PUBLIC NOTICE

Notice is Hereby Given that the Tooele City Council will meet in a Business Meeting on Wednesday, February 1, 2023, at the hour of 7:00 p.m. The meeting will be held at the Tooele City Hall Council Chambers, located at 90 North Main Street, Tooele, Utah.

*We encourage you to join the City Council meeting electronically by visiting the **Tooele City YouTube Channel**, at **https://www.youtube.com/@tooelecity** or by going to YouTube.com and searching "Tooele City Channel". If you are attending electronically and would like to submit a comment for the public comment period or for a public hearing item, please email cmpubliccomment@tooelecity.org anytime up until the start of the meeting. Emails will be read at the designated points in the meeting.*

AGENDA

1. **Pledge of Allegiance**

2. **Roll Call**

3. **Public Comment Period**

4. **Public Hearing & Motion on Ordinance 2023-03** An Ordinance of Tooele City Amending Tooele City Code Chapter 7-16 Table 1: Table of Uses to Remove the "Group Home" Use
   Presented by Roger Baker, City Attorney

5. **Public Hearing & Motion on Ordinance 2023-04** An Ordinance of the Tooele City Council Making Technical Revisions to the Amended (2022) Moderate Income Housing Element of the Tooele City General Plan
   Presented by Jim Bolser, Community Development Director

6. **Public Hearing & Motion on Ordinance 2023-07** An Ordinance of Tooele City Reassigning the Land Use Designation for Approximately 97 Acres of Property Located at Approximately 1825 South 11th Avenue from Regional Commercial (RC) to Industrial (I)
   Presented by Jim Bolser, Community Development Director

7. **Resolution 2023-08** A Resolution of the Tooele City Council Approving a Financial Consulting Services Agreement with Lewis Young Robertson & Burningham
   Presented by Shannon Wimmer, Finance Director

8. **Resolution 2023-09** A Resolution of the Tooele City Council Approving and Adopting the Water System Amendment to the APWA Manual of Standard Specifications and Plans (2017 Edition) for Installation of Water Transmission and Distribution Lines
   Presented by Paul Hansen, City Engineer

9. **Resolution 2023-10** A Resolution of the Tooele City Council Amending the Tooele City Fee Schedule Regarding Animal Shelter Fees
   Presented by Darwin Cook, Parks & Recreation Director

10. **Resolution 2023-11** A Resolution of the Tooele City Council Reappointing Amanda Graf to the Administrative Control Board of the North Tooele City Special Service District
    Presented by Justin Brady, City Council Chair

11. **Invoices & Purchase Orders**
    Presented by Michelle Pitt, City Recorder

12. **Minutes**

13. **Adjourn**

_____
Michelle Y. Pitt, Tooele City Recorder

Pursuant to the Americans with Disabilities Act, Individuals Needing Special Accommodations Should Notify Michelle Y. Pitt, Tooele City Recorder, at 435-843-2111 or michellep@tooelecity.org, Prior to the Meeting.

TOOELE CITY CORPORATION

ORDINANCE 2023-03

AN ORDINANCE OF TOOELE CITY AMENDING TOOELE CITY CODE CHAPTER 7-16 TABLE 1: TABLES OF USES TO REMOVE THE "GROUP HOME" USE.

WHEREAS, on January 4, 2023, the City Council approved Ordinance 2023-01 enacting a temporary land use regulation removing and repealing the "group home" use from Tooele City Code Chapter 7-16 Table 1: Table of Uses (Ordinance 2023-01 is attached hereto and incorporated herein as Exhibit A); and,

WHEREAS, Utah Constitution, Article XI, Section 5 directly confers upon Utah's charter cities, including Tooele City, "the authority to exercise all powers relating to municipal affairs, and to adopt and enforce within its limits, local police, sanitary and similar regulations not in conflict with the general law"; and,

WHEREAS, Utah Code Section 10-8-84 enables Tooele City to "pass all ordinances and rules, and make all regulations . . . as are necessary and proper to provide for the safety and preserve the health, and promote the prosperity, improve the morals, peace and good order, comfort, and convenience of the city and its inhabitants, and for the protection of property in the city"; and,

WHEREAS, on December 21, 2022, the City Council approved Ordinance 2022-40, amending TCC Chapter 7-15 regarding residential facilities for persons with a disability, also commonly known as group homes, and allowing such dwellings as permitted uses "in any zoning district where a dwelling is allowed as a permitted or conditional use, subject to the same development regulations as applied to dwellings" (i.e., conditional use permit); and,

WHEREAS, the use "Group Home" remains in TCC Chapter 7-16 Table 1: Tables of Uses listing the allowed uses in the mixed-use, commercial, and industrial zoning districts, and it should be repealed and removed due to the enactment of Chapter 7-15; and,

WHEREAS, while accessory dwellings are allowed in the commercial and industrial zoning districts, dwellings are otherwise prohibited, and therefore residential facilities for persons with a disability would also be prohibited; and,

WHEREAS, the vestigial presence of the "Group Home" use conflicts with the new TCC Chapter 7-15 and with the other dwelling use designations in Table 1: Table of Uses, and should be repealed and removed; and,

WHEREAS, the term "Group Home" is not defined in TCC Section 7-1-5 (Definitions), in part because the "Group Home" use has been intended to be repealed and removed from Table 1: Table of Uses due to the enactment of Chapter 7-15; and,

WHEREAS, leaving the “Group Home” use in Table 1: Table of Uses would allow group home dwellings as conditional uses in the General Commercial (GC) zoning district, inconsistent with and contrary to the general dwelling prohibition in the GC zone, to Chapter 7-15, and to the legislative policy intentions and enactments of the Tooele City Council; and,

WHEREAS, as a matter of long-standing legislative policy, the City Council has determined that dwellings, with the exception of some accessory dwelling units (ADUs), are contrary to the health, safety, and general welfare of the public when located in commercial and industrial zoning districts, and allowing new group home dwellings in these districts, even by conditional use, would be contrary to the health, safety, and general welfare of the public; and,

WHEREAS, the law of conditional uses requires land use authorities (in Tooele City’s case, the Planning Commission) to approve conditional use permits if reasonable conditions can be imposed to mitigate (not eliminate) the anticipated adverse impacts of the conditional use, whereas the City Council has already enacted legislative policy prohibiting the approval of residential facilities for persons with a disability except in residential zoning districts; and,

WHEREAS, the City Administration recommends that the City Code be amended to repeal and remove the “Group Home” use from Table 1: Table Uses in TCC Chapter 7-16, and that no new group home dwellings be permitted in the commercial and industrial zoning districts of Tooele City, excepting in accessory dwellings as already provided in Table 1: Table of Uses; and,

WHEREAS, on January 25, 2023, the Planning Commission convened a duly-noticed public hearing, accepted public comment, and voted to provide its recommendation to the City Council; and,

WHEREAS, on February 1, 2023, the City Council convened a public hearing and accepted public comment:

NOW, THEREFORE, BE IT ORDAINED BY THE TOOELE CITY COUNCIL that TCC Chapter 7-16 Table 1: Table of Uses is hereby amended to remove the “group home” use.

This Ordinance is necessary for the immediate preservation of the peace, health, safety, and welfare of Tooele City and its residents and businesses and shall become effective upon passage, without further publication, by authority of the Tooele City Charter.

IN WITNESS WHEREOF, this Ordinance is approved by the Tooele City Council this ____ day of _____, 2023.

TOOELE CITY COUNCIL

(For) (Against)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

ABSTAINING: _____

MAYOR OF TOOELE CITY

(Approved) (Disapproved)

_____ _____

(If the mayor approves this ordinance, the City Council passes this ordinance with the Mayor's approval. If the Mayor disapproves this ordinance, the City Council passes the ordinance over the Mayor's disapproval by a super-majority vote (at least 4). If the Mayor neither approves nor disapproves of this ordinance by signature, this ordinance becomes effective without the Mayor's approval or disapproval. UCA 10-3-704(11).)

ATTEST:

_____
Michelle Y. Pitt, City Recorder

S E A L

Approved as to Form: _____
Roger Evans Baker, City Attorney

Exhibit A

Ordinance 2023-01:
Temporary Land Use Regulation

TOOELE CITY CORPORATION

ORDINANCE 2023-01

AN ORDINANCE OF TOOELE CITY ENACTING A TEMPORARY LAND USE REGULATION AMENDING TOOELE CITY CODE CHAPTER 7-16 TABLE 1: TABLES OF USES TO REMOVE THE "GROUP HOME" USE.

WHEREAS, Utah Constitution, Article XI, Section 5 directly confers upon Utah's charter cities, including Tooele City, "the authority to exercise all powers relating to municipal affairs, and to adopt and enforce within its limits, local police, sanitary and similar regulations not in conflict with the general law"; and,

WHEREAS, Utah Code Section 10-8-84 enables Tooele City to "pass all ordinances and rules, and make all regulations . . . as are necessary and proper to provide for the safety and preserve the health, and promote the prosperity, improve the morals, peace and good order, comfort, and convenience of the city and its inhabitants, and for the protection of property in the city"; and,

WHEREAS, Utah Code Section 10-9a-504 enables Tooele City to "enact an ordinance establishing a temporary land use regulation," without prior Planning Commission recommendation or public hearings, upon the City Council finding a "compelling, countervailing public interest" in doing so, with "temporary" meaning not to exceed six months; and,

WHEREAS, the Utah Supreme Court case of *Western Land Equities v. Logan City* (1980) identified and established a common law principle called the Pending Ordinance Rule, which provides that a land use or development "application for a permitted use cannot be refused **unless a prohibiting ordinance is pending at the time of application**"; further, "if a city…has initiated proceedings to amend its zoning ordinances, a landowner who subsequently makes application for a permit is not entitled to rely on the original zoning designation" (emphasis added); and,

WHEREAS, like UCA Section 10-9a-504, the Pending Ordinance Rule requires a legislative finding of a compelling, countervailing public interest; and,

WHERREAS, *Western Land Equities* also established Utah's vested development rights rule that, except for the Pending Ordinance Rule, a land use application establishes the date on which development rights vest, as well as the set of land use ordinances applicable to the approved land use; and,

WHEREAS, *Western Land Equities* recognizes the unfairness and the threat to the public interest where the announcement of a future zoning ordinance change would trigger a race to file and vest land use applications prior to the municipality's ability to follow the established lengthy process for amending land use ordinances, thus subverting and undermining the very public policies supporting the need for the zoning ordinance amendment; and,

WHEREAS, on December 21, 2022, the City Council approved Ordinance 2022-40, amending TCC Chapter 7-15 regarding residential facilities for persons with a disability, also commonly known as group homes, and allowing such dwellings as permitted uses “in any zoning district where a dwelling is allowed as a permitted or conditional use, subject to the same development regulations as applied to dwellings” (i.e., conditional use permit); and,

WHEREAS, the use “Group Home” remains in TCC Chapter 7-16 Table 1: Tables of Uses listing the allowed uses in the mixed-use, commercial, and industrial zoning districts, and it should be repealed and removed due to the enactment of Chapter 7-15; and,

WHEREAS, while accessory dwellings are allowed in the commercial and industrial zoning districts, dwellings are otherwise prohibited, and therefore residential facilities for persons with a disability would also be prohibited; and,

WHEREAS, the vestigial presence of the “Group Home” use conflicts with the new TCC Chapter 7-15 and with the other dwelling use designations in Table 1: Table of Uses, and should be repealed and removed; and,

WHEREAS, the term “Group Home” is not defined in TCC Section 7-1-5 (Definitions), in part because the “Group Home” use has been intended to be repealed and removed from Table 1: Table of Uses due to the enactment of Chapter 7-15; and,

WHEREAS, leaving the “Group Home” use in Table 1: Table of Uses would allow group home dwellings as conditional uses in the General Commercial (GC) zoning district, inconsistent with and contrary to the general dwelling prohibition in the GC zone, to Chapter 7-15, and to the legislative policy intentions and enactments of the Tooele City Council; and,

WHEREAS, as a matter of long-standing legislative policy, the City Council has determined that dwellings, with the exception of some accessory dwelling units (ADUs), are contrary to the health, safety, and general welfare of the public when located in commercial and industrial zoning districts, and allowing new group home dwellings in these districts, even by conditional use, would be contrary to the health, safety, and general welfare of the public; and,

WHEREAS, the law of conditional uses requires land use authorities (in Tooele City’s case, the Planning Commission) to approve conditional use permits if reasonable conditions can be imposed to mitigate (not eliminate) the anticipated adverse impacts of the conditional use, whereas the City Council has already enacted legislative policy prohibiting the approval of residential facilities for persons with a disability except in residential zoning districts; and,

WHEREAS, the City Administration recommends that the City Code be amended immediately, or as soon as legally possible, to repeal and remove the “Group Home” use from Table 1: Table Uses in TCC Chapter 7-16, and that no new group home dwellings be permitted in the commercial and industrial zoning districts of Tooele City, excepting in accessory dwellings as already provided in Table 1: Table of Uses; and,

WHEREAS, following approval of this Ordinance and the temporary land use regulation proposed herein, the City Council will have a maximum of six months to comply with the statutory land use regulation amendment process to remove the “Group Home” use from Table 1: Table of Uses, including public hearings before the Planning Commission and City Council:

NOW, THEREFORE, BE IT ORDAINED BY THE TOOELE CITY COUNCIL as follows:

1. This Ordinance 2023-01 is hereby approved; and,

2. The temporary land use regulation enumerated and described in this Ordinance 2023-01 is hereby temporarily enacted, and “Group Home” use is hereby temporarily repealed and removed from TCC Chapter 7-16 Table 1:Tables of Uses; and,

3. This Ordinance 2023-01 and the temporary land use regulation are effectively immediately, as authorized by the Tooele City Charter; and,

4. For the duration of this temporary land use regulation, no new group home dwellings shall be permitted, vested, or otherwise approved or allowed in the commercial and industrial zoning districts of Tooele City, excepting in accessory dwelling units as already provided in Table 1: Table of Uses; and,

5. This Ordinance 2023-01 shall be in effect until a land use regulation is enacted following the regular Planning Commission and City Council public processes required by the Utah Code and the Tooele City Code, but in no event for longer than six months; and,

6. The City Administration, including planning staff, are hereby instructed to prepare draft City Code language on the subject of this Ordinance 2023-01 for consideration by the Planning Commission and City Council; and,

7. Should a new land use regulation governing the “Group Home” use not be enacted within the six-month period referenced above, the existing City Code provisions will govern; and,

8. This Ordinance 2023-01 and its temporary zoning regulation shall have binding application upon all land use applications submitted after the date on which proceedings formally began to amend the City Code regarding the “Group Home” use, that date being December 29, 2022; and,

9. As required by Utah Code Section 10-9a-504 and *Western Land Equities*, the City Council hereby makes a finding of compelling, countervailing public interest in disallowing the “Group Home” use in the commercial and industrial zoning districts of Tooele City; and,

10. Similarly, the City Council hereby finds that in failing to approve this Ordinance 2023-01 and enact this temporary land use ordinance, group home dwellings could be vested and constructed contrary to the legislative policies otherwise enacted in by the Tooele City Council.

This Ordinance is necessary for the immediate preservation of the peace, health, safety, and welfare of Tooele City and its residents and businesses and shall become effective upon passage, without further publication, by authority of the Tooele City Charter.

IN WITNESS WHEREOF, this Ordinance is approved by the Tooele City Council this ____ day of _____, 2023.

TOOELE CITY COUNCIL

(For) (Against)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

ABSTAINING: _____

MAYOR OF TOOELE CITY

(Approved) (Disapproved)

_____ _____

(If the mayor approves this ordinance, the City Council passes this ordinance with the Mayor's approval. If the Mayor disapproves this ordinance, the City Council passes the ordinance over the Mayor's disapproval by a super-majority vote (at least 4). If the Mayor neither approves nor disapproves of this ordinance by signature, this ordinance becomes effective without the Mayor's approval or disapproval. UCA 10-3-704(11).)

ATTEST:

_____
Michelle Y. Pitt, City Recorder

S E A L

Approved as to Form: _____
Roger Evans Baker, City Attorney

MEMORANDUM

To: Planning Commission
Tooele City Council

From: Jim Bolser, *AICP*, Director

Date: January 19, 2023

Re: Moderate Income Housing Plan Revisions

Subject:

During the 2022 General Legislative Session, the Utah State Legislature adopted House Bill 462 requiring cities throughout the state to make amendments to their Moderate Income Housing Plans, adopt their revised plan, and submit those revised plans to the state for review prior to October 1, 2022. On September 21, 2022, the City Council unanimously approved Ordinance 2022-37 adopted the revised Moderate Income Housing Plan. That revised plan was then submitted to the state prior to the deadline. On November 18, 2022, the City received a Notice of Noncompliance from the state Department of Workforce Services (DWS) indicated that the revised plan adopted by the City Council did not meet the requirements of the state established by HB 462. It has become understood that the receipt of this Notice of Noncompliance was rather prevalent around the state. Although the City's position has been that the revised plan adopted by the City in September 2022 did meet the criteria of the state law, the City worked closely with the state DWS to make revisions to the plan that will make the plan satisfactory prior to the February 16, 2023 deadline to do so. Through that effort, an initial review by the state DWS of the further revised plan has been found to be satisfactory and is now simply in need of re-adoption and formal submission back to the state. The only parts of the plan that have been revised since the September 2022 plan reviewed by the Planning Commission and adopted by the City Council are the Strategies for Implementing the Construction of Moderate Income Housing section. That section begins on page 26 of the document, attached.

As always, should you have any questions or concerns please feel free to contact me at any time.

TOOELE CITY CORPORATION

ORDINANCE 2023-04

AN ORDINANCE OF THE TOOELE CITY COUNCIL MAKING TECHNICAL REVISIONS TO THE AMENDED (2022) MODERATE INCOME HOUSING ELEMENT OF THE TOOELE CITY GENERAL PLAN.

WHEREAS, Utah Code § 10-9a-401, *et seq.*, requires and provides for the adoption of a "comprehensive, long-range plan" (hereinafter the "General Plan") by each Utah city and town, which General Plan contemplates and provides direction for (a) "present and future needs of the community" and (b) "growth and development of all or any part of the land within the municipality"; and,

WHEREAS, the Tooele City General Plan includes various elements, including water, sewer, transportation, moderate income housing, and land use. The Tooele City Council adopted the Tooele City General Plan, after duly-noticed public hearings, by Ordinance 1998-39 as a Tooele City ordinance, and which set forth appropriate Use Designations for land in Tooele City (e.g., residential, commercial, industrial); and,

WHEREAS, Utah Code Sections 10-9a-401(3) and 10-9a-403(2) require the General Plan of each Utah municipality to include a plan element that provides a realistic opportunity to meet the need for additional moderate income housing; and,

WHEREAS, in preparing the Moderate Income Housing element of the General Plan, Utah Code Section 10-9a-403(2)(b) requires the City to do the following:

- consider the Legislature's determination that municipalities shall facilitate a reasonable opportunity for a variety of housing, including moderate income housing, to meet the needs of people desiring to live in the community, and to allow persons with moderate incomes to benefit from and fully participate in all aspects of neighborhood and community life; and,
- include an analysis of why the means and techniques recommended in the Moderate Income Housing element provide that realistic opportunity within the next five years; and,
- consider means and techniques, such as:
    - rezoning for densities necessary to assure the production of moderate income housing;
    - facilitate and encourage the rehabilitation of existing uninhabitable housing stock into moderate income housing;
    - consider general fund subsidies to waive constructed related fees;
    - consider utilization of state or federal funds or tax incentives to promote the construction of moderate income housing;
    - consider programs offered by the Utah Housing Corporation;
    - consider Department of Workforce Services affordable housing programs; and,
- identify agriculture protection areas.

WHEREAS, Tooele City has actively considered and enacted means and techniques to allow a variety of housing opportunities for Tooele City residents, including moderate income housing, including by doing the following:

- enacting incentives for in-fill development, including less restrictive land use regulations (Ordinance 2015-25);
- creating several areas of HDR zoning that allow residential densities of between 8 and 20 units per acre;
- approving several new apartment and attached single-family developments;

- enacting multi-family design standards to ensure that high-density housing developments include good site and building design for the benefit of residents, which standards recognize the fact that high density requires good design to be successful (Ordinance 2005-05);
- amending the MU-B (Mixed Use-Broadway) zoning district regulations to allow higher density residential developments with less restrictive land use regulations (Ordinance 2018-13);
- enacting a point-based for single-family design standards intended to improve building and site design without significantly increasing costs (Ordinance 2006-22);
- allowing for residential facilities for persons with a disability (Ordinance 2012-17);
- allowing for residential facilities for elderly persons (Ordinance 2012-17); and,
- allowing for housing in the MU-G (Mixed Use-General) zoning district; and,
- allowing for higher density residential uses beyond that previously allowable within Tooele City (Ordinance 2019-08); and,
- allowing for the ability to construct and utilize accessory dwelling units (Ordinance 2019-13) and amending the ADU regulation consistent with new state law requirements (Ordinance 2021-08);
- reducing minimum lot frontage requirements in In-Fill Geographic Areas A and B, and reducing other regulatory requirements and costs (Ordinance 2019-24).

WHEREAS, the Utah State Legislature adopted Utah State House Bill 462 during the 2022 General Legislative Session which, among other things, requires a higher level of accountability for communities regarding moderate income housing plans including plans for implementation of the moderate income housing strategies established by the State Legislature and selected by the City; and,

WHEREAS, the Moderate Income Housing Element prepared and adopted by Tooele City identifies at least nine strategies already in place for encouraging and maintaining moderate income housing units within the community, fully complying with and exceeding the requirements of House Bill 462 (only three are required by state law); and,

WHEREAS, the Moderate Income Housing Element prepared and adopted by Tooele City includes the implementation plan for each of the nine strategies Tooele City is currently executing and complies with the implementation requirements of House Bill 462; and,

WHEREAS, Utah State House Bill 462 requires the adoption of and reporting from its regulations into the Moderate Income Housing plans for communities by October 1, 2022; and,

WHEREAS, the Tooele City Council unanimously adopted a comprehensive review and amendment of the Moderate Income Housing Element to the General Plan on December 5, 2018 as Ordinance 2018-25; and,

WHEREAS, the City proposed and submitted amendments to the Moderate Income Housing Element to reflect compliance with the tenets and requirements of Utah State House Bill 462 (2022) prior to the October 1, 2022 deadline; and,

WHEREAS, on November 18, 2022, Tooele City received a Notice of Noncompliance from the Utah Department of Workforce Services, attached as **Exhibit C**; and,

WHEREAS, the Notice of Noncompliance identified two purported insufficiencies with Tooele City's submitted Moderate Income Housing Plan; and,

WHEREAS, one insufficiency that was identified was the City's plan document not utilizing exact language from Utah State Code Section 10-9a-403 for the strategies used to encourage moderate income housing within the community; and,

WHEREAS, City Staff-level review of the identified strategies in the Plan shows that eight of the nine strategies Tooele City identified, in excess of the state code requirement of three, contain exact language from Utah State Code Section 10-9a-403, and the ninth differed by a single word; and,

WHEREAS, the second insufficiency was identified as not identifying actionable and specific benchmarks or measures for the implementation plans for each moderate income housing strategy adopted by the City; and,

WHEREAS, City Staff-level review of the identified strategies in the Plan shows that most, if not all, of the identified strategies in the Tooele City Plan discuss an already completed one-time task of establishing and implementing the strategy as well as the City's actual ongoing implementation of those strategies; and,

WHEREAS, as a means to remain positive partners with the State of Utah and not place certain and specific state funding sources in potential jeopardy (e.g., Road "C" road maintenance funds), Tooele City has made non-substantive revisions to the adopted Moderate Income Housing Plan as requested by the Utah State Department of Workforce Services, including to correct the single-word discrepancy and to identify monitoring metrics for each strategy; and,

WHEREAS, by email dated January 3, 3023, the State of Utah indicated its acceptance of the City's proposed revisions to the Plan (a copy of email attached as **Exhibit D**); and; and,

WHEREAS, the Moderate Income Housing Element reflects the legislative policy findings of Tooele City's elected officials regarding the appropriate range, placement, and configuration of housing within the City, including moderate income housing and policy strategies for achieving the same, which findings are based in part upon the recommendations of City staff, public comments, and other relevant considerations; and,

WHEREAS, the Moderate Income Housing Element and the policies contained therein may be amended from time to time by the Tooele City legislative body to reflect the changing policies and values of the elected officials and the public; and,

WHEREAS, Utah Code § 10-9a-403 and § 10-9a-404 provide for the municipal legislature to consider General Plan amendment recommendations given by the Planning Commission, and to approve, revise, or reject proposed General Plan amendments; and,

WHEREAS, the City has proposed amendments to the adopted Moderate Income Housing Element, as shown in the attached **Exhibit A**; and,

WHEREAS, on September 14, 2022, the Planning Commission convened a duly noticed public hearing, accepted written and verbal comment, and voted to forward its recommendation regarding the amended Moderate Income Housing Element to the City Council (see Planning Commission minutes attached as **Exhibit B**); and,

WHEREAS, on September 21, 2022, the City Council convened a duly-advertised public hearing regarding the amended Moderate Income Housing Element; and,

WHEREAS, the current proposed revisions to the adopted Moderate Income Housing Plan, that are being readopted as requested by the Utah State Department of Workforce Services, are non-substantive in nature, do not alter or address the Plan's policies or implementation strategies, the public hearing process outlined in the Utah State Code that was followed for adoption of the Plan for submission prior to the October 1, 2022 deadline was adequate and sufficient for adoption of a Moderate Income Housing Plan, the revisions adopted herein do not affect any data or details of public interest from the Plan, adequate public input has been sought and received on the contents of the Plan, and therefore the public hearing process is not required to be repeated; and

WHEREAS, regardless of necessity, Tooele City constantly strives to establish and maintain an open and public process, particularly with the adoption of its policies and regulations, and therefore conducted a new series of review and public hearings for the re-adoption of the Moderate Income Housing Plan as part of the City's General Plan to reflect the revisions requested by the State of Utah Department of Workforce Services; and,

WHEREAS, on January 25, 2023, the Planning Commission convened a duly noticed public hearing, accepted written and verbal comment, and voted to forward its recommendation regarding the amended Moderate Income Housing Element to the City Council (see Planning Commission minutes attached as **Exhibit B**); and,

WHEREAS, on February 1, 2023, the City Council convened a duly-advertised public hearing regarding the amended Moderate Income Housing Element:

NOW, THEREFORE, BE IT ORDAINED BY THE TOOELE CITY COUNCIL that:

1. this Ordinance and the Moderate Income Housing element amendments proposed therein are in the best interest of the City in that they will facilitate a reasonable opportunity for a variety of housing to meet the needs of people desiring to live in the community and allow persons with moderate incomes to benefit from and fully participate in all aspects of neighborhood and community life in Tooele City and are consistent with the General Plan; and,
2. this Ordinance and the Moderate Income Housing element amendments proposed therein are in the best interest of the City in that they fully comply with and exceed the requirements and objectives of Utah State House Bill 462 (2022) AND UCA 10-9a-403 for identifying and implementing strategies and methods through which moderate income housing is encouraged and maintained within the community; and,
3. the Moderate Income Housing Element of the General Plan is hereby amended and adopted as illustrated in **Exhibit A**, attached.

This Ordinance is necessary for the immediate preservation of the peace, health, safety, or welfare of Tooele City and shall become effective immediately upon passage, without further publication, by authority of the Tooele City Charter.

IN WITNESS WHEREOF, this Ordinance is passed by the Tooele City Council this ____ day of _____, 2022.

TOOELE CITY COUNCIL

(For) (Against)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

ABSTAINING: _____

MAYOR OF TOOELE CITY

(Approved) (Disapproved)

_____ _____

ATTEST:

_____
Michelle Pitt, City Recorder

S E A L

Approved as to Form:

_____
Roger Baker, City Attorney

EXHIBIT A

MODERATE INCOME HOUSING PLAN

MODERATE INCOME HOUSING PLAN
TOOELE CITY - 2022

PERPARED BY

TOOELE CITY COMMUNITY DEVELOPMENT DEPARTMENT

Table of Contents

INTRODUCTION

House Bill 295

Utah's affordable housing legislation (HB295) aspires toward a community's housing market meeting the homeownership desires of all moderate, low and extremely low income households. The legislation encourages a community to provide a "reasonable opportunity for a variety of affordable housing for moderate income households." The results of this housing needs analysis demonstrates that the Tooele City housing market satisfies the requirements of HB295. The City housing market has a substantial number of *homeownership* opportunities for moderate income households while affordable housing opportunities for low and extremely low income households, as shown by household data, tend to be limited.

City General Plan

Tooele City adopted a General Plan with a Land Use Element on December 16, 1998, which Land Use Element has been amended many times for individual areas or projects. A new General Plan was adopted in December 2020, with updated plan elements, including and updated Land Use Plan. The moderate housing plan fits into the City General Plan as one on the guiding elements of the total plan. Each department coordinates with the Community Development Director, Public Works Director and the City Engineer, to maintain, replace, and expand City services and utilities as needed. The Community Development Department uses the General Plan Elements to regulate and guide new developments to provide a balanced and diversified housing inventory.

Regional Planning

The three main population centers in Tooele Valley are separated by large tracts of land predominately rural in nature with single-family homes on large parcels. Grantsville City has expanded its corporate boundary eastward to Tooele City and Erda City incorporated in 2021 to occupy portions of those unincorporated tracts. No coordination has occurred with the other entities in the development of a moderate-income housing plan. Tooele County Housing Authority and Utah Housing Corporation have constructed 11 of their 16 low income or tax credit housing communities in Tooele City. Tooele City is the only urban area in the Tooele Valley with a sizable and diverse housing inventory that provides for all income levels, though Grantsville City is also experiencing rapid growth.

City Growth Pattern

Despite the housing construction recession of 2007, residential construction and home sales in Tooele City are strong and have grown significantly since 2018. Similar to the statewide trend, sales of existing homes are at record levels and the median sales price of a single family home has increase by 75% in 2017 to $210,000, and since then to over $350,000.

Tooele City has experienced rapid population growth over the last 3 decades (Chart 2). From 1980 to 1990, the City experienced a negative growth rate of -3.13% a possible result of local mine closures. From 1990 to 2010, the housing boom of the Wasatch Front Counties spilled over into the Tooele Valley with 62% and 40% growth rates respectively, in spite of a building recession from 2007 to 2011. From 2010 to the 2016 ACS Census shows a low 3.7% growth rate for Tooele City and market indicators predict a growth rate increase in the near future as new subdivisions and apartment projects are completed.

CHART 1

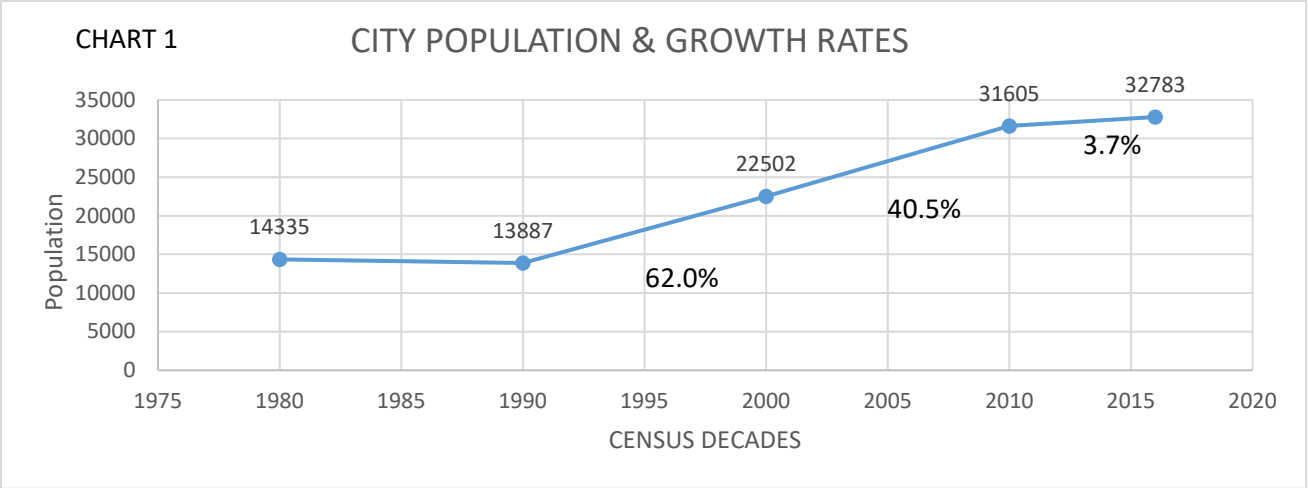
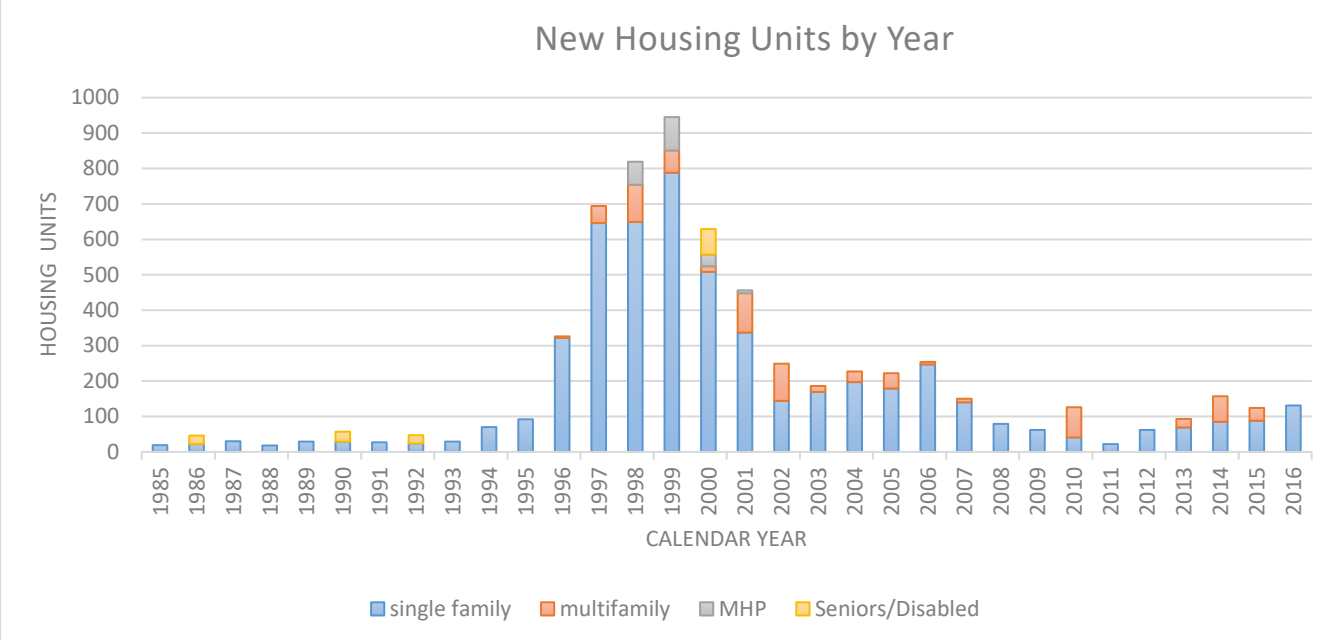


Chart 1 shows housing units constructed each year including new Mobile Home units in Mobile Home Parks, Elderly and Disabled housing units constructed in each year. Single-family detached homes are the preferred housing unit constructed in Tooele City over the last 30 years.

Tooele City, at 32,763 is the largest City in Tooele County comprising half of the County's 2016 population of 65,285. The high growth rate of Tooele City and Tooele County in the past 25 years has been the result of the Wasatch Front's soaring housing costs and diminished land availability. Tooele City's rapid growth started in 1994, peaked in 1999 with over 900 new housing units and then declined to a low of 186 housing units in 2003. The market attempted to recover until 2006 but declined again until 2011 with just 21 housing units. Since 2011, housing construction has increased to just over 130 housing units per year in 2016.

Chart 2



Source: Tooele City Building Department

Commuting Patterns

The majority of Tooele County's working age population commute for employment. Each workday more than 18,000 County residents leave the county for work in Salt Lake, Utah, Davis, Weber Counties. Tooele County has an out-commuting ratio of 3.11 which means a little over 3 residents leave Tooele County for employment each day, while one resident lives and works in Tooele County. The mean travel time of residents of Tooele City is 28.4 minutes which does not deter new home buyers from selecting Tooele City. (Source: U.S. Census ACS 2016)

New Housing Construction

Apartment communities (rent assisted and market rate) show a very low vacancy rate at or below four percent. Rent assisted communities are full with waiting lists and the four large market rate projects in the City have very low vacancy rates. Rents in Tooele have also increased. Two of the newest apartment communities report rents for 3 bedroom units at $950 to $1300 per month and the communities are 99% occupied. (Source: Tooele County affordable housing needs assessment - 2018)

Housing market indicators point to a housing shortage in Tooele City with increasing prices for both homeownership and renters and very low vacancy rates. Currently, most major housing market in Utah face similar conditions. Housing demand is outpacing the supply of new homes and apartments.

Tooele City residential construction for the last 5 years has been relatively slow compared to the housing market in the Wasatch Front counties that have recovered from the 2007 construction recession. Few new single-family housing subdivisions were completed in Tooele City between 2006 and 2016 and, as a result of this lack of new building lot inventory, Tooele City may experience a slowdown in single-family home construction in 2018.

Community Sentiment

Community sentiment towards growth was noted during public hearings for the adoption of the City General Plan with the Land Use element in December16, 1998. The public was not in favor of large high density housing projects and expressed concerns about traffic, noise and higher taxes. The consensus of the hearings was for a balanced mix of housing styles which would permit residents to select from single family homes, condominiums, townhomes, apartments, mobile homes, and senior housing. The lot sizes would range from 1 and 5 acre lots for larger homes, 10,000 to 14,000 square foot lots for large to moderate sized homes and 7,000 to 8,000 square foot lots for moderate to small homes. The mix would be predominately single family homes.

Procedures and Definitions

City Staff utilized the Utah Affordable Housing Forecast Tool (UAHFT) to analyze housing needs in the community, based upon the affordability of the existing housing stock. The UAHFT is a housing needs model that projects housing demand based upon current trends of housing affordability and projected population increases. Data for the model was obtained through the US Census, the US Department of Housing and Urban Development, the Utah State Governor's Office of Planning and Budget (GOPB) and other sources. Findings for the models are summarized throughout this study.

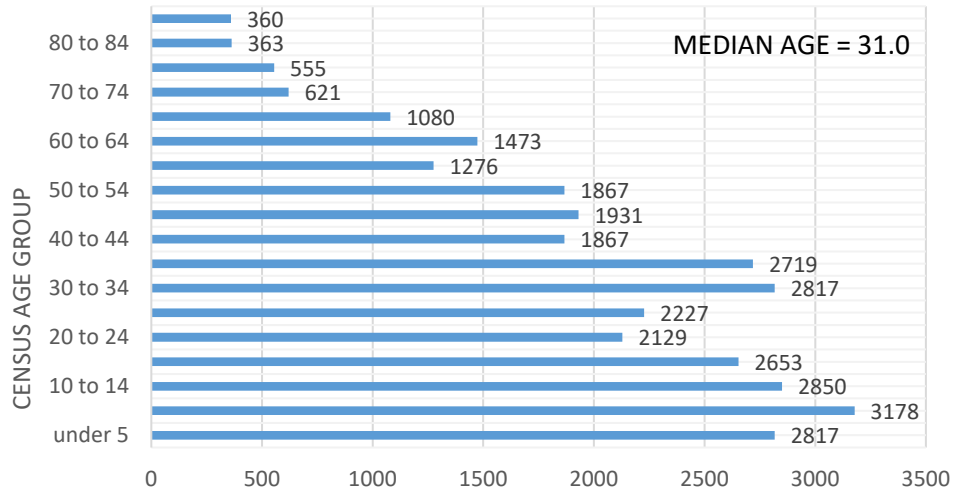
The following terms are commonly used throughout this document:

- Affordable Housing: Housing for which the occupant is paying no more than 30 percent of his or her income for gross housing cost, including utilities.
- Area Median Income (AMI): the Area Median Income is a statistic generated by the U.S. Department of Housing and Urban Development (HUD) for the purposes of determining the eligibility of applicants for certain federal housing programs.
- American Community Survey (ACS): the American Community Survey is an ongoing survey by the U.S. Census Bureau. It regularly gathers information previously contained only in the long form of the decennial census, such as ancestry, educational attainment, income, language proficiency, migration, disability, employment, and housing characteristics. Sent to approximately 295,000 addresses monthly, it is the largest household survey that the Census Bureau administers.
- Utah Affordable Housing Forecast Tool (UAHFT is a housing needs model that projects housing needs based upon currents trends of housing affordability and projected population increases.
- Low to Moderate Income Households (LMI): Low to Moderate Income Households refer to Households whose income does not exceed 115 percent of the median income for the area when adjusted for family size.
- U.S. Department of Housing and Urban Development (HUD): HUD is a cabinet department in the Executive branch of the United States federal government. HUD's Comprehensive Housing Affordability Strategy (CHAS) also makes available, projections of needs for affordable housing for the three moderate income target groups.
- Cost burdened households: Households spending more than 30 percent of their income for housing cost are considered to be cost burdened.

Population

Current Demographics

Chart 3 2016 POPULATION BY AGE GROUP



Source: US Census 2021-2016 ACS POPULATION PER AGE GROUP

Chart 3 shows Tooele City as having a median age of 31 years. The chart also shows that the young adult age group (20 to 29 years) drops which is probably a result of young adults leaving home for college and additional job opportunities in adjacent counties. The adult age group of 30 years and older reflects a significant number of families returning to or

migrating to Tooele City from the Wasatch Front counties. A survey of new residents signing up for City utilities, shows most new families have moved to Tooele City because of Tooele City's more affordable housing .

The US Census numbers show Tooele City Population increasing from the 2010 Census population of 31,605 to 32,783 in 2016 with a growth rate of 3.6%. In the same period, Tooele City issued building permits for 380 single family homes and 132 apartment units. The demographics of the 2016 Census estimates demonstrates that family migration (30 to 40 years old) to Tooele City is still occurring (Chart 3).

Households within Targeted Income Groups

An effective indicator of the need for affordable housing is the number of households experiencing housing cost burdens. This data is provided by HUD's Comprehensive Housing Affordability Strategy (CHAS). If a household is paying more than 30 percent of their income for housing and utilities, that household has a "housing cost burden." If a household is paying more than 50 percent of their income for housing, that household has a "severe housing cost burden."

Table 1

HUD CHAS 2015 HOME OWNER - RENTERS COST BURDEN 30% AND 50% TOOELE CITY			
Income by Cost Burden (Renters only)	Cost burden > 30%	Cost burden > 50%	Total
Household Income <= 30% HAMFI	505	460	640
Household Income >30% to <=50% HAMFI	305	55	475
Household Income >50% to <=80% HAMFI	240	0	550
Household Income >80% to <=100% HAMFI	0	0	240
Household Income >100% HAMFI	0	0	680
Total	1050	515	2585
Income by Cost Burden (Owners only)	Cost burden > 30%	Cost burden > 50%	Total
Household Income <= 30% HAMFI	195	130	245
Household Income >30% to <=50% HAMFI	325	155	620
Household Income >50% to <=80% HAMFI	690	95	1670
Household Income >80% to <=100% HAMFI	190	0	1145
Household Income >100% HAMFI	130	0	4030
Total	1530	380	7705
HUD CHAS 2015			

Table 2 shows the HUD CHAS Owners & Renter Data for Tooele City. CHAS estimates there are 2585 renters and 7705 owners. About 20 percent of homeowners have a housing cost burden of at least 30 Percent. The share of homeowners facing severe housing cost burdens drops to about 5 percent for 50% of income.

Table 2

Homeowners with Cost Burdens in Tooele City, 2015				
Total Owners	Owners with Cost burden >=30% of Income	Percent of Owners burden >=30% of Income	Owners with Cost burden >=50% of Income	Percent of Owners burden >=50% of Income
7,705	1530	19.9%	380	4.9%
Source: HUD CHAS				

Renters with Cost Burdens in Tooele City, 2015				
Total Renters	Renters with Cost Burden >=30% of Income	Percent of Renters Burden >=30% of Income	Renters with Cost Burden >=50% of Income	Percent of Renters Burden >=50% of Income
2,585	1,050	40.6%	515	19.9%
Source: HUD CHAS				

In Tooele City, 40.6 percent of all renters have a cost burden of at least 30%. The share of renters with a severe housing cost burden (50% AMI or less) drops to 19.9 percent. Households that have a cost burden are not receiving any housing subsidy, (tax credit, voucher, etc.).

Table 3

Tooele City has an Area Median Income of $56,602 in 2016 which is up from $48,133 in 2000. Stansbury Park has an AMI of $85,297 and Grantsville has an AMI of $64,652. Table 3 shows the income available for median income households in Tooele City, households at 50% to 80% AMI, households at 30% to 50% AMI, and households below 30% AMI. Also shown is what a household in each income group can afford to spend on housing. For example, a household in Tooele City with income at 50% AMI to 80% AMI could afford to spend, without incurring a cost burden, $800 to $1,280 each month. The estimated Gross Monthly Income and Affordable Housing Costs for several race and age groups are also listed. The elderly (65+) are a special needs population with the lowest median income and having many disabilities and medical needs which makes finding affordable housing difficult. The elderly are a priority concern for Tooele City.

Tooele City 2016		
Affordable Housing Costs by Income, Tenure, Race, and Age		
Category - $56,602/yr	Gross Monthly Income	Affordable Housing Costs
Area Median Household Income	$4,747	$1,424
>50%-80% AMI	$2,667 to $4,266	$800 to $1,280
>30-50% AMI	$1,653 to $2,666	$496 to $799
0-30% AMI	$0 To $1,652	$0 to $495
Median Homeowner Household Income	$5,352	$1,606
Median Renter Household Income	$2,899	$870
White Household Median Income	$4,904	$1,471
Hispanic Household Median Income	$4,561	$1,368
Elderly Household Median Income (65+)	$3,245	$974
Source: U.S. Census Bureau, American Community Survey. 2012-2016.		

CURRENT HOUSING STOCK

Total Housing Units

The US Census ACS 2016, shows Tooele City as having 11,040 housing units. Of the 11,040 housing units, 8,009 are owner occupied, and 2,497 housing units are renter occupied. The remaining housing units of 534 were vacant at the time of the survey.

Table 4

Tooele City Housing Units by Tenure, 2016					
Owner Occupied Units	Renter Occupied Units	Total Vacant Units	Total Occupied Units	Percent Owner Occupied	Percent Renter Occupied
8,009	2,497	534	10,506	76.20%	23.80%
Source: U.S. Census, ACS 2012-2016					

Breakdown of Housing Units demographics

Table 5

Tooele City's housing inventory is predominantly detached single-family at 8,618 units (78%). A count of attached single-family units shows only 461 units (4.2%) while 2, 3 and 4 unit housing structures account for 479 housing units (4.3%). The remaining housing units in structures of 5 units or more equal 724 units for 6.5%. Mobile homes in Mobile Home Parks account for 6.9% of the housing units.

Housing Units by Units in Structure		
	Housing Units	Percent of Total
Total Housing Units	11,040	
1, Detached	8,618	78.1%
1, Attached	461	4.2%
2	179	1.6%
3 to 4	300	2.7%
5 to 9	276	2.5%
10 to 19	169	1.5%
20 or more units	279	2.5%
mobile homes	758	6.9%
Source: U.S. Census, ACS 2012-2016		

Tooele City has a relatively young housing unit inventory (Table 6). Over half or 52.5% (5801) of all housing units in the City were built in or after 1990 and are no older than 30 years old. The housing units built before 1990 but after 1950 (36%) accounting for 3971 units, are of an age where upgrades or remodeling may be necessary. The housing units built before 1950 account for 11.5% (1268) of Tooele's housing inventory and are primarily located in the older homes within the central core of the City. These homes may be more affordable than newer homes but, due to advanced age may require some investment in remodeling and renovation.

Table 6

Year Structure was Built - Tooele City		
Year Built	Housing Unit	Percent of Total
2010 or after	239	2.2%
2000 to 2009	2774	25.1%
1990 ti 1999	2788	25.2%
1980 to 1989	671	6.1%
1970 to 1979	1320	12.0%
1960 to 1969	1366	12.3%
1950 to 1959	614	5.6%
1940 to 1949	581	5.3%
1939 to earlier	687	6.2%
Total Units	11,040	100.0%
Source: U.S. Census, ACS 2012-2016		

Table 7

Number of Bedrooms in Housing Unit		
Housing Units with	Housing Units	Percent of Total
No Bedrooms	61	0.6%
1 bedroom	418	3.8%
2 Bedrooms	2,000	18.1%
3 Bedrooms	3,827	34.7%
4 Bedrooms	2,987	27.1%
5 or more Bedrooms	1,747	15.8%
Source: U.S. Census, ACS 2012-2016		

The vast majority of housing units in Tooele City have 3, 4, 5 or more bedrooms (77.6%). Two bedrooms or less housing units make up only 22.5% of Tooele City housing units. This large percentage of 3, 4 and 5 bedrooms in housing units indicates that Tooele City's housing market is dominated by large families. The 2016 US Census ACS lists the average family as 3.63 people and the average household as 3.09 people and both exceed the national average.

Housing Units with Housing Problems, 2016	
Housing Problems	
Overcrowding	11
Lack kitchen, plumbing	0
Source: U.S. Census, ACS 2012-2016	

Table 8

Overcrowding was the only housing problem noted by the ACS 2016. HUD CHAS considers more than one person per room as overcrowding.

Affordability of Existing Housing Stock

Home sales data indicates that Tooele city has a high level of affordable housing. Affordability is measured by comparing various income levels and the percentage of new units each income level can afford. In order to qualify as equally affordable, at least 50% of homes sold in a city should be affordable to the median income

level. If more than 50% of new housing units sold in the city are at or above the median income level the City has an affordable housing market. The greater the percentage, the greater the affordability. If 50% of housing units sold are below median income level the City no longer has an affordable housing market.

Median Sales Price of Single Family Homes

Table 9

Median Sales Price of Single-Family Homes in Tooele City			
2000	$119,900	2010	$150,000
2001	$117,460	2011	$125,000
2002	$115,000	2012	$131,000
2004	$117,900	2013	$143,000
2005	$129,900	2014	$157,500
2006	$152,500	2015	$172,500
2007	$180,000	2016	$189,500
2008	$175,000	2017	$210,000
2009	$159,900	AAGR	2.90%
AAGR = average annual growth rate.			
Source: UtahRealtor.Com			

Housing prices in Tooele City are very affordable compared to prices in neighboring Wasatch Front counties. The City median sales price in 2017 was $210,000. In Salt Lake County the median sales price of a single family home in 2017 was $325,000, 55 percent higher.

Median Sales Price of a Condominium and Townhomes

Table 10

In the previous 6 years Tooele City has experienced sales price increases for single-family Homes from $125,000 to $210,000 in 2017. Condominiums sales price increases have also jumped from $81,750 to $152,000 in 2017. A 68 percent price increase in single-family homes and 86 percent price increase for Condominiums and Townhomes.

Tooele City			
Meadian Sales Price of Condominiums and Townhomes			
2000	$115,463	2010	$112,200
2001	$91,900	2011	$81,750
2002	$91,995	2012	$90,950
2004	$84,850	2013	$109,900
2005	$85,950	2014	$109,000
2006	$101,000	2015	$120,000
2007	$119,900	2016	$132,000
2008	$136,400	2017	$152,000
2009	$125,000	AAGR	1.60%
AAGR = average annual growth rate.			
Source: UtahRealtor.Com			

CURRENT AFFORDABLE HOUSING AVAILABILE AND NEED

Table 3 lists the Gross Monthly Income and Affordable Housing Costs for the three targeted income groups. For a household earning $28,301 (50% AMI), may afford housing costs of $799 per month but housing costs greater than the $799 per month would become a cost burden. Table 3 also shows the Gross Monthly Income and Affordable Housing Costs for Median Homeowners Household Income, median renter Household Income, white households Median Income, Hispanic Household Median Income, Elderly Household Median Income (65+). This table follows the recommended template for needs assessment from the Utah State Division of Community Housing.

Table 11

Tooele City 2016		
Affordable Housing Costs by Income, Tenure, Race, and Age		
Category - $56,602/yr	Gross Monthly Income	Affordable Housing Costs
Area Median Household Income	$4,747	$1,424
>50%-80% AMI	$2,667 to $4,266	$800 to $1,280
>30-50% AMI	$1,653 to $2,666	$496 to $799
0-30% AMI	$0 To $1,652	$0 to $495
Median Homeowner Household Income	$5,352	$1,606
Median Renter Household Income	$2,899	$870
White Household Median Income	$4,904	$1,471
Hispanic Household Median Income	$4,561	$1,368
Elderly Household Median Income (65+)	$3,245	$974
Source: U.S. Census Bureau, American Community Survey. 2012-2016.		

Table 12

		Owners and Renters by number w/Cost Burdens				
	<=30% AMI	<30% AMI to <=50% AMI	<50% AMI to <=80% AMI	<80% AMI to <=100% AMI	>100% AMI	Total
Owners by Income	245	620	1,670	1,145	4,030	7,705
30% Cost Burden of Owners	195	325	690	190	130	1,530
50% Cost Burden of Owners	130	155	95	0	0	380
Renters by Income	640	475	550	240	680	2,585
30% Cost Burden of Renters	505	305	240	0	0	1,050
50% Cost Burden of Renters	460	55	0	0	0	515
Source: HUD CHAS						

Table 11 shows the number of households in the five target groups. HUD CHAS indicates there are 7,705 owners and 2,585 renters in Tooele City. Renter households face cost burdens also. Tables 3 and 11 lists the income levels and number of renters in the five income target groups. By HUD CHAS numbers (Table 12), Tooele City needs an additional 325 affordable owner housing units.

Tooele City has 445 subsidized rental units (see table 11) but by HUD CHAS number, Tooele City needs 965 affordable rental units which leads to a need of 520 additional affordable rental units.

Table 13

Percent of Homes Sold in Tooele City Affordable to Households at Area Median Income

	Total Homes Sold	Affordable Homes	Percentage of Homes Sold Affordable
2012	424	414	97.6%
2013	501	491	98.0%
2014	549	519	94.0%
2015	660	632	95.8%
2016	771	740	96.2%

Source: Utah RealEstate.com

Percent of Condos Sold in Tooele City Affordable to Households at Area Median Income

	Total Condos Sold	Affordable Condos	Percentage of Condos Sold Affordable
2012	24	24	100.0%
2013	29	29	100.0%
2014	38	38	100.0%
2015	41	41	100.0%
2016	54	54	100.0%

Source: Utah RealEstate.com

The following tables 13-16 show the availability of existing housing stock for targeted income groups for single family and condominiums or townhomes for the years 2012 to 2016.

At the Area Median Income group level, $56,602, affordable home sales dropped from 97% in 2012 to 96.2% in 2016. Condominiums and townhomes sales at the Area Median Income level were at 100% for all 5 years.

Over 740 single family homes were affordable out of 771 sales (96.2%). This makes Tooele City very affordable at this AMI group level in 2016.

No additional housing units are required for this income level.

Table 14

At the 80% Area Median Income group level, $45,282 (Table 14), affordable home sales dropped from 97% in 2012 to 96.2% in 2016. Condominiums and townhomes sales at the 80% Area Median Income level were at 100% or near 100% for all 5 years. This makes Tooele City very affordable at the 80% AMI. This target income group still has many choices in the purchase of a home, condominium or townhome.

At the 80 percent AMI ($45282), Single -family home sales and Condominium or Townhome sales were well over the affordable 50% sales level hurdle. No additional housing units are needed for this income level.

Percent of Homes Sold in Tooele City Affordable to Houshoulds at 80% AMI

	Total Homes Sold	Affordable Homes	Percentage of Homes Sold Affordable
2012	424	397	93.6%
2013	501	450	89.8%
2014	549	444	80.9%
2015	660	518	78.5%
2016	771	546	70.8%

Source: Utah RealEstate.com

Percent of Condos Sold in Tooele City Affordable to Houshoulds at 80% AMI

	Total Condos Sold	Affordable Condos	Percentage of Condos Sold Affordable
2012	24	24	100.0%
2013	29	29	100.0%
2014	38	35	92.1%
2015	41	40	97.6%
2016	54	54	100.0%

Source: Utah RealEstate.com

Percent of Homes Sold in Tooele City Affordable to Households at 50% AMI

	Total Homes Sold	Affordable Homes	Percentage of Homes Sold Affordable
2012	424	134	31.6%
2013	501	96	19.2%
2014	549	79	14.4%
2015	660	52	7.9%
2016	771	37	4.8%

Source: Utah RealEstate.com

Percent of Condos Sold in Tooele City Affordable to Households at 50% AMI

	Total Condos Sold	Affordable Homes	Percentage of Homes Sold Affordable
2012	24	17	70.8%
2013	29	14	48.3%
2014	38	5	13.2%
2015	41	16	39.0%
2016	54	10	18.5%

Source: Utah RealEstate.com

Table 15

At the 50% Area Median Income group level, $28,301 (Table 15), homes sales that were affordable dropped from 31.6% in 2012 to 4.8% in 2016.

Condominiums and townhomes sales at the 50% Area Median Income level dropped from 70.8% to 18.5% in 2016. This makes Tooele City less affordable and this target group has limited choices in home or condominium purchases. Per HUD CHAS, Tooele City, with only 37 affordable homes and 10 affordable condos, needs 48 additional affordable homes or condos at the 50% AMI level.

Percent of Homes Sold in Tooele City Affordable to Households at 30% AMI

	Total Homes Sold	Affordable Homes	Percentage of Homes Sold Affordable
2012	424	17	4.0%
2013	501	5	1.0%
2014	549	3	0.5%
2015	660	6	0.9%
2016	771	1	0.1%

Source: Utah RealEstate.com

Percent of Condos Sold in Tooele City Affordable to Households at 30% AMI

	Total Condos Sold	Affordable Condos	Percentage of Homes Sold Affordable
2012	24	2	8.3%
2013	29	0	0.0%
2014	38	0	0.0%
2015	41	0	0.0%
2016	54	0	0.0%

Source: Utah RealEstate.com

Table 16

At the 30% Area Median Income group level, $16,980 (Table 16), homes sales that were affordable dropped from 4.0% in 2012 to 0.1% in 2016. Condominiums and townhomes sales at the 30% Area Median Income level dropped from 8.3% to 0% in the same 5 year period. At the 30% AMI level, home purchase options are extremely limited and condominium or townhome purchases may be unavailable. Tooele City is not affordable at the 30% Area Median Income level.

Per HUD CHAS, Tooele City needs an additional 324 affordable housing units at the 30% AMI level.

Rental rates have increased as the median sales prices have gone up. The US Census ACS 2016 shows a median rent of $759. From a recent survey of rental rates on Zillow.com for rentals, there were only 12 homes or apartments available for rent at rates of $700 to $1500 per month. The newer apartments and homes are renting well above the median rate. In the 2016 rental housing market, affordable rental units are limited or not available in the newer apartment communities.

Ethnic and Racial Minority Populations

Tooele City's population is 82% white (not Hispanic). Minorities, which includes Hispanics, comprise 18% of the total City Population. The Hispanic population is 12.9% of the City's population and American Indian being reported for 1.4% of the City population.

Table 17

Tooele City		
Percent Share of City Population by Race		
	Number	Percent
Total	32,783	100%
White	26,919	82.10%
Hispanic	4235	12.90%
American Indian	462	1.40%
Asian	160	0.49%
Pacific Islands	82	0.25%
Black	278	0.85%
Other Race	72	0.22%
2 or more Races	575	1.75%
Source: US Census ACS 2016		

Racial and ethnic minority status is correlated with proverty level. In Tooele City, 8.1% of the entire population is reported to be below the proverty level which would indicate that approximately 2,656 residents are living at or below the poverty income level set by the U.S. Census. The poverty percentage for Tooele County is 7.2% and for the entire State is 11.7%.

Poverty rates by race are identified in table 16. Because of this correlation, any deficiencies in available low and moderate-income housing units, disproportionately impacts minority populations. Of the minority population, 15% are below the poverty level.

Table 18

Tooele City			
Poverty by Race in Tooele City			
Race	Number in Poverty	Percent of Race in Poverty	US Cenus Table
All Races = 8.1%			
White only	1,910	7.2%	B17001H
Hispanic	467	11.2%	B17001I
American Indian	61	12.8%	B17001C
Asian	0	0.0%	B17001D
Pacific Islands	0	0.0%	B17001E
Black	21	7.8%	B17001B
Other Race	241	15.2%	B17001F
2 or more Races	91	10.1%	B17001G
Source: US Census ACS 2016			

SPECIAL NEEDS POPULATION

Tooele City understands that it is important to address affordable housing for those with special needs. People with special needs may include vulnerable populations such as senior citizens, people with disabilities, the homeless or those otherwise in need of specialized or supportive housing.

DISABILITY

Table 19

Tooele City Residents with Disabilities				
Disability	Age Group	Total Pop.	Pop. w/disability	% of Total
hearing disability	Under 5	2828	0	0.00%
	5 to 17	7753	11	0.10%
	19 to 64	19008	468	2.50%
	65 - plus	2898	581	20.00%
vision disability	Under 5	2828	0	0.00%
	5 to 17	7753	37	0.30%
	19 to 64	19008	304	1.60%
	65 - plus	2898	1854	6.40%
cognative disability				
	under 18	10581	560	7.20%
	19 to 64	19008	877	4.60%
	65 - plus	2898	143	4.90%
ambulatory disability	under 18	10581	90	0.20%
	19 to 64	19008	1257	6.60%
	65 - plus	2898	817	28.20%
self-care disability	under 18	10581	142	1.80%
	19 to 64	19008	367	1.90%
	65 - plus	2898	268	9.20%
independent living	19 to 64	19008	729	3.80%
	65 - plus	2898	525	18.1%
Source: US Census ACS 2016				

People with disabilities under the age of 65 comprise approximately 9.0% of the City population or 2,930 people. It is estimated that 36.6% of all Americans 65 or older have some form of disability. According to the ACS approximately 1,178 individuals, or 40.6% of Tooele City residents over age 65 have a disability. People with disabilities often face financial and social difficulties that make it difficult to obtain housing. Programs that are geared toward helping people with disabilities obtain housing include: low rent and public housing voucher programs, assistance through centers of independence, employment and training resources.

The median income of an individual with a disability is usually considerably less than persons without a disability. According to the ACS, median income for disabled residents over 16 years of age, is 32.5% less than City residents without a disability of the same age. This would translate to a disabled single householder having a median income of $38,206 which would require using a larger share of their income for housing.

Seniors-Elderly

About 9.0 percent of Tooele City population is 65 and older as of the 2016 ACS. The share of the city's population that is 65 or older is expected to remain approximately the same. As the City population ages, more families will elect to move their elderly family members to Tooele City to be near them. Some elderly residents may not be able to remain in their homes or may choose to relocate to a dwelling type that better suits their preferences and needs. The Tooele City Council recognizes the need to evaluate the housing options available to seniors wishing to remain in or move to the community.

