Town and theTown retains all rights to operate, maintain, install, repair, remove or relocate any of its facilities located within the Property Licensed at any time and in such a manner as it deems necessary.

14. HAZARDOUS WEATHER / STORM EVENT. The Licensee acknowledges that Running Creek Park is an unimproved park event facility, which may be impacted by rains, flooding, or related storm events. The Town of Elizabeth will take all steps reasonably necessary to ensure the Licensed Property is available for the Friday Night Market. However, the Town also reserves the right to cancel the event on the Licensed Property if, in the Town's sole determination, it finds that holding of any Friday Night Market on the Licensed Property may result in substantial damage to the park lands. In such circumstances, the Town of Elizabeth will provide notice to the Licensee as soon as possible and will work in good faith to obtain an

alternative location in a timely manner.

15. TERMINATION. This License Agreement may be terminated by the Town at any time upon thirty (30) days written notice to Licensee. If default shall be made in any of the covenants or agreements herein contained to be kept by Licensee, it shall be lawful for the Town to enter into the said Property Licensed, or any part thereof, either with or without process of law, to terminate the interest of Licensee or of any person or persons occupying the same, and to expel, remove or put out such person or persons, using such force as may be necessary in so doing, without being liable to prosecution or to damages therefor, and the said Property Licensed again to repossess and enjoy as in the first and former estate of the Town. If at any time the License shall be terminated as aforesaid, or by any other means, Licensee agrees to surrender and deliver up said Property Licensed peaceably to the Town immediately upon the termination, and if Licensee shall remain in possession after termination, Licensee shall be deemed guilty of a forcible detainer on said property Licensed, and waiving all notice, shall be subject to eviction and removal, forcibly or otherwise, with or without process of law.

16. VENUE. For the resolution of any dispute arising hereunder, venue shall be in the courts of Elbert County, State of Colorado.

IN WITNESS WHEREOF, the parties hereto each herewith subscribe the same in triplicate.

TOWN OF ELIZABETH, COLORADO

_____
Angela Ternus, Mayor

ATTEST

_____
Michelle Oeser, Town Clerk

_____
Owner/Representative,
Elizabeth Brewing Company

TO: Honorable Mayor, Mayor Pro Tem, and Board of Trustees
FROM: Michelle Oeser Town Clerk
DATE: April 8, 2025
SUBJECT: Festival Permit

SUMMARY

On April 1, 2025, the Elizabeth Brewing Company (EBC) provided the clerk with 9 Festival Permit Applications and a Security Control plan. A Festival Permit is overseen by the State of Colorado Liquor Enforcement Division. The Town Board is signing off on the permit stating that they agree with the Security and Control plan as well as recognizing that they have approved the security plan, and have examined the premises, know of the character of the Elizabeth Brewing Company.

Obtaining a Festival Permit will give EBC the versatility to provide other alcohol vendors if they choose to. A Festival Permit removes the liability and responsibility of the town carrying a special event permit. This is a positive move in growing and adjusting the Friday Night Markets for now and in the future.

Tony Briggs is here tonight to answer any questions you may have on the Festival Permit or the Security Control Plan.

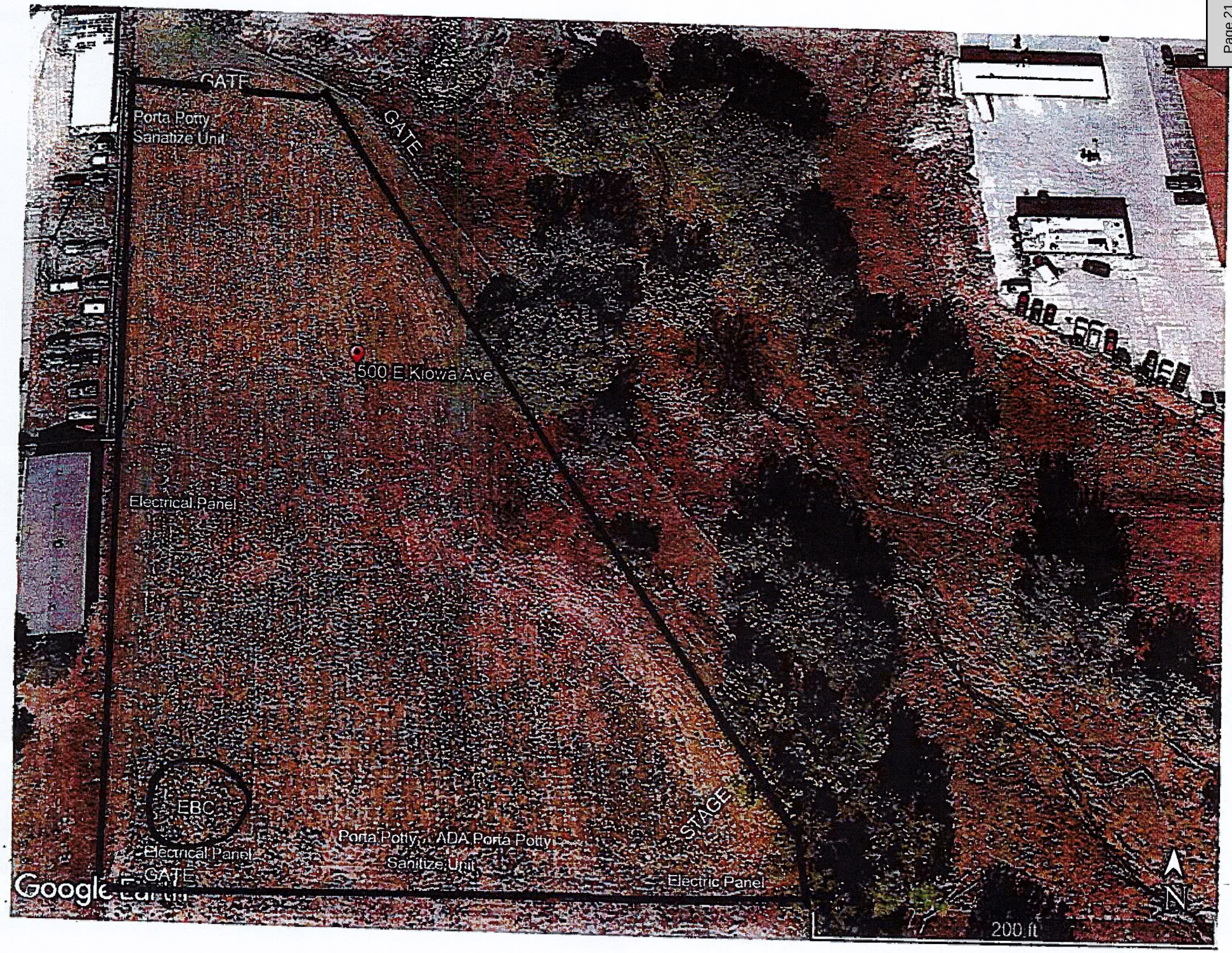
Staff would like to discuss a Special Event Liquor License Application that will be on the April 22, 2025, agenda while Tony Briggs is in attendance.

STAFF RECOMMENDATION

Staff recommend approval of the Elizabeth Brewing Company Festival Permit Applications.

ATTACHMENTS(S)

Licensed area map
Security Control plan
Festival Permit Applications


GATE
Porta Potty
Sanatize Unit
GATE
500 E Kiowa Ave
Electrical Panel
EBC
Electrical Panel
GATE
Porta Potty
ADA Porta Potty
Sanitize Unit
STAGE
Electric Panel
N
200 ft
Google Earth

Security and Control Plan

For Alcohol Beverage Service at The Elizabeth Friday Night Market

Prepared for: The Elizabeth Brewing Company

Date: April 01, 2025

This Security and Control Plan is provided to and agreed upon by The Elizabeth Brewing Company, the participating licensee for The Elizabeth Friday Night Market held from June 20th through August 15th, 2025, at Running Creek Park, 500 E Kiowa Ave, Elizabeth, CO 80107. The plan outlines the procedures and measures to ensure the safe, legal, and responsible service, storage, and management of alcohol beverages during the event.

1. Hours of Service of Alcohol Beverages

Alcohol beverages will be served only during the following designated hours:

- **Start Time:** 4:00 PM
- **End Time:** 9:00 PM
  Service will cease promptly at 9:00 PM each event night (Fridays from June 20th through August 15th, 2025), with no exceptions, and all alcohol sales and consumption will comply with applicable local and state laws.

2. Entries and Exits

- **Controlled Access Points:** The market will have two pedestrian entrances located at the Northeast corner and Southwest corner of Running Creek Park. Each entrance will be staffed by TIPS (Training for Intervention Procedures)-trained individuals who will:
    - Check identification to verify attendees are 21+ for alcohol consumption.
    - Issue wristbands to identify individuals of legal drinking age.
    - Inspect coolers, bags, strollers, and similar items for prohibited items, including outside alcohol.

- **Exit Monitoring:** TIPS-trained staff will monitor exits to prevent alcohol from being removed from the premises and to ensure the safety of departing attendees.

3. Alcohol Storage and Security

- **Setup Phase:** Alcohol will be transported to Running Creek Park by 2:00 PM on each event day in a lockable trailer (or similar vehicle) and remain under the supervision of event staff. The trailer will be secured with padlocks, and only event staff will have access to the alcohol.
- **During the Market:** Alcohol will be stored in locked coolers or behind a staffed bar area and dispensed only by TIPS-certified event staff. Any excess inventory will remain in the lockable trailer, inaccessible to the public, and under staff supervision.
- **Post-Market:** After each market night concludes, all remaining alcohol will be inventoried, secured in the lockable trailer, and removed from Running Creek Park no later than 11:59 PM. It will be returned to its point of origin for secure storage by The Elizabeth Brewing Company.

4. Handling Visibly Intoxicated Parties

- **Training:** All event staff dispensing alcohol and monitoring the licensed area will be TIPS-certified and trained to recognize signs of visible intoxication (e.g., slurred speech, unsteady movement, aggressive behavior).
- **Procedure:**
    - If an individual appears visibly intoxicated, service will be immediately denied.
    - Staff will notify security personnel (trained volunteers or Elizabeth Police Department members), who will escort the individual to a designated safe area away from alcohol service zones.
    - If necessary, transportation (e.g., taxi, rideshare) will be arranged, or law enforcement will be contacted if the individual poses a risk to themselves or others.
- **Documentation:** Incidents involving intoxicated individuals will be logged with details including time, description, and actions taken.

5. Preventing Underage Consumption and Purchases

- **Age Verification:**

- All individuals purchasing or consuming alcohol will present valid, government-issued photo identification at the point of sale or entry.
- Wristbands will be issued only to those 21 and older by TIPS-trained staff, and alcohol service will be restricted to individuals displaying these wristbands.

- **Staff Oversight:** TIPS-certified event staff and security (including trained volunteers and at least two members of the Elizabeth Police Department) will monitor the event to prevent alcohol from being passed to underage persons.
- **Signage:** Clear signage will be posted at all alcohol service areas stating: "No alcohol sales or service to individuals under 21. ID required."
- **Enforcement:** Any person under 21 found attempting to purchase or consume alcohol will be escorted from the alcohol service area by security personnel, and their guardian (if applicable) or law enforcement may be notified. Vendors caught serving minors will face immediate suspension of alcohol service privileges.

6. Security Personnel

- **Staffing:** Security on site will include trained volunteers and a minimum of two members of the Elizabeth Police Department. These individuals will assist with monitoring entrances, exits, and the licensed area to ensure compliance with this plan and local regulations.

Agreement:
By signing below, The Elizabeth Brewing Company acknowledges receipt of this Security and Control Plan and agrees to comply with its terms and conditions to ensure a safe and lawful event from June 20th through August 15th, 2025, at Running Creek Park, 500 E Kiowa Ave, Elizabeth, CO 80107.

- Licensee Name: The Elizabeth Brewing Company
- Representative Name: _____
- Title: _____
- Signature: _____ Date: _____

Certification by Local Licensing Authority:
The Town of Elizabeth, as the local licensing authority, has reviewed and approved this Security and Control Plan for The Elizabeth Friday Night Market.

- Representative Name: _____
- Title: _____
- Signature: _____ Date: _____

Note: This plan is subject to final approval by The Town of Elizabeth and may be amended as required.

DR 8420 (07/22/24)
COLORADO DEPARTMENT OF REVENUE
Liquor Enforcement Division
PO BOX 17087
Denver CO 80217-0087
(303) 205-2300

Festival Permit Application

This permit is only available for the following license types:

- Beer and Wine license;
- Hotel and Restaurant license;
- Tavern license;
- Brew Pub license;
- Vintner's Restaurant license;
- Distillery Pub license;
- Entertainment License;
- Lodging License;
- Manufacturer's license (beer, wine, or spirits);
- Wholesaler's license; or
- Limited Wineries

☒ Initial Application – $50.00 Processing Fee

☐ Subsequent Festival Application - $50.00 per festival (9 total allowed per **calendar year**, per permittee)

Note - An authorized participating licensee can participate in up to 52 festivals in a calendar year.

Legal Business Name
The Elizabeth Brewing Company

Trade Name/DBA Name
Elizabeth Brewing Company

License Number	License Type	Sales Tax Number
03-10388; 03-10389	Manufacturer (brewery); Sales Room M	34315893

Business Phone Number	Email Address
720-335-6011	elizabethbrewingcompany@gmail.com

Premises Address
239 S. Main Street

City	State	ZIP Code
Elizabeth	CO	80107

Mailing Address
PO Box 1683

City	State	ZIP Code
Elizabeth	CO	80107

Festival Location
500 E Kiowa Ave, Elizabeth, CO 80107

Date(s) of Festival
June 20, 2025

What are the hours of alcohol service during each festival date(s)? (1 festival can be no more than 72 hours)
4:00 PM to 9:00 PM

Attach a copy of Premises Use Authorization Letter or Lease

Control Plan Attestation

I affirm that I have attached a Security and Control plan that has been circulated and agreed upon by all participating licensees.

Applicant's Signature

Date (MM/DD/YY) 04/01/25

Licensing Authority Signature

○ Object ○ Do Not Object

Local Licensing Authority Contact Name

Phone Number

List of participating businesses (Attach a separate sheet if needed)

Name
The Elizabeth Brewing Company

License Number
03-10388; 03-10389

License Type
Manufacturer (brewery); Sales Room Malt

Person Responsible
Anthony Briggs

Phone Number
719-659-9800

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Oath Of Applicant

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer and Wine Code and Colorado Liquor Rules which affect my license or permit.

Signature

Title: CEO

Date (MM/DD/YY): 04/01/25

Report And Approval of Local Licensing Authority (City/County)

The foregoing application has been examined and the premises, business conducted and character of the applicant is satisfactory.

Local Licensing Authority (City or County)

Date Notice was provided to Local Licensing Authority

Signature

Title

Date (MM/DD/YY)

During this festival alcohol will only be sold by the participating alcohol beverage holders (Check All that apply)

☒ In open containers for on-premises consumption ☐ In sealed containers for off-premises consumption

Notice To Local Licensing Authority

This application for a festival permit will be granted to the above named applicant unless any of the below listed conditions apply. If any of these conditions apply please contact the state licensing authority immediately.

☐ The applicant has not provided you with at least 30 calendar days notice of the proposed festival

☐ Past festivals have had a history of violation of the Colorado Liquor Code or Colorado Liquor Rules or violations of local ordinances

☐ If granted, this permit would result in violations of the Colorado Liquor Code or Colorado Liquor Rules, or the laws of the local government

If the Local Licensing Authority objects, provide a separate page with details of the objection.

Report of State Licensing Authority

Signature

Title

Date (MM/DD/YY)

DR 8420 (07/22/24)
COLORADO DEPARTMENT OF REVENUE
Liquor Enforcement Division
PO BOX 17087
Denver CO 80217-0087
(303) 205-2300

Festival Permit Application

This permit is only available for the following license types:

- Beer and Wine license;
- Hotel and Restaurant license;
- Tavern license;
- Brew Pub license;
- Vintner's Restaurant license;
- Distillery Pub license;
- Entertainment License;
- Lodging License;
- Manufacturer's license (beer, wine, or spirits);
- Wholesaler's license; or
- Limited Wineries

☐ Initial Application – $50.00 Processing Fee

☒ Subsequent Festival Application - $50.00 per festival (9 total allowed per **calendar year**, per permittee)

Note - An authorized participating licensee can participate in up to 52 festivals in a calendar year.

Legal Business Name
The Elizabeth Brewing Company

Trade Name/DBA Name
Elizabeth Brewing Company

License Number	License Type	Sales Tax Number
03-10388; 03-10389	Manufacturer (brewery); Sales Room M	34315893

Business Phone Number	Email Address
720-335-6011	elizabethbrewingcompany@gmail.com

Premises Address
239 S. Main Street

City	State	ZIP Code
Elizabeth	CO	80107

Mailing Address
PO Box 1683

City	State	ZIP Code
Elizabeth	CO	80107

Festival Location
500 E Kiowa Ave, Elizabeth, CO 80107

Date(s) of Festival
June 27, 2025

What are the hours of alcohol service during each festival date(s)? (1 festival can be no more than 72 hours)
4:00 PM to 9:00 PM

Attach a copy of Premises Use Authorization Letter or Lease

Control Plan Attestation

I affirm that I have attached a Security and Control plan that has been circulated and agreed upon by all participating licensees.

Applicant's Signature

Date (MM/DD/YY) 09/01/25

Licensing Authority Signature

○ Object ○ Do Not Object

Local Licensing Authority Contact Name

Phone Number

List of participating businesses (Attach a separate sheet if needed)

Name: The Elizabeth Brewing Company

License Number: 03-10388; 03-10389

License Type: Manufacturer (brewery); Sales Room Malt

Person Responsible: Anthony Briggs

Phone Number: 719-659-9800

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Oath Of Applicant

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer and Wine Code and Colorado Liquor Rules which affect my license or permit.

Signature

Title: CEO

Date (MM/DD/YY): 04/01/25

Report And Approval of Local Licensing Authority (City/County)

The foregoing application has been examined and the premises, business conducted and character of the applicant is satisfactory.

Local Licensing Authority (City or County)

Date Notice was provided to Local Licensing Authority

Signature

Title

Date (MM/DD/YY)

During this festival alcohol will only be sold by the participating alcohol beverage holders (Check All that apply)

☒ In open containers for on-premises consumption ☐ In sealed containers for off-premises consumption

Notice To Local Licensing Authority

This application for a festival permit will be granted to the above named applicant unless any of the below listed conditions apply. If any of these conditions apply please contact the state licensing authority immediately.

☐ The applicant has not provided you with at least 30 calendar days notice of the proposed festival

☐ Past festivals have had a history of violation of the Colorado Liquor Code or Colorado Liquor Rules or violations of local ordinances

☐ If granted, this permit would result in violations of the Colorado Liquor Code or Colorado Liquor Rules, or the laws of the local government

If the Local Licensing Authority objects, provide a separate page with details of the objection.

Report of State Licensing Authority

Signature

Title

Date (MM/DD/YY)

DR 8420 (07/22/24)
COLORADO DEPARTMENT OF REVENUE
Liquor Enforcement Division
PO BOX 17087
Denver CO 80217-0087
(303) 205-2300

Festival Permit Application

This permit is only available for the following license types:

- Beer and Wine license;
- Hotel and Restaurant license;
- Tavern license;
- Brew Pub license;
- Vintner's Restaurant license;
- Distillery Pub license;
- Entertainment License;
- Lodging License;
- Manufacturer's license (beer, wine, or spirits);
- Wholesaler's license; or
- Limited Wineries

☐ Initial Application – $50.00 Processing Fee

☒ Subsequent Festival Application - $50.00 per festival (9 total allowed per **calendar year**, per permittee)

Note - An authorized participating licensee can participate in up to 52 festivals in a calendar year.

Legal Business Name
The Elizabeth Brewing Company

Trade Name/DBA Name
Elizabeth Brewing Company

License Number	License Type	Sales Tax Number
03-10388; 03-10389	Manufacturer (brewery); Sales Room M	34315893

Business Phone Number	Email Address
720-335-6011	elizabethbrewingcompany@gmail.com

Premises Address
239 S. Main Street

City	State	ZIP Code
Elizabeth	CO	80107

Mailing Address
PO Box 1683

City	State	ZIP Code
Elizabeth	CO	80107

Festival Location
500 E Kiowa Ave, Elizabeth, CO 80107

Date(s) of Festival
July 4, 2025

What are the hours of alcohol service during each festival date(s)? (1 festival can be no more than 72 hours)
4:00 PM to 9:00 PM

Attach a copy of Premises Use Authorization Letter or Lease

Control Plan Attestation

I affirm that I have attached a Security and Control plan that has been circulated and agreed upon by all participating licensees.

Applicant's Signature

Date (MM/DD/YY) 04/01/25

Licensing Authority Signature

○ Object ○ Do Not Object

Local Licensing Authority Contact Name

Phone Number

List of participating businesses (Attach a separate sheet if needed)

Name: The Elizabeth Brewing Company

License Number: 03-10388; 03-10389

License Type: Manufacturer (brewery); Sales Room Malt

Person Responsible: Anthony Briggs

Phone Number: 719-659-9800

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Oath Of Applicant

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer and Wine Code and Colorado Liquor Rules which affect my license or permit.

Signature

Title: CEO

Date (MM/DD/YY): 04/01/25

Report And Approval of Local Licensing Authority (City/County)

The foregoing application has been examined and the premises, business conducted and character of the applicant is satisfactory.

Local Licensing Authority (City or County)

Date Notice was provided to Local Licensing Authority

Signature

Title

Date (MM/DD/YY)

During this festival alcohol will only be sold by the participating alcohol beverage holders (Check All that apply)

☒ In open containers for on-premises consumption ☐ In sealed containers for off-premises consumption

Notice To Local Licensing Authority

This application for a festival permit will be granted to the above named applicant unless any of the below listed conditions apply. If any of these conditions apply please contact the state licensing authority immediately.

☐ The applicant has not provided you with at least 30 calendar days notice of the proposed festival

☐ Past festivals have had a history of violation of the Colorado Liquor Code or Colorado Liquor Rules or violations of local ordinances

☐ If granted, this permit would result in violations of the Colorado Liquor Code or Colorado Liquor Rules, or the laws of the local government

If the Local Licensing Authority objects, provide a separate page with details of the objection.

Report of State Licensing Authority

Signature

Title

Date (MM/DD/YY)

DR 8420 (07/22/24)
COLORADO DEPARTMENT OF REVENUE
Liquor Enforcement Division
PO BOX 17087
Denver CO 80217-0087
(303) 205-2300

Festival Permit Application

This permit is only available for the following license types:

- Beer and Wine license;
- Hotel and Restaurant license;
- Tavern license;
- Brew Pub license;
- Vintner's Restaurant license;
- Distillery Pub license;
- Entertainment License;
- Lodging License;
- Manufacturer's license (beer, wine, or spirits);
- Wholesaler's license; or
- Limited Wineries

☐ Initial Application – $50.00 Processing Fee

☒ Subsequent Festival Application - $50.00 per festival (9 total allowed per **calendar year**, per permittee)

Note - An authorized participating licensee can participate in up to 52 festivals in a calendar year.

Legal Business Name
The Elizabeth Brewing Company

Trade Name/DBA Name
Elizabeth Brewing Company

License Number	License Type	Sales Tax Number
03-10388; 03-10389	Manufacturer (brewery); Sales Room M	34315893

Business Phone Number	Email Address
720-335-6011	elizabethbrewingcompany@gmail.com

Premises Address
239 S. Main Street

City	State	ZIP Code
Elizabeth	CO	80107

Mailing Address
PO Box 1683

City	State	ZIP Code
Elizabeth	CO	80107

Festival Location
500 E Kiowa Ave, Elizabeth, CO 80107

Date(s) of Festival
July 11, 2025

What are the hours of alcohol service during each festival date(s)? (1 festival can be no more than 72 hours)
4:00 PM to 9:00 PM

Attach a copy of Premises Use Authorization Letter or Lease

Control Plan Attestation

I affirm that I have attached a Security and Control plan that has been circulated and agreed upon by all participating licensees.

Applicant's Signature

Date (MM/DD/YY) 04/01/25

Licensing Authority Signature

○ Object ○ Do Not Object

Local Licensing Authority Contact Name

Phone Number

List of participating businesses (Attach a separate sheet if needed)

Name
The Elizabeth Brewing Company

License Number
03-10388; 03-10389

License Type
Manufacturer (brewery); Sales Room Malt

Person Responsible
Anthony Briggs

Phone Number
719-659-9800

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Oath Of Applicant

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer and Wine Code and Colorado Liquor Rules which affect my license or permit.

Signature

Title: CEO

Date (MM/DD/YY): 04/01/25

Report And Approval of Local Licensing Authority (City/County)

The foregoing application has been examined and the premises, business conducted and character of the applicant is satisfactory.

Local Licensing Authority (City or County)

Date Notice was provided to Local Licensing Authority

Signature

Title

Date (MM/DD/YY)

During this festival alcohol will only be sold by the participating alcohol beverage holders (Check All that apply)

☒ In open containers for on-premises consumption ☐ In sealed containers for off-premises consumption

Notice To Local Licensing Authority

This application for a festival permit will be granted to the above named applicant unless any of the below listed conditions apply. If any of these conditions apply please contact the state licensing authority immediately.

☐ The applicant has not provided you with at least 30 calendar days notice of the proposed festival

☐ Past festivals have had a history of violation of the Colorado Liquor Code or Colorado Liquor Rules or violations of local ordinances

☐ If granted, this permit would result in violations of the Colorado Liquor Code or Colorado Liquor Rules, or the laws of the local government

If the Local Licensing Authority objects, provide a separate page with details of the objection.

Report of State Licensing Authority

Signature

Title

Date (MM/DD/YY)

DR 8420 (07/22/24)
COLORADO DEPARTMENT OF REVENUE
Liquor Enforcement Division
PO BOX 17087
Denver CO 80217-0087
(303) 205-2300

Festival Permit Application

This permit is only available for the following license types:

- Beer and Wine license;
- Hotel and Restaurant license;
- Tavern license;
- Brew Pub license;
- Vintner's Restaurant license;
- Distillery Pub license;
- Entertainment License;
- Lodging License;
- Manufacturer's license (beer, wine, or spirits);
- Wholesaler's license; or
- Limited Wineries

☐ Initial Application – $50.00 Processing Fee

☒ Subsequent Festival Application - $50.00 per festival (9 total allowed per **calendar year**, per permittee)

Note - An authorized participating licensee can participate in up to 52 festivals in a calendar year.

Legal Business Name
The Elizabeth Brewing Company

Trade Name/DBA Name
Elizabeth Brewing Company

License Number	License Type	Sales Tax Number
03-10388; 03-10389	Manufacturer (brewery); Sales Room M	34315893

Business Phone Number	Email Address
720-335-6011	elizabethbrewingcompany@gmail.com

Premises Address
239 S. Main Street

City	State	ZIP Code
Elizabeth	CO	80107

Mailing Address
PO Box 1683

City	State	ZIP Code
Elizabeth	CO	80107

Festival Location
500 E Kiowa Ave, Elizabeth, CO 80107

Date(s) of Festival
July 18, 2025

What are the hours of alcohol service during each festival date(s)? (1 festival can be no more than 72 hours)
4:00 PM to 9:00 PM

Attach a copy of Premises Use Authorization Letter or Lease

Control Plan Attestation

I affirm that I have attached a Security and Control plan that has been circulated and agreed upon by all participating licensees.

Applicant's Signature

Date (MM/DD/YY) 04/01/25

Licensing Authority Signature

○ Object ○ Do Not Object

Local Licensing Authority Contact Name

Phone Number

List of participating businesses (Attach a separate sheet if needed)

Name
The Elizabeth Brewing Company

License Number
03-10388; 03-10389

License Type
Manufacturer (brewery); Sales Room Malt

Person Responsible
Anthony Briggs

Phone Number
719-659-9800

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Oath Of Applicant

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer and Wine Code and Colorado Liquor Rules which affect my license or permit.

Signature

Title: CEO

Date (MM/DD/YY): 04/01/25

Report And Approval of Local Licensing Authority (City/County)

The foregoing application has been examined and the premises, business conducted and character of the applicant is satisfactory.

Local Licensing Authority (City or County)

Date Notice was provided to Local Licensing Authority

Signature

Title

Date (MM/DD/YY)

During this festival alcohol will only be sold by the participating alcohol beverage holders (Check All that apply)

☒ In open containers for on-premises consumption ☐ In sealed containers for off-premises consumption

Notice To Local Licensing Authority

This application for a festival permit will be granted to the above named applicant unless any of the below listed conditions apply. If any of these conditions apply please contact the state licensing authority immediately.

☐ The applicant has not provided you with at least 30 calendar days notice of the proposed festival

☐ Past festivals have had a history of violation of the Colorado Liquor Code or Colorado Liquor Rules or violations of local ordinances

☐ If granted, this permit would result in violations of the Colorado Liquor Code or Colorado Liquor Rules, or the laws of the local government

If the Local Licensing Authority objects, provide a separate page with details of the objection.

Report of State Licensing Authority

Signature

Title

Date (MM/DD/YY)

DR 8420 (07/22/24)
COLORADO DEPARTMENT OF REVENUE
Liquor Enforcement Division
PO BOX 17087
Denver CO 80217-0087
(303) 205-2300

Festival Permit Application

This permit is only available for the following license types:

- Beer and Wine license;
- Hotel and Restaurant license;
- Tavern license;
- Brew Pub license;
- Vintner's Restaurant license;
- Distillery Pub license;
- Entertainment License;
- Lodging License;
- Manufacturer's license (beer, wine, or spirits);
- Wholesaler's license; or
- Limited Wineries

☐ Initial Application – $50.00 Processing Fee

☒ Subsequent Festival Application - $50.00 per festival (9 total allowed per **calendar year**, per permittee)

Note - An authorized participating licensee can participate in up to 52 festivals in a calendar year.

Legal Business Name
The Elizabeth Brewing Company

Trade Name/DBA Name
Elizabeth Brewing Company

License Number	License Type	Sales Tax Number
03-10388; 03-10389	Manufacturer (brewery); Sales Room M	34315893

Business Phone Number	Email Address
720-335-6011	elizabethbrewingcompany@gmail.com

Premises Address
239 S. Main Street

City	State	ZIP Code
Elizabeth	CO	80107

Mailing Address
PO Box 1683

City	State	ZIP Code
Elizabeth	CO	80107

Festival Location
500 E Kiowa Ave, Elizabeth, CO 80107

Date(s) of Festival
July 25, 2025

What are the hours of alcohol service during each festival date(s)? (1 festival can be no more than 72 hours)
4:00 PM to 9:00 PM

Attach a copy of Premises Use Authorization Letter or Lease

Control Plan Attestation

I affirm that I have attached a Security and Control plan that has been circulated and agreed upon by all participating licensees.

Applicant's Signature

Date (MM/DD/YY) 04/01/25

Licensing Authority Signature

○ Object ○ Do Not Object

Local Licensing Authority Contact Name

Phone Number

List of participating businesses (Attach a separate sheet if needed)

Name: The Elizabeth Brewing Company

License Number: 03-10388; 03-10389

License Type: Manufacturer (brewery); Sales Room Malt

Person Responsible: Anthony Briggs

Phone Number: 719-659-9800

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Oath Of Applicant

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer and Wine Code and Colorado Liquor Rules which affect my license or permit.

Signature

Title: CEO

Date (MM/DD/YY): 04/01/25

Report And Approval of Local Licensing Authority (City/County)

The foregoing application has been examined and the premises, business conducted and character of the applicant is satisfactory.

Local Licensing Authority (City or County)

Date Notice was provided to Local Licensing Authority

Signature

Title

Date (MM/DD/YY)

During this festival alcohol will only be sold by the participating alcohol beverage holders (Check All that apply)

☒ In open containers for on-premises consumption ☐ In sealed containers for off-premises consumption

Notice To Local Licensing Authority

This application for a festival permit will be granted to the above named applicant unless any of the below listed conditions apply. If any of these conditions apply please contact the state licensing authority immediately.

☐ The applicant has not provided you with at least 30 calendar days notice of the proposed festival

☐ Past festivals have had a history of violation of the Colorado Liquor Code or Colorado Liquor Rules or violations of local ordinances

☐ If granted, this permit would result in violations of the Colorado Liquor Code or Colorado Liquor Rules, or the laws of the local government

If the Local Licensing Authority objects, provide a separate page with details of the objection.

Report of State Licensing Authority

Signature

Title

Date (MM/DD/YY)

DR 8420 (07/22/24)
COLORADO DEPARTMENT OF REVENUE
Liquor Enforcement Division
PO BOX 17087
Denver CO 80217-0087
(303) 205-2300

Festival Permit Application

This permit is only available for the following license types:

- Beer and Wine license;
- Hotel and Restaurant license;
- Tavern license;
- Brew Pub license;
- Vintner's Restaurant license;
- Distillery Pub license;
- Entertainment License;
- Lodging License;
- Manufacturer's license (beer, wine, or spirits);
- Wholesaler's license; or
- Limited Wineries

☐ Initial Application – $50.00 Processing Fee

☒ Subsequent Festival Application - $50.00 per festival (9 total allowed per **calendar year**, per permittee)

Note - An authorized participating licensee can participate in up to 52 festivals in a calendar year.

Legal Business Name
The Elizabeth Brewing Company

Trade Name/DBA Name
Elizabeth Brewing Company

License Number	License Type	Sales Tax Number
03-10388; 03-10389	Manufacturer (brewery); Sales Room M	34315893

Business Phone Number	Email Address
720-335-6011	elizabethbrewingcompany@gmail.com

Premises Address
239 S. Main Street

City	State	ZIP Code
Elizabeth	CO	80107

Mailing Address
PO Box 1683

City	State	ZIP Code
Elizabeth	CO	80107

Festival Location
500 E Kiowa Ave, Elizabeth, CO 80107

Date(s) of Festival
August 1, 2025

What are the hours of alcohol service during each festival date(s)? (1 festival can be no more than 72 hours)
4:00 PM to 9:00 PM

Attach a copy of Premises Use Authorization Letter or Lease

Control Plan Attestation

I affirm that I have attached a Security and Control plan that has been circulated and agreed upon by all participating licensees.

Applicant's Signature

Date (MM/DD/YY) 04/01/25

Licensing Authority Signature

○ Object ○ Do Not Object

Local Licensing Authority Contact Name

Phone Number

List of participating businesses (Attach a separate sheet if needed)

Name: The Elizabeth Brewing Company

License Number: 03-10388; 03-10389

License Type: Manufacturer (brewery); Sales Room Malt

Person Responsible: Anthony Briggs

Phone Number: 719-659-9800

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Oath Of Applicant

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer and Wine Code and Colorado Liquor Rules which affect my license or permit.

Signature

Title: CEO

Date (MM/DD/YY): 04/01/25

Report And Approval of Local Licensing Authority (City/County)

The foregoing application has been examined and the premises, business conducted and character of the applicant is satisfactory.

Local Licensing Authority (City or County)

Date Notice was provided to Local Licensing Authority

Signature

Title

Date (MM/DD/YY)

During this festival alcohol will only be sold by the participating alcohol beverage holders (Check All that apply)

☒ In open containers for on-premises consumption ☐ In sealed containers for off-premises consumption

Notice To Local Licensing Authority

This application for a festival permit will be granted to the above named applicant unless any of the below listed conditions apply. If any of these conditions apply please contact the state licensing authority immediately.

☐ The applicant has not provided you with at least 30 calendar days notice of the proposed festival

☐ Past festivals have had a history of violation of the Colorado Liquor Code or Colorado Liquor Rules or violations of local ordinances

☐ If granted, this permit would result in violations of the Colorado Liquor Code or Colorado Liquor Rules, or the laws of the local government

If the Local Licensing Authority objects, provide a separate page with details of the objection.

Report of State Licensing Authority

Signature

Title

Date (MM/DD/YY)

DR 8420 (07/22/24)
COLORADO DEPARTMENT OF REVENUE
Liquor Enforcement Division
PO BOX 17087
Denver CO 80217-0087
(303) 205-2300

Festival Permit Application

This permit is only available for the following license types:

- Beer and Wine license;
- Hotel and Restaurant license;
- Tavern license;
- Brew Pub license;
- Vintner's Restaurant license;
- Distillery Pub license;
- Entertainment License;
- Lodging License;
- Manufacturer's license (beer, wine, or spirits);
- Wholesaler's license; or
- Limited Wineries

☐ Initial Application – $50.00 Processing Fee

☒ Subsequent Festival Application - $50.00 per festival (9 total allowed per **calendar year**, per permittee)

Note - An authorized participating licensee can participate in up to 52 festivals in a calendar year.

Legal Business Name
The Elizabeth Brewing Company

Trade Name/DBA Name
Elizabeth Brewing Company

License Number	License Type	Sales Tax Number
03-10388; 03-10389	Manufacturer (brewery); Sales Room M	34315893

Business Phone Number	Email Address
720-335-6011	elizabethbrewingcompany@gmail.com

Premises Address
239 S. Main Street

City	State	ZIP Code
Elizabeth	CO	80107

Mailing Address
PO Box 1683

City	State	ZIP Code
Elizabeth	CO	80107

Festival Location
500 E Kiowa Ave, Elizabeth, CO 80107

Date(s) of Festival
August 8, 2025

What are the hours of alcohol service during each festival date(s)? (1 festival can be no more than 72 hours)
4:00 PM to 9:00 PM

Attach a copy of Premises Use Authorization Letter or Lease

Control Plan Attestation

I affirm that I have attached a Security and Control plan that has been circulated and agreed upon by all participating licensees.

Applicant's Signature

Date (MM/DD/YY) 04/01/25

Licensing Authority Signature

○ Object ○ Do Not Object

Local Licensing Authority Contact Name

Phone Number

List of participating businesses (Attach a separate sheet if needed)

Name: The Elizabeth Brewing Company

License Number: 03-10388; 03-10389

License Type: Manufacturer (brewery); Sales Room Malt

Person Responsible: Anthony Briggs

Phone Number: 719-659-9800

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Oath Of Applicant

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer and Wine Code and Colorado Liquor Rules which affect my license or permit.

Signature

Title: CEO

Date (MM/DD/YY): 04/01/25

Report And Approval of Local Licensing Authority (City/County)

The foregoing application has been examined and the premises, business conducted and character of the applicant is satisfactory.

Local Licensing Authority (City or County)

Date Notice was provided to Local Licensing Authority

Signature

Title

Date (MM/DD/YY)

During this festival alcohol will only be sold by the participating alcohol beverage holders (Check All that apply)

☒ In open containers for on-premises consumption ☐ In sealed containers for off-premises consumption

Notice To Local Licensing Authority

This application for a festival permit will be granted to the above named applicant unless any of the below listed conditions apply. If any of these conditions apply please contact the state licensing authority immediately.

☐ The applicant has not provided you with at least 30 calendar days notice of the proposed festival

☐ Past festivals have had a history of violation of the Colorado Liquor Code or Colorado Liquor Rules or violations of local ordinances

☐ If granted, this permit would result in violations of the Colorado Liquor Code or Colorado Liquor Rules, or the laws of the local government

If the Local Licensing Authority objects, provide a separate page with details of the objection.

Report of State Licensing Authority

Signature

Title

Date (MM/DD/YY)

DR 8420 (07/22/24)
COLORADO DEPARTMENT OF REVENUE
Liquor Enforcement Division
PO BOX 17087
Denver CO 80217-0087
(303) 205-2300

Festival Permit Application

This permit is only available for the following license types:

- Beer and Wine license;
- Hotel and Restaurant license;
- Tavern license;
- Brew Pub license;
- Vintner's Restaurant license;
- Distillery Pub license;
- Entertainment License;
- Lodging License;
- Manufacturer's license (beer, wine, or spirits);
- Wholesaler's license; or
- Limited Wineries

☐ Initial Application – $50.00 Processing Fee

☒ Subsequent Festival Application - $50.00 per festival (9 total allowed per **calendar year**, per permittee)

Note - An authorized participating licensee can participate in up to 52 festivals in a calendar year.

Legal Business Name
The Elizabeth Brewing Company

Trade Name/DBA Name
Elizabeth Brewing Company

License Number	License Type	Sales Tax Number
03-10388; 03-10389	Manufacturer (brewery); Sales Room M	34315893

Business Phone Number	Email Address
720-335-6011	elizabethbrewingcompany@gmail.com

Premises Address
239 S. Main Street

City	State	ZIP Code
Elizabeth	CO	80107

Mailing Address
PO Box 1683

City	State	ZIP Code
Elizabeth	CO	80107

Festival Location
500 E Kiowa Ave, Elizabeth, CO 80107

Date(s) of Festival
August 15, 2025

What are the hours of alcohol service during each festival date(s)? (1 festival can be no more than 72 hours)
4:00 PM to 9:00 PM

Attach a copy of Premises Use Authorization Letter or Lease

Control Plan Attestation

I affirm that I have attached a Security and Control plan that has been circulated and agreed upon by all participating licensees.

Applicant's Signature

Date (MM/DD/YY)

04/01/25

Licensing Authority Signature

○ Object ○ Do Not Object

Local Licensing Authority Contact Name

Phone Number

List of participating businesses (Attach a separate sheet if needed)

Name

The Elizabeth Brewing Company

License Number

03-10388; 03-10389

License Type

Manufacturer (brewery); Sales Room Malt

Person Responsible

Anthony Briggs

Phone Number

719-659-9800

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Name

License Number

License Type

Person Responsible

Phone Number

Oath Of Applicant

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer and Wine Code and Colorado Liquor Rules which affect my license or permit.

Signature

Title: CEO

Date (MM/DD/YY): 04/01/25

Report And Approval of Local Licensing Authority (City/County)

The foregoing application has been examined and the premises, business conducted and character of the applicant is satisfactory.

Local Licensing Authority (City or County)

Date Notice was provided to Local Licensing Authority

Signature

Title

Date (MM/DD/YY)

During this festival alcohol will only be sold by the participating alcohol beverage holders (Check All that apply)

☒ In open containers for on-premises consumption ☐ In sealed containers for off-premises consumption

Notice To Local Licensing Authority

This application for a festival permit will be granted to the above named applicant unless any of the below listed conditions apply. If any of these conditions apply please contact the state licensing authority immediately.

☐ The applicant has not provided you with at least 30 calendar days notice of the proposed festival

☐ Past festivals have had a history of violation of the Colorado Liquor Code or Colorado Liquor Rules or violations of local ordinances

☐ If granted, this permit would result in violations of the Colorado Liquor Code or Colorado Liquor Rules, or the laws of the local government

If the Local Licensing Authority objects, provide a separate page with details of the objection.

Report of State Licensing Authority

Signature

Title

Date (MM/DD/YY)

Town of Elizabeth, Colorado

2025 Strategic Planning Report

March 8, 2025

CIVICATE

Strategic Planning Retreat
Executive Report

TOWN OF ELIZABETH, COLORADO

"STRENGTHENING OUR ROOTS, SHAPING OUR FUTURE"

Facilitator: Todd Leopold | March 8, 2025

CIVICATE

SUMMARY

The **Town of Elizabeth** engaged in a **Strategic Planning Board Retreat** on March 8, 2025 to provide an opportunity to reflect on past achievements, look to the community's future, and develop shared vision statements around key focus areas identified by the Board of Trustees. This included the prioritization of *Strategic Initiatives* that aligned with meeting those key focus areas over the next five years. Through collaborative discussions, prioritization exercises, and commitment statements, the retreat aimed to define actionable steps toward a cohesive and prosperous future for the Town and community at-large. The retreat's outcomes are to serve as a complimentary planning effort that coincides with other planning efforts undertaken by the Town.

INTRODUCTION

In March, the Town requested Civicate, LLC. to facilitate a Board of Trustee Strategic Planning retreat to serve as one of Town Board's guiding documents that identified initiatives to meet current and future community needs, while aligning with the Town's Operating and Capital Improvement Budgets, that subsequently drive daily operations and capital projects. This Strategic Plan identifies key focus areas of Board and specifies strategic initiatives within a 5-year time horizon. The Board used a five-year outlook to incorporate both short and longer term initiatives that will be reflected in the Town's ongoing financial planning processes.

This Plan was developed by the Board of Trustees using a strategic planning framework, in collaboration with the Town's executive leadership team, and should be reviewed on an annual basis as part of the Board of Trustees future strategic planning processes, with a focus on reaffirming existing strategic initiatives, identifying new initiatives and updating prior year results. Follow up retreats should provide a forum for in-depth discussion which will either confirm the current approach or modify existing plans based on current social, economic and financial conditions of the Town and surrounding region.

VISION STATEMENT

This document includes the Board of Trustee's Vision Statement that was developed based upon five priority focus areas identified by the Board;

- **Welcoming, Inclusive Community**
- **Building Community Support.**
- **Expanded Community Gathering Spots**
- **Supporting Commercial and Small business growth**
- **Enhanced Public Safety presence in the Community**

VISION STATEMENT

We envision being a welcoming, inclusive community fostering a small town feel where families come together to support one another. The Town values community safety and a flourishing, diverse commercial environment that is sustainable, resilient, and hospitable.

WE VALUE:

- ***Community Gathering Places***
- ***Diversity of Retail and Entertainment Centers***
- ***Expanded Community Events***
- ***Support for Police and Law Enforcement***

EXTERNAL AND INTERNAL IMPACTS

The Board of Trustees utilized a *Civic Compass* exercise to identify their strengths and challenges as they pivot towards a proactive, future-focused direction for the Town. The following table provides a list of what the Trustees identified as the community and organization's strengths, weaknesses, opportunities, and external threats that may impact the Town in the future.

Table 1.0 – ENVIRONMENTAL SCAN

STRENGTHS	OPPORTUNITIES
Well Trained PD	Expand opportunities for business growth
Staff Knowledge	Increase Community events, concerts,etc.
Cost of Living compared to surrounding areas	Build Relationships with Other Elected Offices
Lower Tax Burden	Creation of a Facilities Master Plan
Growth Opportunities	Managed Growth and Space
Quality Law Enforcement	Community/Senior Center Support
Healthy Financials	
Family-Oriented Community	
Small Town Feel	
Community event support	
WEAKNESSES	**THREATS**
No Emergency Evacuation Plan	County Development impacting Town Services
Main Street Commerce Diversity	East/West routes for Emergency / Disaster evacuation
No Community Gathering Center	Crime Increasing
Community Division	Sunset on 1.5% Capital Improvement Fund
Traffic Congestion through Town	State Government Mandates
Hwy 86 capacity constraints	Community Division
Limited funding for major projects	Pay Competitiveness of Surrounding Communities
Visual appeal of some buildings	

STRATEGIC INITIATIVES

The Board of Trustees utilized the Vision Statement in the identification of their Strategic Initiatives based on a Five-Year implementation timeframe. *Strategic Initiatives* were defined as those key projects or programs that the Board of Trustees would like to invest resources to advance the Board's Vision Statement. Following a brainstorming exercise the Board prioritized the strategic initiatives by level of importance and anticipated completion or implementation depending on the initiative identified.

The Town Administrator and executive management team will refine these Initiatives into specific action plans and final work products to be presented to the Board to confirm intended outcomes and expectations. In order to support these efforts, the management team will provide the Board an agreed upon frequency regarding initiative updates to ensure that these are moving forward and the appropriate resources have been dedicated to accomplishing them.

The Trustees identified 11 of 17 identified Strategic Initiatives to prioritize (see table 2.0). The table also includes the Board's anticipated timeframe for completion. The numeric score listed after the initiative was the prioritized ranking for each of the items – higher the number the more significant the priority.

Table 2.0 – PRIORITIZED STRATEGIC INITIATIVES

STRATEGIC INITIATIVES - FY2025 thru FY2027			
ST No.	2025 - 2026 Next 12 Months	ST No.	2026 - 2027 12 -24 Months
25.01	Develop a Multi-Agency Economic Development/Marketing Strategy (32)	25.04	Amend Comprehensive Plan - (a) Zoning Regulations (b) Design Standards/Precess (c) Growth Management Strategies (25)
25.02	Land Acquistion and Engineering Drawings for a Multi-Purpose Community/Senior Center (31)	25.05	Develop a Facilities Master Plan and Condition Assessement (9)
25.03	Develop a Comprehensive Infrastructure List and Integrated CIP Plan (2)	25.06	Develop a Market Compensation Study - Prioritize Public Safety (3)
STRATEGIC INITIATIVES - FY2027 thru FY2029			
ST No.	2027 - 2028 24 - 36 Months	ST No.	2028-2029 36 - 48 Months
25.07	Develop financial and operational plan to increase police service levels (12)	25.09	Identify Land and Develop Financing Plan (Capital and Operating) Town Hall and Police Station (3)
25.08	Develop a Multi-Agency Economic Development/Marketing Strategy w/ Chamber (7)		
STRATEGIC INITIATIVES - Ongoing			
ST No.	Ongoing		
25.10	Hillside $ w/ Utilities (5)		
25.11	Engagement with other Entities (County, State Agencies, School District, etrc.) (5)		

Table 3.0 – BRAINSTORMING INITIATIVES

STRATEGIC INITIATIVES - BRAINSTORMING	
ST No.	**Initiatives**
25.12	Upgrade RC park
25.13	Develop Plan for South 40 Area
25.14	Strategy for Future Collaboration with the "Stampede" Event
25.15	Promote Small Business
25.16	Support Funding of Jobs
25.17	Identify Planning Efficiencies

COMMITMENTS BY TRUSTEES

Following the Strategic Initiatives exercise the Board of Trustees discussed their individual commitments to each other and the staff in order to ensure successful implementation and completion of the key Strategic Initiatives discussed earlier in the day.

TO: Honorable Mayor, Mayor Pro Tem, and Board of Trustees

FROM: Mike Devol, Public Works Director

DATED: April 8, 2025

SUBJECT: Discussion and comments for Town Water and Sewer Standards from Resolution Adopted 2011 to New Updated Version 2025.

BACKGROUND

The Town of Elizabeth Board of trustees adopted the Towns Water and Sewer standards in 2011(attached) to bring documents current with CDPHE requirements. Public Works drafted a 2017 version, which was never presented to the board. Public Works, JVA Engineering and Terracina engineering have compiled a Town of Elizabeth Water and Sewer Standards for 2025 for board discussions and questions (attached). Once all questions or concerns have been addressed an amended version will be brought to the Board of Trustees on April 22 scheduled meeting for approval by resolution. Please see attached Cross Connection Control Ordinance that Public Works prepared with CDPHE approval and was accepted by resolution in 2019.

STAFF RECOMMENDATION

Once all questions or concerns have been addressed, Public Works will have a recommendation.

BUDGET CONSIDERATIONS

No budget considerations are needed as this is a housekeeping item under the approved 2025 budget.

ATTACHMENTS

Attachment A – Town Water and Sewer Standards 2011

Attachment B – Proposed Town Water and Sewer Standards 2025

Attachment C – Town Code Ordinance 19-18 Amending Cross Connection Control Program
July 23, 2019

ORDINANCE 11-07

AN ORDINANCE AMENDING SECTIONS 13-2-70, 13-2-150, 13-2-160 (h) AND (j), 13-3-50, AND 13-3-70, AND ENACTING ARTICLE VI, CHAPTER 13 OF THE TOWN OF ELIZABETH MUNICIPAL CODE ADOPTING THE TOWN OF ELIZABETH WATER AND SEWER STANDARDS.

BE IT ORDAINED BY THE BOARD OF TRUSTEES FOR THE TOWN OF ELIZABETH, COLORADO, THAT:

Section 1. Section 13-2-70 of the Town of Elizabeth Municipal Code is hereby repealed and reenacted to read as follows:

Sec. 13-2-70. Metering of water.

All water sold by the Town shall be metered by meters which shall be installed in accordance with the Town of Elizabeth's Water Standards, as the same may be amended from time to time.

Section 2. Section 13-2-150 of the Town of Elizabeth Municipal Code is hereby repealed and reenacted to read as follows

Sec. 13-2-150. Service Line Regulations.

No more than one (1) building shall be permitted to use a water service line. All water lines (mains and service lines) installed from and after the effective date of the ordinance codified herein shall be installed in accordance with the Town of Elizabeth's Water Standards, as the same may be amended from time to time.

Section 3. Section 13-2-160, subsection (h) and (j) of the Town of Elizabeth Municipal Code are hereby repealed and reenacted to read as follows

Sec. 13-2-160. Miscellaneous regulations.

(h) Responsibility for the water line shall be determined in accordance with the Water Standards.

(j) Construction of water mains. Any user of the water system, either inside or outside of the corporate limits, must build his or her own water line if there is no line available for him or her to connect with. All connections to the Town's water system must be made in accordance with the Town of Elizabeth's Water Standards, as the same may be amended from time to time.

Section 4. Section 13-3-50 of the Town of Elizabeth Municipal Code is hereby repealed and reenacted to read as follows

Sec. 13-3-50 Construction of sewers.

Any user of the sewer system, either inside or outside the corporate limits, must build his or her own sewer line if there is no line available for him or her to connect with. All connections to the Town's sewer system must be made in accordance with the Town of Elizabeth's Sewer Standards, as the same may be amended from time to time.

Section 5. Section 13-3-70 of the Town of Elizabeth Municipal Code is hereby repealed and reenacted to read as follows

Sec.13-3-70 Use of grease, oil and sand interceptors.

Grease, oil and sand interceptors shall be provided in accordance with the Town of Elizabeth's Sewer Standards, as the same may be amended from time to time.

Section 6. The Town of Elizabeth Municipal Code is amended by the addition thereto of a new Chapter 13, Article VI to read as follows

Article VI
Water and Sewer Standards.
Sec. 13-6-10. Purpose.

It is the purpose of this Article to establish standards for water and sewer systems within the Town in order that, through careful design and quality workmanship and materials, the safety of those using Town water and sewer services may be promoted.

Sec. 13-6-20. Jurisdiction.

These standards shall apply to all water and sewer services within the Town. If different sections of the standards should require materials, methods of construction or other requirements, the most restrictive shall apply.

Sec. 13-6-30. Fees.

The Board of Trustees may establish and adopt a schedule of fees to be paid by the developer/builder to defray the expenses of the Town in reviewing plans and/or inspecting work. Further, the Town may charge a reasonable fee for copies of these standards.

Sec. 13-6-40. Violations.

No water or sewer systems shall be constructed in violation of the Article or amendments thereto without the express approval of the Board of Trustees. The Board, through the Town Attorney and court of appropriate jurisdiction may initiate legal action to prevent, abate or remove such unlawful construction in addition to any other remedies provided by law.

Sec. 13-6-50. Penalties.

Any person, whether as principal, agent, employee or otherwise, who violates any of the provisions of the *Town of Elizabeth Water and Sewer Standards* shall be subject to the general penalties as set forth in Section 1-4-20 of this Code.

Sec. 13-6-50. Adoption.

The Town, through its Board of Trustees, hereby adopts the *Town of Elizabeth Water and Sewer Standards,* dated June 2011. One (1) copy of said *Standards* shall be maintained on file at the office of the Town Clerk and may be inspected during regular business hours.

Section 7. Severability. If any section, paragraph clause, or provision of this Ordinance shall for any reason be held to be invalid or unenforceable, the invalidity or enforceability of such section, paragraph, clause or provision shall not affect any of the remaining provisions of this Ordinance, the intent being that the same are severable.

Section 8. The Board of Trustees hereby finds, determines and declares that this Ordinance is promulgated under the general police power of the Town, that it is promulgated for the health, safety and welfare of the public, and that this Ordinance is necessary for the preservation of health and safety and for the protection of public convenience and welfare. The Board of Trustees further determines that the Ordinance bears a rational relation to the proper legislative object sought to be attained.

Section 9. This Ordinance shall become effective thirty (30) days after publication.

Read and approved at a meeting of the Board of Trustees of the Town of Elizabeth, Colorado, this 28th day of June, 2011.

Passed by a vote of 4 for and 3 against and ordered published.

H. Clay Hurst, Mayor

ATTEST:

Serena L. Carter, Town Clerk

Town of Elizabeth

WATER AND SEWER STANDARDS

JUNE 2011

Hatch Mott MacDonald

TABLE OF CONTENTS

PAGE

SECTION 1 APPLICATION AND DEFINITIONS 1
1.1 APPLICABILITY 1
1.2 DEFINITIONS 1

SECTION 2 SYSTEM REQUIREMENTS, DESIGN AND SIZING 4
2.1 PURPOSE 4
2.2 OWNERSHIP OF FACILITIES 4
2.3 DRAWINGS 4
2.4 EASEMENTS 5
2.5 SEWER COLLECTION SYSTEM REQUIREMENTS 5
2.5.1 Specially Regulated Wastes 6
2.5.2 Prohibited Wastes 6
2.5.3 Pretreatment 7
2.5.4 Sump Pumps and Illegal Devices 8
2.5.5 Grease, Oil or Sand Interceptors 8
2.5.6 Swimming Pools 9
2.6 SEWER MAIN DESIGN / SIZING 9
2.7 WATER SYSTEM REQUIREMENTS 10
2.8 WATER DISTRIBUTION DESIGN / SIZING 10
2.9 INSPECTIONS 11
2.10 ACCEPTANCE CHECKLIST 11

SECTION 3 LOCAL SEWER AND WATER STANDARDS 13
3.1 PURPOSE 13
3.2 SANITARY SEWER MATERIALS 13
3.3 WATER MAIN MATERIALS 14
3.4 INSTALLATION 15
3.4.1 Sewer Installation 15
3.4.2 Manholes 16
3.4.3 Underdrains 17
3.4.4 Waterline Installation 17
3.4.5 Fire Hydrant Installation 18
3.4.6 Sewer and Water Main Pipe Bedding and Backfill 18
3.5 TESTING 22
3.5.1 Sanitary Sewer Line Testing 22
3.5.1.1 Pipeline Flushing 22
3.5.1.2 Alignment and Grade 23
3.5.1.3 Leakage Testing by Exfiltration 23
3.5.1.4 Leakage Testing by Infiltration 24
3.5.1.5 Low-Pressure Air Test 24
3.5.1.6 Deflection 26
3.5.2 Manholes 27

3.5.2.1 Visual Examination 27
3.5.2.2 Leakage Test 27
3.5.3 Television Inspection 28
3.5.4 Water Main Testing 28
3.5.5 Water Main Disinfection 29

SECTION 4 SERVICE LINE STANDARDS 30
4.1 GENERAL 30
4.2 OWNERSHIP AND MAINTENANCE 30
4.3 SERVICE CONNECTION 32
4.4 SEWER SERVICE SIZING 33
4.5 WATER SERVICE SIZING 33
4.6 SEWER SERVICE MATERIALS AND INSTALLATION 34
4.7 WATER SERVICE MATERIALS 34
4.8 WATER SERVICE INSTALLATION 35
4.9 DOCUMENTATION 35

STANDARD DETAILS

GENERAL

G1 - STANDARD APPROVAL BLOCK
G2 - TYPICAL WATER AND SEWER STREET PLAN
G3 - SEWER AND WATER LINE CROSSING
G4 - CONCRETE ENCASEMENT
G5 - SURFACE MARKER
G6 - BORE CASING
G7 - HARNESS LUGS – BORE CASING

SEWER SYSTEM

S1 - SEWER PIPE TRENCH
S2 - STANDARD MANHOLE
S3 - DROP MANHOLE
S4 - FLAT TOP MANHOLES
S5 - CAST-IN-PLACE MANHOLE BASES

WATER SYSTEM

W1 - WATER PIPE TRENCH
W2 - HORIZONTAL THRUST BLOCKS
W3 - VERTICAL THRUST BLOCKS
W4 - MECHANICAL THRUST RESTRAINT
W5 - TRACER WIRE
W6 - BURIED VALVES
W7 - FIRE HYDRANT

W8 - BLOW-OFF
W9 - AIR RELIEF VALVE

SERVICE LINES

L1 - TYPICAL RESIDENTIAL SEWER SERVICE
L2 - SEWER SERVICE WYE CONNECTION
L3 - SEWER SERVICE LINE CLEANOUT
L4 - TYPICAL NEW SINGLE FAMILY DETACHED RESIDENTIAL WATER SERVICE
L5 - EXISTING SINGLE FAMILY DETACHED RESIDENTIAL WATER SERVICE

SECTION 1
APPLICABILITY AND DEFINITIONS

SECTION 1

APPLICATION AND DEFINITIONS

1.1 APPLICABILITY

These standards are to be applied in conjunction with the other administrative and procedural requirements of the Town of Elizabeth.

1.2 DEFINITIONS

Unless the context specifically indicates otherwise, the meaning of terms used herein shall be as follows:

Acceptance shall mean formal notification by the Town to the Applicant that all the requirements of the "Checklist" have been met.

Actual Cost shall mean all direct costs applicable to the construction of a given facility, including surveys, preliminary and design engineering, construction, inspection, administrative, regulatory agency fees, bond fees, all required easements and/or rights-of-way, plan approval fees, "as-built" drawings, attorneys' fees, and other costs necessary for completion.

Applicant shall mean the person(s), firm, joint venture, partnership or corporation which is requesting service from the Town. In this document, the words "applicant" and "developer" have been used interchangeably.

Board and Board of Trustees shall mean the governing body of the Town of Elizabeth.

B.O.D. (Denoting 5-Day, 20 degrees centigrade Biochemical Oxygen Demand) shall mean the amount of oxygen which is utilized in the aerobic decomposition of Sewage under laboratory procedures in accordance with the current "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, the American Water Works Association and the Water Environment Federation.

Contractor shall mean the entity working on behalf of the developer to construct utilities or other physical improvements.

CDPHE shall mean the Colorado Department of Public and Health and Environment.

Cross-Connection means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture or other device which contains, or may contain, contaminated water, sewage or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a

result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and other temporary or permanent devices through or because of which backflow could occur are considered to be cross connections.

Customer shall mean any person, company, corporation or governmental authority or agency authorized to use the public water or sewer systems under a permit issued or otherwise authorized by the Board of Directors or the Town Manager.

Developer shall mean the person(s), firm, joint venture, partnership or corporation which is the owner or operator of land and which seeks to have the land served by the Town.

Engineer shall mean the engineering firm, or duly authorized representative (engineer), designated by the Town to act on its behalf in all engineering and related matters. This item includes an Inspector employed by the Engineer.

Engineer of Record shall mean the Professional Engineer, registered with the State of Colorado, who is responsible for the design of utilities or other improvements on behalf of the Developer.

EQR This is an abbreviation for Equivalent Residential Unit which is an average single-family detached residence or the equivalent, from a systems demand standpoint.

Inspector shall mean the Manager, Superintendent, Engineer, agent, officers, employees of the Town or other person so designated by the Manager to perform inspections pursuant to these Standards or other Rules and Regulations of the Town.

Local Facilities are those facilities generally designed primarily to serve individual subdivisions or plats. Examples are: water distribution systems, collector sewer lines and storm drainage collection systems.

Manager shall mean Manager of the Town, Public Works Director or, the Manager's duly authorized agent.

Owner shall mean the land's record title holder or lessee with planning powers.

Oversize Costs this item is applicable to part of the construction costs of a water distribution line or sewer main to be installed within, or for, a subdivision; but which the Town has also assigned a transmission function which results in the need for a larger pipeline. Oversize costs are the difference between the actual costs of the size line required by the Town and the size required by the Developer; however, for purposes of determining oversize, the minimum size shall be assumed to be 12-inch diameter for water and 10-inch diameter for sewer. Engineering and inspection costs are not included, only construction costs. The additional cost for the oversize may be negotiated between the Town and the Developer.

PRV shall mean pressure reducing valve.

PVC shall mean poly vinyl chloride.

Permit shall mean written permission of the Board of Directors authorizing connection to water or a sewer main of the Town granting applicant a license to use the system or to receive service from the system owned, operated or served by the Town.

Person shall mean any individual, firm, company, association, society, corporation or group.

Raw Water shall mean water that has not been treated.

Regional Facilities shall mean those facilities generally serving the Town's service areas as a whole. Examples are: water sources, water treatment plants, wastewater treatment plants, lift stations, tanks, and water transmission lines or trunk sewer mains.

Sewage shall mean any liquid waste containing animal or vegetable matter in suspension or solution from residences, commercial buildings, institutions, and industrial establishments.

Sewer or Sewer Main shall mean a Town-owned sewer pipeline, carrying sanitary sewage or approved industrial wastes only, and shall be installed in a public street or easement.

Sewer Service Line shall mean the privately owned sewer line extending from the building to the sewer main and shall include the tap onto the sewer main.

Shall is mandatory; "May" is permissive.

Town shall mean the Town of Elizabeth or the Board of Trustees of the Town.

Water Main shall mean a Town-owned water pipeline, carrying potable water only and shall be installed in a public street or easement.

Water Service Line shall mean the water line extending from the water main to the Customer's building, and shall include the tap on the main, corporation cock, curb stop and box and meter installation (see Section 4 for ownership responsibilities).

SECTION 2
SYSTEM REQUIREMENTS, DESIGN AND SIZING

SECTION 2

SYSTEM REQUIREMENTS, DESIGN AND SIZING

2.1 PURPOSE

Local sewerage and water facilities are considered to be engineered improvements which are designed for specific applications. All designs, drawings and specifications must be prepared by, or under the direction of a Professional Engineer registered in Colorado, whose seal must be on a record set of documents. Local collection systems and water distribution systems are the responsibility of the Developer, who is responsible for design and construction and the costs thereof and for payment of actual costs of design reviews and other reviews and inspections provided by the Town. The standard details and specifications contained herein are minimum design standards which the Town will accept in order to facilitate perpetual operation and maintenance procedures.

2.2 OWNERSHIP OF FACILITIES

All existing and future Regional and Local Facilities connected with and forming an integral part of the Systems and accepted for operation and maintenance pursuant to these Standards shall become and are the property of the Town, unless a contract between the Town and the Owner provides otherwise. That portion of all existing and future Service Lines extending from a main to each resident, unit or building for each customer that is connected with the System shall become and is the property of the Owner/Customer (See Section 4 for further descriptions of Customer Ownership).

2.3 DRAWINGS

Unless otherwise approved by the Town, all design drawings shall be 24" x 36" in size. Drawing scale for area plans shall be 1" = 50'. Submission of ½ size sets (at scale) are acceptable for review purposes.

Prior to the construction or installation of any Local Facilities, the Developer shall submit Design Documents with appropriate fees to the Town for review and approval. [The Developer is encouraged to submit preliminary designs for review of the overall layout, prior to producing this set of design drawings for review.] Each review package submitted to the Town shall consist of four (4) sets, and a cover letter describing the project. Two copies are for the Town, and two copies are for review by the Town's Engineer. The Developer must also make an independent submittal to the Elizabeth Fire Department. The Town and/or its Engineer may request additional documentation or calculations, depending on the complexity of the application.

The cover sheet of each design drawing set shall have an "approval block" affixed thereto which provides for the signatures of authorized representatives of the Town of Elizabeth, the Town's Engineer, and the Elizabeth Fire Department. The "approval block" shall be a facsimile of that appended to these Standard Specifications, "Standard Approval Block," Drawing G1. Drawings

submitted for approval must be stamped and signed by a Professional Engineer registered in Colorado.

Construction may not begin until the Design Documents have been approved by the Town. The construction contractor(s) must have a copy of the signed, approved design documents in their possession at the construction site.

After completion of construction, the Developer shall also provide a complete set of record drawings for the facilities. The record drawings shall show sufficient dimensioned ties to reasonably permanent surface features for all buried facilities to allow for future locating. One copy of the record drawings, stamped and signed by the P.E. must also be submitted for the Town's records, along with an electronic copy on CD in the latest version of AutoCAD and also in PDF format.

2.4 EASEMENTS

Where Local Facilities are to be located out of the public right-of-way, the Developer shall be responsible for obtaining easements required for the construction, maintenance, and operation of the facilities. The Town will not accept alignments that could present access or construction problems in present or in the future (e.g., steep slopes or difficult vehicular access).

The legal description for the easements shall be prepared by a Professional Land Surveyor, registered in the State of Colorado. Easements shall be in a form acceptable to the Town and shall be shown on the construction drawings. The Town will not approve the Contract Documents until all required easements have been deeded to the Town.

In general, the minimum width of easements for pipelines shall be 30 feet. Temporary construction easements shall have a minimum width of 40 feet. Wider easements may be required for deep sections of pipeline, multiple lines, storm sewers, or where otherwise required by the Town. In general, an easement containing a water line and a sewer line shall be no less than 36 feet in width. No water line shall be located less than 5 feet from the edge of easement and no sewer main shall be located less than 10 feet from the edge of easement.

2.5 SEWER COLLECTION SYSTEM REQUIREMENTS

The Sewer Collection System is for the disposal of water contaminated by biodegradable wastes. No Person shall make connection of roof downspouts, exterior foundation drains, areaway drains, surface drains or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to the Sewer Collection System. In order to protect the Sewer Collection System from damage, destruction, deterioration, misuse or malfunction and to guard against health hazards and the creation of public nuisance, the following regulations shall apply relative to the discharge of Sewage containing deleterious wastes.

A septic facility may not be utilized within the Town Service Area unless a waiver is obtained from the Town.

2.5.1 Specially Regulated Wastes

a) Industrial Wastes. No Person or Persons shall discharge or cause to be discharged any Industrial Waste of any type into the Sewer Collection System unless written permission is received from the Town.

b) Inflow/Infiltration. No Person or Persons shall discharge or cause to be discharged into the Sewer Collection System, storm drainage from ground surface, roof ladders, catch basins or any other source, or sub-surface drainage or ground water.

c) Other Wastes. Industrial cooling water, unpolluted process waters, bakery/restaurant wastes, car washing wastes, swimming pool drainage and floor drainage from enclosed and covered areas may be connected to the Sewer Collection System only by a special Permit from the Town. The application for such a Permit, in addition to information normally required for a Permit application, shall include the following:

- Name and address of the Owner.
- Location of the property for which the request is made.
- Description of the facility or operation requested for connection.
- Estimated quantities and qualities of the waste to be discharged including maximum rates.
- Plans and specifications of related waste generating processes and any pretreatment processes.

Such Permits issued by the Town may contain the following conditions:

- the construction of flow measuring and/or sampling devices;
- the construction of valves or gates to stop flows on an emergency basis;
- the construction of grease, oil or sand interceptors, or other pretreatment facilities;

or the Town may place other restrictions on the Permit as reasonably required under the circumstances. Nothing in this Section shall prohibit the Town from denying an application for a Permit if the Town determines that the demand on the System(s) impairs the Town's existing operations or use.

2.5.2 Prohibited Wastes

Toxic or non-biodegradable waste or any other waste which results in effluent not being within state standards after providing conventional treatment shall not be discharged into the Sewer Collection System. No drain accepting discharge from vehicle wash racks, filling stations, restaurants or other building sewers as specified by the Town shall be connected to any Sewer Service Line unless the discharge first passes through an acceptable grease, oil or sand interceptor. Except as provided herein, no Person shall discharge or cause to be discharged any of the following described waters or wastes to the Sewer Collection System:

a. Any liquid or vapor having temperatures higher than one hundred and four degrees Fahrenheit (104º F).
b. Any water or waste which may contain more than one hundred parts per million (100 ppm) by weight of animal or vegetable fat, oil or grease.
c. Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid, gas, oil or grease.
d. Any garbage that has not been properly shredded to less than one-half inch (½") in the largest dimension.
e. Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastic, wood, paunch manure or any other solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with the proper and normal operation of the Sewer Collection System.
f. Any waters or wastes having pH lower than 5.0 or higher than 9.0, or having any other corrosive or toxic property capable of causing damage or hazard to structures, equipment or personnel of the Sewer Collection System.
g. Any water or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any Sewage treatment process, constitute a hazard to humans, animals or fish, or create any hazard in the receiving waters of the sewer treatment plant effluent.
h. Any waters or wastes containing suspended solids of such character and quantity that unusual attention or expense is required to handle such materials at the sewer treatment plant.
i. Any noxious substances or malodorous waste, waters, gases or substance capable of creating a public nuisance, either in the sewer or at the sewer treatment plant.
j. A five (5) day B.O.D. concentration greater than three hundred parts per million (300 ppm).
k. A concentration of more than three hundred parts per million (300 ppm) of suspended solids.
l. Concentrated wastes from septic tanks and portable sanitary devices.
m. A peak flow rate greater than five (5) times the average flow rate.
n. Any chemicals having a twenty-four (24) hour proportionate composite sample concentration at the point of discharge in excess of the following:

Cadmium	0.10 mg/L
Chromium	5.0 mg/L
Copper	3.0 mg/L
Cyanides	2.0 mg/L
Iron	15.0 mg/L
Phenol	10.0 mg/L
H2s (Hydrogen Sulfide)	1.0 mg/L
Zinc	2.0 mg/L

2.5.3 Pretreatment

Where necessary, as determined by the Town, whose determinations shall be final, the Customer shall provide, at its sole cost and expense, such preliminary treatment as may be deemed

necessary. Where preliminary treatment facilities are provided for any waste or water, they shall meet with the approval of the Town for adequacy of design, and once built, shall be maintained continuously in satisfactory and effective operation by the Customer. When required by the Town, the Customer of any property served by a Service Line carrying Industrial Wastes shall install a suitable control manhole or monitoring point in the building sewer to facilitate observation, sampling and measurement of the Industrial Wastes. Such manhole or monitoring point shall be accessible and safely located, and constructed in accordance with plans and specifications approved by the Town. The manhole or monitoring point shall be installed and maintained by the Customer at its expense.

2.5.4 Sump Pumps and Illegal Devices

No plumbing fixture, device, construction or plumbing system shall be installed within any building or improvement which will provide a connection between the Sewer Collection System, directly or indirectly, or with a Sewer Service Line for the purpose of draining ground or surface waters into the Sewer Collection System, and no physical connections shall be permitted whereby a Sewer Service Line is connected to a sump pump or other facility in such a manner that through either the manipulation of valves, the lack of back pressure valves, or as a result of any other arrangement or connection, it is possible to drain flood, overflow, storm or ground water directly or indirectly into the Sewer Collection System. Any Person having connected, or permitting to be connected, such a system to a Sewer Service Line or a Sewer Main, may be given notice to immediately disconnect such device or pumping system at his cost, and upon failure to do so, the Town may forthwith disconnect any Sewer Service Line from the property containing such a forbidden device or pumping system at the Sewer Main. The cost of such disconnection shall be a lien and charge against the property involved. No Sewer Service Line shall thereafter be connected to the Sewer Collection System without payment of the re-connection fee to the Town, and all costs and expenses of the Town relative thereto and positive proof that such improper and illegal connection or device has been removed and will not thereafter be re-connected to the Sewer Collection System.

2.5.5 Grease, Oil or Sand Interceptors

a) Design, Installation and Location. Grease, oil or sand interceptors shall be provided and installed at the sole cost and expense of the Customer when, in the opinion of the Manager, they are necessary for the proper handling of liquid wastes containing greases, oil, etc., in excessive amounts, or any flammable wastes, sand or other harmful ingredient. At a minimum, the interceptor shall be constructed in accordance with the latest edition of the Uniform Plumbing Code. All interceptors shall be located as to be readily available and accessible for cleaning and inspection. Grease, oil or sand interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. Interceptors shall be watertight, and, if necessary, as determined by the Town, gastight and vented.

b) Maintenance and Inspection. Where installed, all grease, oil or sand interceptors shall be maintained by the Customer at its sole cost and expense, in continually efficient operation at all times. The Town requires a monthly or periodic cleaning

and pumping of any grease, oil or sand interceptors. The Town may make inspections of grease, oil or sand interceptors and in the event the Customer/Owner is in violation of these requirements, the Customer/Owner may be liable for payment of a penalty. The cost of the Town's inspections may be billed directly by the Town to the Customer and/or Owner and, in addition, may include all other costs incurred by the Town in inspecting the interceptor.

2.5.6 Swimming Pools

No public or private swimming pool shall be connected to the Sewer Collection System without first obtaining a special Permit from the Town. Such Permit shall define and specify the hours during which water may be discharged from such pools into the Sewer Collection System.

2.6 SEWER MAIN DESIGN / SIZING

Collection sewer system design is intended to provide gravity service only. Before the start of design, the Developer is to contact the Town Engineer to confirm the connection point with the existing sewer system. Sewer line sizing is to be approved by the Town Engineer. The Town may direct the Developer to provide sewer line capacity in excess of the Developer's requirements. In such cases, the Town may negotiate reimbursement to the developer for the incremental cost of the oversize. Sewage lift stations and force mains will not be permitted unless specifically authorized by the Town.

Collection sewers shall be designed to carry not less than the projected peak flow rates flowing half full (safety factor = 2.0), unless otherwise approved by the Town Engineer. The minimum size collection sewer shall be 8" diameter. Sewers shall be so designed and constructed to give mean velocities, when flowing full, of not less than 2 feet per second.

When located in public streets, sewer mains shall be positioned on the west and south sides of the street center line. The mains shall be located proximately 5 to 10 feet from road center line and a minimum distance of 5 feet from the lip edge of the gutter pan (See Drawing G2). Sewers shall generally be designed with sufficient depth to serve basements by gravity. The minimum cover shall be 6 feet from top of sewer to finished grade.

Water and sewer lines shall have a 10 feet minimum horizontal separation. Where this separation is impractical, the Town may permit other separation requirements, in accordance with applicable standards. If a water line passes under a sewer main or service, or if it lies within 10 feet of the sewer, the water line is to be protected per Drawing G3 and Drawing G4. When specifically authorized by the Engineer, other encasement or water line protection alternatives may be permitted. Manholes shall be located at a maximum spacing of 400' center-to-center and also at changes in sewer pipeline alignment and/or grade and at the end of each line. Sewers shall be laid with uniform slope between manholes.

Drop manholes (per Drawing S3) are to be provided for any pipeline whose invert entering the manhole is greater than 24" above the invert out.

2.7 WATER SYSTEM REQUIREMENTS

The Town Water Distribution System has been planned and constructed to provide Potable Water for conventional domestic and commercial uses and fire protection and irrigation. Any application for industrial or a high-demand commercial water supply, which use could be expected to require large quantities of water or unusual demand rates, shall be required to submit demand data before a Permit will be issued and said Permit may contain use limitations as determined to be necessary by the Town.

Water from the Water Distribution System and water from any other source shall be distributed through systems entirely independent of each other and Cross-Connection between such supplies is prohibited. Where any potential of backflow is present, a protective device or system, acceptable to the Town, shall be installed to prevent its occurrence.

All lawn sprinkler systems shall be equipped with a vacuum breaker approved by the Town.

All plumbing shall be designed and installed in conformity with the latest edition of the Manual, *Cross-Connection Control,* published by the Colorado Department of Health.

All backflow preventers and the installation of the same shall be approved by the Town and shall meet current CDPHE Standards. The Customer shall install, operate, test and maintain the backflow preventer as required by the Town. The Customer shall provide the Town, on an annual basis, with certified test results of the backflow preventer. Tests shall be made on the device at a minimum of one (1) per year or at any time the Town reasonably believes that the backflow preventer may not be operating properly.

2.8 WATER DISTRIBUTION DESIGN / SIZING

Water mains shall be designed to meet the most stringent of the following two conditions:

a. Maximum hourly demand with pressures not less than 40 psi at any point of the distribution system, or

b. Maximum daily demand rate plus fire flow demand (as determined by IS0 guidelines) with delivery pressures of not less than 20 psi at the hydrant.

The normal minimum size water distribution main shall be 12" or 8" for short looped lines in single-family residential areas. Six-inch mains may be individually approved by the Town for dead-end mains serving no more than 15 residences with a fire hydrant near the end of the line, if this location and delivery rate meet the requirements of the Elizabeth Fire Department. Main line gate valves shall be located at a minimum frequency of every 600 feet and at all intersections.

Water main sizing and connections shall be reviewed with the Town's Engineer prior to final detailing and drafting. The systems shall be designed to maximize interconnections and strengthening of the Town's water system. Where certain lines may also have a transmission function, in the opinion of the Town, the Town may direct that such lines be oversized.

Regulations normally require a 10-foot minimum horizontal separation between water and sewer mains. When located in public streets, potable water pipelines shall normally be positioned on the east or north sides of the street center line. The mains shall be located proximately 5 to 10 feet from road center line and a minimum distance of 5 feet from the lip edge of the gutter pan (See Drawing G2). Curved water line alignments are to be avoided if the water line is laid in the same easement or roadway as a sewer line.

2.9 INSPECTIONS

New installations, replacements, or repairs to the water distribution or sewer conveyance lines shall be inspected and approved by the Town or the Town's designated Inspector. All work shall be performed in accordance with accepted workmanship practices and the specifications set forth and referenced herein. Any work not accepted by the Town shall be redone until compliant with these Standards. All appropriate permits and approved plans shall be kept on the job site during construction. After receipt of approved plans from the Town the Applicant shall give at least 48 hours notice to the Town prior to starting construction.

2.10 ACCEPTANCE CHECKLIST

Checklist for Acceptance of Town Facilities. To be completed after construction and prior to any service connections.

1. Construction of all Town facilities completed to Town Standards and to the approved plans.

2. All facilities tested to Town Standards and accepted by the Town's Engineer. (Furnish copies of soils compaction and materials tests).

3. Permanent survey monuments set at the corners of all easements.

4. Record drawings meeting Town Standards and sealed by a registered Professional Engineer (Hard and Electronic Copies).

5. Furnish a summary of total construction costs (including design costs) of all applicable water and sewer facilities. Include only facilities to be deeded to the Town.

6. Warranty Deed for all facilities to be owned by the Town.

7. Two year Maintenance Bond to begin after the date of acceptance, except that if deficiencies are identified and repaired, a new two-year maintenance bond for the repaired Work is to begin starting on the date of acceptance of the repaired Work.

8. Payment of all fees and confirmation from Town's Attorney that the applicant for dedication of the facilities is not in default under any agreements within the Town.

9. Electronic Copy (CD) of sewer main video following initial acceptance (see Section 3.5.3)

SECTION 3
LOCAL SEWER AND WATER STANDARDS

SECTION 3

LOCAL SEWER AND WATER STANDARDS

3.1 PURPOSE

The standard details and specifications contained herein are minimum design standards which the Town will accept in order to facilitate perpetual operation and maintenance procedures. In addition, the engineer must also design in accordance with the minimum standards of other regulatory agencies. Review and approval of local facilities designs by the Town, its Engineer or other agencies (Elizabeth Fire Department) shall not relieve the Engineer of Record from responsibility for adequate design.

3.2 SANITARY SEWER MATERIALS

Pipe: Sewer pipe and fittings, 15 inches and smaller, shall be polyvinyl chloride (PVC), SDR 35 minimum thickness conforming to ASTM D3034. Joints shall be of the "slip on" type with integrally cast bell having an elastomeric gasket. For non-standard sewer line applications (e. g.: steep terrain; crossings of streams, ditches or drainages), the Town Engineer will issue project-specific requirements on request.

Manholes: Manhole bases, barrels and tops shall be precast concrete units conforming with ASTM C-478. Concrete for manhole bases and other similar items shall have a 28-day compressive strength of not less than 3,000 psi. All reinforcement required shall be standard deformed reinforcement conforming to the requirements set forth in ASTM A615, Grade 40.

The top section required for change of diameter shall be eccentric cone or flat top as depicted on Standard Drawings S2, S3, and S4. To bring the manhole cover to the correct elevation, the adjustment section of each manhole shall be pre-cast concrete grade adjustment rings. These rings shall be not less than 6 inches wide and furnished in heights to allow for 1-inch adjustment. Total adjustment height with grade rings, shall not exceed 12 inches.

Gaskets (O - rings) or flexible connection boots for connecting PVC pipe to manhole sections shall be specifically manufactured for that purpose. The gasket on boot shall be provided by the manhole manufacturer.

Manhole Joints: the joints between precast manhole sections are to be sealed with Rub'R-Nek LTM by Henry Company, or approved alternate gasket material.

External Joint Sealing: In addition to the gasket material used within the joints between sections of the manhole, an external joint wrap is required. Wrap is to be no less than 8" wide and is to be ConSeal CS-202 Butyl Rubber external joint wrap or Rub'R-neck or approved equal.

Manholes for sewers of 15" diameter or less shall have a minimum inside diameter of 4 feet. Consult the Town's Engineer for requirements for larger sewers. Manholes shall be constructed and installed in accordance with the Standard Drawings S2, S3, S4 and S5. Manholes in open

fields shall be designated with surface markers (see Drawings G5). Surface markers shall be flexible plastic manufactured by Carsonite or approved equal and shall be yellow in color with imprinted letters identifying sewer size and manhole number.

Manhole Covers: Manhole frames and covers shall be cast iron with the word "SEWER" cast on the cover. Unless otherwise specified, manhole lids shall be gasketed, unbolted lids, per Neenah R-1500 "self-sealing", or approved equal. If a gasketed, bolted lid is called for, it shall be Neenah Model R-1915-S1, or approved equal.

Manhole Steps shall be treaded, injection-molded polypropylene encapsulating a 112" grade 60 reinforcing rod. Shall be M.A. Industries step, Model PS-1 PF.

3.3 WATER MAIN MATERIALS

All water mains shall be Blue C900 or C905 PVC, conforming to ASTM 2241. Pipe joints shall be push-on type.

Fittings shall be ductile-iron, minimum 250 psi minimum working pressure, conforming to AWWA GI53 or C110 with mechanical joint connections meeting AWWA C111. Fittings shall have a cement mortar lining meeting AWWA 104 and bituminous exterior coating.

Sheathing: All ductile-iron, valves, and fittings shall be polyethylene sheathed in accordance with ANSl A21.5, AWWA C105, 8 mil minimum thickness.

Tracer Wire: A ten-gauge insulted tracer wire shall be required for all water mains. Wire termination boxes shall be provided, as depicted in Drawing W5.

Location Tape: All water lines shall be marked using blue detectable utility marking tape placed 8 to 10 inches below grade. The tape shall be PVC material 6-inches wide with a thickness of four (4) mils.

Surface Markers: Gate valves in open fields shall be designated with surface markers (see Drawings G5). Surface markers shall be flexible plastic manufactured by Carsonite or approved equal and shall be blue in color with imprinted letters identifying main size and valve number.

Pipeline Insulation: Where required at depths less than specified. Insulation shall be Dow STYROFOAM 115 or approved equal.

Line Valves: Line valves shall be provided to allow isolation of parts of the system for maintenance or repair. They are required approximately every 600 feet, or more frequently at intersections of mains to allow isolation of loops and branches. A line valve is required between fire hydrants. Line valves shall comply with requirements for "Buried Valves."

Buried Valves: Valves, 12" and smaller, shall be non-rising stem, bronze mounted gate valves with mechanical joint ends conforming with AWWA C509. Valves shall have 2" square

operating nuts and open left (counterclockwise rotation). Valves shall be Mueller, Clow, Waterous, or approved equal.

Valve Boxes: Each buried valve shall be provided with a cast-iron valve box and round cover. The box shall have a minimum inside diameter of 5 1/4" and be adjustable in length and of the screw type. The word "WATER" shall be cast on the cover. Valve boxes shall be "wide oval base" by Tyler, Clow, or approved equal. Valve boxes shall allow for at least 3 additional extension above the level required for final grade at the time of installation. The top of all valve stems (including extensions) shall be located between 42" and 48" below final grade (See Drawing W6).

Fire Hydrants: Fire hydrants shall be of the dry barrel type and conform with AWWA C502. Hydrants shall have a 5 1/4" main valve, two 2-1/2" hose connections and one 4 1/2" pumper connections. Hydrants shall have 6- inch mechanical joint connections and safety traffic flange. Operating and cap nuts must be 1 ½", Number 17 National Standard hex main valve that opens left. Fire hydrants shall be Mueller Centurion No. A-423, Waterous Pacer WB-67 with bronze seat ring, or approved equal (See Drawing W7).

Blowoffs: Blowoffs shall comply with Drawing W8. The top of all blowoff valve stems (including extensions) shall be located between 42" and 48" below final grade.

Air-Release Valves: Shall be provided at high points in the water distribution system. This may take the form of a fire hydrant or 2" blowoff (both manually operated), or an automatic air-release valve (See Drawing W9). The proposed location and use must be pre-approved by the Town.

Mechanical Joint Restraint: Joint restraint devices shall be made of ductile iron. Joint restraint devices shall be EBAA Iron, Inc., Megalug Series 1100 or 1700 or Uni-Flange Corp. Series 1400 or accepted equal.

Casing Spacers: Carrier pipes to be installed inside casings shall be installed with self-restrained casing spacers. Casing spacers shall provide axial thrust restraint to prevent pipe joint deflection during and after installation. They shall also provide dielectric insulation between the carrier pipe and the casing and facilitate installation of the carrier pipe into the casing. Spacers shall be installed at a maximum of every ten (10) feet of the pipeline to support the pipe barrel and the weight of its contents. Casing spacers shall be manufactured by Uni-Flange or Cascade Waterworks or approved equal.

3.4 INSTALLATION

3.4.1 Sewer Installation

The sewer system shall be installed in a thorough, workmanlike manner in accordance with the Design Documents that have been approved by the Town. The minimum bedding and backfill requirements shall be as shown on Drawing S1 and described in these standards.

The minimum cover shall be 6-feet from top of sewer line to finished grade. A minimum of 5-feet of cover will be allowed if at least 2 inches of an approved pipeline insulation is provided, per Drawing S1. If insulation is installed, use approximately 6-inches of sand or squeegee for the pipe zone materials above and beneath the insulation to protect it from breakage during backfill.

If the bottom of the excavation is soft or unstable, and in the opinion of the Town, is not a satisfactory support for the pipeline, further depth and/or width shall be excavated and refilled to 6-inches below the pipe outside diameter (excluding bells) with Trench Stabilization Material, as specified in Section 3.4.6.

Each pipe length and fitting interior, interior surface of bells, and exterior surface of spigots shall be cleaned of all foreign material before placing it in the trench and shall be kept clean all times thereafter. Each item must also be examined for cracks and other defects before installation.

Pipe shall be cut, only whenever necessary, to conform to location of manholes or connections. All cuts shall be straight, true, and at right angles to the axis of the pipe unless otherwise noted or directed by the Engineer. The cutting process shall leave a smooth end without damaging the pipe. All burrs shall be removed from the ends of cut pipe, and the end chamfered and lightly rasped or filed. All tools used in cutting pipe shall be subject to the Engineer's approval. The manufacturer's requirements for lubrication and gaskets must be followed.

Pipe laying shall proceed upgrade with the spigot ends of pipe pointing in the direction of the flow, unless otherwise approved by the Engineer. Each pipe length shall be laid true to line and grade in such manner as to form a close concentric joint with the adjoining pipe and to prevent sudden offsets to the flow line. Pipe shall be laid in an unwatered trench and shall not be used for draining water from the trench. Pipes are to be kept clean by capping or plugging ends.

3.4.2 Manholes

Manholes shall be constructed to conform to the Standard Details. The invert channels shall be smooth and semi-circular in shape, conforming to the inside of the incoming and outgoing sewer pipelines. Changes in direction of flow shall be made with a smooth curve of as large a radius as the size of the manhole will permit. Changes in size and grade of the channels shall be made gradually and evenly. Where differences in invert elevations exist, sloped flow channels shall be formed so the sewage does not undergo a vertical drop. The invert channels may be formed directly in the concrete of the manhole base. The floor of the manhole outside of the channel shall be smooth and shall slope toward the channels not less than 1 inch per foot nor more than 2 inches per foot. The top circumference of the base shall be finished level and smooth to permit obtaining a watertight joint between the precast manhole sections and the cast in place base. The manhole covers shall be set with their tops at the grades set forth in the approved drawings. When a manhole top is above the ground line, the exposed ring shall be encased in non-shrink grout as shown on the Standard Details. Manhole tops without bolted, gasketed covers shall not be set at or below surrounding grade, except in paved roadways. The site shall be graded so that drainage is away from the manhole.

Each joint of the precast manhole barrel shall have at least one continuous gasket placed on the lower ledge before the barrel immediately above is lowered into place.

For poured-in-place bases (See Drawing S5), joints between the precast manhole barrel sections and the cast in place manhole bases shall have two continuous gaskets and shall be grouted inside and outside using approved non-shrink grout. With a poured-in-place base, the surface of the precast barrels and the cast in place bases shall be smooth and sound. The joint surfaces shall be cleaned to remove any concrete projections or dirt which may prevent a water-tight seal from being established. The joints shall be prepared and the gaskets shall be placed in accordance with the manufacturer's recommendations.

External Joint Sealing Wrap is to be applied to clean concrete surfaces per manufacturer's requirements. Must be applied immediately prior to backfilling, so when backfill is compacted the earth pressure forces bituminous wrap into concrete surfaces. Temperature of manhole sections and of backfill materials must be above 40 deg. F from time of applying wrap to time of backfilling.

3.4.3 Underdrains

The Town does not allow the use of underdrains laid in the same trench as a sanitary sewer line.

3.4.4 Waterline Installation

Water pipelines shall be installed in a thorough and workmanlike manner in accordance with the Design Documents that have been approved by the Town. The minimum bedding and backfill requirements are depicted on Drawing W1 and described in Section 3.4.6. The minimum cover shall be 5 feet from top of water line to finished grade. Pipelines shall not be placed deeper than 10 feet without prior approval by the Town.

A minimum of 4 feet of cover will be allowed if at least 2 inches of an approved pipeline insulation is provided, per Drawing W1. If insulation is installed, use approximately 6-inches of sand or squeegee for the pipe zone materials above and beneath the insulation to protect it from breakage during backfill.

If the bottom of the excavation is soft or unstable, and in the opinion of the Town, is not a satisfactory support for the pipeline, further depth and/or width shall be excavated and refilled to 6-inches below the pipe outside diameter (excluding bells) with Trench Stabilization Material, as specified and detailed in Section 3.4.6.

All pipeline fittings (i.e., bends, tees, plugs, and caps) shall be installed with concrete thrust blocks adequately designed for the specific application and mechanically restrained for at least 40 feet in all directions. Thrust blocks shall be cast-in-place from concrete having a minimum compressive strength of 3,000 psi. Minimum requirements for horizontal and vertical thrustblocks are as shown on Drawing W2 and W3.

Alternate means of thrust restraint may be considered and approved for use where proved to provide similar restraint. Supplemental restraint may also be required where the Engineer believes the soil bearing pressures to be inadequate, or where the Engineer is concerned about subsequent movement due to slope or other conditions of service. See Drawing W4 for mechanical joint restraint lengths and details. Valves near a fitting must be tied back to that fitting, using rodding or mechanical joints.

All dead ends shall be terminated with a fire hydrant or blow-off.

3.4.5 Fire Hydrant Installation

Fire hydrants shall be located as required by the Town and the Elizabeth Fire Department, and shall be placed at a maximum interval of every 500 feet. The Developer shall be required to obtain the approval by the Elizabeth Fire Department for fire hydrant locations. In general, hydrants shall be located a minimum of 18-inches behind curbs or sidewalks. Fire hydrants shall be installed in accordance with Drawing W7. Each hydrant shall be connected to the main by a six-inch (6") branch line. An independent six-inch (6") gate valve shall be installed on the tee off the water main. The length of the branch fire line shall be a maximum of 50 feet and no service line connections shall be made on the fire hydrant branch line.

3.4.6 Sewer and Water Main Pipe Bedding and Backfill

a. Trench Zones. The terms "Bedding Zone", "Pipe Zone" and "Backfill Zone" shall refer to the trench zones identified in the Standard Details S1, and W1.
   1) Bedding zone. The Bedding Zone shall consist of all material placed below the pipe invert or, when permitted, the native materials graded and prepared for direct placement of the pipe.
   2) Pipe zone. The Pipe Zone shall consist of all material placed above the pipe invert to an elevation shown on the details.
   3) Backfill zone. The Backfill Zone shall consist of all material above the Pipe Zone.

b. Material. All bedding and backfill material shall have the approval of the Engineer. All bedding and backfill material shall be free of frozen material, organic material and debris. The materials to be used in each trench zone are indicated on the Standard Details and these materials are described below. All materials may be subject to gradation tests and compaction tests prior to approval of the use of that material. The test results shall be submitted to the Engineer for approval and verified as to their accuracy. These tests shall be performed at no cost to the Town or its agents.

1) Sand bedding or sand backfill material. This material shall be a clean, well-graded sand and shall conform to the following limits when tested by means of laboratory sieves:

Well-Graded Sand

Sieve Size	Total Percent Passing by Weight
3/18 – inch	100
No. 4	70 - 100
No. 8	36 - 93
No. 16	20 - 80
No. 30	8 - 65
No. 50	2 - 30
No. 100	1-10
No. 200	0 - 3

2) Roadbase bedding material or roadbase backfill. This material shall be Class 6 aggregate base course as specified by the latest version of the State of Colorado Department of Highways; and shall meet the following gradation:

Sieve Size	Total Percent Passing by Weight
¾ – inch	100
No. 4	30 - 65
No. 8	20 - 55
No. 200	3 - 12

3) Squeegee Sand. This material shall be clean, well graded and conform to the following limits when tested by means of laboratory sieves:

Sieve Size	Total Percent Passing by Weight
3/8 – inch	100
No. 200	0 – 5

4) Granular bedding or granular backfill material. This material shall be imported crushed rock or angular surfaced gravel and meet the following gradation (ASTM D448, No. 67):

Sieve Size	Total Percent Passing by Weight
1 – inch	100
¾ - inch	90 – 100
3/8 – inch	20 -55
No. 4	0 – 10
No. 8	0 - 5

5) Select material. Select material shall not be permitted unless authorized by the Engineer. This material shall consist of suitable material screened from the excavated earth having no rocks or stones greater in size than ¾-inch.

6) Trench stabilization material. This material shall be a ¾ inch to 1½ inch uniformly-graded, crushed rock or concrete aggregate.

7) Backfill material. Backfill material shall consist of suitable material from the excavated earth, meeting all the requirements of these standards.

No boulders over 6 inches in any dimension shall be allowed in the top 12 inches of the trench. All boulders shall be carefully placed so that no damage will be done to the pipeline. No backfill material shall have boulders larger than 24 inches in any dimension and the amount of boulders larger than 8-inches shall be less than 15% of the backfill volume. Boulders larger than 8 inches in any dimension shall be carefully lowered into the trench until the backfill is 4 feet over the top of the pipe.

c. Bedding and Backfill Installation:

1) General. The compaction requirements for the backfill zone shall conform to maximum dry density according to ASTM D698, Moisture-Density Relations of Soils (Standard Proctor). For the bedding and pipe zones, and when the ASTM D698 test is not applicable, the percentage compaction requirements shall conform to ASTM D4253, Test for Relative Density of Cohesionless Soils.

The Developer is responsible for providing (at no cost to the Town) adequate materials testing and/or geotechnical engineering resources to provide proper Quality Control and response to Quality Assurance directives by the Town or its agents. At a minimum, moisture density tests shall be taken one test for every 24-inch lift per 200 linear feet of trench and at every above ground appurtenance (i.e. valve box, manhole, hydrant, etc.)

When required by the Town, the Developer shall excavate backfilled trenches for the purpose of performing compaction tests at 'locations and depths required by the Engineer. The Developer shall be responsible for reinstalling and compacting the test excavations at no additional cost to the Town.

2) Bedding zone installation. Bedding material shall consist of the material on which the pipe is placed in accordance with the Drawings S1 and W1. Bedding material shall be placed to the required elevation of the pipe invert. Tamping and/or vibratory equipment shall be used to thoroughly tamp the bedding material to a minimum 75 percent relative density.

3) Pipe zone installation. After bedding material has been placed and approved and after the pipe has been installed and approved, the pipe zone backfill shall be installed to an elevation shown on the Standard Drawings.

The pipe zone material shall be as specified on the details and shall be placed and compacted in distinct, separate lifts not to exceed 6 inches of loose depth; except that the first loose lift shall not be higher than the pipe centerline (springline). If select backfill materials are permitted in this zone but acceptable select backfill material (suitable for placement within 12 inches of the pipe barrel) is not available at any particular location, the Developer shall use imported granular backfill material. Compaction shall meet the requirements of "Bedding Zone Installation," utilizing T-bars or mechanical tamping equipment.

4) Backfill zone installation. Unless otherwise provided in the Special Construction Provisions, the following method of installation shall apply. After the pipe zone backfill has been placed and approved, the trench shall be backfilled. All backfill above the pipe zone backfill shall be carefully placed in the trench in lifts no greater than 2 feet loose lifts. Each lift shall be compacted by mechanical equipment to 95 percent of laboratory dry density. After the trench is backfilled to the ground surface, the trench line shall be wheel rolled. If the backfill is depressed below the finished grade elevation, the depressed area shall be refilled and compacted. The backfill shall be mounded higher than the adjacent ground to allow for settlement.

5) Backfill zone installation in roads and streets. Beneath all traveled ways in roads and streets, highway shoulders and within 15 feet of pavement in State Highway Department rights-of-way (unless otherwise specified on the plans) backfill shall be carefully placed and compacted up to the limit of base course material or to gravel. Compaction shall be by mechanical tamping in 8-inch maximum loose lifts using mechanical or hand tampers, weighing not less than 20 pounds, or vibratory rollers. All other means must be approved in writing by the Engineer. All backfill shall be compacted to 95% of maximum laboratory dry density or 70 percent relative density. The material shall be within 2.0 percent of optimum moisture content. Finished backfill surface shall be proof rolled and exhibit no deflections.

The Developer may request approval of alternate means of compaction. Such request must be submitted to the Engineer in writing. Approval of the compaction method will be made by the Engineer only in writing. Use of specified or approved compaction methods does not relieve the Developer from providing a completed project meeting the intent of this Specification.

d. Maintenance of Backfill. All backfill shall be maintained in a satisfactory condition and all places (including pavement) showing signs of settlement shall be filled and maintained for a period of two years following the date of final acceptance of all work performed. When the Developer discovers or is notified by the Engineer or the Town that

any backfill is not in compliance with these requirements, the Developer shall correct such condition at once. Any utilities and road surfacing damaged by such settlement shall be repaired by the Developer to the satisfaction of the Town and Engineer. In addition, the Developer shall be responsible for the cost to the Town of all claims for damages filed with the Court and actions brought against the said Town for, and on account of, such damage.

e. Dewatering. All pipe trenches shall be kept free from water during pipe installation and other related work. The method of dewatering shall provide for a completely dry trench bottom. Dewatering shall be accomplished by the use of well points, sump pumps, rock or gravel drains placed below subgrade or subsurface pipe drains. All water shall be disposed of in a suitable manner without being a menace to public health or causing public inconvenience. No water shall be drained into other work being completed or under construction. The dewatering operation shall continue until such time as it is safe to allow the water table to rise in the excavation. Pipe trenches shall contain enough backfill to prevent pipe flotation.

f. Trench Sub-grade in Poor Soils. In excessively wet, soft, spongy, unstable or similarly unsuitable material is encountered at the surface upon which the bedding material is to be placed, the unsuitable material shall be removed to a depth as determined in the field by the Town or it's designated representative and replaced with Trench Stabilization material.

3.5 TESTING

3.5.1 Sanitary Sewer Line Testing

The following testing procedures are intended to determine if the sanitary sewer line meets the Town's minimum quality standards. Alternative procedures meeting or exceeding the intent of these procedures, as determined by the Town's Engineer, may be acceptable. In any case, however, proposed alternative testing procedures must be included in the design plans and specifications.

The Contractor shall notify the Town's Inspector - no less than 48 hours prior to the desired test time.

The Town's lnspector shall witness all tests and verify the accuracy and acceptability of the equipment utilized. The Town's Engineer will inform the Contractor regarding acceptable methods of repair in the event that one or more sections fail to pass any test.

3.5.1.1 Pipeline Flushing

The Contractor shall flush the pipelines, as the work progresses by means that are in accordance with good practice, to insure that earth, sand, rocks or other foreign materials are removed from the interior of the pipeline. Proper environmental and erosion control

prevention measures shall be employed meeting CDPHE latest Standards and Regulations.

3.5.1.2 Alignment and Grade

Sewer pipelines will be checked by the Town to determine whether any displacement of the pipe has occurred after the trench has been bedded. The test will be as follows:

A light will be flashed between manholes, or if the manholes have not as yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror. If the illuminated interior of the pipelines shows poor alignment, displaced pipe, earth, or other debris in the pipe, or any other kinds of defects, the defects, determined by the Town, shall be remedied by the Contractor. The test will be repeated following completion of backfilling and any poor alignment, displaced pipe, or other defects, determined by the Town, shall be corrected at no cost to the Town.

3.5.1.3 Leakage Testing by Exfiltration

Tests for water tightness shall be made by the Contractor in the presence of the Town's Inspector. The Contractor shall provide assistance to the Town's lnspector in development of a detailed record of the testing program. The sewer and connections shall not leak in excess of the following rate for a 24-hour test period:

MAXIMUM ALLOWABLE SEWER LEAKAGE

Pipe Size Inches	Leakage Gal/Foot/24 Hours
18	0.68
15	0.57
12	0.45
10	0.38
8	0.30
6	0.23

Each reach of pipeline between manholes shall be tested individually. Any individual reach that leaks in excess of the amount allowed in the previous paragraph shall be considered as failing, and shall be repaired and retested.

At the discretion of the Town, the time for leakage rate test may be shortened to four (4) hours.

The tests and measurement of infiltration or exfiltration shall be conducted in a manner as approved by the Town's Inspector. The minimum head for the exfiltration tests shall be 2 feet above the top of the pipe at its highest point in the test section. Sections shall be bulk-headed so that during any test the head on the sewer at its lowest elevation will not be more than 10'. This restriction does not apply to ductile-iron pipe.

The Contractor shall repair the sewer in a manner that is satisfactory to the Town and re-test at the contractors' expense until a satisfactory installation is obtained.

3.5.1.4 Leakage Testing by Infiltration

Infiltration tests will be used if the groundwater table is likely to be 1 foot or more above the invert of the finished sewer. Otherwise, exfiltration tests will be used. The allowable leakage rates are as tabulated for section 3.5.1.3, Leakage Testing by Exfiltration.

3.5.1.5 Low-Pressure Air Test

At the option of the Contractor, low-pressure air testing of the installed sewer pipe may be used instead of the leakage exfiltration test.

The following criteria and procedure shall be utilized, unless otherwise approved by the Town's Inspector.

1) Plug Restraint. It is extremely important and essential that all plugs be installed and braced in such a way that blowouts are prevented. It is recommended that every plug be positively braced and that no one be allowed in the manhole adjoining a line being tested so long as pressure is maintained in the line.

2) Relief Valve. All pressurizing equipment used for low-pressure air testing shall include a regulator or relief valve set no higher than 9 psig to avoid over pressurizing and displacing temporary or permanent plugs. As an added safety precaution, the pressure in the test section should be continuously monitored to make certain that it does not at any time exceed 9 psig.

3) Plug Design. Either mechanical or pneumatic plugs may be used. All plugs shall be designed to resist internal testing pressures without the aid of external bracing or blocking. However, the Contractor should internally restrain or externally brace the plugs to the manhole wall as an added safety precaution throughout the test.

4) Singular Control Panel. To facilitate test verification by the inspecting Engineer, all air used shall pass through a single, above ground control panel.

5) Equipment Controls. The above ground air control equipment shall include a shutoff valve, pressure regulating valve, pressure relief valve, input pressure gauge, and a continuous monitoring pressure gauge having a pressure range from 0 to at least 10 psi. The continuous monitoring gauge shall be no less than 4 inches in diameter with minimum divisions of 0.10 psi and an accuracy of 1-0.04 psi.

6) Separate Hoses. Two separate hoses shall be used to: (1) connect the control panel to the sealed line for introducing low-pressure air, and (2) a separate hose connection for constant monitoring of air pressure build-up in the line. This requirement greatly diminishes any chance for over-pressurizing the line.

7) Pneumatic Plugs. If pneumatic plugs are utilized, a separate hose shall also be required to inflate the pneumatic plugs from the above ground control panel.

8) Laterals, Stubs, and Fittings. During sewer construction all service laterals, stubs, and fittings into the sewer test section shall be properly capped or plugged so as not to allow air loss that could cause an erroneous air test result. It may be necessary and is always advisable to restrain gasketed caps, plugs, or short pipe lengths with bracing stakes, clamps and tierods, or wire harnesses over the pipe bells.

9) Plug Installation and Testing. After manholes have been tested for alignment and grade, and a manhole-to-manhole reach of pipe has been backfilled to final grade and prepared for testing, the plugs shall be placed in the line at both manholes and secured.

It is advisable to seal test all plugs before use. Seal testing may be accomplished by laying one length of pipe on the ground and sealing it at both ends with the plugs to be checked. The sealed pipe should be pressurized to 9 psig. The plugs shall hold against this pressure without bracing and without any movement of the plugs out of the pipe. No persons shall be allowed in the alignment of the pipe during plug testing.

The upstream end of the line shall be plugged first to prevent any upstream water from collecting in the test line.

10) Line Pressurization. Low pressure air shall be slowly introduced into the sealed line until the internal air pressure reaches 4.0 psig.

11) Pressure Stabilization. After a constant pressure of 4.0 psig is reached, the air supply shall be throttled to maintain that internal pressure for at least 2 minutes. This time permits the temperature of the entering air to equalize with the temperature of the pipe wall.

12) Timing Pressure Loss. When temperatures have been equalized and the pressure stabilized at 4.0 psig, the air hose from the control panel to the air supply shall be shut off or disconnected. The continuous monitoring pressure gauge shall then be observed while the pressure is decreased to no less than 3.5 psig. The timing pressure loss test shall then commence at

a pressure reading of 3.5 psig, or any convenient observed pressure reading between 3.5 psig and 4.0 psig. (Except as adjusted for groundwater as follows.)

13) Air Pressure Adjustment. An air pressure correction, which must be added to the 3.5 psig normal test starting pressure, shall be calculated by dividing the average vertical height, in feet of groundwater above the invert of the sewer pipe to be tested, by 2.31. The result gives the air pressure correction in pounds per square inch to be added. (For example, if the average vertical height of groundwater above the pipe invert is 2.8 feet, the additional air pressure above the pipe invert is 2.8 divided by 2.31 or 1.2 psig. This would require a minimum starting pressure of 3.5 plus 1.2 or 4.7 psig). The allowable pressure drop of 1.0 psig and the timing in Table I are not affected and shall remain the same. In no case however should the starting test pressure exceed 9.0 psig.

14) Determination of Line Acceptance. If the time shown in Table I for the designated pipe size and length, elapses before the air pressure drops 1.0 psig, the section undergoing test shall have passed.

TABLE 1
SPECIFICATION TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015

1 (min:sec) Pipe Diameter (in.)	2 Minimum Time (min:sec)	3 Length for Minimum Time (ft)	4 Time for Longer Length (sec)	100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	.380 L	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46
6	5:40	398	.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8.52	10:08	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41

3.5.1.6 Deflection

All PVC sewer pipelines shall be tested for vertical deflection after placement and compaction of backfill unless testing is specifically excepted by the Town's Inspector. Method of testing shall be by deflectometer of the rigid GO/NO-GO type device. Alternative methods will be permitted only by written permission of the Town's Inspector. Maximum allowable deflection shall be five (5) percent of the pipe diameter.

Any and all pipe with vertical deflection greater than the allowable shall be excavated, removed from the pipeline, replaced, backfilled and compacted as specified and retested.

The Town reserves the right to direct the Developer to retest sewer lines after 10-12 months of service, if the Town has concerns about the condition of certain sections of pipe. Sections would be selected for retesting based on the results of the initial tests, the outcome of the television inspection (per Section 2.73), depth of cover, or other technical factors. The Developer shall perform such retesting at no cost to the Town.

3.5.2 Manholes

During the construction of the manholes, the Contractor shall, in accordance with good practice, insure that no earth, sand, rocks or other foreign material exists on the joint surface during assembly of the sections. The Town's Inspector shall check each manhole to determine whether the manhole fulfills the requirements of the Drawings and Town's Standards.

3.5.2.1 Visual Examination

The Town shall visually check each manhole, both exterior and interior, for flaws, cracks, holes, or other inadequacies which might affect the operation or watertight integrity of the manhole. Should any inadequacies be found, the Contractor shall make any repairs deemed necessary by the Town's Inspector.

3.5.2.2 Leakage Test

All manholes shall be tested for leakage and all tests shall be witnessed by the Town's Inspector. The leakage test shall be conducted prior to backfilling around the manhole and shall be carried out in the following manner:

1) All lines leading into or out of the manhole shall be tightly plugged
2) The manhole shall be filled with water to a level at least 2 inches above the uppermost step. The water shall be allowed to stand for two hours to allow for normal water absorption into the manhole material. At the end of the two-hour stabilization period, if the water level in the manhole has dropped below the top step, additional water will be added to bring the level above the step as before. Any visible external leakage or drop in water level noted within the one-hour test period shall constitute failure and the Contractor shall repair or replace the defective work and retest.
3) Vacuum Testing. At the option of the Contractor, vacuum testing of the installed manholes may be used instead of the leakage test. All pipes entering and exiting the manhole shall be temporarily plugged, taking care to securely brace the pipes and plugs to prevent them from being drawn into the manhole.

   The test head shall be placed at the top of the manhole and the seal inflated in accordance with the manufacturer's recommendations.

A vacuum of 10-inches of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head shall be closed, and the vacuum pump shut-off. The time shall be measured for the vacuum to drop to 9-inches of mercury.

The manhole will be declared unacceptable if the time to drop from 10-inches of mercury to 9-inches of mercury is less than 60 seconds. This test interval is valid for 48" MH of up to 24' depth, 60" MH up to 18' deep and 72" MH up to 14' deep. The Town Engineer will establish test intervals for other situations on a case-by-case basis.

3.5.3 Television Inspection

The Developer shall perform television inspections of each segment of the sewer line and record this inspection on a CD, which is to be turned over to the Town. The format for labeling and stationing of this record is to be approved by the Town prior to performing the TV inspection. The Developer is to provide a one week notice prior to the TV inspection, so that a representative from the Town may be present to observe the inspection in progress. There shall be two TV inspections performed, one at the initial acceptance and one at the end of the two year warranty. The warranty inspection is to be performed no earlier than 22 months after acceptance of the sewer construction by the Town. The CD is to be submitted to the Town no later than 23 months after the date of Town acceptance. Performance of the two TV video inspections shall be completed at no cost to the Town.

3.5.4 Water Main Testing

All finished water lines, after reaction blocking is in place, shall be pressure and leakage tested at not less than 150 psi for a two-hour period. If working pressure is greater than 100 psi, the test shall be performed at 1.5 times the expected working pressure. Unless approved by the Engineer no lines longer than 1200' shall be tested at one time.

No pipeline installation will be acceptable until the leakage is less than the amount computed by the following formula:

$$\frac{\qquad}{\qquad}$$

Where:
L = Allowable leakage in gallons (per hour)
S = Tested length of pipe (feet)
D = Nominal diameter of pipe, inches
P = Average test pressure during the test, psi

3.5.5 Water Main Disinfection

All water piping shall be disinfected in accordance with AWWA C601 after all construction work has been completed. Chlorine shall be added to the water at the necessary locations in the amount to form a 50 ppm free chlorine residual. The chlorine solution shall be left in the pipelines for not less than 24 hours, during which time all valves and fire hydrants shall be operated in order to disinfect the appurtenances. After that length of time, the chlorine residual of the solution, at any place in the system, shall not be less than 10 ppm. All chlorination work must be done in the presence of the Engineer. At the end of 24 hours, a bacteriological test is to be performed by the local health authority to insure adequate disinfection, at the cost of the Developer. Special provisions (at no additional cost to the Town) must be made to assure any highly chlorinated water is not discharged to the ground. The Developer must submit the "method of disposal" for this chlorinated water prior to any testing.

SECTION 4
SERVICE LINE STANDARDS

SECTION 4

SERVICE LINE STANDARDS

4.1 GENERAL

No service line may be constructed without prior approval from the Town. The Applicant must provide adequate information describing the nature of the building or development to be connected, the proposed service line size, and the proposed connection point of the service line to the main. A site plan, showing the location of the proposed service line relative to other utilities on and adjacent to the property must be presented. The drawing must show the location of buildings served and parts of the site that are to be paved or otherwise intended to be kept clear of snow, and must also show service line slope and depth of cover over the service line.

The sizing of the service lines shall be the responsibility of the Applicant. When requested by the Town, the Applicant shall, at his expense, furnish data, plans, calculations, or other information as required for the evaluation of the service size. Service lines are the responsibility of the Developer or Applicant, who is responsible for design and construction and the costs thereof and for payment of actual costs of review and inspection provided by the Town.

All service lines are to be constructed in accordance with applicable codes, generally accepted good construction practices, and the minimum standards and criteria contained in this document. The details are provided for standardization purposes only, and represent minimum design standards which may require upgrading for specific applications.

No water service line shall be connected to a main which has not been pressure tested, disinfected and accepted by the Town.

4.2 OWNERSHIP AND MAINTENANCE

Ownership and maintenance responsibilities are defined under the following categories of Sewer Service, New Single-Family Detached Residential Water Service, Existing Single-Family Detached Residential Water Service and Commercial/Multifamily Water Service.

Sewer Service: The sewer service line is defined as beginning at the wye connection of the main line to the point of connection to the building(s) and is the property of the customer of the resident, unit or building served (see Drawing L1). Repairs, maintenance cleanings and pipe replacement of the service line are the responsibility of the customer.

New Single Family Detached Residential Water Service: A new single family detached residential water service is defined as a service constructed on or after January 1, 2011 in accordance with these standards and the details shown on Drawing L4. Starting at the stop and waste valve (curb stop) the customer shall own and be responsible for maintenance and replacement of the service line and appurtenances including the stop and waste valve (curb stop) buried piping, internal piping, meter and meter box, valves, PRV and backflow preventer to the premise served. The stop and waste valve (curb stop) and meter box shall be located in a

convenient, accessible location and kept in good working order and clean of debris. Any meter or valve box not conforming to these maintenance standards shall be cleaned, repaired or replaced by the property owner. Failure by the property owner to comply may cause the Town to complete the required maintenance with the costs thereof billed to the owner. In addition, the Property Owner shall be responsible for the thawing of frozen service lines and appurtenances starting at the stop and waste valve to the premise served.

Existing Single Family Detached Residential Water Service: An existing single family detached residential water service is defined as a service constructed before January 1, 2011. If a property has a stop and waste valve located and installed in accordance with the details on Drawing L5, the customer, starting at the stop and waste valve, shall own and be responsible for maintenance and replacement of the service line and appurtenances including the stop and waste valve buried piping, internal piping, meter and meter box, valves, PRV and backflow preventer to the premise served.