Homeless

According to the 2016 annualized Point in Time count, roughly 0.1% of Utah's population is homeless. Although regional differences may impact the rate of homelessness, this percentage can be used to estimate the number of homeless individuals in Tooele City, which is approximately 32. Tooele County Housing authority has programs in place as noted in the Tooele County Moderate Housing Study which address this need.

Veterans

Based on the 2016 ACS, veterans account for approximately 7.6 percent of Tooele City's population, or 2,507 people. Men make up 92% of those veterans and women 8%. There are 811 veterans that are 65 years or older age, or 32.3 percent of the Tooele City veteran population. Also, 749 veterans in Tooele city were reported as having some form of disability, which amounts to 18.2 percent of the city's disabled population being veterans. Of the 1423 working age veterans (18 to 65 years old), 43% or 1084 were unemployed. There were 100 veterans reported to be living below the poverty level by the 2016 ACS. The median income of a veteran in Tooele City was reported to be $50,533 which is 10.7 percent lower then the City as a whole. This suggests that a single income household with a veteran is less likely to afford the median housing unit in the city. Given these estimates, the City should work with the Utah Department of Workforces Services to consider strategies to lower the unemployment rate among working-aged veterans.

Victims of Domestic Violence

Victims of domestic violence receive shelter at Pathways Domestic Violence Shelter operated by Valley Behavioral Health. The facility has 16 beds and operates at high levels of occupancy. The program provides shelter for victims of domestic violence for 30 days before the individual(s) is released. In 2017 the facility served 536 individuals, 342 were residents of Tooele County. A high need, as expressed by director Elizabeth Albertson, is for transitional housing. Many of their clients do not have housing and are left to choose between homelessness or doubling up with friends/family. Pathways Domestic Violence Shelter has applied for a U.S. Department of Justice grant that would help fund and develop a 5-unit transitional housing facility. Under the terms of the grant the transitional housing would be for 6 months to 24 months. Transitional housing for this population is a high priority.

Fair Housing Status

HUD measures Fair Housing Status by the number of housing discrimination complaints in a jurisdiction. Fair Housing complaints are very low for Tooele County. Since 1994, 24 complaints have been filed. Five complaints were filed in 2012 which was the highest year. Only 3 complaints were file in 2017. Considering the county has about 4,300 rental units, filed complaints are an extremely low percentage of the renter population. (Source: Tooele County Affordable Needs Assessment)

Availability of a Variety of Housing Sizes

Tooele City's housing inventory is predominately single family with 3 and 4 bedrooms (61.8%). There are only 2,479 housing units (22.5%) with 2 bedroom or less within Tooele City. New homes are required by zoning to be at least 1,100 square feet which again leads to a 3 bedroom home. A majority of the homes in Tooele City have basements which have been or can be finished for additional bedrooms as the need arises.

Analysis of Special Needs Housing

There is a significant population of seniors and people with disabilities in Tooele City, currently there is a deficiency of housing specifically designed for this segment of the population in Tooele City. There are 16 low income tax credit and subsidized rental communities in Tooele County. Of the 16, 11 are located in Tooele City (Table 18) and contain 445 housing units (60.7%). The other rental communities consist of 287 units (39.3%) and are located in Grantsville, Stansbury Park and Wendover. Tooele City needs more special needs housing since all available housing units are occupied and there is a waiting list for available rental units. As the city grows, the need for specialized housing will likely continue to increase and the city should evaluate and monitor current zoning regulations to assure that there are minimal regulatory barriers to constructing this type of housing. Subsidized housing and special needs rental housing is managed by Utah Housing Corp and Tooele County Housing Authority.

Table 20

Low Income Tax Credit and Subsidized Rental Communities In Tooele City

Apartment Community	Address	subsidy	Units
Somerset Gardens (Senior)	143 North 400 West	RD Senior	28
Oquirrh View Apartments (Senior)	552 North 270 East	RD Senior	16
Canyon Cove Senior Housing (Senior)	178 East Vine St	HUD Senior	21
Remington Park Retirement (Senior)	495 W Utah Avenue	RD Senior	72
Lake View Apartments	742 N 100 East	Tax Credit	76
Valley Meadows	582 N Shay Lane	Tax Credit	40
Tooele Crown	Scattered Sites	Tax Credit	11
Tooele Gateway Apartments	232 W Fenwick Lane	Tax Credit	130
Westwood Mesa	780 West 770 South	Tax Credit	22
Landmark Apartments	350 West 400 North	HUD Senior	24
Five-Plex		Public Housing	5
		Total	445

Source: Utah Housing Corp & Tooele County Housing Authority

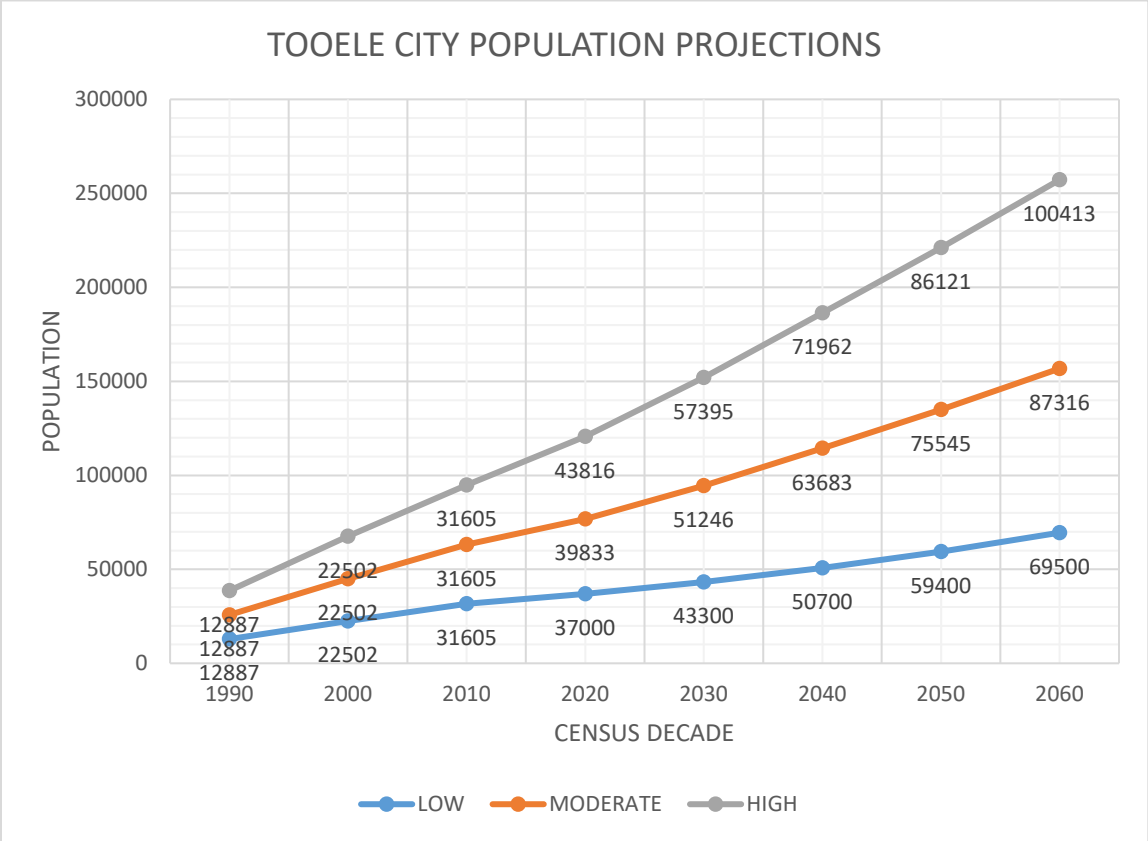
TCHA and Utah Housing Corp administer many affordable housing assistance programs as well as the many Tax Credit and subsidized rental communities. There is a home repair program, weatherization program, down payment assistance program, Security deposit assistance program, rent to own program and Section 8 rental assistance program. Not all programs are funded at any one time but the Housing Authority is constantly seeking grants and additional funding to continue the programs. TCHA is also seeking funding to construct a new housing community for low income households which it will manage because many private landlords have stop participating in the assisted rental program.

Population Projections

High, Medium and Low Population Projections

The population projection used for this study (Moderate Projection) is from the Governor's Office of Budget and Planning with growth rates of between 16% and 29% each decade. A high and low population projection was also calculated based upon the GOBP projection. The GOBP projection is used because it tends to follow the recent growth rates. Chart 4 shows the three population projections. The high projection predicts Tooele City population to reach about 100,000 people by 2060. Assuming all growth factors such as expanded sanitary sewer facilities, expanded culinary water facilities, expanded transportation system to Salt Lake County, expanded city services and continued good economic growth continue, the moderate population projection is obtainable.

Chart 4



Estimated percentages of Targeted Income groups and Special Needs Groups

The UAHFT tool, using the moderate growth projection, shows the percent share of the City 2016 population in relationship to the AMI ($56,605). 50.6% of the City's population has an income at or above the Area Median Income in 2016 (Chart 5). Using the same percentage of the City population in the targeted income groups for the 5 and 10 year projections as is currently estimated by the ACS, see Chart 5. From the US Census ACS, shows 9% of Tooele's Population is disabled, 9% are seniors, .01% are homeless (2016 annualized Point in Time), 7.6% are veteran, and approximately .005% are victims of domestic violence (342 county residents served in 2017).

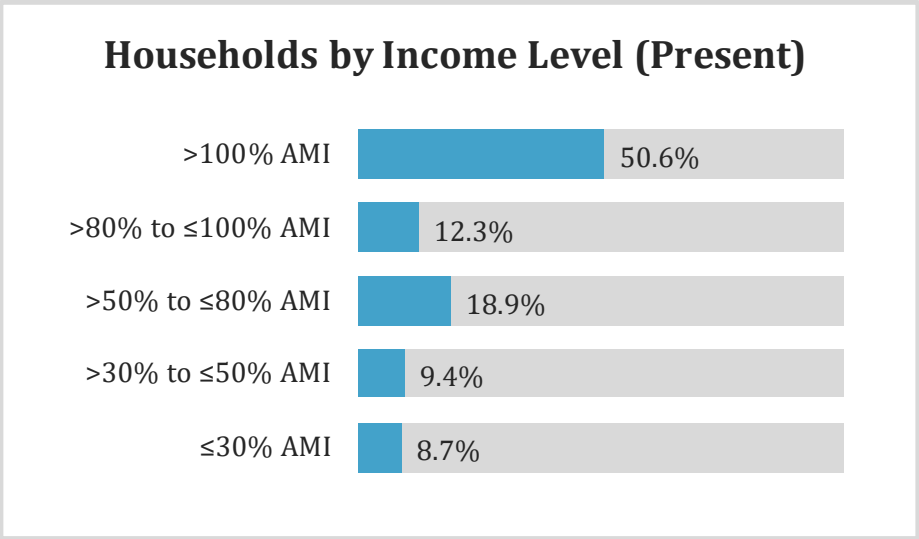


Chart 5

Forecast of Affordable Housing Need

Comparing Population Projections with Expected Housing Construction

The housing construction industry in Tooele City in 2016 is still recovering from the economic recession of 2007-2011. New subdivisions are in the planning stages and builders have reported having problems finding building lots and scheduling subcontractors. In 2016, residential contractors are still trying to keep up with the expanding demand in the Tooele City market and have had to delay construction projects because of the above mentioned problems.

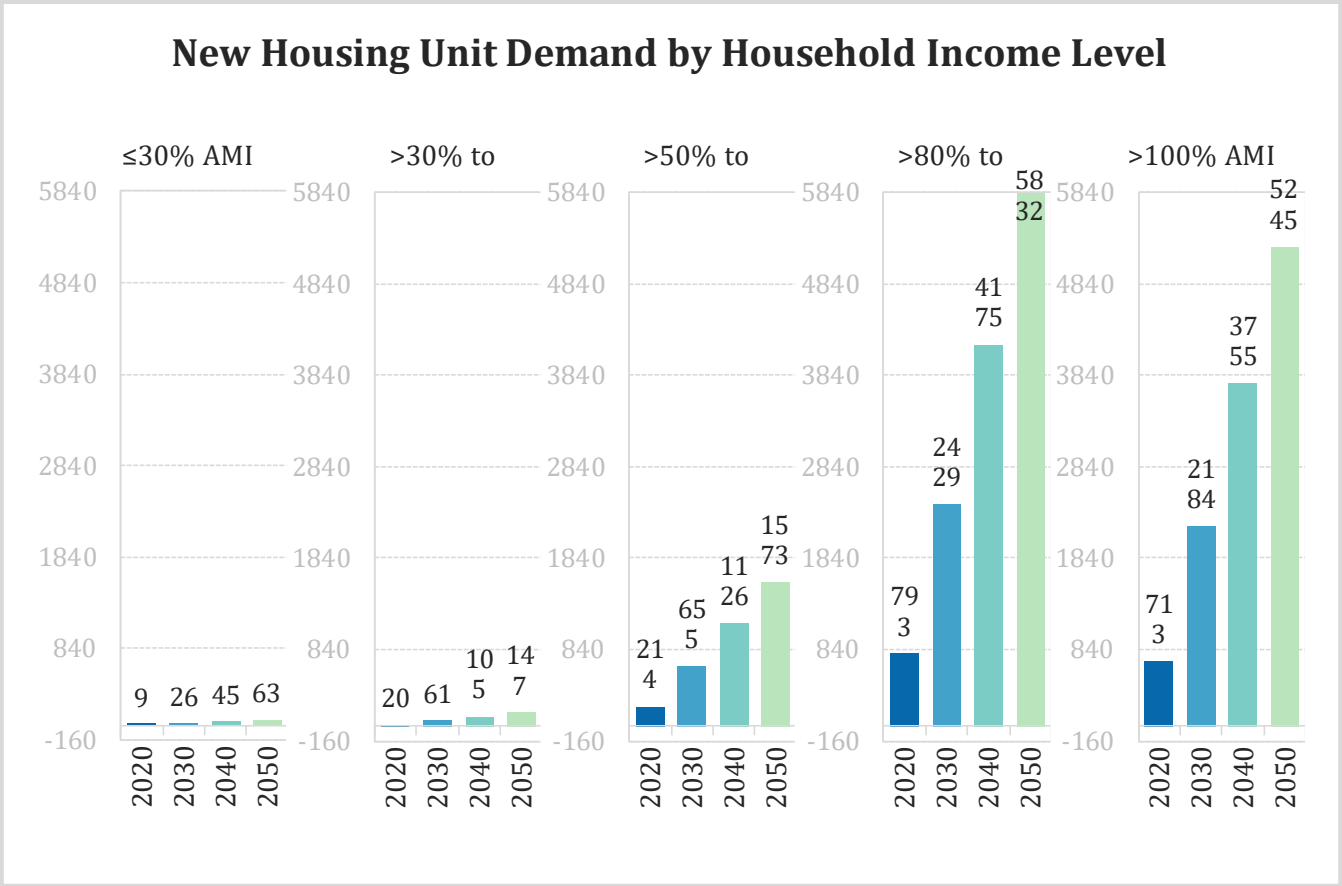
*= actual	2010	2016	2020	2025
Population for	*31,605	32,783	39,833	45,539
Projected number new housing units		*512	2,350	1,902
Projected ramp up of residential construction			600	1,250

Estimated Number of New Housing Units Needed

Income group	2020 New Housing Unit Demand	2025 New Housing Unit Demand
<=30% AMI	9	10
>30% to >50% AMI	26	31
>50% to >80% AMI	45	53
>80% to >100% AMI	63	74
Seniors	193	171
Disabled	193	171
Homeless	23	19
Veterans	178	144
Domestic Violence	12	10

Chart 6 is generated by the UAHFT tool for the 2020 through 2050 population projections for each of the 5 targeted income groups. The 2025 projections would be calculated as half of the 2030 number. The numbers are put into a simple table above. Again the special needs groups may overlap.

Chart 6



Regulatory Environment

Current Zoning and Affordable Housing

Current Tooele City does not have an ordinance specific to affordable housing. There are no fee or permit waivers or density bonuses for affordable housing. Although there are no proactive policies promoting affordable housing, ordinances or policies that prohibit affordable housing do not exist in the City's code. Manufactured housing is permitted, high density multi-family housing is permitted, and minimum lot sizes for single-family homes are between 7,000 and 8,000 square feet, which helps with affordable housing.

The only City ordinance that may be a barrier to affordable housing or Fair Housing, is the single-family, multi-family residential standards. (Title 7, Chapters 11a & 11b) These ordinances establish minimum standards for covered parking, square footage, minimum masonry percentage and minimum architectural features such as front porches, decorative windows, articulated roof lines and articulated building elevations and others which can increase the cost of a housing unit.

Table 21

ZONING DISTRICT	TOTAL ACREAGE	USED ACRES	PERCENT OF TOTAL	VACANT ACRES	PERCENT OF TOTAL
BISON RIDGE PUD	55.29	0	0.00%	55.29	100.00%
COPPER CANYON PUD	128.74	57.1	44.40%	71.64	55.60%
GLENEAGLES PUD	17.71	6.53	37.00%	11.18	63.10%
General Commercial	988.87	171.71	17.40%	817.16	82.60%
High Density Residential	170.12	82.2	48.30%	87.92	51.70%
Industrial (heavy)	802.26	210.25	26.20%	592.009	73.80%
Light Industrial	385.93	180.94	46.90%	204.99	53.10%
Medium Density Residentia	94.74	90.49	95.50%	4.25	4.50%
Mixed Use-160 acres	320.11	34.23	10.70%	285.88	89.30%
Mix Use-Broadway	22.16	18.75	84.60%	3.413	15.40%
Mixed Use-General	101.73	88.169	86.70%	13.563	13.30%
Neighbor Commercial	254.6	2.388	0.90%	252.216	99.10%
Open Space	2,196.33	109.26	5.00%	2087.07	95.00%
OVERLAKE HWY COM	16.45	14.4	87.50%	2.05	12.50%
OVERLAKE MULTI-FAMILY	15	15	100.00%	0	0.00%
OVERLAKE SINGLE FAMILY	149.39	149.39	100.00%	0	0.00%
Peterson Industrial Depo PU	273.63	267.56	97.80%	6.073	2.20%
R1-10	160.06	149.84	93.60%	10.22	6.40%
R1-12	160.58	113.231	70.50%	47.35	29.50%
R1-14	80.37	44.2	55.00%	36.17	45.00%
R1-7	3,726.67	1499	40.20%	2227.665	59.80%
R1-8	306.64	267.119	87.10%	39.52	12.90%
Research and Development	842.1	0	0.00%	842.102	100.00%
Rural Residential – 1 acre	685.81	288.363	42.00%	397.442	58.00%
Rural Residential – 5 acres	827.39	24.38	2.90%	803.01	97.10%
UNKNOWN	54.28	0	0.00%	54.28	100.00%
	12,836.97	3,884.49	30.50%	8,920.69	69.50%
Source: Tooele City Planning and Zoning					

Tooele City has annexed vast areas of vacant property in the last 30 years. A total of 20 square miles (Table 19) is zoned for development (not counting roads). Only 6.1 square miles (30.5%) is developed. The potential for future growth is high. The zone most suitable to affordable housing is the HDR High Density Residential zone (16 units per acre) with 89.92 available acres. Also the MDR zone, 4.25 available acres (8 units per acre) is suitable for affordable housing. The R1-7 zone, 2227.66 available acres (5 units per acre) and the R1-8 zone, 39.52 available acres (4.5 units per acre) are the most suitable zones for affordable single-family homes.

Plans to Meet the Affordable Housing Need

Existing Development for Affordable Housing

With housing values declining after the 1999 peak, several approved Tooele City condominium and townhome projects completed their infrastructure but ceased constructing housing units. Builders claimed they could not construct Townhomes or Condominiums that would be substantially more affordable than single-family homes and so sales ground to a halt. With today's median home sales price at over $210,000, Townhomes and Condominiums should now fill the price range under single-family housing. There are 221 condominium or Townhome units platted with site work competed (Table 22) where the residential buildings were never completed in Tooele City. These types of housing units tend to be more affordable.

Table 22

Tooele City unfinished Condominium and Townhome Projects			
Project Name	Total Units	Remaining Units	Project Start Year
West Point Meadows Condominium Amd	64	43	1997
Cresent Court Condominiums Amd	199	133	2001
Comiskey Park Garden Home Condos	88	8	2000
Gleneagles PUD	54	37	2001
Total	405	221	
Source: Tooele City Planning Dept.			

Existing Zoning that Typically allows Affordable Housing

Table 23

Current Zoning which Facilitates Affordable Housing				
Zoning	Density Per Acre	Vacant Acres	Projected lots/units	Projected Populations
R1-7	5	2227.0	11,135	33,405
R1-8	4.5	39.5	177	533
Copper Canyon PUD	5	55.3	276	829
Gleneagles PUD	16	2.6	41	123
Cresent Ct Condos	16	7.9	133	399
West Point Meadow Condos	16	2.4	37	111
Medium Density Residential	8	4.3	19	58
High Density Residential	16	87.9	1,400	4,200
Source: Tooele City Planning Department		2426.9	13,218	39,658

Without rezoning more acreage in the future, Tooele City could grow by 13,218 affordable housing units and reach a population of 72,441. Acres set aside for parks, schools, and roads would need to be deducted. Future annexations could offset the deducted acreages. With the thousands of acres of land surrounding the City, Tooele will continue to annex and grow as City services are increasingly necessary for the expected population growth in Utah.

Existing and Future Mobile Home Parks

Tooele City has 639 mobile home spaces in the existing eight mobile home parks. Mobile homes within a mobile home park can be an affordable housing option. Building pad rents and utilities must be calculated in order to determine the affordability of the housing unit. Tooele City does have an ordinance that would permit new mobile home parks if the need of such housing units was demonstrated to create a balance of housing units and the location satisfied proximity to major roads and commercial centers.

Strategy to meet Current and Forecasted Affordable Housing Needs

Zoning and Annexations

Tooele City does not regularly change zoning on its own, however, the General Plan Land Use Element recommends a balanced and diverse mix of residential housing units and lot sizes and each rezone request should comply with the requirements of the City's Land Use Element.

Tooele City has recently approved several rezones of undeveloped land to MR-8 and MR-16 and one rezone for high density residential uses that provides more options in lot size and residential housing unit styles such as apartments, condominiums and town houses.

- One of those developments is the Lexington Greens Multi-Family residential development. Tooele City amended the zoning map to MR-16 Multi-Family Residential zoning district. This large development includes 86.4 acres and includes 192 single-family residential lots, 276 rental apartments, and 177 multi-family residential town house style units.
- Another development approved by Tooele City that included a zoning map amendment the MR-16 zoning district, a higher density residential zone, is the Western Acres development. This development also includes a PUD overlay that permits reduced distances between buildings, reduced architectural standards for building exteriors and smaller lots sizes in the single-family residential sections. The development will yield at build out, 714 town house style units and 97 single-family residential units.

Tooele City will consider future annexation petitions and has approved one residential annexation as recently as 2015.

Tooele City's current Zoning Map provides sufficient zoning districts to meet the city's affordable housing needs through 2050. More than 2,400 acres of zoning that allows for affordable housing possibilities exists within City boundaries. All zoning change requests are reviewed individually, case by case, as they are submitted.

Tooele City has an in-fill overlay zoning district that provides incentives for residential construction in the older central City area. The incentives include smaller setbacks, reduction of water rights requirements, reduced lot frontage requirements, and increased total lot coverage.

Tooele City also has an effective PUD (Planned Unit Development) ordinance that can be applied to any residential zoning district. The PUD ordinance provides flexibility in development standards such as

setbacks, lot sizes, lot coverages and so forth. Flexibility in these standards can serve to reduce per-lot land costs and help to reduce the overall cost of housing within a development.

Strategies for Implementing the Construction of Moderate Income Housing

The Goals and Strategies should be achievable by the time of the next Moderate Income Affordable Housing Plan update.

Strategy 1 – Rezone for Densities Necessary to Facilitate the Production of Moderate Income Housing.

This strategy is complete. Tooele City has recently rezoned various properties from non-residential and lower-density zones to higher-density zones, including the MR-16 Multi-Family Residential zone permitting up to up to 16 units per acre, as follows:

- Ordinance 2022-13, approved April 6, 2022, rezoning 38 acres from Rural Residential to R1-7 higher density single-family.
- Ordinance 2022-18, approved May 4, 2022, approving a high-density planned unit development allowing 449 multi-family dwelling units.
- Ordinance 2022-30, approved August 17, 2022, rezoning 8 acres from R1-7 single-family zoning to the MR-12 and MR-16 multi-family zones.
- Ordinance 2022-36, approved September 21, 2022, rezoning 7 acres from neighborhood commercial to MR-12 multi-family.
- Ordinance 2021-16, approved March 2, 2022, amending the land use plan for 7 acres from medium-density zones to high-density zones.
- Ordinance 2021-19, approved March 2, 2022, rezoning 14 acres from general commercial to MR-16 multi-family.
- Ordinance 2021-21, approved March 2, 2022, rezoning 4 acres from MR-8 to MR-16 multi-family.
- Ordinance 2021-25, approved July 21, 2021, amending the land use plan for 24 acres from medium-density zones to high-density zones.
- Ordinance 2020-50, approved December 16, 2020, rezoning 87 acres from rural residential and industrial zones to the MR-16 zone, allowing for 800 townhomes.

Also, Tooele City has recently created new multi-family residential zones to allow a greater variety of MR densities and products (see Ordinance 2022-22, approved July 6, 2022). These new zoning districts are the MR-12 and the MR-20 Multi-Family Residential zones in addition to the existing MR-8 and MR-16 Multi-Family Residential zoning districts.

Tooele City has enacted an ordinance allowing residential special districts (RSD), essentially zoning districts in which the terms are negotiated based on ordinance parameters, developer requests, and City requirements, which may include flexible high-density arrangements and affordable housing (see Ordinance 2021-27, approved July 21, 2021).

Utah State Code Reference

The basis for this strategy comes from Section 10-9a-403(2)(B)(iii)(A) which states:

10-9a-403. General plan preparation.

(2) (a) At a minimum, the proposed general plan, with the accompanying maps, charts, and descriptive and explanatory matter, shall include the planning commission's recommendations for the following plan elements:

(iii) for a specified municipality as defined in Section 10-9a-408, a moderate income housing element that:

(A) provides a realistic opportunity to meet the need for additional moderate income housing within the next five years;

(B) selects three or more moderate income housing strategies described in Subsection (2)(b)(iii) for implementation, including one additional moderate income housing strategy as provided in Subsection (2)(b)(iv) for a specified municipality that has a fixed guideway public transit station; and

(C) includes an implementation plan as provided in Subsection (2)(c);

(b) In drafting the moderate income housing element, the planning commission:

(iii) for a town, may include, and for other municipalities, shall include, a recommendation to implement three or more of the following moderate income housing strategies:

(A) rezone for densities necessary to facilitate the production of moderate income housing;

Implementation Plan

Section 10-9a-403(2)(a)(iii)(A) specifies that a community's Moderate Income Housing Element to the General Plan is to provide a realistic opportunity to meet the need for additional moderate income housing within the next five years. Further, Section 10-9a-403(2)(c) of the Utah State Code notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, whether one-time or ongoing, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed.

Implementation of this strategy is ongoing. Tooele City remains prepared and committed to the process of accepting and reviewing Zoning Map Amendment applications for higher density residential zones as they are submitted by property owners, developers, and others in a timely and efficient manner. Tooele City has routinely considered the potential for moderate income housing as a factor in making decisions regarding Zoning Map Amendment requests and anticipates continuing to do so. Over the past few years Tooele City has approved numerous Land Use Map and Zoning Map Amendment requests that resulted in changes to higher density single-family residential and multi-family residential assignments (see the ordinances cited above). A regular part of these approvals was discussion regarding the possibility or intentions of the applicants to seek or provide affordable, attainable, and moderate income housing. Some of those properties have in fact been developed and others remain awaiting development of housing.

Measures and Timeline for Monitoring, Reviewing, and Continuing to Implement This Strategy

The Planning Commission will review annually typically in the first half of each calendar year, the Land Use Map and Zoning Map, in the context of the rezones and developments approved the previous year, to evaluate whether additional areas should be rezoned for higher densities, even though the development market has not yet requested such rezones, and make recommendations to be discussed and acted upon by the City Council through the preparations of ordinances, policies, plans, and map amendments. The results of each annual review will be included in State-required moderate income housing reports and updates.

We recognize, however, that municipalities cannot compel property owners or applicants to request amendments to land use or zoning assignments, or to construct affordable housing once the rezones are approved. The City also recognizes that for housing to be considered affordable, under the model implemented by the State of Utah, it does not need to be multi-family and single-family housing can qualify as affordable. Further, the City recognizes that, despite rezones and zoning assignments, the City has little to no role the in the establishment and construction of affordable housing. For housing to be affordable, it's a calculation based on the rents or mortgages charged which places the development and construction community in a significantly advantaged position, if not the sole determining factor, over cities to determine whether or not housing constructed will be affordable to the eventual residents. Still, the City expresses an *ongoing* commitment that over the course of the next five years as Land Use Map and Zoning Map Amendment applications come forward an analysis will be performed on each application as to the impact or potential moderate income housing to result from the request.

Strategy 2 – Zone or Rezone for Higher Density or Moderate Income Residential Development in Commercial or Mixed-Use Zones near Major Transit Investment Corridors, Commercial Centers or Employment Centers.

This strategy is complete. In December 2020, Tooele City adopted a revised General Plan. Included in this revision are the Land Use and Transportation Elements. These elements will be reviewed and locations within the City near major transportation corridors, mass transit stops, future mass transit corridors and so forth will be identified and considered for medium and higher density residential zoning districts where various housing types may be constructed.

Utah State Code Reference

The basis for this strategy comes from Section 10-9a-403(2)(B)(iii)(F) which states:

10-9a-403. General plan preparation.

(2) (a) At a minimum, the proposed general plan, with the accompanying maps, charts, and descriptive and explanatory matter, shall include the planning commission's recommendations for the following plan elements:

(iii) for a specified municipality as defined in Section 10-9a-408, a moderate income housing element that:

(A) provides a realistic opportunity to meet the need for additional moderate income housing within the next five years;

(B) selects three or more moderate income housing strategies described in Subsection (2)(b)(iii) for implementation, including one additional moderate income housing strategy as provided in Subsection (2)(b)(iv) for a specified municipality that has a fixed guideway public transit station; and

(C) includes an implementation plan as provided in Subsection (2)(c);

(b) In drafting the moderate income housing element, the planning commission:

(iii) for a town, may include, and for other municipalities, shall include, a recommendation to implement three or more of the following moderate income housing strategies:

(F) zone or rezone for higher density or moderate income residential development in commercial or mixed-use zones near major transit investment corridors, commercial centers, or employment centers;

Implementation Plan

Section 10-9a-403(2)(a)(iii)(A) specifies that a community's Moderate Income Housing Element to the General Plan is to provide a realistic opportunity to meet the need for additional moderate income housing within the next five years. Further, Section 10-9a-403(2)(c) of the Utah State Code notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, whether one-time or ongoing, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed.

Implementation of this strategy is ongoing. As development occurs and the inevitable expansion and evolution of the transportations system that accompanies development within Tooele City, the City continues to evaluate the Land Use Element of the Tooele City General Plan and amend the Land Use Map accordingly. Additionally, when considering Zoning Map Amendment applications, particularly when those considerations include the possibility of Moderate Income Housing, access and proximity to the transportation facilities routinely plays an important role in those considerations. Conversely, when consideration of new or expanded transportation facilities falls to the City exclusive of development, the land uses surrounding those facilities and the joint benefit each provides to the other also plays an important role. It is not anticipated that these roles will change as development and the expansion of transportation system continues to occur.

Measures and Timeline for Monitoring, Reviewing, and Continuing to Implement This Strategy

The Planning Commission will review annually, typically in the first half of the calendar year, the Land Use Map and Zoning Map, in the context of existing and proposed transportation upgrades, in addition to the rezones and developments approved the previous year, to evaluate whether additional areas should be rezoned for higher densities near transportation corridors, even though the development market has not yet requested such rezones, and make recommendations to be discussed and acted upon by the City Council through the preparations of ordinances, policies, plans, agreements, and map amendments. The results of each annual review will be included in State-required moderate income housing reports and updates.

We recognize however, that municipalities cannot compel property owners or applicants to request amendments to land use or zoning assignments for development in specific areas of the community, such as along transportation corridors. The City also recognizes that for housing to be considered affordable, under the model implemented by the State of Utah, it does not need to be multi-family and single-family housing can qualify as affordable. Further, the City recognizes that, despite rezones and zoning assignments, the City has little to no role the in the establishment and construction of affordable housing. For housing to be affordable, it's a calculation based on the rents or mortgages charged which places the development and construction community in a significantly advantaged position, if not the sole determining factor, over cities to determine whether or not housing constructed will be affordable to the eventual residents. Still, the City expresses an *ongoing* commitment that over the course of the next five years as Land Use Map and Zoning Map Amendment applications come forward along transportation corridors an analysis will be performed on each application as to the impact or potential moderate income housing to result from the request.

Strategy 3 – Create or Allow for, and Reduce Regulations Related to, Internal or Detached Accessory Dwelling Units in Residential Zones.

This strategy is complete. On August 21, 2019, the Tooele City Council approved an ordinance enacting Chapter 7-14a addressing accessory dwelling units. This ordinance permits detached, attached and interior accessory dwelling units for properties that meet certain qualifications of lot size, setbacks, parking and so forth. Having the Accessory Dwelling Unit ordinance complete, Tooele City will now begin implementing this ordinance through the building permit process. In 2020, 2021 and 2022, the State Legislature mandated the removal of restrictions on ADU, and the Tooele City's ADU ordinance already complied with the mandates, except for reducing the minimum lot size for qualifying ADU lot to 6,000 square feet, which Tooele City did by ordinance amendment (see Ordinance 2021-08, approved May 5, 2021). The City's ADU ordinance aims to strike a public policy balance of allowing, even encouraging, ADUs without costly or overly burdensome regulations but also without unduly shifting economic burdens to the general populace.

Utah State Code Reference

The basis for this strategy comes from Section 10-9a-403(2)(B)(iii)(E) which states:

10-9a-403. General plan preparation.

(2) (a) At a minimum, the proposed general plan, with the accompanying maps, charts, and descriptive and explanatory matter, shall include the planning commission's recommendations for the following plan elements:

(iii) for a specified municipality as defined in Section 10-9a-408, a moderate income housing element that:

(A) provides a realistic opportunity to meet the need for additional moderate income housing within the next five years;

(B) selects three or more moderate income housing strategies described in Subsection (2)(b)(iii) for implementation, including one additional moderate income housing strategy as provided in Subsection (2)(b)(iv) for a specified municipality that has a fixed guideway public transit station; and

(C) includes an implementation plan as provided in Subsection (2)(c);

(b) In drafting the moderate income housing element, the planning commission:

(iii) for a town, may include, and for other municipalities, shall include, a recommendation to implement three or more of the following moderate income housing strategies:

(E) create or allow for, and reduce regulations related to, internal or detached accessory dwelling units in residential zones;

Implementation Plan

Section 10-9a-403(2)(a)(iii)(A) specifies that a community's Moderate Income Housing Element to the General Plan is to provide a realistic opportunity to meet the need for additional moderate income housing within the next five years. Further, Section 10-9a-403(2)(c) of the Utah State Code notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, whether one-time or ongoing, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed.

Implementation of this strategy is ongoing. Tooele City implemented a program and code allowance for accessory dwelling units even before the state legislature's recent actions or encouragement and mandate for cities. That program included, and continues to include, relaxed regulation to encourage the utilization of the allowance of accessory dwelling units in residential areas. Tooele City continues and will continue to support the permitting of Accessory Dwelling Units in residential areas.

Measures and Timeline for Monitoring, Reviewing, and Continuing to Implement This Strategy

Tooele City will stay attuned to changes in state law regarding Accessory Dwelling Units, by annually conducting a review, typically in the second quarter of each calendar year, of all enacted legislation from the Utah State Legislature regarding Accessory Dwelling Unit regulations and requirements. The Planning Commission will offer recommendation, based on this review, to the City Council to update the Tooele City Code to conform Tooele City's Accessory Dwelling Unit regulation to newly enacted state legislation. Also, typically in the first quarter of each year, the Community Development Department will catalog all Accessory Dwelling Units approved by building permit, and report this data to the Planning Commission and City Council, in addition to discussing strategies for making Accessory Dwelling Unit use more common.

The City maintains an *ongoing* commitment that over the course of the next five years to implement the allowances for and approval of internal and external accessory dwelling units throughout the community.

Strategy 4 – Apply for or partner with an entity that applies for state or federal funds or tax incentives to promote the construction of moderate income housing, an entity that applies for programs offered by the Utah Housing Corporation within that agency's funding capacity, an entity that applies for affordable housing programs administered by the Department of Workforce Services, an entity that applies for affordable housing programs administered by an interlocal agreement under Title 11, Chapter 13, Interlocal Cooperation Act, an entity that applies for services provided by a public housing authority to

preserve and create moderate income housing or any other entity that applies for programs or services that promote the construction or preservation of moderate income housing.

This strategy is partially complete and implementation is ongoing. Tooele City will work with Tooele County Housing Authority and have a City representative attend the quarterly meetings. Tooele City has the largest population in Tooele County and has the most to gain from partnering with the Housing Authority to construct more moderate income housing.

Tooele City is also working with the Utah Housing Authority, directing them to new developments where lots can be purchased and developed as moderate income housing with the assistance of subsidies and City reduction of impact fees as permitted by Tooele City Code.

In 2019-2022, Tooele City worked with the Housing Authority for the approval of three subdivisions for affordable single-family detached housing: Bison Ridge, Buffalo Ridge, and Murdock. At the same time, the City worked with the Utah Housing Corporation to pass an ordinance to waive impact fees for affordable housing (see Ordinance 2019-30, approved November 20, 2019). The ordinance has mechanisms in place to assure that savings generated from decreased or eliminated impact fees do not fatten the developer bottom line but are passed along to the affordable housing purchasers. The ordinance contains carefully articulated eligibility requirements and deed restriction language to achieve this beneficial public policy result. The mechanisms and eligibility requirements include AMI determinations and the recordation of restrictive covenants developed in cooperation with the Utah Housing Corporation (see Tooele City Code 4-15-5). The City has approved impact fee waivers for these Housing Authority projects. These projects include the following:

- Buffalo Pass Subdivision - June 3, 2020, waiving $7,000 per dwelling unit
- Bison Ridge Subdivision - June 3, 2020, waiving $7,000 per dwelling unit
- Murdock Subdivision - Resolution 2022-60, approved July 6, 2022, waiving $13,761.80 per dwelling unit
- Harris Community Village project - Resolution 2022-61, approved July 6, 2022, waiving $12,756.80 per dwelling unit

Tooele City conveyed property to the Housing Authority for the development of its Whistle Stop affordable housing project, which has been built and is successful.

Tooele City has provided regulatory and process facilitation and encouragement for the Housing Authority's joint venture with Switch Point for a new transitional housing facility for homeless persons, together with on-site support services.

Tooele City has retained outside legal counsel to assist in the development of a new ordinance on housing for the disabled compliant with the changing nuances of the Fair Housing Act.

Utah State Code Reference

The basis for this strategy comes from Section 10-9a-403(2)(B)(iii)(O) which states:

10-9a-403. General plan preparation.

(2) (a) At a minimum, the proposed general plan, with the accompanying maps, charts, and descriptive and explanatory matter, shall include the planning commission's recommendations for the following plan elements:
(iii) for a specified municipality as defined in Section 10-9a-408, a moderate income housing element that:
(A) provides a realistic opportunity to meet the need for additional moderate income housing within the next five years;
(B) selects three or more moderate income housing strategies described in Subsection (2)(b)(iii) for implementation, including one additional moderate income housing strategy as provided in Subsection (2)(b)(iv) for a specified municipality that has a fixed guideway public transit station; and
(C) includes an implementation plan as provided in Subsection (2)(c);
(b) In drafting the moderate income housing element, the planning commission:
(iii) for a town, may include, and for other municipalities, shall include, a recommendation to implement three or more of the following moderate income housing strategies:
(O) apply for or partner with an entity that applies for state or federal funds or tax incentives to promote the construction of moderate income housing, an entity that applies for programs offered by the Utah Housing Corporation within that agency's funding capacity, an entity that applies for affordable housing programs administered by the Department of Workforce Services, an entity that applies for affordable housing programs administered by an association of governments established by an interlocal agreement under Title 11, Chapter 13, Interlocal Cooperation Act, an entity that applies for services provided by a public housing authority to preserve and create moderate income housing, or any other entity that applies for programs or services that promote the construction or preservation of moderate income housing;

Implementation Plan

Section 10-9a-403(2)(a)(iii)(A) specifies that a community's Moderate Income Housing Element to the General Plan is to provide a realistic opportunity to meet the need for additional moderate income housing within the next five years. Further, Section 10-9a-403(2)(c) of the Utah State Code notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, whether one-time or ongoing, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed.

Measures and Timeline for Monitoring, Reviewing, and Continuing to Implement This Strategy

Tooele City has codified allowed reductions and waivers of impact fees for developments that utilize state or federal funds or tax incentives to promote the construction of moderate income housing, among other methods of providing moderate income housing. Tooele City recently expanded that provision to increase the amount of reduction or waiver possible for such projects as well to more greatly expand and support the possibilities of providing moderate income housing. Tooele City also continues working with agencies to explore ways to provide the Tooele County Housing Authority and

other agencies dedicated to providing moderate income housing priority access to a limited supply of water rights in order to further their affordable housing projects.

It is difficult to set benchmarks for impact fee waivers when they are dependent upon the submittal and approval of eligible affordable housing projects. However, whenever an eligible project has requested a waiver, the waiver has been granted (waivers are discretionary, not mandatory). However, in January of each year, the Community Development Department will catalog all impact fees waived during the preceding calendar year and report this data to the Planning Commission and City Council. The City maintains an *ongoing* commitment that over the course of the next five years to continue working with the Tooele County Housing Authority and other agencies dedicated to providing moderate income housing to establish and preserve moderate income housing opportunities within the community through utilization of the codified reductions and waivers of fees and priority access to scarce water rights.

Strategy 5 – Demonstrate Investment in the Rehabilitation or Expansion of Infrastructure that Facilitates the Construction of Moderate Income Housing.

This strategy is partially complete and implementation is ongoing. Tooele City has created In-Fill Overlay Districts applicable to older portions of the City where existing housing stock is increasingly aging and in need of renovation. The In-Fill Overlay zoning district is formulated to appropriately encourage residential development and redevelopment on lots and parcels of record that may be nonconforming or surrounded by developed land in order to more efficiently utilize residential land, existing public infrastructure, and public services.

Tooele City is always seeking ways to improve the In-Fill Overlay districts to utilize or rehabilitate existing infrastructure and make development more feasible. The City is currently considering amendments to lot width and frontage requirements that would assist subdivision of existing narrow lots into lots able to be developed with smaller and more affordable homes.

Tooele City should also seek to revise the In-Fill Overlay district area's incentives to encourage replacing or remodeling a dilapidated housing unit that may become a more affordable housing unit than new construction.

In certain portions of the City's in-fill geographic areas, requirements for transportation infrastructure construction (e.g., sidewalk) have been reduced or eliminated.

Tooele City provided a regulatory facilitation role in obtaining EPA remediation of a burned out and demolished hotel, paving the way for a new affordable housing project on Broadway Street in the City's Newtown district.

Utah State Code Reference

The basis for this strategy comes from Section 10-9a-403(2)(B)(iii)(B) which states:

10-9a-403. General plan preparation.

(2) (a) At a minimum, the proposed general plan, with the accompanying maps, charts, and descriptive and explanatory matter, shall include the planning commission's recommendations for the following plan elements:
(iii) for a specified municipality as defined in Section 10-9a-408, a moderate income housing element that:
(A) provides a realistic opportunity to meet the need for additional moderate income housing within the next five years;
(B) selects three or more moderate income housing strategies described in Subsection (2)(b)(iii) for implementation, including one additional moderate income housing strategy as provided in Subsection (2)(b)(iv) for a specified municipality that has a fixed guideway public transit station; and
(C) includes an implementation plan as provided in Subsection (2)(c);
(b) In drafting the moderate income housing element, the planning commission:
(iii) for a town, may include, and for other municipalities, shall include, a recommendation to implement three or more of the following moderate income housing strategies:
(B) demonstrate investment in the rehabilitation or expansion of infrastructure that facilitates the construction of moderate income housing;

Implementation Plan

Section 10-9a-403(2)(a)(iii)(A) specifies that a community's Moderate Income Housing Element to the General Plan is to provide a realistic opportunity to meet the need for additional moderate income housing within the next five years. Further, Section 10-9a-403(2)(c) of the Utah State Code notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, whether one-time or ongoing, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed.

Measures and Timeline for Monitoring, Reviewing, and Continuing to Implement This Strategy

Development that occurs within the In-Fill Overlay District will continue to reduce or eliminate requirements for transportation infrastructure improvements. Starting in 2015, Tooele City established a program for reduced regulation for infill development, and redevelopment, in the heart of the community and has continued adding more reductions into the program. The efforts to establish and expand this program include the following:

- Ordinance 2015-25, approved December 16, 2015, creating the In-Fill districts and enacting regulatory standards within those districts.
- Ordinance 2019-08, approved March 20, 2019, making technical improvements to the regulatory standards within the In-Fill districts.
- Ordinance 2019-24, approved October 2, 2019, creating additional reductions to the regulatory standards within the In-Fill districts.
- Ordinance 2020-38, approved October 7, 2020, creating additional reductions related to water rights conveyance requirements within the In-Fill districts.

Investment in these areas, both planning and reduction of costs to the provision of housing opportunities, is ongoing and represents an ongoing commitment on the part of the City towards meeting moderate income housing needs. On June 1, 2022, the Tooele City Council approved Resolution 2022-51, a contract in the amount of $50,000 for the preparation of a Broadway Area Master Plan, in part, to explore affordable housing opportunities in this community reinvestment area. This contract establishes a completion date for the Master Planning effort for June 30, 2023. During the second half of the 2023 calendar year, Tooele City will be establishing priorities, goals, and timelines resulting from that Master Planning effort for continued and further implementation.

It is difficult to set benchmarks for implementing reduced regulations when they are dependent upon the submittal and approval of eligible projects. However, whenever an eligible project has requested a reduction in regulation, the reduction has been automatically granted as allowed in the City Code. However, in January of each year, the Community Development Department will catalog all eligible projects utilizing the reduced regulation during the preceding calendar year and report this data to the Planning Commission and City Council. Regardless, the City maintains an *ongoing* commitment that over the course of the next five years to continue utilizing the reduced regulation for in-fill development to encourage moderate income housing opportunities within the community. Additionally, where the City has already begun the master planning of a specific area of the community that provides a high potential for additional moderate income housing, over the next five years the Tooele City will be completing that effort and using that master planning effort as basis for planning infrastructure needs determinations and investments that encourage moderate income housing. Where the outcome of that master planning effort remains unknown, the City maintains the flexibility to adjust infrastructure planning, investment, and construction timelines and benchmarks within the master plan area pending the outcome of that master planning effort.

Strategy 6 – Reduce, Waive, or Eliminate Impact Fees Related to Moderate Income Housing.

This strategy is partially complete, and implementation is ongoing. Tooele City's accessory dwelling unit ordinance provides 50% reductions in impact fees for all attached and detached units. Impact fee reductions include culinary water, sanitary sewer, public safety and parks and recreation fees. Interior accessory dwelling units are exempt from payment of any impact fees; thus, the City ordinance was already in compliance with state legislation to follow the ordinance enactment

Tooele City's In-Fill Overlay districts also reduce culinary water fees by 50% which serves to encourage development of smaller less expensive lots within the City. This serves to make lots more affordable in the In-Fill areas and facilitates more affordable housing.

Tooele City ordinances permit the City Council to reduce impact fees for affordable housing units and the City should plan to partner with State organizations such as the Utah Housing Authority to encourage the construction of moderate income housing.

Utah State Code Reference

The basis for this strategy comes from Section 10-9a-403(2)(B)(iii)(L) which states:

10-9a-403. General plan preparation.

(2) (a) At a minimum, the proposed general plan, with the accompanying maps, charts, and descriptive and explanatory matter, shall include the planning commission's recommendations for the following plan elements:

(iii) for a specified municipality as defined in Section 10-9a-408, a moderate income housing element that:

(A) provides a realistic opportunity to meet the need for additional moderate income housing within the next five years;

(B) selects three or more moderate income housing strategies described in Subsection (2)(b)(iii) for implementation, including one additional moderate income housing strategy as provided in Subsection (2)(b)(iv) for a specified municipality that has a fixed guideway public transit station; and

(C) includes an implementation plan as provided in Subsection (2)(c);

(b) In drafting the moderate income housing element, the planning commission:

(iii) for a town, may include, and for other municipalities, shall include, a recommendation to implement three or more of the following moderate income housing strategies:

(L) reduce, waive, or eliminate impact fees related to moderate income housing;

Implementation Plan

Section 10-9a-403(2)(a)(iii)(A) specifies that a community's Moderate Income Housing Element to the General Plan is to provide a realistic opportunity to meet the need for additional moderate income housing within the next five years. Further, Section 10-9a-403(2)(c) of the Utah State Code notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, whether one-time or ongoing, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed.

Measures and Timeline for Monitoring, Reviewing, and Continuing to Implement This Strategy

Tooele City has codified and implemented a reduction and waiver program for impact fees as a part of constructing attached and detached accessory dwelling units. Tooele City maintains and continues to the encouragement of development and redevelopment for properties within the In-Fill Overlay Districts. The Tooele City Council continues to consider reductions in impact fees for affordable housing units when the City partners with State, County, and other appropriate housing organizations. Starting as early as 1996, the Tooele City Council approved ordinances establishing a program for reducing or waiving development related impact fees for eligible affordable housing units. The efforts to establish and expand this program include the following:

- Ordinance 96-15, approved June 5, 1996, enacted an impact fee structure for Tooele City for charging such fees as allowed by Senate Bill 4 (1995 Special Session of the Utah State Legislature) which also included a provision for waiving impact fees up to $5,000 per unit for affordable housing.
- Ordinance 2001-35, approved January 23, 2001, revising the impact fees allowable for possible waiver with the adoption of new impact fee studies and fees.

- Ordinance 2001-36, approved January 23, 2001, revising the impact fees allowable for possible waiver with the adoption of new impact fee studies and fees.
- Ordinance 2010-04, approved February 17, 2010, revising the impact fees allowable for possible waiver with the adoption of new impact fee studies and fees.
- Ordinance 2019-30, approved November 20, 2019, increasing the maximum allowable amount of impact fee waiver possible.

It is difficult to set benchmarks for implementing reduced regulations when they are dependent upon the submittal and approval of eligible projects. However, whenever an eligible project has requested a reduction or waiver of impact fees for affordable housing, the reduction or waiver has been granted. During the time from 2020 to 2022 alone, the following impact fee reductions and waivers have been approved:

- Buffalo Pass Subdivision, a 6-lot single-family residential subdivision approved on June 3, 2020 for impact fee waivers in the amount of $7,000 per lot for affordable housing, totaling waivers of $42,000 for the development.
- Buffalo Ridge Subdivision, a 6-lot single-family residential subdivision approved on June 3, 2020 for impact fee waivers in the amount of $7,000 per lot for affordable housing, totaling waivers of $42,000 for the development.
- Murdock Subdivision, Phases 1 and 2, a combined 23-lot single-family residential subdivision, specifically for affordable housing units, was approved on July 6, 2022, for a waiver of $6,000 per dwelling unit outright, a waiver of an additional $4,000 per dwelling unit with reimbursement to the City from other dedicated City funds, and the City would pay another $3,761.80 per dwelling unit out of other dedicated City funds, totaling waivers of $13,761.80 per lot and $316,521.40 for the development.
- Harris Community Village, a 66-unit multi-family residential development, specifically for affordable housing units, was approved on July 6, 2022, for a waiver of $6,000 per dwelling unit outright, a waiver of an additional $4,000 per dwelling unit with reimbursement to the City from other dedicated City funds, and the City would pay another $2,756.80 per dwelling unit out of other dedicated City funds, totaling waivers of $12,756.80 per unit and $841,948.80 for the development.

In January of each year, the Community Development Department will catalog all eligible projects utilizing the reduced regulation during the preceding calendar year and report this data to the Planning Commission and City Council. Regardless, the City maintains an *ongoing* commitment that over the course of the next five years to continue working with the Tooele County Housing Authority and other agencies dedicated to providing moderate income housing to utilize the codified reductions and waivers of impact fees related to moderate income housing.

Strategy 7 – Identify and Utilize General Fund Subsidies or Other Sources of Revenue to Waive Construction Related Fees that are Otherwise Generally Imposed by the City for the Construction or Rehabilitation of Moderate Income Housing.

This strategy is partially complete and implementation is ongoing. Tooele City Code already permits General Fund subsidies and the Tooele City Council has considered increasing these for moderate income housing. Any time impact fees are waived there is a requirement that the fee is made up for through General Fund subsidies. The efforts to review the level of subsidies allowed and increase revise those levels include the following:

- Ordinance 96-15, approved June 5, 1996, enacted an impact fee structure for Tooele City for charging such fees as allowed by Senate Bill 4 (1995 Special Session of the Utah State Legislature) which also included a provision for waiving impact fees up to $5,000 per unit for affordable housing.
- Ordinance 2001-35, approved January 23, 2001, revising the impact fees allowable for possible waiver with the adoption of new impact fee studies and fees.
- Ordinance 2001-36, approved January 23, 2001, revising the impact fees allowable for possible waiver with the adoption of new impact fee studies and fees.
- Ordinance 2010-04, approved February 17, 2010, revising the impact fees allowable for possible waiver with the adoption of new impact fee studies and fees.
- Ordinance 2019-30, approved November 20, 2019, increasing the maximum allowable amount of impact fee waiver possible.

Utah State Code Reference

The basis for this strategy comes from Section 10-9a-403(2)(B)(iii)(D) which states:

10-9a-403. General plan preparation.

(2) (a) At a minimum, the proposed general plan, with the accompanying maps, charts, and descriptive and explanatory matter, shall include the planning commission's recommendations for the following plan elements:

(iii) for a specified municipality as defined in Section 10-9a-408, a moderate income housing element that:

(A) provides a realistic opportunity to meet the need for additional moderate income housing within the next five years;

(B) selects three or more moderate income housing strategies described in Subsection (2)(b)(iii) for implementation, including one additional moderate income housing strategy as provided in Subsection (2)(b)(iv) for a specified municipality that has a fixed guideway public transit station; and

(C) includes an implementation plan as provided in Subsection (2)(c);

(b) In drafting the moderate income housing element, the planning commission:

(iii) for a town, may include, and for other municipalities, shall include, a recommendation to implement three or more of the following moderate income housing strategies:

(D) identify and utilize general fund subsidies or other sources of revenue to waive construction related fees that are otherwise generally imposed by the municipality for the construction or rehabilitation of moderate income housing;

Implementation Plan

Section 10-9a-403(2)(a)(iii)(A) specifies that a community's Moderate Income Housing Element to the General Plan is to provide a realistic opportunity to meet the need for additional moderate income housing within the next five years. Further, Section 10-9a-403(2)(c) of the Utah State Code notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, whether one-time or ongoing, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed.

Measures and Timeline for Monitoring, Reviewing, and Continuing to Implement This Strategy

The Tooele City Council continues to evaluate moderate income housing developments and General Fund subsidies as these developments occur. This includes the supplementation of waived fees and water rights requirements to meet the full need of developments dedicated to the provision of moderate income housing beyond that allowed for waiver under adopted City Code provisions.

It is difficult to set benchmarks for implementing subsidies for affordable housing projects related to construction fees when they are dependent upon the submittal and approval of eligible projects. During 2022, the following construction related fees were subsidized the City using General Fund money or other funding sources:

- Harris Community Village, a 66-unit multi-family residential development, specifically for affordable housing units, was approved on July 6, 2022, for a subsidy of construction related fees using dedicated City funds totaling $292,250.00 for the development.

In January of each year, the Community Development Department will catalog all eligible projects utilizing the reduced regulation during the preceding calendar year and report this data to the Planning Commission and City Council. Regardless, the City maintains an *ongoing* commitment that over the course of the next five years to continue working with the applicants for moderate income housing projects to utilize the general fund and other sources of revenue to waive construction related fees for moderate income housing as permissible and appropriate.

Strategy 8 – Preserve Existing and New Moderate Income Housing and Subsidized Units by Utilizing a Landlord Incentive Program, Providing for Deed Restricted Units Through a Grant Program or Establishing a Housing Loss Mitigation Fund.

This strategy is partially complete and implementation is ongoing. In many older areas of Tooele City there are some legally non-conforming duplexes, apartment buildings and other housing units that were constructed prior to existing zoning codes. These non-conforming units are protected by Tooele City Code Chapter 7-3; Non-Conforming Uses. This ordinance permits non-conforming buildings and land uses to persist in perpetuity as long as there is not a cessation of use greater than one year and also permits the re-construction of non-conforming buildings if destroyed by fire or other calamity. There are no plans to change or otherwise amend this ordinance and these non-conforming, potentially moderate income housing units will continue without challenge by Tooele City.

Utah State Code Reference

The basis for this strategy comes from Section 10-9a-403(2)(B)(iii)(K) which states:

10-9a-403. General plan preparation.

(2) (a) At a minimum, the proposed general plan, with the accompanying maps, charts, and descriptive and explanatory matter, shall include the planning commission's recommendations for the following plan elements:

(iii) for a specified municipality as defined in Section 10-9a-408, a moderate income housing element that:

(A) provides a realistic opportunity to meet the need for additional moderate income housing within the next five years;

(B) selects three or more moderate income housing strategies described in Subsection (2)(b)(iii) for implementation, including one additional moderate income housing strategy as provided in Subsection (2)(b)(iv) for a specified municipality that has a fixed guideway public transit station; and

(C) includes an implementation plan as provided in Subsection (2)(c);

(b) In drafting the moderate income housing element, the planning commission:

(iii) for a town, may include, and for other municipalities, shall include, a recommendation to implement three or more of the following moderate income housing strategies:

(K) preserve existing and new moderate income housing and subsidized units by utilizing a landlord incentive program, providing for deed restricted units through a grant program, or, notwithstanding Section 10-9a-535, establishing a housing loss mitigation fund;

Implementation Plan

Section 10-9a-403(2)(a)(iii)(A) specifies that a community's Moderate Income Housing Element to the General Plan is to provide a realistic opportunity to meet the need for additional moderate income housing within the next five years. Further, Section 10-9a-403(2)(c) of the Utah State Code notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, whether one-time or ongoing, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed.

Measures and Timeline for Monitoring, Reviewing, and Continuing to Implement This Strategy

Tooele City continues to permit legally non-conforming duplexes, multi-family residential structures, and accessory dwelling units to continue the use and maintain the opportunity for preservation of moderate income housing in perpetuity. Starting as early as 1995, the Tooele City Council approved ordinances establishing the right of continuation for legally non-conforming uses and noncomplying structures to be continued in their existing state. These allowances included legally non-conforming affordable housing units that existed at the time. The efforts to establish and expand this program include the following:

- Ordinance 95-16, approved August 19, 1995, enacted a program for legally non-conforming uses and noncomplying structures.
- Ordinance 2006-25, approved January 3, 2007, expanded and clarified the program for legally non-conforming uses and noncomplying structures to remain current and compliant with changes in state statute.

Over the course of the next year, the Community Development Department will work to catalog legally nonconforming duplexes, multi-family residential structures, and accessory dwelling units and report this data to the Planning Commission and City Council. As such, where the opportunity to preserve existing and new moderate income housing is already codified within the Tooele City Code. Regardless, the City maintains an *ongoing* commitment that over the course of the next five years to continue working with the owners of existing moderate income housing and property owners to preserve existing and new moderate income housing.

Strategy 9 – Eliminate Impact Fees for Any Accessory Dwelling Unit that is not an Internal Accessory Dwelling Unit as Defined in Section 10-9a-530.

This strategy is partially complete and implementation is ongoing. Tooele City's Accessory Dwelling Unit ordinance currently eliminates an ADU from conveying water rights to the City and from paying street light utility fees and storm water utility fees.

Utah State Code Reference

The basis for this strategy comes from Section 10-9a-403(2)(B)(iii)(R) which states:

10-9a-403. General plan preparation.

(2) (a) At a minimum, the proposed general plan, with the accompanying maps, charts, and descriptive and explanatory matter, shall include the planning commission's recommendations for the following plan elements:

(iii) for a specified municipality as defined in Section 10-9a-408, a moderate income housing element that:

(A) provides a realistic opportunity to meet the need for additional moderate income housing within the next five years;

(B) selects three or more moderate income housing strategies described in Subsection (2)(b)(iii) for implementation, including one additional moderate income housing strategy as provided in Subsection (2)(b)(iv) for a specified municipality that has a fixed guideway public transit station; and

(C) includes an implementation plan as provided in Subsection (2)(c);

(b) In drafting the moderate income housing element, the planning commission:

(iii) for a town, may include, and for other municipalities, shall include, a recommendation to implement three or more of the following moderate income housing strategies:

(R) eliminate impact fees for any accessory dwelling unit that is not an internal accessory dwelling unit as defined in Section 10-9a-530;

Implementation Plan

Section 10-9a-403(2)(a)(iii)(A) specifies that a community's Moderate Income Housing Element to the General Plan is to provide a realistic opportunity to meet the need for additional moderate income housing within the next five years. Further, Section 10-9a-403(2)(c) of the Utah State Code notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, whether one-time or ongoing, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed.

Measures and Timeline for Monitoring, Reviewing, and Continuing to Implement This Strategy

Tooele City continues to maintain codified provisions for the waiver of impact fees as a part of the City's accessory dwelling unit ordinances regardless of the nature of the unit. This provides expanded opportunities for property owners to seek and be provided relief and encourage the construction of accessory dwelling units to support the provision of moderate income housing units.

Tooele City first adopted ordinances to allow accessory dwelling units in 2019, even before the Legislature for the State of Utah passed legislation compelling cities to establish regulations to allow accessory dwelling units. The effort to establish this program include the following:

- Ordinance 2019-13, approved August 21, 2019, creating and enacting the allowance for accessory dwelling units and the regulatory standards for locating and constructing accessory dwelling units, both internal and external, and the reduction or elimination of impact fees for those units.

It is difficult to set benchmarks for implementing reduced or eliminated impact fees when they are dependent upon the submittal and approval of eligible applications. However, whenever an eligible application has been submitted, the reduction or elimination has been automatically granted as allowed in the City Code. However, in January of each year, the Community Development Department will catalog all eligible applications utilizing the reduced or eliminated impact fees for accessory dwelling units during the preceding calendar year and report this data to the Planning Commission and City Council. Regardless, the City maintains an *ongoing* commitment that over the course of the next five years to implement the codified provisions of the City Code that eliminates impact fees for the approval of internal and external accessory dwelling units throughout the community.

Chart 7 – Tooele City Infill Areas A and B

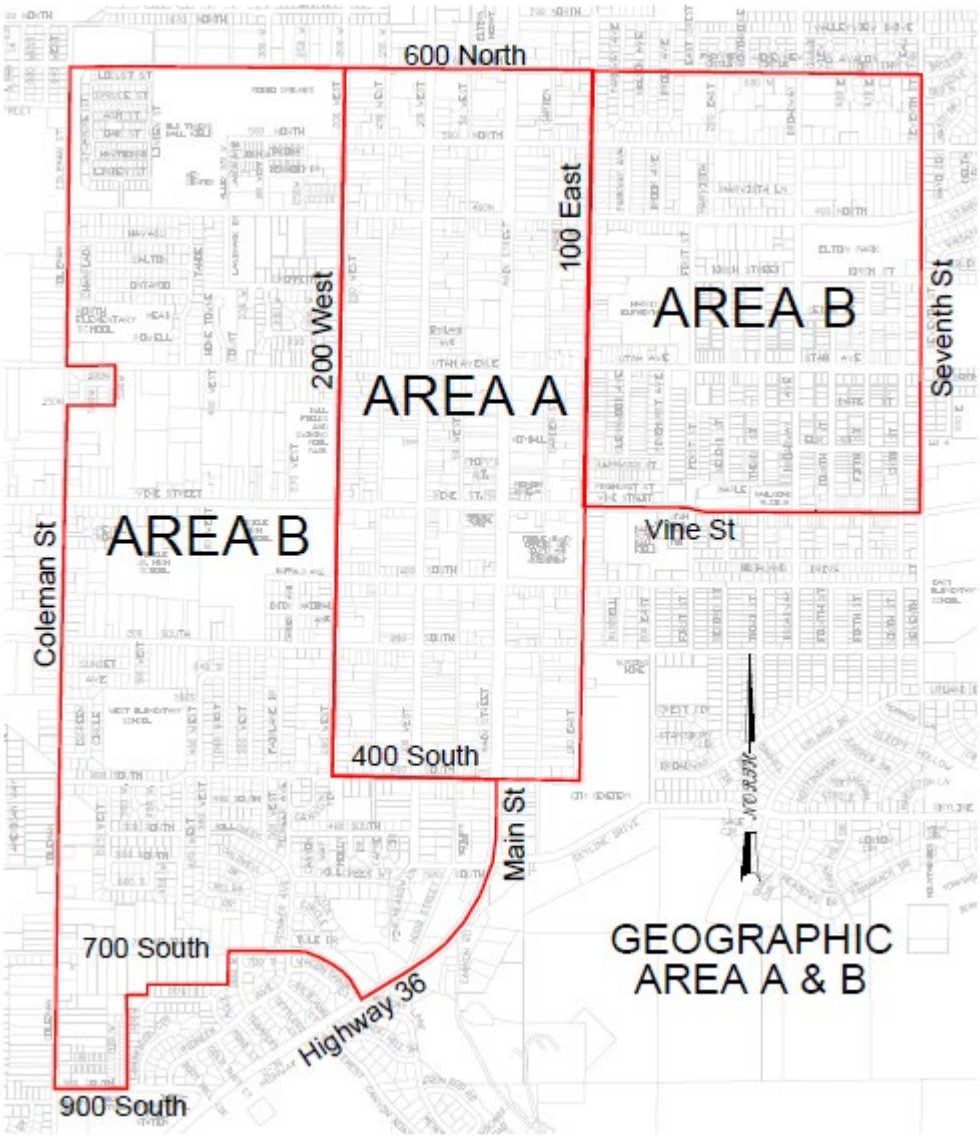


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EXHIBIT B

PLANNING COMMISSION AND CITY COUNCIL MINUTES

Tooele City Planning Commission
Business Meeting Minutes

Date: Wednesday, September 14, 2022
Time: 7:00 p.m.
Place: Tooele City Hall Council Chambers
90 North Main Street, Tooele Utah

Commission Members Present:
Melanie Hammer
Matt Robinson
Tyson Hamilton
Weston Jensen
Alison Dunn
Chris Sloan
Paul Smith
Melodi Gochis

Commission Members Excused:
Jon Proctor

City Council Members Present:
Ed Hansen
Maresa Manzione

City Employees Present:
Andrew Aagard, City Planner
Jim Bolser, Community Development Director
Paul Hansen, Tooele Engineer

Minutes prepared by Katherin Yei

Chairman Robinson called the meeting to order at 7:00 p.m.

1.Pledge of Allegiance
The Pledge of Allegiance was led by Chairman Robinson.

2. Roll Call
Melanie Hammer, Present
Matt Robinson, Present
Tyson Hamilton, Present
Weston Jensen, Present
Paul Smith, Present
Chris Sloan, Present
Alison Dunn, Present

Commissioner Sloan motioned to table item until the next planning commission meeting and leave the public hearing opened. Commissioner Smith seconded. The vote was as follows: Commissioner Hammer, "Aye", Commissioner Gochis, "Aye", Commissioner Sloan, "Aye" Chairman Robinson, "Aye" Commissioner Hamilton, "Aye", Commissioner Jensen, "Aye", and Commissioner Smith, "Aye". The motion passed.

7. Recommendation on a Subdivision Preliminary Plan Request for the Lexington Townhomes Subdivision, Phases 2 & 3 by Harold Irving Representing Lexington Townhomes LLC, to Create 53 Townhome Residential Lots Located at Approximately 620 West Carole's Way in the MR-16 Multi-Family Residential Zoning District on 6.39 Acres.

Mr. Aagard presented information on a subdivision preliminary plan request for the Lexington Townhomes subdivision. It is zoned MR-16. The plan proposes to subdivide the 6.39 acres into townhomes. They have chosen to do phase 2 and phase 3 at the same time. This is not a site plan review, but does tie into the lot boundaries. The applicant does need to submit a site review application. Each lot is 25-feet wide with a creation of driveways, common areas including road ways, storm drains, and leisure area in surrounding areas. Staff is recommending approval with the conditions listed in the staff report.

Commissioner Jensen motioned to forward a positive recommendation on a Subdivision Preliminary Plan Request for the Lexington Townhomes Subdivision, Phases 2 & 3 by Harold Irving Representing Lexington Townhomes LLC, to Create 53 Townhome Residential Lots Located at Approximately 620 West Carole's Way in the MR-16 Multi Family Residential Zoning District on 6.39 Acres based on the findings and conditions listed in the staff report. Commissioner Sloan seconded the motion. The vote was as follows: Commissioner Hammer, "Aye", Commissioner Gochis, "Aye", Commissioner Sloan, "Aye" Chairman Robinson, "Aye" Commissioner Hamilton, "Aye", Commissioner Jensen, "Aye", and Commissioner Smith, "Nay". The motion passed.

8. Public Hearing and Recommendation on an Update to the Moderate-Income Housing Plan Element of the Tooele City General Plan.

Mr. Aagard presented an update to the Moderate-Income Housing plan based off recent House Bill 462 being passed. The changes include clarifying MIH requirement and timing to amend the General Plan. Tooele City is in great shape for compliance and has already been doing that with additional strategies. Once the plan is adopted by the City Council, the report will be sent into the State and be posted on the City website.

The Planning Commission had the following questions:
When the City updates the report, are they required to use the census?

Mr. Aagard addressed the Planning Commission. They are not required to use the census, but it is a great resource.

Mr. Bolser addressed the Commission. The scope the state requires, the census leads to answers everything the City needs to comply.

The public hearing was opened.

Kalani Mascherino shared her excitement that Tooele is in good shape.

The public hearing was closed.

Commissioner Sloan motioned to forward a positive recommendation to amend and update the Moderate-Income Housing Plan Element of the Tooele City General Plan. Commissioner Hamilton seconded the motion. The vote was as follows:
Commissioner Hammer, "Aye", Commissioner Gochis, "Aye", Commissioner Sloan, "Aye" Chairman Robinson, "Aye" Commissioner Hamilton, "Aye", Commissioner Jensen, "Aye", and Commissioner Smith, "Aye". The motion passed.

9. City Council Reports

Council Member Manzione shared the following information from the City Council Meeting: There was a public hearing on the annexation with no decision yet. There was a public hearing and an approval for the amendment of the zoning map for 800 East due to non-conforming. They approved a few subdivisions.

10. Review and Approval of Planning Commission Minutes for the Business Meeting Held on August 24, 2022.

There are no changes to the minutes.

Chairman Robinson motioned to approve the minutes for August 24th, 2022. Commissioner Hammer seconded the motion. The vote was as follows:
Commissioner Hammer, "Aye", Commissioner Gochis, "Aye", Commissioner Sloan, "Aye" Chairman Robinson, "Aye" Commissioner Hamilton, "Aye", Commissioner Jensen, "Aye", and Commissioner Smith, "Aye". The motion passed.

11. Adjourn

Chairman Robinson adjourned the meeting at 8:15 p.m.

The content of the minutes is not intended, nor are they submitted, as a verbatim transcription of the meeting. These minutes are a brief overview of what occurred at the meeting.

Approved this ____ day of September, 2022

_____
Matt Robinson, Tooele City Planning Commission Chair

Tooele City Council Business Meeting Minutes

Date: Wednesday, September 21, 2022
Time: 7:00 p.m.
Place: Tooele City Hall, Council Chambers
90 North Main Street, Tooele, Utah

City Council Members Present:
Ed Hansen
Justin Brady
Maresa Manzione
Tony Graf
Dave McCall

City Employees Present:
Mayor Debbie Winn
Jim Bolser, Community Development Director
Adrian Day, Police Department Chief
Roger Baker, City Attorney
Darwin Cook, Parks and Recreation Director
Jami Grandpre, Public Works Director
Holly Potter, Deputy City Recorder

City Employees Excused:
Michelle Pitt, City Recorder
Shannon Wimmer, Finance Director

Minutes prepared by Katherin Yei

Chairman Brady called the meeting to order at 7:00 p.m.

1. Pledge of Allegiance
The Pledge of Allegiance was led by Jim Bolser, Community Develop Director.

2. Roll Call
Ed Hansen, Present
Justin Brady, Present
Maresa Manzione, Present
Dave McCall, Present
Tony Graf, Present via phone

3. Youth Advocate of the Year
Presented by Jamie Slade, Prevention Specialist & Sandy Medina, Communities that Care

Council Member Hansen motioned to approve Ordinance 2022-36 an Ordinance of Tooele City Reassigning the Zoning for Approximately 7.36 Acres Located at 602 & 603 South 3 O' Clock Drive from NC Neighborhood Commercial to the MR-12 Multi-Family Residential Zoning District with the condition of 10-units per acre max. Council Member Manzione seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

8. Public Hearing and Motion on Ordinance 2022-37 an Ordinance of the Tooele City Council Amending the Moderate-Income Housing Element of the Tooele City General Plan
Presented by Jim Bolser, Community Development Director

Mr. Bolser presented an update to the Moderate-Income Housing Plan based off recent House Bill 462 being passed. The changes include clarifying the MIH implementation strategy requirements and the timing to amend the General Plan. Tooele City is in great shape for compliance and has already been doing that with additional strategies. Once the plan is adopted by the City Council, the report will be sent into the State and be posted on the City website. The next step is to update the data and strategies within the plan. The Planning Commission has forwarded a unanimous positive recommendation.

The public hearing was opened. No one came forward. The public hearing was closed.

Council Member Manzione motioned to approve Ordinance 2022-37 an Ordinance of the Tooele City Council Amending the Moderate-Income Housing Element of the Tooele City General Plan. Council Member McCall seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

9. Preliminary Plan Request for the Lexington Townhomes Subdivision, Phases 2 & 3 to Create 53 Townhome Residential Lots Located at Approximately 620 West Carole's Way
Presented by Jim Bolser, Community Development Director

Mr. Bolser presented a preliminary plan request for the Lexington Townhomes Subdivision. The multi-family portion of the Lexington Greens project has been split into eight master lots. The property is zoned MR-16, Multi-Family Residential. The application is to subdivide phases 2 and 3. The Planning Commission has forwarded a positive recommendation.

Council Member Hansen motioned to approve Preliminary Plan Request for the Lexington Townhomes Subdivision, Phases 2 & 3 to Create 53 Townhome Residential Lots Located at Approximately 620 West Carole's Way. Council Member McCall seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

EXHIBIT C

NOVEMBER 18, 2022 NOTICE OF NONCOMPLIANCE

State of Utah
SPENCER J. COX
Governor
DEIDRE HENDERSON
Lieutenant Governor

Department of Workforce Services
CASEY R. CAMERON
Executive Director
GREG PARAS
Deputy Director
NATE MCDONALD
Deputy Director
KEVIN BURT
Deputy Director

November 18, 2022

To: Mayor and City Council
Tooele City

From: Department of Workforce Services
Housing and Community Development Division

Re: Moderate Income Housing Report 2022—Notice of Non-Compliance

Dear Tooele City Mayor and City Council,

Thank you for submitting the Annual Moderate Income Housing Report. Following review of the submitted plan and report, the Housing and Community Development Division has determined that the submission does not fulfill the requirements set forth in State Code section 10-9a-408. Please see the below description of deficiencies and actions the city must take to comply with the Code.

The Moderate-Income Housing Report requires a copy of the adoption ordinance for the general plan updates made in 2022. The Tooele City submission did not include a copy of the adoption ordinance or a link to the updated general plan. Please include a signed copy of the 2022 ordinance and a link to the updated general plan when the city resubmits.

Section 10-9a-403(2)(b)(iii) notes that cities shall include a recommendation to implement three or more of the moderate-income housing strategies. HB 462, passed in 2022, included notable changes to the strategies and requires communities to update their general plans with the new language. Strategies four, seven, and eight described in the attached 2022 Moderate Income Housing Plan do not reflect the State Code language for strategies O, D, and K. There is also a discrepancy between the strategies included in the plan submitted by the city, which include strategies A, B, F, E, O, L, D, and K, and the strategies identified in the online report, which include strategies A, C, D, E, F, K, L, and O.

Deficiency Corrective Action: Update the moderate income housing element of the general plan to include the exact language from the code 10-9a-403(2)(b)(iii) for the strategies the City has adopted into the general plan. Please ensure that the strategies in the general plan match those identified in the moderate-income housing annual report submission for the City.

Section 10-9a-403(2)(c) notes that the City shall draft implementation plans that establish a timeline for implementing selected strategies, identify specific measures and benchmarks for implementing each selected strategy, and provide flexibility for the municipality to adjust as needed. Additionally, section 10-9a-408(2)(c) requires each municipality's report starting in 2023 to describe action taken by the municipality towards implementation of the selected strategies, including how each land use decision or regulation supports the implementation of the moderate income housing strategies, barriers encountered, accessory dwelling unit information, the market's response to the strategies and implementation plans, and recommendations to the State regarding how the State can support the municipality in implementing strategies. Thus, implementation plans in the 2022 reporting year must be of a sufficient quality to show specific details on actionable tasks, timelines for implementation, measures used to demonstrate progress, and what resources the municipality will use to achieve the strategies selected.

The City's submission does not include the required implementation plan, which must include benchmarks or measures and a timeline for the strategy to measure success. The Strategies currently include detail about what the City has recently done or should do. The implementation plan must include detail about future actions or benchmarks that the City will engage in. If a strategy has been implemented, is complete, or is ongoing, measures and a specific timeline for program monitoring, review, or continued implementation must be included.

> **Deficiency Corrective Action:** The City must update the moderate income housing element of the general plan to identify actionable and specific benchmarks or measures for all moderate-income housing strategies adopted by the City. Strategies which have been implemented, complete, ongoing, or current should identify measures and a timeline for monitoring, review, or continued implementation of the Strategy.

Please review the State Code sections referenced and submit your report using the form found here: https://jobs.utah.gov/housing/affordable/moderate/reporting/.

Section 10-9a-408(6) allows for each community 90 days from the date after this notice is sent to come into compliance with State Code. Per section 10-9a-408(7)(b), **failure to cure the described deficiencies in your municipality's report by February 16, 2023, will make Tooele City ineligible for Utah Department of Transportation (UDOT) Transportation Investment Fund of 2005, including the Transit Transportation Investment funding and the Governor's Office of Planning and Budget (GOPB) Covid-19 Local Assistance Matching Grant for the 2024 fiscal year.**

The Housing and Community Development Division is available to help you work through the noted deficiencies. We want to work with you to meet the requirements of the Code. If you have any questions or concerns, please contact Alyssa Gamble at angamble@utah.gov.

Sincerely,

Alyssa Gamble
Program Manager – Moderate Income Housing Database
Housing and Community Development
Department of Workforce Services

EXHIBIT D

STATE OF UTAH CORRESPONDENCE ACCEPTING
TOOELE CITY'S MODERATE INCOME HOUSING PLAN REVISIONS

Jim Bolser

From: Alyssa Gamble <angamble@utah.gov>
Sent: Tuesday, January 3, 2023 2:02 PM
To: Jim Bolser
Cc: Christina Oliver; Andrew Aagard; Roger Baker
Subject: Re: Tooele City Moderate Income Housing Plan

Dear Jim,

I have completed the review of the moderate income housing element draft for Tooele City. As the draft is currently written, eight of the nine strategies included meet the requirements for compliance. The strategy language matches state code and each of the eight strategies include an implementation plan with benchmarks and timelines.

Strategy 7 (D) does not match state statute language and it does not include an implementation plan. The strategy in 10-9a-403 starts with "identify" not "consider". While an implementation plan is not included, it looks like there may be some opportunity to add an implementation plan. In the first paragraph of the strategy description, it states that "the Tooele City Council is considering increasing these for moderate income housing." If the Council is looking to identify general fund subsidies for moderate income housing, the City could reword the sentence to create a specific benchmark and add a timeline on adoption to create an implementation plan.

Whether the City moves forward with the eight compliant strategies or updates Strategy 7 to include nine compliant strategies, the current draft meets the strategy and implementation plan requirements described in the statute. If further edits are made during the update process, you are welcome to send those to me for review prior to adoption of the plan. When you are ready to resubmit the report, please do so using this link.

Thank you for your work on the draft. Let me and Christina know if you have any questions, comments, or concerns.

I hope you had a Happy New Year!

Sincerely,
ALYSSA GAMBLE, AICP
MODERATE INCOME HOUSING PROGRAM MANAGER
P: 385-249-4808
E: angamble@utah.gov
UTAH DEPARTMENT OF WORKFORCE SERVICES
HOUSING & COMMUNITY DEVELOPMENT

On Thu, Dec 29, 2022 at 6:45 AM Christina Oliver <coliver@utah.gov> wrote:

> Good Morning,
> This has been received.
> Review will be completed after the holiday weekend when our planner returns from vacation.
> Have a great day!
> **Christina Oliver**

TOOELE CITY CORPORATION

ORDINANCE 2023 - 07

AN ORDINANCE OF TOOELE CITY REASSIGNING THE LAND USE DESIGNATION FOR APPROXIMATELY 97 ACRES OF PROPERTY LOCATED AT APPROXIMATELY 1825 SOUTH 11TH AVENUE FROM REGIONAL COMMERCIAL (RC) TO INDUSTRIAL (I).

WHEREAS, Utah Code §10-9a-401, *et seq.*, requires and provides for the adoption of a "comprehensive, long-range plan" (hereinafter the "General Plan") by each Utah city and town, which General Plan contemplates and provides direction for (a) "present and future needs of the community" and (b) "growth and development of all or any part of the land within the municipality"; and,

WHEREAS, the Tooele City General Plan includes various elements, including water, sewer, transportation, and land use. The Tooele City Council adopted the Land Use Element of the Tooele City General Plan, after duly-noticed public hearings, by Ordinance 2020-47, on December 16, 2020, by a vote of 5-0; and,

WHEREAS, the Land Use Element (hereinafter the "Land Use Plan") of the General Plan establishes Tooele City's general land use policies, which have been adopted by Ordinance 2020-47 as a Tooele City ordinance, and which set forth appropriate Use Designations for land in Tooele City (e.g., residential, commercial, industrial, open space); and,

WHEREAS, the Land Use Plan reflects the findings of Tooele City's elected officials regarding the appropriate range, placement, and configuration of land uses within the City, which findings are based in part upon the recommendations of land use and planning professionals, Planning Commission recommendations, public comment, and other relevant considerations; and,

WHEREAS, Utah Code §10-9a-501, *et seq.*, provides for the enactment of "land use [i.e., zoning] ordinances and a zoning map" that constitute a portion of the City's regulations (hereinafter "Zoning") for land use and development, establishing order and standards under which land may be developed in Tooele City; and,

WHEREAS, a fundamental purpose of the Land Use Plan is to guide and inform the recommendations of the Planning Commission and the decisions of the City Council about the Zoning designations assigned to land within the City (e.g., R1-10 residential, neighborhood commercial (NC), light industrial (LI)); and,

WHEREAS, the City received an Amendment Petition for Land Use Map amendment for 97 acres of property located at approximately 1825 South 11th Avenue on November 18, 2022, requesting that the Subject Property be reassigned from the RC Regional Commercial Land Use designation to the I Industrial Land Use designation (see Amendment Petition and map attached as Exhibit A, and Staff Report attached as Exhibit

B); and,

WHEREAS, the Subject Properties are owned by Ronald G Bushnell and are currently designated as Regional Commercial in the Land Use Element of the General Plan; and,

WHEREAS, the Regional Commercial land use designation includes the RC Regional Commercial and RD Research and Development Zoning districts; and,

WHEREAS, the Industrial land use designation includes the I Industrial zoning district; and,

WHEREAS, on January 25, 2023, the Planning Commission convened a duly noticed public hearing, accepted written and verbal comment, and voted to forward its recommendation to the City Council (see Planning Commission minutes attached as Exhibit C); and,

WHEREAS, on February 1, 2023, the City Council convened a duly-noticed public hearing:

NOW, THEREFORE, BE IT ORDAINED BY THE TOOELE CITY COUNCIL that:

1. this Ordinance and the Land Use Map amendment proposed therein is in the best interest of the City in that it will create additional opportunities for employment of City residents and provide an expansion to the City's commercial tax base; and,
2. the Land Use map is hereby amended reassigning the Land Use designation to Industrial for approximately 97 acres of property located at approximately 1825 South 11th Avenue, according to the map attached as Exhibit A and staff report attached as Exhibit B.

This Ordinance is necessary for the immediate preservation of the peace, health, safety, or welfare of Tooele City and shall become effective immediately upon passage, without further publication, by authority of the Tooele City Charter.

IN WITNESS WHEREOF, this Ordinance is passed by the Tooele City Council this ____ day of _____, 20__.

TOOELE CITY COUNCIL

(For) (Against)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

ABSTAINING: _____

MAYOR OF TOOELE CITY

(Approved) (Disapproved)

_____ _____

ATTEST:

_____
Michelle Pitt, City Recorder

S E A L

Approved as to Form: _____
Roger Baker, Tooele City Attorney

Exhibit A

Petition and Mapping Pertinent to Zoning Map Amendment

Zoning, General Plan, & Master Plan Map Amendment Application

Community Development Department
90 North Main Street, Tooele, UT 84074
(435) 843-2132 Fax (435) 843-2139
www.tooelecity.org

Tooele City
Est. 1853

Notice: The applicant must submit copies of the map amendment proposal to be reviewed by the City in accordance with the terms of the Tooele City Code. Once plans for a map amendment proposal are submitted, the plans are subject to compliance reviews by the various city departments and may be returned to the applicant for revision if the plans are found to be inconsistent with the requirements of the City Code and all other applicable City ordinances. All submitted map amendment proposals shall be reviewed in accordance with the Tooele City Code. Submission of a map amendment proposal in no way guarantees placement of the application on any particular agenda of any City reviewing body. It is **strongly** advised that all applications be submitted well in advance of any anticipated deadlines.

Project Information

22-1336

Date of Submission:	Current Map Designation:	Proposed Map Designation:	Parcel #(s):
Nov 18,2022	RR1, 5, 20, MU160	I - Industrial	17-096-0-0002A

Project Name:	Acres:
AA TRAILER PARK	97.383

Project Address: 1825s 11th AVE, TOOELE, UT, 84074

Proposed for Amendment: ☒ Ordinance ☒ General Plan ☐ Master Plan: ~~LAND USE~~ MAP AMEND

Brief Project Summary:
Rezone to expand existing RV park.
Future plans to install one or more of the following:
Self-storage, vehicle storage, light industrial complex

Property Owner(s):			**Applicant(s):**		
Sea Ray Investments			Craig Mills		
Address: 144 W. Bingham Road, Suite 5			Address: 1825s 11th Ave		
City: St. George	State: UT	Zip: 84790	City: Tooele	State: UT	Zip: 84074
Phone: 435-986-9500			Phone: 801-803-8032		
Contact Person: Craig Mills			Address: 2468e Sundown Ave		
Phone:			City: Cottonwood Heights	State: UT	Zip: 84121
Cellular: 801-803-8032	Fax:		Email: craig.aatp@gmail.com		

*The application you are submitting will become a public record pursuant to the provisions of the Utah State Government Records Access and Management Act (GRAMA). You are asked to furnish the information on this form for the purpose of identification and to expedite the processing of your request. This information will be used only so far as necessary for completing the transaction. If you decide not to supply the requested information, you should be aware that your application may take a longer time or may be impossible to complete. If you are an "at-risk government employee" as defined in *Utah Code Ann.* § 63-2-302.5, please inform the city employee accepting this information. Tooele City does not currently share your private, controlled or protected information with any other person or government entity.

Note to Applicant:
Zoning and map designations are made by ordinance. Any change of zoning or map designation is an amendment the ordinance establishing that map for which the procedures are established by city and state law. Since the procedures must be followed precisely, the time for amending the map may vary from as little as 2½ months to 6 months or more depending on the size and complexity of the application and the timing.

For Office Use Only 2221349

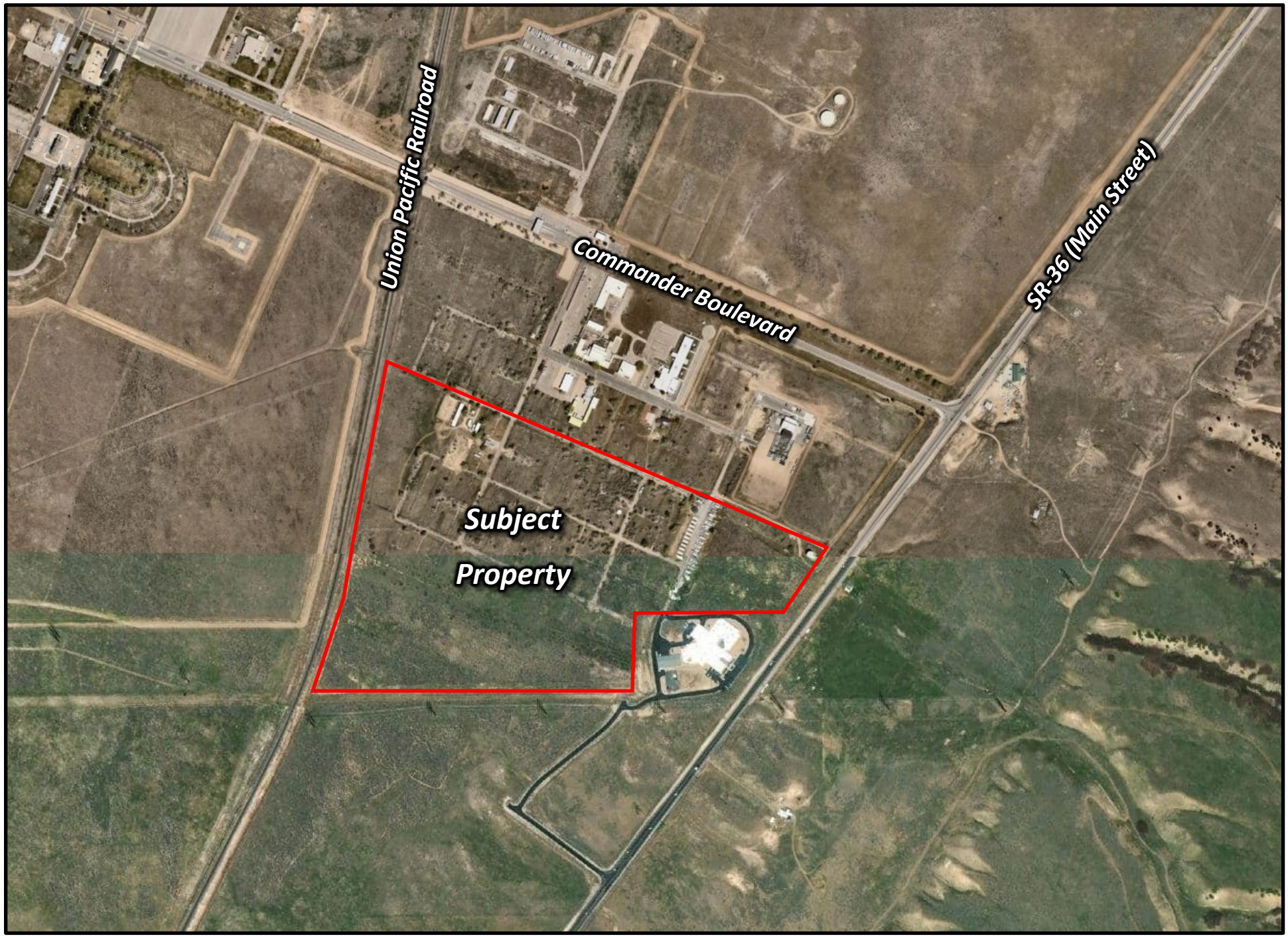
Received By:	Date Received:	Fees:	App. #:
Hunter	11/22/22	$6,000.00	

RA.521970

General Plan Map

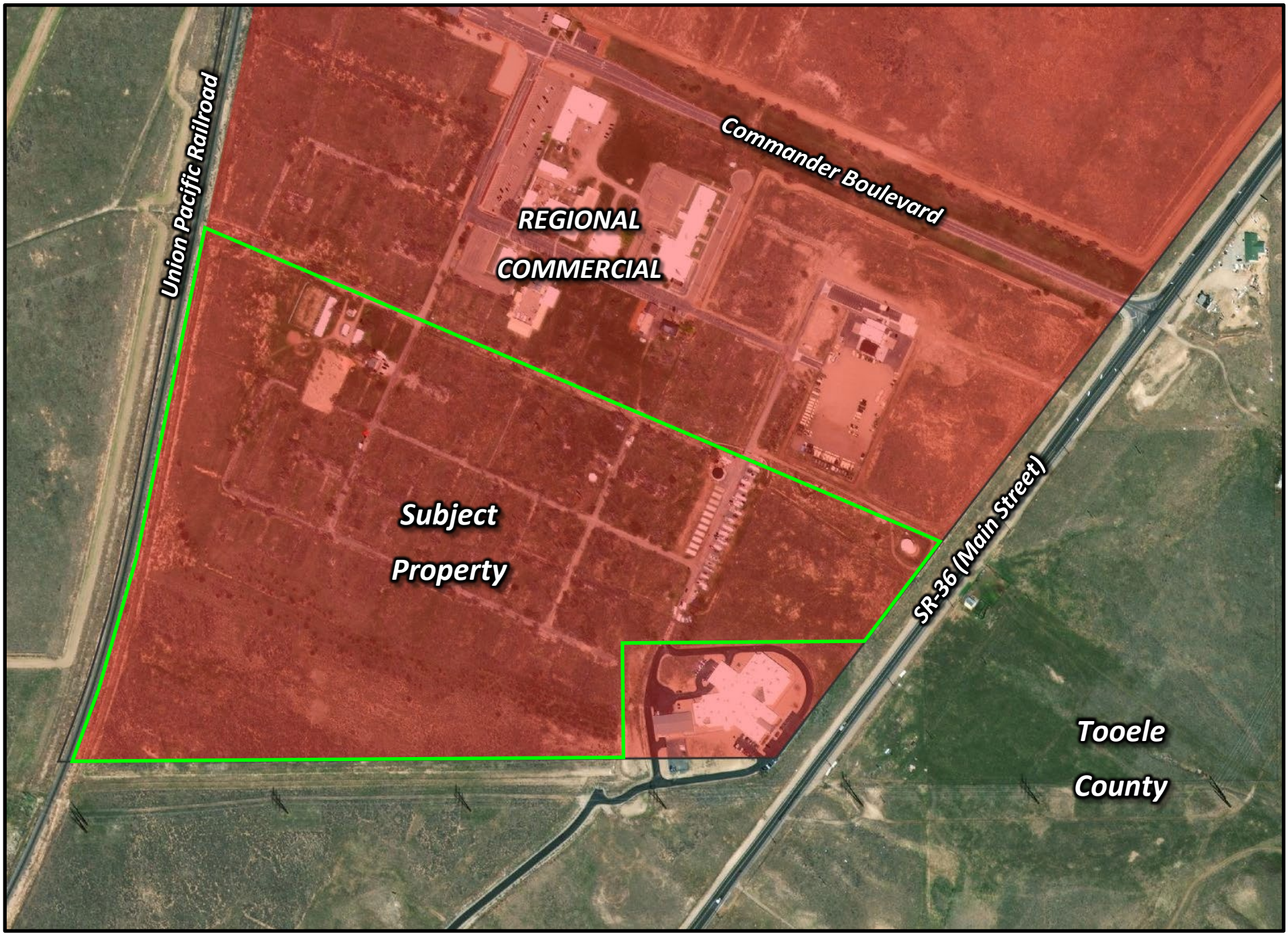
1. What is the present land use designation of the subject property(s)?
    a. RR1, RR5, RR20, MU160
2. Explain how the proposed land use designation is similar or compatible with the other land use designations in the surrounding area.
    a. The surrounding area includes a jail, army depot, rail, and county land. Current uses for this plot includes an RV Park, corrals, storage and a rental home.
3. What do you anticipate the land being used for?
    a. We propose to expand the RV Park providing additional space to service people working on base and surrounding areas. Additional pads will provide a place to stay for snowbirds and those traveling through the state. This additional space will also be used to meet the need of low-income individuals that use this type of a facility as a last resort of residence. We receive an average of 3 calls per day from people looking for a pad to rent. These individuals would work and buy food, gasoline, other goods and service in the Tooele area.
    b. We propose to use a parcel of the land for self-storage. Many moving to the Tooele area are renting. The addition of self-storage units will provide individuals renting/living in the Tooele area a place for their possessions including boats, RVs and other vehicles. Although there are many self-storage units in the area, even a self-storage complex under construction is already taking reservations.
    c. We propose to use a parcel of the land for a light industrial park to offer locations for small business owners to store, manufacture, fix, create, and provide other goods and service to the area.
4. Explain how the proposed land use designation would affect property, surrounding properties, and Tooele City.
    a. The proposed use would increase traffic on the road at the entrance to the Tooele Army Depot and streets leading to the park. Due to the nature of the surrounding properties, they should not be affected by noise or lights.
5. Explain how the proposed land use designation promotes the goals and objectives of Tooele City.
    a. Rezoning will provide a location for small business to operate, increase Tooele's tax base, diversify Tooele's commercial/industrial business, and transform a deteriorating military facility into a vibrant commercial/industrial park for the purpose of attracting economic development to the Tooele vicinity.

AA Trailer Park Land Use Map Amendment



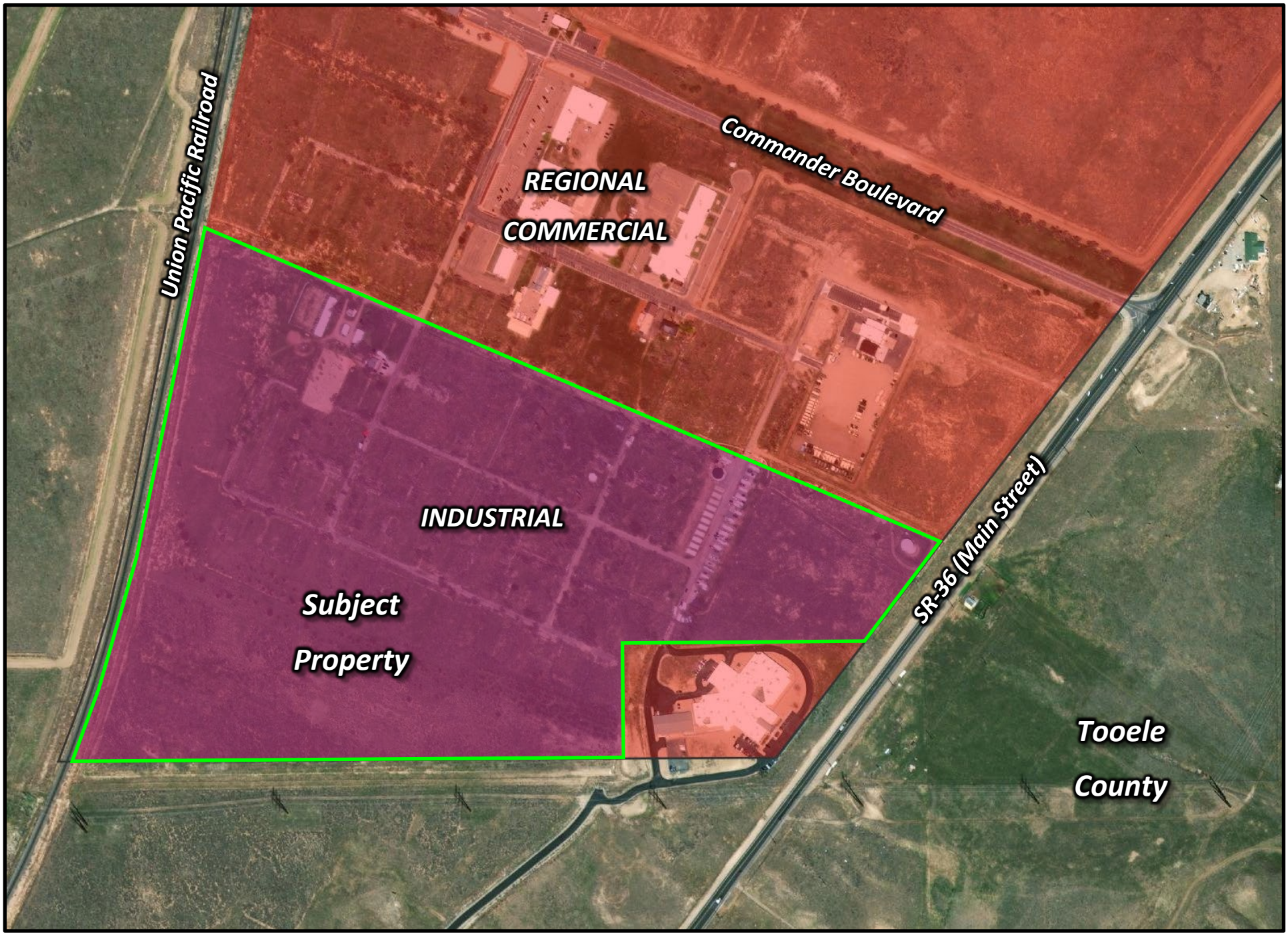
Aerial Map

AA Trailer Park Land Use Map Amendment



Current Land Use Map

AA Trailer Park Land Use Map Amendment



Proposed Land Use Map

Exhibit B

Staff Report

STAFF REPORT
January 25, 2023

To: Tooele City Planning Commission
Business Date: December 14, 2022

From: Planning Division
Community Development Department

Prepared By: Andrew Aagard, City Planner / Zoning Administrator

Re: **AA Trailer Park – Land Use Map Amendment Request**

Application No.:	P22-1336
Applicant:	Craig Mills
Project Location:	Approximately 1825 South 11th Avenue
Zoning:	RR-1 Residential Zone
Acreage:	97.4 Acres (Approximately 4,241,872 ft^2)
Request:	Request for approval of a Land Use Map Amendment in the RR-1 Residential zone regarding re-assigning the land use designation for approximately 97 acres to the Industrial land use designation.

BACKGROUND

This application is a request for approval of a Land Use Map Amendment for approximately 97.4 acres located at approximately 1825 South 11th Avenue. The property is currently zoned RR-1 Residential. The applicant is requesting that a Land Use Map Amendment be approved to allow for the development of the currently vacant property as a RV park / campground, self storage facility, vehicle storage facility and a light industrial complex.

ANALYSIS

General Plan and Zoning. The Land Use Map of the General Plan calls for the Regional Commercial land use designation for the subject property. The property has been assigned the RR-1 Residential zoning classification, supporting approximately one dwelling unit per acre. The RR-1 Residential zoning designation is not identified by the General Plan as a preferred zoning classification for the Regional Commercial land use designation. Properties to the north of the subject property are zoned OS Open Space. Properties to the west, south and east are located in unincorporated Tooele County as well as the Tooele Army Depot. Mapping pertinent to the subject request can be found in Exhibit "A" to this report.

The applicant is wishing to expand an existing mobile home / RV park. They are also desiring to develop the property as a self storage facility, vehicle storage facility and a light industrial complex. These uses are permissible in the Industrial Service and Industrial zoning districts. However, in order to qualify for one of these two districts the Land Use Map must first be amended to either a Light Industrial or Industrial designation. The applicant has selected the Industrial land use designation which will require the Industrial zoning district.

The current zoning of the property is RR-1 Residential. The RR-1 zoning district is a rural residential zoning district that emphasizes rural type land uses such as large 1 acre lots for single-family homes, the keeping of large animals such as horses, cows and goats and agriculture. In many cases the RR-1 zoning district is used as a holding zone for locations in the City that are not at a point where development can

occur due to lack of utilities and infrastructure. The RR-1 zoning district does not permit recreational vehicle parks and campgrounds and therefore the request by the applicant to change the Land Use Map. The property currently bears the Regional Commercial land use designation. This land use designation is specific to and encourages the RC Regional Commercial and the RD Research and Development zoning districts. These commercial zoning districts are designed for large scale commercial uses that are utilized regionally and not just locally. These zones permit research centers, large scale retail facilities, medical parks, business parks, and so forth. Recreational vehicle parks and campgrounds are not permitted within these zoning districts.

There are two zones that permit RV parks and campgrounds. Those are the Industrial Service and Industrial zone. There are also three residential zones that permit campgrounds, those being the RR-5, RR-2 and the MU-160 zoning districts. Regardless of whether the applicant were to choose the Industrial zones or the Residential zones to facilitate the desired project there would still be a requirement to amend the Land Use Map and the Zoning Map. The process would be identical.

Self storage facilities are permissible in the Light Industrial, Industrial and Industrial Service zones. Vehicle storage yards are permissible only in the Industrial zoning district.

In order to accomplish the Industrial zoning district the land use map would need to be amended to Industrial. The Industrial land use designation incorporates only one zone and that is the Industrial zoning district.

Please keep in mind that a Land Use Map is a future decision guiding document and does not change or alter the zoning map. If the Land Use Map is amended to Industrial, the applicant would still have to apply for a Zoning Map Amendment.

Water. This area is located where water infrastructure is lacking. Currently the Tooele Army Depot provides water to the existing uses located on the property. Tooele City provides a 12" water line to the County Jail. City Staff reached out to Dorinda Ware, Chief, Master Planning / Business Operations and presented the proposal to develop the 97 acres. Staff asked if the Depot would be willing to provide water to new development that will occur on the site. Her response was an emphatic "no" and stated repeatedly that the Depot did not have the water to provide to a new development and would refuse any request to do so. That would then require the applicant to bring new water resources to satisfy the needs of the proposed development in the form of additional water rights, pipes and other infrastructure at significant cost. A letter from Dorinda has been included in this packet explaining the Depot's position on providing water to any new development in the area.

Criteria For Approval. The criteria for review and potential approval of a Land Use Map Amendment request is found in Section 7-1A-3 of the Tooele City Code. This section depicts the standard of review for such requests as:

(1) In considering a proposed amendment to the Tooele City General Plan, the applicant shall identify, and the City Staff, Planning Commission, and City Council may consider, the following factors, among others:
   (a) The effect of the proposed amendment on the character of the surrounding area;
   (b) Consistency with the General Plan Land Use Map and the goals and policies of the General Plan and its separate elements;
   (c) Consistency and compatibility with the existing uses of adjacent and nearby properties;
   (d) Consistency and compatibility with the possible future uses of adjoining and nearby properties as identified by the General Plan;

(e) The suitability of the properties for the uses requested viz. a viz. the suitability of the properties for the uses identified by the General Plan; and
(f) The overall community benefit of the proposed amendment.

REVIEWS

Planning Division Review. The Tooele City Planning Division has completed their review of the Land Use Map Amendment submission and has issued the following comment regarding this proposal:

1. The Tooele Army Depot will not be providing any water for new development on this property.

Engineering and Public Works Review. The Tooele City Engineering and Public Works Divisions do not typically review Land Use Map and Zoning Map amendments and therefore have not issued any comments regarding this application.

Tooele City Fire Department Review. The Tooele City Fire Department do not typically review Land Use Map and Zoning Map amendments and therefore have not issued any comments regarding this application.

Noticing. The applicant has expressed their desire to amend the Land Use Map for the subject property and do so in a manner which is compliant with the City Code. As such, notice has been properly issued in the manner outlined in the City and State Codes.

STAFF RECOMMENDATION

Staff recommends the Planning Commission carefully weigh this request for a Land Use Map Amendment according to the appropriate tenets of the Utah State Code and the Tooele City Code, particularly Section 7-1A-7(1) and render a decision in the best interest of the community with any conditions deemed appropriate and based on specific findings to address the necessary criteria for making such decisions.

Potential topics for findings that the Commission should consider in rendering a decision:

1. The effect of the proposed application on the character of the surrounding area.
2. The degree to which the proposed application is consistent with the intent, goals, and objectives of any applicable master plan.
3. The degree to which the proposed application is consistent with the intent, goals, and objectives of the Tooele City General Plan.
4. The degree to which the proposed application is consistent with the requirements and provisions of the Tooele City Code.
5. The suitability of the properties for the uses proposed.
6. The degree to which the proposed application will or will not be deleterious to the health, safety, and general welfare of the general public or the residents of adjacent properties.
7. The degree to which the proposed application conforms to the general aesthetic and physical development of the area.
8. Whether a change in the uses allowed for the affected properties will unduly affect the uses or proposed uses for adjoining and nearby properties.
9. The overall community benefit of the proposed amendment.
10. Whether or not public services in the area are adequate to support the subject

development.

11. Other findings the Commission deems appropriate to base their decision upon for the proposed application.

MODEL MOTIONS

Sample Motion for a Positive Recommendation – "I move we forward a positive recommendation to the City Council for the AA Trailer Park Land Use Map Amendment Request by Craig Mills, for the purpose of reassigning 97.4 acres located at approximately 1825 South 11th Avenue to the Industrial Land Use designation, application number P22-1336, based on the findings and subject to the conditions listed in the Staff Report dated December 6, 2022:"

1. List any additional findings and conditions…

Sample Motion for a Negative Recommendation – "I move we forward a negative recommendation to the City Council for the AA Trailer Park Land Use Map Amendment Request by Craig Mills, for the purpose of reassigning 97.4 acres located at approximately 1825 South 11th Avenue to the Industrial Land Use designation, application number P22-1336, based on the following findings:"

1. List findings…

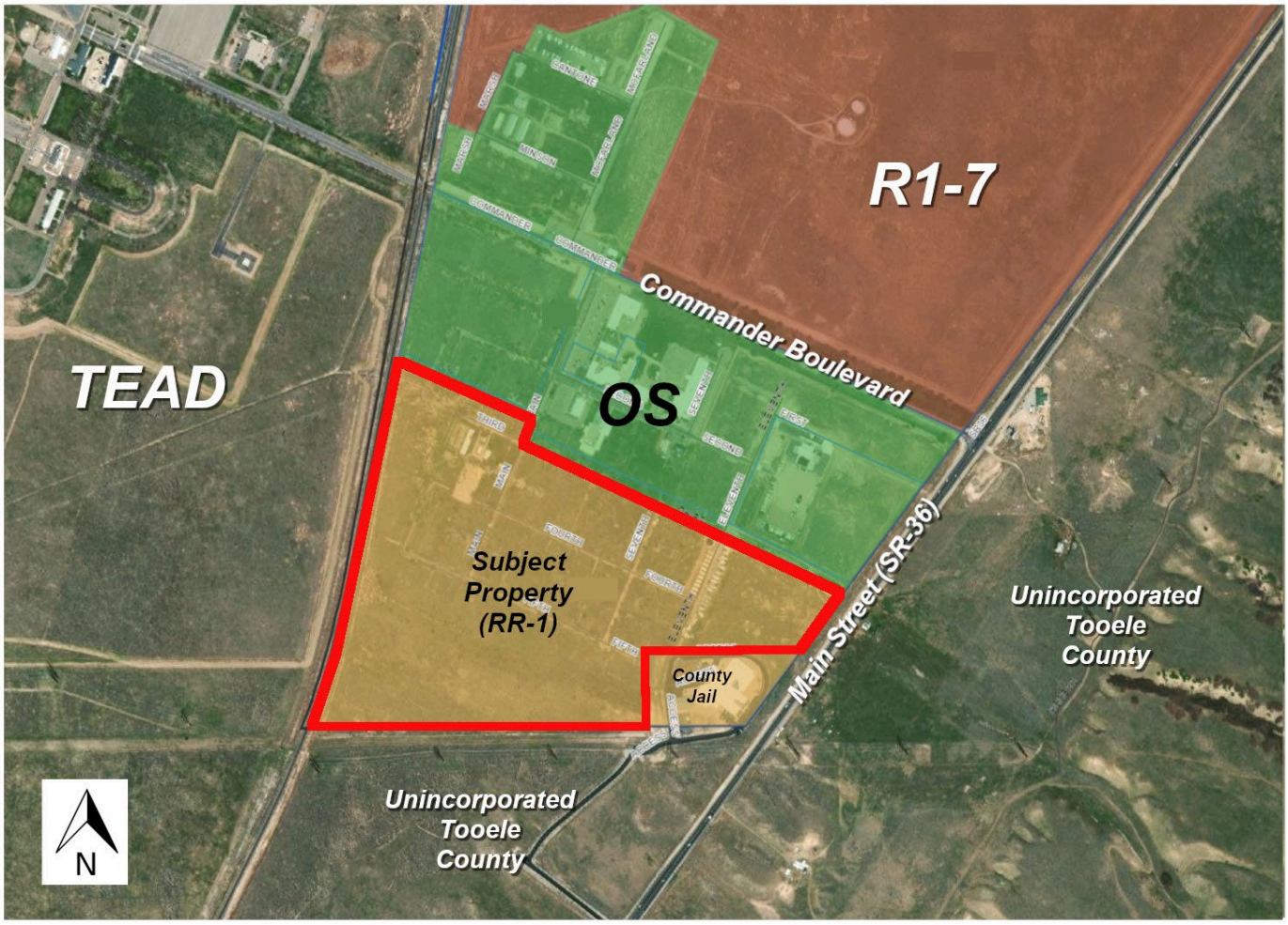
EXHIBIT A

MAPPING PERTINENT TO THE AA TRAILER PARK LAND USE MAP AMENDMENT

AA Trailer Park Land Use Map Amendment

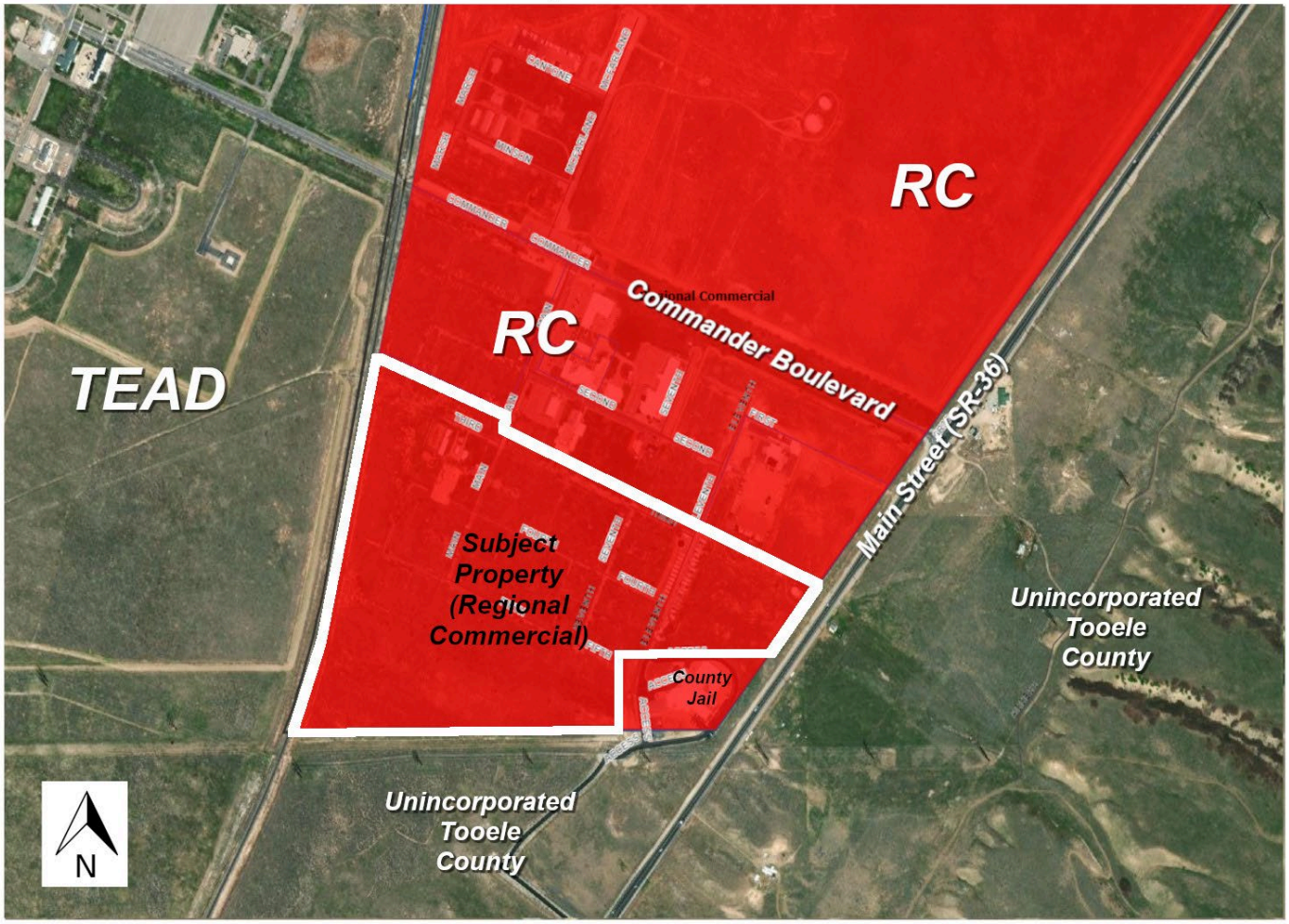
Aerial View

AA Trailer Park Land Use Map Amendment



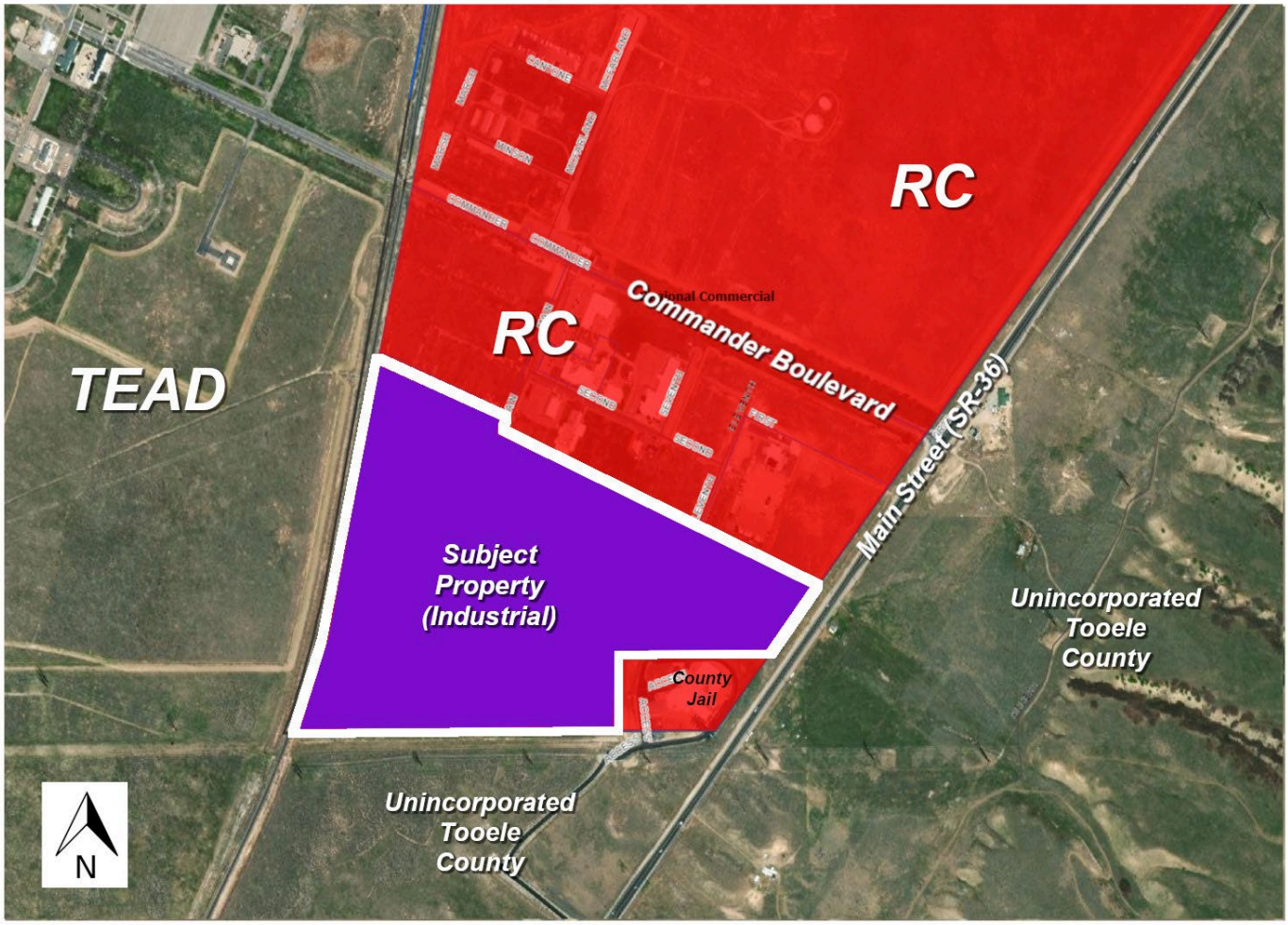
Current Zoning

AA Trailer Park Land Use Map Amendment



Current Land Use

AA Trailer Park Land Use Map Amendment



Proposed Land Use

EXHIBIT B

APPLICANT SUBMITTED INFORMATION

Zoning, General Plan, & Master Plan Map Amendment Application

Community Development Department
90 North Main Street, Tooele, UT 84074
(435) 843-2132 Fax (435) 843-2139
www.tooelecity.org

Tooele City
Est. 1853

Notice: The applicant must submit copies of the map amendment proposal to be reviewed by the City in accordance with the terms of the Tooele City Code. Once plans for a map amendment proposal are submitted, the plans are subject to compliance reviews by the various city departments and may be returned to the applicant for revision if the plans are found to be inconsistent with the requirements of the City Code and all other applicable City ordinances. All submitted map amendment proposals shall be reviewed in accordance with the Tooele City Code. Submission of a map amendment proposal in no way guarantees placement of the application on any particular agenda of any City reviewing body. It is **strongly** advised that all applications be submitted well in advance of any anticipated deadlines.

Project Information

22-1336

Date of Submission:	Current Map Designation:	Proposed Map Designation:	Parcel #(s):
Nov 18,2022	RR1, 5, 20, MU160	I - Industrial	17-096-0-0002A

Project Name:	Acres:
AA TRAILER PARK	97.383

Project Address: 1825s 11th AVE, TOOELE, UT, 84074

Proposed for Amendment: ☒ Ordinance ☒ General Plan ☐ Master Plan: ~~LAND USE~~ MAP AMEND

Brief Project Summary:
Rezone to expand existing RV park.
Future plans to install one or more of the following:
Self-storage, vehicle storage, light industrial complex

Property Owner(s):			**Applicant(s):**		
Sea Ray Investments			Craig Mills		
Address: 144 W. Bingham Road, Suite 5			Address: 1825s 11th Ave		
City: St. George	State: UT	Zip: 84790	City: Tooele	State: UT	Zip: 84074
Phone: 435-986-9500			Phone: 801-803-8032		
Contact Person: Craig Mills			Address: 2468e Sundown Ave		
Phone:			City: Cottonwood Heights	State: UT	Zip: 84121
Cellular: 801-803-8032	Fax:		Email: craig.aatp@gmail.com		

*The application you are submitting will become a public record pursuant to the provisions of the Utah State Government Records Access and Management Act (GRAMA). You are asked to furnish the information on this form for the purpose of identification and to expedite the processing of your request. This information will be used only so far as necessary for completing the transaction. If you decide not to supply the requested information, you should be aware that your application may take a longer time or may be impossible to complete. If you are an "at-risk government employee" as defined in *Utah Code Ann.* § 63-2-302.5, please inform the city employee accepting this information. Tooele City does not currently share your private, controlled or protected information with any other person or government entity.

Note to Applicant:
Zoning and map designations are made by ordinance. Any change of zoning or map designation is an amendment the ordinance establishing that map for which the procedures are established by city and state law. Since the procedures must be followed precisely, the time for amending the map may vary from as little as 2½ months to 6 months or more depending on the size and complexity of the application and the timing.

For Office Use Only 2221349

Received By:	Date Received:	Fees:	App. #:
Hunter	11/22/22	$6,000.00	

RA.521970

General Plan Map

1. What is the present land use designation of the subject property(s)?
    a. RR1, RR5, RR20, MU160
2. Explain how the proposed land use designation is similar or compatible with the other land use designations in the surrounding area.
    a. The surrounding area includes a jail, army depot, rail, and county land. Current uses for this plot includes an RV Park, corrals, storage and a rental home.
3. What do you anticipate the land being used for?
    a. We propose to expand the RV Park providing additional space to service people working on base and surrounding areas. Additional pads will provide a place to stay for snowbirds and those traveling through the state. This additional space will also be used to meet the need of low-income individuals that use this type of a facility as a last resort of residence. We receive an average of 3 calls per day from people looking for a pad to rent. These individuals would work and buy food, gasoline, other goods and service in the Tooele area.
    b. We propose to use a parcel of the land for self-storage. Many moving to the Tooele area are renting. The addition of self-storage units will provide individuals renting/living in the Tooele area a place for their possessions including boats, RVs and other vehicles. Although there are many self-storage units in the area, even a self-storage complex under construction is already taking reservations.
    c. We propose to use a parcel of the land for a light industrial park to offer locations for small business owners to store, manufacture, fix, create, and provide other goods and service to the area.
4. Explain how the proposed land use designation would affect property, surrounding properties, and Tooele City.
    a. The proposed use would increase traffic on the road at the entrance to the Tooele Army Depot and streets leading to the park. Due to the nature of the surrounding properties, they should not be affected by noise or lights.
5. Explain how the proposed land use designation promotes the goals and objectives of Tooele City.
    a. Rezoning will provide a location for small business to operate, increase Tooele's tax base, diversify Tooele's commercial/industrial business, and transform a deteriorating military facility into a vibrant commercial/industrial park for the purpose of attracting economic development to the Tooele vicinity.

Exhibit C

Planning Commission Minutes

TOOELE CITY CORPORATION

RESOLUTION 2023-08

A RESOLUTION OF THE TOOELE CITY COUNCIL APPROVING A FINANCIAL CONSULTING SERVICES AGREEMENT WITH LEWIS YOUNG ROBERTSON & BURNINGHAM.