If a property does not have a private water system in accordance with the detail shown on Drawing L5, the Property Owner shall own and be responsible for maintenance and replacement of the service line, and appurtenances including the stop and waste valve (curb stop), buried piping, internal piping, meter and meter box, valves, PRV and backflow preventer from the premise served to the Town right-of-way or Town easement; however, the water system shall be considered a non-conforming water system. Ownership of non-conforming water systems shall be recognized in accordance with this paragraph until December 31, 2015. However, any repairs to a non-conforming water service line shall require the installation of a stop and waste valve. A backflow prevention device will be required as mandated by the Colorado Department of Health Drinking Water Cross Connection Regulations. A Pressure Reducing Valve (PRV) is not required at the time of the stop and waste installation; however, it is the responsibility of the property owner to maintain proper operating water pressures for individual water service. Upon request, the Town shall provide a required stop and waste valve and box setting to customers for their own installation during this period and at the time the customer has an open excavation and is prepared to place the stop and waste valve on the water line. The Town may assist in the cost of relocating the meter pit to conform to current standards on a case by case basis as determined by the Board of Trustees.

After December 31, 2015, if a property has a non-conforming water system, the property owner shall own and be responsible for maintenance and replacement of the service line, and appurtenances including the corporation stop, stop and waste valve (curb stop), buried piping, internal piping, meter and meter box, valves, PRV and backflow preventer from the premise served to the corporation stop on the main line, unless the property has a stop and waste valve installed in accordance with Drawing L5, in which the responsibility shall be from the stop and waste valve to the premise served.

The stop and waste valve and meter box shall be located in a convenient, accessible location and kept in good working order and clean of debris. Any meter or valve box not conforming to these maintenance standards shall be cleaned, repaired or replaced by the property owner. Failure by the property owner to comply may cause the Town to complete the required maintenance with the costs thereof billed to the owner.

The Town, depending on the on extent of ownership, shall be responsible for the replacement of Town improvements such as sidewalks and asphalt in repairing or replacing any service line.

The Town will not be responsible for the thawing of frozen service lines under private ownership.

Commercial/Multifamily Water Service: Each individual Commercial structure or Multifamily unit shall be served by separate service lines. At the discretion of the Town, depending on unit ownership, single lines serving Multifamily units may be allowed.

Typically separate lines shall be installed for fire suppression systems. The Town may allow combined service lines for potable use and fire suppression. Potable services must be isolated and protected from the fire suppression system as per the Standards and CDPHE Regulations. The Town assumes no obligation for the adequacy of private fire protection systems.

Water services ownership begins at the stop and waste valve if one is installed; or at the isolation valve if there is no stop and waste valve; or at the corporation stop on the mainline if there is no isolation valve or stop and waste valve. Starting at the point of ownership (corporation stop, isolation valve, or stop and waste valve) the customer shall own and be responsible for maintenance and replacement of the service line and appurtenances included buried piping, internal piping, meter and meter box or vault, valves, PRV and backflow preventer. The meter or meter box/vault shall be located in a convenient, accessible location and kept in good working order and clean of debris. Any meter or vault not conforming to these maintenance standards shall be cleaned, repaired or replaced by the property owner. Failure by the property owner to comply may cause the Town to complete the required maintenance with the costs thereof billed to the owner. In addition, the Town will not be responsible for the thawing of frozen lines and appurtenances under private ownership.

4.3 SERVICE CONNECTION

No connection between the sewer or water system of the Town and the service of the owner may be made except in a public street adequate to accommodate the sewer or water facilities or in a similar place to which the Town has as a free right of access as it would have in a public street.

Where parallel or approximately parallel to a structural wall, the service shall be at least 5' from the wall. Penetrations through structures shall be approximately at right angles and shall provide flexibility such that the service will not be damaged by settlement of the structures.

Water and sewer service lines shall have 10 feet minimum of horizontal separation. Where this separation is impractical, the Town may permit other separation requirements, in accordance with applicable standards. If a sewer service line passes over a water main or service, or if it lies within 10 feet of the water main or service, the service is to be modified as specified in Drawing G3.

The minimum cover shall be 6 feet from top of sewer service line to finished grade and 5 feet from top of water service line to finish grade.

The applicant for a service shall notify the Town when the service line is ready for connection to the public sewer or water main, and the connection shall not be made until after inspection and approval by the Town. The service line shall meet the requirements of the Uniform Plumbing Code. The connection to the main shall be made in the presence of and approved by the Town Inspector. The trench of each service line must be open (not backfil1ed) from the building to the tap, to allow inspection by the Town prior to backfilling.

If practicable, pre-installed wye fittings shall be used for sewer service connections; otherwise the connection of the building sewer service to the main shall be made as follows: A saddle tee shall be used to connect 4" or 6 sewer service lines to 8" to 15" sewer mains. No saddle wyes are allowed. The service line connection shall conform to the Drawing L1. To simplify later location of service connection points in plastic pipe, bury 1-2 pound piece of magnetic material within 12" of the joint and approx. 12" above.

Each sewer service line is to have a 4" cleanout installed within 20' of the building served, per Drawing L2. Cleanouts are required for any significant change in service line direction and at intervals of no greater than 90'.

Water services lines shall be laid at a uniform grade and in straight alignment. A reference mark shall be placed on the curb above the line.

4.4 SEWER SERVICE SIZING

The size and slope of the building service sewer shall be subject to the approval of the Town, but in no event shall the diameter be less than 4". Minimum grade and slopes shall be as follows:

4" .....2.0% Normal, 1.0% Minimum
6" 1.00%
8" 0.60%

4.5 WATER SERVICE SIZING

Sizing. Sizing for potable water services shall be made in general conformance with AWWA Manual M22, "Sizing Water Service Lines and Meters." When requested by the Town, the Applicant shall, at his expense, furnish data, plans, calculations, or other information as required for the evaluation of the service size.

Cross Connections. Cross connections of any type that permit a backflow condition from any source other than the Town's potable water mains are prohibited. The Town will not provide water service to any customer unless the potable water supply is protected from potential or actual cross connections as required by State and Town regulations. Each service shall include an approved back flow prevention device. All water services larger than 1-inch and all fire suppression systems shall include and approved double check valve.

Pressure Regulation. All services shall be equipped with a pressure reducing valve (PRV), except where specifically exempted by the Town. The PRV shall be upstream of all uses. The PRV shall be set for a downstream pressure not exceeding 70 psig.

4.6 SEWER SERVICE MATERIALS AND INSTALLATION

Sewer service pipe shall be PVC, with a thickness not less than SDR 35. Sanitary Sewer Service Pipe shall be green or other acceptable color.

The line shall be water tight and on a constant grade in a straight line, and not closer than 5' from any bearing wall.

4.7 WATER SERVICE MATERIALS

Water Service Pipeline: The water service pipeline shall be Type K, soft copper conforming to ASTM 888, unless otherwise specifically approved by the Town. Fittings shall be brass or copper alloy. Connections shall be by flared joints and no soldered joints shall be permitted underground.

Corporation Stops: Corporation stops shall be used for the connection of services (2- inch and smaller) to the water main. Corporation stops shall be brass and conform with AWWA C800. The inlet shall be standard AWWA corporation stop inlet thread and the outlet shall be for compression type "K", 1" or less, copper service pipe. Corporation stops shall be Mueller H-15000, Ford F-600, or approved equal, provided with an insulating coupling for potable service.

Curb Stops: Curb stops (sometimes called "stop boxes") shall be provided as detailed on Drawing L3 for all services. Curb stops shall be brass and conform with AWWA C800. Connections shall be for compression type " K copper service pipe. Curb stops shall be Mueller H-15204, Ford 8-22, or approved equal.

Service Saddles: Service saddles shall be used for all water taps on any pipe other than DIP (Ductile Iron Pipe). For DIP, 3/4" and 1"' taps may be made without using a service saddle on pipe 8" mains or larger. All other DIP taps shall be made with a double strap bronze saddle, Smith Blair No. 357, Rockwell No. 323 or approved equal.

Meters. Unless otherwise approved, water meters shall be housed in an exterior meter pit in accordance with the standard drawings. Meters shall be bronze case Sensus SR-II TR/LP with sealed register and touch read/pit lid adapters. Meter shall be set with a coppersetter having an integral angle curb valve on the inlet side. Coppersetter shall be Ford 80 series or approved equal.

Meter Pits. Meter pits shall be pre-cast polyethylene with minimum nominal wall thickness of 0.55-inches, vertical crush strength exceeding 20,000 lbs, white interior color and black exterior color manufactured by Mid-States Plastics or approved equal.

Meter Pit Covers. Covers shall be constructed of cast iron with rubber or plastic inner frost lid. The top lid shall include a worm type lock operated by a pentagon head. The lid and cover shall be Ford Wabash No. W3 or approved equal. The top lid shall be tapped for mounting the touch read pad.

4.8 WATER SERVICE INSTALLATION

The service line connection shall be constructed as shown in Drawing L4.

All excavations for water service installations shall be adequately guarded with barricades and lights so as to protect the public from hazards. Utilities, streets, sidewalks, parkways, and other public or private property disturbed in the course of work shall be restored to their original condition in a manner satisfactory to the Town of Elizabeth or other affected owners or jurisdictions.

All excavations required for the installations of a water service shall be open-trench work, unless otherwise approved by the Town. The services shall be bedded and backfilled in accordance with the minimum cover and/or insulation requirements of Section 3. The bedding and pipe zone material within 12" of the water service line shall be select native soils with 3" max. diameter rock. Backfill materials shall be select native soils with 6" maximum diameter rock. If insulation is installed, use approximately 6" of sand or squeegee for the pipe zone materials above and beneath the insulation to protect it from breakage during backfill.

4.9 DOCUMENTATION

The Applicant shall submit a dimensioned sketch to the Town, showing the location of the point of connection, relative to visible and reasonably permanent surface features, such as building corners, property pins or power flight poles. As-built drawings of the entire system, including curb-stops, shall be required at system dedication and pursuant to the Town's Municipal Code.

STANDARD DETAILS

STANDARD DETAILS

GENERAL

THESE DESIGNS, PLANS, AND CONTRACT DOCUMENTS ARE REVIEWED FOR CONCEPT AND GENERAL CONFORMANCE TO THE TOWNS' MINIMUM STANDARDS ONLY, AND THE PRIMARY RESPONSIBILITY FOR DESIGN ADEQUACY IS TO REMAIN WITH THE ENGINEER OF RECORD. THIS REVIEW DOES NOT IMPLY RESPONSIBILITY BY THE TOWN OF ELIZABETH, OR THE TOWN ENGINEER FOR COMPLETENESS, ACCURACY OR CORRECTNESS OF CALCULATION. THE REVIEW DOES NOT IMPLY THAT QUANTITIES OF ITEMS INDICATED ON THE PLANS ARE THE FINAL QUANTITIES REQUIRED. THE REVIEW SHALL NOT BE CONSTRUED FOR ANY REASON AS ACCEPTANCE OF FINANCIAL RESPONSIBILITY BY THE TOWN FOR ADDITIONAL ITEMS AND ADDITIONAL QUANTITIES OF ITEMS SHOWN THAT MAY BE REQUIRED DURING THE CONSTRUCTION PHASE.

APPROVED FOR CONSTRUCTION WITHIN ONE YEAR OF THE EARLIEST OF THESE DATES:

BY _____ _____

TOWN ENGINEER — DATE

BY _____ _____

TOWN OF ELIZABETH–PUBLIC WORKS DIRECTOR — DATE

BY _____ _____

TOWN OF ELIZABETH–TOWN ADMINISTRATION — DATE

BY _____ _____

ELIZABETH FIRE DEPARTMENT — DATE

TOWN OF ELIZABETH

STANDARD APPROVAL BLOCK

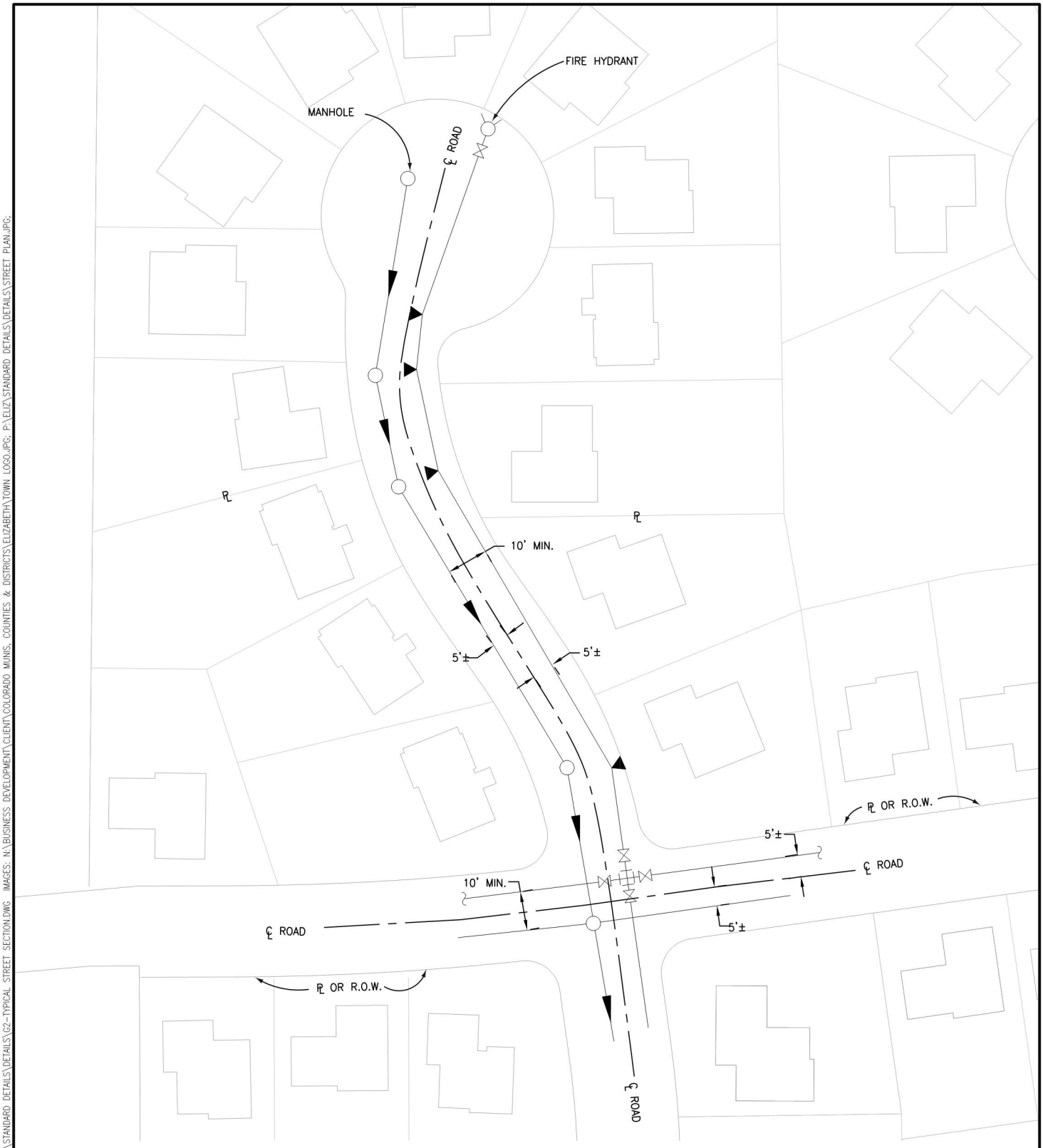
SCALE: NTS | DATE: JUNE 2011

LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS

G1

6/22/11 07:55 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\G1-STANDARD APPROVAL BLOCK.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



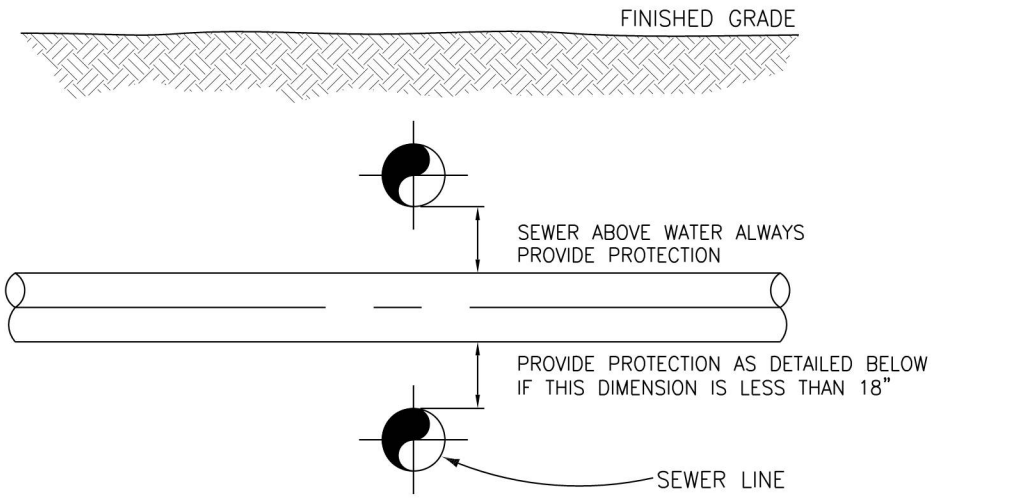
TOWN OF ELIZABETH

TYPICAL WATER AND SEWER STREET PLAN

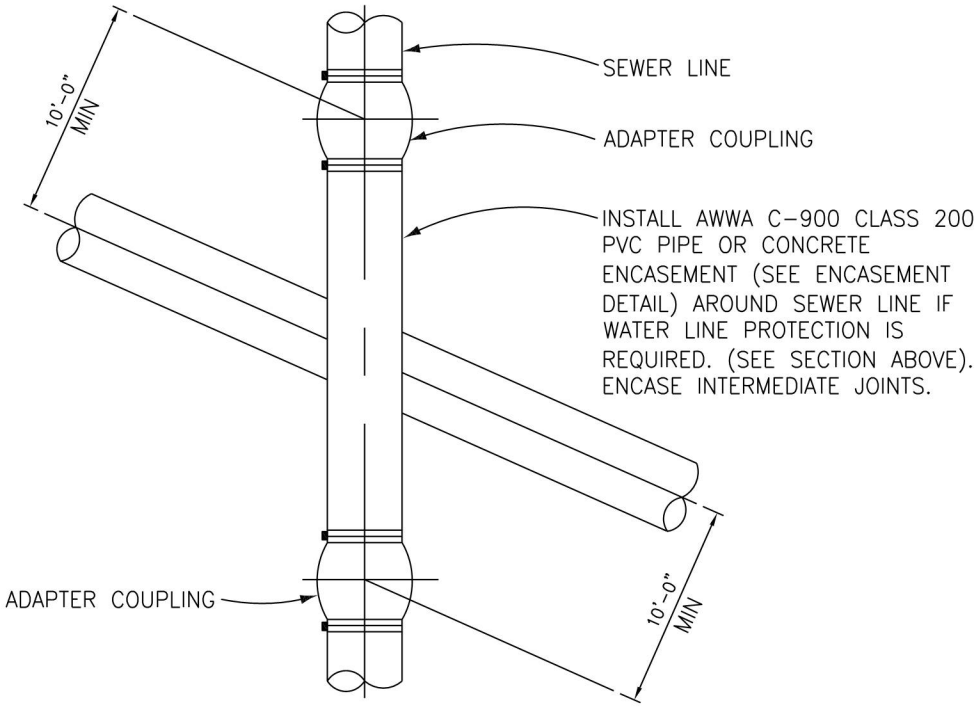
SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	G2
WATER AND SEWER STANDARDS	

6/22/11 07:57 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\G2-TYPICAL STREET SECTION.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG; P:\ELIZ\STANDARD DETAILS\DETAILS\STREET PLAN.JPG;

6/22/11 09:18 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\G3-SEWER CROSSING WATERLINE DETAIL.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



SECTION

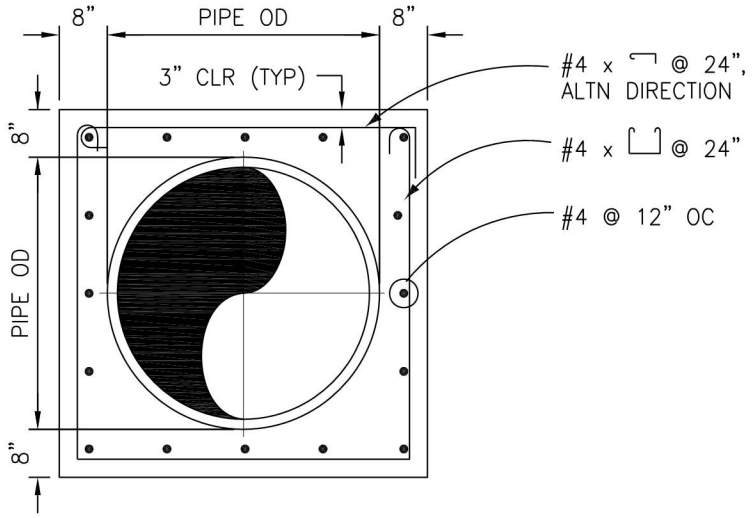


PLAN

TOWN OF ELIZABETH

SEWER AND
WATER LINE CROSSING

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	G3
WATER AND SEWER STANDARDS	



NOTES:

1. FOR TIE–INS TO STRUCTURES EXTEND LONGITUDINAL REINFORCING INTO WALL OR SLAB, PROVIDE DOWELS AT EACH END.

2. PROVIDE TWO FLEXIBLE JOINTS WITHIN SIX FEET OF EACH END OF ENCASEMENT.

3. USE GR 40 REINF. BARS.

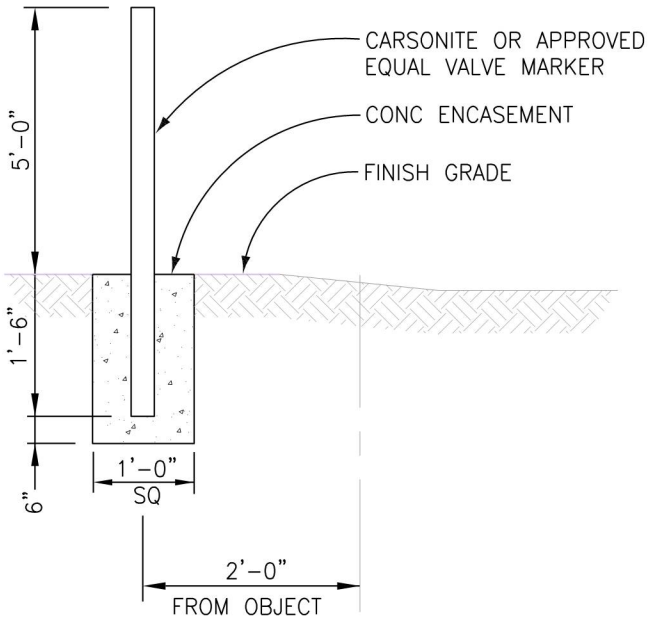
4. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 3,000 psi AT 28 DAYS

TOWN OF ELIZABETH

CONCRETE ENCASEMENT

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	G4
WATER AND SEWER STANDARDS	

6/22/11 07:59 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\G4-PIPE ENCASEMENT.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

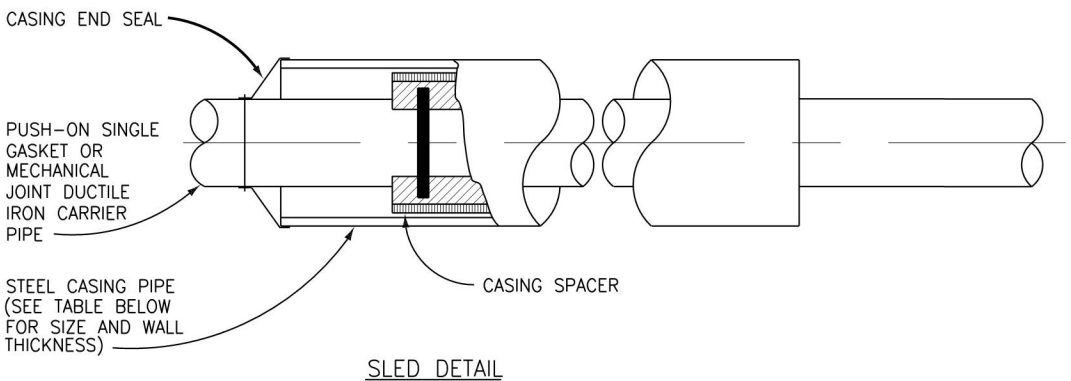


TOWN OF ELIZABETH

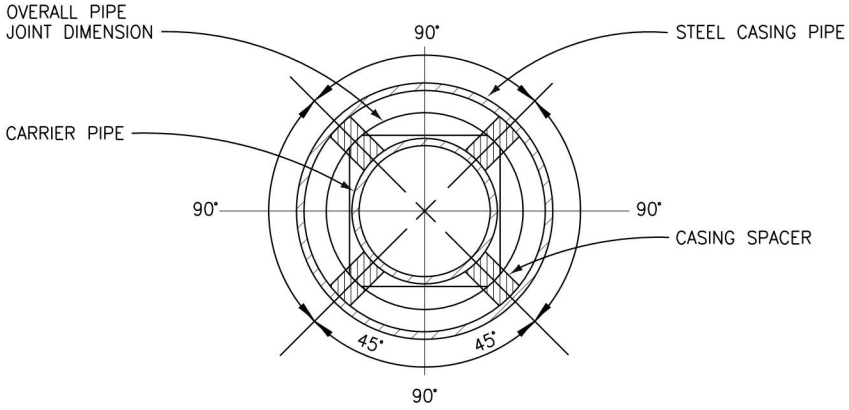
SURFACE MARKER

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	G5
WATER AND SEWER STANDARDS	

6/22/11 07:59 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\G5-SURFACE MARKE.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



SLED DETAIL



PIPE CASING DETAIL

CARRIER PIPE NOMINAL DIA.	CASING PIPE	
	MIN. O.D.	MIN. WALL THICK
4"	12"	0.188"
6"	16"	0.250"
8"	18"	0.282"
12"	22"	0.344"
16"	28"	0.406"
20"	32"	0.469"

NOTES:
1. NEOPRENE OR PVC RUNNERS MAY BE USED FOR CASING SPACERS.
2. TRENCH LAID CASINGS SHALL BE DESIGNED AND INSTALLED TO CONDUIT STANDARDS.
3. USE HARNESS LUGS FOR WATER MAIN RESTRAINT (SEE DWG G7).

TOWN OF ELIZABETH

BORE CASING

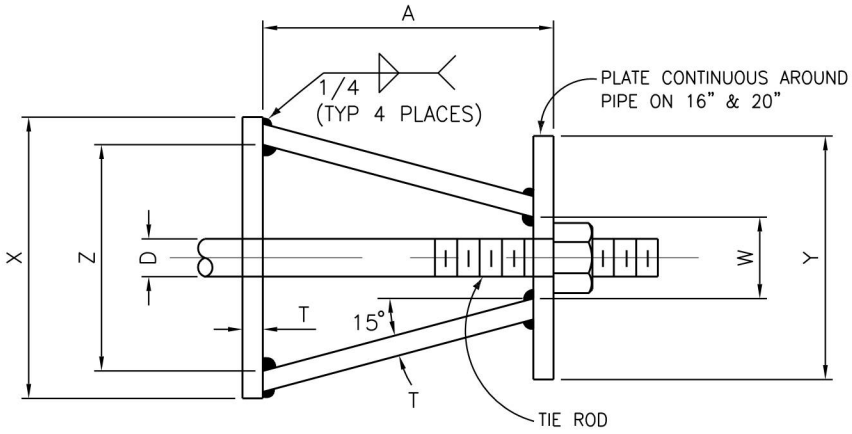
SCALE: NTS | DATE: JUNE 2011

LAST REVISED: JUNE 2011

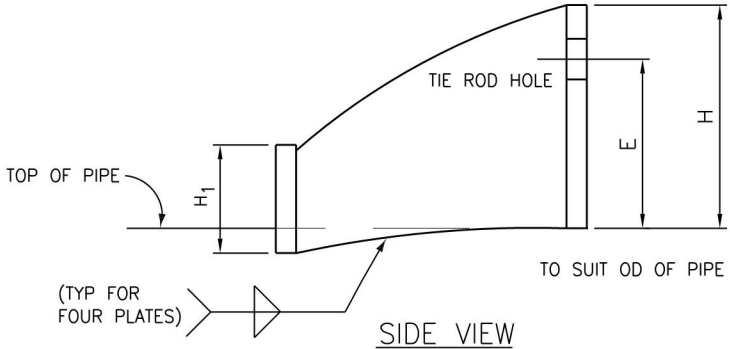
WATER AND SEWER STANDARDS

G6

6/22/11 09:39 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\G6-BORE CASING.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



TOP VIEW



SIDE VIEW

	CARRIER PIPE NOMINAL DIA.	STUD DIA. D	A	W	Z	T	H	E	H_1	Y	X
W/O FLANGED LUGS	4" TO 12"	3/4"	5"	1-1/2"	3-3/4"	3/8"	4-1/8"	3-1/8"	2"	4-1/2"	5"
	16"	1"	5-3/4"	1-3/4"	4-1/2"	1/2"	4-1/2"	3-1/4"	2"	RING	6"
	20"	1-1/4"	7-1/2"	2"	5-3/4"	5/8"	5"	3-3/4"	2-1/2"	RING	7-1/2"

NOTES:

1. USE TWO HIGH STRENGTH STEEL TIE RODS AT END OF CASING.
2. TIE ROD HOLE DIAMETER 1/8" LARGER THAN STUD DIAMETER.
3. BOTTOM EDGE OF ALL PLATES SHAPED TO FIT OD OF PIPE.
4. HARNESS LUGS AS PER AWWA MANUAL M-II.

TOWN OF ELIZABETH

HARNESS LUGS - BORE CASING

SCALE: NTS | DATE: JUNE 2011

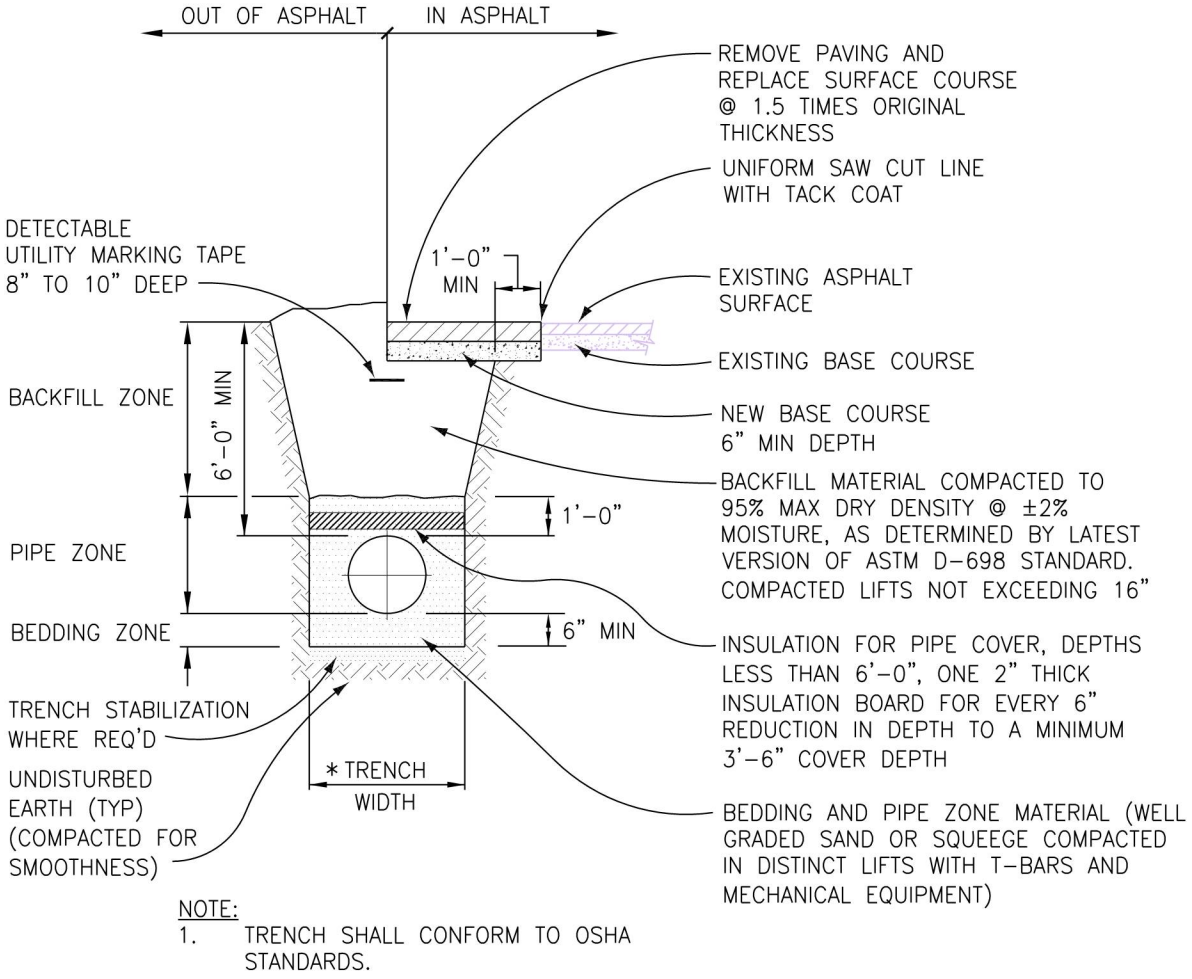
LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS

6/22/11 08:03 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\G7-HARNESS LUG.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

STANDARD DETAILS

SEWER SYSTEM



NOTE:
1. TRENCH SHALL CONFORM TO OSHA STANDARDS.

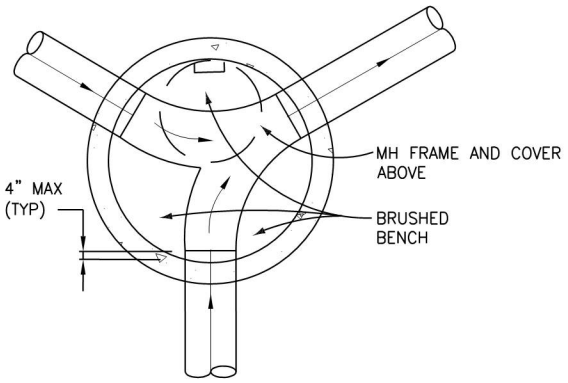
* MAXIMUM TRENCH WIDTH = 24" + NORMAL PIPE DIAMETER

TOWN OF ELIZABETH

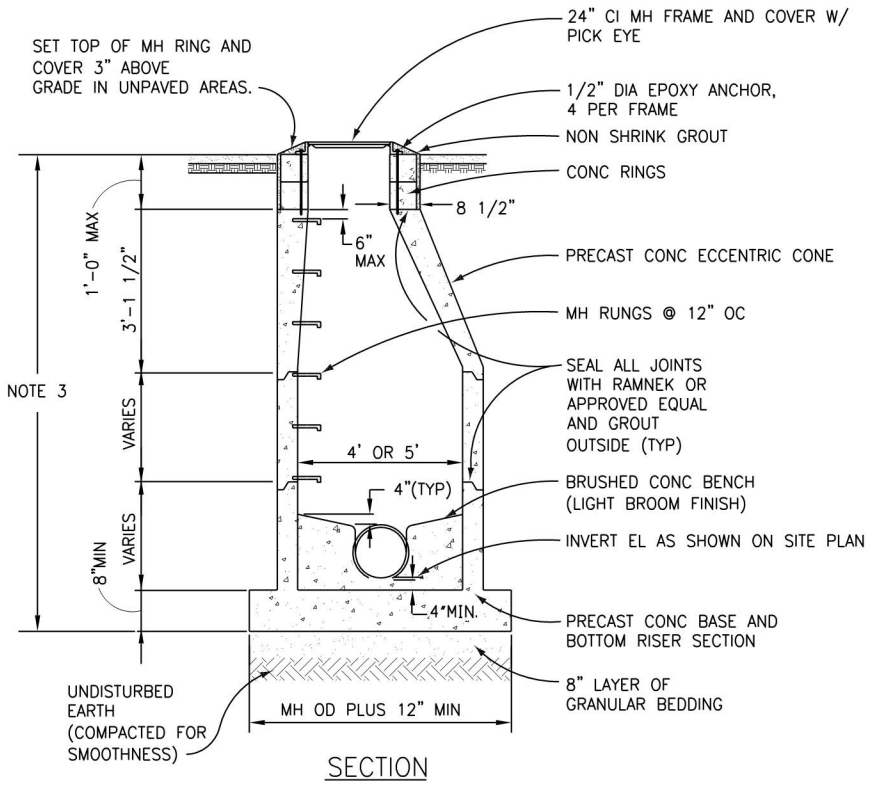
SEWER PIPE TRENCH

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	S1
WATER AND SEWER STANDARDS	

6/22/11 08:05 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\S1-PIPE TRENCH_SEWER.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



TYPICAL PLAN



SECTION

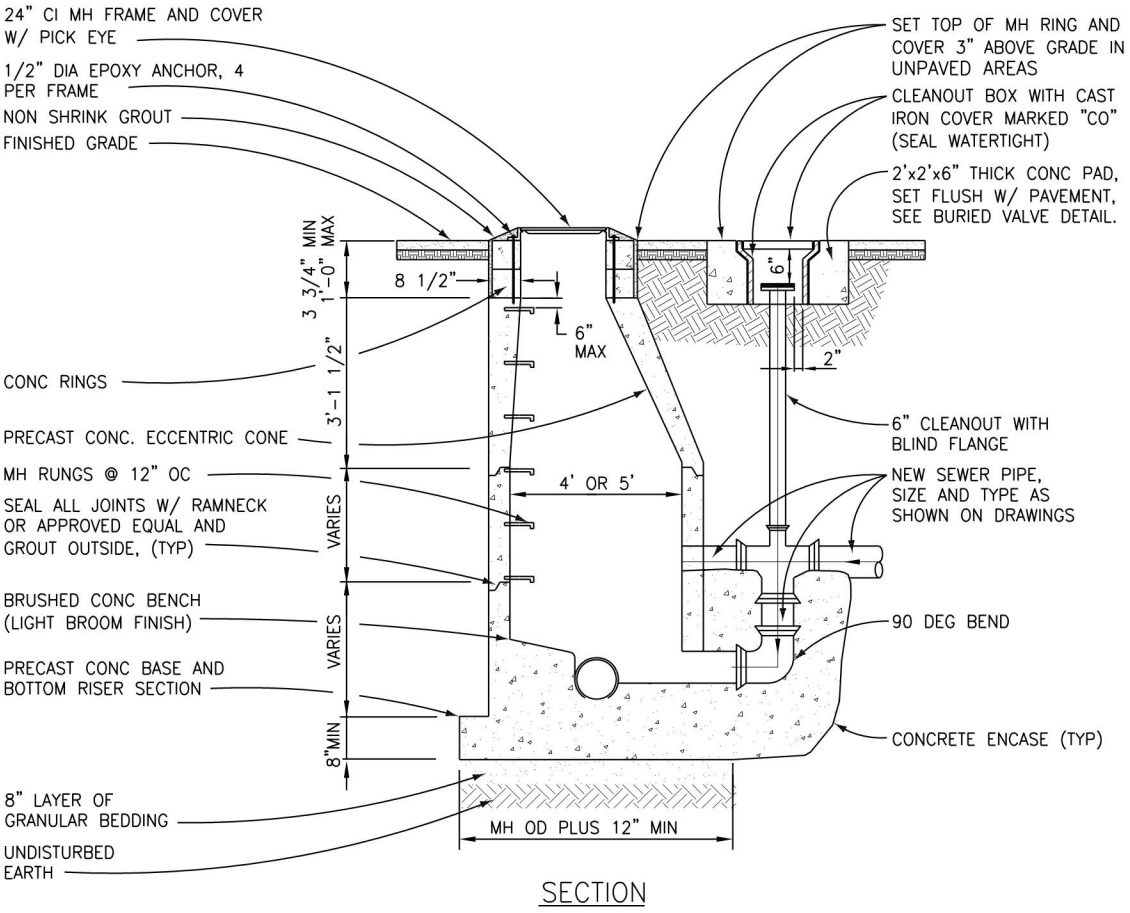
NOTES:
1. ALL COMPONENTS SHALL BE CAPABLE OF HS-20 LOADING.
2. INSTALL ALL PIPES INTO MANHOLES WITH FLEXIBLE PIPE-TO-MANHOLE CONNECTORS.
3. USE PRECAST FLAT TOP COVER FOR SEWER DEPTHS LESS THAN 6'-0" (SEE DWG. S4).

TOWN OF ELIZABETH

STANDARD MANHOLE

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	S2
WATER AND SEWER STANDARDS	

6/22/11 08:15 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\S2-MANHOLE WITH FORMED BENCH.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



SECTION

NOTES:
1. ALL COMPONENTS SHALL BE CAPABLE OF HS-20 LOADING.
2. INSTALL ALL PIPES INTO MANHOLES WITH FLEXIBLE PIPE-TO-MANHOLE CONNECTORS.
3. DROP MH SHALL BE USED FOR ALL SITUATIONS WHERE INVERT OF PIPES ENTER MH AT 24" OR HIGHER ABOVE THE INVERT OUT ELEVATION.
4. MIN OF 18" CONC REQUIRED BENEATH 90° BEND.

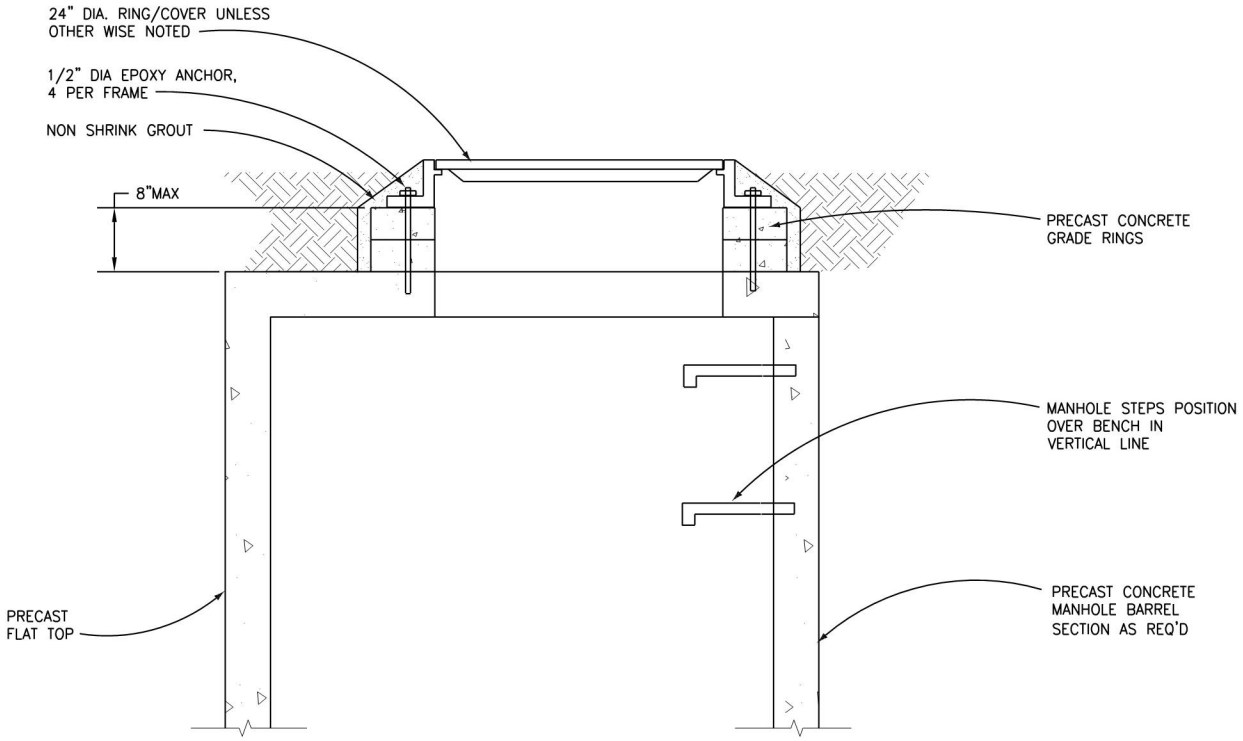
TOWN OF ELIZABETH

DROP MANHOLE

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	S3
WATER AND SEWER STANDARDS	

6/22/11 08:22 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\S3-MANHOLE WITH FORMED BENCH.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

6/22/11 08:15 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\S4-MANUAL FLAT TOP SHALLOW MANHOLE.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

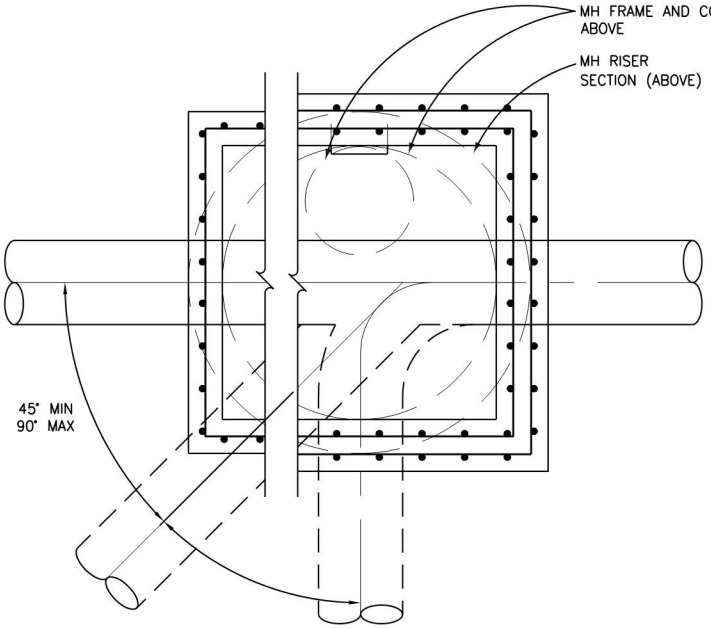


NOTES:
1. PRECAST SECTIONS TO CONFORM TO ASTM-C-478.
2. RING/COVER AND GRADE RINGS TO BE SET ON FULL BED OF MORTAR.

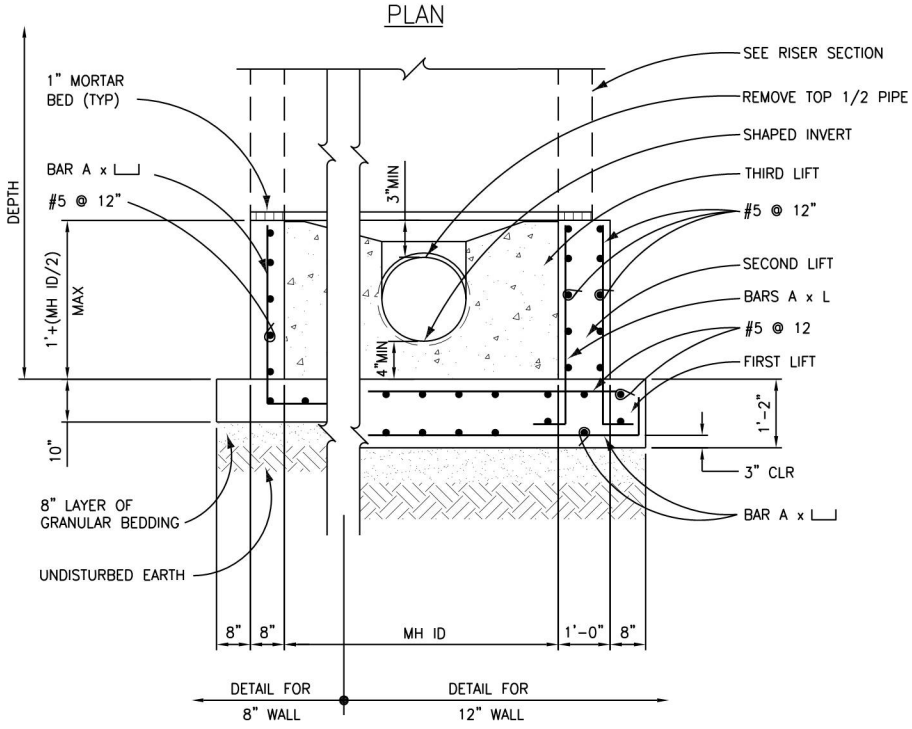
TOWN OF ELIZABETH

FLAT TOP MANHOLES

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	S4
WATER AND SEWER STANDARDS	



PLAN



SECTION

TABLE 1			
MANHOLE RISER SECTION DIA	DEPTH BELOW FINISHED GRADE	REQD WALL	BARS A
4' ID	0 TO 8'	8"	#5 @ 12"
	8' TO 10'	8"	#5 @ 6"
	10' TO 20'	12"	#6 @ 12"
5' ID	0 TO 6'	8"	#5 @ 12"
	6' TO 10'	8"	#5 @ 6"
	10' TO 15'	12"	#6 @ 12"
	15' TO 20'	12"	#6 @ 6"
6' ID	0 TO 6'	8"	#5 @ 12"
	6' TO 9'	8"	#5 @ 6"
	9' TO 14'	12"	#6 @ 12"
	14' TO 20'	12"	#6 @ 6"
7' ID	0 TO 6'	8"	#5 @ 12"
	6' TO 9'	8"	#5 @ 6"
	9' TO 12'	12"	#6 @ 12"
	12' TO 20'	12"	#6 @ 6"

* MINIMUM CONCRETE COVER OVER BARS SHALL BE 2" UNLESS NOTED OTHERWISE

TOWN OF ELIZABETH

CAST-IN-PLACE MANHOLE BASE

SCALE: NTS | DATE: JUNE 2011

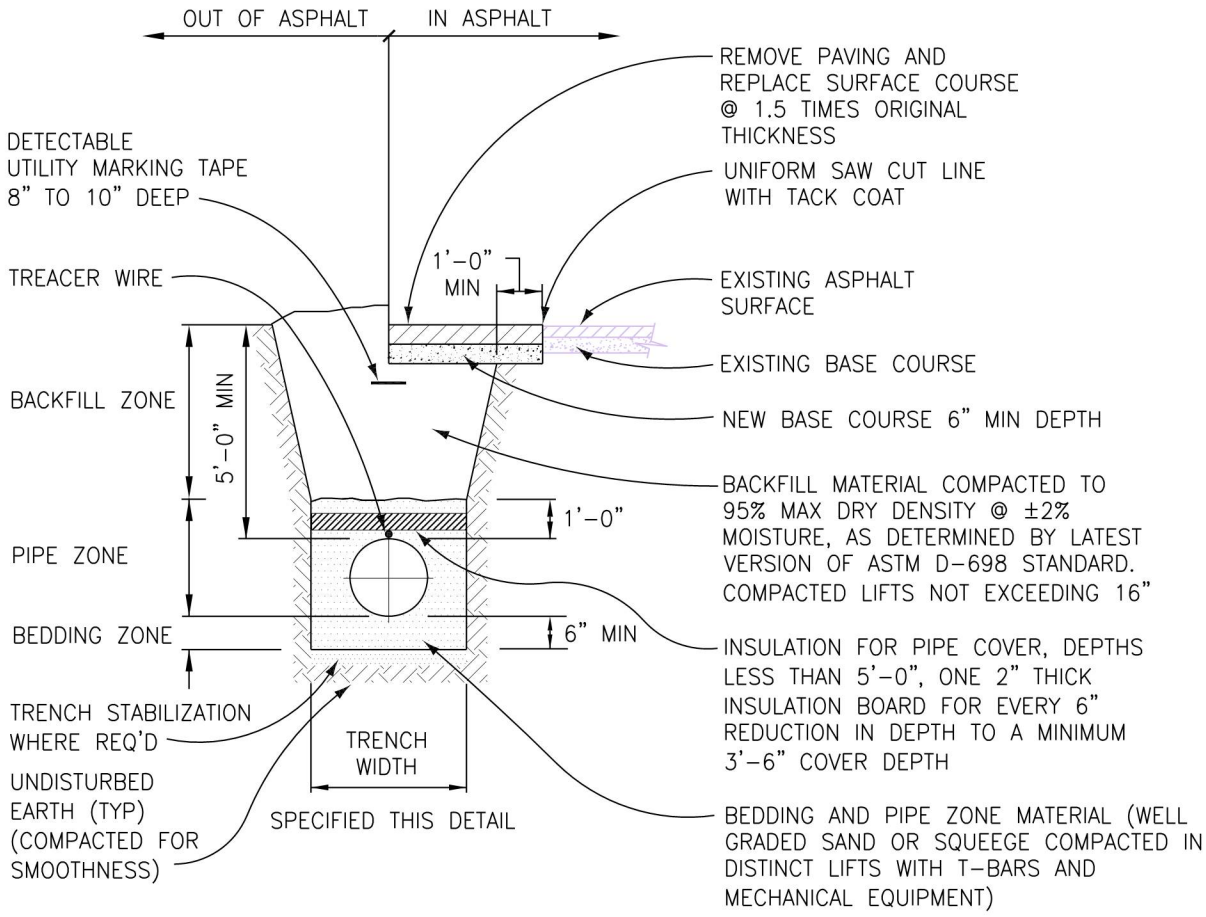
LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS

6/22/11 09:19 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\S5-CAST IN PLACE BASE.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

STANDARD DETAILS

WATER SYSTEM



NOTE:
1. TRENCH SHALL CONFORM TO OSHA STANDARDS.

TRENCH WIDTH SHALL CONFORM TO THE FOLLOWING:

PIPE I.D.	MIN. WIDTH	MAX. WIDTH
4" OR SMALLER	1'-4"	2'-4"
6"	1'-6"	2'-6"
8"	1'-8"	2'-8"
12"	2'-0"	3'-0"
16"	2'-4"	3'-4"

TOWN OF ELIZABETH

WATER PIPE TRENCH

SCALE: NTS | DATE: JUNE 2011

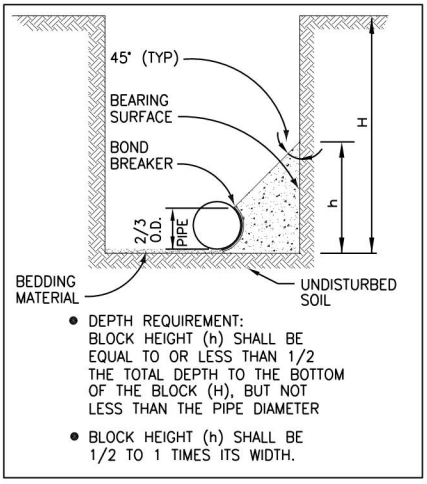
LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS

6/22/11 08:29 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\W1-PIPE TRENCH.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

GENERAL:

1. ALL BURIED PIPING FITTINGS SHALL BE PROVIDED WITH CONCRETE THRUST BLOCKS AT ALL DIRECTION CHANGES UNLESS OTHERWISE NOTED.
2. IN ADDITION TO THRUST BLOCKS, ALL FITTINGS AND VALVES SHALL BE RESTRAINED FOR AT LEAST 40 FEET IN ALL DIRECTIONS. MEGALUGS MAY BE USED ON DIP AND PVC PIPE FOR RESTRAINT EXCEPT IN LOCATIONS WHERE FLEXIBLE JOINTS ARE REQUIRED.
3. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH OR STRUCTURAL BACKFILL.
4. KEEP CONCRETE CLEAR OF JOINT, BOLTS, NUTS, CLAMPS, AND OTHER ACCESSORIES.
5. THRUST BLOCKS SHALL NOT BE LOCATED OR SIZED TO ENCASE ADJACENT PIPES OR FITTINGS.
6. A BOND BREAKER SHALL BE PLACED BETWEEN THE PIPE AND THRUST BLOCK.
7. DO NOT COVER ANY BOLT CONNECTIONS.



TYPICAL CROSS SECTION

FITTING SIZE (IN)	A_1 TEE, WYE PLUG OR CAP (SF)	A_2 90° BEND (SF)	A_2 45° BEND (SF)	A_2 22 1/2° BEND (SF)	A_2 11 1/4° BEND (SF)
4	1.4	2.0	1.1	1.0	1.0
6	3.2	4.5	2.4	1.2	1.0
8	5.7	8.0	4.3	2.2	1.1
10	8.8	12.5	6.8	3.4	1.7
12	12.7	18.0	9.7	5.0	2.5
14	17.3	24.5	13.3	6.8	3.4
16	22.6	32.0	17.3	8.8	4.4
18	28.6	40.5	21.9	11.2	5.6
20	35.3	50.0	27.1	13.8	6.9
24	50.9	72.0	39.0	19.9	10.0

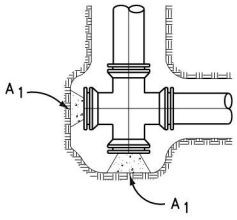
TABLE 1 – BEARING AREA OF THRUST BLOCKS IN SQUARE FEET (HORIZONTAL BENDS & VERTICAL UPWARD BENDS)

HORIZONTAL BENDS AND VERTICAL UPWARD BENDS:

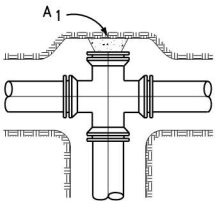
1. BEARING AREAS (TABLE 1) BASED ON TEST PRESSURE OF 150 psi, AN ALLOWABLE SOIL BEARING PRESSURE OF 2,000 psf AND A SAFETY FACTOR OF 1.5, TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING PRESSURES, USE THE FOLLOWING EQUATION:

BEARING AREA = (TEST PRESSURE / 150 psi) x (2,000 / SOIL BEARING PRESSURE psf) x (TABLE 1 VALUE)

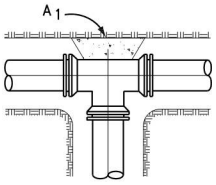
2. UNLESS OTHERWISE NOTED ON THE GENERAL DRAWINGS IN THE GENERAL NOTES OR SPECIFICATIONS, USE SOIL BEARING PRESSURE = 2000 psf FOR THIS PROJECT.
3. BEARING AREA OF THRUST BLOCK SHALL NOT BE LESS THAN 1.0 SQUARE FOOT.
4. IF THE DEPTH REQUIREMENT (SEE TYPICAL CROSS SECTION) CAN NOT BE ACHIEVED, THE ENGINEER SHALL BE NOTIFIED.