WHEREAS, Tooele City, on behalf of itself and both its redevelopment agency (RDA) and municipal building authority (MBA) are in need of ongoing financial consulting services; and,

WHEREAS, Tooele City has utilized the financial consulting services of Lewis Young Robertson & Burningham, Inc. for many years and is satisfied with their services; and,

WHEREAS, attached as Exhibit A is a proposed financial consulting services agreement, including an Addendum A for the financing of a new fire station, which proposed agreement has a five-year term, with one-year renewals:

NOW, THEREFORE, BE IT RESOLVED BY THE TOOELE CITY COUNCIL, that the Mayor is hereby authorized to sign on behalf of Tooele City an agreement with Lewis Young Robertson & Burningham, Inc. for ongoing financial consulting services for the City, the RDA, and the MBA.

This Resolution shall become effective upon passage, without further publication, by authority of the Tooele City Charter.

IN WITNESS WHEREOF, this Resolution is passed by the Tooele City Council this ____ day of _____, 2023.

TOOELE CITY COUNCIL

(For) (Against)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

ABSTAINING: _____

MAYOR OF TOOELE CITY

(Approved) (Disapproved)

_____ _____

ATTEST:

_____
Michelle Y. Pitt, City Recorder

S E A L

Approved as to Form: _____
Roger Evans Baker, City Attorney

Exhibit A

Agreement and Addendum

AGREEMENT FOR FINANCIAL ADVISORY AND CONSULTING SERVICES

TOOELE CITY, UTAH

THIS AGREEMENT for Financial Advisory and Consulting Services (the "Agreement") is made as of January ___, 2023, (the "Effective Date"), by and between TOOELE CITY, UTAH, a body corporate and politic of the State of Utah (the "Client"), and LEWIS YOUNG ROBERTSON & BURNINGHAM, INC., a Utah corporation having its corporate offices at the address of 41 North Rio Grande, Suite 101, Salt Lake City, Utah 84101 (the "Financial Consultant").

WHEREAS, the Financial Consultant is an experienced and fully qualified firm that provides financial advisory and consulting services, as more fully set forth herein, to and for local governmental entities; and

WHEREAS, the Client (who also consists of the municipal or local building authority and redevelopment agency) wishes to engage the Financial Consultant to provide the Services defined below and for the purposes set forth in this Agreement;

NOW, THEREFORE, in consideration of the mutual promises and covenants contained in this Agreement, the Client and the Financial Consultant agree as follows:

1. ***General Scope of Services.***

During the Term of this Agreement, the Financial Consultant will perform and provide the services needed, required or desired by the Client, which may include, but are not limited to, providing the following services (collectively, and combined with the detailed services set forth in Section 2 below, the "Services"):

(a) information and analysis regarding the best methods of issuing debt and all related matters including, but not limited to, rating agency presentations, debt structuring, market conditions, comparable interest rates, quantitative analysis, investment of bond proceeds, etc.;
(b) bond election consulting;
(c) formulation of debt policies and procedures for the Client;
(d) advice and assistance in preparing or updating capital facility plans and related cash flow modeling;
(e) advice and assistance in preparing or updating impact fee analyses;
(f) advice and assistance in preparing or updating utility rate studies and ordinances;
(g) review of banking services contracts with advice and assistance in negotiating new contract(s);
(h) election consulting;
(i) financial modeling and preliminary feasibility of capital projects;
(j) advice and assistance with governmental budgeting; and
(k) other financial and consulting services as requested by the Client.

2. *Detailed Scope of Services—Particular to Debt Issuance*

During the Term hereof, with respect to any particular debt issuance by the Client, the Financial Consultant will provide the following particular Services, as appropriate and necessary, for the issuance and placement or sale of each such debt issue;

(a) consult with and advise the Client regarding the recommended size, structure and other specifications of the particular issue;
(b) furnish information and advice concerning current market conditions for the particular type of debt to be issued;
(c) assist in the formulation of a coordinated plan and schedule for the authorization, issuance and placement or sale of the debt;
(d) prepare, as necessary, a detailed quantitative analysis of the debt issue;
(e) assist the Client in selecting other professional services necessary to complete debt transaction(s) which could include bond counsel, disclosure counsel, trustee, paying agent, financial printing, feasibility consultant, CPA verification, and title services, as applicable;
(f) consult with and work with the bond attorneys and other consultants selected by the Client as necessary and appropriate;
(g) attend "due diligence" meetings with Client officials and others and assist the Client in compiling financial and demographic information related to the particular debt issue;
(h) mail or otherwise distribute the offering information prepared in connection with the debt issue in accordance with instructions provided by the Client;
(i) advise the Client regarding the method of placement or sale of the particular debt issue and assist in identifying potential purchasers;
(j) attend all meetings as necessary or as requested by the Client and attend the closing of the particular debt issue;
(l) advise Client officials regarding any presentations to be made to any of the credit rating services or bond insurers for the purpose of obtaining credit rating services or bond insurance for the debt issue, assist in compiling the required information and financial data for the presentations and, upon request, accompany the Client's representatives to the rating agencies' or insurers' offices to present the required information and financial data;
(m) advise and assist Client officials as requested regarding the potential availability of private, state and federal funding for the project being financed and assist, as requested, in applying for such funding; and
(n) advise and assist the Client regarding appropriate investments for bond proceeds.

3. Detailed Scope of Services—Particular to General Financial Consulting

With respect to any Services which do not lead to the issuance of debt, a detailed statement of work for each Service will be agreed upon in advance in writing between the parties and will be incorporated as an addendum to this Agreement once signed by both parties. Said addenda to include the date, description of the specific transaction, and reference to the year and Client matter *(e.g. "2023-01 Fire Station Financing").*

4. Term of Financial Advisory and Consulting Agreement

The Client and the Financial Consultant agree that the initial term of this Agreement will be for five (5) years (from the Effective Date of this Agreement ("Initial Term"), and shall automatically renew for additional periods of one (1) year (each, a "Renewal Term," and the Initial Term and Renewal Terms, collectively, constitute the "Term"), unless otherwise terminated as set forth in Paragraph 13 herein.

5. Representations of the Client.

The Client represents and warrants that, in connection with any issuance of debt or request for the Financial Consultant to proceed with any other services as provided for under the provisions of this Agreement, the Client will take the following actions, among other actions as may be appropriate and necessary, to accomplish the authorization, issuance and sale of a particular debt issue, or to facilitate the timely processing and completion of other services requested by the Client.

(a) cooperate with the Financial Consultant in all respects and provide the Financial Consultant with all information and data the Client may have in its possession or under its control which is reasonably required by the Financial Consultant and is considered material to the transaction;

(b) pass all required resolutions and take all other reasonable legislative or administrative actions as necessary or as advised by counsel to authorize, issue and sell any particular debt issue, or to allow for completion of other services, and to assure compliance with all constitutional provisions, laws, ordinances, rules and regulations pertaining thereto;

(c) furnish the Financial Consultant with certified copies of the minutes of all meetings and other proceedings taken in connection with a particular debt issue or other service-related matters, all affidavits of publication relating thereto and all other certificates and documents required to successfully market a debt issue and make delivery thereof, or complete other requested services;

(d) authorize the preparation and distribution of all documentation related to the particular service, including but not limited to, offering information provided to prospective purchasers of any particular debt issue;

(e) review and approve all offering information or other documentation related to other financial services prior to its distribution;

(f) if a credit rating or bond insurance will be applied for on a particular debt issue, the Client will contract directly with the rating agency for the rating, or the bond insurer for the insurance, and will make available to the rating agency or bond insurer all information and financial data reasonably requested;

(g) select and retain other professionals as needed for each issue of debt and as may be needed in connection with the completion of other services under this contract (such as issuer's counsel, bond counsel, engineers, appraisers, feasibility consultants, etc.) and pay the agreed fees and expenses of those contracts; and

(h) compensate the Financial Consultant for all Services rendered under this Agreement and any amendments or addenda hereof in accordance with Paragraph 6 below.

6. General Payment of Compensation, Costs and Expenses.

The Client shall compensate the Financial Consultant for the Services rendered under this Agreement as follows:

(a) for Services rendered in accordance with this Agreement, compensation will be as mutually agreed by the parties at the time the Services are initiated, as documented in a statement of work or other similar document. For Services of the Financial Consultant that do not lead to the actual issuance of debt, compensation will be determined based upon the scope of work performed, as documented in a statement of work or other similar document. Compensation will be mutually agreed upon as the scope of work is defined, and may be in the form of either agency commission or an agreed-to fee for Services. The compensation arrangement for a particular debt issue will be described in a separate statement of work or other similar document, included as an addendum to this Agreement and approved by both parties;

(b) certain expenses that may be incurred by the Financial Consultant such as mailing or shipping costs of offering information, printing of bond or note instruments, special computer services, advertising, out-of-state travel, closing expenses and actual costs of copying or printing any offering information shall be borne by the Client. However, in the event any such expense exceeds the sum of $500.00, such expense shall be approved by the Client before it is incurred;

(c) with respect to the costs and expenses of a particular transaction that are not specifically mentioned or provided for in this Section 6, the Client and the Financial Consultant will agree on and arrange for their payment, as the requirements of the particular transaction or engagement are specified.

7. Payment Methods.

(a) upon the sale and delivery of any debt issue, the Financial Consultant shall submit an invoice to the Client for the Services rendered by the Financial Consultant with respect to such debt and payment of the fee amount shall be due at the time of closing on the debt transaction;

(b) for the completion of requested Services which do not involve the issuance of debt, any fee amount required to be paid hereunder shall be billed and paid in periodic payments (most often monthly) as set forth in the applicable statement of work.

8. Financial Consultant an Independent Contractor.

For purposes of this Agreement and the Services to be performed hereunder, the Financial Consultant, its officers, employees and agents shall not be considered to be officers, employees, agents or servants of the Client. The Financial Consultant is and shall be considered to be an independent contractor in all respects and as such its personnel will not be supervised by Client officers or personnel and the Client will not furnish facilities or equipment to the Financial Consultant for its use in the performance hereof.

9. Conflict of Interest

Pursuant to certain requirements of MSRB Rule G-42, which went into effect June 23, 2016, the Financial Consultant apprises the Client as follows:

The Financial Consultant represents that it knows of no current conflict of interest or potential conflict of interest in providing services to the Client. If a situation comes to the attention of the Financial Consultant whereby an interest of the Client is in conflict with the interests of the Financial Consultant or of another client of the Financial Consultant, the Financial Consultant shall promptly disclose the conflict to the Client and enter into discussions to appropriately resolve the conflict. Client shall advise Financial Consultant in any particular case of concerns the Client may have so that the parties can fully examine and resolve any potential conflict of interest.

Financial Consultant may be paid for Services set out in addenda to this Agreement, which may present a conflict of interest with respect to the Client. The standard payment under this Agreement represents a method of payment that is based upon the amount of the transaction, with minimum fees. This form of compensation represents a conflict of interest because Financial Consultant may have an incentive to advise the Agency to increase the size of an issue of debt for purposes of increasing Financial Consultant's compensation. Also, under most circumstances, Financial Consultant fees for these services are contingent upon completion of a particular transaction. This also represents a conflict because Financial Consultant may have an incentive to recommend unnecessary financings or financings disadvantageous to the Client. These conflicts are mitigated by 1) our long term relationship, which provides us an incentive to take a long, non-transactional, view of our service to you, and 2) by our fiduciary obligation to put the interests of the Agency ahead of our own.

The Financial Consultant sometimes engages in Consulting work for the Client pursuant to this Agreement. In this connection, we may, in unusual circumstances, provide services as a consultant which represent a conflict of interest in our role as Financial Advisor to the Client. This could arise, by example, from a situation in which client A wishes to improve its sewer system and could finance this with either general obligation bonds or sewer revenue bonds. If sewer revenue bonds are selected, we may then obtain consulting business in performing a rate study for the sewer system, which rate study might or might not be needed for a general obligation bond issue. Such a conflict could also arise in a situation in which we provide consulting services which might suggest issuing a bond, when non-borrowing alternatives are available to the Client. These potential conflicts are mitigated by 1) our fiduciary duty to put the Client's interests ahead of our own, 2) our desire to avoid reputational risk, and 3) our long term relationship, which provides us an incentive to take a long, non-transactional view of our services to you.

10. Additional Services.

If authorized in advance by the Client and in compliance with the terms of this Agreement, the Financial Consultant may furnish services in addition to the basic services described herein. Compensation for those additional services shall be as mutually agreed to by the parties and an addendum will be executed and incorporated into this Agreement.

11. No Sales Obligation of the Financial Consultant.

The Client acknowledges that neither the Financial Consultant nor its principals shall be obligated in any way for any part of a distribution, underwriting, placement, issuance or sale of any bonds, notes or other forms of indebtedness relating to this Agreement.

12. Amendments.

The parties hereto may request changes in the Services or other provisions of this Agreement at any time, but no change shall be effective until it has been mutually agreed to by the parties in writing or is required to be made pursuant to or because of changes in federal, state or local laws relating to debt issuance by local governments. Except for amendments due to changes in law which shall be deemed to take place immediately as of the effective date of the change in law, all other amendments must be in writing and authorized by both parties, by a duly executed amendment of this Agreement.

13. Termination.

Unless previously terminated according to Paragraph 6 of this Agreement, it is agreed that either party may terminate this Agreement by providing the other party at least thirty (30) calendar days written notice of termination. Any such termination shall be accomplished by one party giving the other party written notice thereof, at least thirty (30) calendar days in advance of the desired termination date. Neither party shall have any liability to the other for damages or other losses because of a termination of this Agreement unless that termination is wrongful and not done in good faith; provided, however, if a termination should occur, the Client agrees to pay the Financial Consultant all amounts due for Services actually performed through and including the termination date and the Financial Consultant shall deliver to the Client all data, reports and information that would be due on the termination date.

14. Miscellaneous.

(a) *Governing Law.* This Agreement shall be governed in all respects by the laws of the State of Utah, without regard to the conflict of laws rules thereof.

(b) *Successors and Assigns.* This Agreement may not be assigned by either party without the written consent of both the Client and the Financial Consultant; provided, however, the Financial Consultant has the right to assign this Agreement as part of a merger, consolidation, or other type of acquisition, as long as the assignee agrees to assume all of Financial Consultant's obligations hereunder.

(c) *Entire Agreement.* This Agreement is the full and entire understanding and agreement of the parties with regard to the subjects discussed herein.

(d) *Notices.* All notices and other communications required or permitted under this Agreement shall be in writing and may be sent by personal delivery, telecopy, overnight delivery service or U.S. Mail, in which event it may be mailed by first-class, certified or registered, postage prepaid. All such notices and communications shall be addressed to the Financial Consultant at the following address at such other address that the Financial Consultant shall have furnished to the Client in writing.

Jason W. Burningham, Managing Partner
Lewis Young Robertson & Burningham, Inc.
41 North Rio Grande Street, Suite 101
Salt Lake City, UT 84101

Notices to be mailed to the Client shall be sent to:

Shannon Wimmer, Finance Director
TOOELE CITY
90 North Main Street
Tooele, Utah 84074

(e) *Severability.* If any provision of this Agreement shall be determined, by a court of competent jurisdiction, to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(f) *Titles and Subtitles.* The titles of the paragraphs and subparagraphs of this Agreement are for convenience of reference only and are not to be considered in construing this Agreement.

(g) *Counterparts.* This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument.

(h) *Further Assurances.* Each party to this Agreement shall do and perform or cause to be done and performed all such further acts and things and shall execute and deliver all such other agreements, certificates, instruments and documents as the other party hereto may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers thereunto duly authorized this ___ day of January 2023.

TOOELE CITY, UTAH
(the "Client")

[SEAL] _____

Title: _____

Attest:

_____

Title: _____

LEWIS YOUNG ROBERTSON & BURNINGHAM, INC.
(the "Financial Consultant")

_____
Jason W. Burningham, Principal and Owner

Attest:

_____

Title: _____

ADDENDUM A:
2023-01 [FIRE STATION FINANCING PROJECT]

Fee Schedule for
TOOELE CITY, UTAH OR MUNICIPAL BUILDING AUTHORITY OF TOOELE, UTAH
Lease Revenue or Sales Tax Revenue Bonds
Series 2023

January 1, 2023

Client desires to retain Financial Consultant in preparing, advising and facilitating the financing of a new fire station. The Client currently anticipates pursuing this financing through the State of Utah Permanent Community Impact Board (CIB) and Financial Consultant has the knowledge and experience in assisting local governments through financing capital projects through the CIB. As an addendum to that certain Financial Advisory and Consulting Agreement, dated January _____, 2023, the Client retains the Financial Consultant for financial advisory services in connection with the preparation, advice and the ultimate issuance and sale of the Series 2023 Lease Revenue or Sales Tax Revenue Bonds for purposes of funding a new fire station.

The fee to be paid to the Financial Consultant shall be in the amount not-to-exceed 0.70% of the gross proceeds related to the debt obligation with a minimum amount of $15,000 and shall be paid in accordance with the provisions outlined in Paragraph 7 of the Financial Consulting Services Agreement.

Addendum A: 2023-01 [Fire Station Bonds] is acknowledged and accepted as of the date referenced above.

TOOELE CITY, UTAH
(the "Client")

[SEAL] _____

Title: _____

LEWIS YOUNG ROBERTSON & BURNINGHAM, INC.
(the "Financial Consultant")

_____
Jason W. Burningham, Principal and Owner

TOOELE CITY CORPORATION

RESOLUTION 2023–09

A RESOLUTION OF THE TOOELE CITY COUNCIL APPROVING AND ADOPTING THE WATER SYSTEM AMENDMENT TO THE APWA MANUAL OF STANDARD SPECIFICATIONS AND PLANS (2017 EDITION) FOR INSTALLATION OF WATER TRANSMISSION AND DISTRIBUTION LINES.

WHEREAS, the City continues to experience residential, commercial and industrial growth within the service boundaries of the City and the Tooele City Water Special Service District; and,

WHEREAS, the development of new land requires the construction of new and replacement of existing public infrastructure, including culinary water transmission and distribution lines; and,

WHEREAS, by Utah Code Annotated Section R309-500-7 - Approval of Standard Installation Drawings and Specifications for Water Transmission and Distribution Lines, the State allows that:

> "*A public water system with approved standard installation drawings and specifications may install water transmission and distribution lines up to and including 16 inches in diameter and is not required to:*
> *(a) submit project notification, plans, or specifications or obtain Plan Approval per R309-500-6;*
> *(b) obtain an Operating Permit per R309-500-9; or*
> *(c) submit a certification of hydraulic modeling per R309-511."*

and,

WHEREAS, by Tooele City Ordinance Title 4, Chapter 17 - APWA Manual of Standard Specifications and Manual Of Standard Plans Adopted, paragraph (1):

> "*Tooele City has adopted separate or amended standards and specifications for specific aspects of the APWA Standards. In those instances, the Tooele City adopted amendments shall govern. The APWA Standards and the Tooele City adopted amendments shall collectively constitute the "City Standards*";

and,

WHEREAS, Tooele City has reviewed and updated the Standard Specifications and Plans related to improvements to the culinary water system, and which have been combined into a single document entitled "*Water System Amendment to the APWA Manual of Standard Specifications and Plans (2017 Edition)*" (See Attached Exhibit A):

NOW, THEREFORE, BE IT RESOLVED BY THE TOOELE CITY COUNCIL that the "*Water System Amendment to the APWA Manual of Standard Specifications and Plans (2017 Edition)*" is hereby adopted and becomes part of the City Standards, as outlined in Tooele City Code Title 4, Chapter 17.

This Resolution shall become effective upon passage, without further publication, by authority of the Tooele City Charter.

IN WITNESS WHEREOF, this Resolution is passed by the Tooele City Council this_____ day of _____, 2023.

TOOELE CITY COUNCIL

(For) (Against)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

ABSTAINING: _____

MAYOR OF TOOELE CITY

(Approved) (Disapproved)

_____ _____

ATTEST:

_____

Michelle Pitt, City Recorder

S E A L

Approved as to Form: _____

Roger Evans Baker, Tooele City Attorney

EXHIBIT A

Water System Amendment to the APWA Manual of Standard Specifications and Plans (2017 Edition)

DRAFT
JANUARY 24, 2023
TOOELE CITY CORPORATION

WATER SYSTEM AMENDMENT

(Revised January 2023)

APWA MANUAL OF STANDARD SPECIFICATIONS AND PLANS (2017 Edition)

This document modifies a portion of the 2017 APWA Standards and Plans, and shall be used on all projects located within Tooele City. Any specification or plan not shown herein shall default back to the 2017 APWA Specifications and Plans and remain in full force and effect.

SPECIFICATIONS

SECTION 01 45 00 (Revised)

QUALITY CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. CONTRACTOR responsibilities for quality control.

1.2 QUALITY ASSURANCE

A. Employ an **independent** agency or staff to assure installed product and materials comply with Contract Documents, and to assure inspections, tests, and other services comply with industry standards.

B. Use an AMRL (AASHTO Materials Reference Library) certified laboratory that has personnel certified by WAQTC (Western Alliance for Quality Transportation Construction).

C. When requested by ENGINEER, provide a professional opinion from a testing agency concerning test results and quality of work covered by testing performed.

D. Do more testing, if, in ENGINEER's opinion, work is not being adequately controlled.

1.3 TESTING AGENCY

A. Provide sufficient personnel and cooperate with ENGINEER and CONTRACTOR in performing testing service.

B. Obtain and secure samples using procedures specified in the applicable testing code.

C. Perform product testing in accordance with applicable requirements of the Contract Documents.

D. Correlate tests with ENGINEER's acceptance tests.

E. When an out-of-tolerance condition exists, perform additional control testing until tolerance is attained.

F. Report any non-compliance of materials and mixes to CONTRACTOR and ENGINEER immediately.

1.4 SUBMITTALS – CONTRACTOR

A. **Before Construction**: Identify:

1. Name, address and telephone number of testing agency.
2. Person whom agency has charged with engineering managerial responsibility.
3. Licensed professional for testing agency who is to review services.
4. Names and levels of certification and years of experience of testing agency's laboratory and field technicians.

B. **During Construction**: Submit quality control test data requested by ENGINEER to demonstrate work performed complies with Contract Documents.

1.5 **SUBMITTALS – TESTING AGENCY**

A. **During Construction**: Submit field test results immediately to ENGINEER and CONTRACTOR or not later than day of test. Submit laboratory test results within 48 hours of determination.

B. **After Construction**: Submit a final summary report in tabular form. Show each failed test and its corresponding passing test.

C. **Reports**: Include on all reports:

1. Project title, number and date.
2. Date, time and location of test.
3. Name and address of material Supplier.
4. Identification of product being tested and type of test.
5. Testing results and interpretation of results.
6. Name of technician(s) who sampled and who performed test.

1.6 **LIMITS ON TESTING AGENCY**

A. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.

B. Agency may not suspend work.

C. Agency has no authority to determine acceptance for ENGINEER.

D. Samples must be collected and secured only by the testing agency.

PART 2 PRODUCTS

2.1 **MATERIALS**

A. Material furnished from sources that have been found satisfactory under OWNER’s or ENGINEER's normal testing and sampling procedures may be used in the Work.

B. Materials that are supported with a Supplier's certificate of compliance may be used in the Work. Certificate must be in possession of CONTRACTOR for review by ENGINEER before use.

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 03 30 04 (Revised)
CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Material requirements.

1.2 REFERENCES

A. **ACI Standards (Latest Editions):**

211.1 Selecting Proportions for Normal, Heavyweight, and Mass Concrete.

211.2 Selecting Proportions for Structural Lightweight Concrete.

211.3 Standard Practice for Selecting Proportions for No-Slump Concrete.

214 Evaluation of Strength Test Results of Concrete.

301 Specifications for Structural Concrete for Buildings.

305 Hot Weather Concreting.

306 Cold Weather Concreting.

318 Building Code Requirements for Reinforced Concrete.

B. **ASTM Standards (Latest Editions):**

C 33 Concrete Aggregates.

C 39 Compressive Strength of Cylindrical Concrete Specimens.

C 88 Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.

C 94 Ready-Mixed Concrete.

C 117 Material Finer than 75µ (No. 200) Sieve in Mineral Aggregates by Washing.

C 123 Lightweight Particles in Aggregate.

C 138 Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.

C 142 Clay lumps and Friable Particles in Aggregates.

C 143 Slump of Hydraulic-Cement Concrete.

C 150 Portland Cement.

C 172 Sampling Freshly Mixed Concrete.

C 227 Potential Reactivity of Cement-Aggregate Combinations (Mortar Bar Method).

C 231 Air Content of Freshly Mixed Concrete by the Pressure Method.

C 260 Air-Entraining Admixtures for Concrete.

C 289 Potential Reactivity of Aggregates (Chemical Method).

C 295 Petrographic Examination of Aggregates for Concrete.

C 441 Effectiveness of Mineral Admixtures or Ground Blast-Furnace Slag in Preventing Excessive Expansion of Concrete Due to The Alkali-Silica Reaction.

C 494 Chemical Admixtures for Concrete.

C 535 Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

C 595 Blended Hydraulic Cements.

C 618 Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

C 1064 Temperature of Freshly Mixed Portland Cement Concrete.

C 1077 Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

C 1116 Fiber-Reinforced Concrete and Shot Crete.

C 1157 Blended Hydraulic Cement.

C 1240 Use of Silica Fume as a Mineral Admixture in Hydraulic Cement Concrete, Mortar, and Grout.

C 1260 Potential Alkali Reactivity of Aggregates (Mortar-Bar Method).

C 1293 Concrete Aggregates by Determination of Length Change of Concrete Due to Alkali-Silica Reaction.

C 1567 Determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method).

C 1602 Mixing Water Used in The Production of Hydraulic Cement Concrete.

STP 15-C Manual on Quality Control of Materials.

1.3 SUBMITTALS

A. **Quality Assurance**:

1. Independent Laboratory: Submit names, certification levels, and years of experience of testing agency's field technicians that are assigned to the Work. Verify laboratory complies with ASTM and ACI standards.
2. Mixing Equipment: Submit certification of plant equipment.

B. **Mix Design**: Allow ENGINEER 10 days to evaluate the submittal. Provide the following information.

1. Date of mix design. If older than 365 days from date of submission recertify mix design.
2. Physical properties of the aggregate (see this section's article 2.3). Test results shall not be older 455 days from the date of submission.

The information is for suitability of source and not for project control. A new report may be required if aggregate source is changed.

3. Identify whether mix is for hot, cold, or normal weather placement.
4. Cement source, type and chemical composition.
5. Aggregate soundness and potential reactivity.
6. Average Strength (f_{cr}), per quality control chart.
7. Allowable range of slump and air content.
8. Water cement ratio.
9. Proportions of materials in the mix.
10. Unit weight.
11. ~~Analysis of water if water is not potable~~. Water to be potable.
12. Mortar bar or prism test results if a pozzolan is included in the mix.
13. Technical data sheets for additives to be used at the plant and at the job site. Certify additives are compatible with each other.

C. **Pre-approved Mix Design**: Submit name and address of Supplier and Suppliers mix design number if available.

D. **Before Changing Mix Design**: Submit a new design and allow ENGINEER 10 days to evaluate the changes.

1.4 QUALITY ASSURANCE

A. General:

1. Use a laboratory that follows and complies with ASTM C 1077.
2. Reject concrete that does not meet requirements of this section.
3. If requested, submit a quality control and testing report describing source and field quality assurance activities performed by CONTRACTOR and Suppliers.

B. At the Source:

1. Do not change material sources, type of cement, air-entraining agent, water reducing agent, other admixtures except as allowed by mix design.
2. Store bagged and bulk cement in weatherproof enclosures. Exclude moisture and contaminants.
3. Prevent segregation and contamination of aggregate stockpiles.
4. Avoid contamination, evaporation, or damage to admixtures. Protect liquid admixtures from freezing.

C. At the Site: Use of admixtures will not relax hot or cold weather placement requirements.

1.5 **ACCEPTANCE**

A. Materials:

1. Aggregate Source:
   a. Verify suitability of aggregate source.
   b. Verify aggregate gradation.
   c. Verify percent of combined aggregate passing No. 200 sieve.
2. At the Site:
   a. Verify mix identification, batch time, slump, air content, and temperature.
   b. Verify drum rotation is less than 300 revolutions.
3. At the Laboratory: Verify strength in 28 days.

B. Defective Material:

1. Price adjustment, Section 01 29 00 and Section 03 30 10.
2. Dispute resolution, Section 01 35 10.

PART 2 PRODUCTS

2.1 **CEMENT**

A. General:

1. Do not use air entraining cement except for hand mixed applications.
2. Do not use cement containing lumps or is partially set.
3. Do not mix cement originating from different sources.

B. Standard Set Cement:

1. Type II cement per tables 1 and 3 in ASTM C 150, or Type V when necessary, or
2. Low-alkali cement per Table 2 in ASTM C 150.

C. Blended Hydraulic Cement: The following are cement equivalencies when substituting blended cement for a portland cement.

Table 1 – Cement Equivalencies

Portland Cement ASTM C 150	Blended Cement ASTM C 595	Blended Cement ASTM C 1157
Type I	IP	GU
Type II	IP (MS)	MS
Type III	--	HE
Type IV	--	--
Type V	--	HS

D. Rapid Set Cement: As above and as follows:

1. Initial set time: 15 minutes minimum.

2. Color: Acceptable to the ENGINEER.

2.2 WATER

A. Clean, non-staining, non-detrimental per ASTM C 1602.

B. Screen out extraneous material.

C. Do not use alkali soil water.

2.3 AGGREGATES

A. Gravel, crushed gravel, crushed stone, crushed concrete, slag, sand or combination with the following physical properties.

Table 2 – Physical Properties

Property		ASTM	Min	Max	Units
Coarse Aggregate					
Wear (hardness or toughness) (a)		(a)	--	50	percent
Soundness (5 cycles)	Na_2SO_4	C88	--	12	percent
	Mg_2SO_4	C88	--	18	percent
Coal and lignite (SG = 2.4 min.) (b)		C123	0.5	1.0	
Clay lumps, friable particles, chert		C142	--	7	
Material finer than 200 sieve		C117	--	1.0	percent
Fine Aggregate					
Soundness (5 cycles)	Na_2SO_4	C88	--	10	--
	Mg_2SO_4	C88	--	15	--
Fineness modulus		C33	2.3	3.1	--
Coal and lignite (SG = 2.4 min.) (b)		C123	0.5	1.0	
Clay lumps, friable particles, chert		C142	--	3.0	percent
Aggregate blend (meets one of the following)					
1. Average prism length change in 12 months (c)		C1293	--	0.04	percent
2. Average mortar bar length change in 16 days (c)		C1260	--	0.10	percent
3. Petrography limits					
Quartz (d)		C295	--	5.0	percent
Chert or chalcedony			--	3.0	percent
Tridymite or cristobalite			--	1.0	percent
Opal			--	0.5	percent
Natural glass in volcanic rock			--	3	percent
4. Historical data acceptable to ENGINEER					

NOTES

(a) Wear retained on No. 8 sieve. For aggregate less than 1 1/2" use ASTM C131. For larger aggregates use ASTM C 535.

(b) Organic impurities producing a dark color concrete may cause rejection.

(c) Prism length change and mortar bar length change based upon unmodified ASTM tests.

(d) Quartz must NOT be optically strained, micro-fractured, or microcrystalline in nature.

2.4 ADDITIVES

A. Calcium Chloride: Not allowed in reinforced concrete.

B. Air Entrainment: ASTM C 260. For extrusion enhancement use non-vinsal resin.

C. Set Enhancement and Water Reducing Agents: ASTM C 494.

1. Type A: Water reducing.
2. Type B: Set retarding.
3. Type C: Set accelerating.
4. Type D: Water reducing and set retarding.
5. Type E: Water reducing and set accelerating.
6. Type F: High range water reducing (super plasticizer). *
7. Type G: High range water reducing and set retarding. *

* Keep the relative durability factor of water reducing additives not less than 90 and the chlorides content (as Cl^-) not exceeding 1 percent by weight of the admixtures.

D. Pozzolan:

1. Natural or fly ash per ASTM C 618.
2. Silica fume per ASTM C 1240.

E. Special Admixtures: Allowed if mix design submittal is accepted:

1. Lithium nitrate based solution for control of reactive aggregates.
2. Calcium nitrite based solution for corrosion protection of reinforced structures subject to chloride-induced corrosion.
3. Shrinkage reducer for controlling drying shrinkage in concrete.
4. Viscosity modifier for enhancement of self consolidating concrete or for workability.

2.5 MIX DESIGN

A. Selection of Cement: ASTM C 150 or C 1157.

1. For sulfate resistance, use Type V portland cement, or Type II with Class F fly ash. Class F fly ash may be used as an addition to Type V portland cement.
2. Do not use fly ash with Type IP(MS) or Type III portland cement.

B. Selection of Aggregates:

1. Maximum Particle Size:
   a. 1/5 of narrowest dimension between forms.
   b. 1/3 of depth of slab.
   c. 3/4 of minimum clear spacing between reinforcing bars.
2. Gradation: ASTM C 33.
   a. Coarse Aggregate: Choose from the following grades. Gradations are based upon percent of material passing sieve by weight.

Table 3 – Coarse Aggregate Gradation				
Sieve	**Grade**			
	357 (2")	**467 (1.5")**	**57 (1")**	**67 (3/4")**
2-1/2"	100	--	--	--
2 Inch	95 - 100	100	--	--
1-1/2"	--	95 – 100	100	--
1"	35 – 20	--	95 – 100	100
3/4"	--	35 – 70	--	90 – 100
1/2"	10 – 30	--	25- 60	--
3/8"	--	10 – 30	--	20 – 55
No. 4	0 – 5	0 – 5	0 – 10	0 – 10

b. Fine Aggregate:

Table 4 – Fine Aggregate Gradation	
Sieve	**Percent Passing by Weight**
3/8"	100
No. 4	95 to 100
No. 16	45 to 80
No. 50	10 to 30
No. 100	2 to 10

c. Silts and Clays: The amount of material smaller than the No. 200 sieve in any combined gradation sample is limited to the following percentages by weight of the combined sample:

1) 1.75 percent maximum for concrete subject to abrasion.

2) 3.0 percent maximum for all other concrete.

C. Selection of Pozzolan:

1. General: If a blended aggregate passes an unmodified ASTM C 1293 test, use of a pozzolan is CONTRACTOR's choice. If aggregate does not pass ASTM C 1293, select a pozzolan (or blended cement, or both) and determine the effective dosage to meet one of the following tests:

   a. ASTM C 1567. The expansion of a cement-pozzolan-aggregate job-mix mortar bar is less than or equal to 0.10 percent at 16 days. Do not use this test if a lithium admixture is used in the job-mix.

   b. ASTM C 441. The expansion of a test mixture at 56 days is less than or equal to a control mixture prepared with cement with equivalent alkalis between 0.5 and 0.6 percent.

2. Fly Ash (Class F): Allowed as a cement replacement under the following conditions:

   a. Before replacement is made, use the minimum cement content in the design formula to establish the water/cement ratio.

   b. Replace up to 20 percent of the cement by weight on a one (1) part fly ash to one (1) part cement basis.

c. Submit to ENGINEER a quality history of the fly ash identifying a minimum of 20 of the most current ASTM C 618 analysis.

3. Natural Pozzolan (Class N): Allowed as a cement replacement if the 14 day expansion test (ASTM C 1567) with job aggregates, job cement and natural pozzolan does not exceed the 14 day expansion test of job aggregates, job cement and Class F fly ash.

4. Silica Fume: Allowed as a cement replacement if replacement of hydraulic cement on a 1 part silica fume to 1 part cement does not exceed 10 percent, and water/cement ratio is established before cement is replaced with silica fume.

D. Selection of Mix Properties: Select and proportion the mix to produce appropriate strength, durability and workability. Use ACI 211.1, 211.2, or 211.3, and meet the following properties and limitations:

Table 5 – Mix Properties and Limitations

Properties		Test Method	Class 2000	Class 3000	Class 4000	Class 5000
Compressive Strength (f_c') at 28 days, psi, minimum		ASTM C 39	2000	3000	4000	5000
Compressive Strength at 7 days, psi, (for reference only)		ASTM C 39	1340	2010	2680	3350
Average Strength, psi (f_{cr})		ACI 214	(a)	(a)	(a)	(a)
Cement content, bags, minimum (b)		--	4.5	5.5	6.5	7.5
Water-cement ratio (by weight), maximum (c)		ACI 318	(d)	(d)	0.44	
Entrained air, percent (based upon aggregate size) (e)	2" 1-1/2" 1" 3/4"	ASTM C 231	3.0 to 6.0 " " "	4.5 to 7.5 " " "	4.0 to 7.0 4.5 to 7.5 5.0 to 7.5 5.0 to 7.5	
Slump		ASTM C 143	(d)	(d)	(d)	(d)

NOTES
(a). The amount by which average strength (f_{cr}) exceeds compressive strength (f_c') is based upon statistical assurance that no more than 1 test in 100 tests will fall below compressive strength (f_c').
(b) Unless allowed otherwise by ENGINEER.
(c) Before pozzolan substitution.
(d) Specific to exposure conditions and finishing need.
(e) Comply with ACI 211.1 if air content is changed.
(f) 1 bag of cement = 94 pounds.

1. Cold Weather: ACI 306. Unless allowed otherwise by ENGINEER, increase cement content in the mix design by 1 class between **October 1 and March 1,** i.e. Class 3000 becomes Class 4000, Class 4000 becomes Class 5000, etc.
2. Hot Weather: ACI 305. Reduce temperature of mix ingredients or use an admixture appropriate to job conditions when air temperature is over 75 deg F.
3. Concrete Deposited Under Water: Increase cement content one (1) class for concrete placed above water or use viscosity modifying admixture.

E. Selection of Fiber Reinforcement: The basis for determining material proportions of fiber-reinforced concrete is the Supplier's responsibility per ASTM C 1116 subject to mix property requirements of this Section. Unless specified otherwise provide synthetic fibers.

2.6 SOURCE QUALITY CONTROL

A. General: Collect Samples randomly. Do not change source quality control sampling point.

B. Aggregate:

1. Soundness, ASTM C 88.
2. Alkali-silica reactivity, ASTM C 289, C 1567, C1260, C 227 and C 1293.
3. Petrographically examine fine and coarse aggregate sources once every three (3) years, ASTM C 295.

C. Concrete Mix: Obtain samples per ASTM C 172 and run the following tests:

1. Compressive strength, ASTM C 39.
2. Unit weight, ASTM C 138.
3. Slump, ASTM C 143.
4. Air, ASTM C 231.
5. Temperature, ASTM C 1064.

D. Concrete Quality Charts: Comply with ACI 214 and ACI 301. Plot new results and identify trends on quality control charts that comply in form to ASTM STP 15-C. Show the Specified Strength (f_c'), the required Average Strength (f_{cr}), and the compressive strength versus date of Sample.

E. Equipment: Certify at least every two (2) years through the services of a design professional licensed in the State of Utah, that plant equipment complies with requirements of the National Ready Mixed Concrete Association and ASTM C 94.

1. Transit Trucks: Equip transit trucks with plates indicating total volume, agitating volume and mix volume.
2. Weights and Measures: Comply with regulatory requirements of State of Utah.

PART 3 EXECUTION

3.1 INSTALLATION

A. Placement, Section 03 30 10.

3.2 FIELD QUALITY CONTROL

A. Truck Mixed Concrete (Dry Batch): ASTM C 94.

1. Truck Mixer: Fill drum no more than 63 percent of the gross drum volume and no less than two (2) cubic yards. Use drum manufacturer's recommended mixing speed (between 12 – 18 rpm).
2. Truck Agitator: Do not fill drum greater than 80 percent of the gross drum volume. Use drum manufacturer's recommended agitating speed (between 2 – 6 rpm).

B. Mixing Plant: ASTM C 94.

1. Use option C and requirements in this Section for preparing ready-mixed concrete.
2. Use scales certified by the State of Utah. Do not use volume measurement except for water and liquid admixtures.
3. Mixing time must exceed 80 seconds after adding air entrainment admixture.

C. Hand Mixing:

1. Do not hand mix batches larger than 0.5 cubic yard.
2. Hand mix only on a watertight platform.
3. Ensure all stones are thoroughly covered with mortar and mixture is of uniform color and consistency before adding water.

END OF SECTION

SECTION 03 30 05 (Revised)

CONCRETE TESTING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Concrete sampling and testing requirements.

1.2 REFERENCES

A. **ACI Standards (Latest Edition)**:

318 Building Code Requirements for Reinforced Concrete.

B. **ASTM Standards (Latest Edition)**:

C 31 Making and Curing Concrete Test Specimens in the Field.

C 39 Compressive Strength of Cylindrical Concrete Specimens.

C 42 Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

C 78 Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading).

C 136 Standard Method for Sieve Analysis of Fine and Coarse Aggregates.

C 138 Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.

C 143 Slump of Portland Cement Concrete.

C 172 Sampling Freshly Mixed Concrete.

C 173 Air Content of Freshly Mixed Concrete by Volumetric Method.

C 231 Air Content of Freshly Mixed Concrete by the Pressure Method.

C 567 Unit Weight of Structural Lightweight Concrete.

C 1064 Temperature of Freshly Mixed Portland Cement Concrete.

C 1077 Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

1.3 SUBMITTALS

A. Concrete Supplier: If requested, submit reports and material certificates verifying concrete quality control.

B. Laboratory: Promptly submit test data results for seven (7) and 28 day breaks to Supplier, CONTRACTOR and ENGINEER**.**

1.4 QUALITY ASSURANCE

A. Provide an ASTM C 1077 compliant and ACI certified laboratory.

B. Provide level I ACI certified field sampling technicians.

1.5 SITE CONDITIONS

A. Assist ENGINEER: Furnish labor to assist ENGINEER in obtaining and handling acceptance Samples at site or sources.

B. Store and Cure Test Specimens: Safely store and cure concrete test specimens and acceptance test specimens for first 24 hours:

1. Follow ASTM C 31 in making and curing cylinders or beams at site. Do not move the cylinders or beams for the initial 16 hour cure period. Provide initial cure temperature as follows:

   a. 60 to 80 deg F for Class 4,000 or less.

   b. 68 to 78 deg F for Class 5,000 or greater.

2. Equip storage device with an automatic 24 hour temperature recorder with an accuracy of plus or minus two (2) deg F

3. Use water containing hydrated lime if water is to be in contact with cylinders or beams.

4. Ensure the device(s) can accommodate the required number of test cylinders or beams. Lack of capacity will cause the placement of concrete to cease.

5. Have the storage devices available at the point of placement at least 24 hours before placement.

6. A 24 hour test run may be required.

1.6 ACCEPTANCE

A. At the Laboratory:

1. Compressive strength, ASTM C 31.

2. Flexure strength, ASTM C 78.

B. At the Site:

1. Acceptance: Reject non-complying batches until two (2) consecutive batches are compliant then proceed in random batch testing for acceptance.

2. Sampling Protocol: ASTM C 172. Unless indicated otherwise follow Table 1 sampling frequency requirements. Collect sample at discharge chute before placement, or at pumper hose after priming grout has been wasted.

Table 1 – Sampling Frequency				
Rate of Placement (Cubic Yard / Day)	**Temperature**	**Air**	**Slump**	**Strength**
0 - 8	1	1	1	Determined by ENGINEER
0 - 50	1	1	1	1
Each additional 50 cu. yd. or fraction thereof	1	1	1	1

3. Testing Protocol:
   a. Temperature, ASTM C 1064.
   b. Air content, ASTM C 231 or ASTM C 173 if lightweight aggregate is used.
   c. Slump, ASTM C 143.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 PRECAST PRODUCTS

A. Obtain composite Samples from different portions of the batch.
B. Make and cure concrete test specimens for acceptance, ASTM C 31.
C. Cure all precast products with water vapor or water.
D. Do not damage precast products by stripping forms or handling before the concrete reaches its specified strength.

3.2 CAST-IN-PLACE PRODUCTS

A. Obtaining Samples:
   1. Batch samples, ASTM C 172.
   2. Core samples, ASTM C 42.
B. Identify location of tests on test reports.
C. Compressive strength, ASTM C 39:
   1. Mold four (4) test specimens, ASTM C 31.
   2. For strength test perform slump, air, unit weight, and temperature test.
   3. Break 1 cylinder at seven (7) days and three (3) cylinders at 28 days. The average strength of three (3) cylinder breaks shall be considered the test result.
   4. If any one cylinder in a 28 days test shows definite evidence of

improper sampling, molding, handling, curing, or testing, discard the cylinder. The average strength of the remaining cylinders shall be considered the test result.

D. Tensile (flexural) strength, ASTM C 78:
   1. Mold ~~four~~ (~~4~~) five (5) test specimens, ASTM C 31.
   2. For strength test perform slump, air, unit weight, and temperature test.
   3. Break 1 beam at seven (7) days and three (3) beams at 28 days. The average strength of the three (3) beam breaks shall be considered the test result.
   4. If any one beam in a 28 days test shows definite evidence of improper sampling, molding, handling, curing, or testing, discard the beam. The average strength of the remaining beams shall be considered the test result.
   5. If average strength of 28-day specimens does not meet strength requirement, test specimen #5 @ 56 days.

E. Aggregate, ASTM C 136 for fine and coarse aggregate.

F. Slump test, ASTM C 143.

G. Air Test:
   1. Normal weight concrete, ASTM C 231.
   2. Light weight concrete, ASTM C 173.

H. Unit Weight:
   1. Normal weight concrete, ASTM C 138.
   2. Light weight concrete, ASTM C 567.

I. When requested, test in-place concrete by impact hammer, sonoscope, or other non-destructive device:
   1. To determine relative strengths in various locations in Work.
   2. To aid in evaluating concrete strength.
   3. To select areas to be cored.
   4. To verify quality control in the absence of control testing.

3.3 RETESTING DEFECTIVE CONCRETE STRENGTH

A. If CONTRACTOR desires to do a retest, a request to ENGINEER for retesting must be made within 35 days from time of concrete placement. No coring or retesting shall be done after 40 days have elapsed from the time of placement:
   1. Choose three (3) random test locations and verify choice with ENGINEER. Obtain retest samples per ASTM C 42 and test compressive strength per ASTM C 39 or flexure strength per ASTM C 78.
   2. Establish a chain of custody for all test samples.

3. If concrete placed in the Work will be dry under service condition, air dry cores for seven (7) days before tests. Unless otherwise specified, use air temperature 60 to 80 deg F and relative humidity less than 60 percent.
4. If concrete placed in the Work will be more than superficially wet under service conditions, test cores after moisture conditioning (liquid or vapor water cure).
5. If more than 1 core shows evidence of having been damaged before testing provide replacement cores, otherwise evaluation will be done on two (2) or more core samples.
6. Evaluate cores in accordance with ACI 318 requirements.
7. If core tests are inconclusive, or impractical to obtain, or if structural analysis does not confirm the safety of the Work, load test may be used and evaluated in accordance with ACI 318 requirements.

B. Coat sides of core hole with concrete epoxy resin adhesive. Fill core holes with non-shrink concrete mortar. Match color and texture of surrounding concrete.

C. Within 40 days from time of placement publish the chain of custody record and the results of retesting.

END OF SECTION

SECTION 03 30 10 (Revised)

CONCRETE PLACEMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Concrete placement for slabs on grade, slabs on fill, structural building frame, and other concrete components.

1.2 REFERENCES

A. **ACI Standards (Latest Edition)**:

301 Structural Concrete for Buildings.
305 Hot Weather Concreting.
306 Cold Weather Concreting.
309 Consolidation of Concrete.
318 Building Code Requirements for Reinforced Concrete

B. **ASTM Standards (Latest Edition)**:

C 881 Epoxy-Resin-Base Bonding Systems for Concrete.
C 1059 Latex Agents for Bonding Fresh to Hardened Concrete.

1.3 SUBMITTALS

A. Batch Delivery Ticket: For each batch delivered to site, identify:

1. Date and Project description.
2. Producer and plant.
3. Name of contractor.
4. Serial number of ticket.
5. Mix identification number or code.
6. Truck number and time dispatched.
7. Volume of concrete.
8. Type and amount of cement.
9. Total water and water/cement ratio.
10. Water added for receiver of concrete and receiver's initials.
11. Admixture types.
12. Separate weights of fine and coarse aggregate.
13. Statement of whether batch is pre-mixed at plant or mixed in transit.

B. Record of Placed Concrete: Identify date of record, location of pour, quantity, air temperature, and CONTRACTOR’s quality control test Samples taken.

C. Bonding Compound: Identify product name, type, and chemical analysis.

1.4 **QUALITY ASSURANCE**

A. Provide ACI certified finishers.

B. Remove and replace any placed concrete suffering hot or cold weather damage.

C. For control testing follow Section 03 30 05 requirements.

1.5 **ACCEPTANCE**

A **General**:

1. Price adjustment, Section 01 29 00. CONTRACTOR may request ENGINEER determine appropriate Modifications or payment adjustments to pay for Defective work.
2. Retesting by CONTRACTOR, Section 01 35 10 and Section 03 30 05.

B. Concrete work that fails to meet any of the following requirements will be considered defective. Replace Defective Work at no additional cost to OWNER:

1. Placement:
   a. Reinforcing steel size, quantity, strength, position, damage, or arrangement is not as specified or does not comply with code.
   b. Formwork differs from required dimensions or location in such a manner as to reduce concrete's strength or load carrying capacity or physical esthetics.
   c. Workmanship likely to result in deficient strength.
2. Finishing:
   a. Concrete exposed to view has defects that adversely affect appearance.
   b. Slab tolerances of Section 03 35 00 are not met.
3. Protection:
   a. Method of curing is not as specified.
   b. Inadequate protection of concrete during early stages of hardening and strength development from:
      1) temperature extremes.
      2) rapid moisture loss.
   c. Mechanical injury, construction fires, accidents, or premature removal of formwork likely to result in deficient strength development.

PART 2 PRODUCTS

2.1 **MATERIALS**

A. Concrete: Section 03 30 04. Class as indicated:

1. For roadway cuts, Section 33 05 25.

B. Bonding Compound: ASTM C 1059. Either polyvinyl acetate base or acrylic base latex:

1. Use type I in areas not subject to high humidity or immersion in water with minimum bond strength of 400 psi.

2. Use type II in areas subject to high humidity or immersion in water with minimum bond strength of 1250 psi.

C. Vapor Retarder: 10 mil thick clear polyethylene sheet. Type recommended for below grade application.

D. Forms: Section 03 11 00.

E. Reinforcement: Section 03 20 00.

F. Coverings and Curing Compound: Section 03 39 00.

G. Shrinkage Compensating Grouts: Section 03 61 00.

H. Epoxy Adhesive: Section 03 61 00.

PART 3 EXECUTION

3.1 **EXAMINATION**

A. Verify items to be cast into concrete are accurately placed and held securely.

B. Verify slump, air content range, mix identity, and batch time on delivery ticket matches mix design.

C. Verify slab steel mats are supported by steel chairs, precast concrete blocks, or other slab bolsters. Do not pour if absent.

3.2 **PREPARATION**

A. Implement the traffic control plan requirements Section 01 55 26.

B. Notify ENGINEER no later than 24 hours before commencement of concrete placement.

C. Do not allow construction loads to exceed structural capacity.

D. Clean previously placed concrete. Apply bonding compound per manufacturer's instructions.

E. At locations where new concrete is dowelled to existing work, drill, remove dust, insert and pack steel dowels with shrink compensating grout, and expansion caps where required.

3.3 **DELIVERY**

A. Concrete Temperature: Keep mixed concrete temperature before placement between 60 deg F. and 90 deg F.

B. Slump and Air Content: Keep within allowable ranges.

C. Transport Time:

Air Temperature	Time After Initial Batching
Less than 90 deg F	1–1/2 hours
Greater than 90 deg F	1–hour (without retarder)
Greater than 90 deg F	1–1/2 hours (with retarder)

To increase time past 1-1/2 hours, a hydration stabilizer that is acceptable to Supplier may be used.

D. Tempering:

1. Water may be added if all following conditions are met:
   a. The mix design water/cement ratio is not exceeded.
   b. The delivery ticket allows for addition of water based upon water/cement ratio.
   c. The amount of water added is accurately measured to within 1 gallon of the design addition.
   d. Water addition is followed by three (3) minutes of mixing at mixing speed before discharge.
   e. Supplier and CONTRACTOR mutually agree on who is authorized to add water.
2. **Do not add water after 1 cubic yard of concrete has discharged from the delivery vehicle.**

E. Super-plasticizer: Comply with manufacturer's requirements. If none, then as follows:

1. If added at site, add agent using injection equipment capable of rapidly and uniformly distributing admixture to concrete. Before discharge, mix for a minimum of five (5) minutes at a drum rate not less than 12 rpm or more than 15 rpm.
2. If added at plant, do not deliver to site unless batch delivery ticket displays water/cement ratio before super-plasticizer addition.

3.4 CONCRETE PLACEMENT

A. In General: ACI 301.

1. Do not disturb reinforcement, inserts, embedded parts, and formed joints.
2. Do not break or interrupt successive pours such that cold joints occur.
3. Honeycomb or embedded debris in concrete is not acceptable.

B. Hot Weather Placement: ACI 305. If the rate of evaporation approaches 0.2 lb./ft^2/hr. precautions against plastic shrinkage cracking are necessary. (i.e. dampening Subgrade and forms; placing concrete at the lowest possible temperature; erecting windbreaks and sunshades; fog sprays; use of evaporation retardants; or rescheduling time of placement).

C. Cold Weather Placement: ACI 306. Accelerating admixture may be used in concrete work placed at ambient temperatures below 50 deg F

Use of admixtures will not relax cold weather placement, curing, or protection requirements. If air temperature is forecasted to fall below 32 deg F. within 14 days of placement, proceed as follows:

1. Provide cold weather protection (cover, insulation, heat, etc.).
2. Do not use chemical "anti-freeze" additives in the concrete. (NOTE: this does not apply to normal accelerators.)
3. Do not proceed with the placement of concrete until the temperature of all contact surfaces is 35 degrees F and ambient temperature is ascending.
4. Protect the concrete from freezing until a compressive strength of at least 90 percent of design strength has been achieved, determined by either:
   a. Maturity meter. Refer to AASHTO T 325, or.
   b. Field cured cylinders.
5. Adequately vent combustion-type heaters that produce carbon monoxide.
6. When applying external heat, maintain moist conditions to avoid excessive moisture loss from concrete.
7. When removing heat, limit drop in temperature of concrete surfaces to 20 degrees F during any 12 hour period until the surface temperature of the concrete reaches that of the atmosphere.

D. Concrete Temperature: Keep mixed concrete temperature at time of placement between 60 deg F and 90 deg F

E. Do not disturb reinforcement, inserts, embedded parts, and formed joints.

F. Do not break or interrupt successive pours such that cold joints occur.

G. Honeycomb or embedded debris in concrete is not acceptable.

3.5 JOINTS AND JOINT SEALING

A. Steel edging and jointing tools are acceptable. Preferred are magnesium, aluminum or wood tools

B. Pavement joint sealing, Section 32 13 73.

3.6 CONSOLIDATION

A. Keep spare vibrator available during concrete placement operations.

B. Follow ACI 309 requirements.

3.7 CURING

A. Section 03 39 00. Use a membrane forming compound unless specified otherwise.

3.8 FINISHING

A. Section 03 35 00 and as follows.

Table 1 – Finishes	
Type of work	**Finish**
Sidewalks, garage floors, ramps, exterior concrete Pavement	Broom or belt
Exterior platforms, steps, and landings, exterior and interior pedestrian ramps, not covered by other finish materials	Non-slip
Surfaces intended to receive bonded applied cementitious applications	Scratched
Surfaces intended to receive roofing, except future floors, waterproofing membranes, and roof surfaces that are future floors or sand bed terrazzo	Floated
Floors and roof surfaces that are floors intended as walking surfaces or to receive floor coverings	Troweled
Unpainted concrete surfaces not exposed to public view	Rough as-cast form finish
Unpainted concrete surfaces exposed to public view	Smooth as-cast form finish
Concrete surfaces to receive paint or plaster	Grout cleaned finish

3.9 PROTECTION AND REPAIR

A. Protection, Section 01 66 00:

1. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, graffiti, and mechanical injury.
2. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

B. Repair:

1. Modify or replace concrete not conforming to required levels, lines, details, and elevations.
2. Structural analysis and additional testing may be required at no additional cost to OWNER when the strength of a structure is considered potentially deficient.
3. To patch imperfections refer to Section 03 35 00 requirements.
4. Remove graffiti and mechanical injury.

END OF SECTION

SECTION 03 39 00 (Revised)

CONCRETE CURING

PART 1 GENERAL

1.1. SECTION INCLUDES

A. Concrete curing requirements.

1.2 REFERENCES

A. **ACI Standards (Latest Editions):**

301 Structural Concrete for Buildings.

305 Hot Weather Concreting.

306 Cold Weather Concreting.

B. **ASTM Standards (Latest Editions):**

C 171 Sheet Materials for Curing Concrete.

C 1315 Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.

1.3 SUBMITTALS

A. Curing agent data sheet.

B. Curing plan. Describe estimated cure quantity and procedure.

C. Manufacturer certificates, Section 01 33 00 that shows product meets performance criteria.

D. Manufacturer's recommended installation procedures which, when accepted by ENGINEER, will become the basis for accepting or rejecting installed product.

1.4 QUALITY ASSURANCE

A. Use workers knowledgeable of ACI 301, 305, 306.

1.5 PRODUCT HANDLING

A. Protect materials of this Section before, during, and after installation.

B. Protect the work and materials of other trades.

C. In the event of damage, immediately make replacements and repair at no additional cost to OWNER.

1.6 WEATHER LIMITATIONS

A. Above 75 deg F, ACI 305

B. Below 55 deg F, ACI 306.

PART 2 PRODUCTS

2.1 COVERS

A. Water or Fog-spay: Clean, non-staining and non-detrimental to concrete.

B. Sheet Coverings: White waterproof paper, polyethylene film, or polyethylene coated burlap sheet complying with ASTM C 171.

C. Mat Coverings: Clean roll goods of cotton or burlap fabric.

D. Insulating Coverings: Non-staining curing blankets.

2.2 MEMBRANE FORMING COMPOUND

A. Material:
   1. Styrene-acrylic.
   2. Styrene-butadiene.
   3. Alpha-methylstyrene.

B. Reference: ASTM C 1315:
   1. Type II Class A or B (white pigmented).
   2. Type ID Class A (clear with fugitive dye).

C. Volatile Organic Compounds (VOC): Comply with local, state and federal requirements.

PART 3 EXECUTION

3.1 PREPARATION

A. *DO NOT DILUTE CURING COMPOUNDS.*

B. Do not use membrane forming curing compound on surfaces that are to receive hardeners.

C. Commence curing operation within 20 minutes after finishing.

3.2 APPLICATION – COVERS

A. Water: Apply water-fog spray or ponding.

B. Absorptive Mat: Place absorptive mat to provide coverage of concrete surfaces and edges. Lap over adjacent absorptive covers. Thoroughly saturate with water and keep continuously wet.

C. Moisture-Retaining Sheet: Place cover in widest practicable width with sides and ends lapped and sealed to prevent moisture loss. Repair any holes or tears during curing period.

D. Formed Surface Curing: Cure formed concrete surfaces, including underside of beams, supported slabs and other similar surfaces by moist curing with forms in place for full curing period. If forms are removed before curing completion, applying cure film or penetrant or use methods indicated above, as applicable.

3.3 APPLICATION – MEMBRANE FORMING COMPOUND

A. Apply coating continuously and uniformly. Follow manufacturer's recommendations.

B. Protect continuity of film coatings and repair damage during cure period.

C. If forms are removed before expiration of cure period, apply coating to unprotected areas.

3.4 CONCRETE CURE TEMPERATURE

A. During cure period, eliminate thermal shock of concrete by keeping cure temperature even throughout extent and depth of concrete.

3.5 SCHEDULE

A. Concrete Exposed to Potable Water (as in Water Storage reservoirs):
   1. Moisture cover curing, or
   2. Acrylic cure, or
   3. Styrene acrylic silane co-polymer cure.

END OF SECTION

SECTION 03 40 00 (Revised)

PRECAST CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Pre-cast concrete, complete with required connecting and supporting devices.

1.2 REFERENCES

A. **ACI Standards (Latest Editions)**:

318 Building Code Requirements for Reinforced Concrete. This reference standard includes ASTM material standards.

B. **ASTM Standards (Latest Editions)**:

A 36: Structural Steel.

C 478 Precast Reinforced Concrete Manhole Sections.

C 857 Minimum Structural Design Loading for Underground Precast Concrete Utility Structures.

C 858 Underground Precast Concrete Utility Structures.

C 891 Installation of Underground Precast Concrete Utility Structures.

C. **AWS Standards (Latest Editions)**:

D1.1 Structural Welding Code Steel.

D1.4 Structural Welding Code Reinforcing Steel.

D. **PCI Standards (Latest Editions)**:

Design Handbook.

MNL-116 Quality Control and Assurance for Plant Production of Prestressed Concrete.

MNL-117 Quality Control and Assurance for Plant Production of Architectural Precast Concrete.

1.3 DESIGN CRITERIA

A. Design structural precast concrete units, ACI 318 and PCI design handbook.

B. Design utility precast units, ASTM C 857 and C 858.

C. Under direct supervision of a design professional who is fully experienced in design of units.

D. Design units to support required stripping and handling loads, and live, dead and construction loads.

E. Design component connections to provide adjustment to accommodate misalignment of structure during installation.

1.4 **SHOP DRAWINGS**

A. Prepare Shop Drawings under seal of a licensed design professional.

B. Submit Shop Drawings, Section 01 33 00.

C. Indicate unit locations, unit identification marks, fabrication details, reinforcement, connection details, pertinent dimensions, and erection support points. Unit identification marks to appear on all manufactured units.

D. Do not proceed with fabrication until Shop Drawings have been accepted.

1.5 **QUALITY ASSURANCE**

A. Manufacturer:
   1. Prestressed: PCI certified.
   2. Precast Concrete Units: PCI or NPCA certified
   3. Precast Utility Structures and Pipe: ACPA certified.

B. Transporter: Acceptable to manufacturer.

C. Erector:
   1. Prestressed: PCI certified.
   2. Precast: Has five (5) years minimum experience in erecting precast units.

D. Welders: Certified, AWS D1.1 and AWS D1.4.

1.6 **DELIVERY, STORAGE AND HANDLING**

A. Handle precast units in positions consistent with their shape and design. Lift and support only from support points indicated on Shop Drawings.

B. Embedded Lifting or Handling Devices: Capable of supporting units in positions anticipated during manufacture, storage, transportation, and erection.

C. Block and laterally brace units while stored at manufacturers. Provide lateral bracing that is sufficient to prevent bowing and warping that is clean, nonstaining, and will not inhibit uniform curing of exposed surfaces.

D. Provide edges of units with adequate protection to prevent staining, chipping, or spalling of concrete.

E. Unless otherwise approved in writing, do not deliver units to job site until required for installation.

PART 2 PRODUCTS

2.1 **CONCRETE**

A. Above Ground: 5000 psi minimum, Section 03 30 04 and ACI 318.

B. Underground: Class 4000 minimum, Section 03 30 04 and ASTM C 478 or ASTM C 858.

2.2 ACCESSORIES

A. Connecting and Supporting Devices: Steel, ASTM A 36.

B. Bolts, Nuts, and Washers: High-strength steel. Section 05 05 23.

C. Reinforcement: Grade 60 billet steel bars, Section 03 20 00 plain finish

2.3 FABRICATION

A. Maintain plant records and quality control program during production of structural precast concrete. Make records available to ENGINEER.