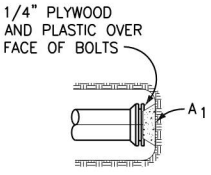
PLUGGED CROSS



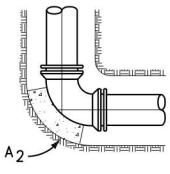
PLUGGED CROSS



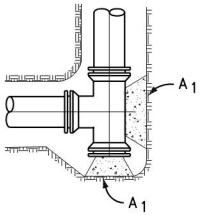
TEE



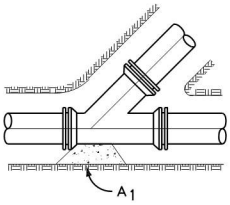
PLUG OR CAP



BEND



TEE PLUGGED ON RUN



WYE

TOWN OF ELIZABETH

HORIZONTAL THRUST BLOCKS

SCALE: NTS | DATE: JUNE 2011

LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS

W2

6/22/11 09:54 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\W2-THRUST BLOCK.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

TABLE 2 – VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL DOWNWARD BENDS)

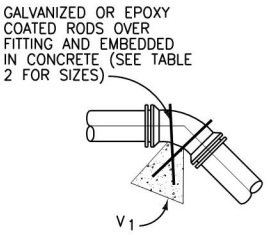
FITTING SIZE (IN)	V_1			ROD SIZE	EMBEDMENT (FT)
	45^0 BEND (CY)	$22\ 1/2^0$ BEND (CY)	$11\ 1/4^0$ BEND (CY)		
4	0.5	0.3	0.1	#6	2.5
6	1.1	0.6	0.3	#6	2.5
8	2.0	1.1	0.5	#6	2.5
10	3.1	1.7	0.9	#6	2.5
12	4.4	2.4	1.2	#6	2.5
14	6.1	3.3	1.7	#8	3.0
16	7.9	4.3	2.2	#8	3.0
18	10.0	5.4	2.8	#8	3.0
20	12.3	6.7	3.4	#8	3.0
24	17.8	9.6	4.9	#8	3.0

VERTICAL DOWNWARD BENDS:

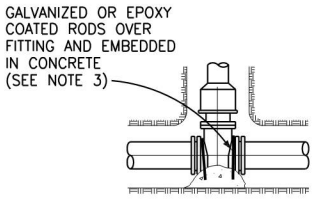
1. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE DRAWINGS FOR VOLUMES SHOWN TO LEFT OF HEAVY, BOLD LINE IN TABLE 2.
2. THRUST BLOCK VOLUMES (TABLE 2) FOR VERTICAL DOWNWARD BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 PSI, THE WEIGHT OF CONCRETE = 4050 LBS/CUBIC YARD, AND A SAFETY FACTOR OF 1.5. TO COMPUTE VOLUMES FOR DIFFERENT TEST PRESSURES AND CONCRETE WEIGHTS, USE THE FOLLOWING EQUATION:

VOLUME = (TEST PRESSURE / 150) x (4,050 / CONCRETE WEIGHT) x (TABLE 2 VALUE)

3. VOLUME OF THRUST BLOCK IN CUBIC YARDS FOR VALVES SHALL BE THE SAME VOLUME USED FOR 11 1/4 BENDS.



VERTICAL DOWNWARD BEND



VALVE

THRUST RESTRAINTS
NTS

TOWN OF ELIZABETH

VERTICAL THRUST BLOCKS

SCALE: NTS | DATE: JUNE 2011

LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS

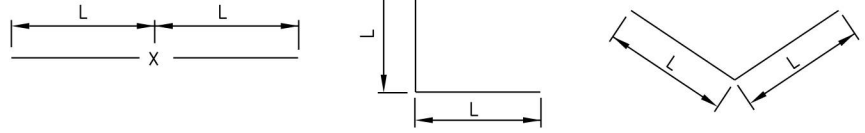
6/22/11 08:32 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\W3-THRUST BLOCK.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

LENGTH OF RESTRAINED PIPE

PIPE SIZE	FITTING	90° BEND, TEE, PLUG, OR VALVE	45° BEND	22 1/2° BEND	11 1/4° BEND
4"	L	30'	9'	1'	–
6"	L	45'	13'	4'	–
8"	L	60'	18'	5'	1'
12"	L	90'	25'	7'	2'
14"	L	100'	28'	7'	2'
16"	L	110'	32'	8'	2'
20"	L	130'	39'	10'	3'
24"	L	160'	45'	12'	3'

NOTES:
1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2. BASED ON 100 PSI INTERNAL PRESSURE.
3. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE TIED TOGETHER.
4. FOR LENGTH OF RESTRAINED PIPE AT DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:
5. IF A VALVE IS WITHIN DISTANCE "L" OF A FITTING. THE VALVE MUST BE TIED TO THAT FITTING.
6. CROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.
7. LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS, OR OTHER RESTRAINT SYSTEM.

LENGTH OF RESTRAINED PIPE = (TEST PRESSURE/100 PSI) x (TABLE VALUE)



TEE OR VALVE 90° BEND BENDS

STANDARD THRUST BLOCKS

TOWN OF ELIZABETH

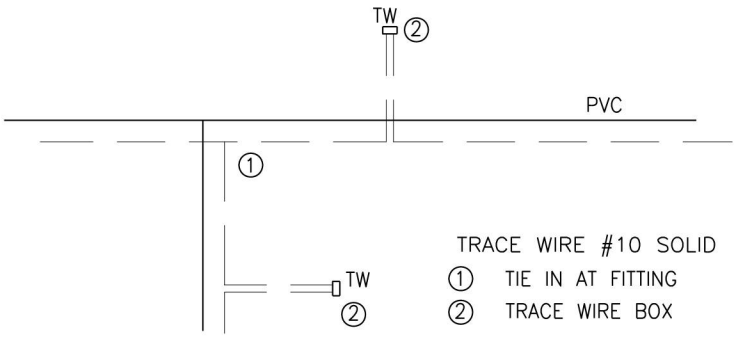
MECHANICAL THRUST RESTRAINT

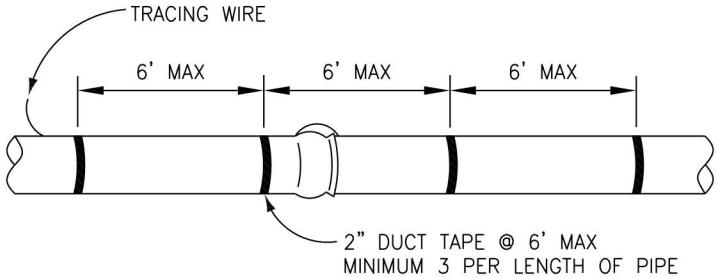
SCALE: NTS | DATE: JUNE 2011

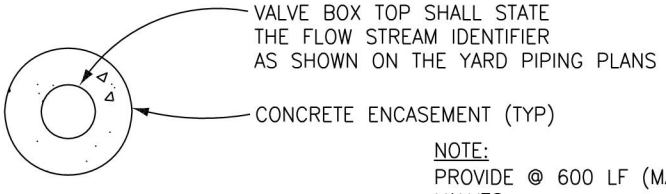
LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS

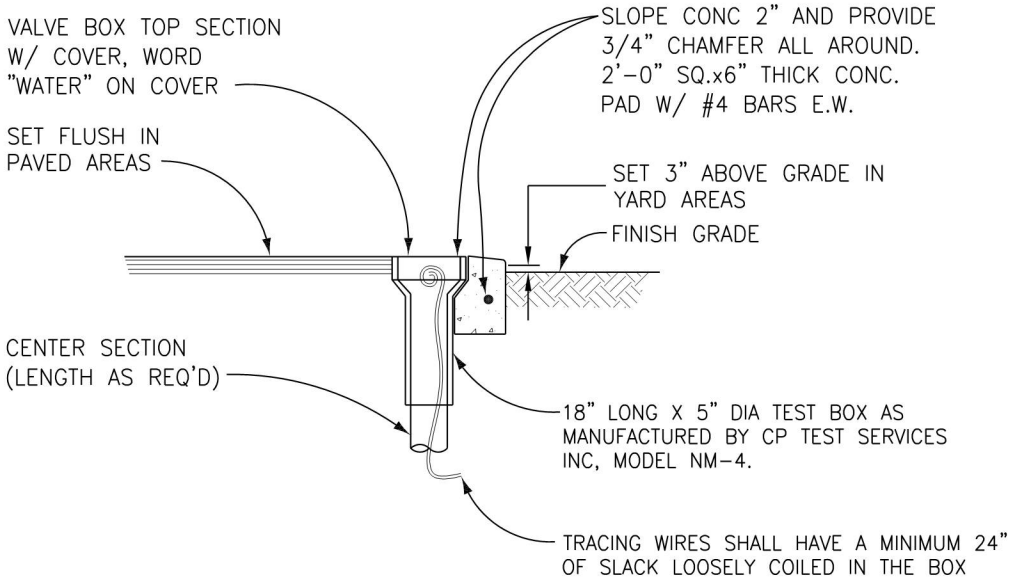
6/22/11 09:21 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\W4-THRUST RESTRAINT.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;







NOTE:
PROVIDE @ 600 LF (MAX) SPACING AND AT ALL VALVES.



VALVE BOX PAD

TOWN OF ELIZABETH

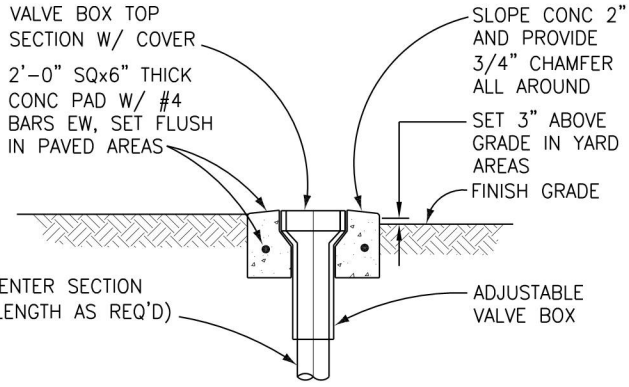
TRACER WIRE

SCALE: NTS | DATE: JUNE 2011

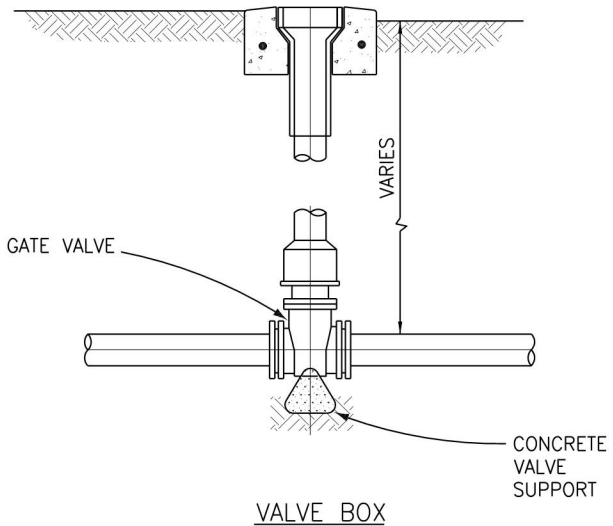
LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS

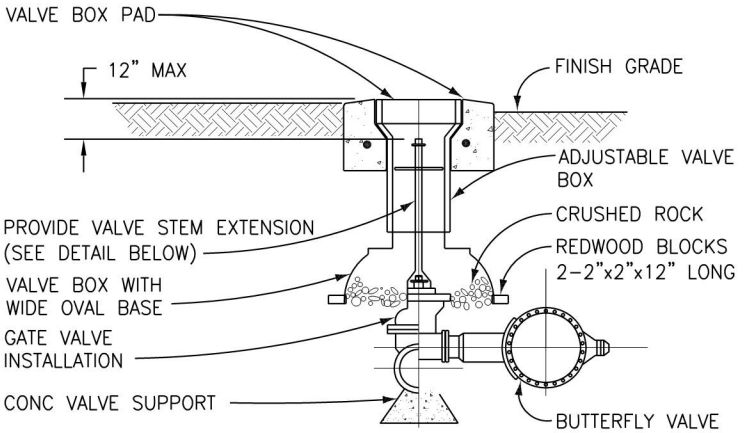
6/22/11 08:34 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\W5-TRACER WIRE.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

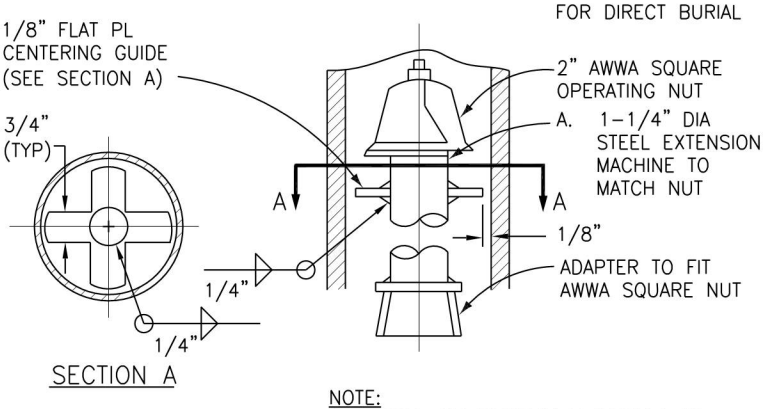


VALVE BOX PAD



VALVE BOX





SECTION A

NOTE:
1. PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACES OF VALVE BODY, VALVE BOX, EXTENSION STEM AND APPURTENANCES.

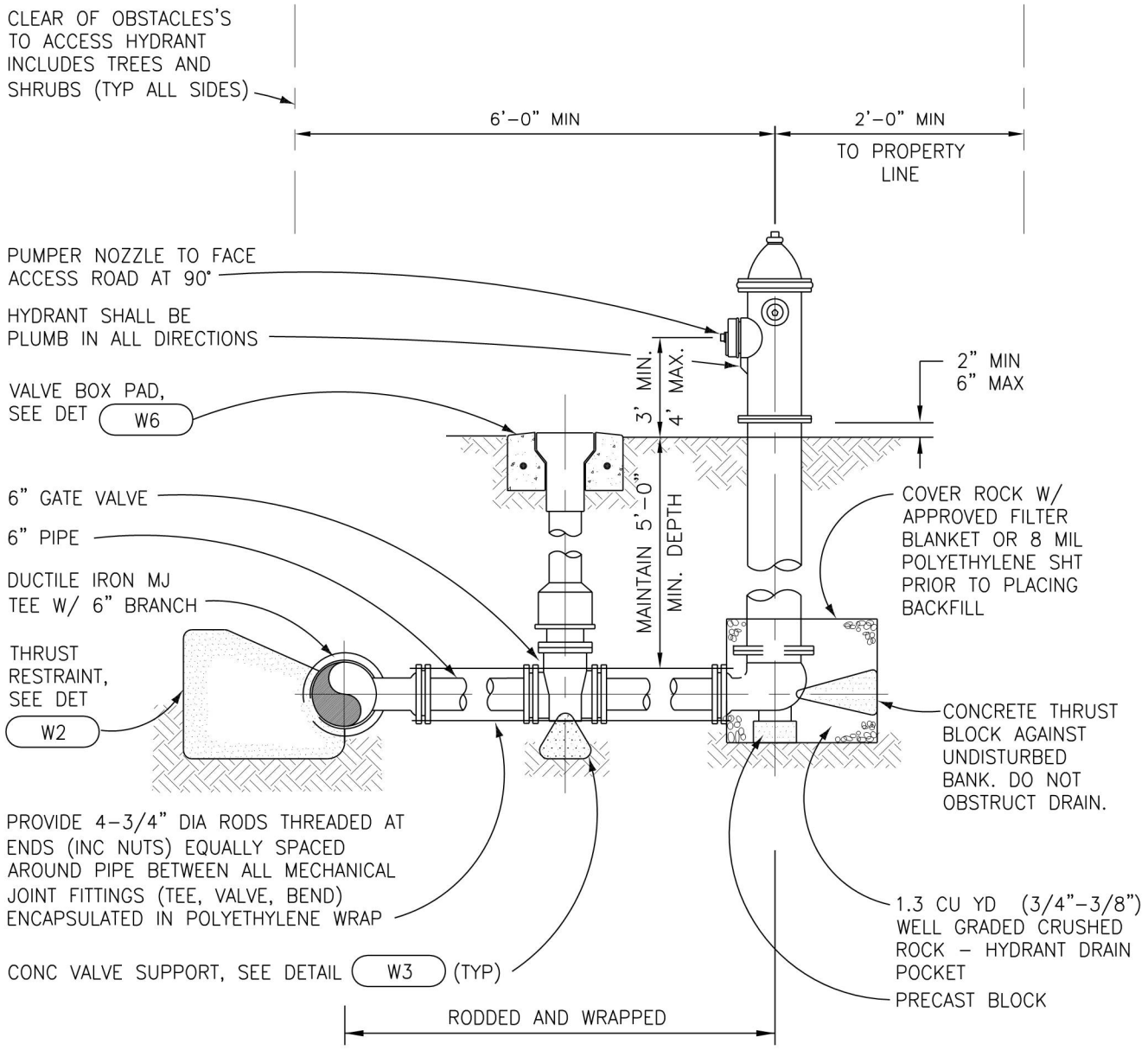
BURIED VALVE INSTALLATION

TOWN OF ELIZABETH

BURIED VALVES

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	W6
WATER AND SEWER STANDARDS	

6/22/11 08:34 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\W6-BURIED VALVE.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



FIRE HYDRANT

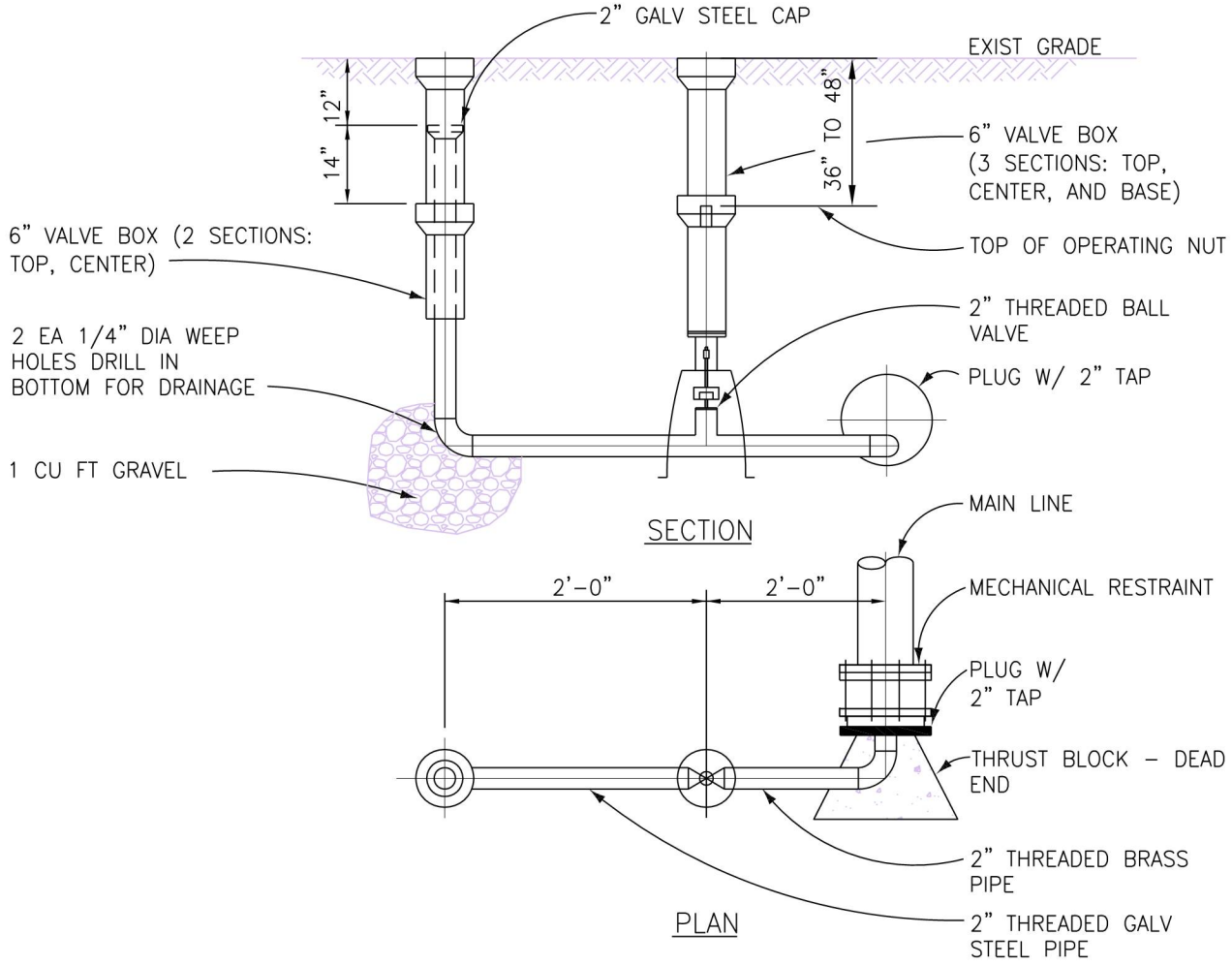
NTS

TOWN OF ELIZABETH

FIRE HYDRANT

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	W7
WATER AND SEWER STANDARDS	

6/22/11 08:35 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\W7-FIRE HYDRANT.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



BLOWOFF

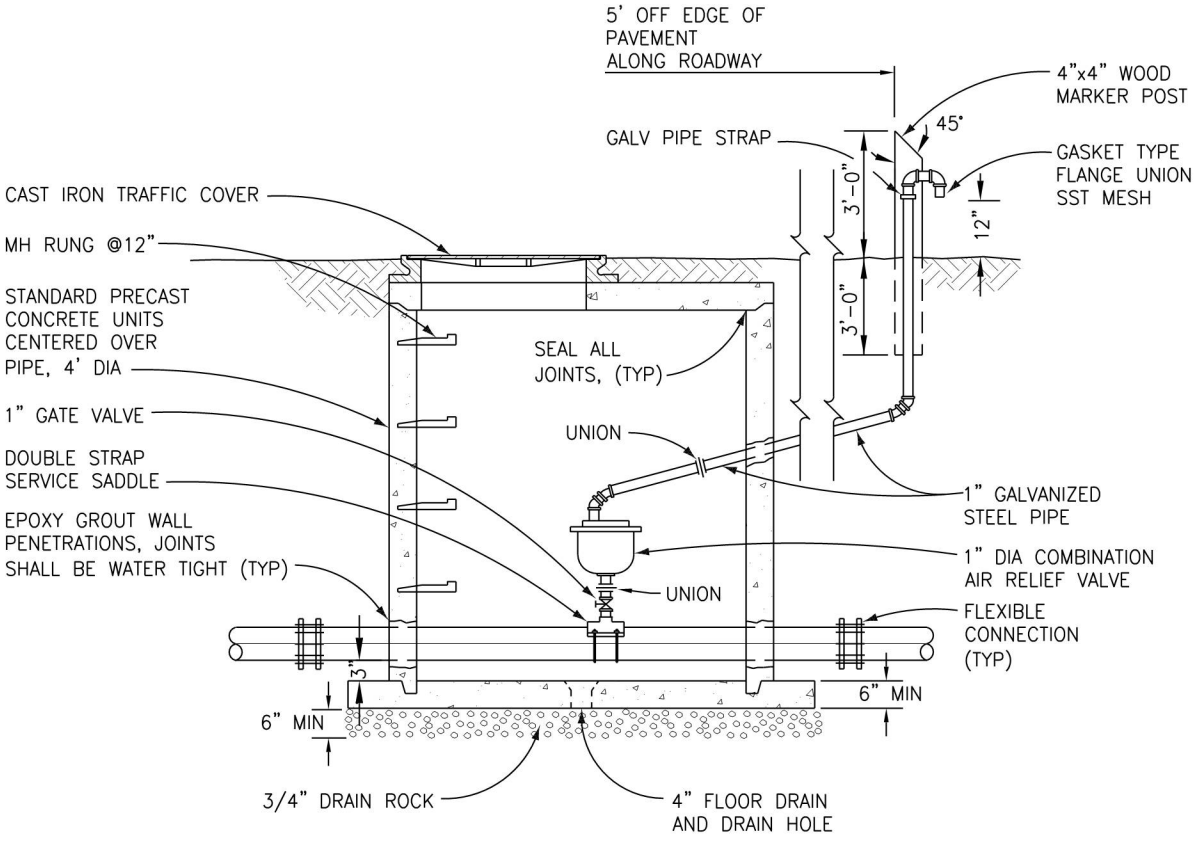
NTS

TOWN OF ELIZABETH

BLOW-OFF

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	W8
WATER AND SEWER STANDARDS	

6/22/11 08:35 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\W8-TEMPORARY BLOWOFF.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



TOWN OF ELIZABETH

AIR RELIEF VALVE

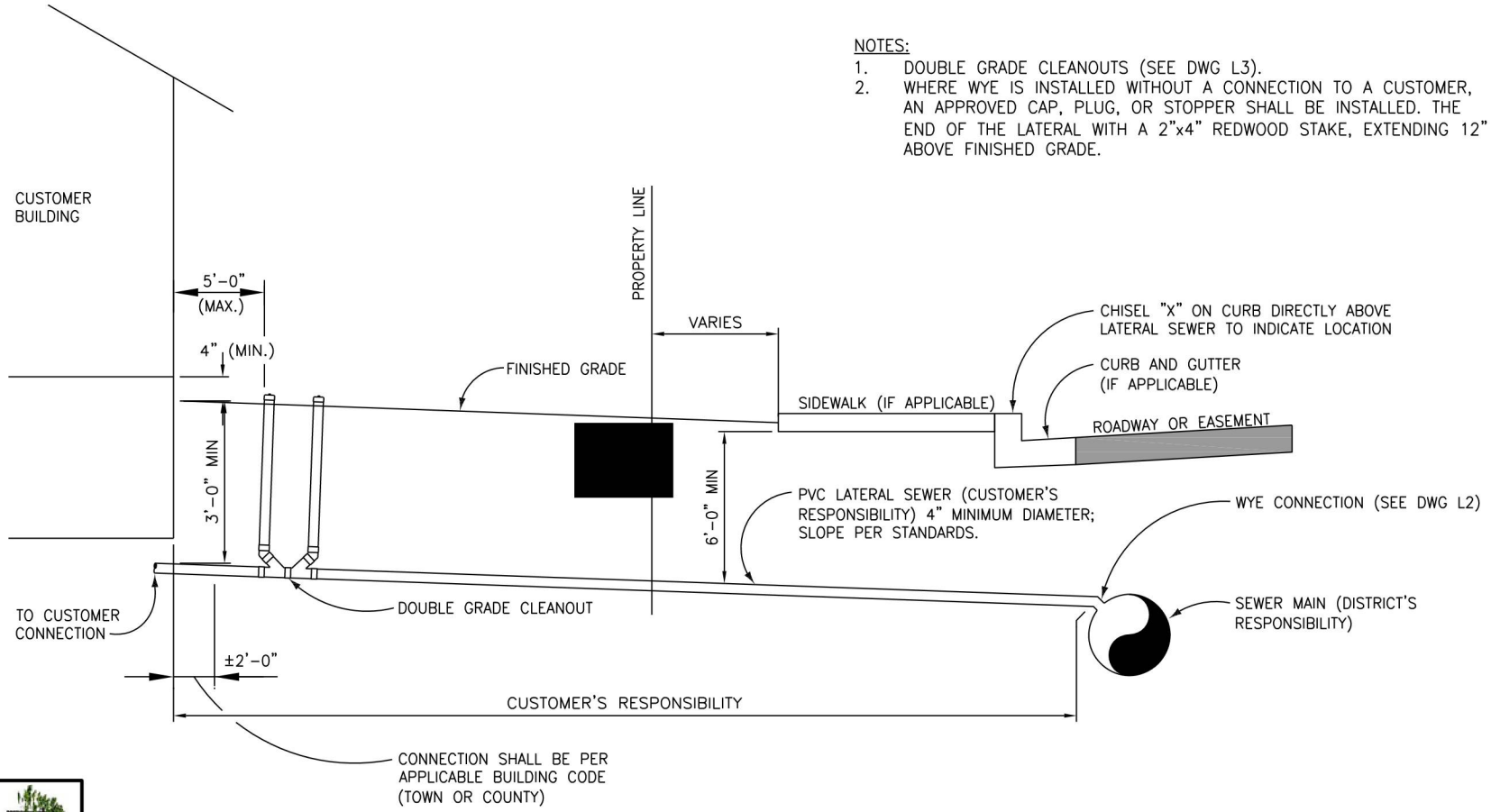
SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	W10
WATER AND SEWER STANDARDS	

6/22/11 08:36 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\W9 - AIR RELIEF VALVE VAULT.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

STANDARD DETAILS

SERVICE LINES

NOTES:
1. DOUBLE GRADE CLEANOUTS (SEE DWG L3).
2. WHERE WYE IS INSTALLED WITHOUT A CONNECTION TO A CUSTOMER, AN APPROVED CAP, PLUG, OR STOPPER SHALL BE INSTALLED. THE END OF THE LATERAL WITH A 2"x4" REDWOOD STAKE, EXTENDING 12" ABOVE FINISHED GRADE.

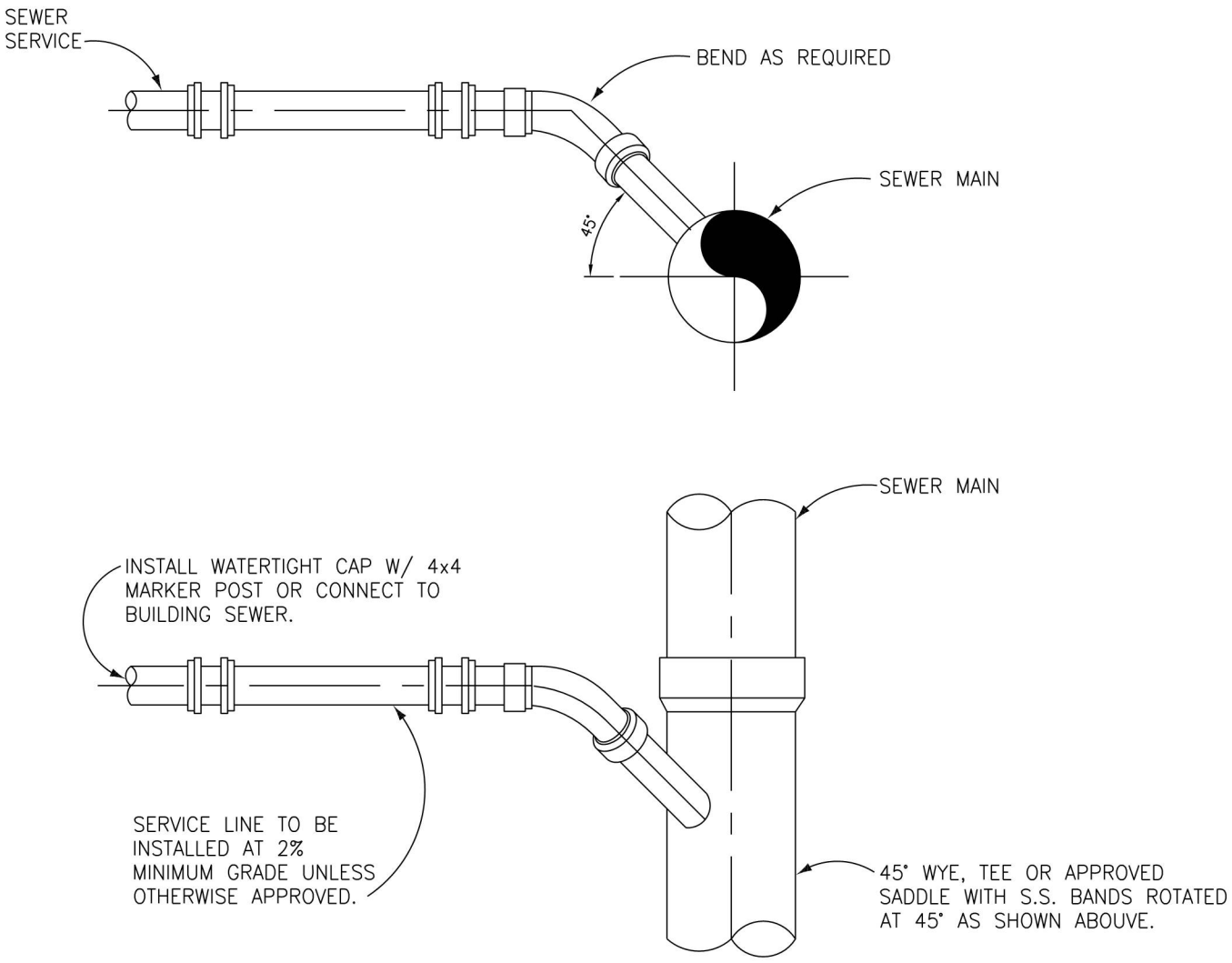


TOWN OF ELIZABETH

TYPICAL RESIDENTIAL SEWER SERVICE

SCALE: NTS
DATE: JAN 2011
LAST REVISED: JAN 2011
WATER AND SEWER STANDARDS

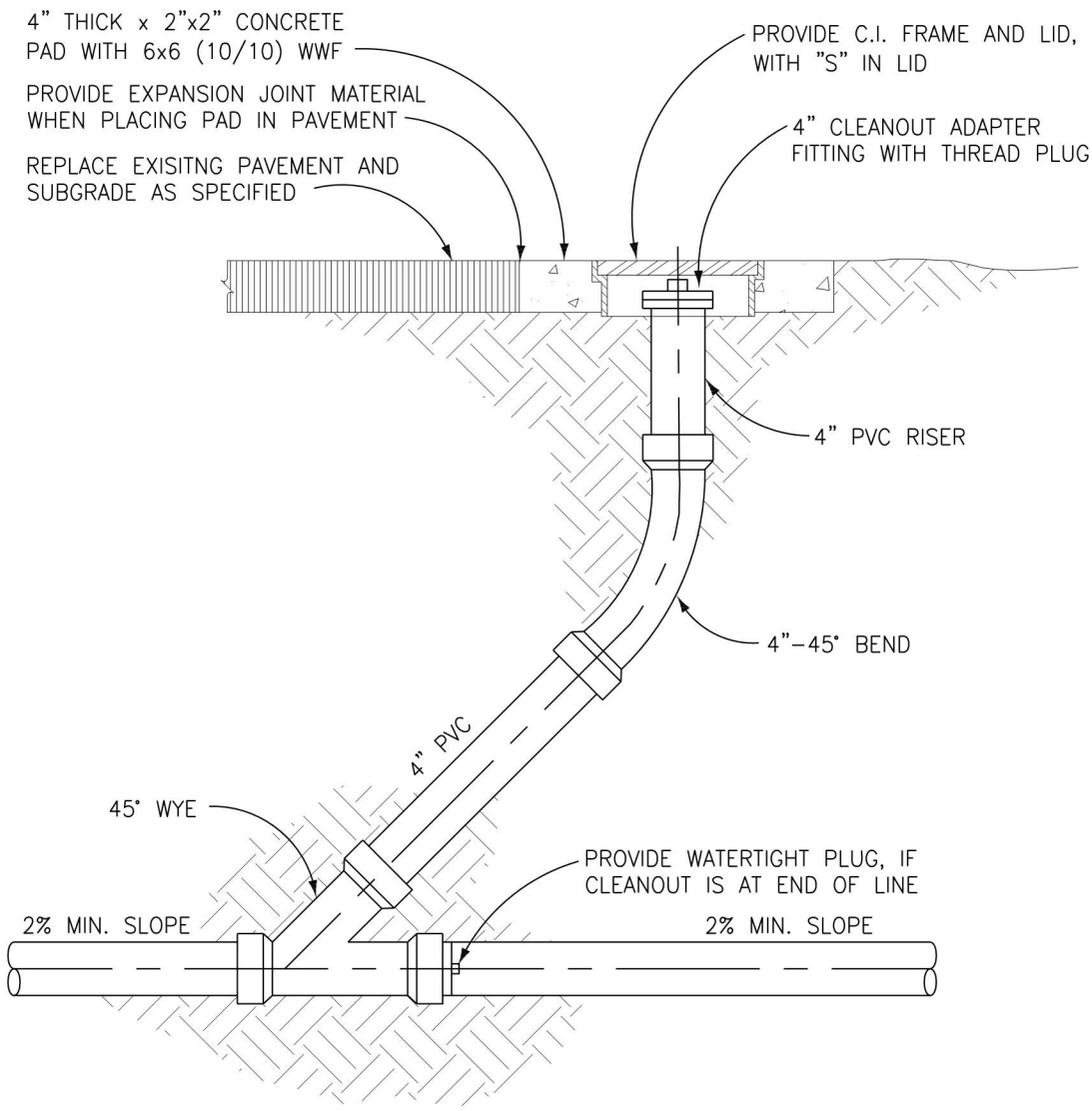
6/22/11 09:29 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\12-SEWER SERVICE CONNECTION DETAIL.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;



TOWN OF ELIZABETH

SEWER SERVICE
WYE CONNECTION

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	
WATER AND SEWER STANDARDS	



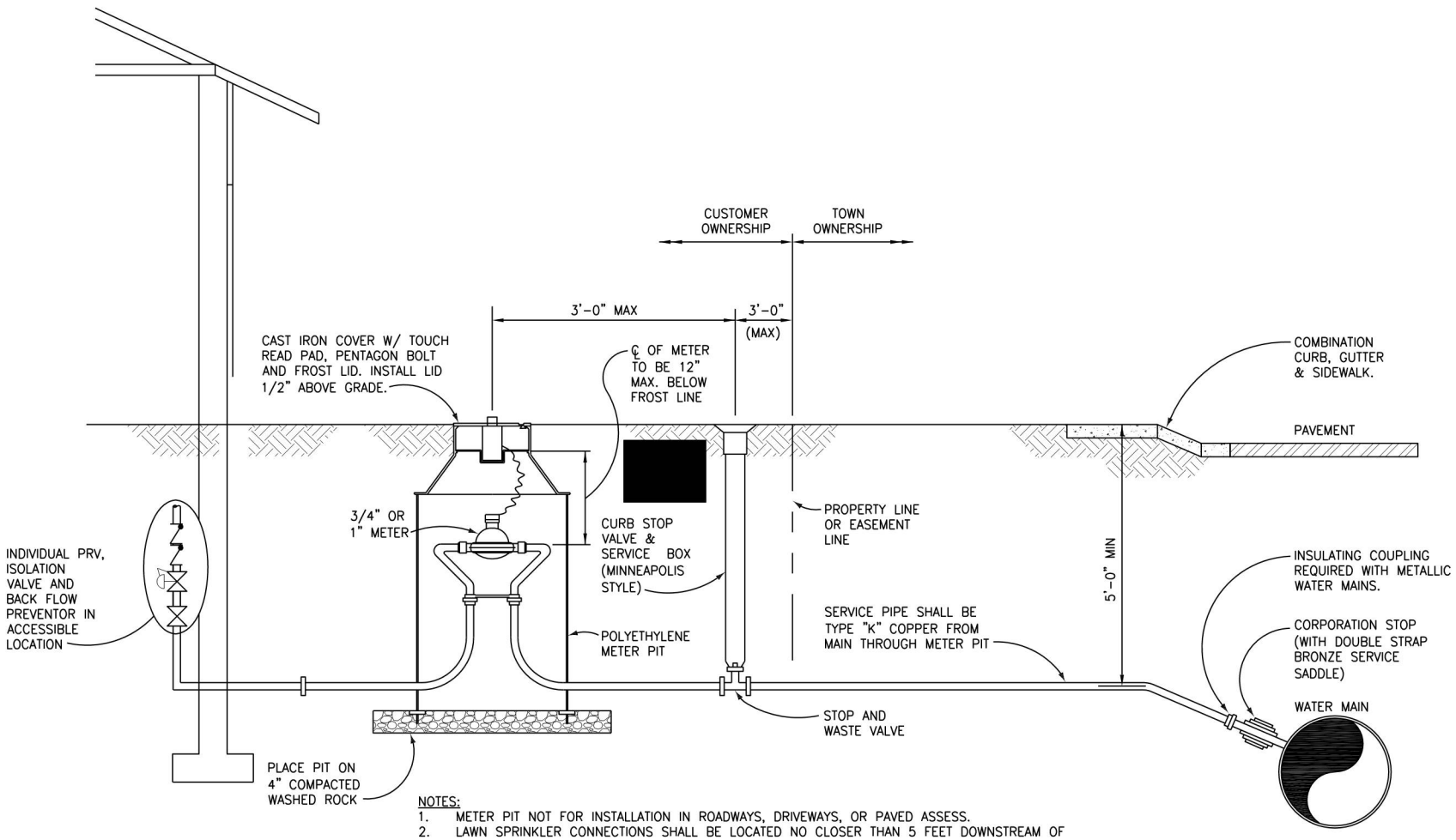
NOTE:
BEND & WYE TO BE GASKETED, NO GLUE JOINTS. PIPE MATERIAL AS SPECIFIED FOR SERVICE LINE.

TOWN OF ELIZABETH

SEWER SERVICE LINE CLEANOUT

SCALE: NTS	DATE: JUNE 2011
LAST REVISED: JUNE 2011	
WATER AND SEWER STANDARDS	

6/22/11 09:29 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\3-SERVIE LINE CLEANOUT DETAIL.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG; P:\ELIZ\STANDARD DETAILS\DETAILS\CLEAN OUT.JPG;



NOTES:
1. METER PIT NOT FOR INSTALLATION IN ROADWAYS, DRIVEWAYS, OR PAVED ASSESS.
2. LAWN SPRINKLER CONNECTIONS SHALL BE LOCATED NO CLOSER THAN 5 FEET DOWNSTREAM OF METER PIT.
3. NO CHANGES IN PIPE DIAMETER SHALL BE MADE IN THE METER PIT OR BEYOND THE METER PIT WALL ON THE OUTLET SIDE.
4. PIPELINE INSULATION REQUIRED FOR COVERS LESS THAN 4'-0" (SEE DETAIL W1).
5. SEE WATER AND SEWER STANDARDS SECTION 4.2 FOR DESCRIPTION OF SERVICE LINE OWNERSHIP.

TOWN OF ELIZABETH

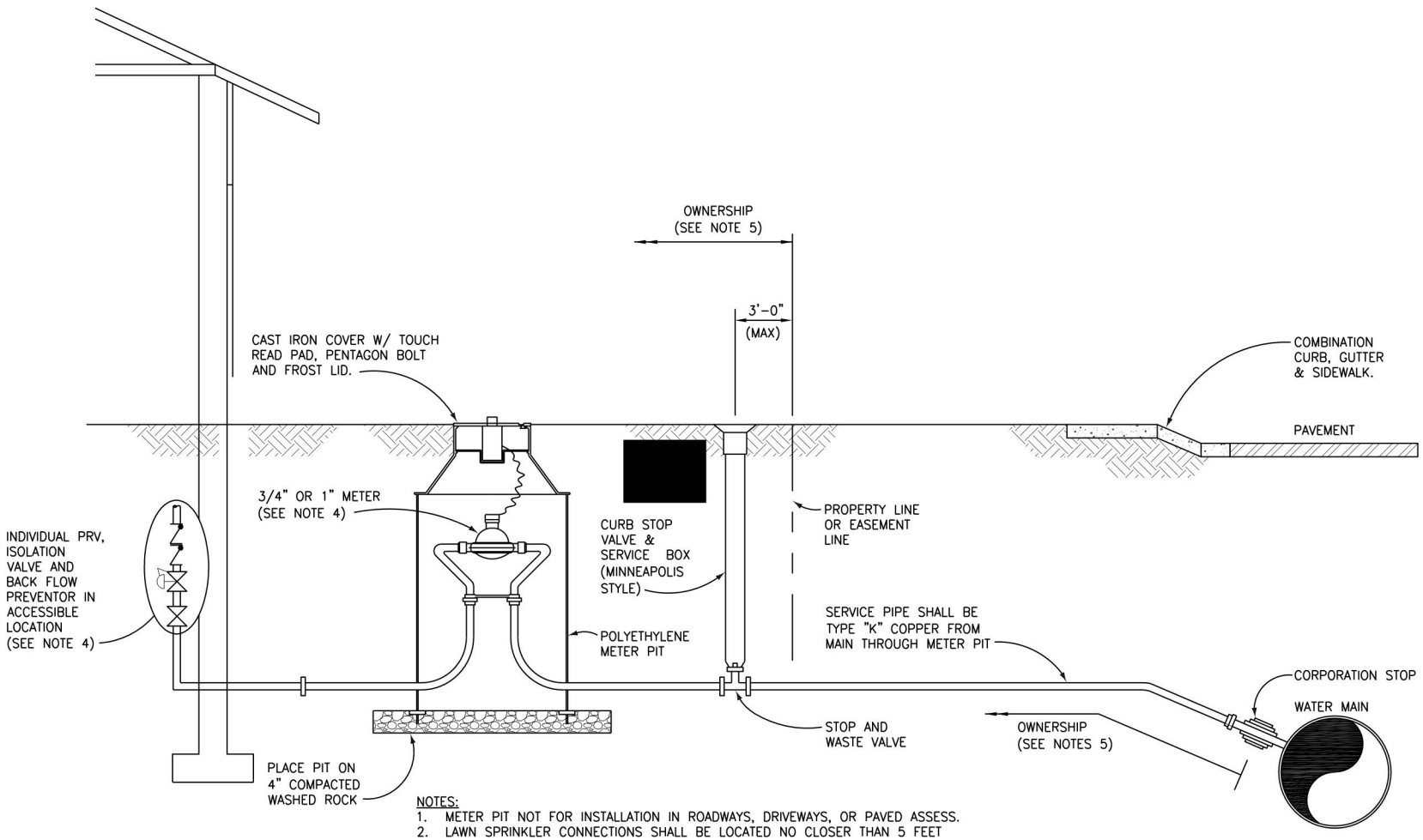
TYPICAL NEW SINGLE FAMILY DETACHED RESIDENTIAL WATER SERVICE

SCALE: NTS

DATE: JUNE 2011

LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS



NOTES:
1. METER PIT NOT FOR INSTALLATION IN ROADWAYS, DRIVEWAYS, OR PAVED ASSESS.
2. LAWN SPRINKLER CONNECTIONS SHALL BE LOCATED NO CLOSER THAN 5 FEET DOWNSTREAM OF METER PIT.
3. NO CHANGES IN PIPE DIAMETER SHALL BE MADE IN THE METER PIT OR BEYOND THE METER PIT WALL ON THE OUTLET SIDE.
4. METER MAY ALSO BE LOCATED IN THE BUILDINGS WITH OUTSIDE REMOTE READ SERVICE.
5. SEE WATER AND SEWER STANDARDS SECTION 4.2 FOR DESCRIPTION OF SERVICE LINE OWNERSHIP.

TOWN OF ELIZABETH

EXISTING SINGLE FAMILY DETACHED RESIDENTIAL WATER SERVICE

SCALE: NTS

DATE: JUNE 2011

LAST REVISED: JUNE 2011

WATER AND SEWER STANDARDS

WATER AND SEWER STANDARDS

FOR THE

TOWN OF ELIZABETH

FINAL DRAFT

APRIL 2025

TABLE OF CONTENTS

PAGE

SECTION 1 APPLICATION AND DEFINITIONS 1
1.1 APPLICABILITY 1
1.2 DEFINITIONS 1

SECTION 2 SYSTEM REQUIREMENTS, DESIGN AND SIZING 4
2.1 PURPOSE 4
2.2 OWNERSHIP OF FACILITIES 4
2.3 DRAWINGS 4
2.4 EASEMENTS 5
2.5 SEWER COLLECTION SYSTEM REQUIREMENTS 5
2.5.1 Specially Regulated Wastes 6
2.5.2 Prohibited Wastes 6
2.5.3 Pretreatment 7
2.5.4 Sump Pumps and Illegal Devices 8
2.5.5 Grease, Oil or Sand Interceptors 8
2.5.6 Swimming Pools 10
2.6 SEWER MAIN DESIGN / SIZING 10
2.7 WATER SYSTEM REQUIREMENTS 11
2.8 WATER DISTRIBUTION DESIGN / SIZING 11
2.9 INSPECTIONS 12
2.10 ACCEPTANCE CHECKLIST 12

SECTION 3 LOCAL SEWER AND WATER STANDARDS 14
3.1 PURPOSE 14
3.2 SANITARY SEWER MATERIALS 14
3.3 WATER MAIN MATERIALS 15
3.4 INSTALLATION 17
3.4.1 Sewer Installation 17
3.4.2 Manholes 17
3.4.3 Underdrains 18
3.4.4 Waterline Installation 18
3.4.5 Fire Hydrant Installation 19
3.4.6 Sewer and Water Main Pipe Bedding and Backfill 19
3.5 TESTING 23
3.5.1 Sanitary Sewer Line Testing 23
3.5.1.1 Pipeline Flushing 23
3.5.1.2 Alignment and Grade 24
3.5.1.3 Leakage Testing by Exfiltration 24
3.5.1.4 Leakage Testing by Infiltration 25
3.5.1.5 Low-Pressure Air Test 25
3.5.1.6 Deflection 27
3.5.2 Manholes 28

3.5.2.1 Visual Examination 28
3.5.2.2 Leakage Test 28
3.5.3 Television Inspection 29
3.5.4 Water Main Testing 29
3.5.5 Water Main Disinfection 30

SECTION 4 SERVICE LINE STANDARDS 31
4.1 GENERAL 31
4.2 OWNERSHIP AND MAINTENANCE 31
4.3 SERVICE CONNECTION 33
4.4 SEWER SERVICE SIZING 34
4.5 WATER SERVICE SIZING 34
4.6 SEWER SERVICE MATERIALS AND INSTALLATION 34
4.7 WATER SERVICE MATERIALS 35
4.8 WATER SERVICE INSTALLATION 36
4.9 DOCUMENTATION 36

SECTION 5 BACKFLOW PREVETION AND CROSS-CONNECTION CONTROL

STANDARD DETAILS

GENERAL

G1 - STANDARD APPROVAL BLOCK
G2 - TYPICAL WATER AND SEWER STREET PLAN
G3 - SEWER AND WATER LINE CROSSING
G4 - CONCRETE ENCASEMENT
G5 - SURFACE MARKER
G6 - BORE CASING
G7 - HARNESS LUGS – BORE CASING

SEWER SYSTEM

S1 - SEWER PIPE TRENCH
S2 - STANDARD MANHOLE
S3 - DROP MANHOLE
S4 - FLAT TOP MANHOLES
S5 - CAST-IN-PLACE MANHOLE BASES
S6 - GREASE INTERCEPTOR
S7 - SAND & OIL INTERCEPTOR

WATER SYSTEM

W1 - WATER PIPE TRENCH
W2 - HORIZONTAL THRUST BLOCKS
W3 - VERTICAL THRUST BLOCKS

W4 - MECHANICAL THRUST RESTRAINT
W5 - TRACER WIRE
W6 - BURIED VALVES
W7 - FIRE HYDRANT
W8 - BLOW-OFF
W9 - AIR RELIEF VALVE

SERVICE LINES

L1 - TYPICAL RESIDENTIAL SEWER SERVICE
L2 - SEWER SERVICE WYE CONNECTION
L3 - SEWER SERVICE LINE CLEANOUT
L4 - TYPICAL NEW SINGLE FAMILY DETACHED RESIDENTIAL WATER SERVICE

SECTION 1
APPLICABILITY AND DEFINITIONS

SECTION 1

APPLICATION AND DEFINITIONS

1.1 APPLICABILITY

These standards are to be applied in conjunction with the other administrative and procedural requirements of the Town of Elizabeth.

1.2 DEFINITIONS

Unless the context specifically indicates otherwise, the meaning of terms used herein shall be as follows (In addition, see Section 5 for backflow prevention specific definitions)

Acceptance shall mean formal notification by the Town to the Applicant that all the requirements of the "Checklist" have been met.

Actual Cost shall mean all direct costs applicable to the construction of a given facility, including surveys, preliminary and design engineering, construction, inspection, administrative, regulatory agency fees, bond fees, all required easements and/or rights-of-way, plan approval fees, "as-built" drawings, attorneys' fees, and other costs necessary for completion.

Applicant shall mean the person(s), firm, joint venture, partnership or corporation which is requesting service from the Town. In this document, the words "applicant" and "developer" have been used interchangeably.

Board and Board of Trustees shall mean the governing body of the Town of Elizabeth.

B.O.D. (Denoting 5-Day, 20 degrees centigrade Biochemical Oxygen Demand) shall mean the amount of oxygen which is utilized in the aerobic decomposition of Sewage under laboratory procedures in accordance with the current "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, the American Water Works Association and the Water Environment Federation.

Contractor shall mean the entity working on behalf of the developer to construct utilities or other physical improvements.

CDPHE shall mean the Colorado Department of Public and Health and Environment.

Cross-Connection means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture or other device which contains, or may contain, contaminated water, sewage or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a

result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and other temporary or permanent devices through or because of which backflow could occur are considered to be cross connections.

Customer shall mean any person, company, corporation or governmental authority or agency authorized to use the public water or sewer systems under a permit issued or otherwise authorized by the Board of Trustees or the Town Administrator.

Developer shall mean the person(s), firm, joint venture, partnership or corporation which is the owner or operator of land and which seeks to have the land served by the Town.

Engineer shall mean the engineering firm, or duly authorized representative (engineer), designated by the Town to act on its behalf in all engineering and related matters. This item includes an Inspector employed by the Engineer.

Engineer of Record shall mean the Professional Engineer, registered with the State of Colorado, who is responsible for the design of utilities or other improvements on behalf of the Developer.

EQR This is an abbreviation for Equivalent Residential Unit which is an average single-family detached residence or the equivalent, from a systems demand standpoint.

Inspector shall mean the Manager, Superintendent, Engineer, agent, officers, employees of the Town or other person so designated by the Manager to perform inspections pursuant to these Standards or other Rules and Regulations of the Town.

Local Facilities are those facilities generally designed primarily to serve individual subdivisions or plats. Examples are: water distribution systems, collector sewer lines and storm drainage collection systems.

Manager shall mean Manager of the Town, Public Works Director or, the Manager's duly authorized agent.

Owner shall mean the land's record title holder or lessee with planning powers.

Oversize Costs this item is applicable to part of the construction costs of a water distribution line or sewer main to be installed within, or for, a subdivision; but which the Town has also assigned a transmission function which results in the need for a larger pipeline. Oversize costs are the difference between the actual costs of the size line required by the Town and the size required by the Developer; however, for purposes of determining oversize, the minimum size shall be assumed to be 12-inch diameter for water and 10-inch diameter for sewer. Engineering and inspection costs are not included, only construction costs. The additional cost for the oversize may be negotiated between the Town and the Developer.

PRV shall mean pressure reducing valve.

PVC shall mean poly vinyl chloride.

Permit shall mean written permission of the Board of Trustees authorizing connection to water or a sewer main of the Town granting applicant a license to use the system or to receive service from the system owned, operated or served by the Town.

Person shall mean any individual, firm, company, association, society, corporation or group.

Raw Water shall mean water that has not been treated.

Regional Facilities shall mean those facilities generally serving the Town's service areas as a whole. Examples are: water sources, water treatment plants, wastewater treatment plants, lift stations, tanks, and water transmission lines or trunk sewer mains.

Sewage shall mean any liquid waste containing animal or vegetable matter in suspension or solution from residences, commercial buildings, institutions, and industrial establishments.

Sewer or Sewer Main shall mean a Town-owned sewer pipeline, carrying sanitary sewage or approved industrial wastes only, and shall be installed in a public street or easement.

Sewer Service Line shall mean the privately owned sewer line extending from the building to the sewer main and shall include the tap onto the sewer main.

Shall is mandatory; "May" is permissive.

Town shall mean the Town of Elizabeth or the Board of Trustees of the Town.

Water Main shall mean a Town-owned water pipeline, carrying potable water only and shall be installed in a public street or easement.

Water Service Line shall mean the water line extending from the water main to the Customer's building, and shall include the tap on the main, corporation cock, curb stop and box and meter installation (see Section 4 for ownership responsibilities).

SECTION 2
SYSTEM REQUIREMENTS, DESIGN AND SIZING

SECTION 2

SYSTEM REQUIREMENTS, DESIGN AND SIZING

2.1 PURPOSE

Local sewerage and water facilities are considered to be engineered improvements which are designed for specific applications. All designs, drawings and specifications must be prepared by, or under the direction of a Professional Engineer registered in Colorado, whose seal must be on a record set of documents. Local collection systems and water distribution systems are the responsibility of the Developer, who is responsible for design and construction and the costs thereof and for payment of actual costs of design reviews and other reviews and inspections provided by the Town. The standard details and specifications contained herein are minimum design standards which the Town will accept in order to facilitate perpetual operation and maintenance procedures.

2.2 OWNERSHIP OF FACILITIES

All existing and future Regional and Local Facilities connected with and forming an integral part of the Systems and accepted for operation and maintenance pursuant to these Standards shall become and are the property of the Town, unless a contract between the Town and the Owner provides otherwise. That portion of all existing and future Service Lines extending from a main to each resident, unit or building for each customer that is connected with the System shall become and is the property of the Owner/Customer (See Section 4 for further descriptions of Customer Ownership).

2.3 DRAWINGS

Unless otherwise approved by the Town, all design drawings shall be 24" x 36" in size. Drawing scale for area plans shall be 1" = 50'. Submission of ½ size sets (at scale) are acceptable for review purposes.

Prior to the construction or installation of any Local Facilities, the Developer shall submit Design Documents with appropriate fees to the Town for review and approval. [The Developer is encouraged to submit preliminary designs for review of the overall layout, prior to producing this set of design drawings for review.] Each review package submitted to the Town shall consist of four (4) sets, and a cover letter describing the project. Two copies are for the Town, and two copies are for review by the Town's Engineer. The Developer must also make an independent submittal to the Elizabeth Fire Department. The Town and/or its Engineer may request additional documentation or calculations, depending on the complexity of the application.

The cover sheet of each design drawing set shall have an "approval block" affixed thereto which provides for the signatures of authorized representatives of the Town of Elizabeth, the Town's Engineer, and the Elizabeth Fire Department. The "approval block" shall be a facsimile of that appended to these Standard Specifications, "Standard Approval Block," Drawing G1. Drawings

submitted for approval must be stamped and signed by a Professional Engineer registered in Colorado.

Construction may not begin until the Design Documents have been approved by the Town. The construction contractor(s) must have a copy of the signed, approved design documents in their possession at the construction site.

After completion of construction, the Developer shall also provide a complete set of record drawings for the facilities. The record drawings shall show sufficient dimensioned ties to reasonably permanent surface features for all buried facilities to allow for future locating. One copy of the record drawings, stamped and signed by the P.E. must also be submitted for the Town's records, along with an electronic copy on CD in the latest version of AutoCAD and also in PDF format.

2.4 EASEMENTS

Where Local Facilities are to be located out of the public right-of-way, the Developer shall be responsible for obtaining easements required for the construction, maintenance, and operation of the facilities. The Town will not accept alignments that could present access or construction problems in present or in the future (e.g., steep slopes or difficult vehicular access).

The legal description for the easements shall be prepared by a Professional Land Surveyor, registered in the State of Colorado. Easements shall be in a form acceptable to the Town and shall be shown on the construction drawings. The Town will not approve the Contract Documents until all required easements have been deeded to the Town.

In general, the minimum width of easements for pipelines shall be 30 feet. Temporary construction easements shall have a minimum width of 40 feet. Wider easements may be required for deep sections of pipeline, multiple lines, storm sewers, or where otherwise required by the Town. In general, an easement containing a water line and a sewer line shall be no less than 36 feet in width. No water line shall be located less than 5 feet from the edge of easement and no sewer main shall be located less than 10 feet from the edge of easement.

2.5 SEWER COLLECTION SYSTEM REQUIREMENTS

The Sewer Collection System is for the disposal of water contaminated by biodegradable wastes. No Person shall make connection of roof downspouts, exterior foundation drains, areaway drains, surface drains or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to the Sewer Collection System. In order to protect the Sewer Collection System from damage, destruction, deterioration, misuse or malfunction and to guard against health hazards and the creation of public nuisance, the following regulations shall apply relative to the discharge of Sewage containing deleterious wastes.

A septic facility may not be utilized within the Town Service Area unless a waiver is obtained from the Town.

2.5.1 Specially Regulated Wastes

a) Industrial Wastes. No Person or Persons shall discharge or cause to be discharged any Industrial Waste of any type into the Sewer Collection System unless written permission is received from the Town.

b) Inflow/Infiltration. No Person or Persons shall discharge or cause to be discharged into the Sewer Collection System, storm drainage from ground surface, roof ladders, catch basins or any other source, or sub-surface drainage or ground water.

c) Other Wastes. Industrial cooling water, unpolluted process waters, bakery/restaurant wastes, car washing wastes, swimming pool drainage and floor drainage from enclosed and covered areas may be connected to the Sewer Collection System only by a special Permit from the Town. The application for such a Permit, in addition to information normally required for a Permit application, shall include the following:

- Name and address of the Owner.
- Location of the property for which the request is made.
- Description of the facility or operation requested for connection.
- Estimated quantities and qualities of the waste to be discharged including maximum rates.
- Plans and specifications of related waste generating processes and any pretreatment processes.

Such Permits issued by the Town may contain the following conditions:

- the construction of flow measuring and/or sampling devices;
- the construction of valves or gates to stop flows on an emergency basis;
- the construction of grease, oil or sand interceptors, or other pretreatment facilities;

or the Town may place other restrictions on the Permit as reasonably required under the circumstances. Nothing in this Section shall prohibit the Town from denying an application for a Permit if the Town determines that the demand on the System(s) impairs the Town's existing operations or use.

2.5.2 Prohibited Wastes

Toxic or non-biodegradable waste or any other waste which results in effluent not being within state standards after providing conventional treatment shall not be discharged into the Sewer Collection System. No drain accepting discharge from vehicle wash racks, filling stations, restaurants or other building sewers as specified by the Town shall be connected to any Sewer Service Line unless the discharge first passes through an acceptable grease, oil or sand interceptor. Except as provided herein, no Person shall discharge or cause to be discharged any of the following described waters or wastes to the Sewer Collection System:

a. Any liquid or vapor having temperatures higher than one hundred and four degrees Fahrenheit (104º F).
b. Any water or waste which may contain more than one hundred parts per million (100 ppm) by weight of animal or vegetable fat, oil or grease.
c. Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid, gas, oil or grease, distilled alcohol
d. Any garbage that has not been properly shredded to less than one-half inch (½") in the largest dimension.
e. Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastic, wood, paunch manure or any other solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with the proper and normal operation of the Sewer Collection System.
f. Any waters or wastes having pH lower than 5.0 or higher than 9.0, or having any other corrosive or toxic property capable of causing damage or hazard to structures, equipment or personnel of the Sewer Collection System.
g. Any water or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any Sewage treatment process, constitute a hazard to humans, animals or fish, or create any hazard in the receiving waters of the sewer treatment plant effluent.
h. Any waters or wastes containing suspended solids of such character and quantity that unusual attention or expense is required to handle such materials at the sewer treatment plant.
i. Any noxious substances or malodorous waste, waters, gases or substance capable of creating a public nuisance, either in the sewer or at the sewer treatment plant.
j. A five (5) day B.O.D. concentration greater than three hundred parts per million (300 ppm).
k. A concentration of more than three hundred parts per million (300 ppm) of suspended solids.
l. Concentrated wastes from septic tanks and portable sanitary devices.
m. A peak flow rate greater than five (5) times the average flow rate.
n. Any chemicals having a twenty-four (24) hour proportionate composite sample concentration at the point of discharge in excess of the following:

Cadmium	0.10 mg/L
Chromium	5.0 mg/L
Copper	3.0 mg/L
Cyanides	2.0 mg/L
Iron	15.0 mg/L
Phenol	10.0 mg/L
H2s (Hydrogen Sulfide)	1.0 mg/L
Zinc	2.0 mg/L

2.5.3 Pretreatment

Where necessary, as determined by the Town, whose determinations shall be final, the Customer shall provide, at its sole cost and expense, such preliminary treatment as may be deemed

necessary. Where preliminary treatment facilities are provided for any waste or water, they shall meet with the approval of the Town for adequacy of design, and once built, shall be maintained continuously in satisfactory and effective operation by the Customer. When required by the Town, the Customer of any property served by a Service Line carrying Industrial Wastes shall install a suitable control manhole or monitoring point in the building sewer to facilitate observation, sampling and measurement of the Industrial Wastes. Such manhole or monitoring point shall be accessible and safely located and constructed in accordance with plans and specifications approved by the Town. The manhole or monitoring point shall be installed and maintained by the Customer at its expense.

2.5.4 Sump Pumps and Illegal Devices

No plumbing fixture, device, construction or plumbing system shall be installed within any building or improvement which will provide a connection between the Sewer Collection System, directly or indirectly, or with a Sewer Service Line for the purpose of draining ground or surface waters into the Sewer Collection System, and no physical connections shall be permitted whereby a Sewer Service Line is connected to a sump pump or other facility in such a manner that through either the manipulation of valves, the lack of back pressure valves, or as a result of any other arrangement or connection, it is possible to drain flood, overflow, storm or ground water directly or indirectly into the Sewer Collection System. Any Person having connected, or permitting to be connected, such a system to a Sewer Service Line or a Sewer Main, may be given notice to immediately disconnect such device or pumping system at his cost, and upon failure to do so, the Town may forthwith disconnect any Sewer Service Line from the property containing such a forbidden device or pumping system at the Sewer Main. The cost of such disconnection shall be a lien and charge against the property involved. No Sewer Service Line shall thereafter be connected to the Sewer Collection System without payment of the re-connection fee to the Town, and all costs and expenses of the Town relative thereto and positive proof that such improper and illegal connection or device has been removed and will not thereafter be re-connected to the Sewer Collection System.

2.5.5 Grease, Oil or Sand Interceptors

a) General - Design, Installation and Location. Grease, oil or sand interceptors shall be provided and installed at the sole cost and expense of the Customer when, in the opinion of the Manager, they are necessary for the proper handling of liquid wastes containing greases, oil, etc., in excessive amounts, or any flammable wastes, sand or other harmful ingredient. Fixtures that must be connected include, but are not limited to all kitchen service drains, scullery sinks, pot and pan sinks, dishwashing machines, soup kettles, garbage disposals and floor drains located in areas where materials containing grease may exist. Toilets, urinals, and similar fixtures shall not be connected to the interceptor. Upon prior approval by the Town, interceptors will not be required for facilities where food is served but not cooked at the facility, and/or no equipment or utensils associated with the preparation or service of cooked foods are washed at the facility. At a minimum, the interceptor shall be designed in accordance with the 2012 International Plumbing Code (IPC). The Customer shall also submit the proposed menu as part

of the sizing calculations. The Town reserves the right to adjust the proposed sizing based on the proposed menu. All interceptors shall be located as to be readily available and accessible for cleaning and inspection. Grease, oil or sand interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. Interceptors shall be watertight, and, if necessary, as determined by the Town, gastight and vented.

b) **New Buildings:** Interceptors for new buildings shall be approved by the Town and shall have a minimum of two (2) compartments with fittings designed for grease, oil and/or sand retention. There shall be at least two (2) manholes lids for each interceptor to provide access for cleaning and inspection of all fixtures and compartments. Interceptors for new buildings shall be located outside of the facility served and will not be allowed in drive-through driveways or next to main entranceways. Location of all interceptors shall be approved by the Town and shall be shown on the approved final development plan. Grease interceptors shall conform to Detail S6 and sand/oil interceptors shall conform to Detail S7, as applicable. The volume of a grease interceptor shall be determined by multiplying the total rate of flow in gallons per minute from each fixture required to be connected to the interceptor times a minimum retention time of not less than 15 minutes, the resulting volume expressed in gallons. The minimum acceptable grease interceptor volume shall be not less than 750 gallons. The flow rate from each fixture is provided in the following schedule:

TYPE OF FIXTURE	RATE OF FLOW (GPM)
Floor drain/sink	10
Restaurant kitchen sink	15
Single compartment scullery sink	20
Three compartment sinks	35
Two single compartment sinks	25
Two double compartment sinks	35
Restaurant dishwasher:	
up to 30 gallon water capacity	15
30 to 50 gallon water capacity	25
50 to 100 gallon water capacity	40
Garbage disposal/grinder	35

The volume of a sand/oil interceptor shall be determined as depicted in the following with a minimum acceptable volume of not less than 500 gallons.

Parking Garage – A base of forty-five (45) gallons plus eight (8) gallons per ten (10) vehicles
Repair Garage, Warehouse – A base of Forty-five (45) gallons plus eight (8) gallons per one hundred (100) square feet of building area.

c) Maintenance and Inspection. Where installed, all grease, oil or sand interceptors shall be maintained by the Customer at its sole cost and expense, in continually efficient operation at all times. The Town requires a monthly or periodic cleaning and pumping of any grease, oil or sand interceptors. The Customer shall maintain

a cleaning and maintenance record. At a minimum, the previous two years' maintenance records shall be filed at the property for periodic review by the Town. The Town may make inspections of grease, oil or sand interceptors and in the event the Customer/Owner is in violation of these requirements, the Customer/Owner may be liable for payment of a penalty (Per EMC 13-6-50). The cost of the Town's inspections may be billed directly by the Town to the Customer and/or Owner and, in addition, may include all other costs incurred by the Town in inspecting the interceptor.

2.5.6 Private Lift Stations

The Town will allow the construction and use of a private lift station if the customer or the engineer or representative working on behalf of the customer has exhausted all avenues of providing a gravity lateral sewer. In the event a private lift station is installed, the private lift station is the sole responsibility of the customer. The lift station shall be designed and permitted (if applicable) in conformance with CDPHE standards. Expenses associated with operating and maintaining the lift station shall be the responsibility of the customer. The Town shall be granted access to inspect the lift station upon request and reserves the right to isolate the system due to any violations of these Standards. .

2.5.7 Swimming Pools

No public or private swimming pool shall be connected to the Sewer Collection System without first obtaining a special Permit from the Town. Such Permit shall define and specify the hours during which water may be discharged from such pools into the Sewer Collection System.

2.6 SEWER MAIN DESIGN / SIZING

Collection sewer system design is intended to provide gravity service only. Before the start of design, the Developer is to contact the Town Engineer to confirm the connection point with the existing sewer system. Sewer line sizing is to be approved by the Town Engineer. The Town may direct the Developer to provide sewer line capacity in excess of the Developer's requirements. In such cases, the Town may negotiate reimbursement to the developer for the incremental cost of the oversize. Sewage lift stations and force mains will not be permitted unless specifically authorized by the Town.

Collection sewers shall be designed to carry not less than the projected peak flow rates flowing half full (safety factor = 2.0), unless otherwise approved by the Town Engineer. The minimum size collection sewer shall be 8" diameter. Sewers shall be so designed and constructed to give mean velocities, when flowing full, of not less than 2 feet per second.

When located in public streets, sewer mains shall be positioned on the west and south sides of the street center line. The mains shall be located proximately 5 to 10 feet from road center line and a minimum distance of 5 feet from the lip edge of the gutter pan (See Drawing G2). Sewers

shall generally be designed with sufficient depth to serve basements by gravity. The minimum cover shall be 6 feet from top of sewer to finished grade.

Water and sewer lines shall have a 10 feet minimum horizontal separation. Where this separation is impractical, the Town may permit other separation requirements, in accordance with applicable standards. If a water line passes under a sewer main or service, or if it lies within 10 feet of the sewer, the water line is to be protected per Drawing G3 and Drawing G4. When specifically authorized by the Engineer, other encasement or water line protection alternatives may be permitted. Manholes shall be located at a maximum spacing of 300 feet center-to-center and also at changes in sewer pipeline alignment and/or grade and at the end of each line. Sewers shall be laid with uniform slope between manholes.

Drop manholes (per Drawing S3) are to be provided for any pipeline whose invert entering the manhole is greater than 24" above the invert out.

2.7 WATER SYSTEM REQUIREMENTS

The Town Water Distribution System has been planned and constructed to provide Potable Water for conventional domestic and commercial uses and fire protection and irrigation. Any application for industrial or a high-demand commercial water supply, which use could be expected to require large quantities of water or unusual demand rates, shall be required to submit demand data before a Permit will be issued and said Permit may contain use limitations as determined to be necessary by the Town.

Water from the Water Distribution System and water from any other source shall be distributed through systems entirely independent of each other and Cross-Connection between such supplies is prohibited. Where any potential of backflow is present, a protective device or system, acceptable to the Town, shall be installed to prevent its occurrence. The installation, testing and maintenance of the protection device shall comply with the Backflow Prevention and Cross-Connection Control standards presented in Section 5.

All lawn sprinkler systems shall be equipped with a vacuum breaker approved by the Town.

2.8 WATER DISTRIBUTION DESIGN / SIZING

Water mains shall be designed to meet the more stringent of the following two conditions:

a. Maximum hourly demand with pressures not less than 40 psi at any point of the distribution system, or

b. Maximum daily demand rate plus fire flow demand (as determined by IS0 guidelines) with delivery pressures of not less than 20 psi at the hydrant.

The normal minimum size water distribution main shall be 12" or 8" for short looped lines in single-family residential areas. Six-inch mains may be individually approved by the Town for

dead-end mains serving no more than 15 residences with a fire hydrant near the end of the line, if this location and delivery rate meet the requirements of the Elizabeth Fire Department. Main line gate valves shall be located at a minimum frequency of every 600 feet and at all intersections. Crosses or tees shall include isolation valves on all legs, unless otherwise directed by the Town.

Water main sizing and connections shall be reviewed with the Town's Engineer prior to final detailing and drafting. The systems shall be designed to maximize interconnections and strengthening of the Town's water system. Where certain lines may also have a transmission function, in the opinion of the Town, the Town may direct that such lines be oversized.

Regulations normally require a 10-foot minimum horizontal separation between water and sewer mains. When located in public streets, potable water pipelines shall normally be positioned on the east or north sides of the street center line. The mains shall be located proximately 5 to 10 feet from road center line and a minimum distance of 5 feet from the lip edge of the gutter pan (See Drawing G2). Curved water line alignments are to be avoided if the water line is laid in the same easement or roadway as a sewer line.

2.9 INSPECTIONS

New installations, replacements, or repairs to the water distribution or sewer conveyance lines shall be inspected and approved by the Town or the Town’s designated Inspector. All work shall be performed in accordance with accepted workmanship practices and the specifications set forth and referenced herein. Any work not accepted by the Town shall be redone until compliant with these Standards. All appropriate permits and approved plans shall be kept on the job site during construction. After receipt of approved plans from the Town the Applicant shall give at least 48 hours notice to the Town prior to starting construction.

2.10 ACCEPTANCE CHECKLIST

Checklist for Acceptance of Town Facilities. To be completed after construction and prior to any service connections.

1. Construction of all Town facilities completed to Town Standards and to the approved plans.

2. All facilities tested to Town Standards and accepted by the Town's Engineer. (Furnish copies of soils compaction and materials tests).

3. Permanent survey monuments set at the corners of all easements.

4. Record drawings meeting Town Standards and sealed by a registered Professional Engineer (Hard and Electronic Copies).

5. Furnish a summary of total construction costs (including design costs) of all applicable water and sewer facilities. Include only facilities to be deeded to the Town.

6. Warranty Deed for all facilities to be owned by the Town.

7. Two-year Maintenance Bond to begin after the date of acceptance, except that if deficiencies are identified and repaired, a new two-year maintenance bond for the repaired Work is to begin starting on the date of acceptance of the repaired Work.

8. Payment of all fees and confirmation from Town's Attorney that the applicant for dedication of the facilities is not in default under any agreements within the Town.

9. Electronic Copy (CD) of sewer main video following initial acceptance (see Section 3.5.3)

SECTION 3
LOCAL SEWER AND WATER STANDARDS

SECTION 3

LOCAL SEWER AND WATER STANDARDS

3.1 PURPOSE

The standard details and specifications contained herein are minimum design standards which the Town will accept in order to facilitate perpetual operation and maintenance procedures. In addition, the engineer must also design in accordance with the minimum standards of other regulatory agencies. Review and approval of local facilities designs by the Town, its Engineer or other agencies (Elizabeth Fire Department) shall not relieve the Engineer of Record from responsibility for adequate design.

3.2 SANITARY SEWER MATERIALS

Pipe: Sewer pipe and fittings, 15 inches and smaller, shall be polyvinyl chloride (PVC), SDR 35 minimum thickness conforming to ASTM D3034. Joints shall be of the "slip on" type with integrally cast bell having an elastomeric gasket. For non-standard sewer line applications (e. g.: steep terrain; crossings of streams, ditches or drainages), the Town Engineer will issue project-specific requirements on request.

Manholes: Manhole bases, barrels and tops shall be precast concrete units conforming with ASTM C-478. Concrete for manhole bases and other similar items shall have a 28-day compressive strength of not less than 3,000 psi. All reinforcement required shall be standard deformed reinforcement conforming to the requirements set forth in ASTM A615, Grade 40.

The top section required for change of diameter shall be eccentric cone or flat top as depicted on Standard Drawings S2, S3, and S4. To bring the manhole cover to the correct elevation, the adjustment section of each manhole shall be pre-cast concrete grade adjustment rings. These rings shall be not less than 6 inches wide and furnished in heights to allow for 1-inch adjustment. Total adjustment height with grade rings, shall not exceed 12 inches.

Gaskets (O - rings) or flexible connection boots for connecting PVC pipe to manhole sections shall be specifically manufactured for that purpose. The gasket on boot shall be provided by the manhole manufacturer.

Manhole Joints: the joints between precast manhole sections are to be sealed with Ram-Nek LTM by Henry Company, or approved alternate gasket material.

External Joint Sealing: In addition to the gasket material used within the joints between sections of the manhole, an external joint wrap is required. Wrap is to be no less than 8" wide and is to be ConSeal CS-202 Butyl Rubber external joint wrap or Ram-Nek or approved equal.

Manholes for sewers of 15" diameter or less shall have a minimum inside diameter of 4 feet. Consult the Town’s Engineer for requirements for larger sewers. Manholes shall be constructed and installed in accordance with the Standard Drawings S2, S3, S4 and S5. Manholes in open

fields shall be designated with surface markers (see Drawings G5). Surface markers shall be flexible plastic manufactured by Carsonite or approved equal and shall be yellow in color with imprinted letters identifying sewer size and manhole number.

Manhole Covers: Manhole frames and covers shall be cast iron with the word "SEWER" cast on the cover. Unless otherwise specified, manhole lids shall be gasketed, unbolted lids, per Neenah R-1500 "self-sealing", or approved equal. If a gasketed, bolted lid is called for, it shall be Neenah Model R-1915-S1, or approved equal. Manhole covers shall include plastic infiltration inserts to protect against drainage inflow.

Manhole Steps shall be treaded, injection-molded polypropylene encapsulating a 112" grade 60 reinforcing rod. Shall be M.A. Industries step, Model PS-1 PF, or approved equal.

3.3 WATER MAIN MATERIALS

All water mains shall be Blue C900 or C905 PVC, conforming to ASTM 2241. Pipe joints shall be push-on type.

Fittings shall be ductile-iron, minimum 250 psi minimum working pressure, conforming to AWWA GI53 or C110 with mechanical joint connections meeting AWWA C111. Fittings shall have a cement mortar lining meeting AWWA 104 and bituminous exterior coating.

Sheathing: All ductile-iron, valves, and fittings shall be polyethylene sheathed in accordance with ANSl A21.5, AWWA C105, 10 mil minimum thickness.

Tracer Wire: A ten-gauge insulted tracer wire shall be required for all water mains. Wire termination boxes shall be provided, as depicted in Drawing W5.

Location Tape: All water lines shall be marked using blue detectable utility marking tape placed 8 to 10 inches below grade. The tape shall be PVC material 6-inches wide with a thickness of four (4) mils.

Surface Markers: Gate valves in open fields shall be designated with surface markers (see Drawings G5). Surface markers shall be flexible plastic manufactured by Carsonite or approved equal and shall be blue in color with imprinted letters identifying main size and valve number.

Pipeline Insulation: Where required at depths less than specified. Insulation shall be Dow STYROFOAM 115 or approved equal.

Line Valves: Line valves shall be provided to allow isolation of parts of the system for maintenance or repair. They are required approximately every 600 feet, or more frequently at intersections of mains to allow isolation of loops and branches. Line valves shall be provided on the legs of all cross and tee fittings, unless otherwise approved by the Town. A line valve is required between fire hydrants. Line valves shall comply with requirements for "Buried Valves."

Buried Valves: Valves, 12" and smaller, shall be non-rising stem, bronze mounted gate valves with mechanical joint ends conforming with AWWA C509. Valves shall have 2" square operating nuts and open left (counterclockwise rotation). Valves shall be Mueller, Clow, Waterous, or approved equal.

Valve Boxes: Each buried valve shall be provided with a cast-iron valve box and round cover. The box shall have a minimum inside diameter of 5 1/4" and be adjustable in length and of the screw type. The word "WATER" shall be cast on the cover. Valve boxes shall be "wide oval base" by Tyler, Clow, or approved equal. Valve boxes shall allow for at least 3 additional extensions above the level required for final grade at the time of installation. The top of all valve stems (including extensions) shall be located between 42” and 48" below final grade (See Drawing W6).

Fire Hydrants: Fire hydrants shall be of the dry barrel type and conform with AWWA C502. Hydrants shall have a 5 1/4" main valve, two 2-1/2" hose connections and one 4 1/2" pumper connection. Hydrants shall have 6- inch mechanical joint connections and safety traffic flange. Operating and cap nuts must be 1 ½”, Number 17 National Standard hex main valve that opens left. Fire hydrants shall be Mueller Centurion No. A-423, Waterous Pacer WB-67 with bronze seat ring, or approved equal (See Drawing W7).

Blowoffs: Blowoffs shall comply with Drawing W8. The top of all blowoff valve stems (including extensions) shall be located between 42" and 48" below final grade.

Air-Release Valves: Shall be provided at high points in the water distribution system. This may take the form of a fire hydrant or 2" blowoff (both manually operated), or an automatic air-release valve (See Drawing W9). The proposed location and use must be pre-approved by the Town.

Mechanical Joint Restraint: Joint restraint devices shall be made of ductile iron. Joint restraint devices shall be EBAA Iron, Inc., Megalug Series 1100 or 1700 or Uni-Flange Corp. Series 1400 or accepted equal.

Casing Spacers: Carrier pipes to be installed inside casings shall be installed with self-restrained casing spacers. Casing spacers shall provide axial thrust restraint to prevent pipe joint deflection during and after installation. They shall also provide dielectric insulation between the carrier pipe and the casing and facilitate installation of the carrier pipe into the casing. Spacers shall be installed at a maximum of every ten (10) feet of the pipeline to support the pipe barrel and the weight of its contents. Casing spacers shall be manufactured by Uni-Flange or Cascade Waterworks or approved equal.

3.4 INSTALLATION

3.4.1 Sewer Installation

The sewer system shall be installed in a thorough, workmanlike manner in accordance with the Design Documents that have been approved by the Town. The minimum bedding and backfill requirements shall be as shown on Drawing S1 and described in these standards.

The minimum cover shall be 6-feet from top of sewer line to finished grade. A minimum of 5-feet of cover will be allowed if at least 2 inches of an approved pipeline insulation is provided, per Drawing S1. If insulation is installed, use approximately 6-inches of sand or squeegee for the pipe zone materials above and beneath the insulation to protect it from breakage during backfill.

If the bottom of the excavation is soft or unstable, and in the opinion of the Town, is not a satisfactory support for the pipeline, further depth and/or width shall be excavated and refilled to 6-inches below the pipe outside diameter (excluding bells) with Trench Stabilization Material, as specified in Section 3.4.6.

Each pipe length and fitting interior, interior surface of bells, and exterior surface of spigots shall be cleaned of all foreign material before placing it in the trench and shall be kept clean all times thereafter. Each item must also be examined for cracks and other defects before installation.

Pipe shall be cut, only whenever necessary, to conform to location of manholes or connections. All cuts shall be straight, true, and at right angles to the axis of the pipe unless otherwise noted or directed by the Engineer. The cutting process shall leave a smooth end without damaging the pipe. All burrs shall be removed from the ends of cut pipe, and the end chamfered and lightly rasped or filed. All tools used in cutting pipe shall be subject to the Engineer's approval. The manufacturer's requirements for lubrication and gaskets must be followed.

Pipe laying shall proceed upgrade with the spigot ends of pipe pointing in the direction of the flow, unless otherwise approved by the Engineer. Each pipe length shall be laid true to line and grade in such manner as to form a close concentric joint with the adjoining pipe and to prevent sudden offsets to the flow line. Pipe shall be laid in an unwatered trench and shall not be used for draining water from the trench. Pipes are to be kept clean by capping or plugging ends.

3.4.2 Manholes

Manholes shall be constructed to conform to the Standard Details. The invert channels shall be smooth and semi-circular in shape, conforming to the inside of the incoming and outgoing sewer pipelines. Changes in direction of flow shall be made with a smooth curve of as large a radius as the size of the manhole will permit. Changes in size and grade of the channels shall be made gradually and evenly. Where differences in invert elevations exist, sloped flow channels shall be formed so the sewage does not undergo a vertical drop. The invert channels may be formed directly in the concrete of the manhole base. The floor of the manhole outside of the channel shall have a rough broom finish and shall slope toward the channels not less than 1 inch per foot nor more than 2 inches per foot. The top circumference of the base shall be finished level and

smooth to permit obtaining a watertight joint between the precast manhole sections and the cast in place base. The manhole covers shall be set with their tops at the grades set forth in the approved drawings. When a manhole top is above the ground line, the exposed ring shall be encased in non-shrink grout as shown on the Standard Details. Manhole tops without bolted, gasketed covers shall not be set at or below surrounding grade, except in paved roadways. The site shall be graded so that drainage is away from the manhole.

Each joint of the precast manhole barrel shall have at least one continuous Ram-Nek gasket placed on the lower ledge before the barrel immediately above is lowered into place.

For poured-in-place bases (See Drawing S5), joints between the precast manhole barrel sections and the cast in place manhole bases shall have two continuous gaskets and shall be grouted inside and outside using approved non-shrink grout. With a poured-in-place base, the surface of the precast barrels and the cast in place bases shall be smooth and sound. The joint surfaces shall be cleaned to remove any concrete projections or dirt which may prevent a water-tight seal from being established. The joints shall be prepared and the gaskets shall be placed in accordance with the manufacturer's recommendations.

External Joint Sealing Wrap is to be applied to clean concrete surfaces per manufacturer's requirements. Must be applied immediately prior to backfilling, so when backfill is compacted the earth pressure forces bituminous wrap into concrete surfaces. Temperature of manhole sections and of backfill materials must be above 40 deg. F from time of applying wrap to time of backfilling.

3.4.3 Underdrains

The Town does not allow the use of underdrains laid in the same trench as a sanitary sewer line.

3.4.4 Waterline Installation

Water pipelines shall be installed in a thorough and workmanlike manner in accordance with the Design Documents that have been approved by the Town. The minimum bedding and backfill requirements are depicted on Drawing W1 and described in Section 3.4.6. The minimum cover shall be 5 feet from top of water line to finished grade. Pipelines shall not be placed deeper than 10 feet without prior approval by the Town.

A minimum of 3 feet 6-inches of cover will be allowed if at least 8 inches of an approved pipeline insulation is provided, per Drawing W1. If insulation is installed, use approximately 6-inches of sand or squeegee for the pipe zone materials above and beneath the insulation to protect it from breakage during backfill.

If the bottom of the excavation is soft or unstable, and in the opinion of the Town, is not a satisfactory support for the pipeline, further depth and/or width shall be excavated and refilled to 6-inches below the pipe outside diameter (excluding bells) with Trench Stabilization Material, as specified and detailed in Section 3.4.6.

All pipeline fittings (i.e., bends, tees, plugs, and caps) shall be installed with concrete thrust blocks adequately designed for the specific application and mechanically restrained for at least 40 feet in all directions. Thrust blocks shall be cast-in-place from concrete having a minimum compressive strength of 3,000 psi. Minimum requirements for horizontal and vertical thrustblocks are as shown on Drawing W2 and W3.

Alternate means of thrust restraint may be considered and approved for use where proved to provide similar restraint. Supplemental restraint may also be required where the Engineer believes the soil bearing pressures to be inadequate, or where the Engineer is concerned about subsequent movement due to slope or other conditions of service. See Drawing W4 for mechanical joint restraint lengths and details. Valves near a fitting must be tied back to that fitting, using rodding or mechanical joints.

All dead ends shall be terminated with a fire hydrant or blow-off.

3.4.5 Fire Hydrant Installation

Fire hydrants shall be located as required by the Town and the Elizabeth Fire Department and shall be placed at a maximum interval of every 500 feet. The Developer shall be required to obtain the approval by the Elizabeth Fire Department for fire hydrant locations. In general, hydrants shall be located at a minimum of 18-inches behind curbs or sidewalks. Fire hydrants shall be installed in accordance with Drawing W7. Each hydrant shall be connected to the main by a six-inch (6”) branch line. An independent six-inch (6”) gate valve shall be installed on the tee off the water main. The length of the branch fire line shall be a maximum of 50 feet and no service line connections shall be made on the fire hydrant branch line.

3.4.6 Sewer and Water Main Pipe Bedding and Backfill

a. Trench Zones. The terms "Bedding Zone", "Pipe Zone" and "Backfill Zone" shall refer to the trench zones identified in the Standard Details S1, and W1.
   1) Bedding zone. The Bedding Zone shall consist of all material placed below the pipe invert or, when permitted, the native materials graded and prepared for direct placement of the pipe.
   2) Pipe zone. The Pipe Zone shall consist of all material placed above the pipe invert to an elevation shown on the details.
   3) Backfill zone. The Backfill Zone shall consist of all material above the Pipe Zone.

b. Material. All bedding and backfill material shall have the approval of the Engineer. All bedding and backfill material shall be free of frozen material, organic material and debris. The materials to be used in each trench zone are indicated on the Standard Details and these materials are described below. All materials may be subject to gradation tests and compaction tests prior to approval of the use of that material. The test results shall be submitted to the Engineer for approval and verified as to their accuracy. These tests shall be performed at no cost to the Town or its agents.

1) Sand bedding or sand backfill material. This material shall be a clean, well-graded sand and shall conform to the following limits when tested by means of laboratory sieves:

Well-Graded Sand

Sieve Size	Total Percent Passing by Weight
3/18 – inch	100
No. 4	70 - 100
No. 8	36 - 93
No. 16	20 - 80
No. 30	8 - 65
No. 50	2 - 30
No. 100	1-10
No. 200	0 - 3

2) Roadbase bedding material or roadbase backfill. This material shall be Class 6 aggregate base course as specified by the latest version of the State of Colorado Department of Highways; and shall meet the following gradation:

Sieve Size	Total Percent Passing by Weight
¾ – inch	100
No. 4	30 - 65
No. 8	20 - 55
No. 200	3 - 12

3) Squeegee Sand. This material shall be clean, well graded and conform to the following limits when tested by means of laboratory sieves:

Sieve Size	Total Percent Passing by Weight
3/8 – inch	100
No. 200	0 – 5

4) Granular bedding or granular backfill material. This material shall be imported crushed rock or angular surfaced gravel and meet the following gradation (ASTM D448, No. 67):

Sieve Size	Total Percent Passing by Weight
1 – inch	100
¾ - inch	90 – 100
3/8 – inch	20 -55
No. 4	0 – 10
No. 8	0 - 5

5) Select material. Select material shall not be permitted unless authorized by the Engineer. This material shall consist of suitable material screened from the excavated earth having no rocks or stones greater in size than ¾-inch.

6) Trench stabilization material. This material shall be a ¾ inch to 1½ inch uniformly-graded, crushed rock or concrete aggregate.

7) Backfill material. Backfill material shall consist of suitable material from the excavated earth, meeting all the requirements of these standards.

No boulders over 6 inches in any dimension shall be allowed in the top 12 inches of the trench. All boulders shall be carefully placed so that no damage will be done to the pipeline. No backfill material shall have boulders larger than 24 inches in any dimension and the amount of boulders larger than 8-inches shall be less than 15% of the backfill volume. Boulders larger than 8 inches in any dimension shall be carefully lowered into the trench until the backfill is 4 feet over the top of the pipe.

c. Bedding and Backfill Installation:

1) General. The compaction requirements for the backfill zone shall conform to maximum dry density according to ASTM D698, Moisture-Density Relations of Soils (Standard Proctor). For the bedding and pipe zones, and when the ASTM D698 test is not applicable, the percentage compaction requirements shall conform to ASTM D4253, Test for Relative Density of Cohesionless Soils.

The Developer is responsible for providing (at no cost to the Town) adequate materials testing and/or geotechnical engineering resources to provide proper Quality Control and response to Quality Assurance directives by the Town or its agents. At a minimum, moisture density tests shall be taken one test for every 24-inch lift per 200 linear feet of trench and at every above ground appurtenance (i.e. valve box, manhole, hydrant, etc.)

When required by the Town, the Developer shall excavate backfilled trenches for the purpose of performing compaction tests at 'locations and depths required by the Engineer. The Developer shall be responsible for reinstalling and compacting the test excavations at no additional cost to the Town.

2) Bedding zone installation. Bedding material shall consist of the material on which the pipe is placed in accordance with the Drawings S1 and W1. Bedding material shall be placed to the required elevation of the pipe invert. Tamping and/or vibratory equipment shall be used to thoroughly tamp the bedding material to a minimum 75 percent relative density.

3) Pipe zone installation. After bedding material has been placed and approved and after the pipe has been installed and approved, the pipe zone backfill shall be installed to an elevation shown on the Standard Drawings.

The pipe zone material shall be as specified on the details and shall be placed and compacted in distinct, separate lifts not to exceed 6 inches of loose depth; except that the first loose lift shall not be higher than the pipe centerline (springline). If select backfill materials are permitted in this zone but acceptable select backfill material (suitable for placement within 12 inches of the pipe barrel) is not available at any particular location, the Developer shall use imported granular backfill material. Compaction shall meet the requirements of "Bedding Zone Installation," utilizing T-bars or mechanical tamping equipment.

4) Backfill zone installation. Unless otherwise provided in the Special Construction Provisions, the following method of installation shall apply. After the pipe zone backfill has been placed and approved, the trench shall be backfilled. All backfill above the pipe zone backfill shall be carefully placed in the trench in lifts no greater than 2 feet loose lifts. Each lift shall be compacted by mechanical equipment to 95 percent of laboratory dry density. After the trench is backfilled to the ground surface, the trench line shall be wheel rolled. If the backfill is depressed below the finished grade elevation, the depressed area shall be refilled and compacted. The backfill shall be mounded higher than the adjacent ground to allow for settlement.

5) Backfill zone installation in roads and streets. Beneath all traveled ways in roads and streets, highway shoulders and within 15 feet of pavement in State Highway Department rights-of-way (unless otherwise specified on the plans) backfill shall be carefully placed and compacted up to the limit of base course material or to gravel. Compaction shall be by mechanical tamping in 8-inch maximum loose lifts using mechanical or hand tampers, weighing not less than 20 pounds, or vibratory rollers. All other means must be approved in writing by the Engineer. All backfill shall be compacted to 95% of maximum laboratory dry density or 70 percent relative density. The material shall be within 2.0 percent of optimum moisture content. Finished backfill surface shall be proof rolled and exhibit no deflections.

The Developer may request approval of alternate means of compaction. Such request must be submitted from a registered engineer to the Town in writing. Approval of the compaction method will be made by the Town only in writing. Use of specified or approved compaction methods does not relieve the Developer from providing a completed project meeting the intent of this Specification.

d. Maintenance of Backfill. All backfill shall be maintained in a satisfactory condition and all places (including pavement) showing signs of settlement shall be filled and maintained for a period of two years following the date of final acceptance of all work performed. When the Developer discovers or is notified by the Engineer or the Town that

any backfill is not in compliance with these requirements, the Developer shall correct such condition at once. Any utilities and road surfacing damaged by such settlement shall be repaired by the Developer to the satisfaction of the Town and Engineer. In addition, the Developer shall be responsible for the cost to the Town of all claims for damages filed with the Court and actions brought against the said Town for, and on account of, such damage.

e. Dewatering. All pipe trenches shall be kept free from water during pipe installation and other related work. The method of dewatering shall provide for a completely dry trench bottom. Dewatering shall be accomplished by the use of well points, sump pumps, rock or gravel drains placed below subgrade or subsurface pipe drains. All water shall be disposed of in a suitable manner without being a menace to public health or causing public inconvenience. No water shall be drained into other work being completed or under construction. The dewatering operation shall continue until such time as it is safe to allow the water table to rise in the excavation. Pipe trenches shall contain enough backfill to prevent pipe flotation.

f. Trench Sub-grade in Poor Soils. In excessively wet, soft, spongy, unstable or similarly unsuitable material is encountered at the surface upon which the bedding material is to be placed, the unsuitable material shall be removed to a depth as determined in the field by the Town or it’s designated representative and replaced with Trench Stabilization material.

3.5 TESTING

3.5.1 Sanitary Sewer Line Testing

The following testing procedures are intended to determine if the sanitary sewer line meets the Town's minimum quality standards. Alternative procedures meeting or exceeding the intent of these procedures, as determined by the Town's Engineer, may be acceptable. In any case, however, proposed alternative testing procedures must be included in the design plans and specifications.

The Contractor shall notify the Town's Inspector - no less than 48 hours prior to the desired test time.

The Town's lnspector shall witness all tests and verify the accuracy and acceptability of the equipment utilized. The Town's Engineer will inform the Contractor regarding acceptable methods of repair in the event that one or more sections fail to pass any test.

3.5.1.1 Pipeline Flushing

The Contractor shall flush the pipelines, as the work progresses by means that are in accordance with good practice, to insure that earth, sand, rocks or other foreign materials are removed from the interior of the pipeline. Proper environmental and erosion control

prevention measures shall be employed meeting CDPHE latest Standards and Regulations.

3.5.1.2 Alignment and Grade

Sewer pipelines will be checked by the Town to determine whether any displacement of the pipe has occurred after the trench has been bedded. The test will be as follows:

A light will be flashed between manholes, or if the manholes have not as yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror. If the illuminated interior of the pipelines shows poor alignment, displaced pipe, earth, or other debris in the pipe, or any other kinds of defects, the defects, determined by the Town, shall be remedied by the Contractor. The test will be repeated following completion of backfilling and any poor alignment, displaced pipe, or other defects, determined by the Town, shall be corrected at no cost to the Town.

3.5.1.3 Leakage Testing by Exfiltration

Tests for water tightness shall be made by the Contractor in the presence of the Town's Inspector. The Contractor shall provide assistance to the Town's lnspector in development of a detailed record of the testing program. The sewer and connections shall not leak in excess of the following rate for a 24-hour test period:

MAXIMUM ALLOWABLE SEWER LEAKAGE

Pipe Size Inches	Leakage Gal/Foot/24 Hours
18	0.68
15	0.57
12	0.45
10	0.38
8	0.30
6	0.23

Each reach of pipeline between manholes shall be tested individually. Any individual reach that leaks in excess of the amount allowed in the previous paragraph shall be considered as failing, and shall be repaired and retested.

At the discretion of the Town, the time for leakage rate test may be shortened to four (4) hours.

The tests and measurement of infiltration or exfiltration shall be conducted in a manner as approved by the Town's Inspector. The minimum head for the exfiltration tests shall be 2 feet above the top of the pipe at its highest point in the test section. Sections shall be bulk-headed so that during any test the head on the sewer at its lowest elevation will not be more than 10'. This restriction does not apply to ductile-iron pipe.

The Contractor shall repair the sewer in a manner that is satisfactory to the Town and re-test at the contractors' expense until a satisfactory installation is obtained.

3.5.1.4 Leakage Testing by Infiltration

Infiltration tests will be used if the groundwater table is likely to be 1 foot or more above the invert of the finished sewer. Otherwise, exfiltration tests will be used. The allowable leakage rates are as tabulated for section 3.5.1.3, Leakage Testing by Exfiltration.

3.5.1.5 Low-Pressure Air Test

At the option of the Contractor, low-pressure air testing of the installed sewer pipe may be used instead of the leakage exfiltration test.

The following criteria and procedure shall be utilized, unless otherwise approved by the Town's Inspector.

1) Plug Restraint. It is extremely important and essential that all plugs be installed and braced in such a way that blowouts are prevented. It is recommended that every plug be positively braced and that no one be allowed in the manhole adjoining a line being tested so long as pressure is maintained in the line.

2) Relief Valve. All pressurizing equipment used for low-pressure air testing shall include a regulator or relief valve set no higher than 9 psig to avoid over pressurizing and displacing temporary or permanent plugs. As an added safety precaution, the pressure in the test section should be continuously monitored to make certain that it does not at any time exceed 9 psig.

3) Plug Design. Either mechanical or pneumatic plugs may be used. All plugs shall be designed to resist internal testing pressures without the aid of external bracing or blocking. However, the Contractor should internally restrain or externally brace the plugs to the manhole wall as an added safety precaution throughout the test.

4) Singular Control Panel. To facilitate test verification by the inspecting Engineer, all air used shall pass through a single, above ground control panel.

5) Equipment Controls. The above ground air control equipment shall include a shutoff valve, pressure regulating valve, pressure relief valve, input pressure gauge, and a continuous monitoring pressure gauge having a pressure range from 0 to at least 10 psi. The continuous monitoring gauge shall be no less than 4 inches in diameter with minimum divisions of 0.10 psi and an accuracy of 0.04 psi.

6) Separate Hoses. Two separate hoses shall be used to: (1) connect the control panel to the sealed line for introducing low-pressure air, and (2) a separate hose connection for constant monitoring of air pressure build-up in the line. This requirement greatly diminishes any chance for over-pressurizing the line.

7) Pneumatic Plugs. If pneumatic plugs are utilized, a separate hose shall also be required to inflate the pneumatic plugs from the above ground control panel.

8) Laterals, Stubs, and Fittings. During sewer construction all service laterals, stubs, and fittings into the sewer test section shall be properly capped or plugged so as not to allow air loss that could cause an erroneous air test result. It may be necessary and is always advisable to restrain gasketed caps, plugs, or short pipe lengths with bracing stakes, clamps and tierods, or wire harnesses over the pipe bells.

9) Plug Installation and Testing. After manholes have been tested for alignment and grade, and a manhole-to-manhole reach of pipe has been backfilled to final grade and prepared for testing, the plugs shall be placed in the line at both manholes and secured.

It is advisable to seal test all plugs before use. Seal testing may be accomplished by laying one length of pipe on the ground and sealing it at both ends with the plugs to be checked. The sealed pipe should be pressurized to 9 psig. The plugs shall hold against this pressure without bracing and without any movement of the plugs out of the pipe. No persons shall be allowed in the alignment of the pipe during plug testing.

The upstream end of the line shall be plugged first to prevent any upstream water from collecting in the test line.

10) Line Pressurization. Low pressure air shall be slowly introduced into the sealed line until the internal air pressure reaches 4.0 psig.

11) Pressure Stabilization. After a constant pressure of 4.0 psig is reached, the air supply shall be throttled to maintain that internal pressure for at least 2 minutes. This time permits the temperature of the entering air to equalize with the temperature of the pipe wall.

12) Timing Pressure Loss. When temperatures have been equalized and the pressure stabilized at 4.0 psig, the air hose from the control panel to the air supply shall be shut off or disconnected. The continuous monitoring pressure gauge shall then be observed while the pressure is decreased to no less than 3.5 psig. The timing pressure loss test shall then commence at

a pressure reading of 3.5 psig, or any convenient observed pressure reading between 3.5 psig and 4.0 psig. (Except as adjusted for groundwater as follows.)

13) Air Pressure Adjustment. An air pressure correction, which must be added to the 3.5 psig normal test starting pressure, shall be calculated by dividing the average vertical height, in feet of groundwater above the invert of the sewer pipe to be tested, by 2.31. The result gives the air pressure correction in pounds per square inch to be added. (For example, if the average vertical height of groundwater above the pipe invert is 2.8 feet, the additional air pressure above the pipe invert is 2.8 divided by 2.31 or 1.2 psig. This would require a minimum starting pressure of 3.5 plus 1.2 or 4.7 psig). The allowable pressure drop of 1.0 psig and the timing in Table I are not affected and shall remain the same. In no case however should the starting test pressure exceed 9.0 psig.

14) Determination of Line Acceptance. If the time shown in Table I for the designated pipe size and length, elapses before the air pressure drops 1.0 psig, the section undergoing test shall have passed.

TABLE 1
SPECIFICATION TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015

1 (min:sec) Pipe Diameter (in.)	2 Minimum Time (min:sec)	3 Length for Minimum Time (ft)	4 Time for Longer Length (sec)	100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	.380 L	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46
6	5:40	398	.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8.52	10:08	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41

3.5.1.6 Deflection

All PVC sewer pipelines shall be tested for vertical deflection after placement and compaction of backfill unless testing is specifically excepted by the Town's Inspector. Method of testing shall be by deflectometer of the rigid GO/NO-GO type device. Alternative methods will be permitted only by written permission of the Town's Inspector. Maximum allowable deflection shall be five (5) percent of the pipe diameter.

Any and all pipe with vertical deflection greater than the allowable shall be excavated, removed from the pipeline, replaced, backfilled and compacted as specified and retested.

The Town reserves the right to direct the Developer to retest sewer lines after 10-12 months of service, if the Town has concerns about the condition of certain sections of pipe. Sections would be selected for retesting based on the results of the initial tests, the outcome of the television inspection (per Section 2.73), depth of cover, or other technical factors. The Developer shall perform such retesting at no cost to the Town.

3.5.2 Manholes

During the construction of the manholes, the Contractor shall, in accordance with good practice, ensure that no earth, sand, rocks or other foreign material exists on the joint surface during assembly of the sections. The Town's Inspector shall check each manhole to determine whether the manhole fulfills the requirements of the Drawings and Town's Standards.

3.5.2.1 Visual Examination

The Town shall visually check each manhole, both exterior and interior, for flaws, cracks, holes, or other inadequacies which might affect the operation or watertight integrity of the manhole. Should any inadequacies be found, the Contractor shall make any repairs deemed necessary by the Town’s Inspector.

3.5.2.2 Leakage Test

All manholes shall be tested for leakage and all tests shall be witnessed by the Town's Inspector. The leakage test shall be conducted prior to backfilling around the manhole and shall be carried out in the following manner:

1) All lines leading into or out of the manhole shall be tightly plugged
2) The manhole shall be filled with water to a level at least 2 inches above the uppermost step. The water shall be allowed to stand for two hours to allow for normal water absorption into the manhole material. At the end of the two-hour stabilization period, if the water level in the manhole has dropped below the top step, additional water will be added to bring the level above the step as before. Any visible external leakage or drop in water level noted within the one-hour test period shall constitute failure and the Contractor shall repair or replace the defective work and retest.
3) Vacuum Testing. At the option of the Contractor, vacuum testing of the installed manholes may be used instead of the leakage test. All pipes entering and exiting the manhole shall be temporarily plugged, taking care to securely brace the pipes and plugs to prevent them from being drawn into the manhole.

   The test head shall be placed at the top of the manhole and the seal inflated in accordance with the manufacturer's recommendations.

A vacuum of 10-inches of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head shall be closed, and the vacuum pump shut-off. The time shall be measured for the vacuum to drop to 9-inches of mercury.

The manhole will be declared unacceptable if the time to drop from 10-inches of mercury to 9-inches of mercury is less than 60 seconds. This test interval is valid for 48" MH of up to 24' depth, 60" MH up to 18' deep and 72" MH up to 14' deep. The Town Engineer will establish test intervals for other situations on a case-by-case basis.

3.5.3 Television Inspection

The Developer shall perform television inspections of each segment of the sewer line and record this inspection on a CD, which is to be turned over to the Town. The format for labeling and stationing of this record is to be approved by the Town prior to performing the TV inspection. The Developer is to provide a one week notice prior to the TV inspection, so that a representative from the Town may be present to observe the inspection in progress. There shall be two TV inspections performed, one at the initial acceptance and one at the end of the two year warranty. The warranty inspection is to be performed no earlier than 22 months after acceptance of the sewer construction by the Town. The CD is to be submitted to the Town no later than 23 months after the date of Town acceptance. Performance of the two TV video inspections shall be completed at no cost to the Town.

3.5.4 Water Main Testing

All finished water lines, after reaction blocking is in place, shall be pressure and leakage tested at not less than 150 psi for a two-hour period. If working pressure is greater than 100 psi, the test shall be performed at 1.5 times the expected working pressure. Unless approved by the Engineer no lines longer than 1200' shall be tested at one time.

No pipeline installation will be acceptable until the leakage is less than the amount computed by the following formula:

$$L = \frac{\mathrm{SD(P)0.5}}{133{,}200}$$

Where:
L = Allowable leakage in gallons (per hour)
S = Tested length of pipe (feet)
D = Nominal diameter of pipe, inches
P = Average test pressure during the test, psi

3.5.5 Water Main Disinfection

All water piping shall be disinfected in accordance with AWWA C601 after all construction work has been completed. Chlorine shall be added to the water at the necessary locations in the amount to form a 50-ppm free chlorine residual. The chlorine solution shall be left in the pipelines for not less than 24 hours, during which time all valves and fire hydrants shall be operated in order to disinfect the appurtenances. After that length of time, the chlorine residual of the solution, at any place in the system, shall not be less than 10 ppm. All chlorination work must be done in the presence of the Engineer. At the end of 24 hours, a bacteriological test is to be performed by the local health authority to ensure adequate disinfection, at the cost of the Developer. Special provisions (at no additional cost to the Town) must be made to ensure any highly chlorinated water is not discharged to the ground. The Developer must submit the "method of disposal" for this chlorinated water prior to any testing.

SECTION 4
SERVICE LINE STANDARDS

SECTION 4

SERVICE LINE STANDARDS

4.1 GENERAL

No service line may be constructed without prior approval from the Town. The Applicant must provide adequate information describing the nature of the building or development to be connected, the proposed service line size, and the proposed connection point of the service line to the main. A site plan, showing the location of the proposed service line relative to other utilities on and adjacent to the property must be presented. The drawing must show the location of buildings served and parts of the site that are to be paved or otherwise intended to be kept clear of snow, and must also show service line slope and depth of cover over the service line.

The sizing of the service lines shall be the responsibility of the Applicant. When requested by the Town, the Applicant shall, at his expense, furnish data, plans, calculations, or other information as required for the evaluation of the service size. Service lines are the responsibility of the Developer or Applicant, who is responsible for design and construction and the costs thereof and for payment of actual costs of review and inspection provided by the Town.

All service lines are to be constructed in accordance with applicable codes, generally accepted good construction practices, and the minimum standards and criteria contained in this document. The details are provided for standardization purposes only, and represent minimum design standards which may require upgrading for specific applications.

No water service line shall be connected to a main which has not been pressure tested, disinfected and accepted by the Town.

4.2 OWNERSHIP AND MAINTENANCE

Ownership and maintenance responsibilities are defined under the following categories of Sewer Service, New Single-Family Detached Residential Water Service, Existing Single-Family Detached Residential Water Service and Commercial/Multifamily Water Service.

Sewer Service: The sewer service line is defined as beginning at the wye connection of the main line to the point of connection to the building(s) and is the property of the customer of the resident, unit or building served (see Drawing L1). Repairs, maintenance cleanings and pipe replacement of the service line are the responsibility of the customer.

New Single Family Detached Residential Water Service: A new single family detached residential water service is defined as a service constructed on or after January 1, 2011 in accordance with these standards and the details shown on Drawing L4. Starting at the property line the customer shall own and be responsible for maintenance and replacement of the service line and appurtenances including the stop and waste valve (curb stop), buried piping, internal piping, meter and meter box, valves, PRV and backflow preventer to the premise served. The stop and waste valve (curb stop) and meter box shall be located in a convenient, accessible

location and kept in good working order and clean of debris. Any meter or valve box not conforming to these maintenance standards shall be cleaned, repaired or replaced by the property owner. Failure by the property owner to comply may cause the Town to complete the required maintenance with the costs thereof billed to the owner. In addition, the Property Owner shall be responsible for the thawing of frozen service lines and appurtenances starting at the stop and waste valve to the premise served.

Existing Single Family Detached Residential Water Service: An existing single family detached residential water service is defined as a service constructed before January 1, 2011. If a property has a stop and waste valve located and installed in accordance with the details on Drawing L4, the customer, starting at the property line, shall own and be responsible for maintenance and replacement of the service line and appurtenances including the stop and waste valve (curb stop), buried piping, internal piping, meter and meter box, valves, PRV and backflow preventer to the premise served.

If a property does not have a private water system in accordance with the detail shown on Drawing L4, the service shall be considered non-conforming. Any repairs to a non-conforming water service line shall require the installation of a stop and waste valve A Pressure Reducing Valve (PRV) is not required at the time of the stop and waste installation; however, it is the responsibility of the property owner to maintain proper operating water pressures for individual water service. If a property has a non-conforming water system, the property owner shall own and be responsible for maintenance and replacement of the service line, and appurtenances including the corporation stop, stop and waste valve (curb stop), buried piping, internal piping, meter and meter box, valves, PRV and backflow preventer from the premise served to the corporation stop on the main line.,

The stop and waste valve and meter box shall be located in a convenient, accessible location and kept in good working order and clean of debris. Any meter or valve box not conforming to these maintenance standards shall be cleaned, repaired or replaced by the property owner. Failure by the property owner to comply may cause the Town to complete the required maintenance with the costs thereof billed to the owner.

The Town, depending on the on extent of ownership, shall be responsible for the replacement of Town improvements such as sidewalks, curb & gutter and roadway in repairing or replacing any service line (the replacement of private landscaping and fencing is not included). For non-conforming services, the property owner will be responsible for all Town improvement costs associated with a service repair of replacement.

The Town will not be responsible for the thawing of frozen service lines under private ownership.

Commercial/Industrial/Multifamily Water Service: Each individual Commercial or Industrial structure or Multifamily unit shall be served by separate service lines. At the discretion of the Town, depending on unit ownership, single lines serving Multifamily units may be allowed.

Typically separate lines shall be installed for fire suppression systems. The Town may allow combined service lines for potable use and fire suppression. Potable services must be isolated and protected from the fire suppression system as per these Standards defined in Section 5. . The Town assumes no obligation for the adequacy of private fire protection systems.

Water services ownership begins at the stop and waste valve if one is installed; or at the isolation valve if there is no stop and waste valve; or at the corporation stop on the mainline if there is no isolation valve or stop and waste valve. Starting at the point of ownership (corporation stop, isolation valve, or stop and waste valve) the customer shall own and be responsible for maintenance and replacement of the service line and appurtenances included buried piping, internal piping, meter and meter box or vault, valves, PRV and backflow preventer. The meter or meter box/vault shall be located in a convenient, accessible location and kept in good working order and clean of debris. Any meter or vault not conforming to these maintenance standards shall be cleaned, repaired or replaced by the property owner. Failure by the property owner to comply may cause the Town to complete the required maintenance with the costs thereof billed to the owner. In addition, the Town will not be responsible for the thawing of frozen lines and appurtenances under private ownership.

4.3 SERVICE CONNECTION

No connection between the sewer or water system of the Town and the service of the owner may be made except in a public street adequate to accommodate the sewer or water facilities or in a similar place to which the Town has as a free right of access as it would have in a public street.

Where parallel or approximately parallel to a structural wall, the service shall be at least 5' from the wall. Penetrations through structures shall be approximately at right angles and shall provide flexibility such that the service will not be damaged by settlement of the structures.

Water and sewer service lines shall have 10 feet minimum of horizontal separation. Where this separation is impractical, the Town may permit other separation requirements, in accordance with applicable standards. If a sewer service line passes over a water main or service, or if it lies within 10 feet of the water main or service, the service is to be modified as specified in Drawing G3.

The minimum cover shall be 6 feet from top of sewer service line to finished grade and 5 feet from top of water service line to finish grade.

The applicant for a service shall notify the Town when the service line is ready for connection to the public sewer or water main, and the connection shall not be made until after inspection and approval by the Town. The service line shall meet the requirements of the International Plumbing Code (IPC). The connection to the main shall be made in the presence of and approved by the Town Inspector. The trench of each service line must be open (not backfil1ed) from the building to the tap, to allow inspection by the Town prior to backfilling.

If practicable, pre-installed wye fittings shall be used for sewer service connections; otherwise the connection of the building sewer service to the main shall be made as follows: A saddle tee

shall be used to connect 4" or 6 sewer service lines to 8" to 15" sewer mains. No saddle wyes are allowed. The service line connection shall conform to the Drawing L1. To simplify later location of service connection points in plastic pipe, bury 1-2 pound piece of magnetic material within 12" of the joint and approx. 12" above.

Each sewer service line is to have a 4" cleanout installed within 20' of the building served, per Drawing L2. Cleanouts are required for any significant change in service line direction and at intervals of no greater than 90'.

Water services lines shall be laid at a uniform grade and in straight alignment. A reference mark shall be placed on the curb above the line.

4.4 SEWER SERVICE SIZING

The size and slope of the building service sewer shall be subject to the approval of the Town, but in no event shall the diameter be less than 4". Minimum grade and slopes shall be as follows:

4" .....2.0% Normal, 1.0% Minimum
6" 1.00%
8" 0.60%

4.5 WATER SERVICE SIZING

Sizing. Sizing for potable water services shall be made in general conformance with AWWA Manual M22, "Sizing Water Service Lines and Meters." When requested by the Town, the Applicant shall, at his expense, furnish data, plans, calculations, or other information as required for the evaluation of the service size.

Cross Connections. Cross connections of any type that permit a backflow condition from any source other than the Town's potable water mains are prohibited. The Town will not provide water service to any customer unless the potable water supply is protected from potential or actual cross connections as required in Section 5. . Each service shall include an approved back flow prevention device. All water services larger than 1-inch and all fire suppression systems shall include an approved backflow prevention device as defined in Section 5.

Pressure Regulation. A pressure reducing valve (PRV) is recommended. It is the responsibility of the property owner to maintain proper operating pressures, commonly not exceeding 70 psi, for the individual water service. If a PRV is installed, it shall be located upstream of all uses.

4.6 SEWER SERVICE MATERIALS AND INSTALLATION

Sewer service pipe shall be PVC, with a thickness not less than SDR 35. Sanitary Sewer Service Pipe shall be green or other acceptable color.

The line shall be water tight and on a constant grade in a straight line, and not closer than 5' from any bearing wall.

4.7 WATER SERVICE MATERIALS

Water Service Pipeline: The water service pipeline shall be Type K, soft copper conforming to ASTM 888, unless otherwise specifically approved by the Town. Fittings shall be brass or copper alloy. Connections shall be by flared joints and no soldered joints shall be permitted underground.

Corporation Stops: Corporation stops shall be used for the connection of services (2- inch and smaller) to the water main. Corporation stops shall be brass and conform with AWWA C800. The inlet shall be standard AWWA corporation stop inlet thread and the outlet shall be for compression type "K", 1" or less, copper service pipe. Corporation stops shall be Mueller H-15000, Ford F-600, or approved equal, provided with an insulating coupling for potable service.

Curb Stops: Curb stops (sometimes called "stop & waste boxes") shall be provided as detailed on Drawing L3 for all services. Curb stops shall be brass and conform with AWWA C800. Connections shall be for compression type " K copper service pipe. Curb stops shall be Mueller H-15204, Ford 8-22, or approved equal.

Service Saddles: Service saddles shall be used for all water taps on any pipe other than DIP (Ductile Iron Pipe). For DIP, 3/4" and 1"' taps may be made without using a service saddle on pipe 8" mains or larger. All other DIP taps shall be made with a double strap bronze saddle, Smith Blair No. 357, Rockwell No. 323 or approved equal.

Meters. Unless otherwise approved, water meters shall be housed in an exterior meter pit in accordance with the standard drawings. Meters shall be bronze case Sensus SR-II TR/LP with sealed register and touch read/pit lid adapters. Meter shall be set with a coppersetter having an integral angle curb valve on the inlet side. Coppersetter shall be Ford 80 series or approved equal.

Meter Pits. Meter pits shall be pre-cast polyethylene with minimum nominal wall thickness of 0.55-inches, vertical crush strength exceeding 20,000 lbs, white interior color and black exterior color manufactured by Mid-States Plastics or approved equal. Concrete pits (H20 traffic load rating) with stackable section is also acceptable.

Meter Pit Covers. Covers shall be constructed of cast iron with rubber or plastic inner frost lid. The top lid shall include a worm type lock operated by a pentagon head. The lid and cover shall be Ford Wabash No. W3 or approved equal. The top lid shall be tapped for mounting the touch read pad. Radio transmitting units maybe required by the Town. Pit locations in driveways and alleyways shall have covers rated for H20 traffic loading.