B. Use molds which are rigid and constructed of material that will result in uniform finished products.

C. If self consolidating concrete is NOT used, vibrate concrete to ensure proper consolidation, elimination of unintentional cold joints, and minimize entrapped air on surface.

D. Fabricate required connecting devices, plates, angles, items fit to steel framing members, bolts and accessories.

E. Ensure reinforcing steel, anchors, inserts, plates, angles, and other cast-in items are sufficiently embedded, anchored and property located.

F. Ensure finished surfaces of precast structural units are uniform.

G. Cure units under identical conditions to develop specified concrete quality, and minimize appearance blemishes such as non-uniformity, staining or surface cracking.

2.4 DESIGN DEVIATIONS

A. Deviation: Provide installation equivalent to basic intent without additional cost to OWNER. Deviations from exact required cross-section will be permitted only with approval.

B. Manufacturer's Proposed Design: Supported by complete design calculations and drawings. When requested, submit design calculations for review bearing seal and signature of a licensed design professional.

2.5 OPENINGS

A. Provide required openings, six (6) inches or larger. If approved, smaller sizes may be field constructed by coring or sawing.

2.6 FINISHES

A. General: Required finish will be described in one of the following paragraphs. If no finish is indicated or selected by ENGINEER, provide Standard Finish.

B. Standard Finish: Produced in forms such as plastic or metal lined that impart a smooth finish to the concrete. Small surface holes, normal form joint marks, minor chips and spall are acceptable if approved. Major or unsightly imperfections, honeycomb or structural defects are not acceptable.

C. Commercial Finish: Produced in forms such as plywood or lumber that impart texture to concrete. Remove fins and large projections. Fill holes over 3/8 inch. Make faces true and well defined. Correct exposed ragged edges by rubbing or grinding.

D. Architectural Grade A Finish: Produced in forms such as plastic or metal lined that impart smooth finish to concrete. Fill holes over 1/4 inch in diameter with sand-cement paste. Grind smooth form offsets or fins over 1/8 inch. Coat with neat cement paste using float. After paste coat has dried, rub with burlap to remove loose particles.

E. Architectural Grade B Finish: Produced in forms such as plastic or metal lined that impart smooth finish to concrete. Fill holes over 1/4 inch in diameter with sand-cement paste. Grind smooth form offsets or fins over 1/8 inch.

F. Special Finishes: Sandblasting, acid washing, retarders or form liners as approved by ENGINEER. Special finishes require submittal of two 12 x 12 inch Samples showing a representative color and texture to be used.

G. Painted Finishes: On concrete to be painted, use a form release agent acceptable to the paint manufacturer.

2.7 **REPAIR**

A. Repair of damaged units is acceptable if structural integrity or appearance is not impaired.

2.8 **ALLOWABLE TOLERANCES**

A. Length: Plus or minus 3/4 inch, or plus or minus 1/8 inch per 10 feet of length, whichever is greater, or as indicated.

B. End Squareness: 1/2 inch maximum.

C. Blockouts: 1 inch of centerline location indicated.

PART 3 EXECUTION

3.1 **INSTALLATION**

A. Do not install precast units until concrete has attained its design compressive strength.

B. Install members plumb, level, and in alignment within PCI MNL-116 or PCI MNL-117 and indicated limits of erection tolerances.

C. Clean weld marks or other marks, debris, or dirt from exposed surfaces of units.

D. Install underground utility precast units per ASTM C 891.

3.2 **PERFORMANCE REQUIREMENTS**

A. Conduct inspections, perform testing, and make repairs or replace unsatisfactory precast units as required.

B. Rejection: Units may be rejected for any one of the following:
   1. Exceeding specified installation tolerances.
   2. Damaged during construction operations.
   3. Exposed-to-view surfaces which develops surface deficiencies.
   4. Other defects as listed in PCI MNL-116 or PCI MNL-117.

END OF SECTION

SECTION 05 05 23 (Revised)

BOLTS, NUTS AND ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Stainless Steel bolts, nuts, washers, clamps, straps, rods and accessories.

1.2 REFERENCES

A. **AISC Standards**:

M011: Manual of Steel Construction.

B. **ASME Standards**:

B1.1 Unified inch Screw Threads (UN and UNR Thread Form), Supplement.

C. **ASTM Standards**:

A126 Gray Iron Castings for Valves, Flanges, and Pipe Fittings.

A197 Cupola Malleable Iron.

A307 Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.

A325 High-Strength Bolts for Structural Steel Joints.

A506 Steel, Sheet and Strip, Alloy, Hot-Rolled and Cold-Rolled, Regular Quality and Structural Quality.

A575 Steel Bars, Carbon, Merchant Quality, M-Grades.

F593 Stainless Steel Bolts, Hex Cap Screws, and Studs.

PART 2 PRODUCTS

2.1 MATERIALS

A. General:

1. Use Stainless Steel bolts, nuts, and accessories for all buried fittings.
2. All sizes bolts and nuts, American Standard machined heavy hexagon heads with class two (2) fit and threads, ASME B1.1.

B. Stainless Steel Bolts: Steel, ASTM F593.

C. High Strength Bolts: Steel, ASTM A325.

D. Anchor Bolts: Steel, ASTM A307, or ASTM F593 if stainless steel is indicated.

E. Washers: Grey iron, ASTM A126.

F. Clamps and Straps: Steel, ASTM A506.

G. Rods: Steel, ASTM A575.

H. Rod Coupling: Mallable iron, ASTM A197.

PART 3 EXECUTION

3.1 INSTALLATION

A. Torque all nuts and bolts by procedures contained in AISC M011 to secure items requiring fastening.

B. Extend bolt through nut not less than 1/4 inch beyond nut.

END OF SECTION

SECTION 31 23 23 (Revised)

BACKFILLING FOR STRUCTURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Structural backfill materials.

B. Structural backfilling requirements.

1.2 REFERENCES

A. **ASTM Standards**:

D 698 Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3)).

D 1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3)).

D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

D 4832 Preparation and Testing of Soil-Cement Slurry Test Cylinders.

1.3 SUBMITTALS

A. Submit maximum laboratory dry density and optimum laboratory moisture content for:

1. Subgrade material, and
2. Each type of fill to be used.

1.4 QUALITY ASSURANCE

A. Do not change material sources, or aggregate without ENGINEER's knowledge.

B. Reject backfill material that does not comply with requirements specified in this Section.

C. If requested, submit a written quality control inspections and testing report describing source and field quality control activities performed by CONTRACTOR and Suppliers.

1.5 STORAGE

A. Safely stockpile backfill materials.

B. Separate differing materials, prevent mixing, and maintain optimum moisture content of backfill materials.

1.6 SITE CONDITIONS

A. Do not place, spread, or roll any backfill material over material that is damaged by water. Remove and replace damaged material at no additional cost to OWNER.

B. Control erosion. Keep area free of trash and debris. Repair settled, eroded, and rutted areas.

C. Reshape and compact damaged structural section to required density.

1.7 ACCEPTANCE

A. General: Native material may be wasted if there is no additional cost to substitute material acceptable to ENGINEER.

B. Material: For material acceptance refer to:

1. Common fill, Section 31 05 13.
2. Aggregate base course, Section 32 11 23.
3. Cement treated fill, Section 31 05 15.

C. Lift thickness: One test per Lot.

D. Compaction: One test per Lot. Verify density using nuclear tests, ASTM D 2922. Compaction and Lot sizes as follows:

Table 1 – Compaction and Lot Sizes

Structure Type	Compac-tion	Proctor	Lot Size
Strip Footings	95	Standard	Subgrade: 200 linear feet
	98	Modified	Aggregate base course: 200 linear feet per lift.
Structure Footing excluding strip footings	95	Standard	Subgrade: 225 square feet.
	98	Modified	Aggregate base course: Each 225 square feet per lift
Embankments	95	Standard	Fill: 625 square feet per lift
Interior Slab on Grade	98	Modified	Aggregate base course: 625 square feet
Side of Foundation Walls and Retaining Walls	95	Standard	Exterior:
	98	Modified	Interior
Miscellaneous small structures (e.g. Manholes, drainage boxes, etc.)	95	Standard	Subgrade: Each footprint area Fill: Each lift
	98	Modified	Aggregate base course: Each lift

NOTES
(a) Standard proctor, ASTM D 698.
(b) Modified proctor, ASTM D 1557.

E. Flowable Fill Strength. Lot size is one day production with sub-lots of 250 cubic yards or part thereof. Verify strength using cylinders, ASTM D 4832.

F. Grade, Cross Slope: Measured at random locations.

1.8 **WARRANTY**

A. Repair settlement damage at no additional cost to OWNER.

PART 2 PRODUCTS

2.1 **BACKFILL MATERIALS**

A. Common fill, Section 31 05 13. Granular material, CONTRACTOR's choice.

B. Aggregate base course, Section 32 11 23. Untreated base course.

C. Cement treated fill, Section 31 05 15. Use a flowable fill so vibration is not required.

2.2 **WATER**

A. Make arrangements for sources of water during construction and make arrangements for delivery of water to site.

B. Comply with local Laws and Regulations at no additional cost to OWNER when securing water from water provider.

C. Culinary Water is **NOT AVAILABLE** from the City System.

PART 3 EXECUTION

3.1 **PREPARATION**

A. Implement the traffic control plan requirements, Section 01 55 26.

B. Verify:

1. Backfill material meets gradation requirements.
2. Foundation walls are braced to support surcharge forces imposed by backfilling operations, areas to be backfilled are free of debris, snow, ice or water.
3. Ground surface is not frozen.

C If ground water is in the intended backfill zone, dewater.

3.2 **PROTECTION**

A. Protect existing trees, shrubs, lawns, structures, fences, roads, sidewalks, paving, curb and gutter and other features.

B. Protect above or below grade utilities. Contact utility companies to repair utility damage. Pay all cost of repairs.

C. Avoid displacement of and damage to existing installations while compacting or operating equipment. Do not fill adjacent to structures until excavation is checked by ENGINEER.

D. Do not use compaction equipment adjacent to walls or retaining walls that may cause wall to become over-stressed or moved from alignment.

E. Do not disturb or damage foundation perimeter drainage, foundation, damp-proofing, foundation waterproofing and protective cover, or utilities in trenches. Movement of construction machinery over work at any stage of construction is solely at CONTRACTOR's risk.

F. Restore any damaged structure to its original strength and condition.

3.3 LAYOUT

A. Identify required line, levels, contours, and datum.

B. Stake and flag locations of underground utilities.

C. Upon discovery of unknown utility or concealed conditions, notify ENGINEER.

D. Maintain all benchmarks, control monuments and stakes, whether newly established by surveyor or previously existing. Protect from damage and dislocation.

E. If discrepancy is found between Contract Documents and site, ENGINEER shall make such minor adjustments in the Work as necessary to accomplish the intent of Contract Documents without increasing the Cost of the Work to CONTRACTOR or OWNER.

3.4 SUBGRADE

A. Protect Subgrade from desiccation, flooding, and freezing.

B. Before backfilling over Subgrade, get ENGINEER's observation of subgrade surface preparations.

C. If Subgrade is not readily compactable get ENGINEER’s permission to stabilize the subgrade.

3.5 FOUNDATIONS AND SLABS ON GRADE

A. Lift thickness before compaction is eight (8) inches.

B. Do not backfill against walls until concrete has obtained 14 days strength. Backfill against foundation walls simultaneously on each side.

C. Fill unauthorized excavations with material acceptable to ENGINEER at no additional cost to OWNER.

D. Do not damage adjacent structures or service lines.

E. Where flowable fill is used, use fill that flows easily and vibration for compaction is not required.

3.6 MODIFIED BACKFILL LAYER METHOD

A. Section 33 05 20.

3.7 TOLERANCES

A. Compaction: Ninety-five (95) percent or ninety eight (98) percent minimum relative to a standard or modified proctor density, Section 31 23 26.

B. Lift Thickness (before compaction):

1. Eight (8) inches when using riding compaction equipment.

2. Six (6) inches when using hand held compaction equipment.
3. As proven in the modified backfill layer method, Section 33 05 20.

C. Cement Treated Fill: Compressive strength targets are 60 psi in 28 days and 90 psi maximum in 28 days.

3.8 **CLEANING**

A. Remove stockpiles from site. Grade site surface to prevent free standing surface water.

B. Leave borrow areas clean and neat.

END OF SECTION

SECTION 31 23 26 (Revised)

COMPACTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Compaction of granular fill materials.

1.2 REFERENCES

A. **ASTM Standards**:

D 698 Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3)).

D 1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3))

D 2216 Laboratory Determination of Water (Moisture) Content of Soil and Rock.

D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

D 3017 Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

D 3282 Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes.

D 3740 Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

1.3 DEFINITIONS

A. **A-1 Soil**: Defined in ASTM D 3282.

B. **Modified Proctor Density**: The maximum laboratory density, as defined in and determined by ASTM D 1557 using procedure A, B or C as applicable.

C. **Relative Density (or Relative Compaction):** The ratio of field dry density to the maximum laboratory density expressed as a percentage.

D. **Standard Proctor Density**: The maximum laboratory density, as defined in and determined by ASTM D 698 using procedure A, B or C as applicable.

1.4 QUALITY ASSURANCE

A. Use a soil and rock laboratory that complies with ASTM D 3740.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION

3.1 COMPACTION

A. Moisten or dewater backfill material to obtain optimum moisture for compaction.

B. When no density compactive effort is specified, compact trench backfill to 95 percent or greater relative to a standard proctor density,and base course compaction to 95 percent or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches.

C. Correct deficient compaction conditions. Replace or repair materials and damaged facilities.

3.2 FIELD QUALITY CONTROL

A. Testing: Perform control testing of materials. Perform additional testing at no additional cost to OWNER, for

1. Changes in source of materials or proportions requested by CONTRACTOR, or
2. Failure of materials to meet specification requirements, or
3. Other testing services needed or required by CONTRACTOR.

B. Optimum Soil Density: Use ASTM D 2216 and the following industry standards.

1. For A-1 Soils: Method C of ASTM D 1557 (Modified Proctor)
2. For All Other Soils: Method C of ASTM D 698 (Standard Proctor).

C. Field Density:

1. Use ASTM D 3017 and test method C of ASTM D 2922 for shallow depth nuclear testing.
2. No density determinations are required on any material containing more than 65 percent material retained on the number 10 sieve or more than 60 percent material retained on the number 4 sieve. In lieu of reporting densities in such cases, report the sieve analysis to document the material type.

3.3 REPORT

A. For each material tested, document the following:

1. Vertical and horizontal location of the test.
2. Optimum laboratory moisture content.
3. Field moisture content.
4. Maximum laboratory dry density.
5. Field density.
6. Percent compaction results.
7. Certification of test results by Independent Testing Agency.

END OF SECTION

SECTION 33 05 05

DUCTILE IRON PIPE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Ductile iron pipe, couplings, fittings, and joint materials.

1.2 REFERENCES

A. **AWWA Standards**:

C104	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
C110	Ductile-Iron and Gray Iron Fittings, 3 In. Through 48 In., for Water and Other Liquids.
C111	Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
C115	Flanged Ductile-Iron and Gray Iron Pipe with Threaded Flanges.
C151	Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
C600	Installation of Ductile-Iron Water Mains and Their Appurtenances.

PART 2 PRODUCTS

2.1 PIPE AND FITTINGS

A. Buried Applications:

1. Class 52 or pressure class 350 psi ductile iron pipe, AWWA C151 with push-on joints, AWWA C111.
2. Cement lining for all pipe and fittings, AWWA C104.
3. Class 250 fittings with AWWA C110 joints.
4. Coupler with mechanical joint fittings, AWWA C104, C110, and C111.
5. Rubber gasket slip-on pipe joints, AWWA C111 with gasket lubricant.

6. Bronze wedges with current capacity of 400 amps each for each joint as follows:

Pipe Diameter	No. of Wedges
less than 10”	2
10”	3
12”	4
greater than 12”	6

B. Above Ground Applications: As buried applications, except use bolted flanged fittings, AWWA C104, C110, and C115.

C. Component Materials and Design - All materials used as part of the culinary water system shall comply with Utah State Code R309-550-6, which requires that all materials that may come in contact with drinking water, including pipes, gaskets, lubricants and O-Rings, shall be ANSI-certified as meeting the requirements of ANSI/NSF Standard 61. All components shall be appropriately stamped with the NSF logo.

D. Standards for Mechanical Properties
Pipe, joints, fittings, valves, and fire hydrants shall conform to ANSI/ NSF Standard 61, and applicable sections of AWWA Standards C104-A21.4-08 through C550-05 and C900-07 through C950-07

2.2 COVERINGS

A. Buried Mechanical Joints: Grease and eight (8) mil vinyl wrap plastic cover.

PART 3 EXECUTION

3.1 INSTALLATION

A Follow AWWA C600 requirements, pipe manufacturer's instructions and the following.

1. Gravity Systems: Section 33 31 00 (sanitary sewer) or Section 33 41 00 (storm drainage systems) and ASTM D 2321.
2. Pressure Systems: Section 33 12 19 (water distribution and transmission) and AWWA C900 or ASTM D 2774.
3. Underground Irrigation Systems: Section 32 84 23, (underground irrigation system) and ASTM D 2855.

END OF SECTION

SECTION 33 05 07 (Revised)

POLYVINYL CHLORIDE PIPE

PART 1 GENERAL

1.1. SECTION INCLUDES

A. Polyvinyl chloride pipe, couplings, fittings and joint materials.

1.2 REFERENCES

A. **ASTM Standards**:

D 1784	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
D 2241	Poly (Vinyl Chloride) (PVC) Pressure Rated Pipe (SDR - Series).
D 2321	Underground Installation of Flexible Thermoplastic Sewer Pipe.
D 2412	Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.
D 2564	Solvent Cement for Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings.
D 2729	Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
D 2774	Underground Installation of Thermoplastic Pressure Piping.
D 2855	Making Solvent Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings.
D 3034	Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
D 3139	Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
D 3212	Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
F 656	Primers for Use in Solvent Cement Joints of Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings.
F 679	Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
F 949	Poly(vinyl Chloride) (PVC) Corrugated sewer Pipe with a Smooth Interior and Fittings.

B. **AWWA Standards**:

C110 Ductile-Iron and Gray-Iron Fitting, 3 inches Through 48 inches, for Water and Other Liquids.

C900 Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. Through 12 In., for Water Distribution.

C905 Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 In. Through 48 In.

C909 Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, 4 in. Through 24 In., for Water, Wastewater, and Reclaimed Water Service.

1.3 **DEFINITIONS**

A. **Standard Dimension Ratio (SDR):** Outside diameter of pipe divided by wall thickness.

PART 2 PRODUCTS

2.1 **GRAVITY PIPE SYSTEMS**

A. Pipe:

1. Solid smooth wall:
   a. 4 to 15 inch diameter, ASTM D 3034.
   b. 18 to 27 inch diameter, ASTM F 679.
2. Corrugated wall with a smooth interior, 4 to 10 inches diameter, ASTM F 949.

B. Fittings: ASTM D 1784.

C. Stiffness: 50 psi minimum when measured at five (5) percent deflection, ASTM D 2412.

D. Additives and Fillers: Not to exceed 10 parts by weight; 100 parts of resin in the compound.

E. Joints: Bell and spigot with flexible elastomeric seals, ASTM D 3212.

F. Flattening: No visual evidence of splitting, cracking, or breaking when flattened to 60 percent deflection, ASTM D 2412.

2.2 **PRESSURE PIPE SYSTEMS**

A. Pipe: AWWA C900, C905, or C909 as applicable. Use outside diameters defined by ductile iron pipe sizes. Dimensions, class, SDR, and tolerances per ASTM D 2241. **(Use DR 18 Minimum)**

B. Compounds: Type 1, Grade 1, Class 12454A, ASTM D 1784.

C. Joints:

1. Bell and spigot with flexible elastomeric seals, ASTM D 3139. Use non-toxic lubricant.
2. Solvent weld, ASTM D 2564.

D. Fittings (4 inch and larger): Ductile iron Class 250, ASTM C110.

2.3 **PERFORATED PIPE SYSTEMS**

A. Pipe: Refer to gravity pipe products above.

B. Perforations: ASTM D 2729.

C. Joints: Push-on, solvent weld or other.

2.4 **SOLVENT WELDS**

A. Primer, ASTM F 656.

B. Glue, ASTM D 2564.

2.5 PIPE AND FITTINGS

A. Component Materials and Design - All materials used as part of the culinary water system shall comply with Utah State Code R309-550-6, which requires that all materials that may come in contact with drinking water, including pipes, gaskets, lubricants and O-Rings, shall be ANSI-certified as meeting the requirements of ANSI/NSF Standard 61. All components shall be appropriately stamped with the NSF logo.

PART 3 EXECUTION

3.1 **INSTALLATION**

A. Install pipe per manufactuerer's instructions and the following.

1. Gravity Systems: Section 33 31 00 (sanitary sewer) or Section 33 41 00 (storm drainage systems) and ASTM D 2321.
2. Pressure Systems: Section 33 12 19 (water distribution and transmission) and AWWA C900, C905, C909 or ASTM D 2774.
3. Underground Irrigation Systems: Section 32 84 23, (underground irrigation system) and ASTM D 2855.

END OF SECTION

SECTION 33 05 20 (Revised)

BACKFILLING TRENCHES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Trench backfill materials.

B. Trench backfilling requirements.

1.2 REFERENCES

A. **ASTM Standards**:

D 698 Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3)).

D 1557 Laboratory Compaction Characteristics of Soil using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3)).

D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

D 4832 Preparation and Testing of Soil-Cement Slurry Test Cylinders.

1.3 DEFINITIONS

A. **Bedding**: That surface of the excavation or portion of the Pipe Zone below the pipe.

B. **Pipe Zone**: That zone in a backfilling operation which supports, and surrounds the pipe barrel, and extends to 1 foot above the top of the pipe barrel.

1.4 SUBMITTALS

A. Submit maximum laboratory dry density and optimum laboratory moisture content for:

1. Subgrade material, and
2. Each type of fill to be used.

B. Submit aggregate batch delivery tickets showing name of material source, serial number of ticket, date and truck number, name of Supplier, job name and location, volume or weight. And aggregate classification or Supplier’s identification code.

1.5 QUALITY ASSURANCE

A. Do not change material sources, or aggregate without ENGINEER's knowledge.

B. Reject backfill material that does not comply with requirements in this Section.

C. If requested, submit a quality control inspections and testing report describing source and field quality control activities performed by CONTRACTOR and Suppliers.

1.6 STORAGE

A. Safely stockpile backfill materials.

B. Separate differing materials, prevent mixing, and maintain optimum moisture content of backfill materials.

1.7 SITE CONDITIONS

A. Do not place, spread, or roll any backfill material over material that is damaged by water. Remove and replace damaged material at no additional cost to OWNER.

B. Control traffic and erosion. Keep area free of trash and debris. Repair settled, eroded, and rutted areas.

C. Reshape and compact damaged structural section to required density.

D. Restore any damaged structure to its original strength and condition.

E. Replace contaminated backfill at no additional cost to OWNER.

1.8 SEQUENCING

A. Coordinate backfilling operation with pipeline commissioning, Section 33 08 00.

1.9 ACCEPTANCE

A. General: Native material may be wasted if there is no additional cost to substitute material acceptable to ENGINEER.

B. Material: For material acceptance refer to:

1. Common fill, Section 31 05 13.
2. Aggregate base course, Section 32 11 23.
3. Cement treated fill, Section 31 05 15.

C. Lift Thickness: One test per lot.

D. Compaction: One test per lot. Verify density using nuclear tests, ASTM D 2922. Compaction standard and Lot sizes as follows:

Table 1: Compaction Standard and Lot Size

Material	Proctor	Lot Size
Subgrade	Standard	200 linear feet
Common Fill	Standard	200 linear feet per lift 25 square feet of footing area per lift
Aggregate base course	Modified	200 linear feet per lift 25 square feet of footing area per lift

NOTES
(a) Standard proctor, ASTM D 698.
(b) Modified proctor, ASTM D 1557.
(c) Lift thickness above pipe zone before compaction, 8 inches.

E. Flowable Fill Strength: Lot size is one (1) day production with sub-lots of 50 cubic yards or part thereof. Verify strength using cylinders, ASTM D 4832.

F. Grade, Cross Slope: Measured at random locations.

1.10 **WARRANTY**

A. Correct any settlement of Trench backfill or structures built over Trench backfill at no cost to OWNER.

B. Restore structures damaged by settlement at no additional cost to OWNER.

PART 2 PRODUCTS

2.1 **BACKFILL MATERIALS**

A. Common fill, Section 31 05 13. Granular material, Pea gravel shall not be allowed for pipe, trench, or structural backfill

B. Aggregate base course, Section 32 11 23. Untreated base course.

C. Cement treated fill, Section 31 05 15. Use a flowable fill so vibration is not required.

D. Slag or asphalt bearing material NOT ALLOWED in trench.

E. If existing materials cannot be made suitable for compaction, then import fill must be provided.

2.2 **WATER**

A. Make arrangements for sources of water during construction and make arrangements for delivery of water to site.

B. Comply with local Laws and Regulations at no additional cost to OWNER when securing water from water utility company.

2.3 **GEOTEXTILE FABRIC**

A. Section 31 05 19. Use woven or non-woven stabilization-separation fabric. Select either moderate MARV or high MARV as needed.

2.4 **IDENTIFICATION TAPE**

A. Permanent, bright colored, continuous printed magnetic plastic tape, intended for direct burial service; not less than six (6) inches wide by four (4) mils thick. Tape shall read "**CAUTION: BURIED INSTALLATION BELOW**". Color as follows.

Red	Electric power lines, cables, conduit and lighting cables
Yellow	Gas, oil, steam, petroleum or gaseous materials
Orange	Communications, alarm, signal, cables or conduits
Blue	Potable water
Purple	Reclaimed water, irrigation and slurry lines
Green	Sewer and storm drain lines

PART 3 EXECUTION

3.1 PREPARATION

A. Implement the traffic control plan requirements, Section 01 55 26.

B. Identify required line, levels, contours, and datum.

C. Stake and flag locations of underground utilities.

D. Verify:

1. Backfill material meets gradation requirements.
2. Foundation walls are braced to support surcharge forces imposed by backfilling operations, areas to be backfilled are free of debris, snow, ice or water.
3. Trench bottom is not frozen.

E. If ground water is in the intended backfill zone, dewater.

3.2 SUBGRADE

A. Protect subgrade from desiccation, flooding, and freezing.

B. Before backfilling over Subgrade, get ENGINEER's review of Subgrade surface preparations.

C. If Subgrade is not readily compactable, get ENGINEER's permission to stabilize the subgrade:

1. Excavation for Subgrade stabilization is incidental work, Section 31 23 16.
2. Place geotextile fabric. Place acceptable fill in lifts. Compact.

3.3 PROTECTION

A. During installation or repair, plug end of pipe or fitting except when installing next section of pipe or fitting.

B. Movement of construction machinery over Work at any stage of construction is solely at CONTRACTOR's risk.

3.4 GENERAL BACKFILLING REQUIREMENTS

A. Avoid injuring and displacement of conduit, pipe and structures while compacting soil or operating equipment next to pipeline.

B. Place geotextile fabrics; Section 31 05 19.

C. Do not damage corrosion protection on pipe.

D. Repair or replace damaged pipe at no additional cost to OWNER.

E. Withdraw sheathing, shoring, piles, and similar supports as backfilling progresses. Backfill and compact all holes left by removals.

F. Provide sufficient water quality facilities to protect downstream fish and wildlife, and to meet State water quality requirements.

G. Water settling of trench backfill is not permitted. "Jetting" of trench backfill is prohibited.

3.5 PIPE ZONE

A. Maintain uniform foundation along barrel of pipe with sufficient relief for joint connections.

B. Use backfill materials meeting pipe manufacturer's recommendations.

Maximum backfill particle size is 3/4 inch for plastic pipe.

C. Do not permit free fall of backfill material that may damage pipe, pipe finish, or pipe alignment.

D. Except where piping must remain exposed for tests, fill pipe zone as soon as possible.

3.6 **TRENCH ABOVE PIPE ZONE.**

A. Maximum lift thickness before compaction is eight (8) inches.

B. Fill unauthorized excavations with material acceptable to ENGINEER at no additional cost to OWNER.

C. Do not damage adjacent structures or service lines.

D. Install continuous identification tape directly over buried lines 18 inches below finished grade.

3.7 **MODIFIED BACKFILL LAYER METHOD**

A. At discretion of CONTRACTOR, backfill may be placed in thicker layers than indicated above subject to the following provisions:

1. CONTRACTOR proves the ability of proposed method to achieve specified average compaction density.
2. ENGINEER, on the basis of test results, approves the system in writing.

B. Should CONTRACTOR find it necessary to change the method or any part of it, including the source of material, or the rate of placing the material, obtain approval of ENGINEER, who may require a further trial area.

C. If testing shows a previously approved system is no longer producing the required degree of compaction, make changes to comply.

D. Where vibration effects are creating environmental problems, make changes to eliminate problems.

3.8 **TOLERANCES**

A. Compaction: Ninety-five (95) percent or greater relative to a standard or modified proctor density, Section 31 23 26.

B. Lift Thickness (before compaction):

1. Eight (8) inches when using riding compaction equipment.
2. Six (6) inches when using hand held compaction equipment.
3. As proven in the modified backfill layer method.

C. Cement Treated Fill: Compressive strength targets are 60 psi in 28 days and 90 psi maximum in 28 days.

3.9 **FIELD QUALITY CONTROL**

A. Test trench backfilling until a compaction pattern acceptable to CONTRACTOR and ENGINEER is achieved. Continue random quality control compaction testing.

3.10 SURFACE RESTORATION

A. Provide temporary paved surfaces where trenches pass through roadways, driveway approaches or sidewalks.

B. Restore paved surfaces, Section 33 05 25.

C. Finish landscaped surfaces with grass, Section 32 92 00 or with other ground cover, Section 32 93 13.

3.11 CLEANING

A. Remove stockpiles from site when work is complete. Grade site to prevent free standing surface water.

B. Leave borrow areas clean and neat.

END OF SECTION

SECTION 33 08 00 (Revised)

COMMISSIONING OF WATER UTILITIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Identification of testing requirements for potable and non-potable water piping systems.

B. Warning: DO NOT use hydrostatic pressures described in this Section for air-pressure testing.

1.2 DEFINITIONS

A. **Leakage**: The quantity of water required to maintain specified hydrostatic test pressure after pipeline has been filled with water and air expelled.

B. **Non-rigid Pipe**: Any pipe that requires bedding and pipe zone backfill material for structural support.

1.3 SUBMITTALS

A. Pipeline Test Report: Submit:

1. Type of test.
2. Identification of pipe system.
3. Size, type, location and length of pipe in test section.
4. Test pressure and time.
5. Video cassette and log of visual examination.
6. Amount of leakage versus allowable.
7. Date of test approval.
8. Signature of test supervisor.
9. Signature of Resident Project Representative witnessing the test.

1.4 PROJECT CONDITIONS

A. Repair pipeline system at no additional cost to OWNER until it passes specified commissioning tests.

1.5 WARRANTY

A. At the end of the one year correction period repeat any test requested by ENGINEER to verify warranty of pipeline performance.

1.6 REFERENCES

A. AWWA C600, C602, and C606

PART 2 PRODUCTS

2.1 **TESTING MATERIALS**

A. Medium: Water, air.

B. Recording Equipment (pressure systems):

1. Supply all equipment and power to perform pressure testing.
2. Secure approval of pressure gages.
3. Locate all gages and recording equipment away from affect of sunshine or unsuitable weather conditions.
4. Place, vents, pressure taps and drains for the test. Repair pipeline at completion of test at no additional cost to OWNER.

PART 3 EXECUTION

3.1 **PREPARATION**

A. Notify ENGINEER 48 hours in advance of test.

B. Carry out selected tests as pipeline construction progresses to ensure construction methods are producing satisfactory results.

C. Remove debris, sediment and other material from installed pipe before testing. Do not discharge or flush sand, gravel, concrete, debris or other foreign material into any existing pipeline system. Flushing with clean water only will be allowed but with minimal flows to eliminate exceeding capacities of the existing gravity systems. Flushing into existing pressurized water systems will not be allowed.

3.2 **ALIGNMENT AND GRADE TEST**

A. Do not allow line and grade of pipe to vary more than 1/2 inch in 10 feet and not more than 1 inch variance from true line at any location.

B. Do not allow grade of pipe to vary more than 1/4 inch in 10 feet for all design grades less than or equal to 1 percent and not more than 1/2 inch total variance from true grade at any location. Also, do not allow grade of pipe to vary more than 1/2 inch in 10 feet for all design grades greater than 1 percent and not more than 1 inch total variance from true grade at any location. Theses tolerances shall be acceptable provided that such variation does not result in a level or reverse sloping invert.

C. The variation in the invert elevation between adjoining ends of pipe due to eccentricity of joining surface and pipe interior surfaces shall not exceed 1/64 inch per inch of pipe diameter, or 1/4 inch maximum.

3.3 **PRESSURE TEST**

A. Air Test: Not Allowed

B. Hydrostatic test: Complete per AWWA for the type of pipe used. Two (2) tests are required, pressure and volume.

1. Provide 200 psi test pressure for two (2) hours unless required otherwise, at the lowest point in the line being hydrostatically tested.
2. Provide air release taps at pipeline's highest elevations and expel all air before the test. Insert permanent plugs after test has been completed.

3. No piping installed will be acceptable until the leakage is less than the amount allowed by AWWA C600 - Installation of Mains and their Appurtenances. Under no circumstances shall the test pressure vary by more than 5 psi during the 2 hour test, and the test pressure shall not be less than 200 psi. Prior to performance of the test, the Contractor shall review procedures with the City, and agree on the testing requirements for the specific pipe material tested.

C. Locate and repair defective joints and retest until the leakage rate is less than allowable.

D. Repair any noticeable leakage even if total leakage is less than allowable.

3.4 OBSTRUCTION AND DEFLECTION TEST

A. Obstructions: Maximum protuberance is 1 inch.

B. Deflections:

1. Do not use mechanical pulling equipment when passing mandrels through pipe.
2. Maximum reduction of internal diameter in any plane measured full length of installation and not less than 30 days after installation as follows:
   a. Polyvinyl chloride pipe, 7.5 percent.
   b. High density polyethylene pipe, five (5) percent.
   c. Ductile iron pipe, three (3) percent.
   d. Corrugated metal pipe, 7.5 percent.
3. Recommend an alternate method of measurement if mandrel testing would cause damage to internal pipe coating.

3.5 INFILTRATION TEST

A. Maximum is 50 gallons per inch diameter per mile per 24 hours.

3.6 VIDEO TEST

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

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

C. ENGINEER to be present during video inspection.

D. Inspect measure and record host pipe conditions using digital video recording equipment in MPEG 1 format with 352x240/320x240x30 fps resolution and audio bit rate of 256 Kbps.

E. Identify the date, pipe reach, slope, upstream and downstream manhole numbers, and manhole to manhole footage.

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

3.7 TRACER WIRE CONTINUTIY TEST

A. Test all tracer wire sections for continuity.

3.8 PIPE TESTING SCHEDULE

A. Landscape Irrigation - Gravity System:
   1. Grade test: All laterals drain.

B. Landscape Irrigation – Pressure System:
   1. Grade test: All lateral pipe drains.
   2. Pressure test.
   3. Operational Testing:
      a. Perform operational testing after hydrostatic test is complete; backfill is in place and sprinkler heads adjusted to final coverage.
      b. Demonstrate system meets coverage requirements and automatic controls function properly.
      c. Coverage requirements are based on operation of 1 circuit at a time.

C. Sanitary Sewers:
   1. Alignment and grade test.
   2. Obstructions and deflection test.
   3. Infiltration test for gravity pipeline systems.
   4. Pressure test for pressure pipeline systems.
   5. Video inspection. For lateral replacements constructed by bursting, camera in presence of ENGINEER.
   6. Air test.

D. Subdrains:
   1. Grade test: All pipelines drain.
   2. Obstructions and deflection test.

E. Storm Drains:
   1. Alignment and grade test.
   2. Obstructions and deflection test.
   3. Infiltration test for gravity pipeline systems.
   4. Pressure test for pressure pipeline systems.
   5. Video inspection for all mains and laterals.
   6. Air test

F. Potable Water System:
   1. Obstruction and deflection test.

2. Pressure test.
3. Disinfection (Section 33 13 00).
4. Tracer wire continuity test.

G. Secondary Nonpotable Water System
1. Obstruction and deflection test.
2. Pressure test.
3. Flushing (See Section 33 13 00 disinfection not required).
4. Tracer wire continuity test.

END OF SECTION

SECTION 33 11 00 (Revised)

WATER DISTRIBUTION AND TRANSMISSION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Water distribution and transmission pipe systems, identification, valves, boxes, service connections and accessories.

B. This section is applicable to potable and non-potable water pressure systems.

1.2 REFERENCES

A. **American Concrete Pipe Association (ACPA) Standards**.

B. **APWA (Utah Chapter) Standards**:

Plan 255	Asphalt Concrete "T" Patch.
Plan 256	Concrete Pavement Patch.
Plan 381R	Trench Backfill.
Plan 382	Pipe Zone Backfill.
Plan 521R	3/4" and 1" Meter.
Plan 522R	1-1/2" and 2" Meter.
Plan 541R	Water Service Line.
Plan 542	Water Service Line Loop.
Plan 543	Watermain Loop.
Plan 551R	3/4" and 1" Service Taps.
Plan 552R	1-1/2" and 2" Service Taps.
Plan 561R	Direct Bearring thrust Block.
Plan 562R	Tie-Down Trust Restraints.
Plan 574R	Cover Collar for Water Valve Boxes.

C. **AWWA Standards**:

C600	Installation of Ductile-Iron Water Mains and Their Appurtenances.
C605	Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water.
C800	Underground Service Line Valves and Fittings.
C901	Polyethylene (PE) Pressure Pipe and Tubing, 1/2 in. Through 3 in., for Water Service.
M11	Manual for Steel Pipe - Design and Installation.

D. **Copper Development Association (CDA) Standards**.

E. Applicable water company requirements standards.

1.3 PERFORMANCE REQUIREMENTS

A. Depth of Cover:

1. Minimum bury depth for main lines is 5-foot measured from top of pipe to ground surface. 72 inches maximum unless Public Works Director authorizes otherwise.
2. If less cover, provide additional protection to withstand frost and external loads and must be approved by Public Works Director

B. Remove any section of pipe already placed that is found to be defective or damaged. Relay or replace without additional cost to OWNER.

1.4 SUBMITTALS

A. Product data: Submit manufacturer's technical product data and installation instructions.

B. Commissioning: Submit testing data indicated in Section 33 08 00R.

C. Record Documents, Section 01 78 39: Include details of underground structures, connections, thrust blocks and anchors. Show interface and spatial relationship between piping and adjacent structures.

D. Operating and Maintenance: Submit data, Section 01 78 23. Include maintenance data, parts list, product data and Shop Drawings.

1.5 SITE CONDITIONS

A. Minimize neighborhood traffic interruptions. Barricade stockpiles.

B. Secure acceptance of pipeline lateral tie-in work.

C. Repair public and private facilities damaged by CONTRACTOR.

D. Do not operate any currently active water valve without authorization of the Public Works Director.

PART 2 PRODUCTS

2.1 PIPES AND FITTINGS

A. Provide piping materials and factory fabricated piping products of sizes, types, pressure ratings, and capacities indicated. Use only ANSI / NSF 61 approved products in drinking water systems. All such products shall be appropriately stamped with the ANSI / NSF logo.

B. Where not indicated, provide proper selection as determined by installer and acceptable to ENGINEER to comply with installation requirements.

C. Provide sizes and types of equipment connections for fittings of material that matches pipe material used in the piping system. Where more than one type of material or product option is indicated, selection is installer's choice.

D. Provide pipe fittings and accessories of same material and weight or class as pipe, with joining method indicated or recommended by manufacturer.

E. Use of "Purple" pipe is only allowed for secondary water pipelines.

F. All components shall be Lead Free.

2.2 **VALVES**

A. Section 33 12 16R.

2.3 **VALVE BOX**

A. Buried Valves in Traffic Areas: Cast iron two (2) piece slip sleeve type, 5-1/4 inch shaft, with a drop lid.

B. Buried Valves in Non-Traffic Areas: Cast iron two (2) piece screw adjustable sleeve of height required for installation.

C. Markings: Cast appropriate utility lettering on cover.

2.4 **VALVE CHAMBER**

A. Basin: Class 4000 concrete floor and walls.

B. Steps: Plastic, cast into sidewalls greater than four (4) feet deep.

C. Top: Flat slab class 4000 concrete.

D. Frame and Cover: Scoriated asphalt coated, heavy duty ductile iron conforming to Section 05 56 00 with flat top design and appropriate utility lettering. Shape and size required.

2.5 **MORTAR, GROUT, AND CONCRETE**

A. Mortar: Portland cement, Section 04 05 16.

B. Grout: Portland cement, Section 03 61 00.

C. Concrete:

1. Cast-in-place: Class 4000, Section 03 30 04R.
2. Precast: Class 5000, Section 03 40 00R.

2.6 **TAPPING SADDLES**

A. Bronze alloy or stainless steel saddles with stainless steel straps (double straps on pipes over 12 inches diameter).

B. Straight threads. Tappered threads not allowed.

C. Rated working pressure, 300 psi minimum.

D. Neoprene Buna N gaskets.

2.7 **SERVICE CONNECTION**

A. Taps: Saddle clamp or direct type. Provide plastic spacers or nipples to separate non-similar metals. Direct type tap shall only be used with authorization of the Public Works Director.

B. Service Line:

1. Copper Pipe: Type K, Section 33 05 03 with 200 psi compression fittings according to AWWA C800.
2. Polyethylene Pipe: AWWA C901 with 200 psi compression fittings, and ratings according to AWWA C800.

2.8 ACCESSORIES

A. Bolts, Nuts, Washers: Stainless Steel, Section 05 05 23.

B. Anchorages: Provide anchorages for tees, wyes, crosses, plugs, caps, bends, valves, and hydrants. After installation, apply full coat of asphalt or other acceptable corrosion-retarding material to surfaces of ferrous anchorages.

C. Corporation Stops: All bronze, straight threads, full port, ball valve.

D. Hydrant and Valve: Dry barrel, Section 33 12 19R.

E. Water Meter and Valve: Section 33 12 19R and 33 12 16R, respectively.

F. Grease: Non-oxide food grade required where in contact with potable water. Non-oxide poly-fm for all exposed buried metal surfaces for bolts, nuts, washers, restraints, etc.

G. Polyethylene Sheet: Six (6) mil thick minimum.

H. Joint Restraints: Acceptable to ENGINEER prior to installation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify trench excavation is ready to receive work, and dimensions, and elevations are as required.

B. Commencing installation means acceptance of existing conditions.

3.2 PREPARATION

A. Excavation, Section 31 23 16. Hand trim to required elevations. Correct over excavations.

B. Remove stones or other hard matter that manufacturer stipulates may damage pipe during embedment or impede backfilling or compaction.

C. Examine areas and conditions under which materials and products are to be installed. Do not proceed with system installation until unsatisfactory conditions have been corrected in manner acceptable to system installer.

D. Clearly identify and promptly set aside defective or damaged pipe.

E. Use pipe cutting tool acceptable to pipe manufacturer.

3.3 LAYOUT

A. Comply with Utah administrative rules R309-550-7 - Basic Separation Standards. As a minimum locate potable water pipe at least 18 inches vertical and 10 feet horizontal edge to edge between water and sewer lines. Place water lines above sewer line.

B. Where potable water pipe crosses under gravity-flow sewer lines, fully encase sewer pipe in a steel pipe casing, or concrete encasement as approved by the City, for a distance at least 10 feet each side of the crossing:

1. Do not locate any joint in the water line within 36 inches of the crossing.

2. Encase water line if it is within 24 inches of a sewer force main or a sewer inverted syphon.
3. Encase sewer main joints in concrete if joints are horizontally closer than 36 inches to the water line.

C. Do not put potable water lines in the same trench with sewer lines, storm drains or electric wires.

3.4 INSTALLATION - PIPE AND FITTING

A. General:
1. Seal each open end of pipeline at end of day's work.
2. Grease all bolts and nuts then apply polyethylene sheet and tape wrap.

B. Steel Pipe: AWWA M11.

C. Ductile Iron Pipe: AWWA C600.

D. Copper Tube: CDA "Copper Tube Handbook". City preference is to use polyethylene pipe. However, where used, it is only allowed for pipe 1-1/2" diameter and smaller

E. Polyethylene Pipe: For three (3) inches and smaller pipe follow AWWA C901. Install all other sizes per manufacturer's installation instructions.

F. Polyvinyl Chloride Pipe: AWWA C605.

G. Concrete Pipe: ACPA "Concrete Pipe Handbook".

H. Wedges: Install metal wedges on metal pipe systems. Grease and plastic wrap exposed metal wedges.

3.5 INSTALLATION – CONCRETE THRUST BLOCK

A. APWA Plan 561R or 562R.

B. Do not make hydrostatic tests of Section 33 08 00R until thrust block concrete has cured for at least five (5) days.

C. Provide thrust blocks on all plugs, caps, tees, hydrants and vertical or horizontal elbows.

D. Provide stainless steel or epoxy coated steel tie rods and clamps or shackles to restrain thrust.

E. Unless indicated otherwise or directed by ENGINEER, place base and bearing sides of thrust blocking directly against undisturbed earth.

F. Sides of thrust blocking not subject to thrust may be placed against forms. Place thrust blocking so joint fittings will be accessible for repair.

3.6 INSTALLATION - VALVE AND VALVE BOX

A. Valves:
1. Ensure all parts are in working order.
2. Set location of valves outside of sidewalk limits, driveway approach and other pedestrian or vehicular interference.
3. Install plumb with stem pointing up.
4. Grease all exposed bolts and nuts then apply polyethylene sheet and tape wrap.

B. Air Relief Valves:
   1. At high points in water mains where air can accumulate, air may be removed by means of hydrants or air relief valves.
   2. DO NOT use automatic air relief valves where flooding may occur.

C. Valve Box:
   1. Set over valve nut so operator's key is plumb with clearance in valve box when opening and closing the valve. Riser must NOT rest on valve or pipe system.
   2. Adjust riser to finish grade and clean all dirt or foreign material out of riser.
   3. Install concrete cover collar in paved surface, APWA Plan 574.

3.7 INSTALLATION – JOINT RESTRAINTS

A. Without Thrust Blocks: Install joint restraints with all valves for the distance acceptable to the ENGINEER.

B. With Thrust Blocks: Install joint restraints for the distance approved by the ENGINEER where concrete block design exceeds three (3) cubic yards, for vertical bends, where soil is disturbed, or where undisturbed soil bearing capacity is less than 1000 pounds per square foot.

3.8 INSTALLATION – TAPS

A. APWA Plan 551R or 552R.

B. Apply for and pay for applicable permits from water company for size and location of tap to water main. Comply with all connection requirements of water company.

C. Make service taps with a tapping machine acceptable to water company. Use teflon tape on all taps unless indicated otherwise.

D. Minimum distance between taps is 24 inches, with a five (5) degree stagger. Do not make service taps within 24 inches of the end of pipe. Install taps at 60 degrees from vertical, or authorized by ENGINEER.

E. Service saddles are required on all taps except, 3/4 inch or 1 inch taps to new ductile iron pipe

F. Grease all exposed bolts and nuts then apply six (6) mil thick polyethylene sheet and tape wrap.

3.9 INSTALLATION – SERVICE LINE

A. Replacing Existing Water Service Line: APWA Plan 541.
   1. Follow AWWA C800, Utah drinking water Rules and Regulations (R309-550-11), and International Building Code requirements.
   2. When replacing water service lines, replace non-copper pipe with:
      a. Type K copper pipe, Section 33 05 03, or
      b. Polyethylene pipe, AWWA C901
   3. Minimum pipe diameter 3/4 inch, maximum 3 inches.
   4. Distance from nearest joint or existing tap is 24 inches minimum unless a greater distance is required by pipe manufacturer.
   5. Service lines shall be capped until connected for service

B. Looping Existing Water Service: APWA Plan 542.
   1. Minimum pipe diameter is one (1) inch.
   2. Use liquid nitrogen to spot freeze active service lines. Pinching tools used to close active service lines may be used only if allowed in writing by ENGINEER.
   3. Soldered joints or connections not allowed.
   4. For copper to iron connections use a brass pack joint compression coupling with joint locking device.
   5. For copper-to-copper connections use a brass compression fittings. Flared end fittings are not allowed.

C. Meter box: APWA Plan 521R or 522R. Install meter box back of curb, outside of sidewalk, outside of driveway approaches, or other vehicular or pedestrian interference. All meters shall be located within the public way, unless approved otherwise by the Public Works Director

3.10 INSTALLATION – WATERMAIN LOOP (SYPHON)

A. APWA Plan 543.

B. Existing water mains may not match standard size. Excavate to obtain actual pipe diameter and match size.

C. Do not shutdown pipeline until couplings and fittings are on site. Coordinate shutdown with water company.

D. Connections to steel or transite pipe require transition couplings or sleeves with transition gaskets.

E. Grease all exposed bolts and nuts then apply six (6) mil thick polyethylene sheet and tape wrap.

F. Provide thrust blocks except where joints are welded. Follow details shown on drawings.

3.11 DISINFECTION

A. Secion 33 13 00.

B. After disinfection, legally dispose of disinfection water.

3.12 BACKFILLING

A. Before Backfilling:
   1. Secure ENGINEER's acceptance of brass wedge installation and concrete thrust block installation.
   2. For pressure pipe testing follow Section 33 08 00R requirements and for disinfection follow Section 33 13 00 requirements.

B. Trenches: Section 33 05 20R:
   1. Pipe zone backfill, APWA Plan 382.
   2. Trench backfill, APWA Plan 381R.

C. Landscapes: Section 31 23 23.

3.13 SURFACING RESTORATION

A. Roadway Trenches and Patches: Section 33 05 25:

1. Asphalt concrete "T" patch, APWA Plan 255.
2. Concrete pavement patch, APWA Plan 256.

B. Landscapes: Turfs and grass, Section 32 92 00 or Ground Cover, Section 32 93 13 as applicable.

END OF SECTION

SECTION 33 12 16 (Revised)

WATER VALVES

PART 1 GENERAL

1.1. SECTION INCLUDES

A. Gate, butterfly, plug, check, pressure reducing, pressure relief, control valves and their installation.

1.2 REFERENCES

A. **AWWA Standards**:

C111	Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
C504	Rubber-Seated Butterfly Valves.
C508	Swing-Check Valves for Waterworks Service, 2 In. Through 24 In. NPS.
C509	Resilient-Seated Gate Valves for Water and Sewerage Systems.
C550	Protective Interior Coatings for Valves and Hydrants.
C600	Installation of Ductile-Iron Water Mains and Their Appurtenances.

1.3 SUBMITTALS

A. Provide technical information for evaluating quality of valve. As a minimum include dimensions, weights, materials lists and operation charts.

PART 2 PRODUCTS

2.1 VALVES - GENERAL

A. Underground:

1. All components shall meet the requirements of R309-550-6 - Component Materials and Design. All materials that may come into contact with drinking water shall be ANSI-certified as meeting the requirements of ANSI/NSF Standard 61. All components shall be stamped with the NSF logo.
2. Less than three (3) inches: Screwed ends.
3. 3 inches and larger: Flanged or mechanical joint ends. Non-rising stem. Two inches square operating nut. Low alloy steel bolts, AWWA C111.

B. Submerged or Above Sewage or Water:
   1. Valve body bolts per manufacturer's recommendations.
   2. For joining valve to piping system use stainless steel nuts and bolts, Section 05 05 23.

C. Below an Operating Deck: Provide shaft extension from the valve to deck level.

D. Above Ground: Non-rising stems equipped with a hand wheel.

E. Manually Operated Valves Over six (6) feet Above Operating Level: Provide chain operated handles.

F. Clearance: Install so handles clear all obstruction when moved from open to closed.

G. Rated Working Pressure: ~~150~~ 300 psi if not indicated.

H. Coating: Interior, AWWA C550. Exterior per manufacturer's recommendation.

2.2 GATE VALVES

A. Shall be Resilient Wedge as manufactured by Mueller, Clow, or East Jordan per AWWA C509.

B. 3 inches through 48 inches, cast iron body, bronze mounted, non-rising stem with "O" ring seals.

C. Open counterclockwise.

2.3 BUTTERFLY VALVES

A. Shall be as manufactured by Mueller or Clow, per AWWA C504.

B. 3 inches through 48 inches, cast iron body, bronze mounted.

C. Short body if disc will not interfere with adjacent fittings or long body at CONTRACTOR's option.

D. Wafer Valves: Subject to ENGINEER's approval.

2.4 ECCENTRIC PLUG VALVES

A. Material: Cast iron body, bronze mounted, non-lubricated, eccentric, quarter-turn type with resilient face plugs, ductile iron discs with upper and lower shafts integral.

B. Markings: Indicate open and close position.

C. Port Areas: At least 82 percent of full pipe area.

D. Resilient Seat Seals: Buna N, field replaceable.

2.5 CHECK VALVES

A. Shall be as manufactrured by Cla-Val, and conform to AWWA C508.

B. Less than three (3) inches: Y-pattern, bronze, regrinding, swing check valve, 200 psi working pressure.

C. 3 inches and larger: Iron body, bronze mounted, swing valves with stainless steel hinge pins and outside weight and lever if not indicated otherwise.

2.6 **PRESSURE REDUCING VALVES - SERVICE LINE**

A. Operation: Capable of reducing a varying higher upstream pressure to an adjustable constant lower downstream pressure.

B. Spring and nylon reinforced diaphragm type construction.

C. Equip with Y-strainer upstream of valve.

2.7 **PRESSURE REDUCING VALVES - MAIN LINE**

A. Operation: Capable of maintaining an adjustable constant downstream pressure regardless of upstream pressure.

B. Type: Hydraulically operated using a direct-acting, spring-loaded, normally open, pilot valve controlled diaphragm:

1. Single removable seat and a resilient disc. No "O" ring type discs permitted. No external packing glands permitted. No pistons operating main valve or pilot controls permitted.

2. Y-strainers on pilot controls, variable closing and opening speed controls and a valve position indicator.

C. Rating: 250 psi working pressure.

D. Connection: Flanged.

E. Pressure Gage: Upstream and downstream of valve capable of accurately measuring system pressures.

2.8 **PRESSURE RELIEF VALVES**

A. Operation: Maintain a constant upstream pressure by passing or relieving excess pressure.

B. Closed Valves: Drip-tight.

C. Type: Hydraulically operated, pilot control using a diaphragm with a single removable seat and resilient disc.

D. Pilot Controls: Direct acting, adjustable between 20 and 200 psi, spring-loaded diaphragm valve.

E. Rating: 250 psi working pressure.

F. Connection: Flanged.

2.9 **CONTROL VALVE**

A. Globe, or Angle, as shown on the Plans: Diaphragm actuated, single seated, composition disc, hydraulically operated.

B. Pilot Controls: Externally mounted, four-way, solenoid pilot valve with self cleaning strainers and diaphragm type check valves:

1. Equipped with a limit switch for pump control.

2. Equipped with a built-in lift check valve to prevent flow reversal.

E. Rating: 250 psi working pressure.

F. Connection: Flanged.

G. Solenoids and Limit Switch: Supplied with operating voltage indicated.

2.10 **LEAD FREE**

A. All components shall be Lead Free

PART 3 EXECUTION

3.1 INSTALLATION

A. Flush all lines before valve installation.

B. In ductile iron water mains, AWWA C600.

C. Install butterfly valve shafts vertical in vault boxes and horizontal otherwise.

END OF SECTION

SECTION 33 12 19 (Revised)
HYDRANTS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Dry-barrel fire hydrants, valves, piping and accessories.

1.2 REFERENCES
A. **APWA (Utah Chapter) Standards**:

Plan 511	Fire hydrant with valve.
Plan 561	Direct bearing thrust block.
Plan 562	Tie-down thrust restraints.

B. **AWWA Standards**:

C110	Ductile-Iron and Gray-Iron Fittings, 3 In. Through 48 In., for Water and Other Liquids.
C111	Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
C209	Cold-Applied Tape Coatings for the Exterior of Special Section, Connections, and Fittings for Steel Water Pipelines.
C210	Liquid Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines.
C213	Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel water Pipelines.
C214	Tape Coating Systems for the Exterior of Steel Water Pipelines.
C502	Dry-Barrel Fire Hydrants.
M17	Manual for Installation, Operation, and Maintenance of Fire Hydrants.

1.3 PRODUCT HANDLING
A. Package fire hydrants, gate valves, and valve boxes for protection against dirt and damage during shipment and storage.

B. Do not plug drain hole.

1.4 SUBMITTALS
A. Product Data: Manufacturer's technical product data and installation instructions.

B. Shop Drawings: Show interface and spatial relationship between piping and adjacent structures.

C. Field Quality Control Reports: For system commissioning.

1.5 **JOB CONDITIONS**

A. Notify appropriate fire department as soon as hydrant is removed or placed in service.

PART 2 PRODUCTS

2.1 **DRY-BARREL FIRE HYDRANT**

A. Shall be Mueller Modern Centurion, Clow Medallion, or East Jordan Iron Works (Syracuse Castings) 5CD250 per AWWA C502.

B. Cast iron compression type, opening against pressure and closing with pressure, base valve design, 150 psi working pressure, with 1/4 inch diameter minimum tapping and bronze plug in standpipe:

1. Size: 5-1/4 inch valve opening.
2. Direction to Open Hydrant: Counterclockwise.
3. Size and Shape of Operating and Cap Nuts: Pentagon. 1-1/2 inch point to flat.
4. Hose Nozzles: Two 2-1/2 inch national standard thread, cap, gasket and chain.
5. Pumper Nozzle: One 4-1/2 inch national standard thread, cap, gasket and chain.
6. Depth of Burial: 48 inches or consistent with main depth.
7. Connection to Main: Six (6) inches flanges or mechanical joint.
8. Pressure: 150 psi working pressure and 300 psi hydrostatic pressure.
9. Inlet Bottom Connection: Six (6) inches mechanical joint or flanged in accordance with AWWA C110 and AWWA C111, designed to allow separation at the sidewalk or ground level when hydrant is sheared off.
10. Automatic Drain: Opens as the hydrant is closed.

2.2 **PIPE AND FITTINGS**

A. Ductile Iron: Section 33 05 05. Standard drilling with joints per AWWA C110.

B. PVC: Section 33 05 07.

C. Steel: Section 33 05 09. Standard drilling, 150 lb.

D. Spool: Schedule 40 steel, epoxy lined, exterior wrapped with minimum six (6) mil thick polyethylene sheet and tape wrap, AWWA C210 or C213 and C209 or C214 with two welded in place 150 lb. steel ANSI B 16.5 slip on flanges.

2.3 **VALVES**

A. Gate Valve: Section 33 12 19.

B. If indicated, furnish an auxiliary six (6) inch diameter valve with end connections as required.

2.4 **ACCESSORIES**

A. Bolts, Nuts, Washers: Stainless steel, Section 05 05 23.

B. Anchorages: Provide anchorages for tees, wyes, crosses, plugs, caps, bends, valves, and hydrants. After installation, apply full coat of asphalt or other acceptable corrosion-retarding material to surfaces of ferrous anchorages.

C. Thrust Blocks: Concrete Class 2000 minimum cast-in-place, Section 03 30 04.

D. Valve Box, Valve Chamber: Section 33 12 19.

2.5 **LEAD FREE**

A. All components shall be Lead Free

PART 3 EXECUTION

3.1 **PREPARATION**

A. Excavation, Section 31 23 16.

3.2 **INSTALLATION**

A. Install hydrant according to APWA Plan 511 and AWWA M17.

B. Install hydrants, valves, and valve boxes as indicated and located. Hydrants shall not be connected to or located within 10 feet of a sanitary sewer or storm drain.

C. Install so bottom of hydrant base flange is above grade four (4) inches plus or minus two (2) inches.

D. Point 4-1/2 inch pumper nozzle to face the street.

E. Drain holes at base of hydrant to remain clear with a minimum of 1 cubic yard of clean sewer rock (Section 32 11 23) placed around hydrant base and drain. Place sheet plastic over gravel to prevent silting.

F. Coal tar and tape wrap steel pipe.

G. Grease all buried nuts, bolts, and steel ancillaries then wrap with six (6) mil thick polyethylene sheet and tape wrap.

H. Install thrust blocks according to APWA Plan 561 or 562.

I. All hydrants shall have a minimum lateral size of 6-inches in diameter, with the valve at the main. Laterals longer than 50' shall be increased to 8-inch in diameter, and include an additional valve at the hydrant.

3.3 **BACKFILLING**

A. Secure water company permission to commence backfilling operation.

B. Trenches, Section 33 05 20.

C. Structures, Section 31 23 23.

D. Landscaping, Section 32 91 19.

E. Pavements, Section 32 05 10.

3.4 PAINT

A. Paint buried portion of hydrant with two coats of coal tar enamel or asphalt.

B. Paint hydrant barrel and caps with one coat primer and final coat per water company paint standards.

3.5 FIELD QUALITY CONTROL

A. Commissioning, Section 33 08 00.

B. Disinfection, Section 33 13 00.

END OF SECTION

SECTION 33 12 33

WATER METER (Revised)

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Water meters, service connections, materials.

1.2 REFERENCES

A. **AWWA Standards**:

C704 Cold-Water Meters - Propeller Type for Main Line Applications.

C800 Underground Service Line Valves and Fittings.

1.3 SUBMITTALS

A. Manufacturer's test records for range and accuracy of meter being furnished.

B. Equipment material diagram and parts schematic.

PART 2 PRODUCTS

2.1 METERS FOR SYSTEM PIPING

A. Materials and Construction: AWWA C704:

1. Cast iron bodies, 175 psi working pressure, flanged connections.
2. Built-in straightening vanes.
3. Working pressure 150 psi.
4. Polyethylene plastic propeller.
5. Stainless steel shaft with stainless steel ball bearings, lubricated by means of a single pressure fitting.

B. Accuracy: Plus or minus two (2) percent of scale for velocities over 1 foot per second.

C. Totalizer: Six digits reading in units required.

D. Water meter setters shall be per Plans 521R, 522.1R, 523R, 525R, 527R, 529R, 530R or 531R, as per the appropriate size meter required

2.2 METERS FOR SERVICE PIPING

A. Provided by OWNER unless indicated otherwise.

2.3 SERVICE LINE, VALVES, AND FITTINGS

A. Service Pipe: Copper, Section 33 05 03 or smooth wall polyethylene, Section 33 05 06. The service pipe between main and meter and to a point not less than 1 foot from the public way side of the property line cannot exceed the meter size.