4.8 WATER SERVICE INSTALLATION

The service line connection shall be constructed as shown in Drawing L4.

All excavations for water service installations shall be adequately guarded with barricades and lights so as to protect the public from hazards. Utilities, streets, sidewalks, parkways, and other public or private property disturbed in the course of work shall be restored to their original condition in a manner satisfactory to the Town of Elizabeth or other affected owners or jurisdictions.

All excavations required for the installations of a water service shall be open-trench work, unless otherwise approved by the Town. The services shall be bedded and backfilled in accordance with the minimum cover and/or insulation requirements of Section 3. The bedding and pipe zone material within 12" of the water service line shall be select native soils with 3" max. diameter rock. Backfill materials shall be select native soils with 6" maximum diameter rock. If insulation is installed, use approximately 6" of sand or squeegee for the pipe zone materials above and beneath the insulation to protect it from breakage during backfill.

4.9 DOCUMENTATION

The Applicant shall submit a dimensioned sketch to the Town, showing the location of the point of connection, relative to visible and reasonably permanent surface features, such as building corners, property pins or power flight poles. As-built drawings of the entire system, including curb-stops, shall be required at system dedication and pursuant to the Town's Municipal Code.

SECTION 5
BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL

SECTION 5

BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL

5.1 Purpose.

The purpose of backflow prevention and cross-connection control is to protect the Town of Elizabeth public potable water supply from the possibility of contamination or pollution by isolating or containing within the consumer's internal distribution system(s) or the consumer's private water system(s) such contaminants or pollutants that could backflow into the public water system;To promote the elimination or control of existing cross connections, actual or potential, between the consumer's in-plant/in-house potable water system(s) and non-potable water systems, plumbing fixtures, and industrial piping systems; and To provide for the maintenance of a continuing program of cross-connection control that will systematically and effectively prevent the contamination or pollution of the potable water system.

5.2 Definitions.

The definitions of terms used in this section are those contained in the Colorado Department of Health and Environment's Cross Connection Control Manual as the same may be amended from time to time, unless otherwise defined below:

"Active date" means the first day that a backflow prevention assembly or backflow prevention method is used to control a cross-connection in each calendar year.

"Air gap" is a physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel installed in accordance with standard AMSE A112.1.2.

"Approved Backflow Device" A backflow device or air gap meeting the standards and installation requirements of the A.S.S.E. (American Society of Sanitary Engineers), the latest edition of the Colorado Department of Health and Environment's Colorado Cross Connection Control Manual and/or the requirements of these standards. Approval by the Town will be dependent upon the hazard(s) assessed, but shall not be less than the Colorado Department of Health and Environment's Colorado Cross Connection Control Manual requirements for potable water system protection. "Approved" status shall also be contingent on inspection, testing and passing of such test by a Certified Cross Connection Control Technician. Any variation or exception may be by direction from the current edition of the Colorado Department of Health and Environment's Colorado Cross Connection Control Manual.

"Backflow" means the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the public water distribution system from any source or sources other than its intended source.

"Backflow contamination event" means backflow into the public water system from an uncontrolled cross connection such that the water quality no longer meets the Colorado primary Drinking Water Regulations or presents an immediate health and/or safety risk to the public.

"Backflow prevention assembly" means any mechanical assembly installed at a water service line or at a plumbing fixture to prevent a backflow contamination event, provided that the mechanical assembly is appropriate for the identified contaminant at the cross connection and is an in-line field-testable assembly.

"Backflow prevention method" means any method and/or non-testable device installed at a water service line or at a plumbing fixture to prevent a backflow contamination event, provided that the method or non-testable device is appropriate for the identified contaminant at the cross connection.

"Certified cross-connection control technician" means a person who possesses a valid Backflow Prevention Assembly Tester certification from one of the following approved organizations: American Society of Sanitary Engineering (ASSE) or the American Backflow Prevention Association (ABPA). If a certification has expired, the certification is invalid.

"Containment" means the installation of a backflow prevention assembly or a backflow prevention method at any connection to the public water system that supplies an auxiliary water system, location, facility, or area such that backflow from a cross connection into the public water system is prevented.

"Containment by isolation" means the installation of backflow prevention assemblies or backflow prevention methods at all cross connections identified within a customer's water system such that backflow from a cross connection into the public water system is prevented.

"Controlled" means having a properly installed, maintained, and tested or inspected backflow prevention assembly or backflow prevention method that prevents backflow through a cross connection.

"Cross connection" means any connection that could allow any water, fluid, or gas such that the water quality could present an unacceptable health and/or safety risk to the public, to flow from any pipe, plumbing fixture, or a customer's water system into a public water system's distribution system or any other part of the public water system through backflow.

"Multi-family" means a single residential connection to the public water system's distribution system from which two or more separate dwelling units are supplied water

"Service Connection" The terminal end of the water supplier service connection from the Town's potable water distribution system to the threads on the curb stop if present, or corporation stop on water main line, where the Water Department loses jurisdiction and sanitary control and consumer ownership begins. "Service connection" shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the Town's potable water system.

"Single-family" means:

i. A single dwelling which is occupied by a single family and is supplied by a separate service line; or

ii. A single dwelling comprised of multiple living units where each living unit is supplied by a separate service line.

"*Uncontrolled*" means not having a properly installed, maintained and tested or inspected backflow prevention assembly or backflow prevention method, or the backflow prevention assembly or backflow prevention method does not prevent backflow through a cross connection.

"Thermal Expansion" Increase in linear dimensions of a solid or in volume of a fluid because of rise in temperature

"Water supply system" means a water distribution system, piping, connection fittings, valves and appurtenances within a building, structure, or premises. Water supply systems are also referred to commonly as premise plumbing systems.

5.3 Authority.

(1) The authority for the Town to implement this program is contained in the following statute, legislation and regulations and acts:

a. Article 1-114 and Article 1-114.1 of Title 25 of the Colorado Revised Statutes (CRS)

b. Section 39 of 5 CCR 1002-11, Colorado Primary Drinking Water Regulations (Regulation 11) Effective date May 1, 2015

c. Colorado Plumbing Code

d. International Plumbing Code

The Town shall have the authority to survey all service connections within the distribution system to determine if the connection is a cross-connection.

The Town shall have the authority to control all service connections within the distribution system if the connection is a cross-connection.

The Town may control any service connections within the distribution system in lieu of a Cross Connection Survey as long as the service connection is controlled with a Reduced Pressure Zone (RPZ) backflow prevention assembly that is annually tested.
The Town may collect fees for the administration of this program.

The Town shall maintain records of cross-connection surveys and the installation, testing and repair of all backflow prevention assemblies installed for containment and containment by isolation purposes.

Except as otherwise provided herein, the Town shall administer, implement and enforce the provisions of this Section.

5.4 Applicability.

This Section applies to all commercial, industrial and multi-family residential service connections (Non-Single Family Residential) within the Town water system and to any persons outside the Town who are, by contract or agreement with the Town, users of the Town water system. This Section may apply to single-family-residential service connections if the Town becomes aware of, or suspects a possible cross connection at the single family connection.

5.5 General Policy.

The Town shall be responsible for the protection of the Town's potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through water service connections. If, in the judgment of the Town, an approved backflow-prevention assembly is required at the consumer's water service connection; or, within the consumer's private water system for the safety of the water system, the Town shall give notice in writing to said consumer to install such an approved backflow prevention assembly(s) at specific location(s) on his/her premises. The consumer shall install such approved assembly(s) within the time frame set forth in the notice and at his/her own expense; and, failure, refusal, or inability of the consumer to install, have tested, and maintain said assembly(s) shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

5.6 Requirements.

(a) Commercial, industrial and multi-family service connections shall be subject to a survey for cross connections. If a cross connection has been identified an appropriate backflow prevention assembly and or method shall be installed at the customer's water service connection within 120 days of its discovery. The assembly shall be installed downstream of the water meter or as close to that location as deemed practical by the Town. If the assembly or method cannot be installed within 120 days the Town must take action to control or remove the cross connection, suspended service to the cross connection or receive an alternative compliance schedule from the Colorado Department of Public Health and Environment. At the consumers expense all new connections requiring a backflow device shall be inspected and tested by a Certified Cross Connection Control Technician.

(b) Changes in Service. Any changes in service including, but not limited to, reconnection, change in the number of fixture values, or change in the type of water service, shall require installation of an approved backflow device.

In no case shall it be permissible to have connections or tees between the meter and the containment backflow prevention assembly. In instances where a reduced pressure principle backflow preventer cannot be installed, the owner must install approved backflow prevention devices or methods at all cross-connections within the owner's plumbing system.

(c) Backflow prevention assemblies and methods shall be installed in a location which provides access for maintenance, testing and repair.

(d) Reduced pressure principle backflow preventers shall not be installed in manner subject to flooding.

(e) Provisions shall be made to provide adequate drainage from the discharge of water from reduced pressure principle backflow prevention assemblies. Such discharge shall be conveyed in a mater which does not impact waters of the state.

(f) All assemblies and methods shall be protected to prevent freezing. Those assemblies and methods used for seasonal services may be removed in lieu of being protected from freezing. The assemblies and methods must be reinstalled and then tested by a certified cross-connection control technician upon reinstallation.

(g) Where a backflow prevention assembly or method is installed on a water supply system using storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.

(h) All backflow prevention assemblies shall be tested at the time of installation and on an annual schedule thereafter. Such tests must be conducted by a Certified Cross-Connection Control Technician.

(i) The Town shall require inspection, testing, maintenance and as needed, repairs and replacement of all backflow prevention assemblies and methods, and of all required installations within the owner's plumbing system in the cases where containment assemblies and or methods cannot be installed.

(j) All costs for design, installation, maintenance, testing and as needed repair and replacement are to be borne by the customer.

(k) No grandfather clauses exist except for fire sprinkler systems where the installation of a backflow prevention assembly or method will compromise the integrity of the fire sprinkler system.

(l) New water system connection and/or new building to the Town water system must have the following: plans submitted to the public water system and approved prior to the issuance of water service. Building plans must show:

1) Water service type, size and location
2) Meter size and location
3) Types of water use at the property
4) Backflow prevention assembly size, type and location

5) Fire sprinkler system(s) service line, size and type of backflow prevention assembly.

a) All fire sprinkling lines shall have a minimum protection of an approved double check valve assembly for containment of the system.
b) All glycol (ethylene or propylene), or antifreeze systems shall have an approved reduced pressure principle backflow preventer for containment.
c) Dry fire systems shall have an approved double check valve assembly installed upstream of the air pressure valve.
d) In cases where the installation of a backflow prevention assembly or method will compromise the integrity of the fire sprinkler system the Town can chose to not require the backflow protection. The Town will measure chlorine residual at a location representative of the service connection once a month and perform periodic bacteriological testing at the site. If the Town suspects water quality issues the Town will evaluate the practicability of requiring that the fire sprinkler system be flushed periodically.

e) At the consumers expense all new connections requiring a backflow device shall be inspected and tested by a Certified Cross Connection Control Technician.

f) Variance. Upon written application by the consumer to the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD), the Town may vary from this requirement.

5.7 Installation.

Installation of backflow prevention assembly in compliance with this Section is a condition to receiving water service from the Town. All connections to the municipal water system, including all existing connections, shall conform or be brought into conformance with the following requirements:

a. Backflow prevention assemblies installed in violation of this Section shall be removed and replaced at the water customer's expense. Any such repair or replacement shall be made with an approved backflow prevention assembly within ten (10) days of discovery by the user, a certified technician, or the Town and/or its designee, unless arrangements satisfactory to the Town are made. Should the hazard presented to the water system be determined to present a significant health risk, immediate service discontinuance may be necessary until such repair or replacement is accomplished.
b. Backflow prevention assemblies shall be installed in a safe and accessible location to facilitate maintenance, testing, repair and drainage in accordance with all applicable codes and regulations. No backflow prevention assembly shall be installed in a pit, vault or location where toxic gases are present. No backflow prevention assembly shall be installed over electrical lines or other equipment where water could cause a hazard.

c. Containment backflow prevention assemblies shall be installed immediately downstream of the water meter, prior to any service connections, in compliance with all applicable codes and regulations.
d. Access for inspection, testing, repair, maintenance and/or replacement of backflow prevention assemblies that serve more than one (1) property, such as a master-metered facility, shall not be contingent on access of a private residence or business. Such installations shall be located in an area accessible from the exterior, such as a mechanical room or an ASSE 1060-certified enclosure that is protected against freezing and meeting all installation criteria identified herein.
e. Before installing a backflow prevention assembly, pipelines shall be thoroughly flushed to remove foreign material.
f. Thermal expansion equipment shall be installed on all water systems contained by a backflow prevention assembly.
g. Backflow prevention assembly valves shall not be used as the inlet or outlet valve of the water meter. Test cocks shall not be used as supply connections.
h. All costs for design, installation, maintenance, repair and testing shall be borne by the utility customer.

5.8 Testing and maintenance.

Backflow prevention assemblies shall be tested and maintained as described below:

a. Backflow prevention assembly testing shall be conducted by a Certified Cross Connection Control Technician using the latest test procedures as specified by one of the following councils (A.S.S.E., A.B.C., A.B.P.A).
b. All backflow prevention assemblies shall be tested by a certified technician at the time of installation, prior to issuance of a certificate of occupancy.
c. Backflow prevention assemblies shall be tested immediately upon installation, repair, replacement or alteration of plumbing upstream of the assembly.
d. The Town retains the right to test or otherwise check the installation and operation of any testable assembly at any time to assure proper operation at the property customer’s expense.
e. Should a backflow prevention assembly not be installed in conformance with Town standards, the test report shall reflect such information and be recorded as a failure.
f. All backflow prevention assemblies not meeting requirements shall be repaired or replaced at the water customer's expense. Any such repair or replacement shall be made with an approved backflow prevention assembly within ten (10) days of discovery by the user, a certified technician or the Department and/or its designee, unless arrangements satisfactory to the Department and/or its designee are made. Should the hazard presented to the water system be determined to present a significant health risk, immediate service discontinuance may be necessary until such repair or replacement is accomplished.

5.9 Record keeping.

a. The certified technician shall report on a form approved by the Town
b. Records of all tests, inspections, repairs and replacements of backflow prevention assemblies shall be kept by the water customer, the certified technician and the Town for a period of three (3) years.
c. The certified technician is required to send copies of all passed test reports to the owner and the Town within ten (10) business days after testing, inspecting or repairing any backflow prevention assembly. The certified technician should repair a failed assembly immediately, if possible. When an assembly failure is a potential threat to the potable water system or the environment and cannot be repaired immediately, the certified technician must report the failure verbally to the owner and the Town and/or its designee. The technician must send written notification to the owner and the Town and/or its designee within three (3) working days.

d. Copies of records of test reports, repairs and retests shall be submitted to the Town by mail or e-mail by the testing company or testing technician. Information on test reports shall include, but may not be limited to:

1. Test reports to be provided on company letter head
2. Company information (name, address, phone number)
3. Assembly or method type
4. Assembly or method location address (For multiple businesses on a single protection device, list on the report each business name and address information for each protected)
5. Assembly make, model and serial number
6. Assembly size
7. Test date and results including all results that would justify a pass or fail outcome.
8. Certified cross-connection control technician certification agency
9. Technician's name
10. Technician's certification number
11. Technician's certification expiration date
12. Test kit manufacturer, model and serial number
13. Test kit calibration date

5.10 Right of entry.

a. The Town representative and/or his or her designee assigned to inspect premises relative to possible hazards shall carry proper credentials of his or her office and, upon exhibit of which, said representative shall have the right of entry to inspect any and all buildings and premises for cross-connections in the performance of his or her duties. If such entry is refused, the Town administrative authority or the designated authorized representative thereof shall have recourse to every remedy provided by law to secure entry.

b. This right of entry shall be a condition of water service in order to provide assurance that the health, safety and welfare of the people throughout the Town's potable water distribution system are maintained. Where building security is required, the backflow assembly or assemblies should be located in an area not subject to security. Questions regarding proper credentials should be directed to the Town.

5.11 Compliance.

a. Customers shall cooperate with the installation, inspection, testing, maintenance, and as needed repair and replacement of backflow prevention assemblies and with the Cross Connection Survey process. For any identified uncontrolled cross-connections, the Town will complete one of the following actions within sixty (60) days of its discovery:

    1. Control the cross connection
    2. Remove the cross connection
    3. Suspend service to the cross connection

b. Service of water to any premises may be discontinued by the Town if unprotected cross-connections exist on the premises, if any defect is found in an installed backflow prevention assembly or if a backflow prevention assembly has been removed or bypassed. Service shall not be restored until such conditions or defects are corrected.

c. Discontinuance of service may be summary, immediate and without written notice whenever, in the judgment of the Town Administrator or the designated representative thereof, upon the recommendation of the Town or a registered certified cross-connection control technician, such action is necessary to protect the purity of the public potable water supply or the safety of the water system.

d. Suspended Disconnection. At the Town’s discretion, severing the service connection will be performed if degree of hazard warrants such action in order to protect the Town’s potable water supply. Discontinuance of service may be summary, immediate, and without written notice whenever, in the judgment of the Town, such action is necessary to protect the Town’s potable water supply or the distribution system.

e. The Town will give notice in writing to any owner whose plumbing system has been found to present a risk to the public waters system’s distribution system through an uncontrolled cross connection. The notice and order shall state that the owner must install a backflow prevention assembly or method at each service connection to the owner’s premises to contain the water service. The notice and order will give a date by which the owner must comply.

5.12 Requirements of the Consumer.

(a) All "Non-Single Family Residential" consumers must complete and submit a Cross Connection Survey to the Town, unless, they have a reduced pressure zone (RPZ) Backflow Prevention Assembly that is tested annually.

(b) Cross-Connection(s). The consumer shall be responsible for the elimination or protection of all cross-connections (known or unknown by the Town) on his/her premises by an approved backflow device at his/her expense. Such backflow device expenses shall include installation, maintenance, protection, testing, repair, removal or replacement of said device(s) as required by the Town as a condition of service.

(c) Any consumer determined by the Town to be an "Unacceptable Health and/or Safety Risk" shall have an acceptable (for the level of risk) backflow assembly installed and tested annually. All test reports shall be submitted to the Town.

(d) The consumer or those occupying any premise shall not bypass, disable, remove, or modify any backflow device without written consent by the Town. Any such modifications shall result in termination of service.

(e) The consumer or those designated by him or her shall comply with current N.F.P.A. standards and/or the current Town Standards, as amended, when designing, installing and maintaining any fire suppression system as a condition of service. The Consumer and/or those whom are designated for the design and installation of the system will need to provide verification of approval by the Elizabeth Fire District.

5.13 Plan approval.

All building and/or construction plans involving water/sewer service, plumbing plans for additions or alterations to existing plumbing systems, and/or irrigation system installation submitted to the Town at owner's expense, shall be reviewed by the Town and/or its designee and approved prior to issuance of a permit.

5.14 Fees.

The Board of Trustees may establish and adopt a schedule of fees to be paid by the developer/builder to defray the expenses of the Town in reviewing plans and/or inspecting work. Further, the Town may charge a reasonable fee for copies of any documents.

5.15 Violations and Penalties.

Any person, whether as principal, agent, employee or otherwise, who violates any of the provisions of Section 5 of these Standards shall be subject to the general penalties as set forth in Section 1-4-20 of the Town Code.

STANDARD DETAILS

STANDARD DETAILS - GENERAL

6/22/11 07:55 CON56869 R17 T:\DRAWINGS\PROJECTS\ELIZ\STANDARD DETAILS\DETAILS\G1-STANDARD APPROVAL BLOCK.DWG IMAGES: N:\BUSINESS DEVELOPMENT\CLIENT\COLORADO MUNIS, COUNTIES & DISTRICTS\ELIZABETH\TOWN LOGO.JPG;

THESE DESIGNS, PLANS, AND CONTRACT DOCUMENTS ARE REVIEWED FOR CONCEPT AND GENERAL CONFORMANCE TO THE TOWNS' MINIMUM STANDARDS ONLY, AND THE PRIMARY RESPONSIBILITY FOR DESIGN ADEQUACY IS TO REMAIN WITH THE ENGINEER OF RECORD. THIS REVIEW DOES NOT IMPLY RESPONSIBILITY BY THE TOWN OF ELIZABETH, OR THE TOWN ENGINEER FOR COMPLETENESS, ACCURACY OR CORRECTNESS OF CALCULATION. THE REVIEW DOES NOT IMPLY THAT QUANTITIES OF ITEMS INDICATED ON THE PLANS ARE THE FINAL QUANTITIES REQUIRED. THE REVIEW SHALL NOT BE CONSTRUED FOR ANY REASON AS ACCEPTANCE OF FINANCIAL RESPONSIBILITY BY THE TOWN FOR ADDITIONAL ITEMS AND ADDITIONAL QUANTITIES OF ITEMS SHOWN THAT MAY BE REQUIRED DURING THE CONSTRUCTION PHASE.

APPROVED FOR CONSTRUCTION WITHIN ONE YEAR OF THE EARLIEST OF THESE DATES:

BY _____ _____
TOWN ENGINEER — DATE

BY _____ _____
TOWN OF ELIZABETH-PUBLIC WORKS DIRECTOR — DATE

BY _____ _____
TOWN OF ELIZABETH-TOWN ADMINISTRATION — DATE

BY _____ _____
ELIZABETH FIRE DEPARTMENT — DATE

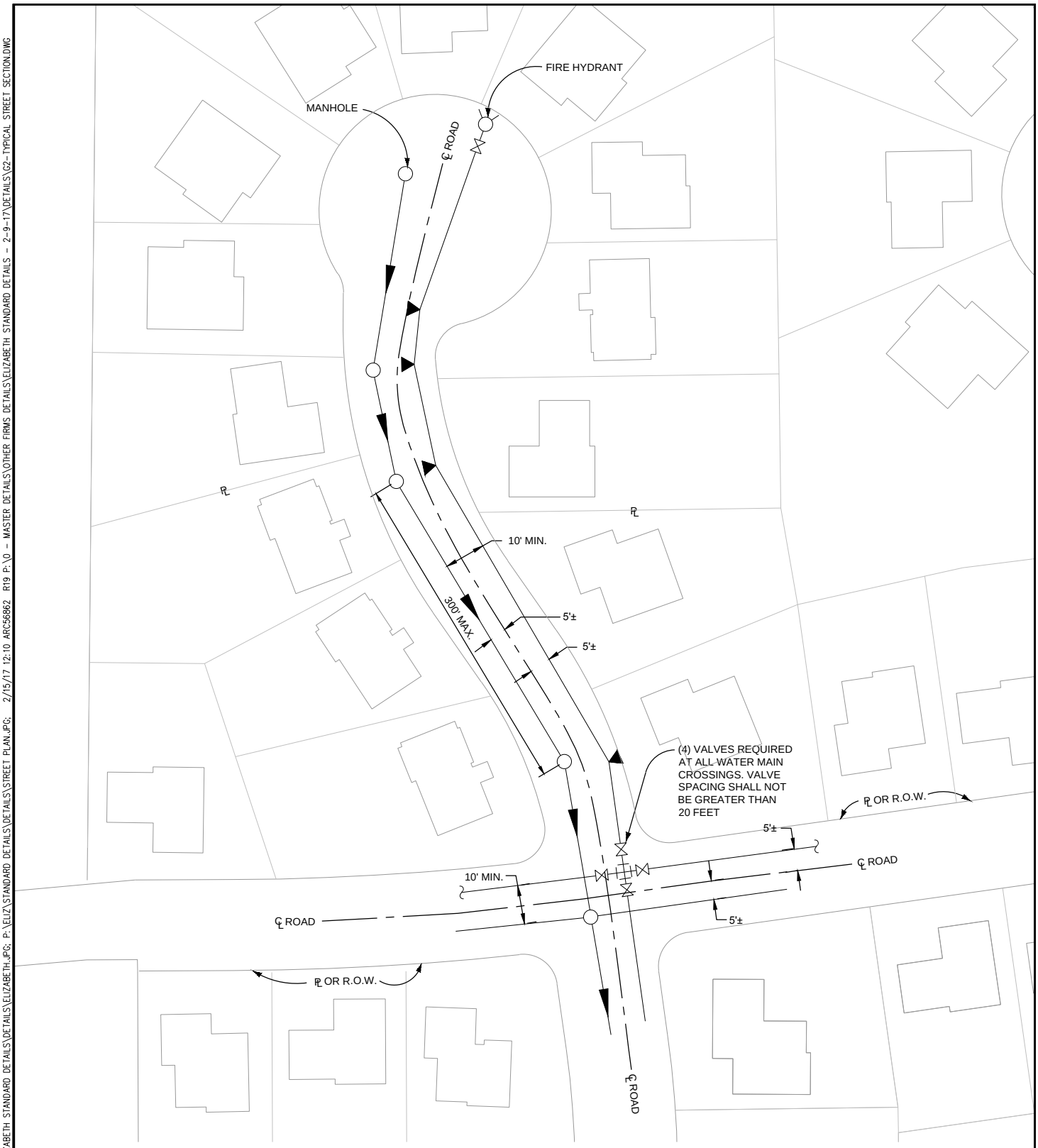
TOWN OF ELIZABETH

STANDARD
APPROVAL BLOCK

SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

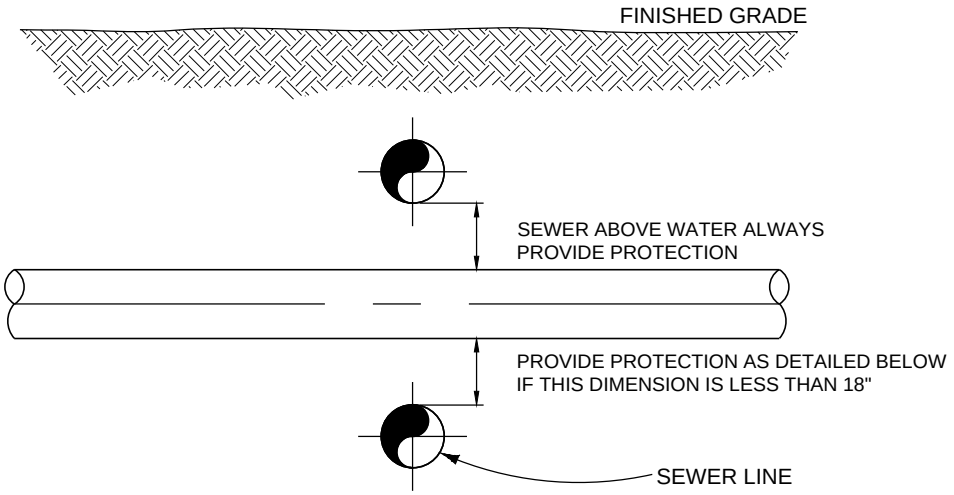


TOWN OF ELIZABETH

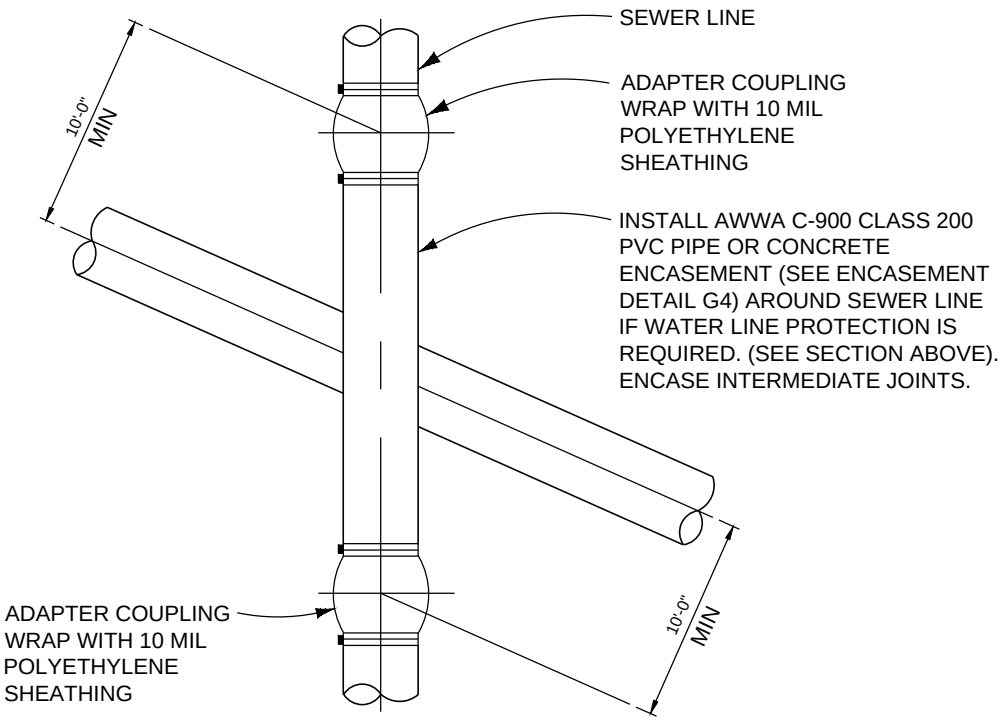
TYPICAL WATER AND SEWER STREET PLAN

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	G2
WATER AND SEWER STANDARDS	

IMAGES: P:\0 – MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG; P:\ELIZ\STANDARD DETAILS\DETAILS\STREET PLAN.JPG; 2/15/17 12:10 ARC56862 R19 P:\0 – MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS – 2-9-17\DETAILS\G2-TYPICAL STREET SECTION.DWG



SECTION



PLAN

TOWN OF ELIZABETH

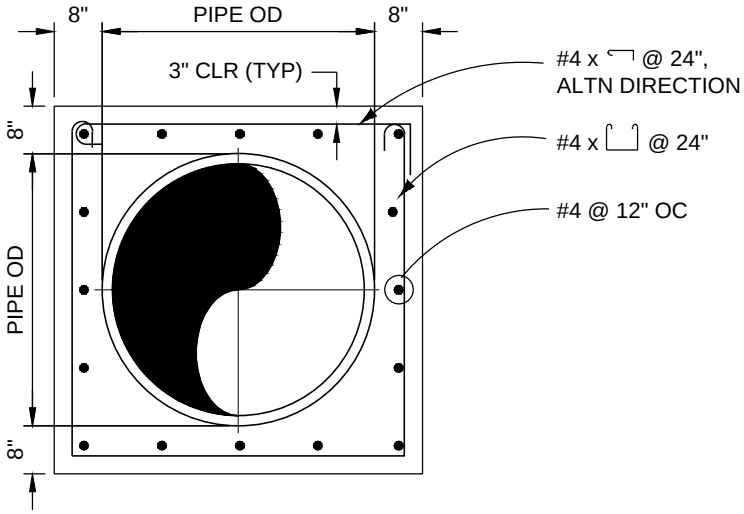
SEWER AND
WATER LINE CROSSING

SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

2/9/17 14:33 ARC56862 R19 P:\10 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\G3-SEWER CROSSING WATERLINE DETAIL.DWG IMAGES: P:\10 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH..JPG;



NOTES:

1. FOR TIE-INS TO STRUCTURES EXTEND LONGITUDINAL REINFORCING INTO WALL OR SLAB, PROVIDE DOWELS AT EACH END.

2. PROVIDE TWO FLEXIBLE JOINTS WITHIN SIX FEET OF EACH END OF ENCASEMENT.

3. USE GR 40 REINF. BARS.

4. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 3,000 psi AT 28 DAYS

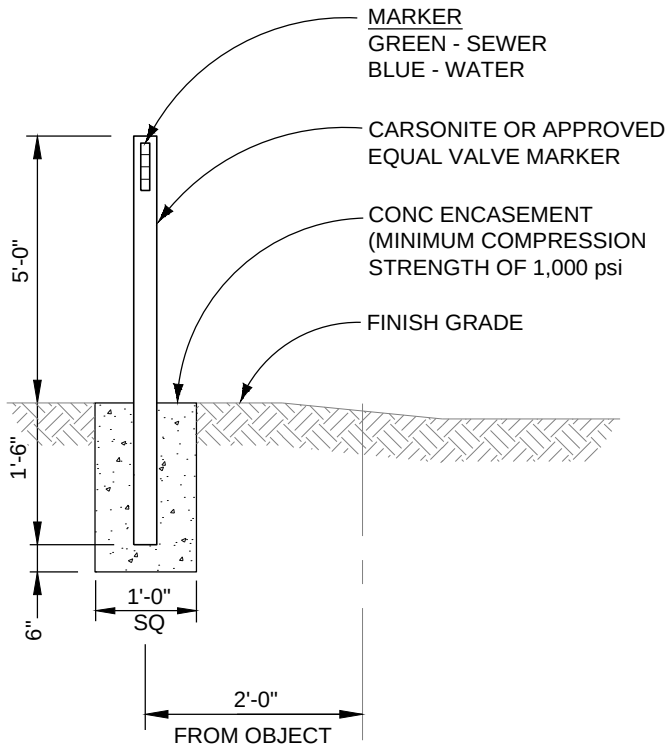
TOWN OF ELIZABETH

CONCRETE ENCASEMENT

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	
WATER AND SEWER STANDARDS	

2/9/17 14:40 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\G4-PIPE ENCASEMENT.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

2/9/17 15:00 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\G5-SURFACE MARKE.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

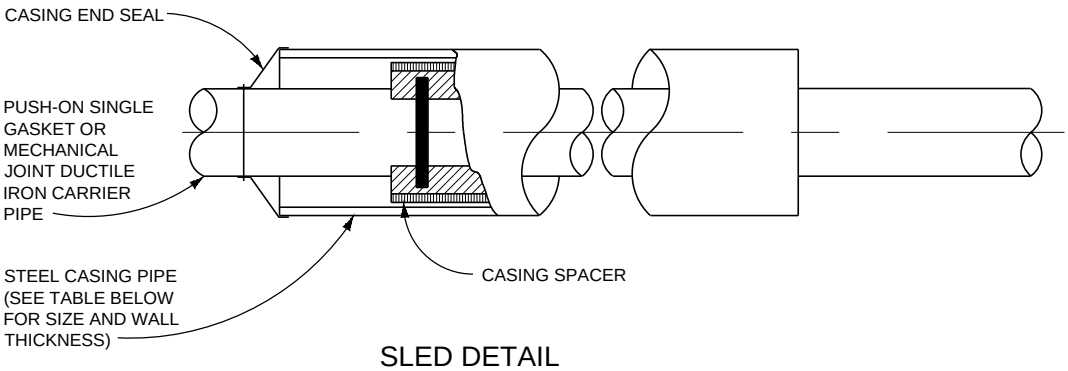


TOWN OF ELIZABETH

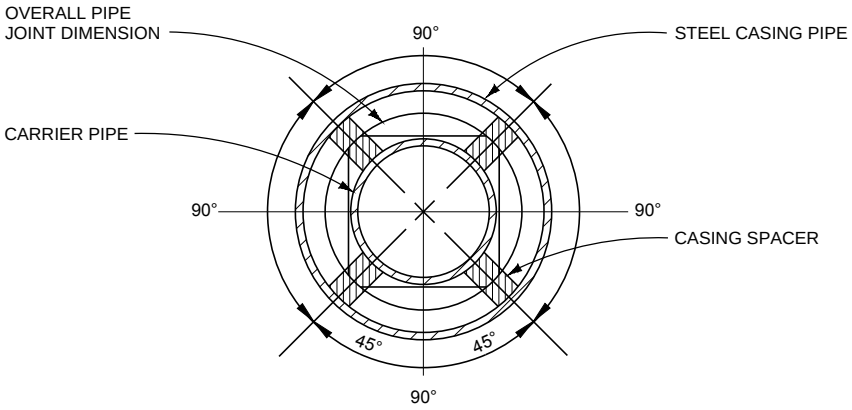
SURFACE MARKER

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	G5
WATER AND SEWER STANDARDS	

2/9/17 15:06 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\G6-BORE CASING.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;



SLED DETAIL



PIPE CASING DETAIL

CARRIER PIPE NOMINAL DIA.	CASING PIPE	
	MIN. O.D.	MIN. WALL THICK
4"	12"	0.188"
6"	16"	0.250"
8"	18"	0.282"
12"	22"	0.344"
16"	28"	0.406"
20"	32"	0.469"

NOTES:
1. NEOPRENE OR PVC RUNNERS MAY BE USED FOR CASING SPACERS.
2. TRENCH LAID CASINGS SHALL BE DESIGNED AND INSTALLED TO CONDUIT STANDARDS.
3. USE HARNESS LUGS FOR WATER MAIN RESTRAINT (SEE DWG G7).

TOWN OF ELIZABETH

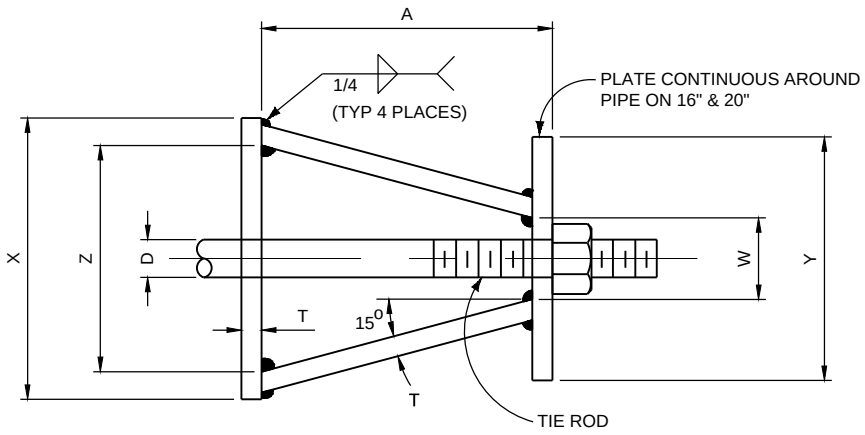
BORE CASING

SCALE: NTS | DATE: APRIL 2025

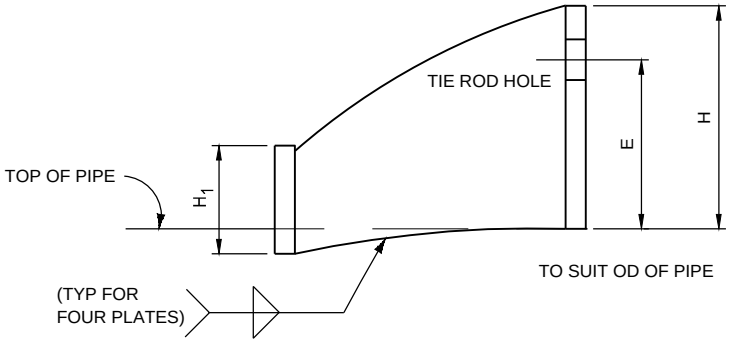
LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

2/9/17 15:16 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\G7-HARNESS LUG.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;



TOP VIEW



SIDE VIEW

	CARRIER PIPE NOMINAL DIA.	STUD DIA. D	A	W	Z	T	H	E	H_1	Y	X
W/O FLANGED LUGS	4" TO 12"	3/4"	5"	1-1/2"	3-3/4"	3/8"	4-1/8"	3-1/8"	2"	4-1/2"	5"
	16"	1"	5-3/4"	1-3/4"	4-1/2"	1/2"	4-1/2"	3-1/4"	2"	RING	6"
	20"	1-1/4"	7-1/2"	2"	5-3/4"	5/8"	5"	3-3/4"	2-1/2"	RING	7-1/2"

NOTES:

1. USE TWO HIGH STRENGTH STAINLESS STEEL TIE RODS AT END OF CASING.
2. TIE ROD HOLE DIAMETER 1/8" LARGER THAN STUD DIAMETER.
3. BOTTOM EDGE OF ALL PLATES SHAPED TO FIT OD OF PIPE.
4. HARNESS LUGS AS PER AWWA MANUAL M-II.
5. WARP W/ 10 MIL POLYETHYLENE SHEATHING.

TOWN OF ELIZABETH

HARNESS LUGS - BORE CASING

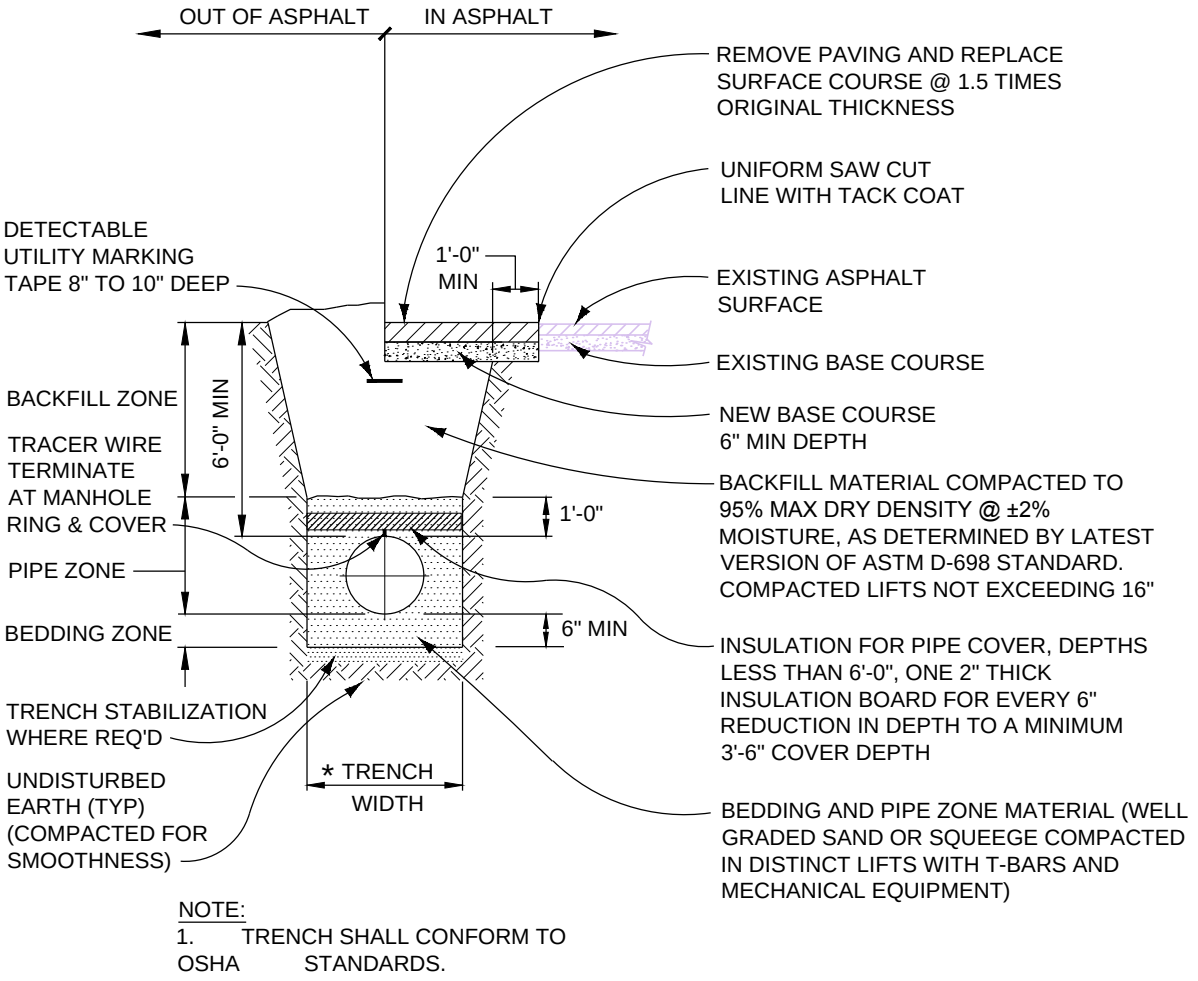
SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

STANDARD DETAILS – SEWER SYSTEM

2/9/17 15:27 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\S1-PIPE TRENCH_SEWER.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;



NOTE:
1. TRENCH SHALL CONFORM TO OSHA STANDARDS.

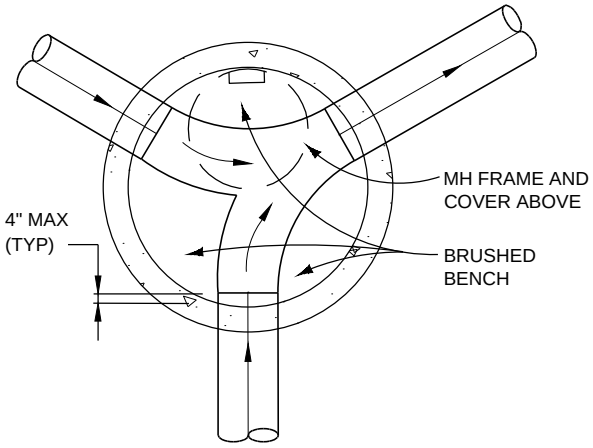
* MAXIMUM TRENCH WIDTH = 24" + NORMAL PIPE DIAMETER

TOWN OF ELIZABETH

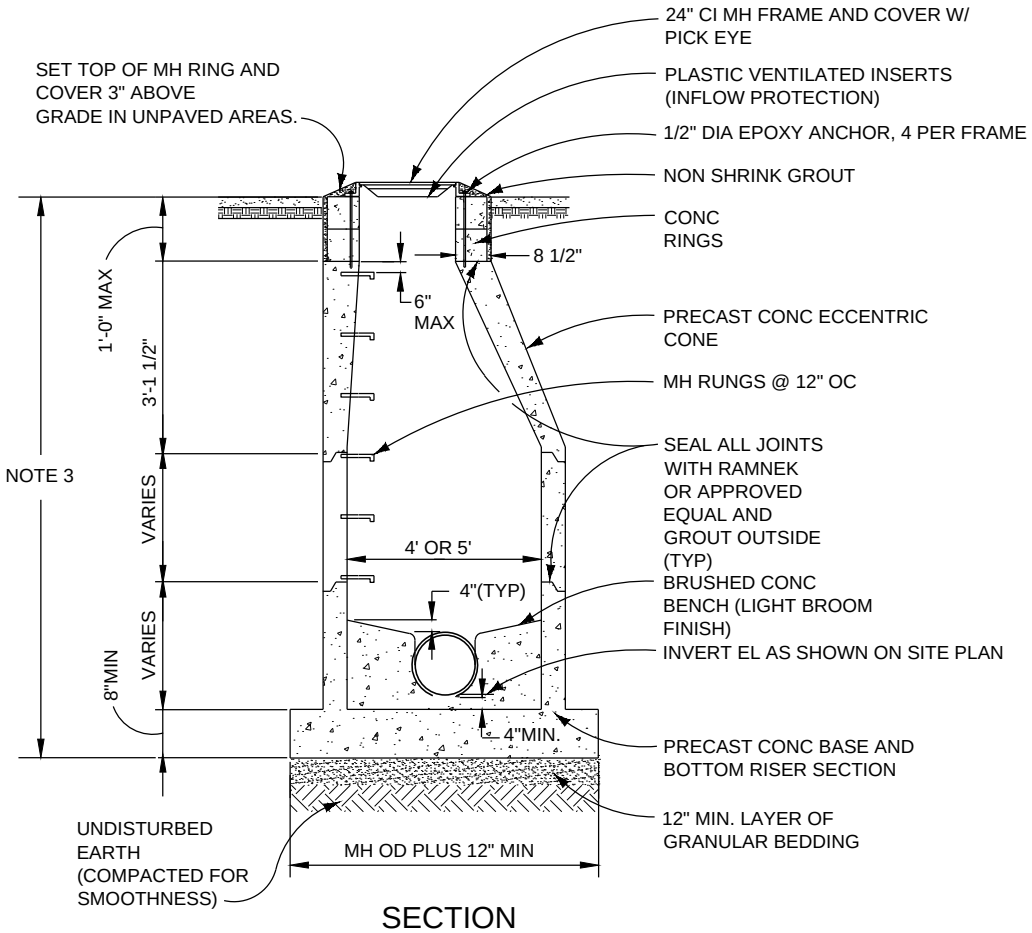
SEWER PIPE TRENCH

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	S1
WATER AND SEWER STANDARDS	

2/13/17 18:04 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\S2-MANHOLE WITH FORMED BENCH.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;



TYPICAL PLAN



SECTION

NOTES:
1. ALL COMPONENTS SHALL BE CAPABLE OF HS-20 LOADING.
2. INSTALL ALL PIPES INTO MANHOLES WITH FLEXIBLE PIPE-TO-MANHOLE CONNECTORS.
3. USE PRECAST FLAT TOP COVER FOR SEWER DEPTHS LESS THAN 6'-0" (SEE DWG. S4).

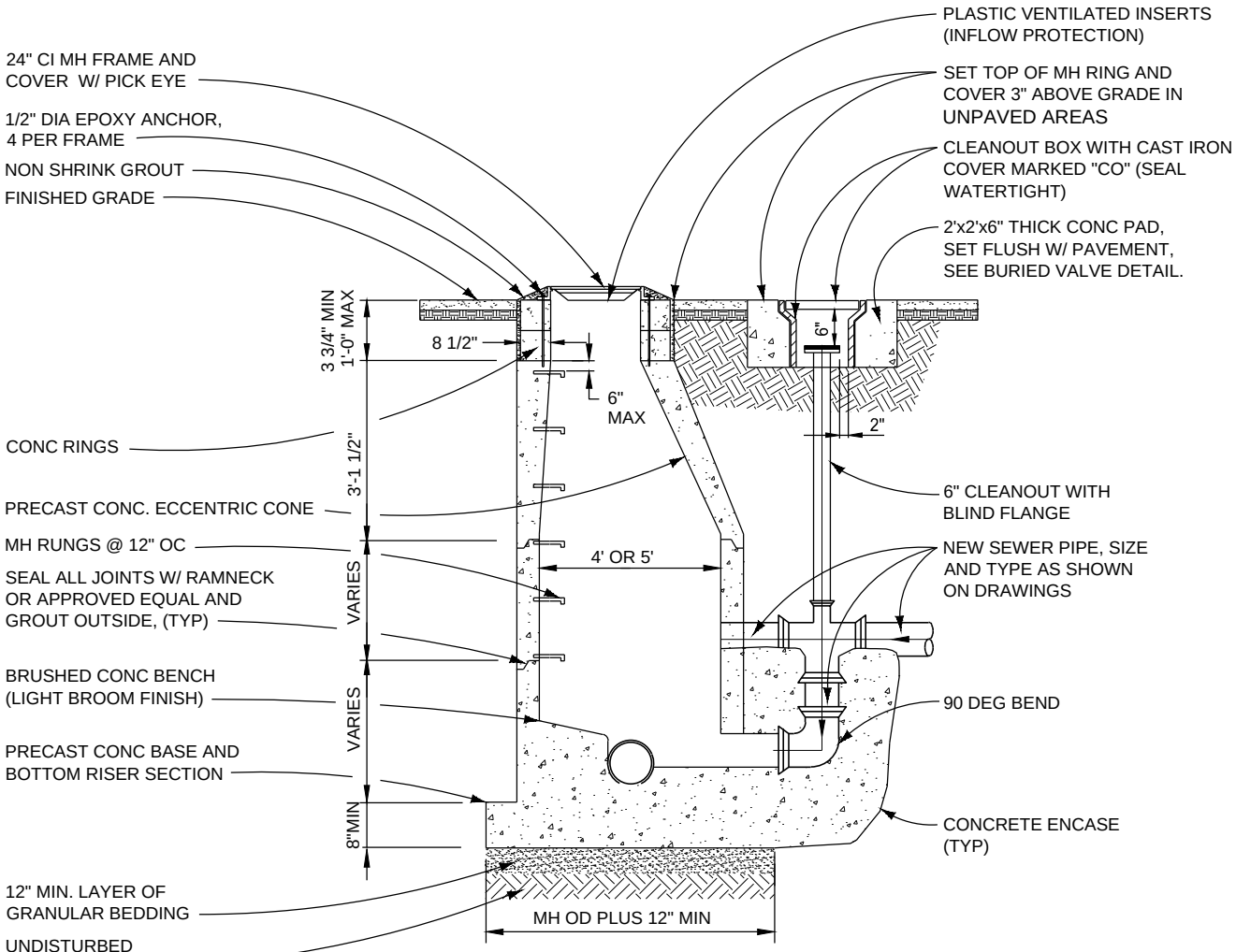
TOWN OF ELIZABETH

STANDARD MANHOLE

SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS



SECTION

NOTES:

1. ALL COMPONENTS SHALL BE CAPABLE OF HS-20 LOADING.
2. INSTALL ALL PIPES INTO MANHOLES WITH FLEXIBLE PIPE-TO-MANHOLE CONNECTORS.
3. DROP MH SHALL BE USED FOR ALL SITUATIONS WHERE INVERT OF PIPES ENTER MH AT 24" OR HIGHER ABOVE THE INVERT OUT ELEVATION.
4. MIN OF 18" CONC REQUIRED BENEATH 90° BEND.

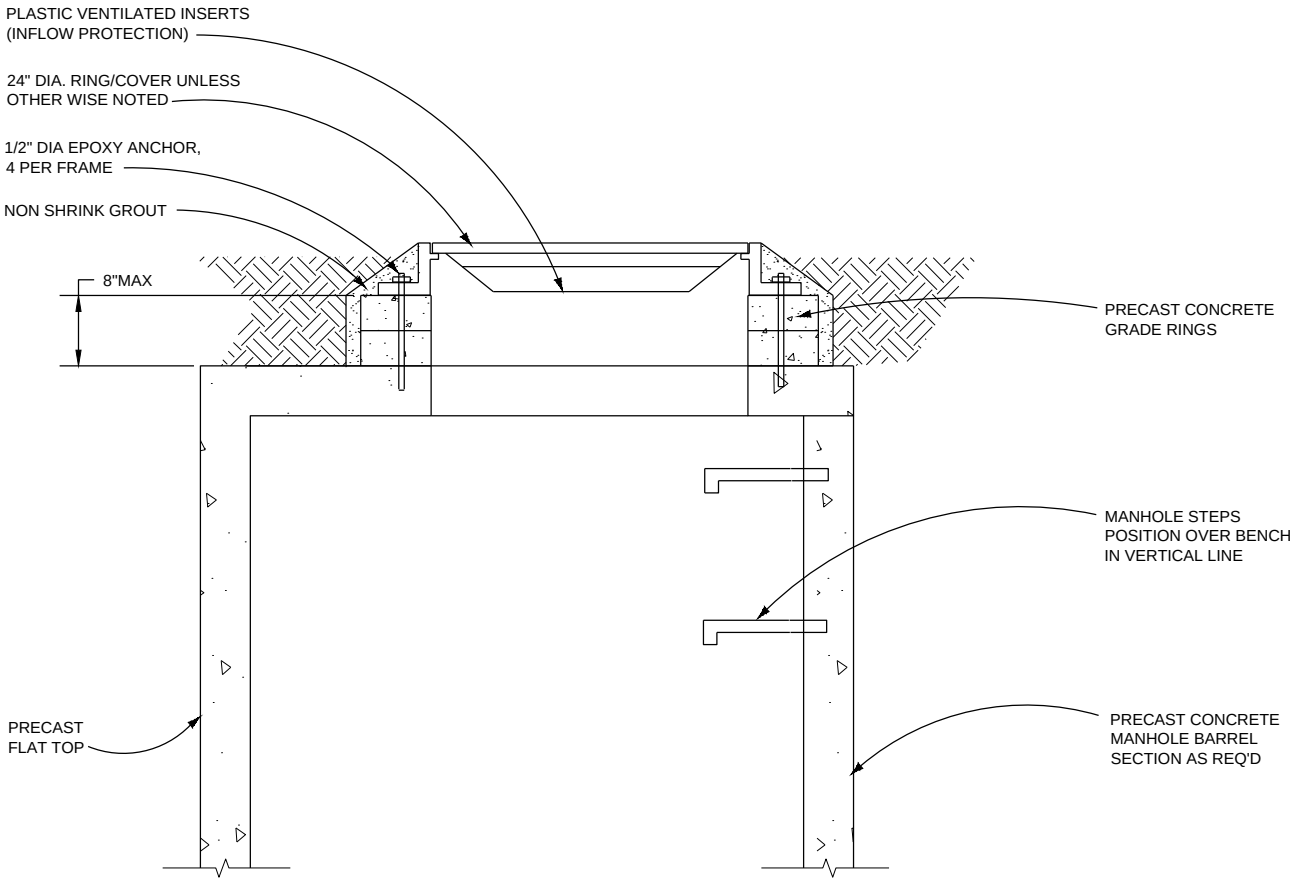
TOWN OF ELIZABETH

DROP MANHOLE

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	
WATER AND SEWER STANDARDS	

2/13/17 18:04 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\S3-MANHOLE WITH FORMED BENCH.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

2/13/17 18:03 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\S4-MANUAL FLAT TOP SHALLOW MANHOLE.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;



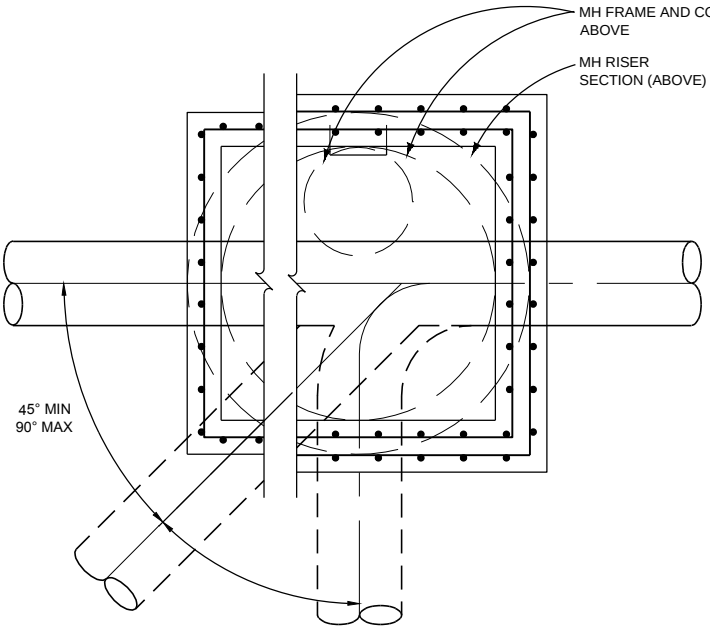
NOTES:
1. PRECAST SECTIONS TO CONFORM TO ASTM-C-478.
2. RING/COVER AND GRADE RINGS TO BE SET ON FULL BED OF MORTAR.

TOWN OF ELIZABETH

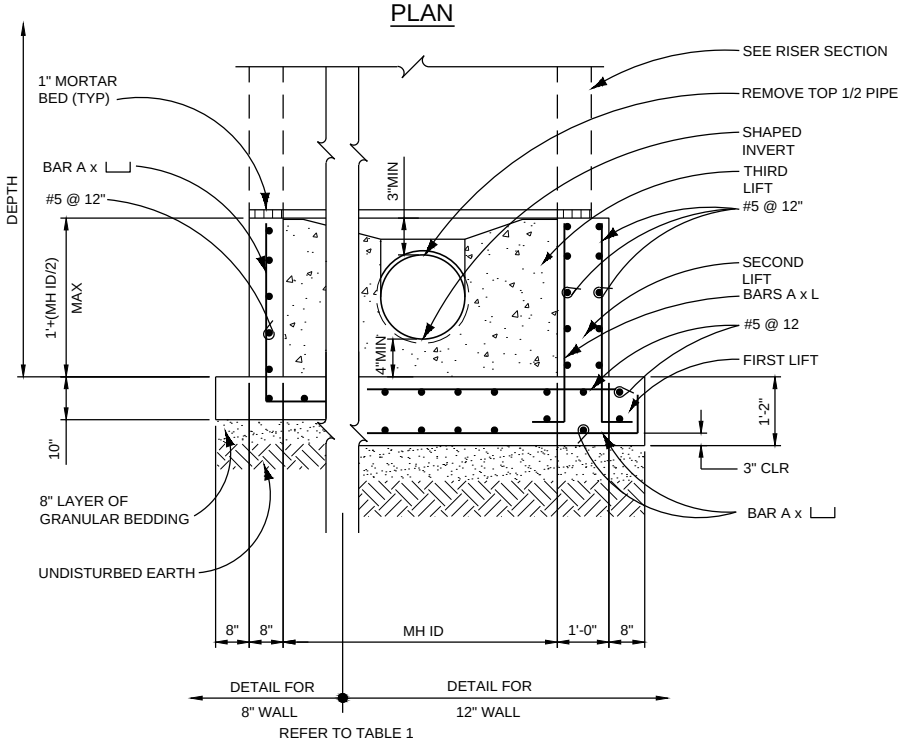
FLAT TOP MANHOLES

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	S4
WATER AND SEWER STANDARDS	

2/13/17 18:03 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\S5-CAST IN PLACE BASE.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;



PLAN



SECTION

TABLE 1			
MANHOLE RISER SECTION DIA	DEPTH BELOW FINISHED GRADE	REQD WALL	BARS A
4' ID	0 TO 8'	8"	#5 @ 12"
	8' TO 10'	8"	#5 @ 6"
	10' TO 20'	12"	#6 @ 12"
5' ID	0 TO 6'	8"	#5 @ 12"
	6' TO 10'	8"	#5 @ 6"
	10' TO 15'	12"	#6 @ 12"
	15' TO 20'	12"	#6 @ 6"
6' ID	0 TO 6'	8"	#5 @ 12"
	6' TO 9'	8"	#5 @ 6"
	9' TO 14'	12"	#6 @ 12"
	14' TO 20'	12"	#6 @ 6"
7' ID	0 TO 6'	8"	#5 @ 12"
	6' TO 9'	8"	#5 @ 6"
	9' TO 12'	12"	#6 @ 12"
	12' TO 20'	12"	#6 @ 6"

* MINIMUM CONCRETE COVER OVER BARS SHALL BE 2" UNLESS NOTED OTHERWISE

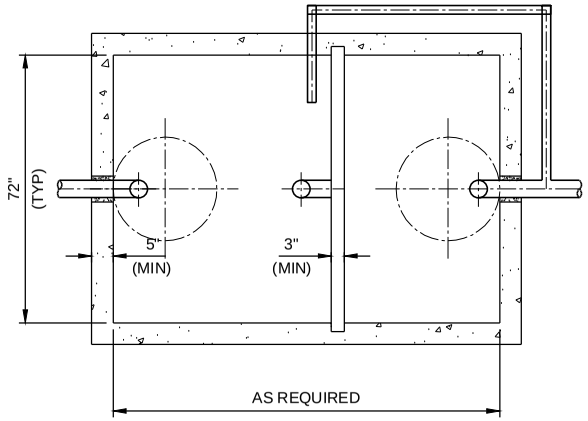
TOWN OF ELIZABETH

CAST-IN-PLACE MANHOLE BASE

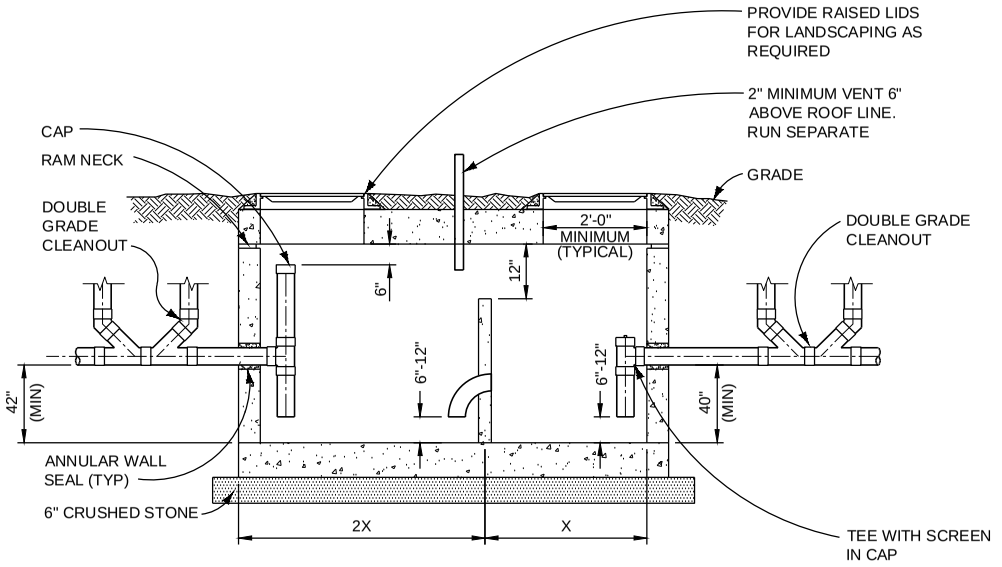
SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS



PLAN



SECTION

NOTES:

1. SIZE GREASE INTERCEPTOR PER TOWN WATER AND SEWER STANDARDS.
2. EXTERIOR PIPE AND FITTINGS SHALL BE SDR-35 PVC, 4" DIAMETER MINIMUM.
3. MANHOLE RING AND COVER SHALL BE HS-20 TRAFFIC RATED.
4. FIBERGLASS TANKS ARE ACCEPTABLE AS ALTERNATE TO CONCRETE. FLOATATION CALCULATIONS WILL BE REQUIRED.
5. BACKFILL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
6. FINAL STRUCTURAL/REINFORCING AND RESISTANCE TO FLOATATION DESIGN OF PRECAST STRUCTURE TO BE COMPLETED BY MANUFACTURER OR PROFESSIONAL ENGINEER LICENSED IN THE STATE OF COLORADO.
7. INTERIOR PIPING SHALL BE GLUED SCHEDULE 40 PVC, 4" DIAMETER MINIMUM.
8. MINIMUM INTERCEPTOR SIZE SHALL BE 750 GALLONS.

EXTERIOR GREASE INTERCEPTOR

NTS

TOWN OF ELIZABETH

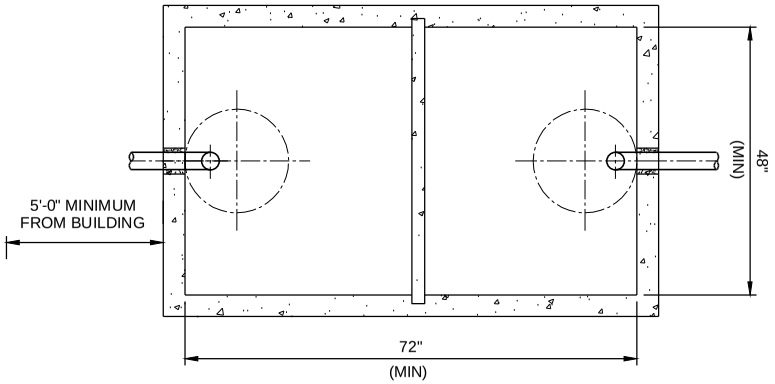
EXTERIOR GREASE INTERCEPTOR

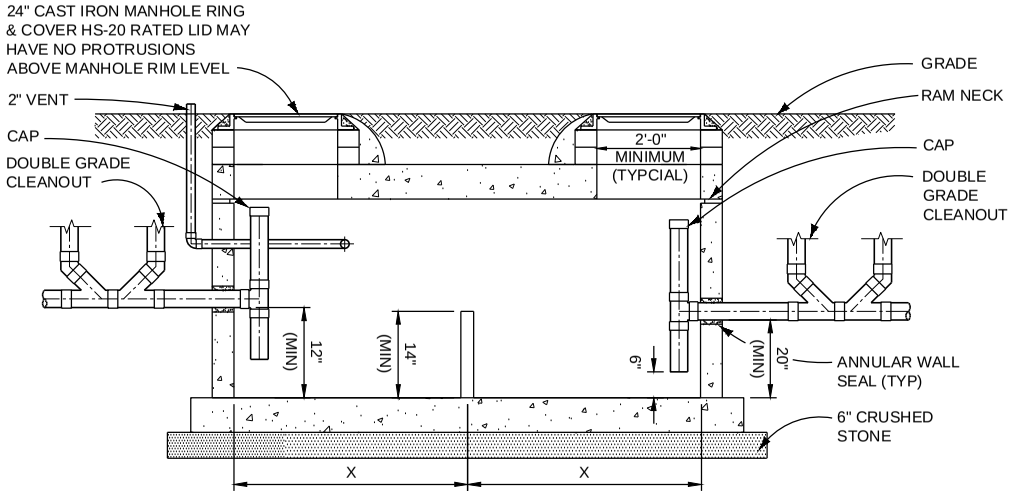
SCALE: NTS

DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS





NOTES:

1. TOP OF VAULT BELOW FINISHED GRADE OR AT GRADE. IF BELOW GRADE, RING AND COVER SHALL BE ADJUSTED TO FINAL GRADE USING A MINIMUM OF 4" GRADE RING(S) AND A MAXIMUM OF 12" GRADE RING(S). FOR DEPTHS OVER 12", A MAN HOLE BARREL SECTION WILL BE REQUIRED. WITH A FLAT TOP FOR DEPTHS OF 4" OR LESS AND A ECCENTRIC CONE TOP FOR DEPTHS GREATER THAN 4'.
2. FIBERGLASS TANKS ARE ACCEPTABLE AS AN ALTERNATIVE TO CONCRETE. FLOATATION CALCULATIONS WILL BE REQUIRED.
3. BACKFILL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS; NO BACKFILL MATERIAL SHALL BE 3" OR GREATER IN DIAMETER.
4. FINAL STRUCTURAL/REINFORCING AND RESISTANCE TO FLOATATION DESIGN OF PRECAST STRUCTURE TO BE COMPLETED BY MANUFACTURER OR PROFESSIONAL ENGINEER LICENSED IN THE STATE OF COLORADO.
5. INTERIOR PIPING SHALL BE GLUED SCHEDULE 40 PVC, 4" DIAMETER MINIMUM.
6. EXTERIOR PIPING SHALL BE SDR-35, 4" DIAMETER MINIMUM.
7. MINIMUM INTERCEPTOR SIZE SHALL BE 500 GALLONS.

SAND AND OIL INTERCEPTOR

NTS

TOWN OF ELIZABETH

SAND AND OIL
INTERCEPTOR

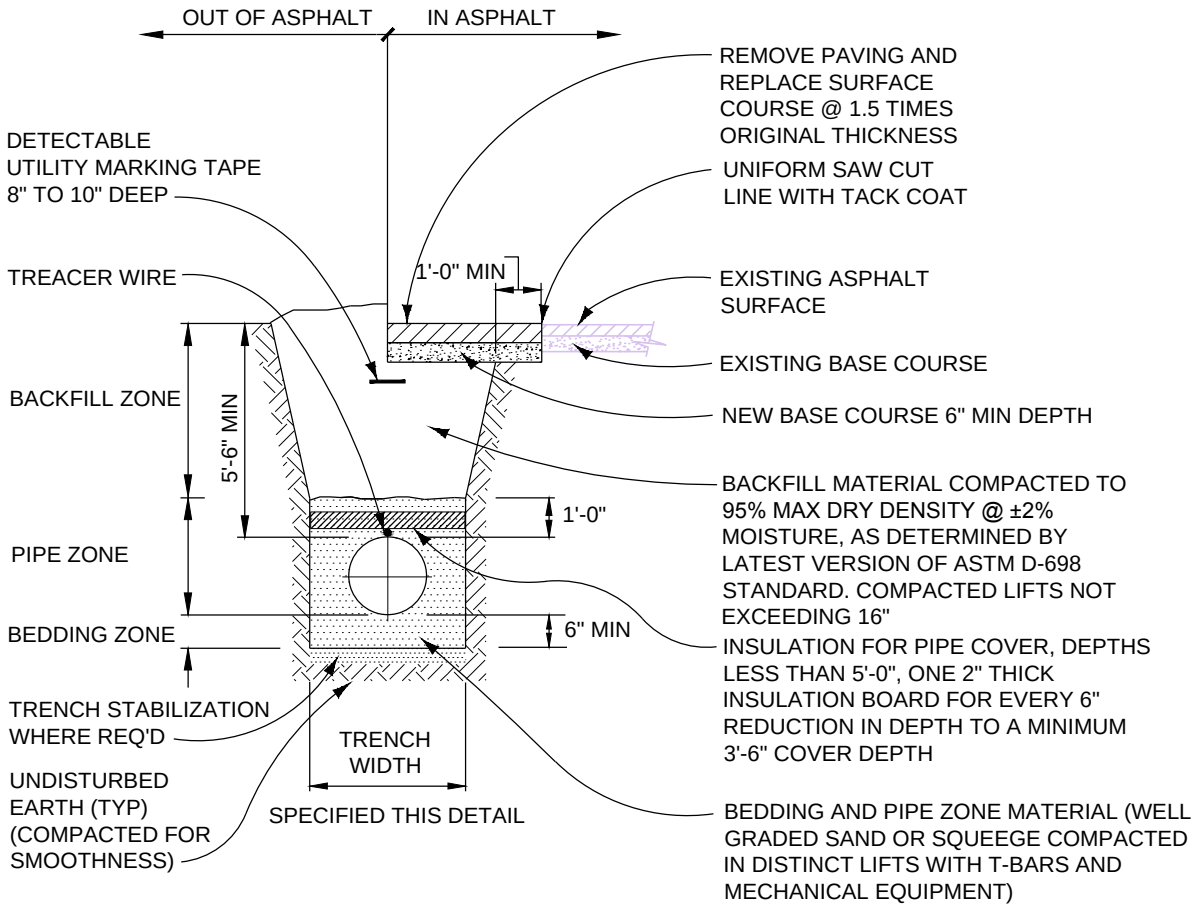
SCALE: NTS

DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

STANDARD DETAILS – WATER SYSTEM



NOTE:
1. TRENCH SHALL CONFORM TO OSHA STANDARDS.

TRENCH WIDTH SHALL CONFORM TO THE FOLLOWING:

PIPE I.D.	MIN. WIDTH	MAX. WIDTH
4" OR SMALLER	1'-4"	2'-4"
6"	1'-6"	2'-6"
8"	1'-8"	2'-8"
12"	2'-0"	3'-0"
16"	2'-4"	3'-4"

TOWN OF ELIZABETH

WATER PIPE TRENCH

SCALE: NTS | DATE: APRIL 2025

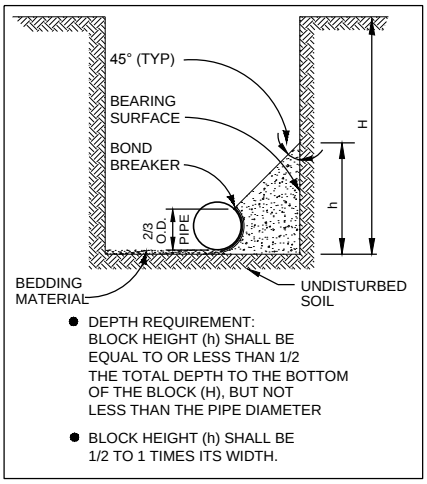
LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

2/13/17 16:44 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\W1-PIPE TRENCH.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

GENERAL:

1. ALL BURIED PIPING FITTINGS SHALL BE PROVIDED WITH CONCRETE THRUST BLOCKS AT ALL DIRECTION CHANGES UNLESS OTHERWISE NOTED.
2. IN ADDITION TO THRUST BLOCKS, ALL FITTINGS AND VALVES SHALL BE RESTRAINED FOR AT LEAST 40 FEET IN ALL DIRECTIONS. MEGALUGS MAY BE USED ON DIP AND PVC PIPE FOR RESTRAINT EXCEPT IN LOCATIONS WHERE FLEXIBLE JOINTS ARE REQUIRED.
3. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH OR STRUCTURAL BACKFILL.
4. KEEP CONCRETE CLEAR OF JOINT, BOLTS, NUTS, CLAMPS, AND OTHER ACCESSORIES.
5. THRUST BLOCKS SHALL NOT BE LOCATED OR SIZED TO ENCASE ADJACENT PIPES OR FITTINGS.
6. A BOND BREAKER SHALL BE PLACED BETWEEN THE PIPE AND THRUST BLOCK.
7. DO NOT COVER ANY BOLT CONNECTIONS.



TYPICAL CROSS SECTION

FITTING SIZE (IN)	A_1 TEE, WYE PLUG OR CAP (SF)	A_2 90° BEND (SF)	A_2 45° BEND (SF)	A_2 22 1/2° BEND (SF)	A_2 11 1/4° BEND (SF)
4	1.4	2.0	1.1	1.0	1.0
6	3.2	4.5	2.4	1.2	1.0
8	5.7	8.0	4.3	2.2	1.1
10	8.8	12.5	6.8	3.4	1.7
12	12.7	18.0	9.7	5.0	2.5
14	17.3	24.5	13.3	6.8	3.4
16	22.6	32.0	17.3	8.8	4.4
18	28.6	40.5	21.9	11.2	5.6
20	35.3	50.0	27.1	13.8	6.9
24	50.9	72.0	39.0	19.9	10.0

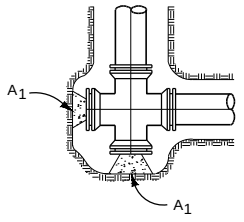
TABLE 1 - BEARING AREA OF THRUST BLOCKS IN SQUARE FEET (HORIZONTAL BENDS & VERTICAL UPWARD BENDS)

HORIZONTAL BENDS AND VERTICAL UPWARD BENDS:

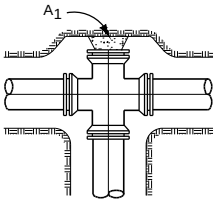
1. BEARING AREAS (TABLE 1) BASED ON TEST PRESSURE OF 150 psi, AN ALLOWABLE SOIL BEARING PRESSURE OF 2,000 psf AND A SAFETY FACTOR OF 1.5, TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING PRESSURES, USE THE FOLLOWING EQUATION:

BEARING AREA = (TEST PRESSURE / 150 psi) x (2,000 / SOIL BEARING PRESSURE psf) x (TABLE 1 VALUE)

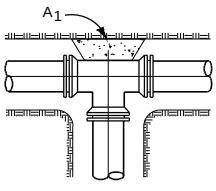
2. UNLESS OTHERWISE NOTED ON THE GENERAL DRAWINGS IN THE GENERAL NOTES OR SPECIFICATIONS, USE SOIL BEARING PRESSURE = 2000 psf FOR THIS PROJECT.
3. BEARING AREA OF THRUST BLOCK SHALL NOT BE LESS THAN 1.0 SQUARE FOOT.
4. IF THE DEPTH REQUIREMENT (SEE TYPICAL CROSS SECTION) CAN NOT BE ACHIEVED, THE ENGINEER SHALL BE NOTIFIED.



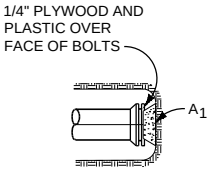
PLUGGED CROSS



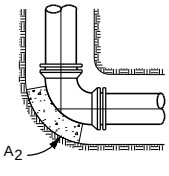
PLUGGED CROSS



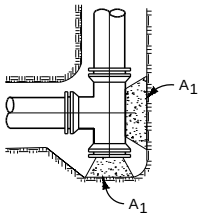
TEE



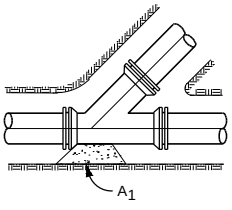
PLUG OR CAP



BEND



TEE PLUGGED ON RUN



WYE

TOWN OF ELIZABETH

HORIZONTAL THRUST BLOCKS

SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

2/14/17 12:12 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\W2-THRUST BLOCK.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

2/14/17 12:10 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\W3-THRUST BLOCK.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

TABLE 2 - VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL DOWNWARD BENDS)

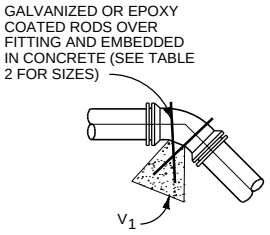
FITTING SIZE (IN)	V_1			ROD SIZE	EMBEDMENT (FT)
	45° BEND (CY)	22 1/2° BEND (CY)	11 1/4° BEND (CY)		
4	0.5	0.3	0.1	#6	2.5
6	1.1	0.6	0.3	#6	2.5
8	2.0	1.1	0.5	#6	2.5
10	3.1	1.7	0.9	#6	2.5
12	4.4	2.4	1.2	#6	2.5
14	6.1	3.3	1.7	#8	3.0
16	7.9	4.3	2.2	#8	3.0
18	10.0	5.4	2.8	#8	3.0
20	12.3	6.7	3.4	#8	3.0
24	17.8	9.6	4.9	#8	3.0

VERTICAL DOWNWARD BENDS:

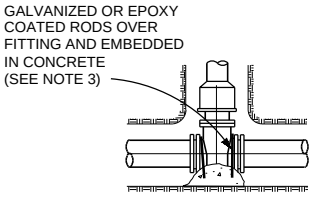
1. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE DRAWINGS FOR VOLUMES SHOWN TO LEFT OF HEAVY, BOLD LINE IN TABLE 2.
2. THRUST BLOCK VOLUMES (TABLE 2) FOR VERTICAL DOWNWARD BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 PSI, THE WEIGHT OF CONCRETE = 4050 LBS/CUBIC YARD, AND A SAFETY FACTOR OF 1.5. TO COMPUTE VOLUMES FOR DIFFERENT TEST PRESSURES AND CONCRETE WEIGHTS, USE THE FOLLOWING EQUATION:

VOLUME = (TEST PRESSURE / 150) x (4,050 / CONCRETE WEIGHT) x (TABLE 2 VALUE)

3. VOLUME OF THRUST BLOCK IN CUBIC YARDS FOR VALVES SHALL BE THE SAME VOLUME USED FOR 11 1/4 BENDS.



VERTICAL DOWNWARD BEND



VALVE

THRUST RESTRAINTS

NTS

TOWN OF ELIZABETH

VERTICAL THRUST BLOCKS

SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

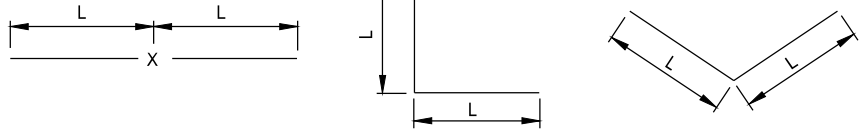
2/14/17 12:08 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\W4-THRUST RESTRAINT.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

LENGTH OF RESTRAINED PIPE

PIPE SIZE	FITTING	90° BEND, TEE, PLUG, OR VALVE	45° BEND	22 1/2° BEND	11 1/4° BEND
4"	L	30'	9'	1'	-
6"	L	45'	13'	4'	-
8"	L	60'	18'	5'	1'
12"	L	90'	25'	7'	2'
14"	L	100'	28'	7'	2'
16"	L	110'	32'	8'	2'
20"	L	130'	39'	10'	3'
24"	L	160'	45'	12'	3'

NOTES:
1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2. BASED ON 100 PSI INTERNAL PRESSURE.
3. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE TIED TOGETHER.
4. FOR LENGTH OF RESTRAINED PIPE AT DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:
5. IF A VALVE IS WITHIN DISTANCE "L" OF A FITTING. THE VALVE MUST BE TIED TO THAT FITTING.
6. CROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.
7. LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS, OR OTHER RESTRAINT SYSTEM.

LENGTH OF RESTRAINED PIPE = (TEST PRESSURE/100 PSI) x (TABLE VALUE)



TEE OR VALVE | 90° BEND | BENDS

STANDARD THRUST BLOCKS

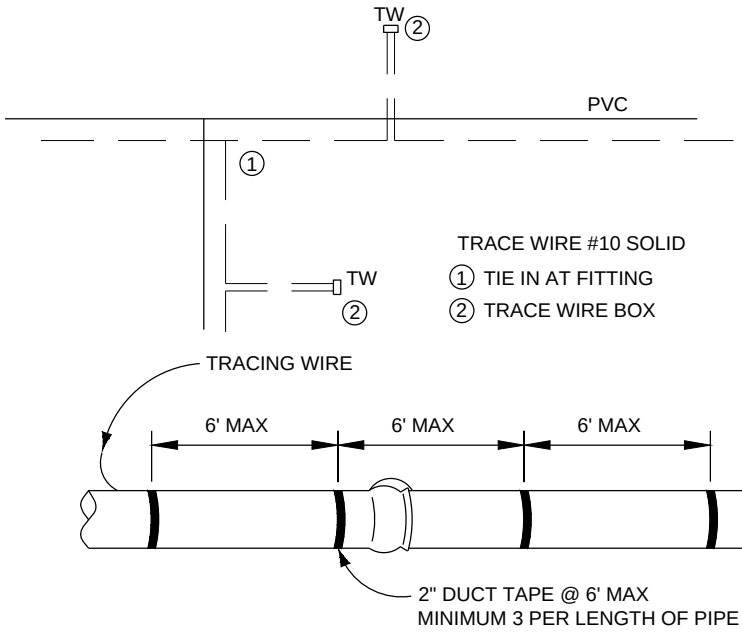
TOWN OF ELIZABETH

MECHANICAL
THRUST RESTRAINT

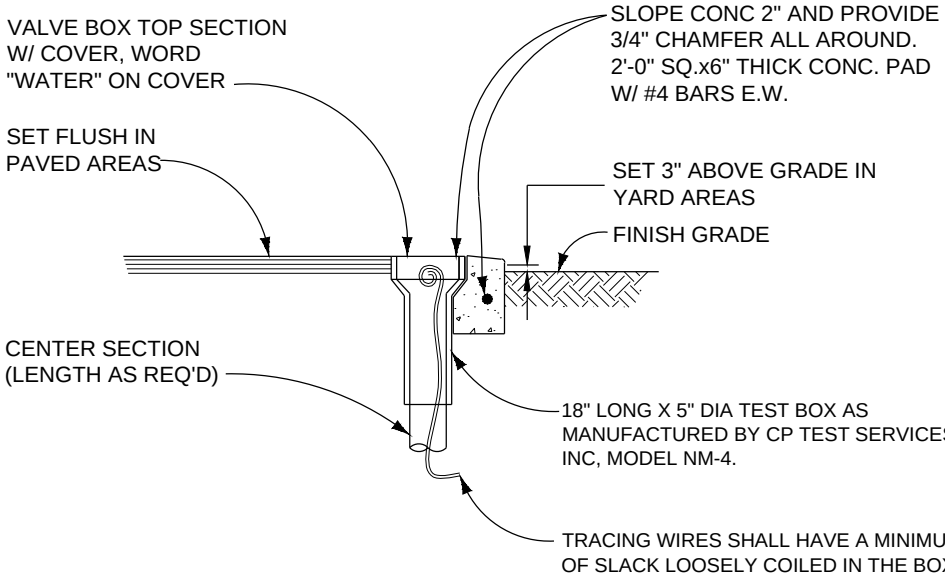
SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS



NOTE:
PROVIDE @ 600 LF (MAX) SPACING AND AT ALL VALVES.



VALVE BOX PAD

TOWN OF ELIZABETH

TRACER WIRE

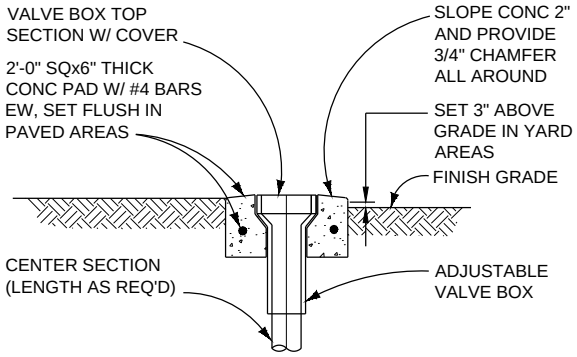
SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

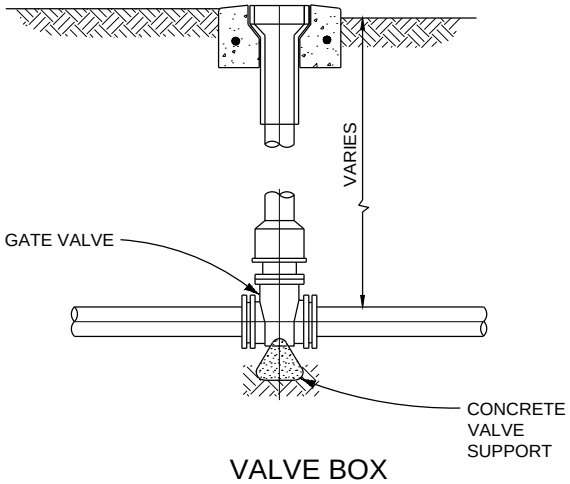
WATER AND SEWER STANDARDS

2/14/17 12:08 ARC56862 R19 P:\O - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\W5-TRACER WIRE.DWG IMAGES: P:\O - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

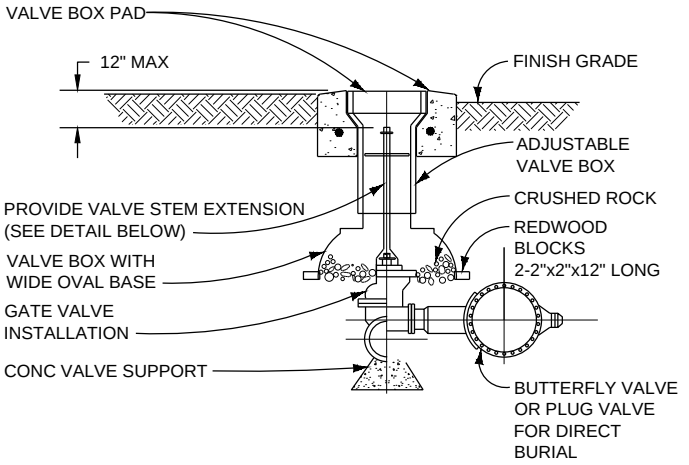
2/14/17 12:07 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\W6-BURIED VALVE.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

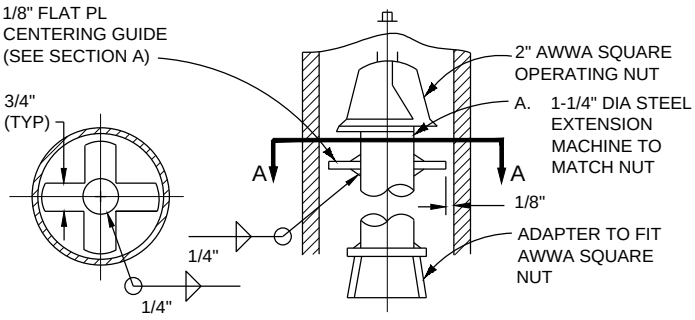


VALVE BOX PAD



VALVE BOX





SECTION A

NOTE:
1. PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACES OF VALVE BODY, VALVE BOX, EXTENSION STEM AND APPURTENANCES.

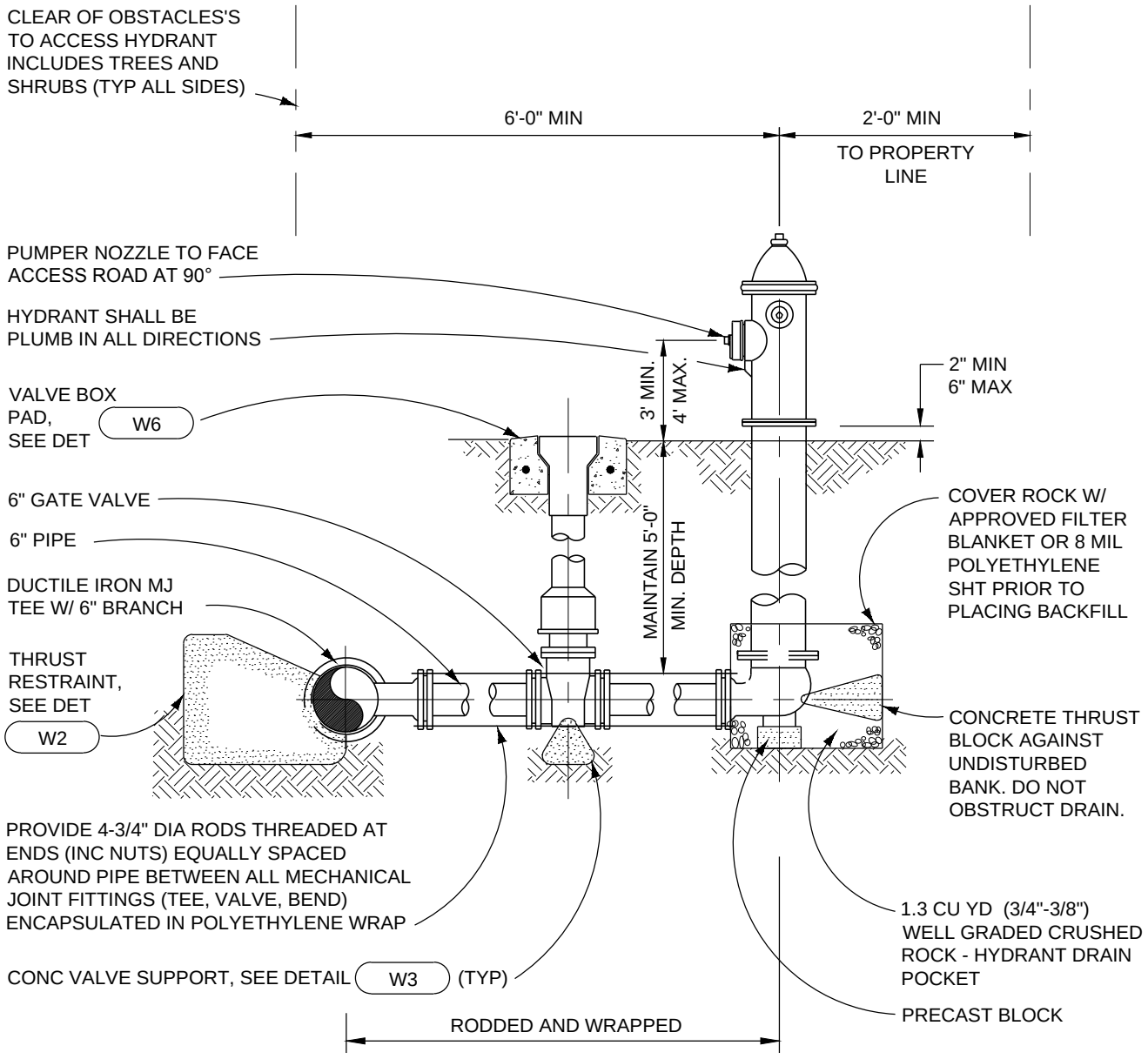
BURIED VALVE INSTALLATION

TOWN OF ELIZABETH

BURIED VALVES

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	W6
WATER AND SEWER STANDARDS	

2/14/17 12:07 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\W7-FIRE HYDRANT.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\ELIZABETH.JPG;



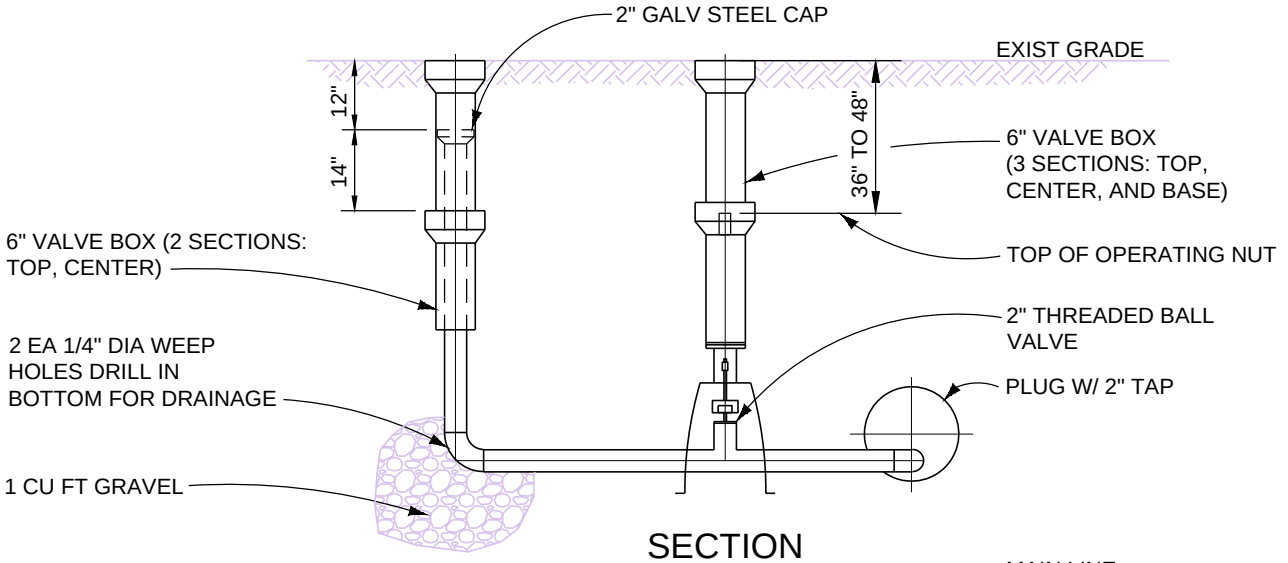
FIRE HYDRANT

NTS

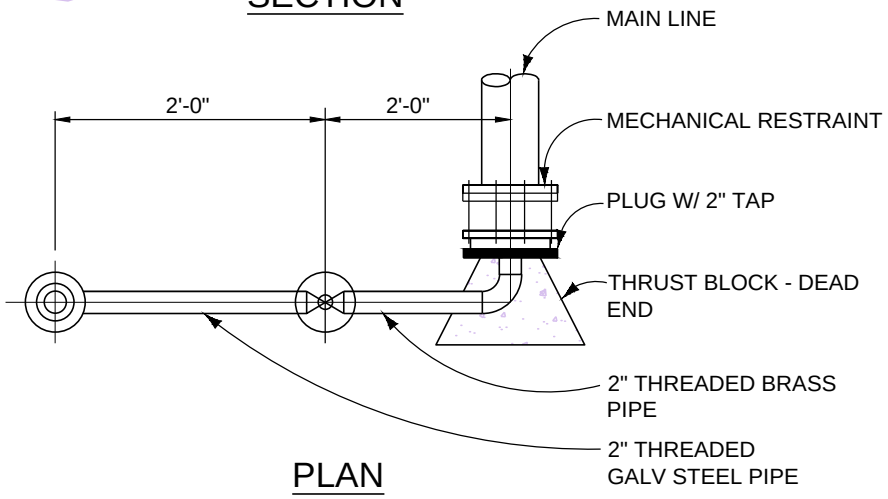
TOWN OF ELIZABETH

FIRE HYDRANT

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	W7
WATER AND SEWER STANDARDS	



SECTION



PLAN

BLOWOFF

NTS

TOWN OF ELIZABETH

BLOW-OFF

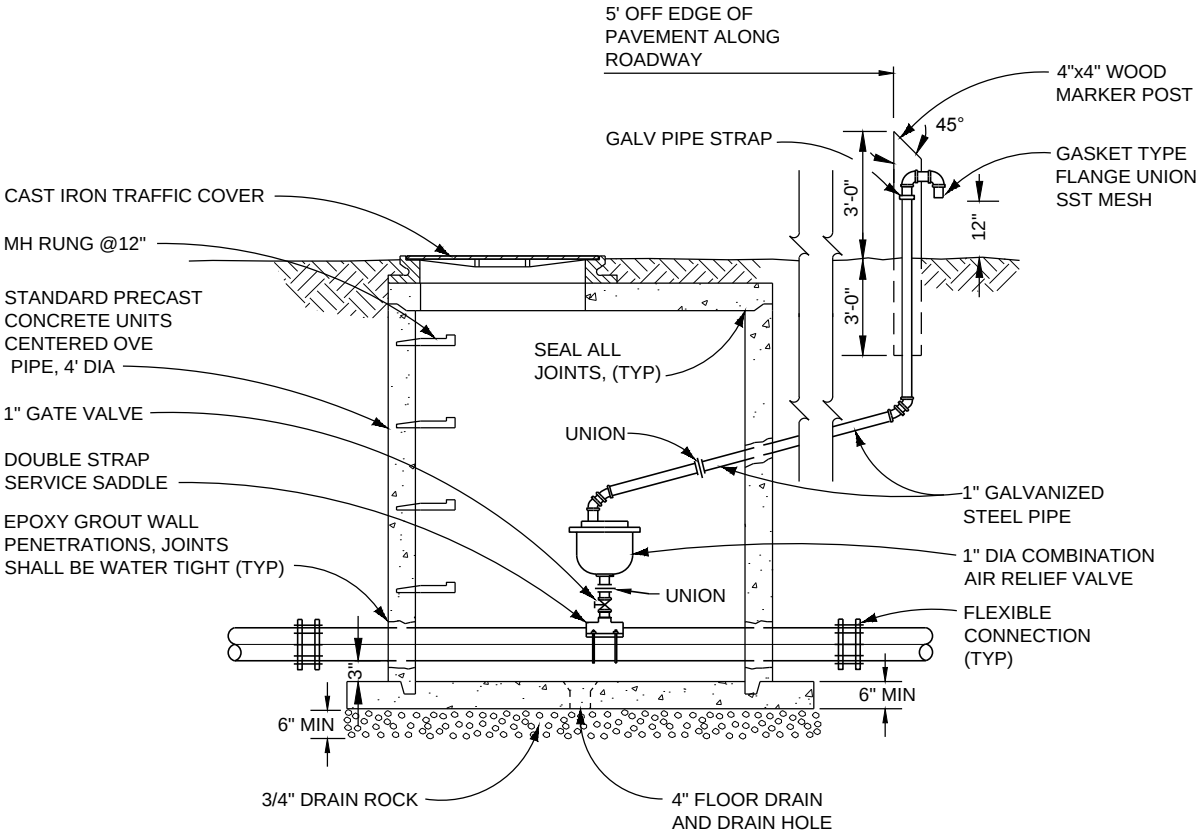
SCALE: NTS | DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

2/14/17 13:26 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\W8-TEMPORARY BLOWOFF.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;

2/14/17 13:26 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\W9 - AIR RELIEF VALVE VAULT.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;



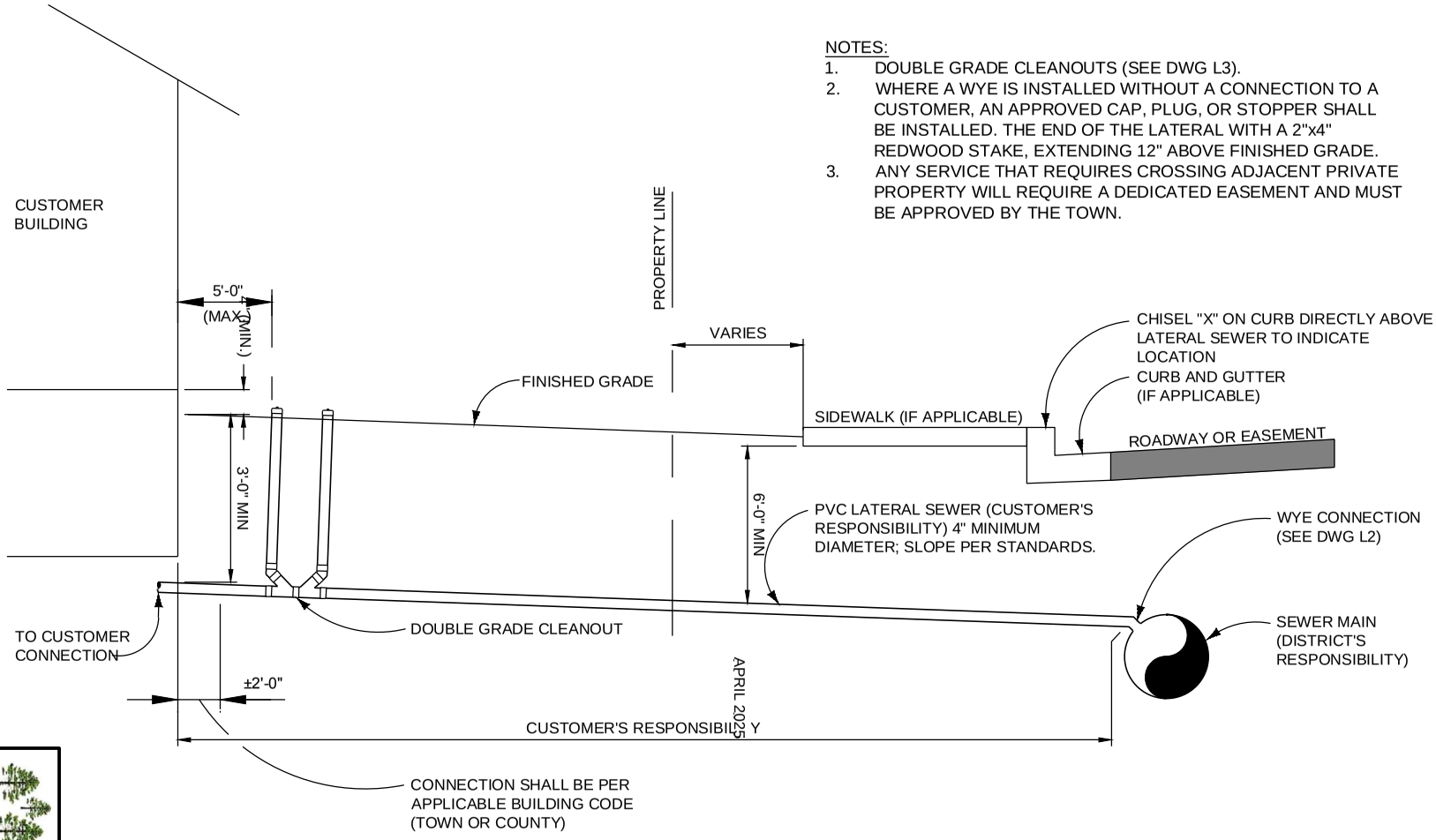
TOWN OF ELIZABETH

AIR REFIEF VALVE

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	W9
WATER AND SEWER STANDARDS	

STANDARD DETAILS – SERVICE LINES

NOTES:
1. DOUBLE GRADE CLEANOUTS (SEE DWG L3).
2. WHERE A WYE IS INSTALLED WITHOUT A CONNECTION TO A CUSTOMER, AN APPROVED CAP, PLUG, OR STOPPER SHALL BE INSTALLED. THE END OF THE LATERAL WITH A 2"x4" REDWOOD STAKE, EXTENDING 12" ABOVE FINISHED GRADE.
3. ANY SERVICE THAT REQUIRES CROSSING ADJACENT PRIVATE PROPERTY WILL REQUIRE A DEDICATED EASEMENT AND MUST BE APPROVED BY THE TOWN.



TOWN OF ELIZABETH

TYPICAL RESIDENTIAL SEWER SERVICE

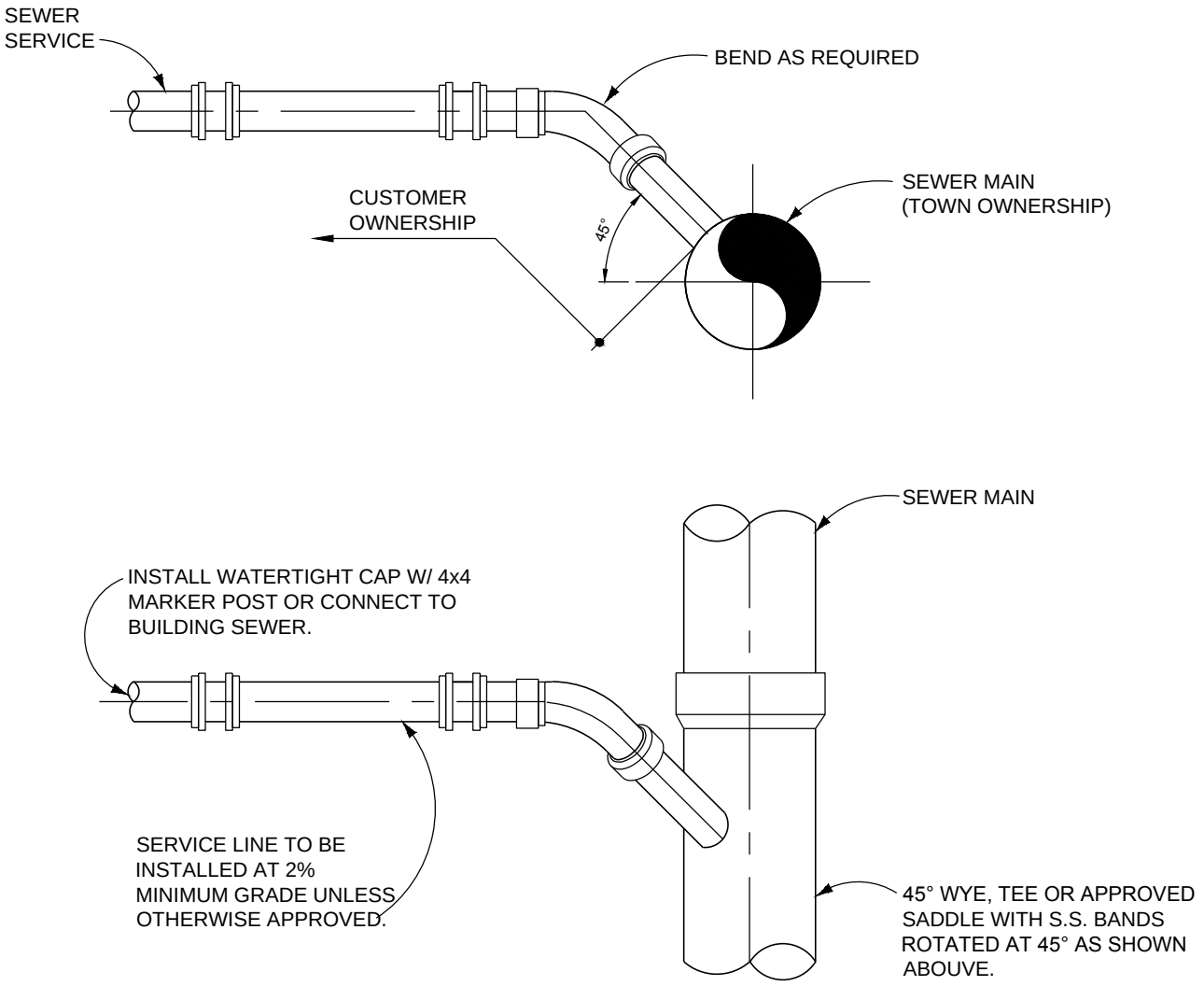
SCALE: NTS

DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

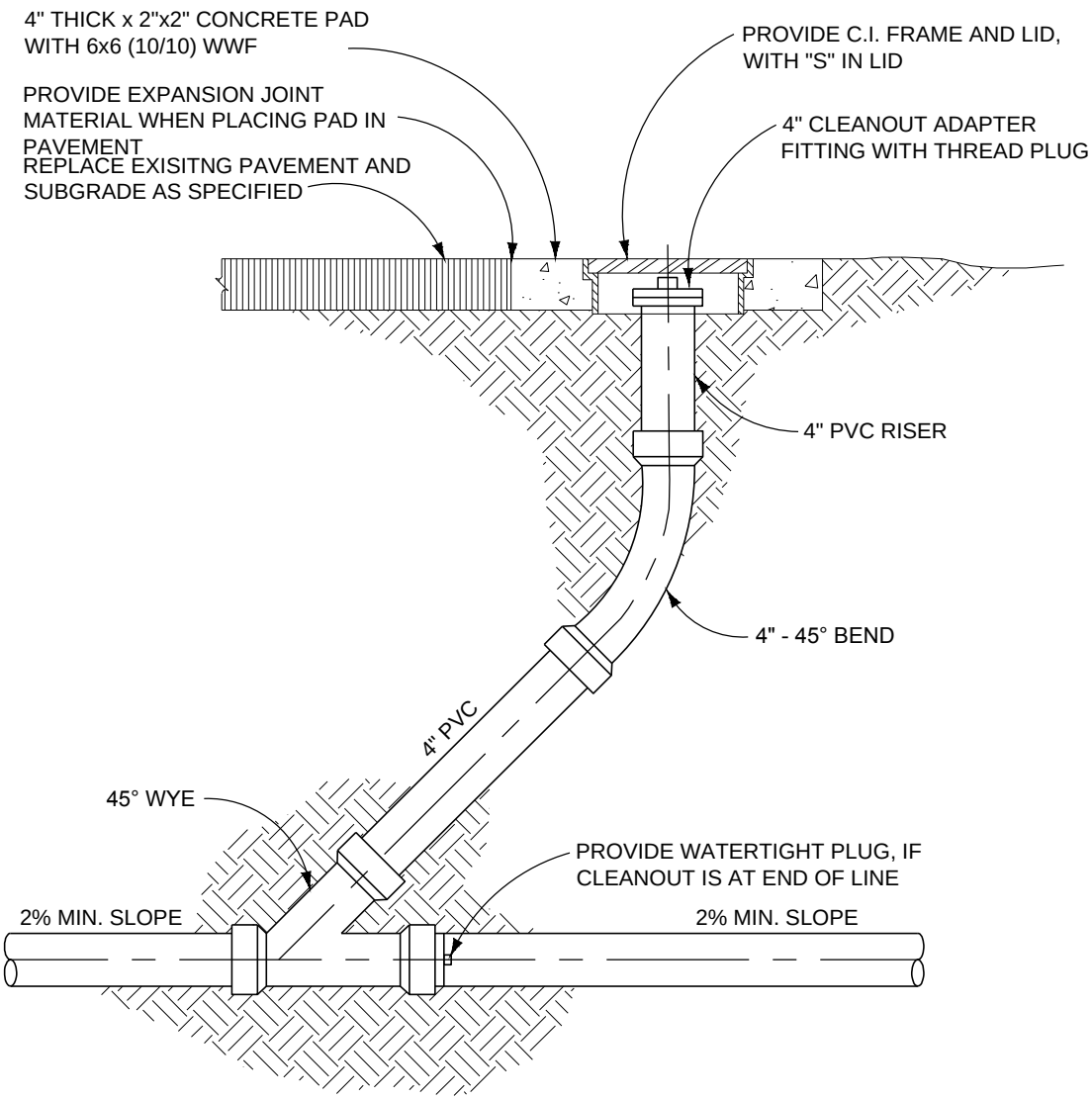
2/14/17 13:25 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\12-SEWER SERVICE CONNECTION DETAIL.DWG IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG;



TOWN OF ELIZABETH

SEWER SERVICE
WYE CONNECTION

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	
WATER AND SEWER STANDARDS	



NOTE:

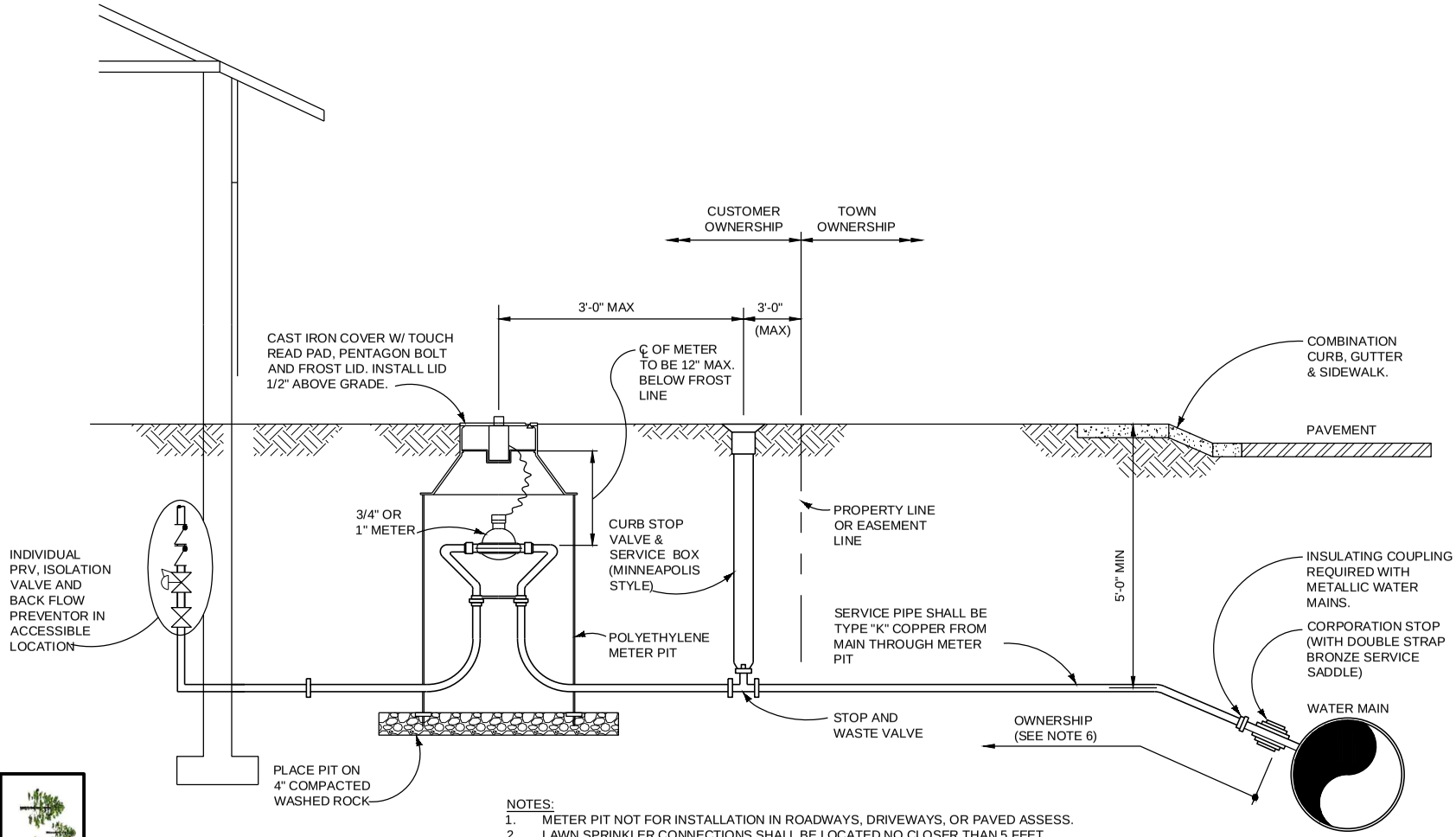
1. BEND & WYE TO BE GASKETED, NO GLUE JOINTS. PIPE MATERIAL AS SPECIFIED FOR SERVICE LINE.
2. FOR LOCATIONS IN PRIVATE LANDSCAPING AREA TERMINATE CLEANOUT 4" ABOVE GRADE. CAST IRON COVER NOT REQUIRED.