B. Service Valves and Fittings: AWWA C800.

C. Meter Setters: Brass, with angle fittings, saddle nuts and gaskets.

D. Corporation Stops and Angle Valves: Invert key design.

E. Bypasses: Not allowed on any service installation without approval of ENGINEER.

F. Service lines shall be capped until connected for service.

2.4 METER BOXES

A. Water meter boxes shall be per Plans 521R, 522.1R, 523R, 525R, 527R, 529R, 530R or 531R, as per the appropriate size meter required

B. Meters 1-1/2" and Larger: Reinforced concrete with a minimum clearance of 12" from each side of meter plumbing.

C. Cover: Ductile or cast iron with utility inscription

D. Any meter placed within a driveway, or other driving surface, shall require a concrete vault.

PART 3 EXECUTION

3.1 INSTALLATION

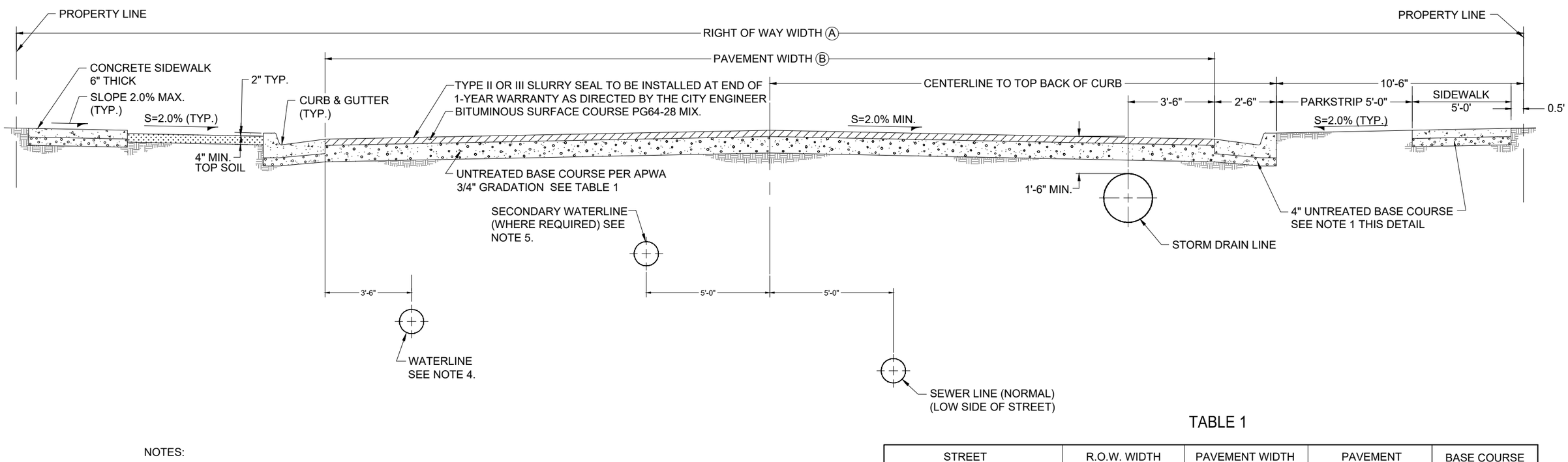
A. Install meter box, meter setters, valves, etc. at indicated locations. If not indicated, install in street right-of-way parking strip or at a location approved by ENGINEER.

B. Install meter setters level and horizontal. Provide suitable pipe lengths to prevent stress.

C. DO NOT operate utility agency's main line valves. Contact agency if valves are to be operated. If required by water utility agency notify affected water users, Section 01 31 13.

D. OWNER Supplied Meters: Installed by CONTRACTOR unless indicated otherwise.

END OF SECTION



NOTES:

1. PROVIDE 4" MINIMUM OF 3/4" OR 1" UNTREATED BASE COURSE UNDER SIDEWALKS, AND CURB & GUTTER, 6" UNDER DRIVE APPROACH (RESIDENTIAL AND 8" (COMMERCIAL).

2. PAVEMENT THICKNESS SHOWN ARE CONSIDERED AS CITY STANDARDS. ANY MODIFICATIONS WILL REQUIRE APPROVAL OF CITY ENGINEER BASED UPON SITE SPECIFIC CONSIDERATIONS.

3. ALL ROAD CUTS SHALL BE REPAIRED WITH BASE THICKNESS AND PAVEMENT THICKNESS (PLUS 1") AS SHOWN IN TABLE 1.

4. CULINARY WATER LINE SHALL HAVE A TYPICAL 5-FOOT BURY DEPTH. A BURY DEPTH LESS THEN 4-FEET, OR GREATER THEN 6- FEET, SHALL REQUIRE APPROVAL OF THE PUBLIC WORKS DIRECTOR.

5. SECONDARY WATER LINE SHALL HAVE A TYPICAL 4-FOOT BURY DEPTH.

TABLE 1

STREET CLASSIFICATION	R.O.W. WIDTH (A)	PAVEMENT WIDTH (B)	PAVEMENT THICKNESS	BASE COURSE THICKNESS
LOCAL	60'	34'	3" (RESIDENTIAL) 4" (COMMERCIAL)	8"
SUB-COLLECTOR	66'	40'	3" (RESIDENTIAL) 4" (COMMERCIAL)	8"
MODIFIED SUB-COLLECTOR	76'	50'	5"	10"
LIMITED ACCESS	84'	58'	5"	10"
ARTERIAL	106'	80'	7"	10"

Tooele City
Est. 1853

STANDARD STREET SECTION WITH CURB & GUTTER

Plan No.
293 R

1/2023

Trench Backfill

1. GENERAL

A. The drawing applies to backfilling a trench (and embankment) above the pipe zone.

2. PRODUCTS

A. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 3-inches.

B. Flowable Fill: APWA Section 31 05 15. Target is 60 psi in 28 days with 90 psi maximum in 28 days, It must flow easily requiring no vibration for consolidation.

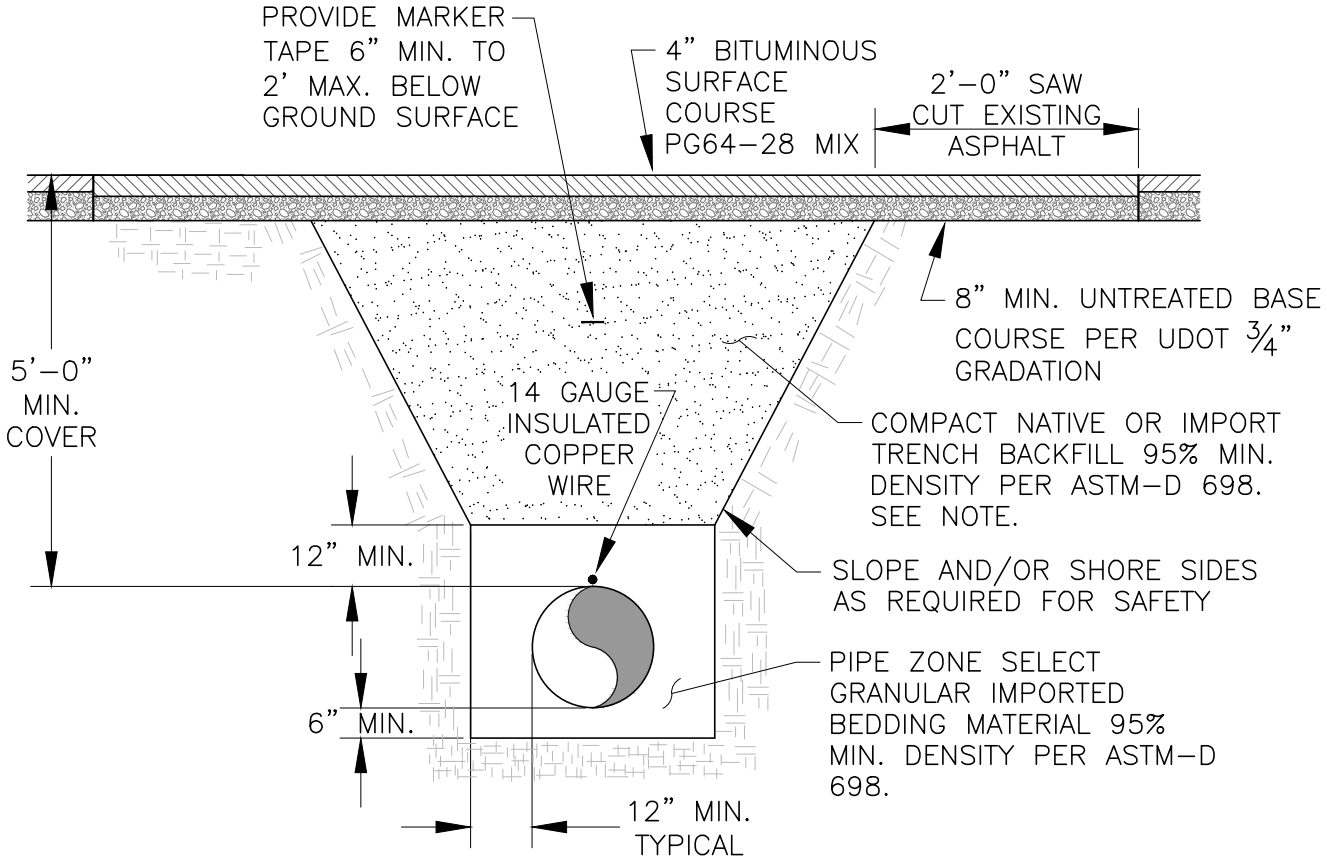
3. EXECUTION

A. Trench Backfill Above the Pipe Zone: Follow requirement indicated in APWA Section 33 05 20R and the following provisions. See Standard Plan 382 for backfilling the pipe zone.
   1) DO NOT USE sewer rock, pea gravel, or recycled RAP aggregate as trench backfill.
   2) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26R.
   3) Water jetting is NOT allowed.

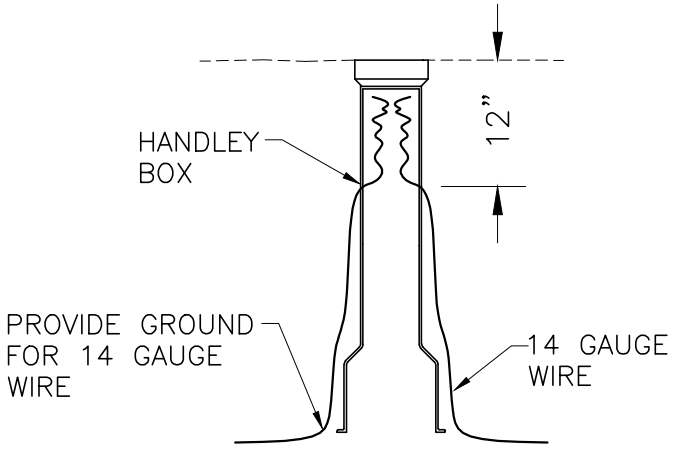
B. Flowable Fill: If controlled low strength material is proposed to be placed in the trench, provide a submittal for review and approval by the ENGINEER. Cure the material before placing surface restorations.

C. Embankment Backfill: When trench sides are sloped proceed as follows.
   1) Maximum lift thickness is 8-inches before compaction.
   2) When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.
   3) Submission of quality control compaction test result data may be requested by ENGINEER at any time. Provide results of tests immediately upon request.

D. Surface Restoration:
   1) Landscaped Surface: Follow APWA Section 32 92 00 (turf or grass) or APWA Section 32 93 13 (ground cover) requirements. Rake to match existing grade. Replace vegetation to match pre-construction conditions.
   2) Paved Surface: Follow APWA Section 33 05 25R (bituminous pavement surfacing), or APWA Section 33 05 25R (concrete pavement surfacing). Do not install surfacing until compaction density is acceptable to ENGINEER. .



NOTE: IF USING NATIVE BACKFILL, IT MUST BE SCREENED TO 3" MINUS AND BLENDED AS NECESSARY TO ENSURE THERE IS A CONSISTENT PROCTOR. IF CONSISTENT FILL CANNOT BE MADE SUITABLE FOR COMPACTION, REMOVE AND REPLACE WITH A1a MATERIAL. COMPACT IN 8-INCH LIFTS OR AS REQUIRED BY THE GEOTECHNICAL REPORT.



PROVIDE HANDLEY BOX (OR APPROVED EQUAL) FOR TRACER WIRE WHERE VALVE BOX SPACING EXCEEDS 400'. BRING TRACER WIRE INTO BOX A MINIMUM OF 12" BELOW CAP AND PROVIDE 30" OF COILED WIRE. TRACER WIRE SHALL BE CHECKED FOR CONTINUITY PRIOR TO ACCEPTANCE.

INSULATED COPPER WIRE AT HANDLEY AND VALVE BOXES

Tooele City
Est. 1853

TYPICAL TRENCH DETAIL

Plan No.
381 R

1/2023

Fire Hydrant with Valve

1. GENERAL

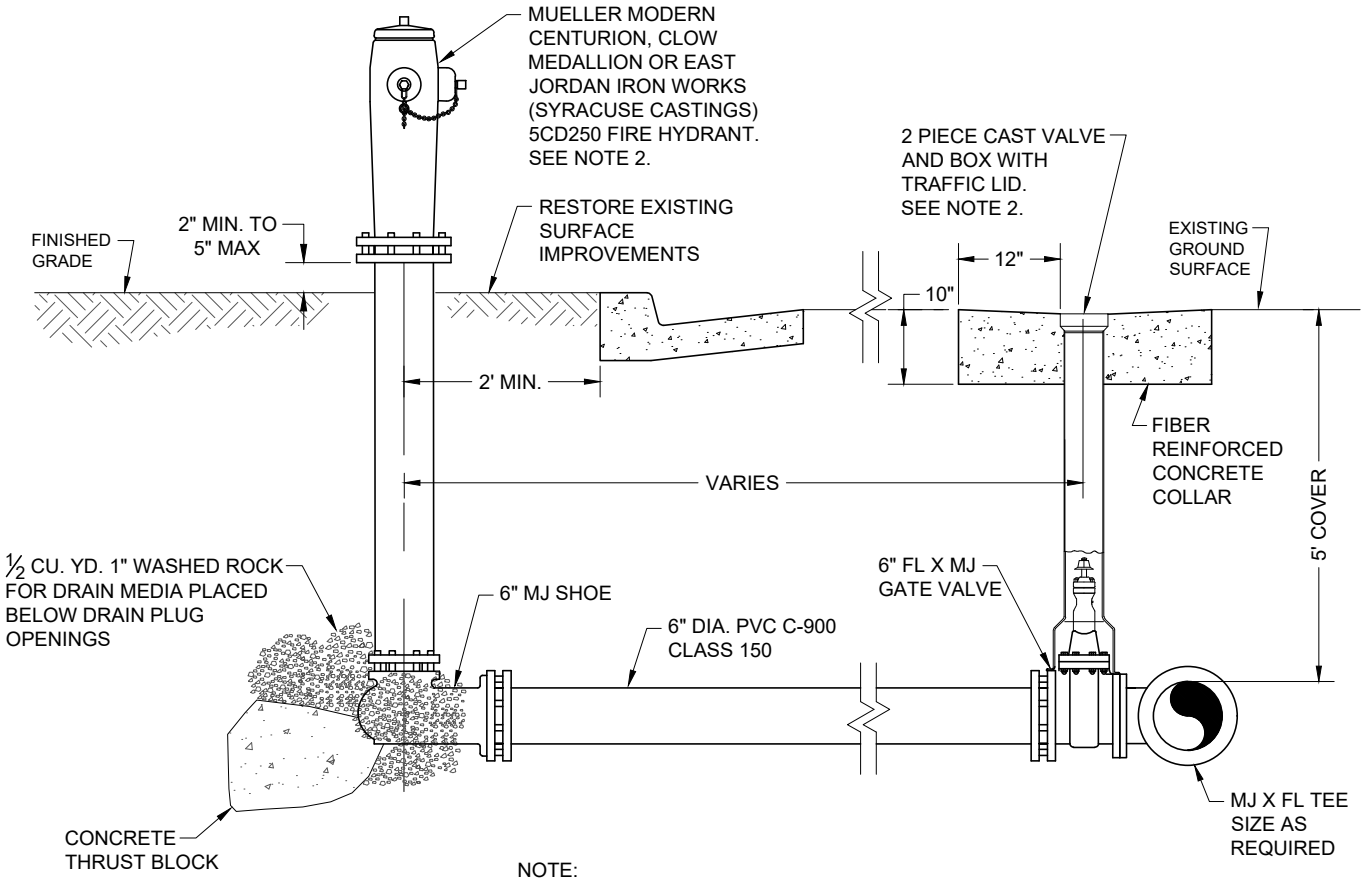
A. Before backfilling, secure inspection of installation by ENGINEER.
B. Additional requirements are specified in APWA Section 33 11 00R.

2. PRODUCTS

A. Hydrant: Dry barrel, AWWA C502. Mueller Modern Centurion, Clow Medallion, or East Jordan Iron Works (Syracuse Castings) 5CD250
B. Thrust Bocks: Concrete Class 4000, APWA Section 03 30 04R.
C. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
D. Backfill: APWA Section 31 05 13. Maximum particle size 2-inches.
   1) Sewer Rock: ASTM Size No. 3 (2" to 1") or larger.
   2) Other Type of Common Fill: CONTRACTOR's choice,.
E. Geotextile: Stabilization-separation fabric, APWA Section 31 05 19.

3. EXECUTION

A. Installation:
   1) Provide at least 1 cubic yard of sewer rock around drain hole at base of hydrant spool. Wrap geotextile around sewer rock and tape geotextile to hydrant spool to prevent silting of sewer rock.
   2) Paint fire hydrant to agency's fire hydrant paint code.
   3) Apply non-oxide grease to all buried metal fittings. Wrap with polyethylene sheet and tape wrap. Provide slits around base to allow hydrant plug to drain.
   4) Notify fire department as soon as hydrant is placed in service.
B. Thrust Blocks:
   1) Before pouring concrete, wrap pipe system with polyethylene sheet to prevent bonding of concrete to pipe system.
   2) Not required for flange or welded pipe systems.
C. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.



NOTE:

1. PROVIDE MEGALUG JOINT RESTRAINT ON ALL MJ FITTINGS.
2. PROVIDE 14-GAUGE TRACER WIRE AND BRING ALONG SIDE OF HYDRANT BARREL AND TEST FOR CONTINUITY. SEE PLAN 381R FOR VALVE BOX TRACER WIRE.

Tooele City
Est. 1853

FIRE HYDRANT DETAIL

Plan No.
511 R

6/2015

3/4" and 1" Meter

1. GENERAL

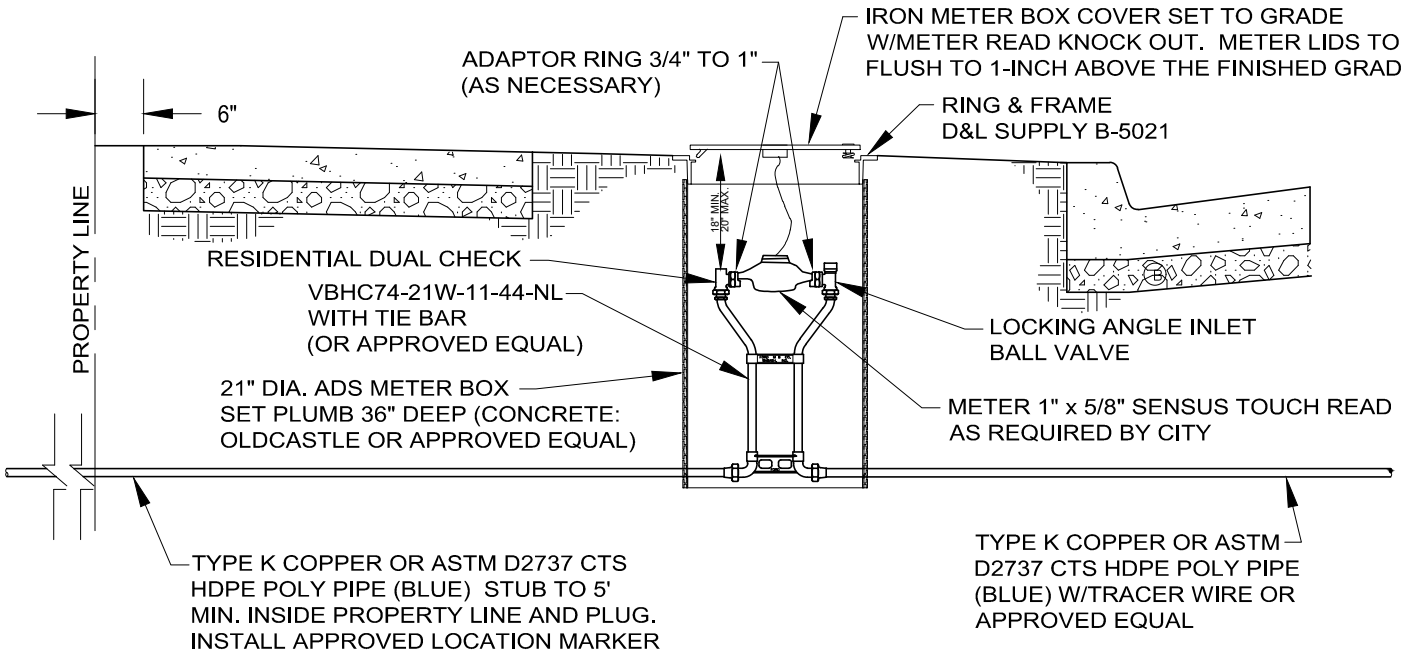
A. In street surfaces or other vehicular traffic areas (like driveway approaches), all meter boxes shall be concrete as directed by ENGINEER.
B. Before backfilling, secure inspection of installation by ENGINEER.
C. All residential laterals and meters vaults shall be 1" min per Plan 521R

2. PRODUCTS

A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
C. Castings: Grey iron class 35 minimum per ASTM A48, coated with asphalt based paint or better.

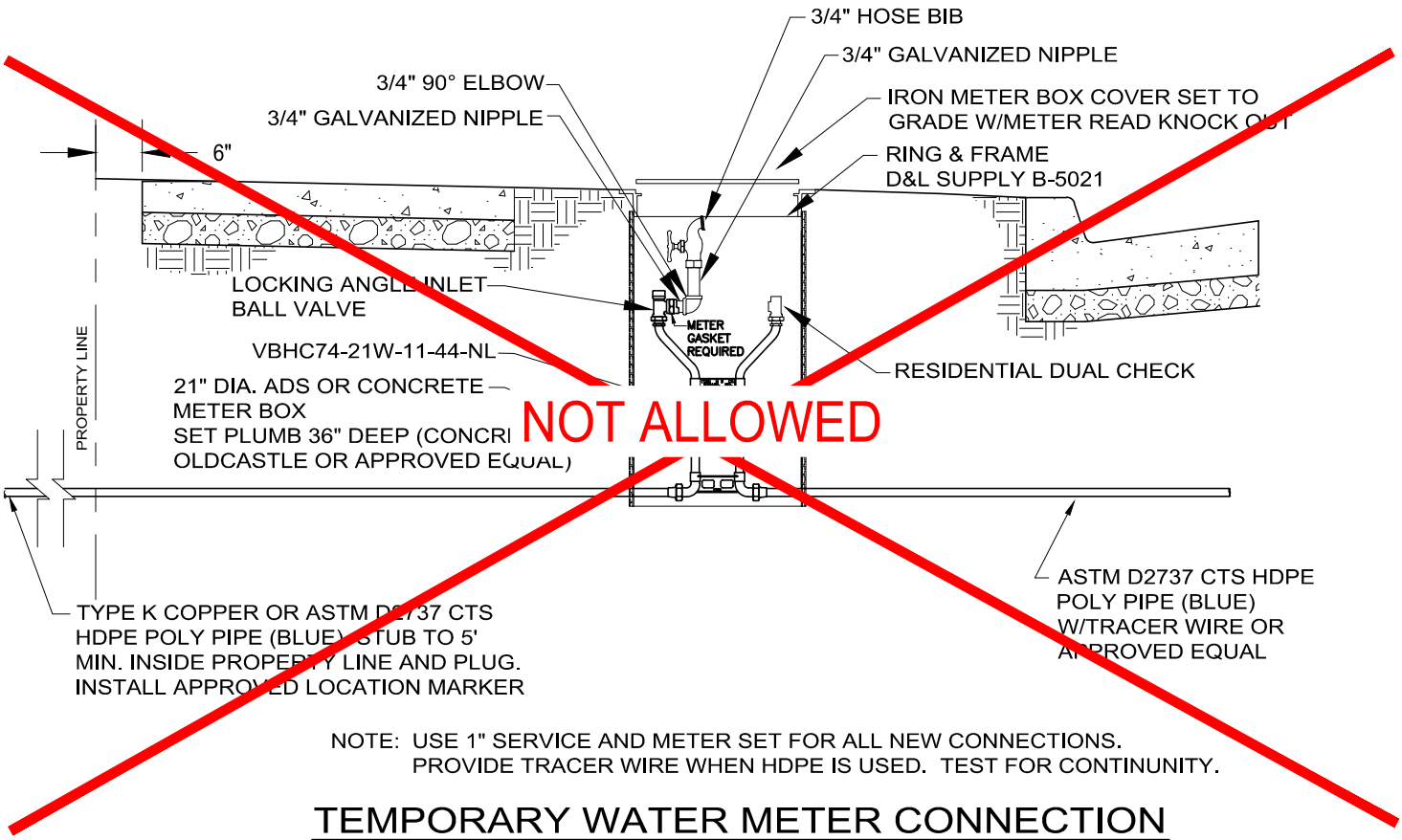
3. EXECUTION

A. Meter Placement:
   1) All meters are to be installed in the park strip or within 7 feet of the property line (street side) or as shown on the approved plans.
   2) Do not install meters under driveway approaches, sidewalks, or curb and gutter without ENGINEER approval. Any meter placed within a driveway or other driving surface will require a concrete vault and traffic rated lid.
B. Meter Box: Set box so grade of the frame and cover matches the grade of the surrounding surface.
C. Pipe Outside of Right-of-Way: Coordinate with utility agency or adjacent property owner for type of pipe to be used outside of right-of-way.
D. Inspection: Before backfilling around meter box, secure inspection of installation by ENGINEER.
E. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.



NOTE: USE 1" SERVICE AND METER SET FOR ALL NEW CONNECTIONS. PROVIDE TRACER WIRE WHEN CTS HDPE IS USED. TRACER WIRE SHALL BE CHECKED FOR CONTINUITY.

RESIDENTIAL WATER METER



NOTE: USE 1" SERVICE AND METER SET FOR ALL NEW CONNECTIONS. PROVIDE TRACER WIRE WHEN HDPE IS USED. TEST FOR CONTINUNITY.

TEMPORARY WATER METER CONNECTION

(MUST BE APPROVED FOR USE BY CITY)

Tooele City
Est. 1853

1" RESIDENTIAL WATER METER

Plan No.
521 R
1/2023

1 1/2" and 2" Compound Meter

1. GENERAL

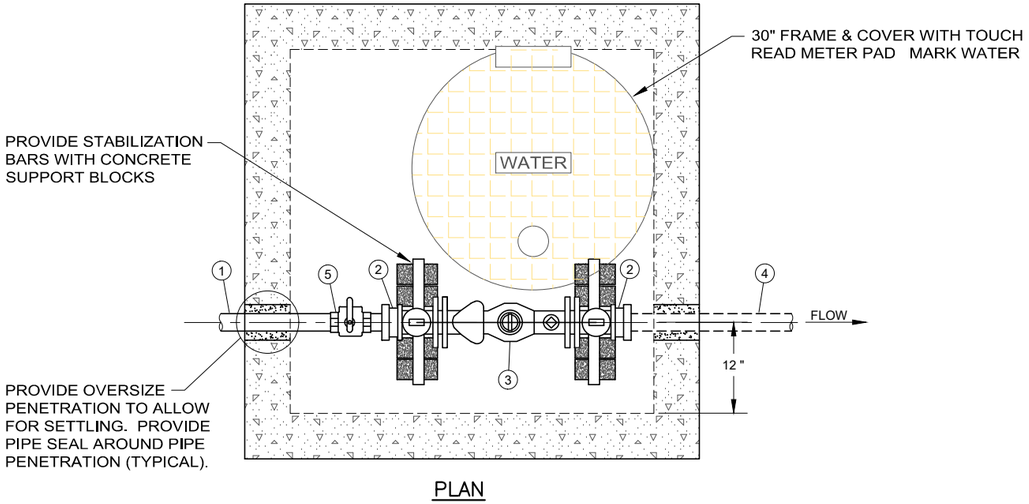
A. Turbine meters may be used exclusively for irrigation or fire, as approved by ENGINEER.
B. Where domestic use is applicable, use a compound meter.
C. Before backfilling, secure inspection of installation by ENGINEER.

2. PRODUCTS

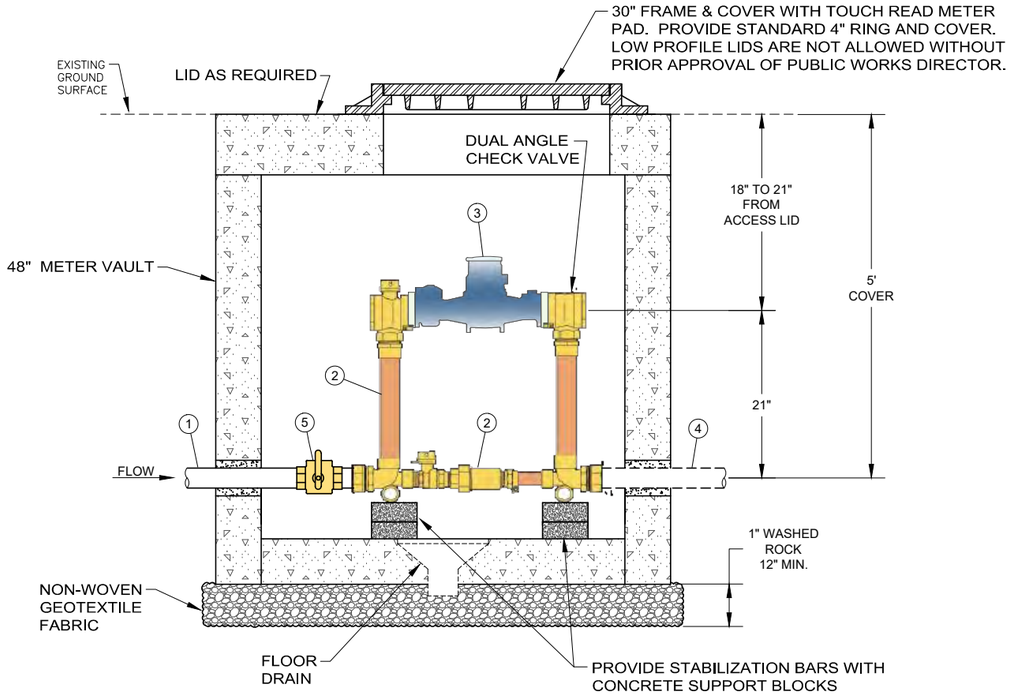
A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
C. Castings: Grey iron class 35 minimum per ASTM A48, coated with asphalt based paint or better.

3. EXECUTION

A. Meter Placement:
   1) All meters are to be installed in the park strip or within 7 feet of the property line (street side) or as shown on the approved plans.
   2) Do not install meters under driveway approaches, sidewalks, or curb and gutter. Any meter placed within a driveway or other driving surface will require a concrete vault and traffic rated lid.
   3) In new construction, install meter at center of lot or per agency requirements.
B. Meter Box: Set box so grade of the frame and cover matches the grade of the surrounding surface.
C. Bypass Valve: Lock in off position.
D. Blocking: Use clay brick or concrete block.
E. Concrete Box:
   1) Center frame and cover over water meter.
   2) Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal.
F. Pipe Outside of Right-of-Way: Coordinate with utility agency or adjacent property owner for type of pipe to be used outside of right-of-way.
G. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.



PLAN



SECTION

METER VAULT VALVE AND FITTING SCHEDULE

NO.	DESCRIPTION	SIZE	JOINT
1.	ASTM D2737 CTS HDPE POLY PIPE (BLUE) W/TRACER WIRE	1.5" OR 2"	COMP.
2.	FORD SERIES 70 COPPER SETTER (H=21"), WITH BALL VALVE INLET & ASSE APPROVED ANGLE DUAL CHECK VALVE OUTLET AND STANDARD BYPASS & CARTRIDGE DUAL CHECK VALVE (2" MODEL VBHC74-21W-11-44-NL) (1½" MODEL VBHC76-21B-11-66-NL)	1.5" OR 2"	FLG
3.	COMPOUND METER (SENSUS OMNI C^2 RADIO READ FURNISHED & INSTALLED BY CITY)	1.5" OR 2"	FLG
4.	OUTLET LINE AS PER PLAN	1.5" OR 2"	-
5.	BRASS BALL VALVE (MUELLER 300 BALL)	1.5" OR 2"	-

NOTE: PROVIDE GRIP JOINT FOR COPPER OR PLASTIC TUBE AS NEEDED. THE METER SETTER SHALL BE NO SMALLER IN SIZE THAN THE LATERAL FROM THE MAIN TO THE METER SETTER INSTALLED.

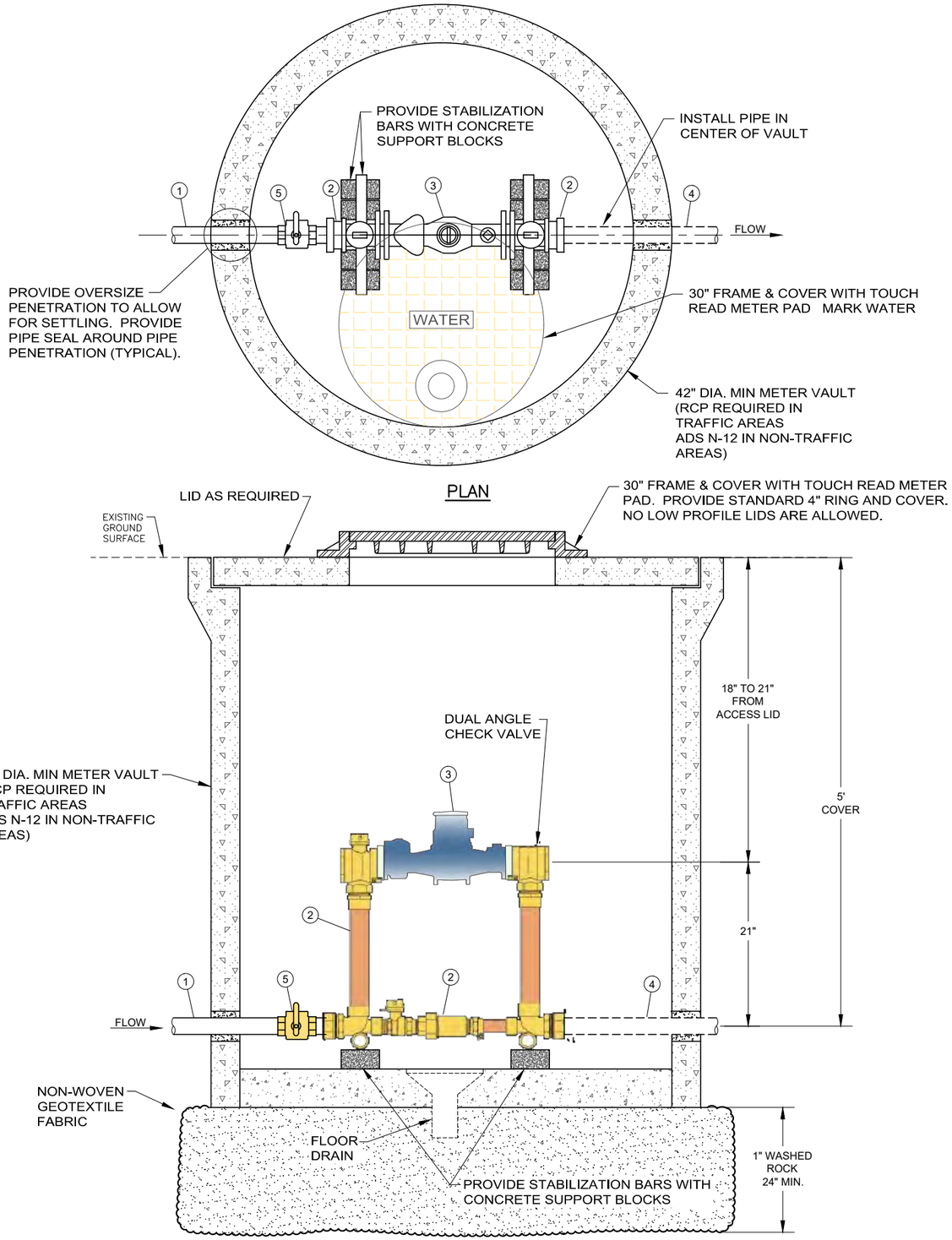
NOTES:

1. CONTRACTOR SHALL RESTORE ALL SURFACE IMPROVEMENTS TO PRE-CONSTRUCTION CONDITION WHERE REQUIRED.
2. CONTRACTOR SHALL PROVIDE ANY ADDITIONAL PIPE & FITTINGS AS NECESSARY.

Tooele City Est. 1853

1.5" OR 2" COMPOUND METER - ALTERNATE 1

Plan No.
522.1 R
DWG 1 OF 2
1/2023



METER VAULT VALVE AND FITTING SCHEDULE

NO.	DESCRIPTION	SIZE	JOINT
1.	ASTM D2737 CTS HDPE POLY PIPE (BLUE) W/TRACER WIRE	1.5" OR 2"	COMP.
2.	FORD SERIES 70 COPPER SETTER (H=21"), WITH BALL VALVE INLET & ASSE APPROVED ANGLE DUAL CHECK VALVE OUTLET AND STANDARD BYPASS & CARTRIDGE DUAL CHECK VALVE (2" MODEL VBHC74-21W-11-44-NL) (1½" MODEL VBHC76-21B-11-66-NL) (OR APPROVED EQUAL)	1.5" OR 2"	FLG
3.	COMPOUND METER (SENSUS OMNI C^2 RADIO READ FURNISHED & INSTALLED BY CITY)	1.5" OR 2"	FLG
4.	OUTLET LINE AS PER PLAN	1.5" OR 2"	-
5.	BRASS BALL VALVE (MUELLER 300 BALL)	1.5" OR 2"	-

NOTE: PROVIDE GRIP JOINT FOR COPPER OR PLASTIC TUBE AS NEEDED. THE METER SETTER SHALL BE NO SMALLER IN SIZE THAN THE LATERAL FROM THE MAIN TO THE METER SETTER INSTALLED.

NOTES:

1. FOR EXISTING LINE, CONTRACTOR SHALL POTHOLE EXISTING PIPE TO VERIFY DEPTH & SHALL ADJUST BOX DEPTH ACCORDINGLY.
2. CONTRACTOR SHALL RESTORE ALL SURFACE IMPROVEMENTS TO PRE-CONSTRUCTION CONDITION WHERE REQUIRED.
2. PROVIDE ANY ADDITIONAL PIPE & FITTINGS AS NECESSARY.

Tooele City
Est. 1853

1.5" OR 2" COMPOUND METER - ALTERNATE NO. 2

Plan No.
522.2 R
DWG 2 OF 2
1//2023

3" and 4" Compound Meter with 2" Bypass

1. GENERAL

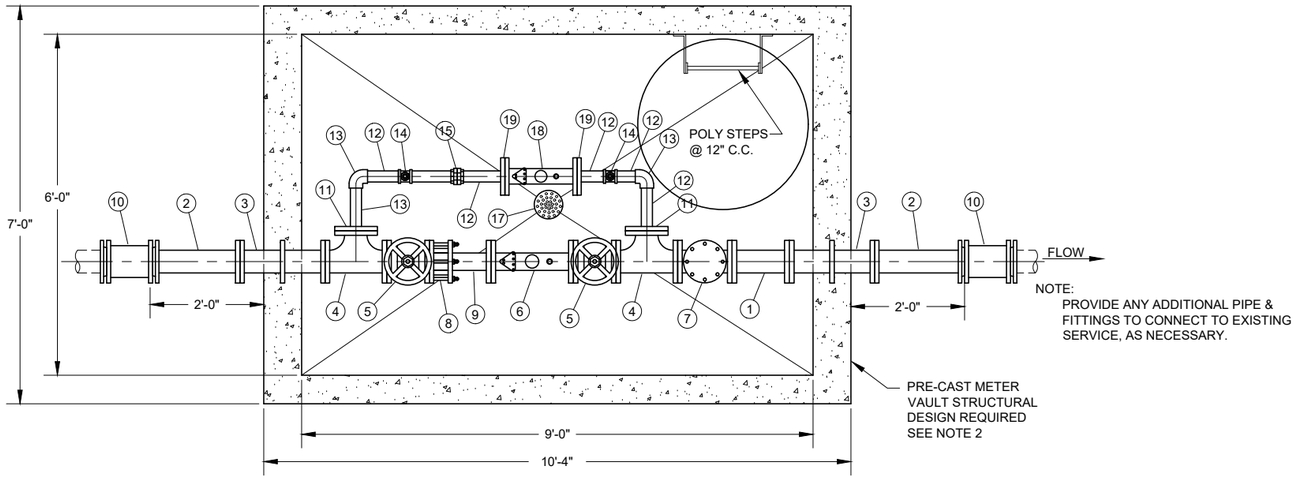
A. Configuration may be changed at ENGINEER's discretion.
B. Additional requirements are specified in APWA Section 33 12 16R.

2 PRODUCTS

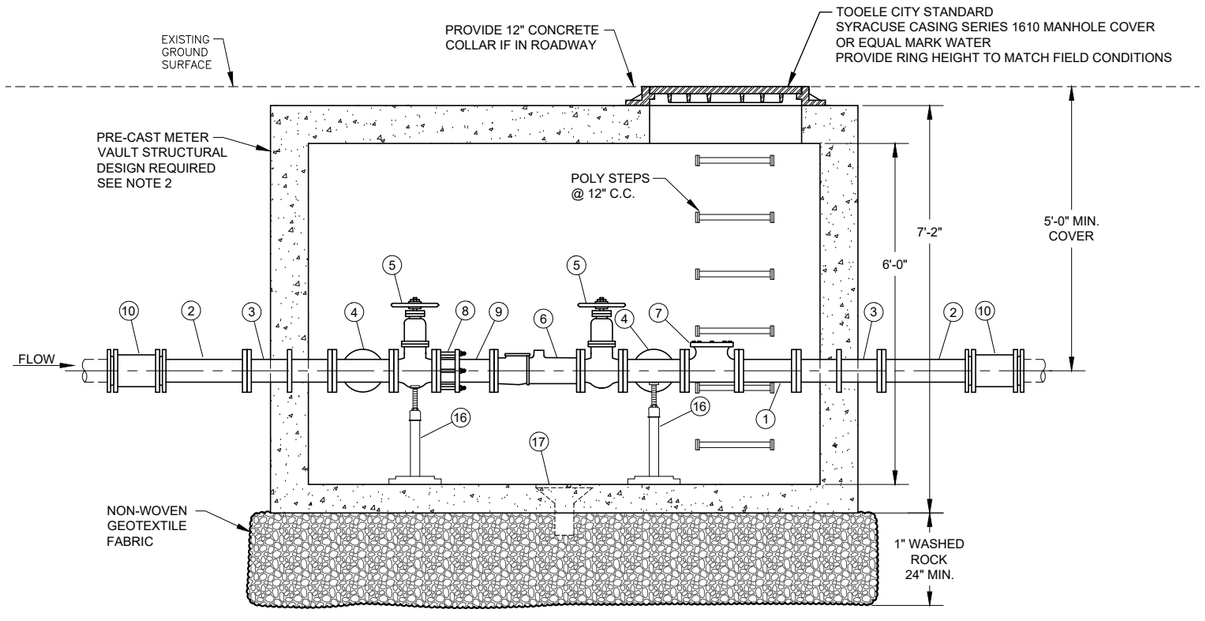
A. Small Fittings: Brass. Do not use galvanized materials.
B. Blocking: Clay brick or concrete block.
C. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.

3. EXECUTION

A. Control Valve: Install valve with valve box adjacent to main.
B. Center frame and cover over water meter.
C. Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal.



PLAN



SECTION–LANDSCAPE AREA INSTALLATION

METER VAULT VALVE AND FITTING SCHEDULE

NO.	DESCRIPTION	SIZE	JOINT
1.	SPOOL PIECE (12" LONG)	3" OR 4"	FLG
2.	NIPPLE	3" OR 4"	FLG X PE
3.	WALL PIPE W/THRUST RING	3" OR 4"	FLG
4.	TEE	3" OR 4"	FLG
5.	GATE VALVE (MUELLER RESILIENT SEAT)	3" OR 4"	FLG
6.	COMPOUND METER (SENSUS OMNI C^2 RADIO READ)	3" OR 4"	FLG
7.	SWING CHECK VALVE	3" OR 4"	FLG
8.	FLANGE COUPLING ADAPTER W/TIE RODS	3" OR 4"	FLG X PE
9.	NIPPLE	3" OR 4"	FLG X PE
10.	SOLID SLEEVE	3" OR 4"	MJ
11.	BLIND FLANGE W/2" TAP	3" OR 4"	FLG
12.	BRASS PIPE	2"	THD
13.	BRASS 90° ELBOW	2"	THD
14.	GATE VALVE BRONZE (LOCKING TYPE)	2"	THD
15.	BRASS UNION	2"	THD
16.	PIPE SUPPORT (GRINNELL MODEL NO. 264)	-	-
17.	FLOOR DRAIN	6" X 4"	-
18.	COMPOUND METER (SENSUS OMNI C^2 RADIO READ)	2"	FLG
19.	FORD METER FLANGE ADAPTOR (BRASS)	2"	THD X FLG

UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53.
ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.

NOTES:

1. CONTRACTOR SHALL POTHOLE EXISTING PIPE TO VERIFY DEPTH & SHALL ADJUST BOX DEPTH ACCORDINGLY.
2. PROVIDE SHOP DRAWING & DESIGN CALCULATIONS FOR PRECAST BOX AS H20 LOADING.
3. CONTRACTOR SHALL RESTORE ALL SURFACE IMPROVEMENTS TO PRE-CONSTRUCTION CONDITION.
4. CONTRACTOR SHALL MAINTAIN FLOW IN 4" DIA. LINE UNTIL READY TO INSTALL METER BOX AND SHALL ANTICIPATE INSTALLATION TO OCCUR AT A PRE-DETERMINED TIME IN ORDER TO MINIMIZE IMPACT. COORDINATE WATER CONNECTION WITH CITY A MINIMUM 48 HOURS IN ADVANCE.
5. IF METER VAULT IS INSTALLED IN ROADWAY OR DRIVING SURFACE, PROVIDE MODIFIED DESIGN FOR COVER AND RING ACCESS FOR APPROVAL PRIOR TO INSTALLATION.

Tooele City
Est. 1853

3" OR 4" COMPOUND METER WITH 2" BYPASS

Plan No.
523 R

1/2023

6" Compound Meter with 2" Bypass

1. GENERAL

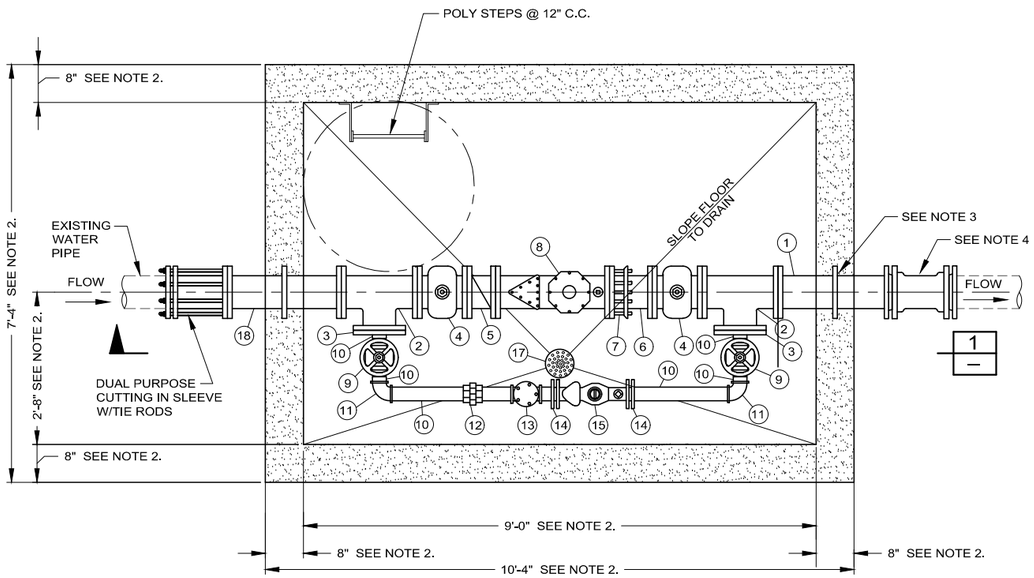
A. Configuration may be changed at ENGINEER's discretion.
B. Additional requirements are specified in APWA Section 33 12 16R.

2 PRODUCTS

A. Small Fittings: Brass. Do not use galvanized materials.
B. Blocking: Clay brick or concrete block.
C. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.

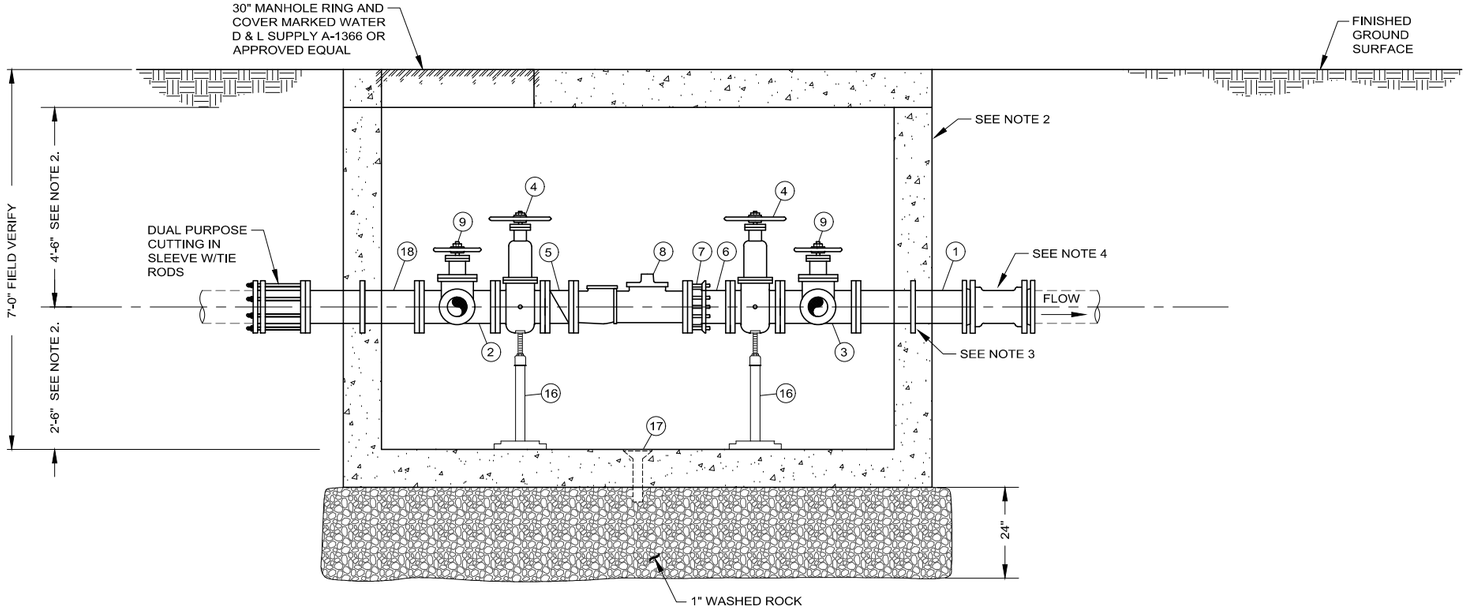
3. EXECUTION

A. Control Valve: Install valve with valve box adjacent to main.
B. Center frame and cover over water meter.
C. Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal.



6" METER STATION PLAN

NOT TO SCALE



SECTION 1 / NOT TO SCALE

PRESSURE REDUCING STATION VALVE AND FITTING SCHEDULE

NO.	DESCRIPTION	SIZE	JOINT
1.	WALL PIPE W/THRUST RING	6" X 2'-0"	FL X PE
2.	TEE	6"	FLG
3.	BLIND FLANGE W/2" TAP	6"	FLG
4.	GATE VALVE (SEE TABLE NOTES)	6"	FLG
5.	SILENT CHECK VALVE	6"	FLG
6.	NIPPLE	6"	FL X PE
7.	FLANGE COUPLING ADAPTER W/TIE RODS	6"	FL X PE
8.	COMPOUND METER (SENSUS OMNI C^2)	6"	FLG
9.	GATE VALVE (BRONZE)	2"	THD
10.	BRASS PIPE	2"	THD
11.	BRASS 90° ELBOW	2"	THD
12.	BRASS UNION	2"	THD
13.	CHECK VALVE	2"	THD
14.	FORD METER FLANGE	2"	THD X FLG
15.	COMPOUND METER (SENSUS OMNI C^2)	2"	FLG
16.	PIPE SUPPORT (GRINNELL MODEL NO. 264)	-	-
17.	FLOOR DRAIN	6" X 2"	-
18.	WALL PIPE W/THRUST RING	6" X 2'-0"	FLG
19.	-	-	-

TABLE NOTES:
UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53.
ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.
MUELLLER RESILIENT SEAT, CLOW RESILIENT WEDGE OR EAST JORDAN GATE VALVE.

NOTES:

1. ALL PIPE ABOVE GROUND TO BE GALVANIZED STEEL.
2. DIMENSIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. H-20 MIN. LOADING REQUIRED. PROVIDE SHOP DRAWINGS FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION.
3. PROVIDE THRUST WALL DESIGN FOR 150 PSI MIN. OPERATING PRESSURE.
4. PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.

Tooele City
Est. 1853

6" COMPOUND METER WITH 2" BYPASS AND METER

Plan No.
525 R

1/2023

8" Compound Meter with 2" Bypass and Meter

1. GENERAL

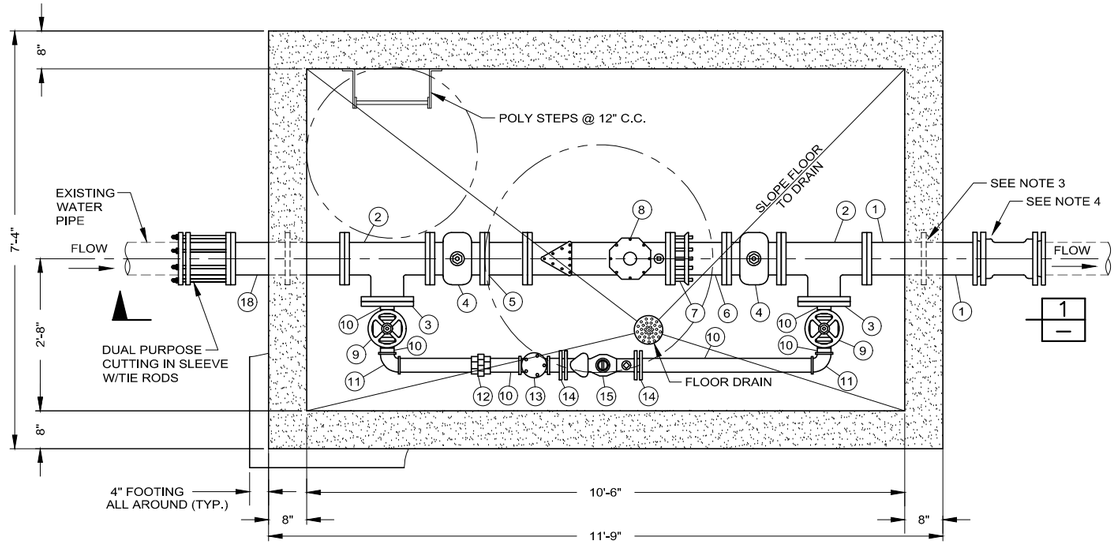
A. Configuration may be changed at ENGINEER's discretion.
B. Additional requirements are specified in APWA Section 33 12 16R.

2. PRODUCTS

A. Small Fittings: Brass. Do not use galvanized materials.
B. Blocking: Clay brick or concrete block.
C. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.

3. EXECUTION

A. Control Valve: Install valve with valve box adjacent to main.
B. Center frame and cover over water meter.
C. Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal.

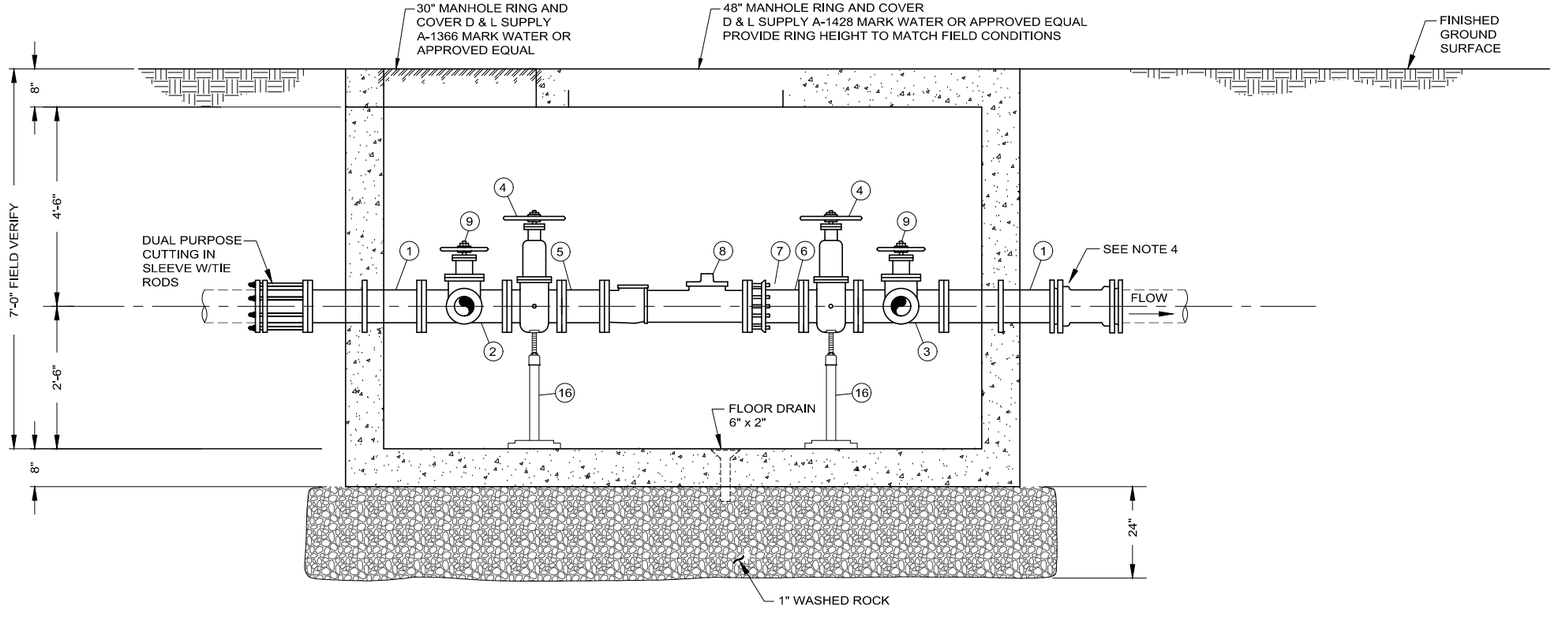


8" METER STATION PLAN

NOT TO SCALE

PRESSURE REDUCING STATION VALVE AND FITTING SCHEDULE			
NO.	DESCRIPTION	SIZE	JOINT
1.	WALL PIPE W/THRUST RING	8" X 2'-0"	FLG
2.	TEE	8"	FLG
3.	BLIND FLANGE W/2" TAP	8"	FLG
4.	GATE VALVE (SEE TABLE NOTES)	8"	FLG
5.	SPOOL PIECE	8"	FLG
6.	NIPPLE	8"	FL X PE
7.	FLANGE COUPLING ADAPTER W/TIE RODS	8"	FL X PE
8.	COMPOUND METER (SENSUS OMNI C) [2]	8"	FLG
9.	GATE VALVE (BRONZE)	2"	THD
10.	BRASS PIPE	2"	THD
11.	BRASS 90° ELBOW	2"	THD
12.	BRASS UNION	2"	THD
13.	CHECK VALVE	2"	THD
14.	FORD METER FLANGE	2"	
15.	COMPOUND METER (SENSUS OMNI C[2])	2"	FLG
16.	PIPE SUPPORT (GRINNELL MODEL NO. 264)	-	-
17.	FLOOR DRAIN	6" X 2"	-
18.	WALL PIPE W/THRUST RING	8" X 2'-0"	FLG
19.	-	-	-

UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53.
ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.



SECTION 1 — NOT TO SCALE

NOTES:

1. ALL PIPE ABOVE GROUND TO BE GALVANIZED STEEL.
2. DIMENSIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. H-20 MIN. LOADING REQUIRED. PROVIDE SHOP DRAWINGS FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION.
3. PROVIDE THRUST WALL DESIGN FOR 150 PSI MIN. OPERATING PRESSURE.
4. PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.

Tooele City
Est. 1853

8" COMPOUND METER WITH 2" BYPASS AND METER

Plan No.
527 R

1/2023

10" Compound Meter with 2" Bypass and Meter

1. GENERAL

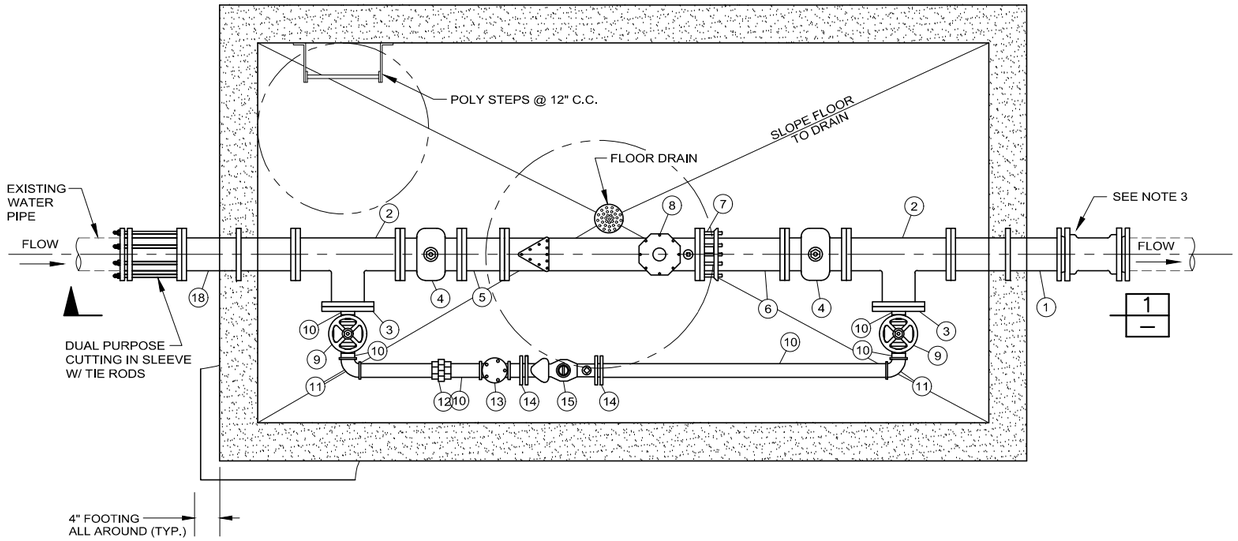
A. Configuration may be changed at ENGINEER's discretion.
B. Additional requirements are specified in APWA Section 33 12 16R.

2 PRODUCTS

A. Small Fittings: Brass. Do not use galvanized materials.
B. Blocking: Clay brick or concrete block.
C. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.

3. EXECUTION

A. Control Valve: Install valve with valve box adjacent to main.
B. Center frame and cover over water meter.
C. Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal.

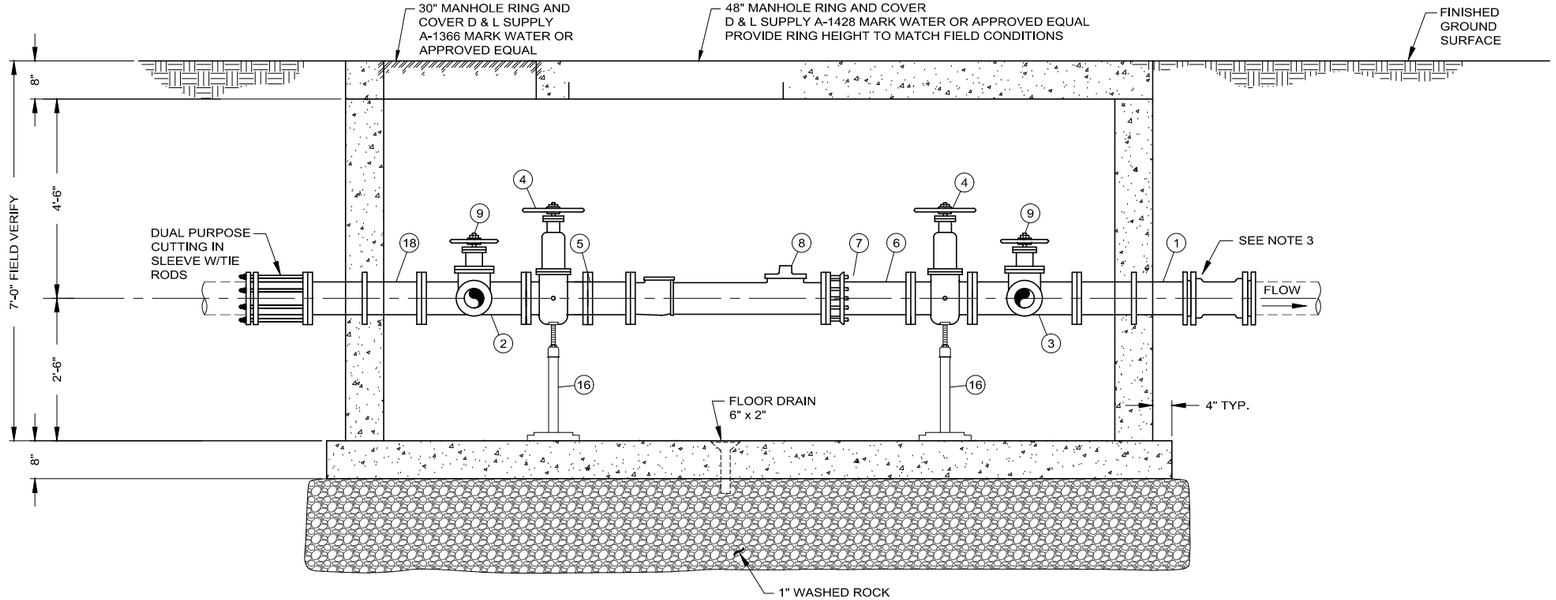


10" METER STATION PLAN

NOT TO SCALE

PRESSURE REDUCING STATION VALVE AND FITTING SCHEDULE			
NO.	DESCRIPTION	SIZE	JOINT
1.	WALL PIPE W/THRUST RING	10" X 2'-0"	FLG
2.	TEE	10"	FLG
3.	BLIND FLANGE W/2" TAP	10"	FLG
4.	GATE VALVE (MUELLER RESILIENT SEAT)	10"	FLG
5.	SPOOL PIECE	10"	FLG
6.	NIPPLE	10"	FL X PE
7.	FLANGE COUPLING ADAPTER W/TIE RODS	10"	FL X PE
8.	COMPOUND METER (SENSUS OMNI C^2)	10"	FLG
9.	GATE VALVE (BRONZE)	2"	THD
10.	BRASS PIPE	2"	THD
11.	BRASS 90° ELBOW	2"	THD
12.	BRASS UNION	2"	THD
13.	CHECK VALVE	2"	THD
14.	FORD METER FLANGE	2"	THD X FLG
15.	COMPOUND METER (SENSUS OMNI C^2)	2"	FLG
16.	PIPE SUPPORT (GRINNELL MODEL NO. 264)	-	-
17.	FLOOR DRAIN	6" X 2"	-
18.	WALL PIPE W/THRUST RING	10" X 2'-0"	FLG
19.	-	-	-

UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53.
ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.



SECTION 1

NOT TO SCALE

NOTES:

1. ALL PIPE ABOVE GROUND TO BE GALVANIZED STEEL.
2. LOCATION OF PRESSURE RELIEF PIPE TO BE FIELD FIT BY ENGINEER.
3. PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.

Tooele City
Est. 1853

10" COMPOUND METER WITH 2" BYPASS AND METER

Plan No.
529 R

1/2023

6″ Fire Line Meter

1. GENERAL

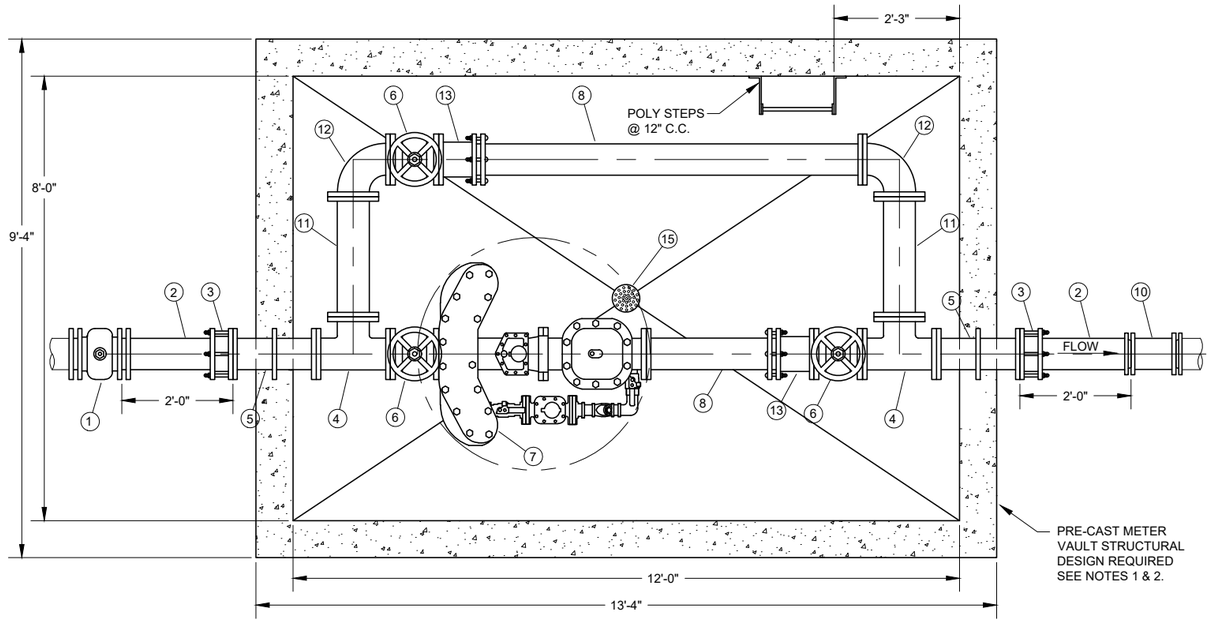
A. Configuration may be changed at ENGINEER's discretion.
B. Additional requirements are specified in APWA Section 33 12 16R.

2 PRODUCTS

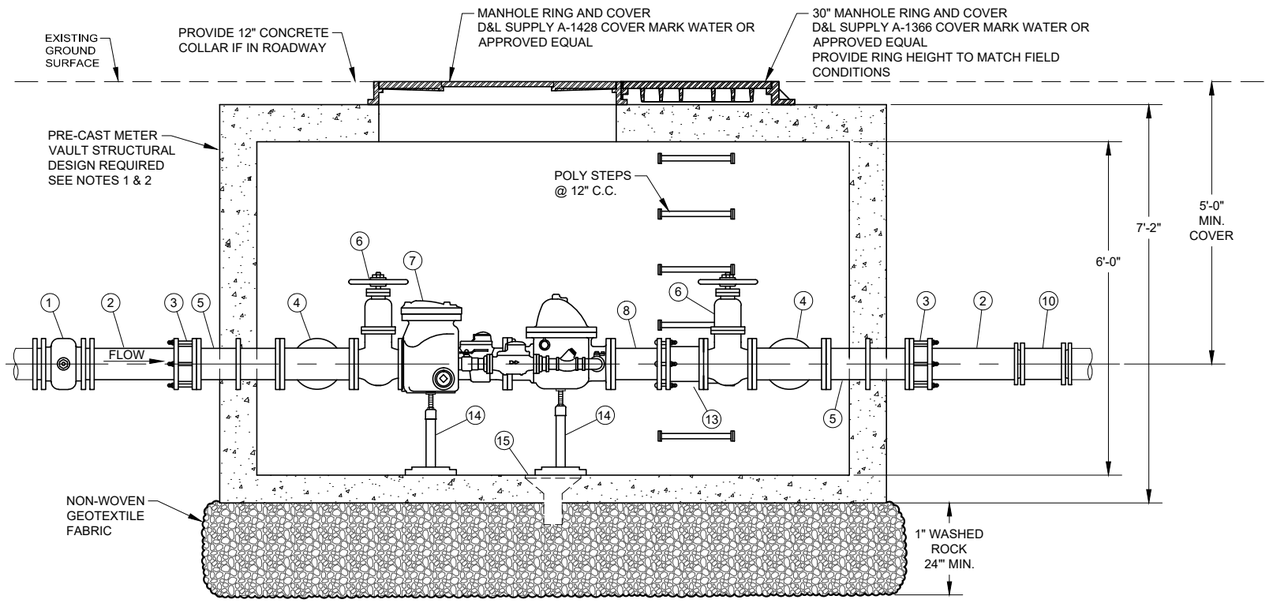
A. Small Fittings: Brass. Do not use galvanized materials.
B. Blocking: Clay brick or concrete block.
C. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.

3. EXECUTION

A. Control Valve: Install valve with valve box adjacent to main.
B. Center frame and cover over water meter.
C. Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal.



PLAN



SECTION

NOTES:

1. VAULT DIMENSIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. H-20 MIN. LOADING REQUIRED. PROVIDE SHOP DRAWINGS FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION.
2. PROVIDE THRUST WALL DESIGN FOR 150 PSI MIN. OPERATING PRESSURE. PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.
3. PROVIDE ANY ADDITIONAL PIPE & FITTINGS TO CONNECT TO EXISTING SERVICE, AS NECESSARY. PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.

METER VAULT VALVE AND FITTING SCHEDULE

NO.	DESCRIPTION	SIZE	JOINT				
1.	GATE VALVE (MUELLER RESILIENT SEAT) W/VALVE BOX)	6"	MJ	9.	FLANGE COUPLING ADAPTER W/TIE RODS	6"	FLG X PE
2.	DIP CLASS 53	6"	PE	10.	SOLID SLEEVE	6"	MJ
3.	FLANGE COUPLING ADAPTER	6"	FLG X PE	11.	SPOOL PIECE	6"	FLG
4.	TEE	6"	FLG	12.	BEND 90°	6"	FLG
5.	WALL PIPE W/THRUST RING	6"	FLG	13.	DUAL PURPOSE CUTTING-IN SLEEVE	6"	FLG X PE
6.	GATE VALVE (MUELLER RESILIENT SEAT)	6"	FLG	14.	PIPE SUPPORT (GRINNELL MODEL NO. 264)	-	-
7.	COMPACT FIRE LINE METER (SENSUS FM-721 RADIO HEAD)	6"	FLG	15.	FLOOR DRAIN	6" X 4"	-
8.	NIPPLE	6"	FLG X PE	16.	-	-	-

UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53. ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.

Tooele City
Est. 1853

6" FIRE LINE METER

Plan No.
530 R

1/2023

8″ Fire Line Meter

1. GENERAL

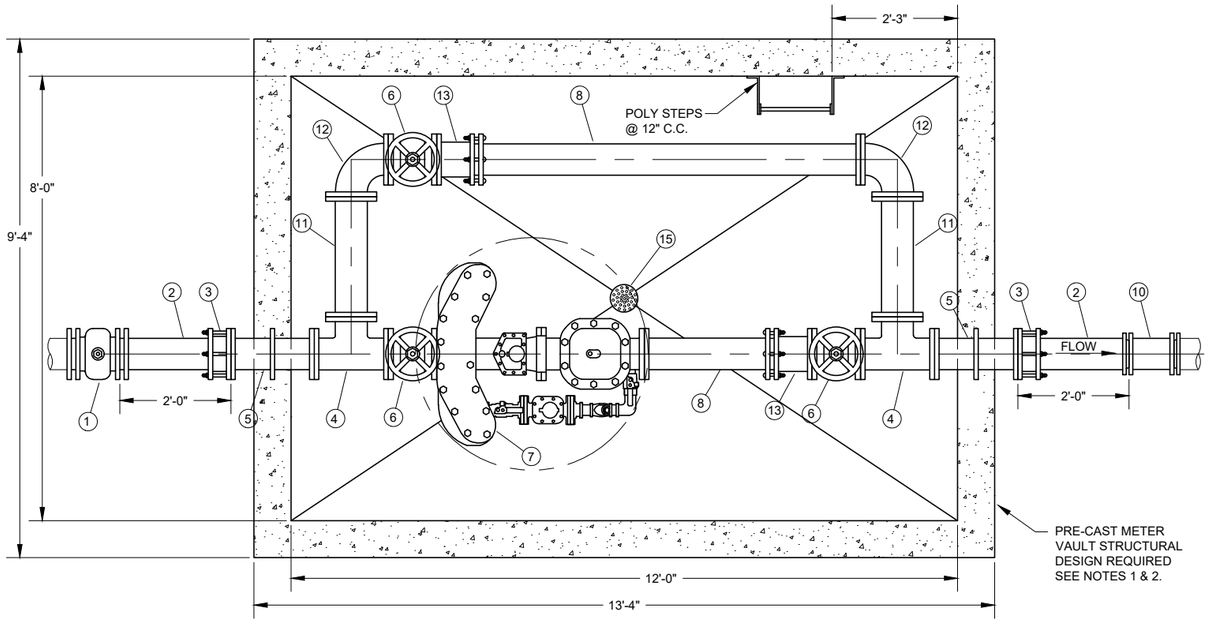
A. Configuration may be changed at ENGINEER's discretion.
B. Additional requirements are specified in APWA Section 33 12 16R.

2 PRODUCTS

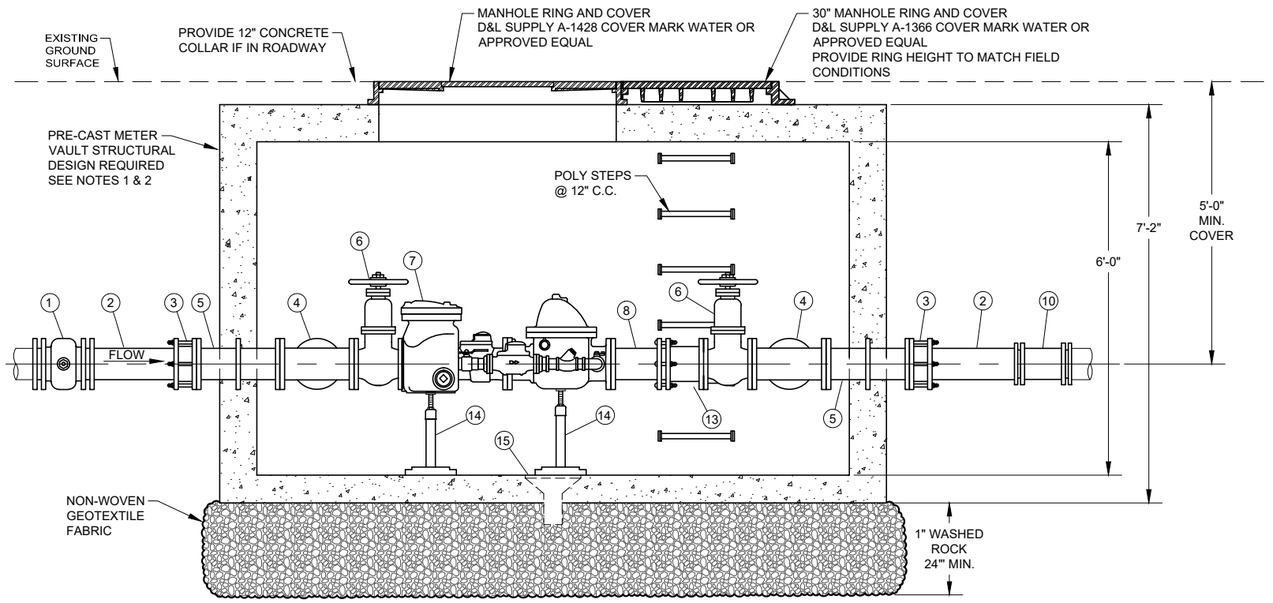
A. Small Fittings: Brass. Do not use galvanized materials.
B. Blocking: Clay brick or concrete block.
C. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.

3. EXECUTION

A. Control Valve: Install valve with valve box adjacent to main.
B. Center frame and cover over water meter.
C. Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal.



PLAN



SECTION

NOTES:

1. VAULT DIMENSIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. H-20 MIN. LOADING REQUIRED. PROVIDE SHOP DRAWINGS FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION.
2. PROVIDE THRUST WALL DESIGN FOR 150 PSI MIN. OPERATING PRESSURE. PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.
3. PROVIDE ANY ADDITIONAL PIPE & FITTINGS TO CONNECT TO EXISTING SERVICE, AS NECESSARY. PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.

METER VAULT VALVE AND FITTING SCHEDULE

NO.	DESCRIPTION	SIZE	JOINT				
1.	GATE VALVE (MUELLER RESILIENT SEAT) W/VALVE BOX)	8"	MJ	9.	FLANGE COUPLING ADAPTER W/TIE RODS	8"	FLG X PE
2.	DIP CLASS 53	8"	PE	10.	SOLID SLEEVE	8"	MJ
3.	FLANGE COUPLING ADAPTER	8"	FLG X PE	11.	SPOOL PIECE	8"	FLG
4.	TEE	8"	FLG	12.	BEND 90°	8"	FLG
5.	WALL PIPE W/THRUST RING	8"	FLG	13.	DUAL PURPOSE CUTTING-IN SLEEVE	8"	FLG X PE
6.	GATE VALVE (MUELLER RESILIENT SEAT)	8"	FLG	14.	PIPE SUPPORT (GRINNELL MODEL NO. 264)	-	-
7.	COMPACT FIRE LINE METER (SENSUS FM-721 RADIO HEAD)	8"	FLG	15.	FLOOR DRAIN	6" X 4"	-
8.	NIPPLE	8"	FLG X PE	16.	-	-	-

UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53. ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.

Tooele City
Est. 1853

8" FIRE LINE METER

Plan No.
531 R
1/2023

Water Service Line

1. GENERAL

A. Before backfilling, secure inspection of installation by ENGINEER.

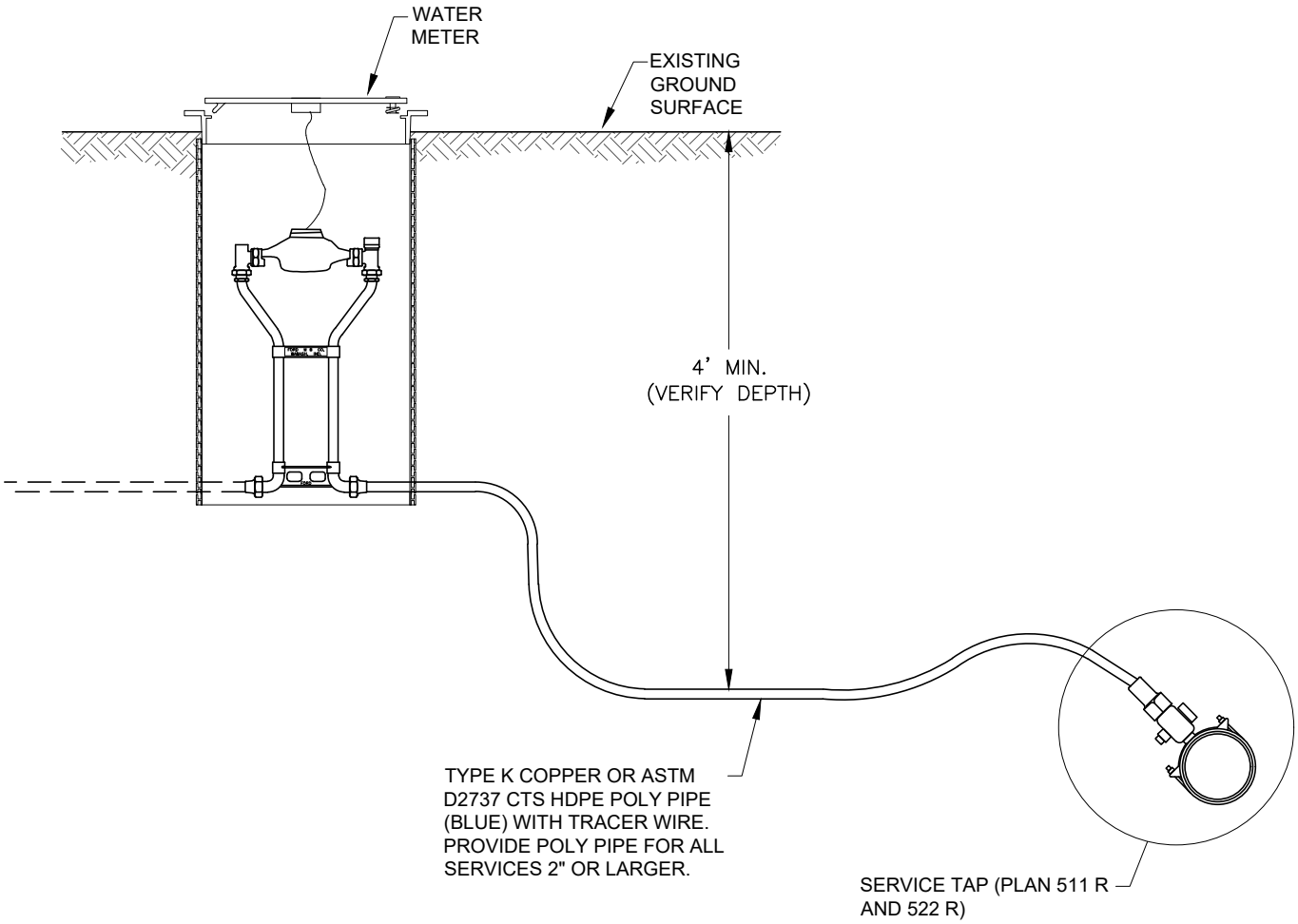
2. PRODUCTS

A. Fittings: Provide brass fittings and nipples. Do not use galvanized materials.

B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.

3. EXECUTION

A. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.



WATER SERVICE LINE

Tooele City
Est. 1853

Plan No.
541 R

1/2023

Fire Hydrant Replacement or Relocation

1. GENERAL

A. Drawing is a single line diagram showing a minimum and typical connection.

B. Additional water system requirements are specified in APWA Section 33 11 00R - Water Distribution and Transmission, 33 12 16R - Water Valves, and 33 12 19R - Hydrants.

C. Before backfilling, secure inspection of installation by ENGINEER.

2. PRODUCTS

A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.

B. Piping: Match existing pipe, fittings, coupling sizes and materials.

C. Thrust Blocks: Concrete Class 4000, APWA Section 03 30 04R.

D. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.

E. Grease: Non-oxide poly-FM.

3. EXECUTION

A. Hydrant: Adjust to grade with pipe spool if necessary.

1) Provide at least 1 cubic yard of sewer rock, APWA Section 31 05 13 around drain hole at base of hydrant. Wrap plastic over sewer rock to prevent silting.
2) Paint fire hydrant to agency's fire hydrant paint code.
3) Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
4) Notify fire department as soon as hydrant is placed in service.

B. Connections: If existing valve and hydrant have O.B. connections, delete MJ x Flange adapter and install 6-inch MJ sleeve. Add a new valve at the tee connection.

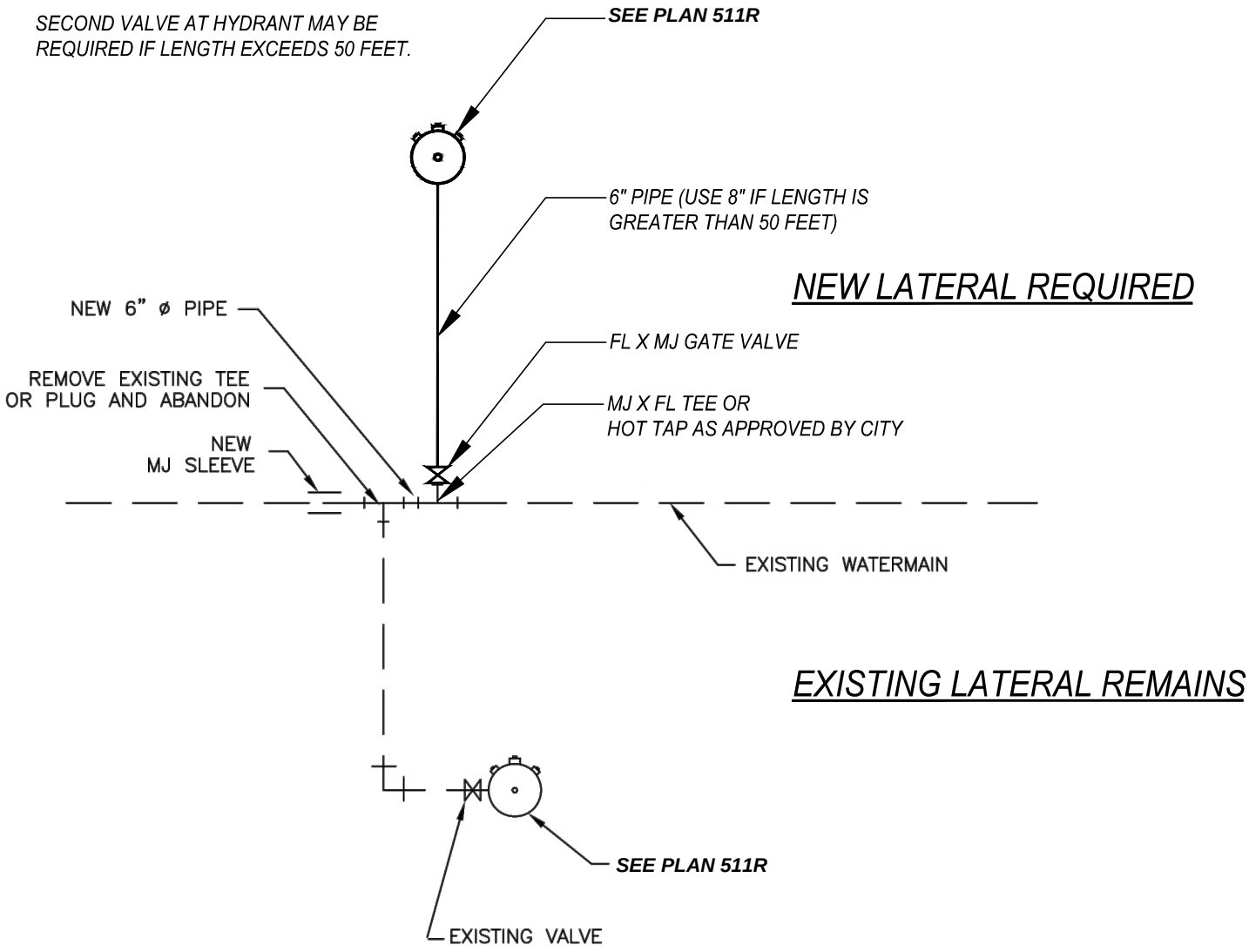
C. Valve Boxes. Salvage any C.I.S.T. valve boxes and reuse. Adjust to grade as necessary on relocated hydrant.

D. Thrust Blocks: Required. Before pouring concrete, wrap pipe system plastic sheet to prevent bonding of concrete to pipe system.

E. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.

F. Surface Restoration:

1) Landscaped Surface: Rake to match existing grade. Replace vegetation to match pre-construction conditions. Follow APWA Section 32 92 00 (turf or grass) or APWA Section 32 93 13 (ground cover) requirements.
2) Paved Surface: Do not install bituminous concrete or Portland cement concrete surfacing until trench compaction is acceptable to ENGINEER. Follow APWA Section 33 05 25 (bituminous concrete surfacing), or APWA Section 33 05 25 (concrete surfacing).



NOTE: **THRUST BLOCKS REQUIRED (PLANS NO. 561R AND 562R)**

Tooele City Est. 1853

FIRE HYDRANT REPLACEMENT OR RELOCATION

Plan No.
546 R
1/2023

3/4" and 1" Service Taps

1. GENERAL

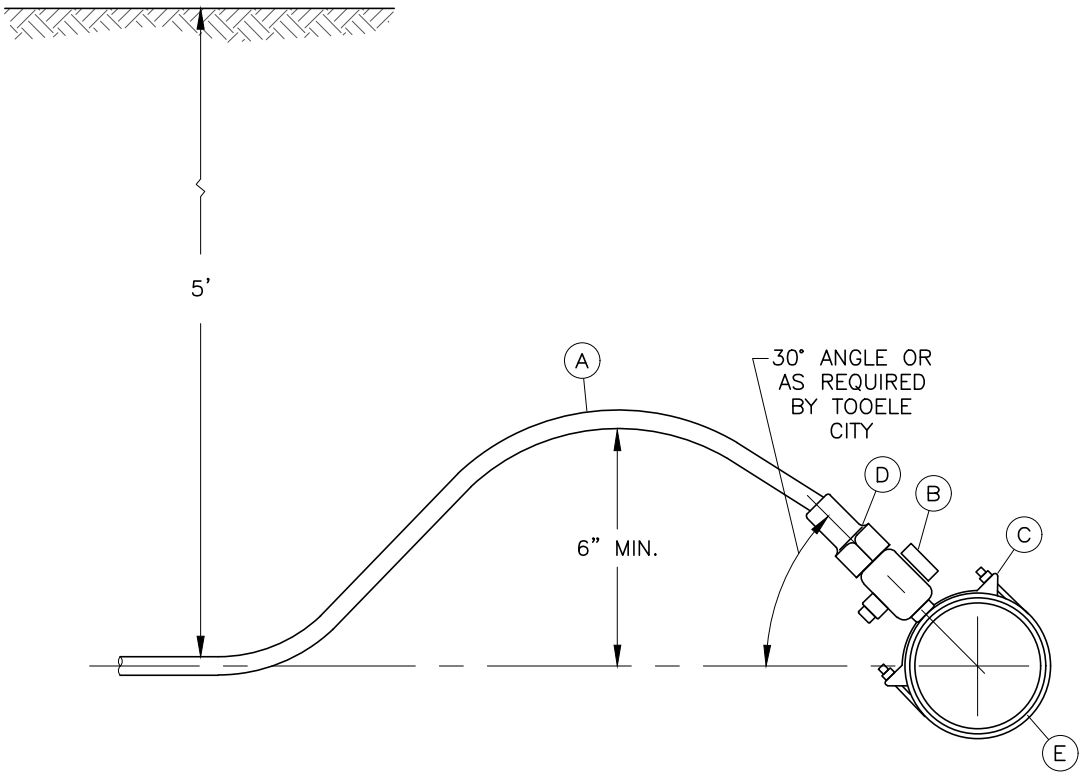
A. Before backfilling around taps, secure inspection of installation by ENGINEER.

2. PRODUCTS

A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
C. Tape: Teflon tape is required on all taps.

3. EXECUTION

A. Tapping: Place taps a minimum of 36-inches apart. Use a tapping tool which is sized corresponding to the size of the service line to be installed. No taps within 36-inches of end of pipe.
B. PVC or AC Pipe: A service saddle clamp is required on all PVC and AC pipe taps unless specified otherwise.
C. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.



NOTE: DIRECT TAP TO WATER LINE NOT ALLOWED.

LEGEND	
NO.	DESCRIPTION
A	TYPE K COPPER OR CTS POLY PIPE
* B	CORPORATION STOP
C	DOUBLE BRASS STRAP SADDLE CLAMP
D	COMPRESSION FITTING
E	WATER MAIN PIPE

* MUELLER 300 TYPE CORPORATION VALVE WITH AWWA TAPER MUELLER "CC" THREAD (OR APPROVED EQUAL).

¾" AND 1" SERVICE TAPS

Tooele City
Est. 1853

Plan No.
551 R

1/2023

1 1/2" and 2" Service Taps

1. GENERAL

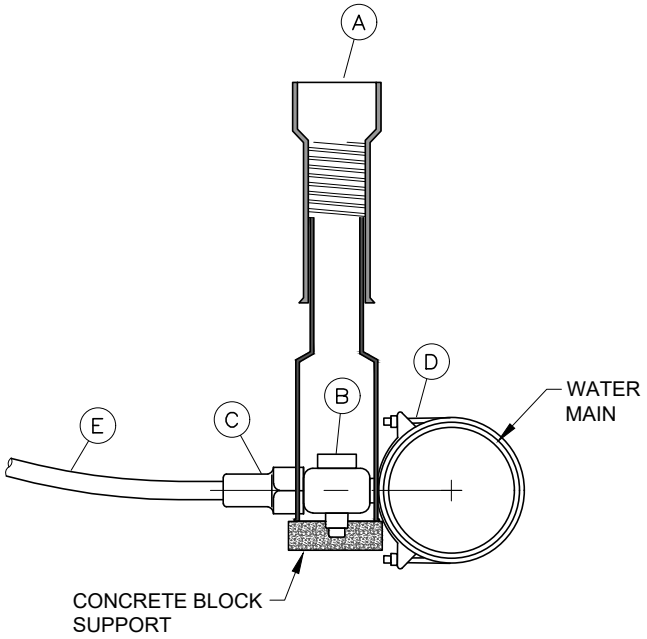
A. Before backfilling around taps, secure inspection of installation by ENGINEER.

2. PRODUCTS

A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
C. Tape: Teflon tape is required on all taps.

3. EXECUTION

A. Tapping: Place taps a minimum of 36-inches apart. Use a tapping tool that is sized corresponding to the size of the service line to be installed. No taps within 36-inches of end of pipe.
B. PVC or AC Pipe: A service saddle clamp is required on all PVC and AC pipe taps unless specified otherwise.
C. Backfill and Base Course: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.
D. Blocks: Clay brick or concrete block required under valve box to assure a 1" or greater space between the box and the corporation stop and pipe assembly.



NOTE: DIRECT TAP TO WATER LINE NOT ALLOWED.

LEGEND	
NO.	DESCRIPTION
A	VALVE BOX WITH LID MARKED WATER
* B	CORPORATION STOP
C	COMPRESSION FITTING
D	DOUBLE BRASS STRAP SADDLE CLAMP
E	CTS POLY PIPE

* MUELLER 300 TYPE CORPORATION VALVE WITH AWWA TAPER MUELLER "CC" THREAD (OR APPROVED EQUAL).

1 ½" AND 2" SERVICE TAPS

Tooele City
Est. 1853

Plan No.
551 R

1/2023

Direct Bearing Thrust Block

1. GENERAL

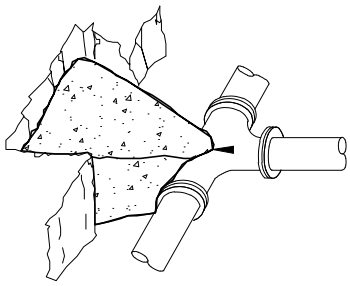
A. Thrust design for pipe sizes or configurations not shown require special design.
B. Bearing areas, volumes, and special thrust blocking details shown on Drawings take precedence over this plan.
C. Restraint sizing is based upon a maximum operating pressure of 150 psi and a test pressure of 200 psi, and a minimum soil bearing strength of 2,000 psf. Operating pressures in excess of 150 psi or soils with less than 2,000 pound bearing strength will require special design.
D. Before backfilling around thrust block, secure inspection of installation by ENGINEER.

2. PRODUCTS

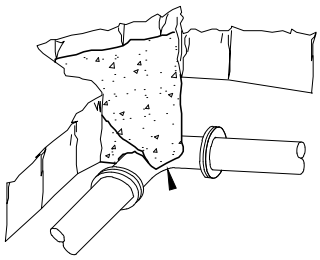
A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
C. Thrust Bocks: Concrete Class 4000, APWA Section 03 30 04R.
D. Grease: Non-oxide poly-FM.

3. EXECUTION

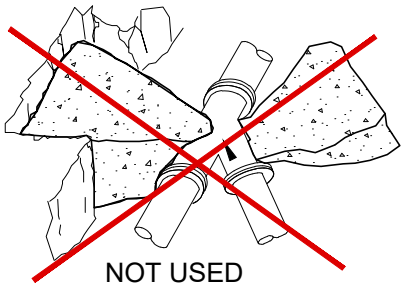
A. Pour concrete against undisturbed soil.
B. Pipe Joints: Do not cover with concrete. Leave completely accessible.
C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
D. Locking restraint devices may be used in conjunction with concrete thrust blocking (at discretion of ENGINEER).
E. Backfill and Base Course: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.
F. Maximum lift thickness before compaction is 8-inches.



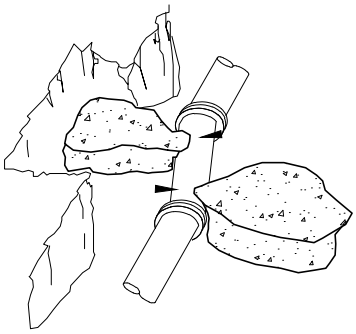
CONDITION I



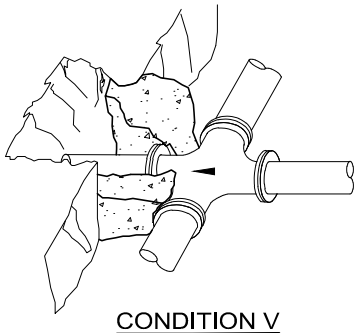
CONDITION II



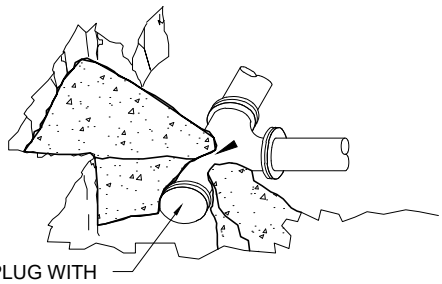
NOT USED
CONDITION III



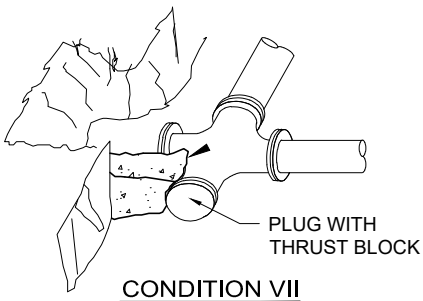
CONDITION IV



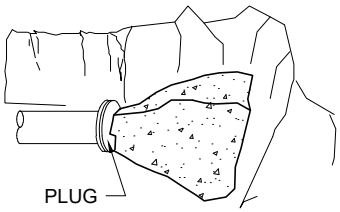
CONDITION V



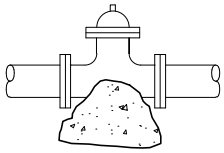
CONDITION VI



CONDITION VII



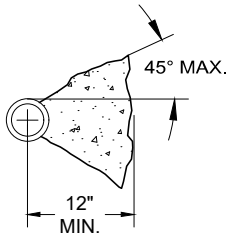
CONDITION VII



VALVE ANCHOR REQUIRED FOR
VALVES 12" AND LARGER

VALVE ANCHOR
12" & LARGER

THRUST BLOCK BEARING AREA IN SQ. FEET								
PIPE SIZE (IN.)	CONDITION							
	I	II	III	IV	V	VI	VII	VIII
4	2.6	3.3	2.6	1.3	1.3	2.0	3.3	2.6
6	4.6	6.5	3.9	2.0	2.6	3.3	6.5	4.6
8	7.8	11.0	5.9	3.3	3.9	5.9	11.0	7.8
10	12.4	17.5	9.8	5.2	6.5	9.1	17.5	12.4
12	17.5	24.8	13.6	7.8	9.1	12.3	24.8	17.5
14	24.0	33.8	18.2	9.7	12.3	16.9	33.8	24.0
16	31.1	44.0	23.8	12.7	15.5	23.2	44.0	31.1
20	48.6	68.8	37.2	19.8	24.2	36.6	68.8	48.6
24	89.8	90.1	48.8	24.9	-	-	-	-



TYPICAL SECTION THROUGH
THRUST BLOCK

NOTES:

1. ALL THRUST BLOCK BEARING FACES SHALL BE POURED AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
2. CONCRETE CLASS 4000, APWA SECTION 03 30 04
3. ALL THRUST BLOCK SIDES SHALL BE FORMED.
4. CALCULATED ON 200 PSI TEST PRESSURE AND ALLOWABLE BEARING PRESSURE OF 2000 LBS. PER SQUARE FOOT.
5. IN POORER SOILS SPECIAL DESIGN IS REQUIRED.
6. USE MJ DUCTILE IRON RESTRAINED GLANDS AND CONCRETE THRUST BLOCKS.

Tooele City
Est. 1853

STANDARD THRUST BLOCK DETAILS

Plan No.
561 R

1/2023

Tie-Down Thrust Restraints

1. GENERAL

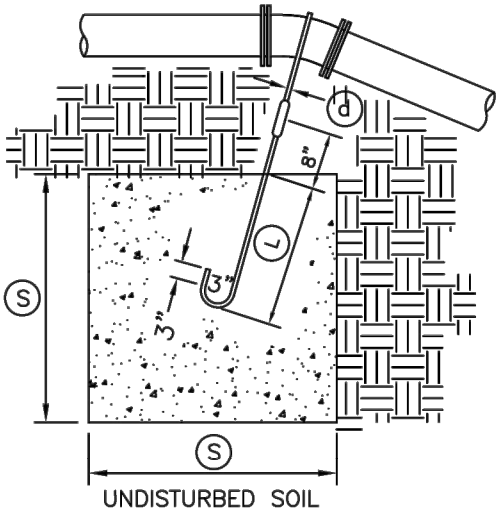
A. Thrust design for pipe sizes or configurations not shown require special design.
B. Bearing areas, volumes, and special thrust blocking details shown on Drawings take precedence over this plan.
C. Restraint sizing is based upon a maximum operating pressure of 150 psi and a test pressure of 200 psi, and a minimum soil bearing strength of 2,000 psf. Operating pressures in excess of 150 psi or soils with less than 2,000 pound bearing strength will require special design.
D. Before backfilling around thrust block, secure inspection of installation by ENGINEER.

2. PRODUCTS

A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
C. Concrete: Class 4,000 minimum, APWA Section 03 30 04R.
D. Reinforcement: Deformed, steel, ASTM A615. Give bars an epoxy coating at least 15 mils thick. Minimum stress yield strength of steel tie-down bars is 70,000 ksi.
E. Grease: Non-oxide poly-FM.

3. EXECUTION

A. Pour concrete against undisturbed soil. Concrete must be allowed to cure in thrust restraints for 5 days before pressurizing water lines or have additional approved thrust restraints installed before pressurizing the water line.
B. Pipe Joints: Do not cover with concrete. Leave completely accessible.
C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
D. Locking restraint devices may be used in conjunction with concrete thrust blocking (at discretion of ENGINEER).
E. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.

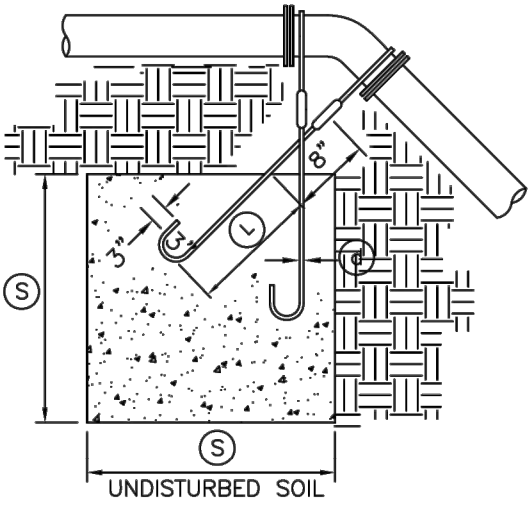


TYPE A RESTRAINT

FOR 11 1/4° – 22 1/2° VERTICAL BENDS

TABLE OF DIMENSIONS

PIPE SIZE NOMIN. DIAMETER – INCH	VB VERTICAL BEND DEGREES	NO. OF CU FT. OF CONCRETE BLOCKING	S SIDE OF CUBE FEET	d DIAMETER OF SHACK OR REBAR RODS – INCH	L DEPTH OF RODS IN CONCRETE FT.
4"	11 1/4°	8	2.0	5/8"	1.5
					2.0
6"	USE ENGINEERS CALCULATIONS				2.0
					2.0
8"	11 1/4°	27	3.0	5/8"	2.0
	22 1/2°	64	4.0	5/8"	2.0
12"	11 1/4°	64	4.0	3/4"	2.0
	22 1/2°	125	5.0	3/4"	3.0
16"	11 1/4°	107	4.25	7/8"	3.0
	22 1/2°	216	6.0	7/8"	4.0
20"	11 1/4°	138	5.17	1"	3.5
	22 1/2°	334	6.94	1"	4.0
24"	11 1/4°	240	6.22	1"	4.0
	22 1/2°	476	7.81	1"	4.0
30"	11 1/4°	369	7.17	1"	4.0
	22 1/2°	733	9.02	1"	4.0



TYPE B RESTRAINT

FOR 45° VERTICAL BENDS

TABLE OF DIMENSIONS

PIPE SIZE NOMIN. DIAMETER – INCH	VB VERTICAL BEND DEGREES	NO. OF CU YD. OF CONCRETE BLOCKING	S SIDE OF CUBE FEET	d DIAMETER OF SHACK OR REBAR RODS – INCH	L DEPTH OF RODS IN CONCRETE IN FEET
4"	45°		3.0	5/8"	2.0
6"	USE ENGINEERS CALCULATIONS				2.5
8"		3.97	4.75	5/8" 5/8"	2.0
12"		9.04	6.25	5/8" 5/8"	4.0
16"		17.24	7.75	3/4" 3/4"	4.0
20"		26.52	9Z.17	3/4" 3/4"	4.0
24"		37.82	10.07	3/4" 3/4"	4.0
30"		58.26	11.63	3/4" 3/4"	4.0

Tooele City Est. 1853

TIE-DOWN THRUST RESTRAINTS

Plan No.
562 R
1/2023

4" Washout Valve

1. GENERAL

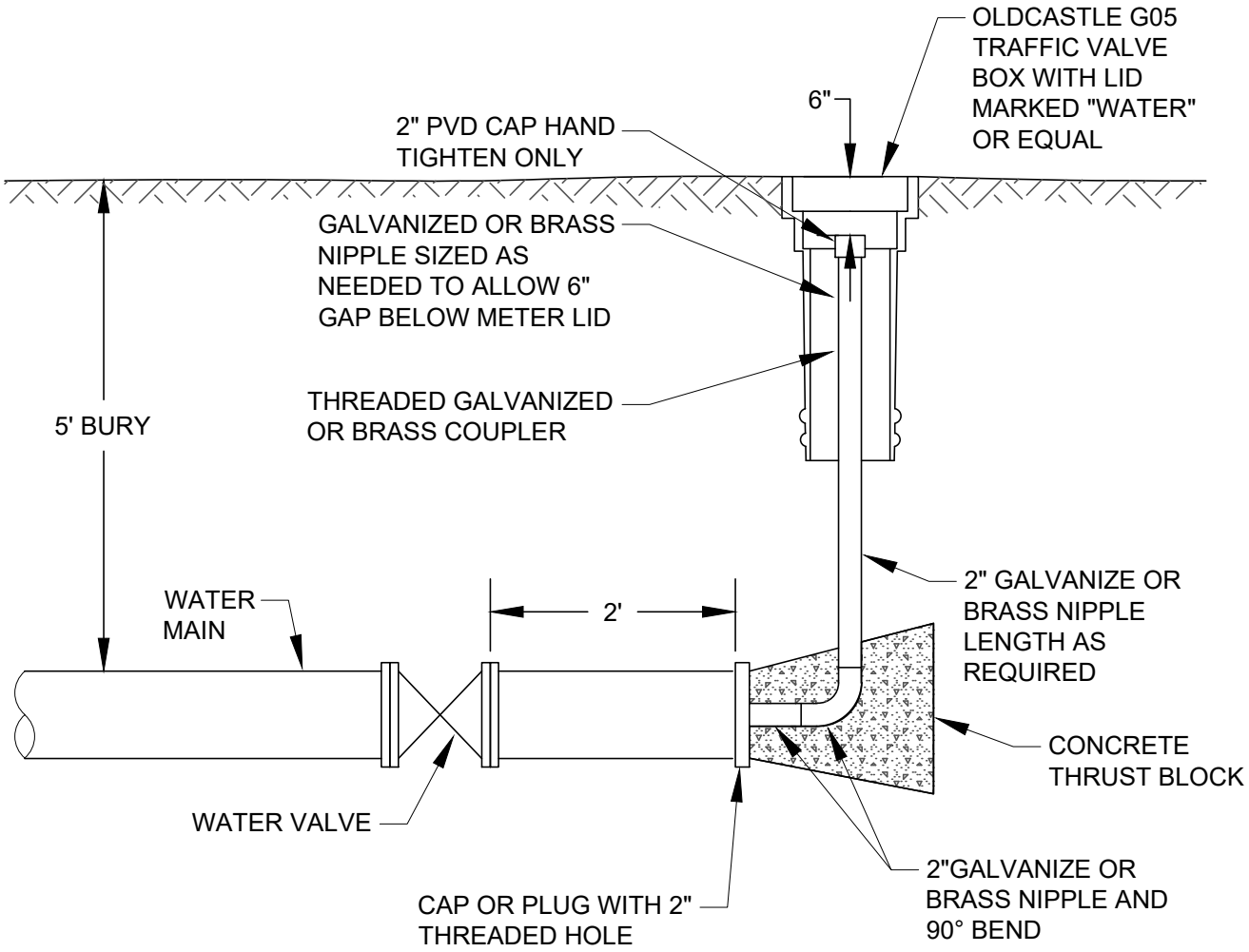
A. Before backfilling, secure inspection of installation by ENGINEER.
B. Water mains 12-inches and larger will require a special washout assembly design.

2. PRODUCTS

A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
C. Concrete: Class 4000, APWA Section 03 30 04R.

3. EXECUTION

A. Pour concrete against undisturbed soil.
B. Apply tape wrap to the exterior of all galvanized pipe per AWWA C209.
C. Place plastic sheet at least 6 mils thick over drain gravel to prevent silting.
D. After installation of washout valve assembly, verify the washout valve riser drains to gravel.
E. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.



NOTE:

PROVIDE MEGALUG JOINT RESTRAINT ON ALL MJ FITTINGS.

THIS TYPE OF VALVE IS ONLY ALLOWED FOR DISINFECTION FLUSHING. PERMANENT FLUSHING REQUIRES A FIRE HYDRANT.

Tooele City
Est. 1853

4" WASHOUT VALVE

Plan No.
571 R

1/2023

Detector Check Valve with 3/4" Bypass Meter

1. GENERAL

A. Configuration may be changed at ENGINEER's discretion.
B. Additional requirements are specified in APWA Section 33 12 16R.

2. PRODUCTS

A. Blocking: Clay brick or concrete block.
B. Small Fittings: Brass. Do not use galvanized materials.
C. Grade Ring: 6-inch concrete grade ring required in roadways, Plan 361.
D. Spools: Length of flange x plain end spool vary.

SPOOLS	
Pipe Size	Pipe Length
6"	10"
8"	8 1/4"
10"	6"

3. EXECUTION

A. Install control valve with valve box adjacent to main.
B. Concrete Box: Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal. Center frame and cover over water meter.
C. Valve Option: The valve in the box (item B legend) closest to the main, and the top section of the valve box (item J legend) may be eliminated at the discretion of the ENGINEER.

A DESIGN PLAN FOR DETECTOR CHECK VALVES IS NOT PROVIDED. RATHER, DETECTOR CHECK VALVES REQUIRE SPECIAL DESIGN AND APPROVAL OF THE CITY.

Tooele City
Est. 1853

DETECTOR CHECK VALVE

Plan No.
572 R
1/2023

Pressure Reducing Valve

1. GENERAL

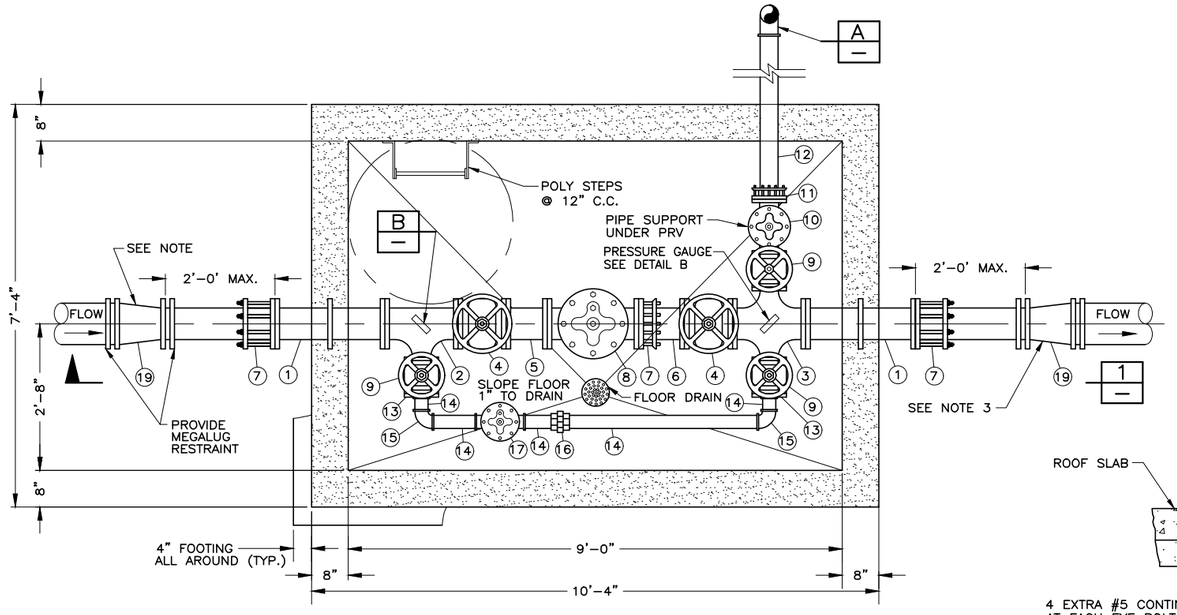
A. Configuration may be changed at ENGINEER's discretion.
B. Additional requirements are specified in APWA Section 33 12 16R.

2. PRODUCTS

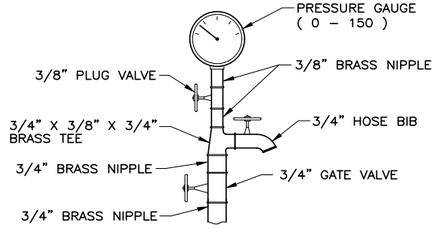
A. Pressure reducing valves shall be of the size shown on the Plan.
B. Small Fillings: Brass. Do not use galvanized materials.
C. Blocking: Pipe supports shall as shown.
D. Taps: Provide two 3/4" I.P. taps with plugs for pressure gages.
E. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.

3. EXECUTION

A. Center frame and cover over water meter.
B. Apply tape wrap to the exterior of all galvanized pipe per AWWA C209.
C. Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal.



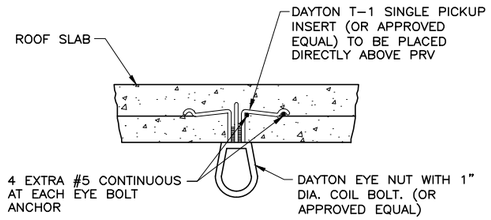
6" PRV STATION PLAN
N.T.S.



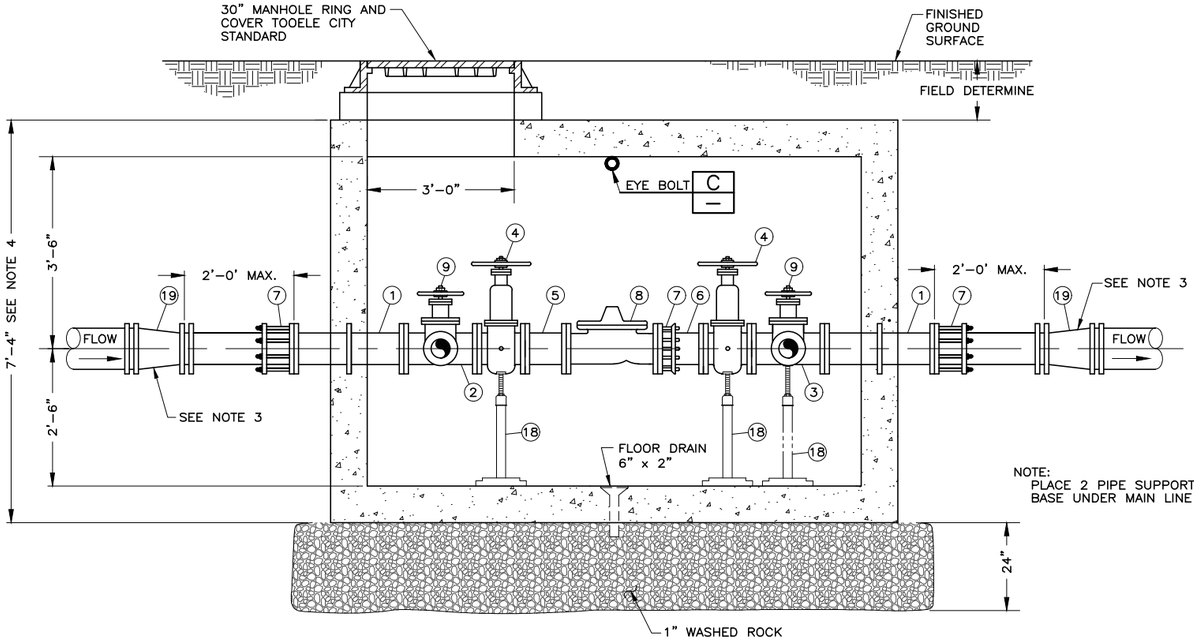
PRESSURE GAUGE DETAIL B
N.T.S.

PRESSURE REDUCING STATION VALVE AND FITTING SCHEDULE			
NO.	DESCRIPTION	SIZE	JOINT
1.	WALL PIPE W/THRUST RING	4" X 2'–0"	FLG
2.	TEE W/ 3/4" TAP	4" X 3"	FLG
3.	CROSS W/ 3/4" TAP	4" X 3"	FLG
4.	GATE VALVE (SEE TABLE NOTES)	4"	FLG
5.	SPOOL PIECE	4" X 9"	FLG
6.	NIPPLE	4"	FL X PE
7.	FLANGE COUPLING ADAPTER	4"	FL X PE
8.	PRESSURE REDUCING VALVE (CLA–VAL 90–01)	4"	FLG
9.	GATE VALVE (MUELLER RESILIENT SEAT)	3"	FLG
10.	PRESSURE RELIEF VALVE (CLA–VAL 50–01)	3"	FLG
11.	FLANGE COUPLING ADAPTER	3"	FLG X PE
12.	BRASS PIPE	3"	THD
13.	REDUCING FLANGE	7½" X 2"	FLG X THD
14.	BRASS PIPE	2"	THD
15.	BRASS 90° ELBOW	2"	THD
16.	BRASS UNION	2"	THD
17.	PRESSURE REDUCING VALVE (CLA–VAL 90–01)	2"	THD
18.	PIPE SUPPORT (GRINNELL MODEL NO. 264)	–	–
19.	REDUCER WITH MEGALUG RESTRAINT ON INFLOW SIDE	8" X 6"	MJ

TABLE NOTES:
UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53.
ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.
MUELLLER RESILIENT SEAT, CLOW RESILIENT WEDGE OR EAST JORDAN GATE VALVE.

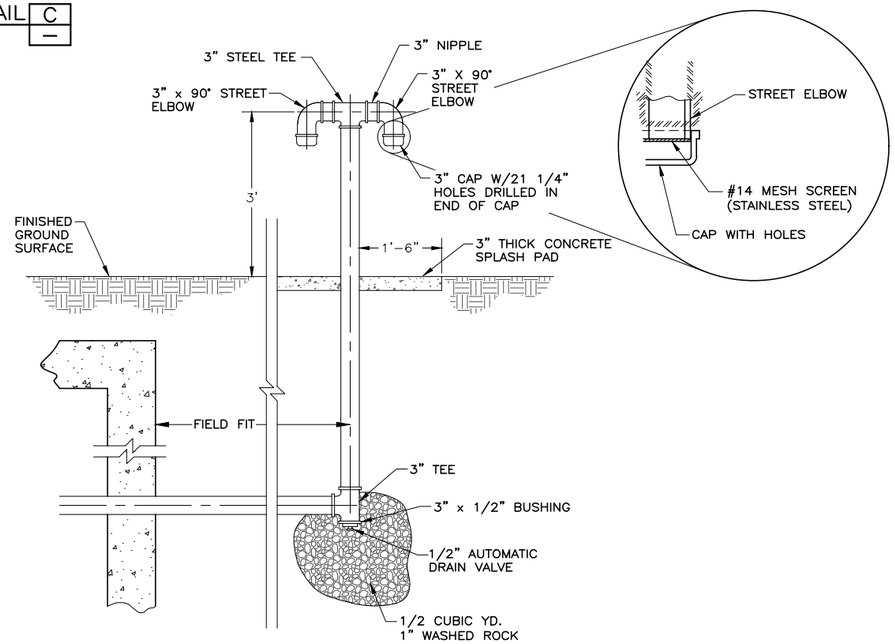


EYE BOLT DETAIL C
N.T.S.



NOTE:
PLACE 2 PIPE SUPPORTS WITH GROUTED BASE UNDER MAIN LINE AS SHOWN.

SECTION 1
N.T.S



PRESSURE RELIEF PIPE A
N.T.S.