TOWN OF ELIZABETH

SEWER SERVICE
LINE CLEANOUT

SCALE: NTS	DATE: APRIL 2025
LAST REVISED: FEBRUARY 2017	
WATER AND SEWER STANDARDS	

IMAGES: P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS\DETAILS\ELIZABETH.JPG; P:\ELIZ\STANDARD DETAILS\DETAILS\CLEAN OUT.JPG; 2/14/17 13:24 ARC56862 R19 P:\0 - MASTER DETAILS\OTHER FIRMS DETAILS\ELIZABETH STANDARD DETAILS - 2-9-17\DETAILS\13-SERVE LINE CLEANOUT DETAIL.DWG



NOTES:

1. METER PIT NOT FOR INSTALLATION IN ROADWAYS, DRIVEWAYS, OR PAVED ASSESS.
2. LAWN SPRINKLER CONNECTIONS SHALL BE LOCATED NO CLOSER THAN 5 FEET DOWNSTREAM OF METER PIT.
3. NO CHANGES IN PIPE DIAMETER SHALL BE MADE IN THE METER PIT OR BEYOND THE METER PIT WALL ON THE OUTLET SIDE.
4. PIPELINE INSULATION REQUIRED FOR COVERS LESS THAN 4'-0" (SEE DETAIL W1).
5. METER MAY ALSO BE LOCATED IN THE BUILDING WITH OUTSIDE REMOVE READ IF APPROVED BY THE TOWN.
6. SEE WATER AND SEWER STANDARDS SECTION 4.2 FOR DESCRIPTION OF SERVICE LINE OWNERSHIP.

TOWN OF ELIZABETH

TYPICAL SINGLE FAMILY DETACHED RESIDENTIAL WATER SERVICE

SCALE: NTS

DATE: APRIL 2025

LAST REVISED: FEBRUARY 2017

WATER AND SEWER STANDARDS

Ordinance NO. 19-18

AN ORDINANCE AMENDING CHAPTER 13 OF THE TOWN OF ELIZABETH MUNICIPAL CODE BY THE ADDITION THERETO OF A NEW ARTICLE VII TO CHAPTER 13 ADOPTING A CROSS-CONNECTION CONTROL PROGRAM TO IMPLEMENT REGULATION 11 ARTICLES 11.37 AND 11.39 OF THE COLORADO PRIMARY DRINKING WATER REGULATIONS

WHEREAS, Regulation 11 (5CCR 1002-11) Article 11.37 and 11.39 Colorado Primary Drinking Water Regulations state that a public water supply system shall have no uncontrolled cross-connection to a pipe, fixture, or supply, any of which contain water not meeting provisions of the drinking water regulations;

WHEREAS, the Town of Elizabeth has the authority to implement and maintain a cross-connection control program as contained in this ordinance; and

WHEREAS, the Board of Trustees of the Town of Elizabeth, Colorado has determined that it is in the best interest of the Town to amend the Municipal Code of the Town of Elizabeth, Colorado by the adoption of this ordinance.

NOW, THEREFORE, IT BE ORDAINED BY THE BOARD OF TRUSTEES OF THE TOWN OF ELIZABETH, COLORADO:

Section 1: The Elizabeth Municipal Code is amended by the addition thereto of a new Article VII of Chapter 13, entitled: "CROSS-CONNECTION CONTROL PROGRAM" which is to read as follows.

ARTICLE VII

Cross-Connection Control Program

Sec. 13-7-10. Purpose.

(1) Protect the public potable water supply system of the Town of Elizabeth from the possibility of contamination or pollution by isolating or containing within the consumer's internal distribution system(s) or the consumer's private water system(s) such contaminants or pollutants that could backflow into the public water system;

(2) To promote the elimination or control of existing cross-connections, actual or potential, between the consumer's in-plant/in-house potable water system(s) and non-potable water system(s), plumbing fixtures, be it residential, commercial, or industrial system; and

(3) To provide for the maintenance of a continuing cross-connection control program that will systematically and effectively prevent the contamination or pollution of all potable water systems.

Sec. 13-7-20. Authority.

(1) The authority to implement this program is contained in the following regulatory provisions:

a. Article 1-114 and Article 1-114.1 of Title 25 of the Colorado Revised Statutes (CRS);

b. Regulation 11 (5CCR 1002-11) Article 11.37 and 11.39 of Colorado Primary Drinking Water Regulations; and

c. Colorado Plumbing Code.

(2) The Town of Elizabeth shall have the authority to survey all service connections within the distribution system to determine if the connection is a cross-connection.

(3) The Town of Elizabeth shall have the authority to control all service connections within the distribution system if the connection is a cross-connection.

(4) The Town of Elizabeth may control any service connections within the distribution system in lieu of a survey, as long as service connection is controlled with an air gap or reduced pressure zone backflow prevention assembly.

(5) The Town of Elizabeth may collect fees for the administration of this program.

(6) The Town of Elizabeth shall maintain records of cross-connection surveys and installation, testing and repair of all backflow prevention assemblies installed for containment and containment by isolation purposes.

(7) Except as otherwise provided herein, the Town of Elizabeth shall administer, implement and enforce the provisions of this ordinance.

(8) The Town of Elizabeth shall be responsible for the protection of the Town's potable water supply distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. If, in the judgement of the Town of Elizabeth, an approved backflow prevention assembly is required at the consumer's water service connection; or within the consumer's private water system for the safety of the Town water supply system, the Town of Elizabeth shall give written notice to said consumer to install such an approved backflow prevention assembly(s) at specific location(s) on his or her premises. The consumer shall install such approved assembly(s) within the time frame set forth in the written notice and at his or her own expense; and, failure, refusal, or inability of the consumer to install, have tested, and maintain said assembly(s) shall constitute grounds for discontinuing water service to the premises until requirements have been satisfactorily fulfilled.

Sec. 13-7-30 Applicability.

This ordinance applies to all commercial, industrial, multi-family and single-family residential service connections within the Town public water system and to any persons outside the Town who are, by contract or agreement with the Town public water system, users of the Town public water system.

Sec. 13-7-40 Definitions.

"ACTIVE DATE" means the first day that a backflow prevention assembly or backflow prevention method is used to control a cross-connection in each calendar year.

"AIR GAP" is a physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel installed in accordance with standard AMSE A112.1.2.

"BACKFLOW" means the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the public water systems distribution system from any source or sources other than its intended source.

"BACKFLOW CONTAMINATION EVENT" means backflow into a public water system from an uncontrolled cross-connection such that the water quality no longer meets the Colorado Primary Drinking Water Regulations or presents an immediate health and/or safety risk to the public.

"BACKFLOW PREVENTION ASSEMBLY" means any mechanical assembly installed at a water service line or at a plumbing fixture to prevent a backflow contamination event, provided that the mechanical assembly is appropriate for the identified contaminant at the cross-connection and is an in-line field-testable assembly.

"BACKFLOW PREVENTION METHOD" means any method and/or non-testable device installed at a water service line or at a plumbing fixture to prevent a backflow contamination event, provided that the method or non-testable device is appropriate for the identified contaminant at the cross-connection.

"CERTIFIED CROSS-CONNECTION CONTROL TECHNICIAN" means a person who possesses a valid Backflow Prevention Assembly Tester certification from one of the following approved organizations: American Society of Sanitary Engineering (ASSE) or the American Backflow Prevention Association (ABPA). If a certification has expired, the certification is invalid.

"CONTAINMENT" means the installation of a backflow prevention assembly or a backflow prevention method at any connection to the public water system that supplies an auxiliary water system, location, facility, or area such that backflow from a cross-connection into the public water system is prevented.

"CONTAINMENT BY ISOLATION" means the installation of backflow prevention assemblies or backflow prevention methods at all cross-connections

identified within a customer's water system such that backflow from a cross-connection into the public water system is prevented.

"CONTROLLED" means having a properly installed, maintained, and tested or inspected backflow prevention assembly or backflow prevention method that prevents the backflow through a cross-connection.

"CROSS-CONNECTION" means any connection that could allow any water, fluid, or gas such that the water quality could present an unacceptable health and/or safety risk to the public, to flow from any pipe, plumbing fixture, or a customer's water system into a public water system's distribution system or any other part of the public water system through backflow.

"MULTI-FAMILY" means a single residential connection to the public water system's distribution system from which two (2) or more separate dwelling units are supplied water.

"SINGLE-FAMILY" means:

a. A single dwelling which is occupied by a single family and is supplied by a separate service line; or

b. A single dwelling comprised of multiple living units where each living unit is supplied by a separate service line.

"UNCONTROLLED" means not having a properly installed and maintained and tested or inspected backflow prevention assembly or backflow prevention method, or the backflow prevention assembly or backflow prevention method does not prevent backflow through a cross-connection.

"WATER SUPPLY SYSTEM" means a water distribution system, piping, connection fittings, valves and appurtenances within a building, structure, or premises. Water supply systems are also referred to commonly as premise plumbing systems.

Sec. 13-7-50. Requirements.

Commercial, industrial and multi-family service connections shall be subject to a survey for cross-connections. If a cross-connection has been identified an appropriate backflow prevention assembly and or method shall be installed at the customer's water service connection within 120 days of its discovery. The assembly shall be installed downstream of the water meter or as close to that location as deemed practical by the public water system. If the assembly or method cannot be installed within 120 days, the public water system must take action to control or remove the cross-connection, suspended service to the cross-connection or receive an alternative compliance schedule from the Colorado Department of Public Health and Environment.

(1) In no case shall it be permissible to have connections or tees between the meter and the containment backflow prevention assembly.

a. In instances where a reduced pressure principle backflow preventer cannot be installed, the owner must install approved backflow prevention devices or methods at all cross-connections within the owner's plumbing system.

b. Backflow prevention assemblies and methods shall be installed in a location which provides access for maintenance, testing and repair.

c. Reduced pressure principle backflow preventers shall not be installed in a manner subject to flooding.

d. Provisions shall be made to provide adequate drainage from the discharge of water from reduced pressure principle backflow prevention assemblies. Such discharge shall be conveyed in a manner which does not impact waters of the state.

e. All assemblies and methods shall be protected to prevent freezing. Those assemblies and methods used for seasonal services may be removed in lieu of being protected from freezing. The assemblies and methods must be reinstalled and then tested by a Certified Cross-Connection Control Technician upon reinstallation.

f. Where backflow prevention assembly or method is installed on a water supply system using storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.

g. All backflow prevention assemblies shall be tested at the time of installation and on an annual schedule of June 15th thereafter. Such tests must be conducted by a Certified Cross-Connection Control Technician.

h. The public water system shall require inspection, testing, maintenance and as needed repairs and replacement of all backflow prevention assemblies and methods, and of all required installations within the owner's plumbing system in the cases where containment assemblies and or methods cannot be installed.

i. All costs for design, installation, maintenance, testing and as needed repair and replacement are to be borne by the customer.

j. No "grandfather" clauses exist except for fire sprinkler systems where the installation of backflow prevention assembly or method will compromise the integrity or the fire sprinkler system.

k. For new buildings, all building plans must be submitted to the public water system and approved prior to the issuance of water service. Building plans must show:

i. Water service type, size and location;

ii. Meter size and location;

iii. Backflow prevention assembly size, type and location; and

iv. Fire sprinkler system(s) service line, size and type of backflow prevention assembly.

A. All fire sprinkling lines shall have a minimum protection of an approved double check valve assembly for containment of the system.

B. All glycol (ethylene or propylene), or antifreeze systems shall have an approved reduced pressure principle backflow preventer for containment.

C. Dry Fire Systems shall have an approved double check valve assembly installed upstream of the air pressure valve.

D. In cases where the installation of backflow prevention assembly or method will compromise the integrity of the fire sprinkler system the public water system can choose to not require the backflow protection. The public water system will measure chlorine residual at location representative of the service connection once a month and perform periodic bacteriological testing at the site. If the public water system suspects water quality issues, the public water system will evaluate the practicability of requiring that the fire sprinkler system be flushed periodically.

Sec. 13-7-60. Inspection, Testing and Repair.

(1) Backflow prevention assemblies or methods shall be tested by a Certified Cross-Connection Control Technician upon installation and tested at least annually, thereafter. The tests shall be made at the expense of the customer.

(2) Any backflow prevention assemblies or methods that are non-testable, shall be inspected at least once annually on or before June 15th by a certified cross-connection control technician. The inspections shall be made at the expense of the customer.

(3) As necessary, backflow prevention assemblies or methods shall be repaired and retested or replaced and tested at the expense of the customer whenever the assemblies or methods are found to be defective.

(4) Testing gauges shall be tested and calibrated for accuracy at least once annually.

Sec. 13-7-70. Reporting and Recordkeeping

(1) Copies of records of test reports, repairs and retests, or replacements shall be kept by the customer for a minimum of three (3) years.

(2) Copies of records of test reports, repairs and retests shall be submitted to the public by mail, facsimile or e-mail by the testing company or testing technician.

(3) Information on test reports shall include, but may not be limited to:

a. Assembly or method type;

b. Assembly or method location;

c. Assembly make, model and serial number;

d. Assembly size;

e. Test date;

f. Test results including all results that would justify a pass or fail outcome;

g. Certified cross-connection control technician certification agency;

h. Technician's certification number;

i. Technician's certification expiration date;

j. Test kit manufacturer, model and serial number; and

k. Test kit calibration date.

Sec. 13-7-80. Right of Entry.

(1) The Town representative and/or his designee assigned to inspect premises relative to possible hazards shall carry proper credentials of his or her office and, upon exhibit of which, said representative shall have the right of entry to inspect any and all buildings and premises for cross-connections, meter inspections, and meter repairs in the performance of his or her duties. If such entry is refused, the Town administrative authority or the designated authorized representative thereof shall have recourse to every remedy provided by law to secure entry, including disconnecting/shut-off water service until entry is allowed.

(2) This right of entry shall be a condition of water service in order to provide assurance that the health, safety and welfare of the people throughout the Town public water distribution system are maintained. Where building security is required, the backflow, backflow assemblies and meters should be located in an area not subject to security. Questions regarding proper credentials should be directed to the Town of Elizabeth Public Works Director.

Sec. 13-7-90. Compliance.

(1) Customers shall cooperate in the installation, maintenance, testing, and reporting of backflow prevention assemblies, water meters, cross-connection survey's and water sampling that is deemed needed by the Town of Elizabeth. Failure to comply with any such requests shall be grounds for water service discontinuation or separation from public water supply.

(2) Service of water to any premises may be discontinued by the Town of Elizabeth if unprotected cross-connections exist on the premises, if any defect is found in an installed backflow prevention assembly or if a backflow prevention

assembly has been removed or bypassed. Services shall not be restored until such conditions or defects are corrected to the satisfaction of the licensed public water supply Operator in Responsible Charge of the Town water supply system.

(3) Discontinuance of service may be immediate and without written notice whenever, in the judgement of the Town Administrator or the designated representative thereof, upon the recommendation from the Operator in Responsible Charge of the Town water supply system or a registered certified cross-connection control program technician deems such action necessary to protect the purity of the Town public water supply system or any parts thereof.

(4) The Town reserves the right to have non-compliant property tested by a certified tester and back charged through the water utility billing.

Sec. 13-7-100. Requirements of the Consumer.

(1) Cross-Connections(s). The consumer shall be responsible for the elimination or protection of all cross-connections (known or unknown by the water Department) on his/her premises by an approved backflow device at his/her expense. Such backflow devise expenses shall include installation, maintenance, protection, testing, repair, removal or replacement of said device(s) as required by the Water Department as a condition of service.

(2) Back-flow Assembly. The consumer or those occupying any premise shall not bypass disable, remove, or modify any backflow device without written consent by the Water Department. Any such modifications shall result in termination of service.

(3) Fire Suppression System Design and Installation. The consumer or those designated by him or her will comply with current N.F.P.A. standards and/or the current Water Department Water Specifications, as amended, when designing, installing and maintaining any fire suppression system as a condition of service. The consumer and/or those whom are designated for the design and installation of the system will need to provide verification of approval by the Elizabeth Fire District.

Sec. 13-7-110. Plan approval.

(1) All building and/or construction plans involving water/sewer service, plumbing plans for additions or alterations to existing plumbing systems, and/or irrigation system installation submitted to the Town shall be reviewed by the Water Department and/or its designee and approved prior to issuance of a permit. Two (2) submitted plans must show:

a. The service address and/or legal description of property being served;

b. The water service type, size and location;

c. Meter type, size and location;

d. Types of water use during occurring at the property; and

e. Sizes, types, manufacturer, model, and locations of all containment and isolation backflow prevention assemblies.

Sec. 13-7-120. Fees.

The Board of Trustees may establish and adopt a schedule of fees to be paid by the developer/builder to defray the expenses of the Town in reviewing plans and/or inspecting work. Further, the Town may charge a reasonable fee for copies of any documents.

Sec. 13-7-130. Penalties.

Any person, whether as principal, agent, employee or otherwise, who violates any of the provisions of Article VII of this Chapter shall be subject to the general penalties as set forth in Section 1-4-20 of this Code.

Sec. 13-7-140. Conflict with other Codes.

If a dispute or conflict arises between the Colorado Plumbing Code as adopted herein, and any plumbing, mechanical, building, electrical, fire or other code adopted by the State, the most stringent provisions of each perspective code shall prevail.

Section 2. Severability. If any section, paragraph clause, or provision of this Ordinance shall for any reason be held to be invalid or unenforceable, the invalidity or enforceability of such section, paragraph, clause or provision shall not affect any of the remaining provisions of this Ordinance, the intent being that the same are severable.

Section 3. The Board of Trustees hereby finds, determines and declares that this Ordinance is promulgated under the general police power of the Town, that it is promulgated for the health, safety, and welfare of the public. And that this Ordinance is necessary for the preservation of health and safety and for the protection of the public convenience and welfare. The Board of Trustees further determines that the Ordinance bears a rational relation to the proper legislative object sought to be attained.

Section 4. This Ordinance shall become effective thirty (30) days after its publication.

Read and approved at a meeting of the Board of Trustees of the Town of Elizabeth, Colorado, this 23 day of July, 2019.

Passed by a vote of 7 for and 0 against and ordered published.

Megan Vasquez, Mayor

ATTEST:

Michelle M. Oeser, Town Clerk

TOWN OF ELIZABETH TOWN OF ELIZABETH INCORPORATED SEAL SEPTEMBER 24, 1880 ELBERT COUNTY COLORADO

To: Honorable Mayor and Board of Trustees
From: Alexandra Cramer, Planner/Project Manager
Date: April 8th, 2025
Subject: MSBOD Appointments

Summary
The Town has received two (2) letters of interest for the two (2) Main Street Board of Directors terms that expire at the end of March 2025. Michael Hussey and Brandon Jeffress have applied to be reinstated to the Main Street Board of Directors for full three-year terms. The terms for both positions would start April 8th, 2025 through April 30, 2028. The Main Street Board of Directors has seven (7) seats with three (3) year terms. Both candidates have provided letters of interest to remain on the board.

Staff Recommendation
Staff recommends that the Board of Trustees reinstate both Michael Hussey and Brandon Jeffress to the Main Street Board of Directors for a three-year term starting April 8th, 2025 through April 30th, 2028.

Attachments
Letters of Interest

Alexandra Cramer, Planner/Project Manager
151 S Banner Street
Elizabeth Colorado
80107

April 2, 2025

Ms. Cramer:

I am submitting my Letter of Interest for reappointment to the Elizabeth Main Street Board. I have been on the Board since its inception and would like to continue in order to see the streetscape project through to fruition and to assist the Main Street Board with future projects.

Please let me know if you have any questions or need any additional information. Thank you and the Board of Trustees for your consideration.

Sincerely,

Michael Hussey ASLA, RLA

4-2-2025

Dear Main Street Board and City Officials,

I wanted to let you know that I wanted to express my interest in reappointment for the board for another three-year term. I have enjoyed the last three years and feel I can still be of great service to the purpose of that board.

Please let me know any other steps needed.

Thanks,

Brandon Jeffress

From:	Patrick Davidson
To:	Angela Ternus; Tracy Hutchins; Loren Einspahr; Michael Schroder; Shannon Downs; Dave Conley; Steve Gaither
Cc:	Patrick Davidson
Subject:	Weekly Update for 3-7-2025
Date:	Friday, March 7, 2025 7:57:00 AM
Attachments:	image001.png image002.png image003.png image004.png

Good morning, Mayor, Mayor Pro Tem, and Members of the Board of Trustees. Here is your weekly update.

Elizabeth Stampede. On Monday I visited with Kevin Whitacre from the rodeo to discuss upcoming questions/concerns for this year's event. As previously mentioned, parking will be a bit of a concern but is manageable. The school district is looking towards running bus service again, and staff is working with EPD and Sheriff Norton to address traffic concerns. Kevin will be on the agenda for the March 25th meeting of the Board, so that he can provide an update.

Community Development Director. Staff have interviewed two (2) new candidates for the position since it was reposted. Both are good candidates, and I will be making a conditional offer on Monday regarding a candidate. The conditional offer will allow for background checks, etc. and to confirm the acceptance of the position. I will update the Board Tuesday.

Comp Plan Amendment. I had an opportunity to meet with Ross Tillman with the firm of Bolton & Menk. The firm deals with land use planning, surveying, engineering, assists in code revisions, and the creation and updating of comprehensive plans. Because the Board has discussed the prospects of updating or amending the plan, I wanted to start to make contacts.

CLAMS Meeting. The newest members of the Board may not know that the various administrators, chiefs, and executive officers meet monthly as a group to discuss operational and planning concerns. These meetings include the Town of Kiowa, the Elizabeth Fire District, the Elizabeth School District, the Pines and the Plains Library, the Elizabeth Park & Rec District, the Police Chief, the Sherrif, and the Elbert County Administrator. This month's meeting was in Kiowa and included Commissioner McDaniel. An interesting question arose regarding the possibilities of creating a "regional" building inspector type service to better serve the community. Additionally, we have revived discussions on whether it would be financially possible for the participating entities to jointly fund a full-time grant writer(s) to assist all of us in future grant opportunities.

Inquiry from the Independence Community. We have been contacted by a representative of the Independence Subdivision as to whether the Board would be interested in holding/hosting an event at their community. They are aware of the ice cream socials held last year and have

an interest in working to better connect our communities. We will be having some additional conversations with them to develop a working relationship, but in the meantime, I did want to bring this to the Board's attention.

June 24th BOT Meeting. The Colorado Municipal League's annual meeting will conflict with the meeting of the BOT on June 24th. It is my understanding that Corey, Mayor Ternus, and perhaps others will be at the conference. I am planning to be there the following day. Consequently, it is probably worthwhile for the Board to consider cancelling the meeting that evening and finding an alternative meeting date and time if necessary.

Have a good weekend and enjoy your retreat!

Patrick

Patrick G. Davidson, Town Administrator
151 S. Banner Street
Elizabeth, CO 80107
(720) 351-4504
pdavidson@townofelizabeth.org

From: Patrick Davidson
To: Angela Ternus; Tracy Hutchins; Loren Einspahr; Michael Schroder; Shannon Downs; Dave Conley; Steve Gaither
Cc: Patrick Davidson
Subject: Weekly Update 3-14-2025
Date: Friday, March 14, 2025 11:18:00 AM
Attachments: image001.png
image002.png
image003.png
image004.png

Good morning, Mayor, Mayor Pro Tem, and Members of the Elizabeth Board of Trustees, here is your weekly update.

Assisted Living Facilities. Currently, Assisted Living Services are only allowed in commercial districts, and even then, only by a "use special review". The Community Development Department is interested in expanding this to also allow Assisted Living Services within regional commercial districts under the same "use by special review" standard. This matter would need to proceed through a code amendment through the Planning Commission and then through the BOT for final approval. Currently, this is provided for informational purposes only. However, if any member of the Board has strong reservations about such a change, please let me know so that the concerns can be addressed or the issue dismissed prior to the start of the code amendment.

Appeal of Impact Fees. The Developer of Pine Ridge Apartments has sought to appeal the determination and applicability of impact fees on the project. Generally, under Section 4-8-120 of the Code, an appeal of these amounts is submitted to the Town Administrator for final action. Because I have been serving as both the Community Development Director as well as the Town Administrator, I believe it is appropriate to delegate the appeal process to an outside individual. This is authorized under the Code. I will be working with Corey to assign a 3rd party to complete the process. Because you may be contacted, I wanted you aware.

Eagle Scout Updates. For the newest members of the Board of Trustees, you may not know, but I have a long tradition of working with the Scouting Program. Last Fall, the Town worked with Matt Webster from Troop 636 to construct some benches for use along the Running Creek Park trail system. We received word this week that the benches are complete and ready for delivery to the Town. We are planning on having Matt present on April 8th to speak with the Board about the project. Also, on Monday I had the chance to visit with Saige Albrecht who is likewise looking at an Eagle Scout project for the Town. Once I have more information and a timeline, I will let you know. It sounds like the project will entail bat boxes to provide habitat in and around the community.

Meeting with Fire Chief. On Wednesday I had my quarterly meeting with the Fire Chief. The Fire Department will be seeking a small sales tax increase within their District to offset additional costs for the District. Here is a direct link to the website regarding the Election:

May 2025 Election Information | Elizabeth Fire Protection District I do not have all the specifics and would recommend you reach out directly to TJ if you have any questions or concerns.

Complaint Against Police Department. You may receive an email, or a series of emails from an individual concerning his grandson's adjudication in Municipal Court. While the grandson plead guilty, the grandfather is angry about the conduct of the PD. It has been referred internally and is working through an Internal Affairs process. To the extent you receive any emails, please let me know so they can be addressed accordingly.

I believe that is everything for this week. Have a great weekend.

Patrick

Patrick G. Davidson, Town Administrator
151 S. Banner Street
Elizabeth, CO 80107
(720) 351-4504
pdavidson@townofelizabeth.org

From: Patrick Davidson
To: Angela Ternus; Tracy Hutchins; Loren Einspahr; Michael Schroder; Dave Conley; Shannon Downs; Steve Gaither
Cc: Patrick Davidson
Subject: Weekly Update for 3-21-2025
Date: Friday, March 21, 2025 8:29:00 AM
Attachments: image001.png
image002.png
image003.png
image004.png

Good Morning Mayor, Mayor Pro Tem, and Members of the Board of Trustees. The following is your weekly update.

Appeal of Impact Fee. As you will recall a developer had asked for a review of the Town's determination of an impact fee. I had an opportunity on Wednesday to go back and review the Ordinance anew, review the timeline of events, and consider the basis for the overall impact fees. I also had a chance to visit with Corey and discuss the analysis. As a result, I believe my analysis was in error as to the time of the calculation of the fees, and as such, I believe the developer is correct. As a result, I have informed the developer of my error, and the process will proceed without an outside hearing examiner reviewing the matter.

Rescheduled Clean-Up Day. You will have received a separate email from Michelle noting the change in dates for the Town clean-up day. It was going to be impossible to have both the "Meat-In" and Town cleanup on the same date. After visiting with the Locker Plant, they were stuck with only one date available, and so we decided to alter the date of our event. We will be pushing the information on social media to let everyone know. It is not ideal for operations, but it is the best solution for the community.

Walnut Grove Project. The developer is getting ready to apply for a GESC permit with the Town to allow basic demolition and dirt movement at the site. You may recall that this PUD was approved many years ago, and now the developer is starting to proceed with the project. You may hear comments that the site is contaminated with lead pipes and asbestos. The Town has previously been provided soil tests and environmental testing results that demonstrate this is not the case. However, it remains a talking point at times within the community. Should you have any questions or concerns, please just let me know.

The Depot RFP. The initial RFP meeting (pre-bid) for this project will be on Monday, March 24th. This is the opportunity for any interested contractors to discuss the project. The bid opening is scheduled for Monday, April 14th.

Assisted Living Code Issue. In my last weekly update, I mentioned the possible need to look at amending the zoning code for assisted living. Because of the questions asked, I had Alex prepare a more detailed analysis and response. It will be included in a separate email to you.

Have a great weekend!

Patrick

Patrick G. Davidson, Town Administrator
151 S. Banner Street
Elizabeth, CO 80107
(720) 351-4504
pdavidson@townofelizabeth.org

From:	Patrick Davidson
To:	Angela Ternus; Tracy Hutchins; Loren Einspahr; Michael Schroder; Shannon Downs; Dave Conley; Steve Gaither
Cc:	Patrick Davidson; Michelle Oeser; Hannah Bruce
Subject:	RE: November Financial Statement Questions
Date:	Tuesday, March 18, 2025 1:27:36 PM
Attachments:	image001.png image002.png image003.png image004.png image005.png

Good afternoon, Mayor. Thank you for reducing your concerns to an email for clarity of this matter. Please find general as well as specific explanations below, in red. As this was an item of discussion by the BOT during last week's meeting, the response is being provided to all members of the Board. Please let me know if you need anything else.

Patrick

Patrick G. Davidson, Town Administrator
151 S. Banner Street
Elizabeth, CO 80107
(720) 351-4504
pdavidson@townofelizabeth.org

From: Angela Ternus <aternus1@townofelizabeth.org>
Sent: Tuesday, March 18, 2025 11:39 AM
To: Patrick Davidson <pdavidson@townofelizabeth.org>
Subject: November Financial Statement Questions

Patrick,

I wanted to follow-up with information regarding the payroll questions I brought up in last Tuesday's BOT meeting. I meant to get this to you last week but was busy with other things.

Was November a month with three pay periods? Did everyone get raises in November?

The month of November was a 3-paycheck month. For the knowledge of the rest of the BOT,

the Town pays employees on a bi-weekly schedule while elected officials are paid bi-monthly. This will always cause a three-paycheck month for two months out of the calendar year.

For general purposes, the Board of Trustees has continued to maintain the ability within the budget to provide a 1x payment of $1,000 NET to each employee working for the Town during the holidays. In addition, the Town has also continued to maintain the $100.00 payment to each employee during the annual Holiday Party. The total of $1,100 is NET per the BOT. Those are reflected in the payment you outlined, as the BOT instructed those payment be triggered in November.

Lastly, as you know, I do not generally focus on a specific line item or account number within the financials. In part, this is because the reliance on percentages in any one account or column may provide a distorted view of the overall fund. Second, for purposes of the Staff and daily operations, the overall amount budgeted to any specific Department, and the percentage spent in relation to the percent of the fiscal year elapsed, is more beneficial to the Department Heads and me. However, I do understand how you review the packets and the financials.

In the General Fund in the Town Clerk Salaries & Wages, account 10-41-1100, wages were $41,532.13 in November. This does not include overtime. In October, the wages in this same account were $24,226.62. In December, the wages in this same account were $26,605.94. November's wages were more than 150% of December's wages. Why the big increase in November?

For October there were two payrolls, the amounts were identical, thereby having a wage payment of $24,226.62. For November, there was a third payroll causing an addition of $12,113.30 to be added to the prior month for a total of $36,339.92 for regular compensation. In November, the BOT also triggered the Holiday pay stated above, which resulted in an additional $5,192.20 as this is a $1,100 net for each employee. For then December 2024, two employees were paid out for comp time per the employee handbook to start out the year with a zero balance. For 2024 the Clerk's total budget ended the year at 97.3% of the amount allocated in that fiscal year. For purposes of salary and wages the total 2024 budget amount was 100%.

In the General Fund in the Police Salaries & Wages, account 10-49-1100, wages were $169,508.81 in November. This does not include overtime. In October, the wages in this same account were $73,664.95. In December, the wages in this same account were $75,871.05. November's wages were more than 200% of December's wages. Why the big increase in November?

The analysis of the police department is a bit more complex. The BOT requested an analysis of

using unspent funds from salary and wages to provide a one-time stipend to officers. This was based on concerns with salaries within the market; the loss of PTO by officers due to mandatory work schedules; and the fact the department was down 3 officers down over much of 2024, and 2 officers out or on light duty with medical leave during portions of 2024. For October and December, the salaries were nearly identical with the difference based on a mid-payroll loss of an officer, and with 7 officers receiving comp-time payout.

For November, the total of the 3 pay periods is $105,740.34. In addition, the Holiday pay of $13,288.94 was paid out to PD in this month, resulting in a total of $119,029.28. The remaining expense occurs because of one-time stipend payments of $5,000 for the Chief and each Seargent, the payment of $4,000 for each officer or PD staff with more than 1 year of service; and $3,000 for each officer or staff with less than 1 year of service. These were NET payments to the employees. As a result, for 2024 the Salary and Wages for PD came in at 104.6% of budget, but the total PD budget coming in at 96.3% or $67,602.33 below the allocated 2024 budget.

In the General Fund in the Public Works Salaries & Wages, account 10-49-1100, were $18,602.52 in November. This does not include overtime. In October, the wages in this same account were $10,660.19. In December, the wages in this same account were $10,538.32. November's wages were more than 150% of December's. Why the big increase in November?

For October there were two payrolls, with one employee receiving a small retro-pay associated with an annual review, for a total of $10,660.19. For November, the same 3 paycheck month calculation occurs resulting in the November $18,602.52 plus the allocated Holiday pay of $1,100 net per employee. For December 2024, the total was $10,538.32, with an $80.00 retro-pay for an employee based on an annual review. For the Public Work's total budget for 2024, the Department ended at 86.1% of the total amount allocated for the 2024 fiscal year.

In the General Fund in the Town Administrator Salaries & Wages, account 10-52-1100, were $21,811.38 in November. In October, the wages in this same account were $13,580.76. In December, the wage in this same account were $13,580.76. November's wages were more than 150% of December's wages. Why the big increase in November?

October and December are identical numbers and are tied to the employment contract and salary. The increase in November is tied directly to the three pay-check months, and the Holiday pay.

In the General Fund in the Community Development Salaries & Wages, account 10-53-1100, were $33,183.32 in November. This does not include overtime. In October, the wages in this same account were $17,910.48. In December, the wages in this same account were

$20,477.55. November's wages were more than 150% of December's wages. Why the big increase in November?

For October there were two payrolls, the amounts were identical, thereby having a wage payment of $17,910.48. For November, there was a third payroll causing an additional payment for a total of $33,183.32. Again, the Holiday pay was triggered as well. Two employees received pay increases, with retro application, for a total of $1,889.62. For December one employee received a raise (effective November) which would increase this amount, a comp time payout for another, and a PTO pay-out for an employee leaving. Even with this, the total salary, and wages for 2024 still came in at 99.1% of budget, with the entire department coming it at 92.4% of budget for 2024.

In the Street Maintenance Fund Salaries & Wages, account 21-49-1100, were $23,231.96 in November. This does not include overtime. In October, the wages in this same account were $13,308.86. In December, the wages in this same account were $13,187.97. November's wages were more than 175% of December's wages. Why the big increase in November?

Again, the payroll in October was $13,308.86 reflecting payroll payment for two pay periods. Recall that time in public works and streets is split between the employees. As such, a raise related to an annual review and any associated retro-active pay is reflected in this number as well. For November, the amount reflects the Holiday payment at the $1,100 per employee. All factors for November otherwise remain the same. For December, there was also a retro-pay for an annual review. The wages reflect the accurate number for that month. Overall salary and wages in the Street Fund were 97.2% of the budgeted amount, leaving the Department budget for 2024 at 96.5% for the year.

In the Water and Sewer Fund the Water Salaries & Wages, account number 52-57-1100, were $16,222.91 in November. This does not include overtime. In October, the wages in this same account were $9,894.20. In December, the wages in this same account were $8,772.47. November's wages were more than 175% of December's wages. Why the big increase in November?

For October 2024, the compensation was $9,894.20 which included no adjustments. For November, we lost an employee resulting in a smaller payroll for the 3rd paycheck in November, as well as no Holiday payment of $1,100 for that specific employee. In December, there was an overall reduction in payroll due to the loss of the same full-time employee, even with the payout of comp time at the end of the year per the Employee Handbook. Therefore, the total salary for 2024 is 82.4% of the budgeted amount, and an overall expenditure in 2024 of 97.6% of the Department budgeted amount.

In the Water and Sewer Fund the Sewer Salaries & Wages, account number 52-58-1100, were

$16,222.86 in November. This does not include overtime. In October, the wages in this same account were $9,894.20. In December, the wages in this same account were $8,772.13. November's wages were more than 175% of December's wages. Why the big increase in November?

For October there were two payrolls, the amounts were identical, thereby having a wage payment of $9,894.86. Since these are basically the same employees as Water and included the loss of the same employee before the 3rd paycheck in November, the process is consistent with the analysis in Water. For 2024 the Sewer's total budget ended the year at 57.6% of the amount allocated in that fiscal year for overall operations, and 80.1% for salaries and wages in the same year.

Thank you,
Angela Ternus
Mayor - Town of Elizabeth

Angela Ternus
Mayor - Town of Elizabeth
aternus1@townofelizabeth.org

ELIZABETH POLICE DEPARTMENT ACTIVITY STATISTICS REPORT

Period: 03/16/2025 to 03/29/2025

ELIZABETH POLICE DEPARTMENT'S MISSION STATEMENT:

"The Elizabeth Police Department is committed to service excellence in protecting life and property, impartial enforcement of law, and building community with those who live, work, and visit, the Town of Elizabeth."

The following is an informational breakdown of EPD police activity from **03/16/2025 at 12:01 a.m. to 03/29/2025 at 11:59 p.m.** This information is compiled from our Records Management System (RMS), identified as New World (NW), as well as Douglas County Regional Dispatch (DCRD) records.

**All suspects/defendants are presumed innocent until proven guilty in a Court of Law. **

Total Calls for Service:

334

Traffic Stops:

Total Stops:	Penalty Assessments:	Written Warnings:	Verbal Warnings:	Assists to Other Agencies
70	28	38	1	3

Other Calls for Service:

Call Type:	Number of Calls:
911 Rapid SOS	1
Abandoned Vehicle	1
Alarm-Bank	1
Alarm-Business Burglary	2
Animal Complaint	1
Animal Cruelty	2
Assault	1
Assist to Fire Department	5
Assist to Other Agencies	6

Attempt to Contact	3
Business Check	34
Citizen Assist	19
Citizen Contact	13
Civil	1
Crime Prevention	12
Dead Animal	2
Drug Offense	1
Fireworks	1
Flock	3
Follow Up	27
Found Property	2
Failure to Yield	1
Grass Fire	1
Harassment	1
Increased Patrol	60
Informational Report	2
Medical Assist	1
Motorist Assist	3
Municipal Ordinance Violation	1
Motor Vehicle Accident with Property Damage	1

Motor Vehicle Accident with Unknown Injuries	3
Park Check	2
Parking Complaint	7
Prowler	1
Repossession	1
School Education	2
Shots Heard	1
Special Assignment	1
Suicidal Subject	1
Suspicious Circumstance	3
Suspicious Person	2
Suspicious Vehicle	9
Theft	1
Traffic Complaint	6
Traffic Hazard	4
Trespass	1
Traffic Stop	70
VIN Verify	1
Warrant Pickup	1
Welfare Check	3
Wildlife	3

Open Patrol Division Criminal Investigations:

Case Number:	Call Type:	Details:
23-5311	Financial Crimes	Investigation into financial crimes.
24-4382	Sex Offense	Investigation into a sex offense involving juveniles.
25-1079	Financial Crimes	Investigation into fraud at a local business.
25-1130	Financial Crimes	Investigation into fraud of a citizen
25-1373	Extortion	Investigation into a citizen who was extorted.
25-1496	Vehicle Trespass/Burglary	Investigation into several vehicle trespasses.
25-1736	Financial Crimes	Investigation into fraud of a citizen.
25-1946	Child Abuse	Investigation into physical child abuse.
25-2266	Arson	Investigation into an illegal burn.
25-2315	Public Disorder	Investigation into a threat that was made.
25-2316	Drug Offense	Investigation into a subject property in Town.

Open Community Services Division Municipal Ordinance Violations:

Case Number:	Call Type:	Notes:
24-4492	Municipal Ordinance Violation	Investigation into accumulation of debris on a property in Town
25-1355	Municipal Ordinance Violation	Investigation into accumulation of debris on a property in Town

**Please note that limited information regarding open investigations is available. This is to protect the integrity of the investigations. **

Closed Case/Incident Reports:

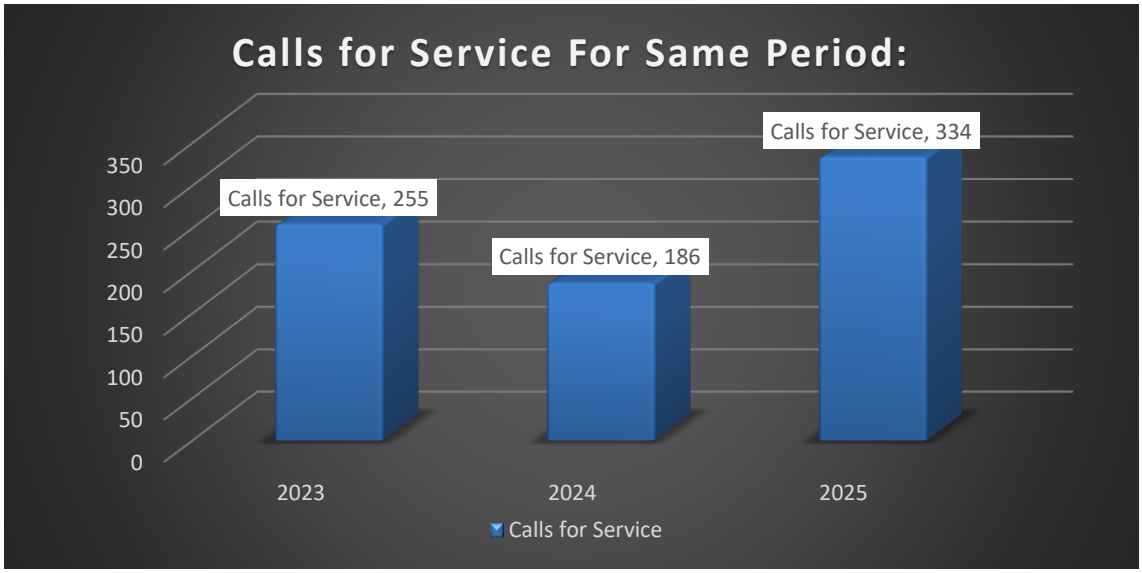
Case/Incident Number:	Call Type:	Details:
25-1909	Animal Complaint	While EPD Officers were on an unrelated call for service taking a party into custody, Officers observed a large animal, believed to be an illegal exotic animal. Officers notified EPD's Community Services Division for further investigation. After the completion of their investigation, the animal was determined to be a hybrid and was therefore legal to possess.
25-1591	Dog Bite	EPD Community Services responded to a reported dog bite. There were no serious injuries. The owner of the dog was issued a municipal summons.

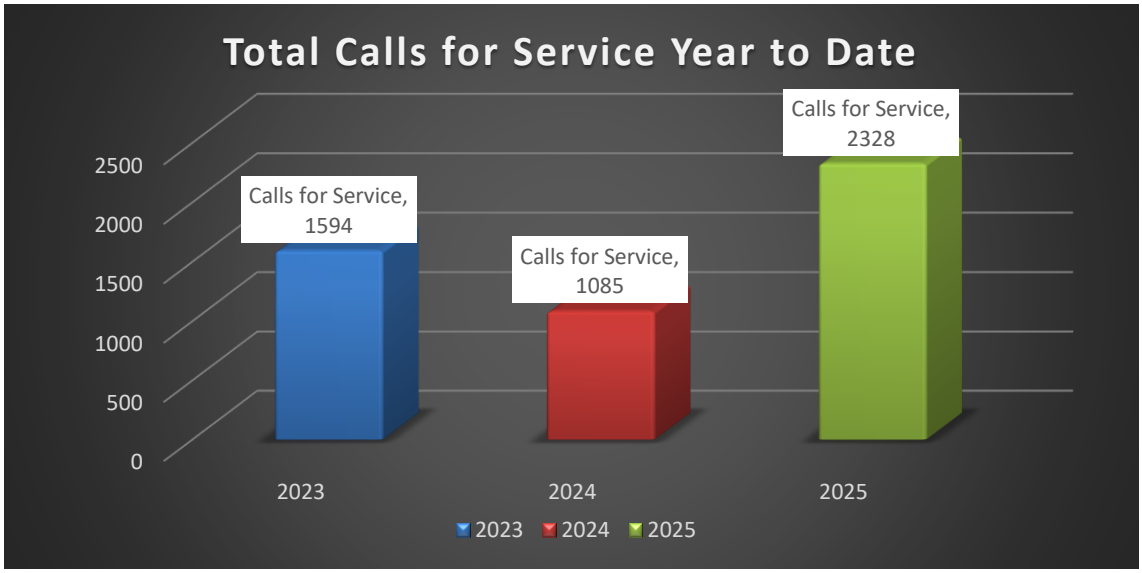
25-2035	Downed Power Line	EPD responded to a downed powerline at a local construction site. In conjunction with the Elizabeth Fire Rescue (EFR), the site was made safe, and no one was injured. The utility company was notified, and an incident report was drafted.
25-1889	Assist to Elbert County	EPD Officers assigned to the regional SWAT team took part in a SWAT operation for a warrant service.
25-1897	Assist to Elbert County	EPD Officers assigned to the regional SWAT team took part in a SWAT operation for a barricaded subject with a weapon.
25-2074	Warrant Arrest	EPD located a suspect who had an active warrant for their arrest. Once their identity and the warrant were confirmed, the party was arrested and booked into the Elbert County Jail.
25-2107	Animal Cruelty	EPD responded to a local store on a report that a juvenile party was beating a dog. Upon arrival, officers could not locate the suspect, who had left the scene prior to their arrival.
25-2072	Motor Vehicle Theft	EPD took a report of a motor vehicle theft. After investigation, it was determined the vehicle was not stolen out of EPD's jurisdiction. The proper agency was notified and the report forwarded to them for further investigation.
25-1841	Child Abuse	EPD responded to a local school on report of child abuse. After investigation, it was determined that no crime had occurred. The Elbert County Department of Human Services (DHS) was notified.
25-2150	Found Property	A citizen turned in a handheld radio to EPD. As the owner could not be located, the radio was

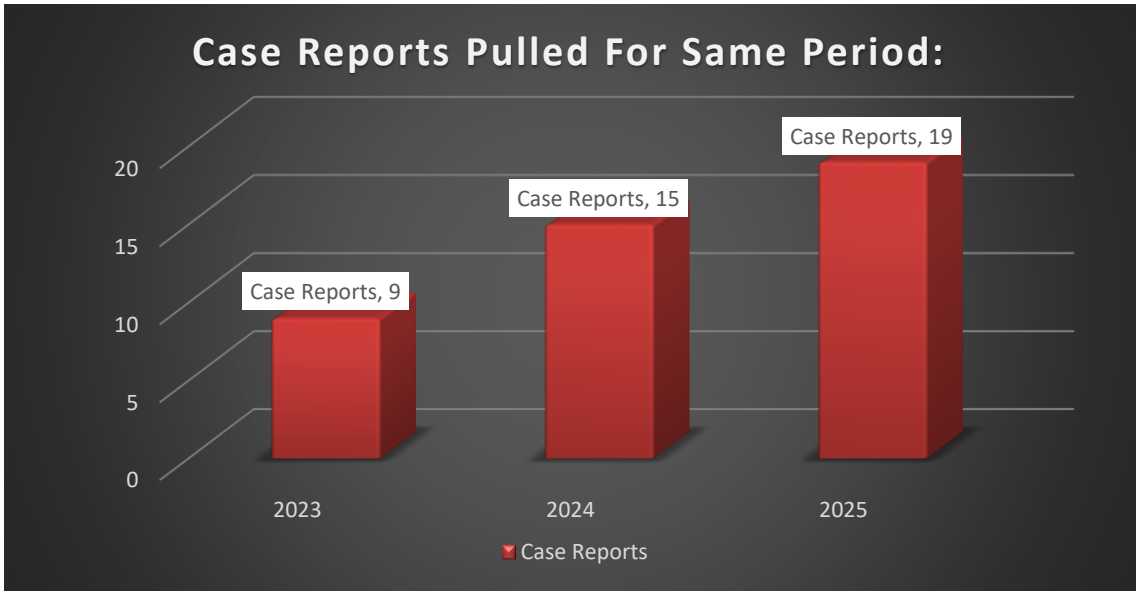
		booked into the property room as found property.
25-2195	Illegal Burn	EPD responded to a reported grass fire in Town. Once on scene, Officers identified two (2) juveniles started the fire recklessly. The juveniles were issued municipal summons.
25-0584	Burglary	EPD closed a case on a burglary investigation. Due to lack of cooperation from the victim, and no corroborating evidence, this case was closed due to a lack of information.
25-1993	Burglary	EPD responded to a reported illegal burn. During the investigation, it was believed the suspect was committing burglary at the property when the burning occurred. After investigation, there was insufficient probable cause to support criminal charges.
25-2188	Assist to Elbert County	EPD responded to assist Elbert County on a DUI. EPD assisted by completing an I-9000 test on the suspect.
25-2131	Harassment	EPD investigated harassment involving several juveniles. After investigation, the suspect was issued a municipal summons.
25-1651	Domestic Violence	EPD concluded an investigation into a physical domestic violence case. Probable cause supported felony charges against the suspect, and an arrest warrant was issued.
25-1907	Sex Offense	EPD closed an investigation into alleged illicit pictures on a juvenile's phone. Probable cause did not exist to support criminal charges.
25-1757	Financial Crimes	EPD was made aware of a local business that was associated with a fraudulent car selling ring. After

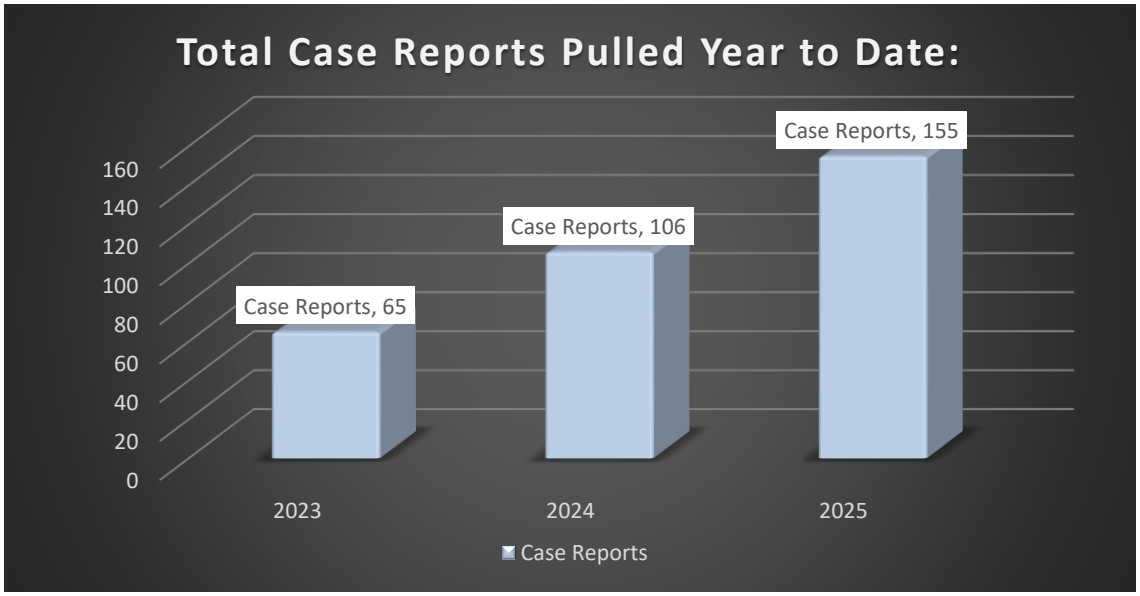
		investigation, it was found that the business's name was being falsely used.
25-2177	Theft	While on an unrelated call, an EPD Officer stopped an in-progress shoplifting. The investigation revealed that the suspect had just stolen from the business and was in the process of trying to flee when the Officer stopped them. The suspect was issued a municipal summons, and the value of the merchandise was recovered.
25-2233	Motor Vehicle Crash	EPD responded to a two-vehicle crash. The driver who violated the Model Traffic Code was issued a municipal summons for a traffic offense.
25-2306	Mental Health Hold	Several EPD Officers responded to a suicidal subject. Upon contacting the subject, it was determined they needed further evaluation. EPD contacted the Mobile Crisis Clinician to respond and evaluate the subject. After the evaluation, it was determined the subject was an imminent harm to themselves. They were placed in protective custody and taken to a mental health facility.

Historical Data:









425 S. Main St., P.O. Box 1527, Elizabeth, Colorado, 80107
Phone: 303-646-4664 Fax: 303-646-0616
Email: Police@townofelizabeth.org
www.townofelizabeth.org

TOWN OF ELIZABETH

MIKE DEVOL, PUBLIC WORKS DIRECTOR

To: Honorable Mayor, Mayor Pro-Tem and Town Board of Trustees
From: Mike DeVol, Public Works Director
Date: April 8, 2025
Subject: Public Works Monitoring Report

Town Street Paving Improvements Project:

1. Ongoing projects for the year 2025.

Town Main St. Decorations:

1. Will remain down for Mainstreet Streetscape project.

Town Wells, Tanks, and Effluent:

1. Denver D-1 Well is slated to be brushed and cleaned in the first two weeks of April.

Town Water Line (Non) Emergency Repair:

1. No Frozen Services during this reporting period.

Town Hall/Repairs/Landscaping Plan:

1. Nothing to Report

Town Walkway Repairs:

1. PW will be completing a sidewalk repair at E Elm St. and S Elbert St. using a Foam Jacking technique as a demonstration for longevity and cost effectiveness. The contractor is local and lives in Hillside Village.
2. PW has noticed two areas of concern for sidewalks that are heaving due to freeze and thaw conditions consistent for our area.

Town Street Maintenance/Striping Projects:

1. Striping will take place in the spring/summer of 2025 as needed.

Town Snow Plowing and Street Sweeping: Snow Season is Upon Us!

1. The Town Newsletter included the Town Plowing Code and Snow Route “No Parking” information.
2. PW has been plowing and applying salt/sand as needed. Clean up continues as storms subside.
3. PW continues educating property owners of their responsibilities and the Town’s actions during and after storms.
4. Public Works has begun sweeping of the streets and removing ice and snow as needed.

Town New Wells at Ritoro/Gold Creek Valley:

1. The new Wells Building is complete, and PW is planning an Open House Grand Opening in the spring of 2025.
2. Landscaping will take place in 2025, and PW will work with the 4 adjacent property owners for their approval of the landscape sketch to ensure that we conceal as much of the building as possible from their views.

Town Trail Project:

1. Town trails are cleared of snow as soon as the storm has stopped for use by the public.
2. PW has seen increased parking along Highway 86, Harvest Bible Church, and Running Creek Elementary school for trail enthusiasts.

Gold Creek Lift Station Improvements:

1. Completion of project has begun warranty period and filing completion with CDPHE Permitting.

Eligibility Surveys for Water and Wastewater Capital:

1. Surveys have been completed for 2024/2025 and accepted by the Colorado Department of Public Health and Environment (CDPHE). The eligibility surveys allow the town to be in line for any funding that may be available for future projects.

Gold Creek Wastewater Treatment Plant (GCWWTP):

1. No Changes as of this report.
2. Just a quick review of the Wastewater Plant: It is designed to treat 500,000 (.5MGD) gallons of raw sewage per day. Train 1 and Train 2 share that equally. The plant is currently treating 170,000 (.17MGD) average gallons per day while maintaining our minimal 85% reduction of constituent removals (currently 93%-99% removal) that are set by CDPHE in our permit. When the time comes that the wastewater plant is treating at 80% (400,000 gallons or .4MGD) of the total capacity, the town must start to show plant expansion plans to CDPHE. The current WTP upgrade budget is currently in good shape for funding. Reference of constituent removal: Please see attached Laboratory Sampling Analysis for actual numbers. Note that all numbers/results are shown as milligrams per liter (mg/L). This equates from metric to standard as parts per million (ppm). Plant is 100% biological/bacteria (bugs). NO CHEMICALS.

Bio-Chemical Oxygen Demand (BOD) minimum 85% removal (current average is 99% removal).
Total Suspended Solids (TTS) minimum 85% removal (current is 93% to 99% removal).
Nitrogen/Ammonia (NH3) minimum 85% removal (current is 99% removal).
E. Coli maximum 115 parts per million (ppm) (current <1 ppm). U.V. light neuters bacterial for no reproduction and does not kill the bacterial which in turn means no chemicals and cost savings to the Town residents.

Town Clean Up Day/Paint Round Up/Arbor Day:

1. Town Clean Up Day is rescheduled to May 10th at the Public Works yard located at 303 Washington St. from 8:00 AM to 12:00 PM due to the conflicting Meat-In event held at the Elizabeth Locker Plant.

Town Public Works News:

1. Public Works has one Water/Wastewater position open for 2025.
2. Public Works has one Streets/Parks position open for 2025.

Friday Night Markets:

1. PW is gearing up for the 2025 season.

Town Parks and Right of Way:

1. Nothing to report.

Upcoming Projects:

1. PW has completed 2024 the CDPHE Annual Reporting.
2. Annual Biosolids has been completed for 2024 and sent to CDPHE.
3. Regulation 85 Nutrient Monitoring accepted by CDPHE.
4. PW has completed a round a PFAFs (radiation/radiological). Results have been reported to CDPHE.
5. Water Augmentation and Recording.
6. Water Lead and Copper sampling.
7. Water Constituents Metals Sampling.
8. Annual DMR (Daily Monitoring Report) Gold Creek Wastewater Plant.
9. Tree City USA Application/Accepted and approved by Tree City USA.
10. Trail DOLA findings and inspections/addition of willow cutting planted.
11. PW has completed Highway User Tax Fund (HUTF) reporting and data processing.
12. PW is completing lead and copper testing per CDPHE guidelines for 2024.
13. Flushing of the entire town's water supply system is completed every 6 months.

Mike DeVol
Town of Elizabeth
Public Works Director
GCWWTP Operations
303-913-6453
mdevol@townofelizabeth.org

April 8, 2025

The Clerk's / Finance report reflects updates provided by individual Staff members.

Hannah

- Allison and I have been asked to attend user groups hosted by InvoiceCloud in the Denver area to help other municipalities better understand their program. We have also had phone meetings with other cities/towns to answer questions from a user to user perspective.
- With the most recent pay estimates for the Main Street Streetscape project from contractors, Community Development and I are able to complete all the reporting for the grants funds and close them out!

Allison

- Dianna and I have updated the business license renewal letters to include some questions and notations from Planning/Community Development. This should help us track changes within Town businesses more accurately.
- I continue to take accessibility trainings. The modules are getting longer, more in-depth, and more useful as I go.
- I have completed the vetting process, and the Town is now eligible for donations through Blackbaud for this year. This organization is linked with Black Hills Energy. It is how we received the donation for the Mayor's Tree Lighting from Tall Grass last year, which was used to help supply the ornament kits for the Elves' tent.

Harmony

- The new website is slated to launch on Friday, April 11th. During this process, the Town website may periodically be unavailable.
- I am happy to have received my GARA certification through the National Association of Government Archives and Records Administrators (NAGARA.) This achievement exhibits my ongoing commitment to managing and caring for the Town Records to the best of my ability.
- I will be out of the office the week of April 14th attending the Empower Laserfiche conference in Las Vegas. I was able to obtain a scholarship once again through our Laserfiche provider, MCCi, to offset some of the expenses. I come back from this conference with lots of information and new ideas for utilizing our program to its fullest capabilities. I appreciate the Board's ongoing support of training for its staff.

Michelle

- Spring is here and summer is coming up on us (which I personally am very happy about), and you may notice Staff in and out over the next few months enjoying time away.
- Staff will be attending training, conferences, and Clerk's institute.
- The screen for the movie night has been reserved. The past couple of years we have had special sugar cookies made to hand out at the event. Would the Board like to do this again?
- The date for the Town's Birthday Bash / Movie night has been changed to Friday September 19th. The screen we requested was not available for the 20th. This should still be a fun family night event.
- The April Court Docket was set with 48 arraignments, 1 continuance (warrant served), 8 reviews, 1 show cause, and 3 trials. This number does not include traffic tickets that were paid prior to the April court date.
- I am working on learning Canva, a user friendly online graphic design platform. I am hoping I can create a more professional-looking newsletter as well as future flyers.