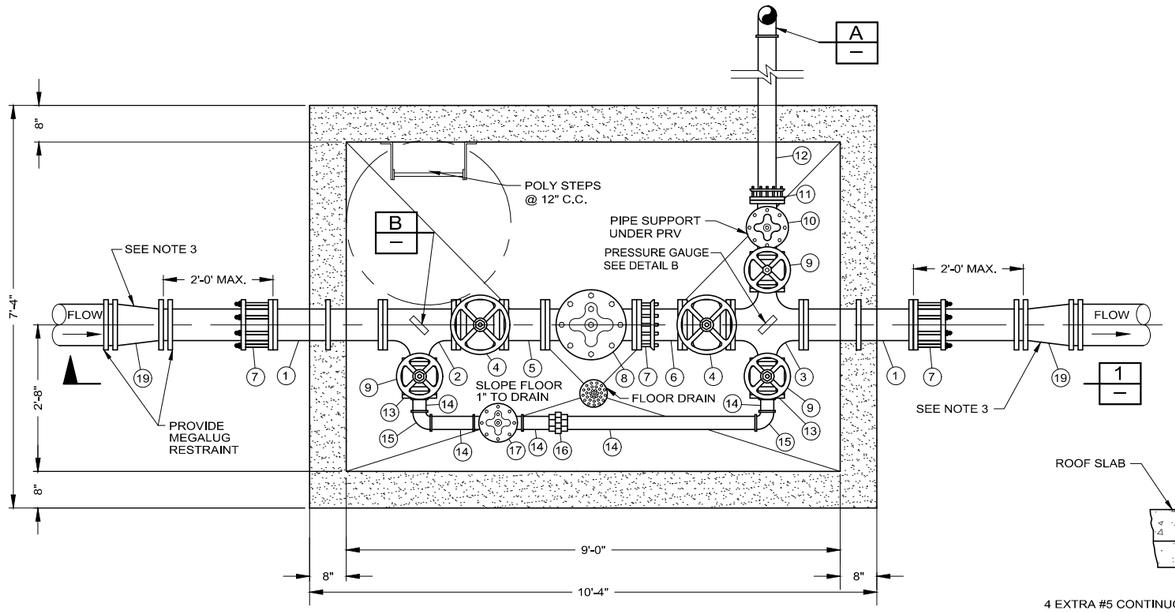
NOTES:
1. ALL PIPE ABOVE GROUND TO BE GALVANIZED STEEL.
2. LOCATION OF PRESSURE RELIEF PIPE TO BE FIELD FIT BY ENGINEER.
3. PROVIDE THRUST WALL DESIGN FOR 150 PSI MIN. OPERATING PRESSURE. PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.
4. VAULT DIMENSIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. H–20 MIN. LOADING REQUIRED. PROVIDE SHOP DRAWINGS FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION.

Tooele City
Est. 1853

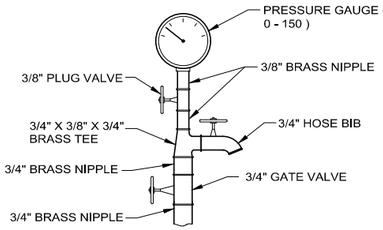
4" PRESSURE REDUCING VALVE WITH 2" BYPASS

Plan No.
573A R

1/2023



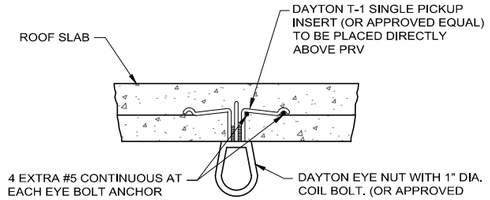
6" PRV STATION PLAN
N.T.S.



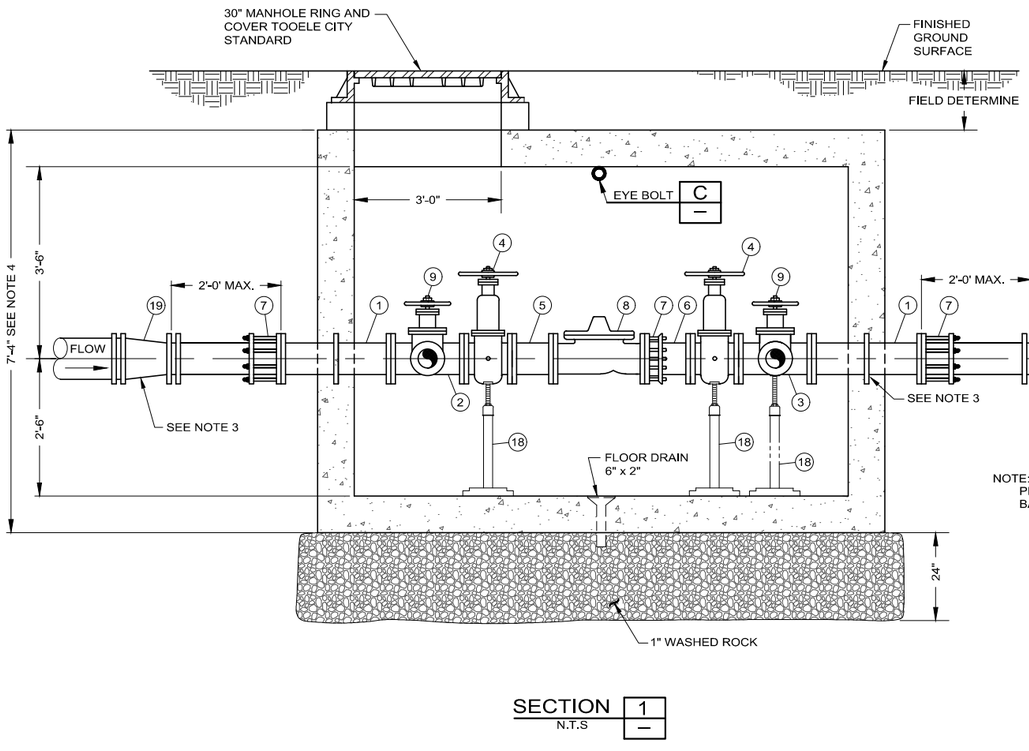
PRESSURE GAUGE DETAIL B
N.T.S.

PRESSURE REDUCING STATION VALVE AND FITTING SCHEDULE			
NO.	DESCRIPTION	SIZE	JOINT
1.	WALL PIPE W/THRUST RING	6" X 2'-0"	FLG
2.	TEE W/ 3/4" TAP	6" X 3"	FLG
3.	CROSS W/ 3/4" TAP	6" X 3"	FLG
4.	GATE VALVE (SEE TABLE NOTES)	6"	FLG
5.	SPOOL PIECE	6" X 9"	FLG
6.	NIPPLE	6"	FL X PE
7.	FLANGE COUPLING ADAPTER	6"	FL X PE
8.	PRESSURE REDUCING VALVE (CLA-VAL 90-01)	6"	FLG
9.	GATE VALVE (MUELLER RESILIENT SEAT)	3"	FLG
10.	PRESSURE RELIEF VALVE (CLA-VAL 50-01)	3"	FLG
11.	FLANGE COUPLING ADAPTER	3"	FLG X PE
12.	BRASS PIPE	3"	THD
13.	REDUCING FLANGE	7½" X 2"	FLG X THD
14.	BRASS PIPE	2"	THD
15.	BRASS 90° ELBOW	2"	THD
16.	BRASS UNION	2"	THD
17.	PRESSURE REDUCING VALVE (CLA-VAL 90-01)	2"	THD
18.	PIPE SUPPORT (GRINNELL MODEL NO. 264)	-	-
19.	REDUCER WITH MEGALUG RESTRAINT ON INFLOW SIDE	8" X 6"	MJ

TABLE NOTES:
UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53.
ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.
MUELLLER RESILIENT SEAT, CLOW RESILIENT WEDGE OR EAST JORDAN GATE VALVE.

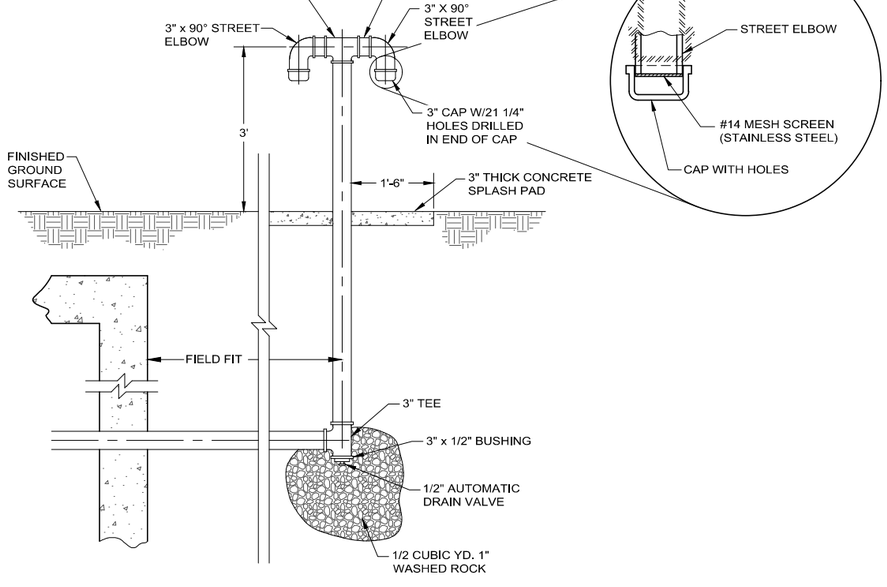


EYE BOLT DETAIL C
N.T.S.



SECTION 1
N.T.S

NOTE:
PLACE 2 PIPE SUPPORTS WITH GROUTED BASE UNDER MAIN LINE AS SHOWN.



PRESSURE RELIEF PIPE A
N.T.S.

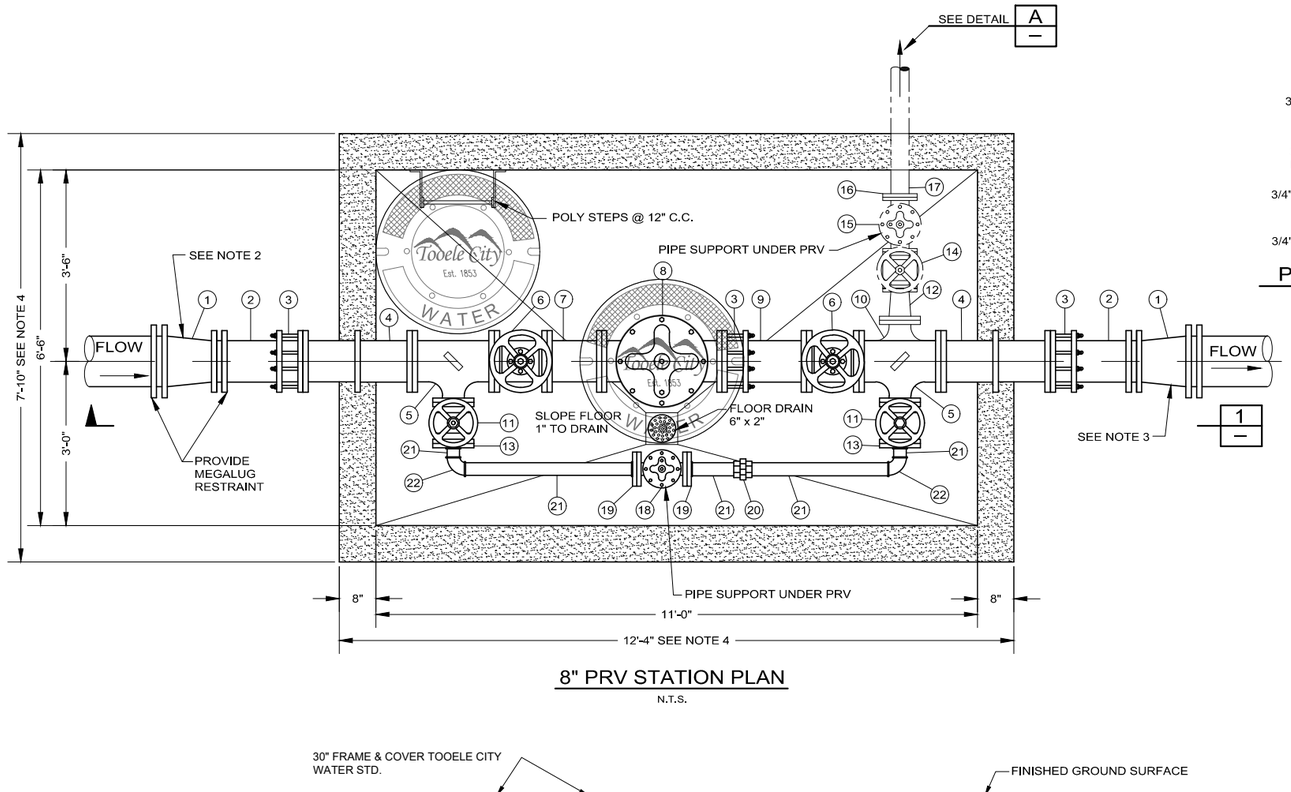
NOTES:
1. ALL PIPE ABOVE GROUND TO BE GALVANIZED STEEL.
2. LOCATION OF PRESSURE RELIEF PIPE TO BE FIELD FIT BY ENGINEER.
3. PROVIDE THRUST WALL DESIGN FOR 150 PSI MIN. OPERATING PRESSURE. PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.
4. VAULT DIMENSIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. H-20 MIN. LOADING REQUIRED. PROVIDE SHOP DRAWINGS FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION.

Tooele City
Est. 1853

6" PRESSURE REDUCING VALVE WITH 2" BYPASS

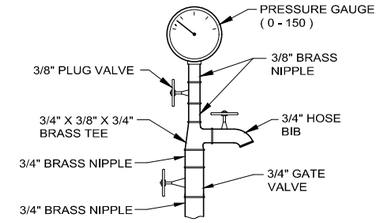
Plan No.
573B R

1/2023



8" PRV STATION PLAN

N.T.S.



PRESSURE GAUGE DETAIL B

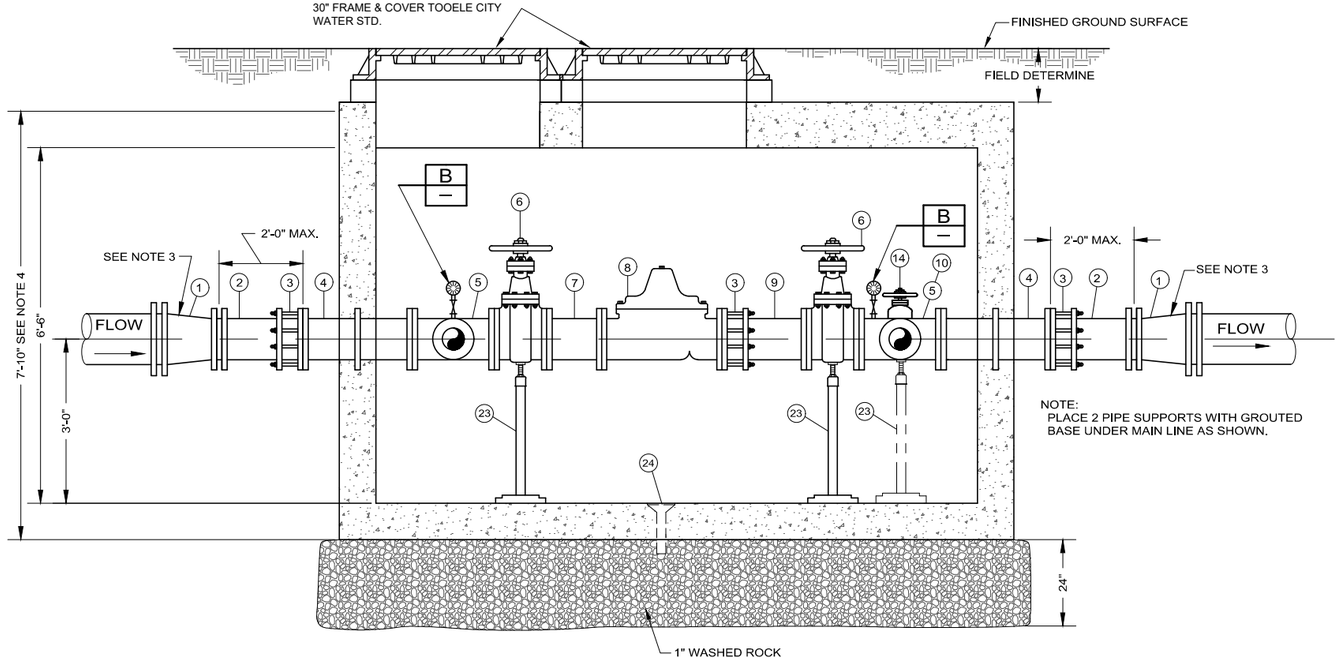
N.T.S.

PRESSURE REDUCING STATION

VALVE AND FITTING SCHEDULE

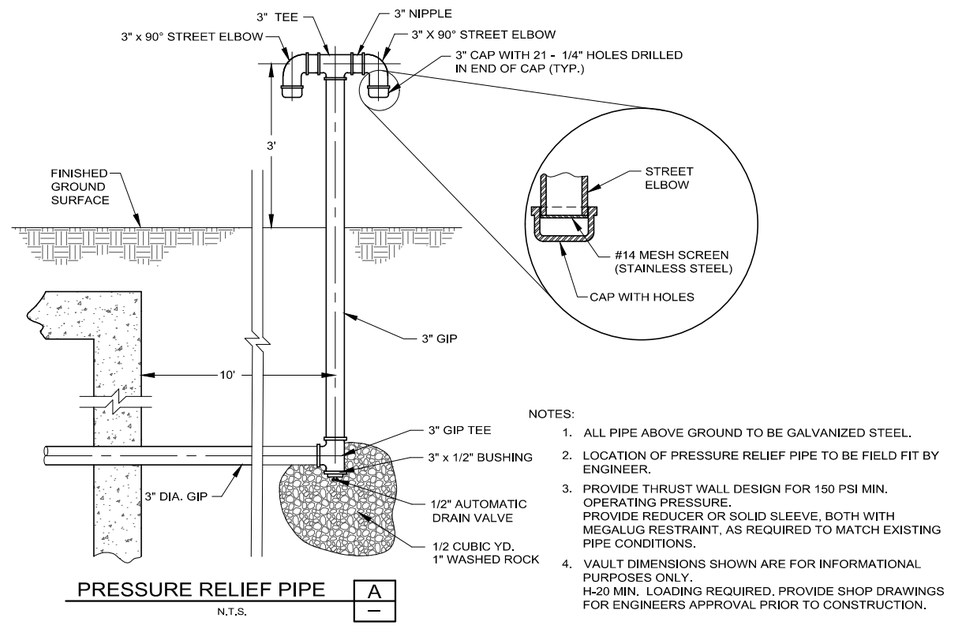
NO.	DESCRIPTION	SIZE	JOINT
1.	REDUCER WITH MEGALUG RESTRAINT ON INFLOW SIDE	10" X 8"	MJ
2.	DUCTILE IRON PIPE	8"	-
3.	FLANGE COUPLING ADAPTER	8"	FLG X PE
4.	WALL PIECE WITH THRUST RING	8" X 2'-0"	FLG
5.	TEE W/ 3/4" TAP	8" X 4"	FLG
6.	GATE VALVE (SEE TABLE NOTES)	8"	FLG
7.	SPOOL PIECE	8" X 1'-0"	FLG
8.	PRESSURE REDUCING VALVE (CLA-VAL 90-01)	8"	FLG
9.	NIPPLE	8"	FLG X PE
10.	CROSS WITH 3/4" TAP	8" X 4"	FLG
11.	GATE VALVE (MUELLER RESILIENT SEAT)	4"	FLG
12.	REDUCER	4" X 3"	FLG
13.	REDUCING FLANGE	9" X 2½"	FLG X THD
14.	GATE VALVE (SEE TABLE NOTES)	3"	FLG
15.	PRESSURE RELIEF VALVE (CLA-VAL 50-01)	3"	FLG
16.	COMPANION FLANGE	3"	FLG X THD
17.	GALVANIZED IRON PIPE	3"	THD
18.	PRESSURE REDUCING VALVE (CLA-VAL 90-01)	2½"	FLG
19.	COMPANION FLANGE	2½"	THD
20.	UNION (BRASS)	2½"	THD
21.	BRASS PIPE	2½"	THD
22.	90° ELBOW (BRASS)	2½"	THD
23.	PIPE SUPPORT (GRINNELL NO. 264 - 4 REQUIRED)	-	-
24.	FLOOR DRAIN	6" X 2"	-

TABLE NOTES:
UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53.
ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.
MUELLLER RESILIENT SEAT, CLOW RESILIENT WEDGE OR EAST JORDAN GATE VALVE.



SECTION 1

N.T.S.



PRESSURE RELIEF PIPE A

N.T.S.

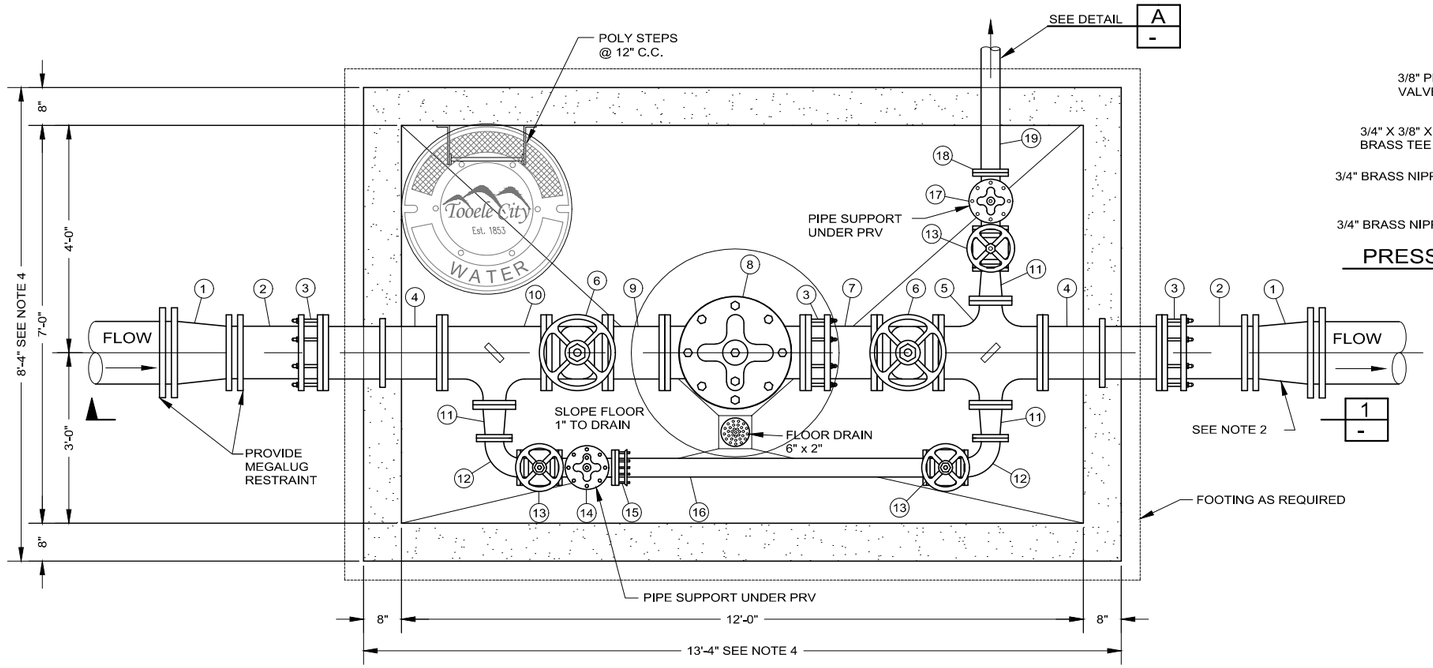
NOTES:
1. ALL PIPE ABOVE GROUND TO BE GALVANIZED STEEL.
2. LOCATION OF PRESSURE RELIEF PIPE TO BE FIELD FIT BY ENGINEER.
3. PROVIDE THRUST WALL DESIGN FOR 150 PSI MIN. OPERATING PRESSURE. PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.
4. VAULT DIMENSIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. H-20 MIN. LOADING REQUIRED, PROVIDE SHOP DRAWINGS FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION.

Tooele City
Est. 1853

8" PRESSURE REDUCING VALVE WITH 2 1/2" BYPASS

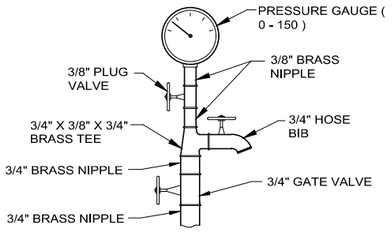
Plan No.
573C R

1/2023



10" PRV STATION PLAN

N.T.S.

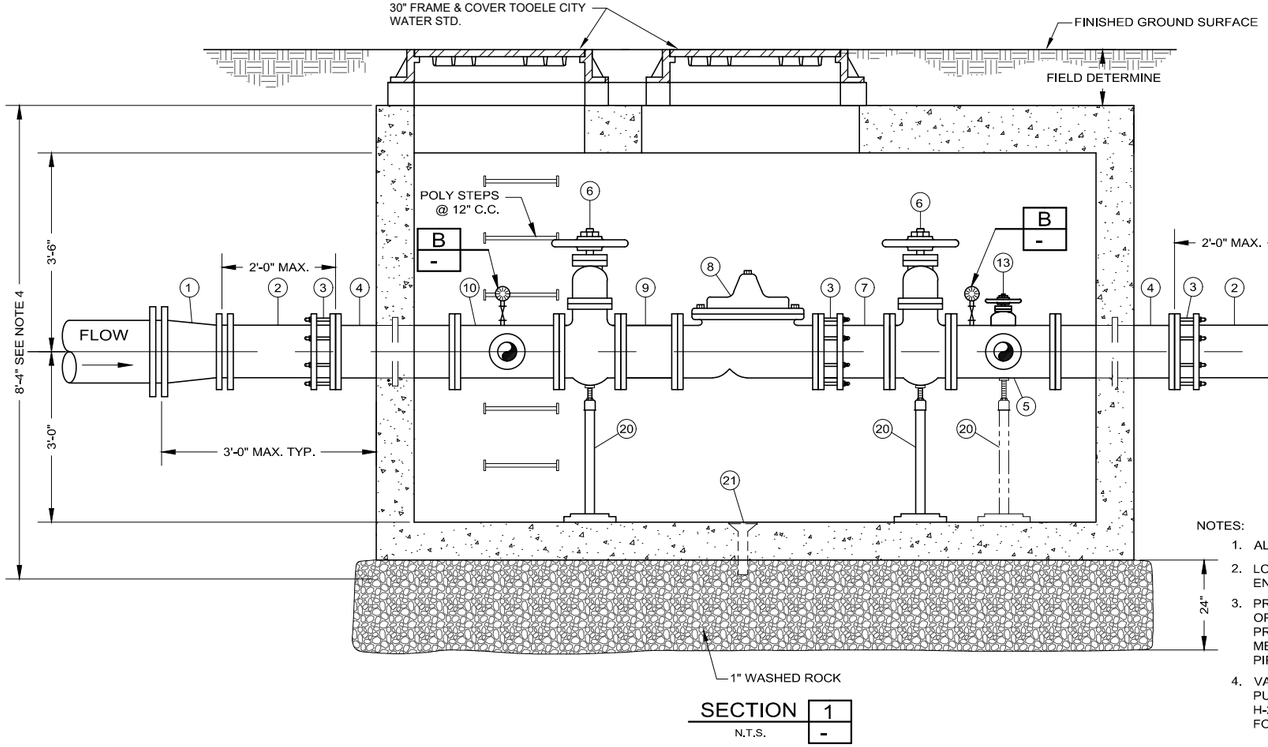


PRESSURE GAUGE DETAIL B

N.T.S.

PRESSURE REDUCING STATION VALVE AND FITTING SCHEDULE			
NO.	DESCRIPTION	SIZE	JOINT
1.	REDUCER WITH MEGALUG RESTRAINT ON INFLOW SIDE	12" X 10"	MJ
2.	DUCTILE IRON PIPE	10"	-
3.	FLANGE COUPLING ADAPTER	10"	FLG X PE
4.	WALL PIECE WITH THRUST RING	10" X 2'-0"	FLG
5.	CROSS W/ 3/4" TAP	10" X 4"	FLG
6.	GATE VALVE (SEE TABLE NOTES)	10"	FLG
7.	NIPPLE	10"	FLG
8.	PRESSURE REDUCING VALVE (CLA-VAL 90-01)	10"	FLG
9.	SPOOL PIECE	10" X 1'-0"	FLG X PE
10.	TEE WITH 3/4" TAP	10" X 4"	FLG
11.	REDUCER	4" X 3"	FLG
12.	90° ELBOW	3"	FLG
13.	GATE VALVE (SEE TABLE NOTES)	3"	FLG
14.	PRESSURE REDUCING VALVE (CLA-VAL 90-01)	3"	FLG
15.	FLANGE COUPLING ADAPTER	3"	FLG X PE
16.	NIPPLE	3"	FLG X PE
17.	PRESSURE RELIEF VALVE (CLA-VAL 50-01)	3"	FLG
18.	COMPANION FLANGE	3"	FLG X THD
19.	GALVANIZED IRON PIPE	3"	THD
20.	PIPE SUPPORT (GRINNELL NO. 264 - 4 REQUIRED)	-	-
21.	FLOOR DRAIN	6" X 2"	-

TABLE NOTES: UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53.
ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.
MUELLLER RESILIENT SEAT, CLOW RESILIENT WEDGE OR EAST JORDAN GATE VALVE.

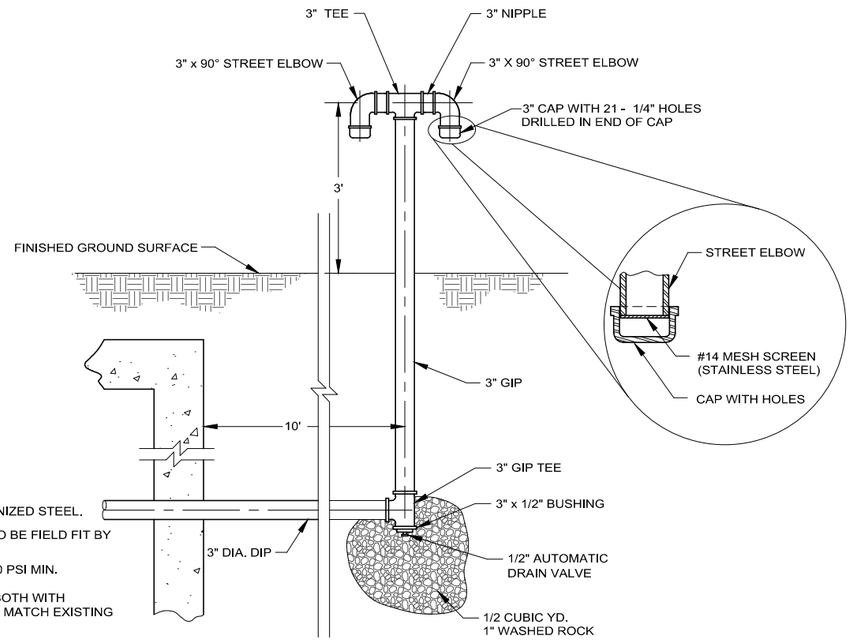


SECTION 1

N.T.S.

NOTES:

1. ALL PIPE ABOVE GROUND TO BE GALVANIZED STEEL.
2. LOCATION OF PRESSURE RELIEF PIPE TO BE FIELD FIT BY ENGINEER.
3. PROVIDE THRUST WALL DESIGN FOR 150 PSI MIN. OPERATING PRESSURE.
   PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.
4. VAULT DIMENSIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY.
   H-20 MIN. LOADING REQUIRED. PROVIDE SHOP DRAWINGS FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION.



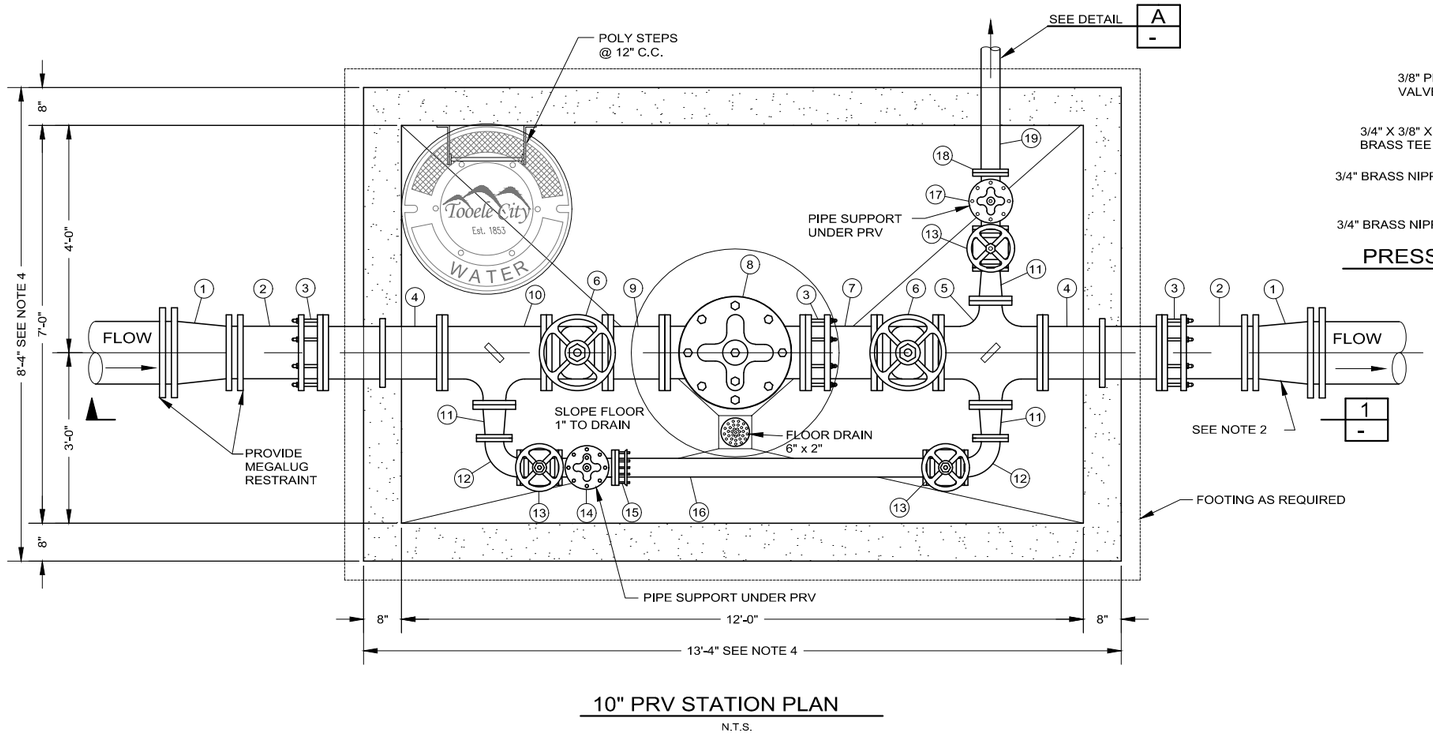
PRESSURE RELIEF PIPE A

N.T.S.

10" PRESSURE REDUCING VALVE WITH 3" BYPASS

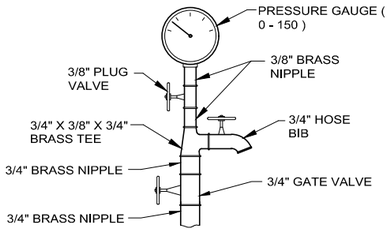
Plan No.
573D R

1/2023



10" PRV STATION PLAN

N.T.S.

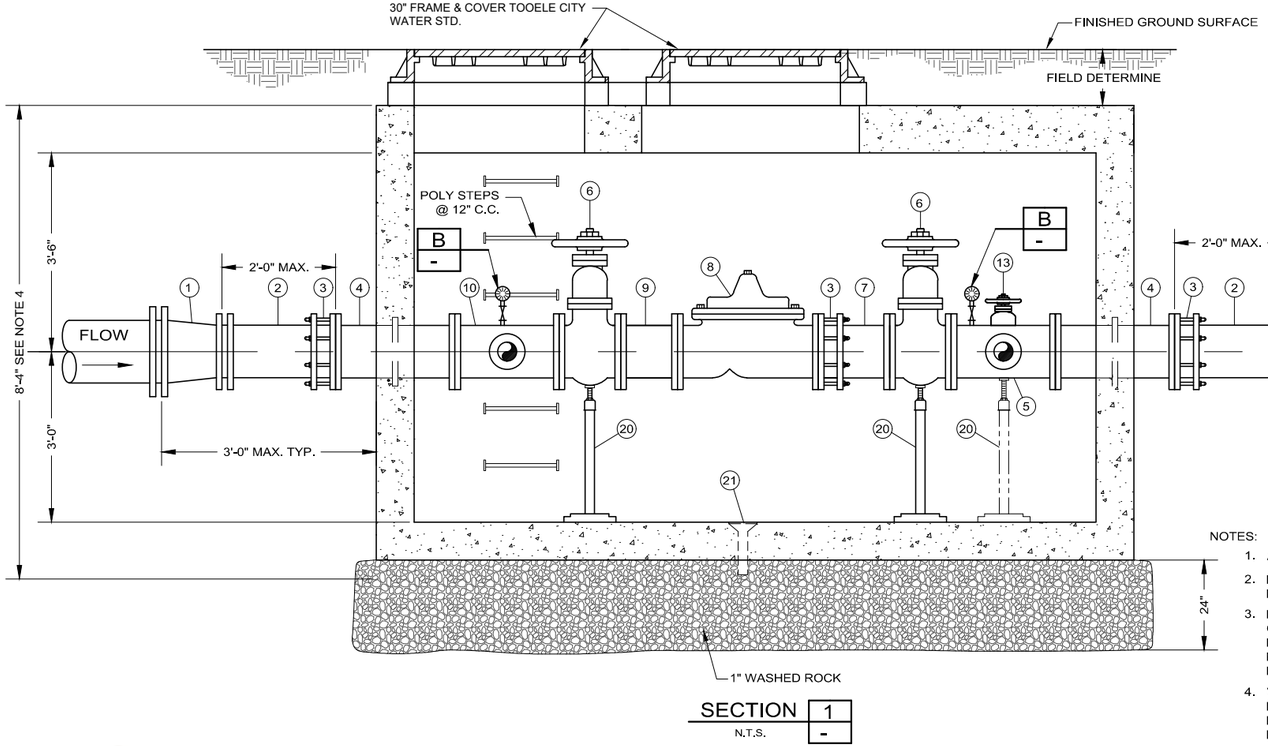


PRESSURE GAUGE DETAIL B -

N.T.S.

PRESSURE REDUCING STATION VALVE AND FITTING SCHEDULE			
NO.	DESCRIPTION	SIZE	JOINT
1.	REDUCER WITH MEGALUG RESTRAINT ON INFLOW SIDE	16" X 12"	MJ
2.	DUCTILE IRON PIPE	12"	-
3.	FLANGE COUPLING ADAPTER	12"	FLG X PE
4.	WALL PIECE WITH THRUST RING	12" X 2'-0"	FLG
5.	CROSS W/ 3/4" TAP	12" X 4"	FLG
6.	GATE VALVE (SEE TABLE NOTES)	12"	FLG
7.	NIPPLE	12"	FLG
8.	PRESSURE REDUCING VALVE (CLA-VAL 90-01)	12"	FLG
9.	SPOOL PIECE	12" X 1'-0"	FLG X PE
10.	TEE WITH 3/4" TAP	12" X 4"	FLG
11.	REDUCER	4" X 3"	FLG
12.	90° ELBOW	3"	FLG
13.	GATE VALVE (SEE TABLE NOTES)	3"	FLG
14.	PRESSURE REDUCING VALVE (CLA-VAL 90-01)	3"	FLG
15.	FLANGE COUPLING ADAPTER	3"	FLG X PE
16.	NIPPLE	3"	FLG X PE
17.	PRESSURE RELIEF VALVE (CLA-VAL 50-01)	3"	FLG
18.	COMPANION FLANGE	3"	FLG X THD
19.	GALVANIZED IRON PIPE	3"	THD
20.	PIPE SUPPORT (GRINNELL NO. 264 - 4 REQUIRED)	-	-
21.	FLOOR DRAIN	6" X 2"	-

TABLE NOTES: UNLESS OTHERWISE SPECIFIED, ALL PIPE AND FITTINGS ARE DIP CLASS 53.
ALL FLANGES ARE ANSI CLASS 125.
PROVIDE MEGALUG RESTRAINT ON ALL MJ FITTINGS.
PROVIDE BRONZE OR STAINLESS STEEL BOLTS FOR ALL CONNECTIONS WITHIN VAULT.
MUELLLER RESILIENT SEAT, CLOW RESILIENT WEDGE OR EAST JORDAN GATE VALVE.

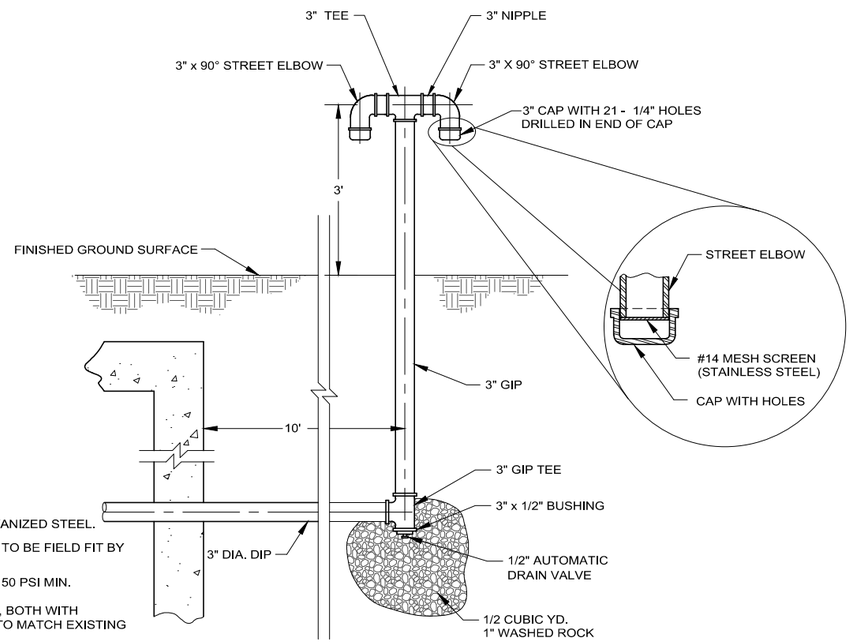


SECTION 1 -

N.T.S.

NOTES:

1. ALL PIPE ABOVE GROUND TO BE GALVANIZED STEEL.
2. LOCATION OF PRESSURE RELIEF PIPE TO BE FIELD FIT BY ENGINEER.
3. PROVIDE THRUST WALL DESIGN FOR 150 PSI MIN. OPERATING PRESSURE.
   PROVIDE REDUCER OR SOLID SLEEVE, BOTH WITH MEGALUG RESTRAINT, AS REQUIRED TO MATCH EXISTING PIPE CONDITIONS.
4. VAULT DIMENSIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY.
   H-20 MIN. LOADING REQUIRED. PROVIDE SHOP DRAWINGS FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION.



PRESSURE RELIEF PIPE A -

N.T.S.

12" PRESSURE REDUCING VALVE WITH 3" BYPASS

Plan No.
573E R

1/2023

Cover Collar for Water Valve Box

1. GENERAL

A. In a pavement surface, fill an annular space around a frame and cover casting with fiber reinforced concrete.

2. PRODUCTS

A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.

B. Fiber Reinforced Type II Portland Cement Concrete (PCC) shall have the following characteristics:

i. 4,000 psi min. compressive strength at 28 days.
ii. 6 sack minimum of cement per cubic yard.
iii. Maximum water - cement ratio of 0.45.
iv. Air entrainment at 6% +/- 1.5%
v. Slump 1-4 inches.
vi. Polypropylene or cellulose fibers shall be added to the PCC at 1.5 lbs. per cubic yard, or as per manufacturers recommendations for driving surfaces.

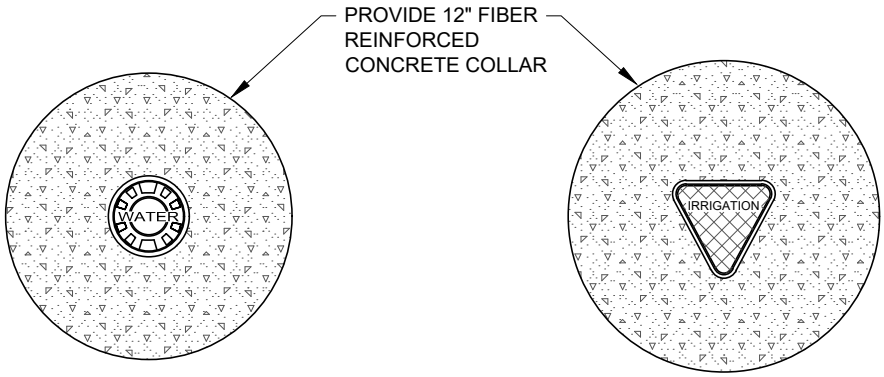
C. Concrete Curing Agent: Type ID Class A (clear with fugitive dye), membrane forming compound, APWA Section 03 39 00.

3. EXECUTION

A. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.

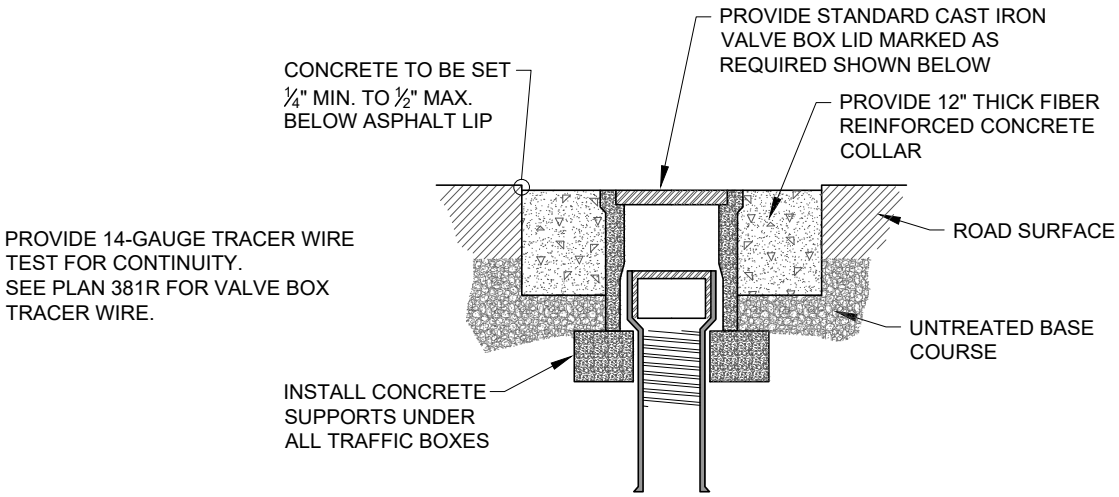
B. Pavement Preparation: Provide a neat vertical and concentric joint between concrete collar and existing bituminous concrete surface. Clean edges of all dirt, oil, and loose debris.

C. Provide steel plates to cover all collars until sufficient strength is reached for traffic loading.



CULINARY WATER PLAN

IRRIGATION WATER PLAN



STANDARD CAST IRON
LID MARKINGS

COVER COLLAR FOR WATER VALVE BOXES

Tooele City
Est. 1853

Plan No.
574 R

1/2023

Air Release Assembly

1. GENERAL

A. This drawing detail is applicable to water main piping less than 16-inches diameter.
B. PCCP, steel, MLAC and other water main pipe materials will require special detail or design drawings. Submit the design and detail drawings and materials to the ENGINEER for review before installation.
C. Installation in areas of high ground water or potential for water entering the vent pipe will require a special design to be provided by the ENGINEER.
D. Before backfilling around the assembly, secure inspection of installation by ENGINEER.

2. PRODUCTS

A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
B. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.
C. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
D. Concrete: Class 4000, APWA Section 03 30 04R.
E. Manhole: Riser, ASTM C478.
F. Reinforcement: Deformed, steel, ASTM A615. Give bars an epoxy coating at least 15 mils thick. Minimum stress yield strength of steel tie-down bars is 70,000 ksi.
G. Small Fittings: Brass. Do not use galvanized materials.
H. PVC Pipe and Fittings: Schedule 40, APWA Section 33 05 07R.
I. Water Tight Wall Seal: Waterproof, compressible.

3. EXECUTION

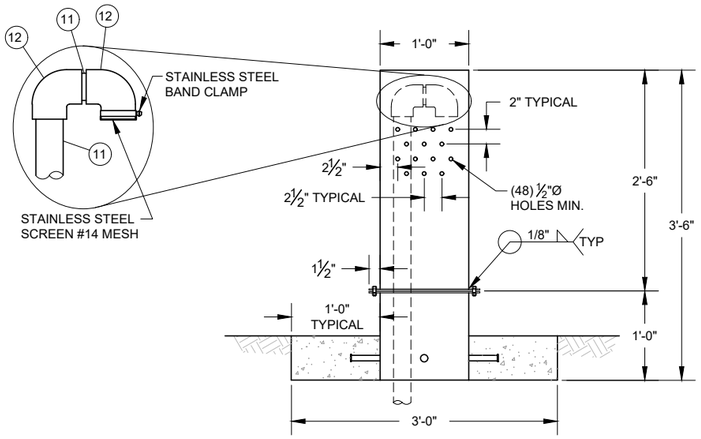
A. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.
B. Apply tape wrap to the exterior of all buried steel or galvanized pipe per AWWA C209.
C. Concrete Placement: APWA Section 03 30 10. Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
D. Service saddle is required on all PVC and AC pipe taps unless specified otherwise. Ductile iron and cast iron pipe may be direct tapped.
E. Seal manhole joints water-tight and ground flush with interior wall.
F. Follow applicable AWWA and NSF standards when connecting piping.
G. If diameter of air relief valve is greater than 2-inches, provide piping to match its diameter from water main connection to open to air.

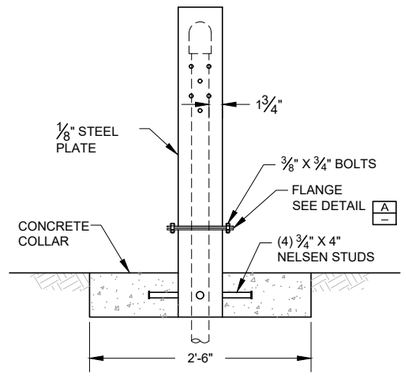
AIR RELIEF MH VALVE & FITTING SCHEDULE

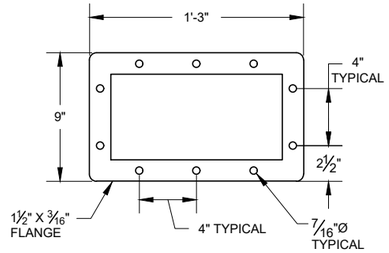
NO.	DESCRIPTION	SIZE	JOINT
1	KOR-N-SEAL MANHOLE BOOT	8"	-
2	PIPE	8"	-
3	LONG SLEEVE	8"	MJ
4	BRASS NIPPLE WITH TAP & ANVELET	1"	THD
5	BRASS BALL VALVE	1"	THD
6	AIR RELEASE VALVE (APCO 145??)	1"	THD
7	BRASS PIPE	1"	THD
8	BRASS 90° BEND	1"	THD
9	BRASS UNION	1"	THD
10	BRASS COUPLING	1"	THD
11	PVC PIPE SCH 40	1"	THD
12	PVC 90° BEND SCH 40	1"	THD
13	BRASS REDUCING TEE	1" X ½"	THD
14	BRASS PIPE	½"	THD
15	BRASS BALL VALVE	½"	THD
16	FLOOR DRAIN	4" X 2"	-
17	PIPE SUPPORT (GRINNELL 254 OR APROVE EQUAL)	SIZED FOR PIPE	

NOTE:

1. HOT DIP GALVANIZE AIR RELIEF VENT STAND PIPE COVER AFTER FABRICATION.
2. AIR RELIEF VENT STAND PIPE SHALL BE LOCATED IN FIELD AS DIRECTED BY ENGINEER.
3. PROVIDE THRUST RESTRAINT FOR ALL FITTINGS.

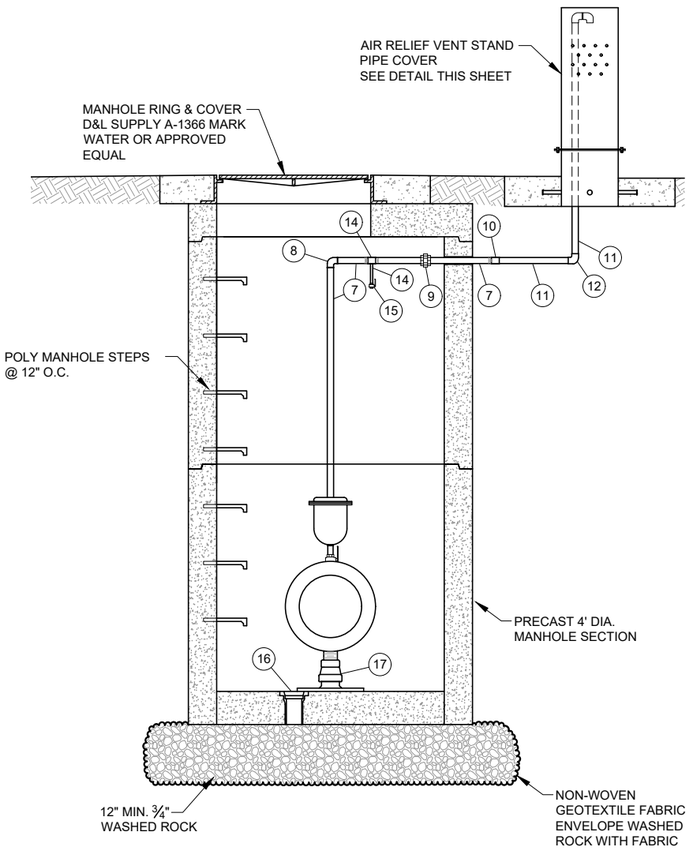




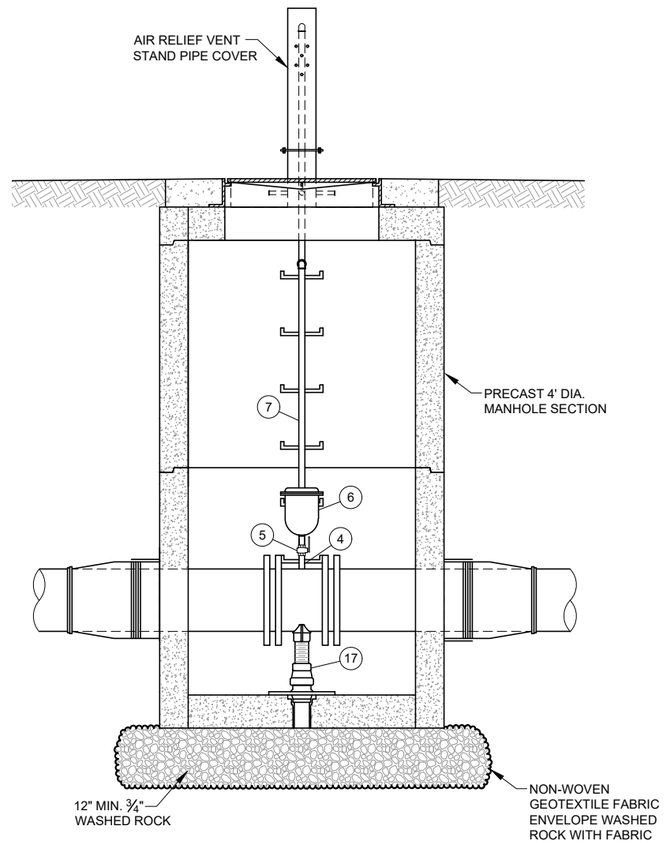


FLANGE DETAIL A
N.T.S.

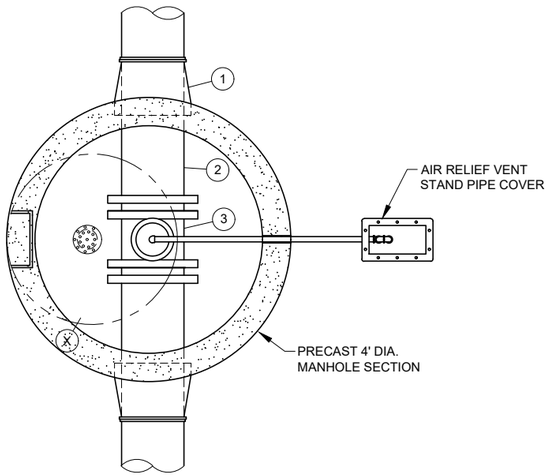
AIR RELIEF VENT STAND PIPE
COVER DETAIL
N.T.S.



SECTION 1
N.T.S.



SECTION 2
N.T.S.



AIR RELIEF / VACUUM VALVE
DETAIL
N.T.S.

Tooele City
Est. 1853

AIR RELEASE ASSEMBLY

Plan No.
575 R

1/2023

Hot Tap Detail

1. GENERAL

A. Additional water system requirements are specified in APWA Section 33 11 00R - Water Distribution and Transmission, 33 12 16R - Water Valves, and 33 12 19R - Hydrants.
B. Before backfilling, secure inspection of installation by Public Works.

2. PRODUCTS

A. Hot Tap: Full body stainless steel tapping sleeve with stainless steel nuts & bolts.
B. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
C. Piping: Match existing pipe, fittings, coupling sizes and materials.
D. Thrust Blocks: Concrete Class 4000, APWA Section 03 30 04R.
E. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
F. Grease: Non-oxide poly-FM.

3. EXECUTION

A. Hot Tap:
   1) Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
B. Valves: See Section 33 12 16R.
C. Valve Boxes. Salvage any C.I.S.T. valve boxes and reuse. Adjust to grade as necessary on relocated hydrant.
D. Thrust Blocks: Required. Before pouring concrete, wrap pipe system plastic sheet to prevent bonding of concrete to pipe system.
E. Base Course and Backfill Placement: When no density compactive effort is specified, compact trench backfill to 95% or greater relative to a standard proctor density, and base course compaction to 95% or greater relative to a modified proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.
F. Surface Restoration:
   1) Landscaped Surface: Rake to match existing grade. Replace vegetation to match pre-construction conditions. Follow APWA Section 32 92 00 (turf or grass) or APWA Section 32 93 13 (ground cover) requirements.
   2) Paved Surface: Do not install bituminous concrete or Portland cement concrete surfacing until trench compaction is acceptable to ENGINEER. Follow APWA Section 33 05 25 (bituminous concrete surfacing), or APWA Section 33 05 25 (concrete surfacing).

Pressurized Irrigation Water and Potable Water Interface

1. GENERAL

A. The catch basin valve and pump size must match the minimum discharge rate from the potable water system when indoor demands are also being expected from the system.

2. PRODUCTS

A. All parts of the potable water system from the stop and waste valve to the air gap drop leg above the catch basin are to be copper or galvanized iron only.

B. Below ground parts on the non-potable water system may be made of PVC or polyethylene at the agency's discretion.

3. EXECUTION

A. Air gap. An air gap of at least two pipe diameters must exist between the maximum overflow lip of the catch basin and the end of the down-turned discharge pipe.

B. Stop and Waste Valve: Locate the valve in an area where subsurface ground water will not accumulate or attach a drain pipe to the drain hole and drain to daylight with a non-corrodible #14 mesh screen over the end.

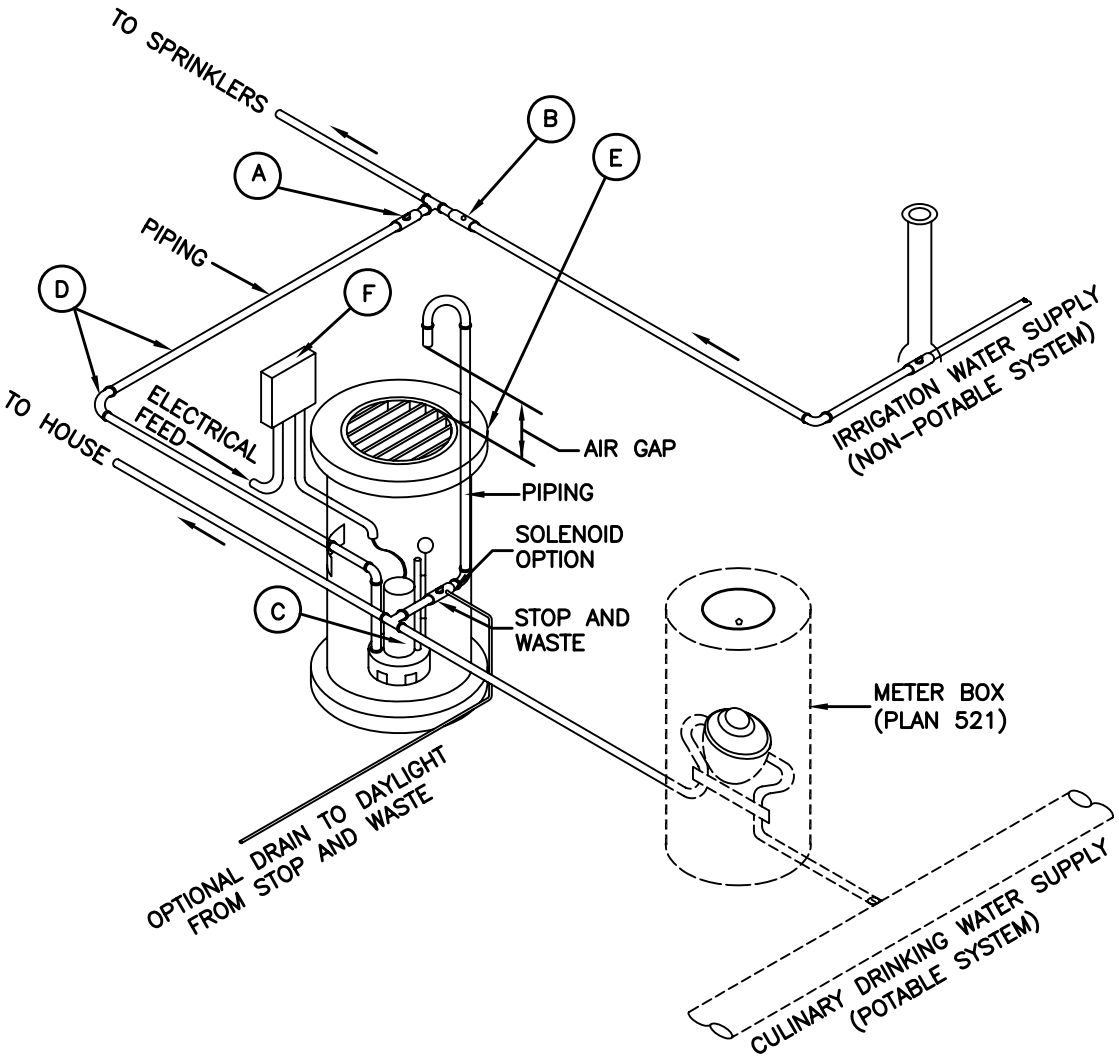
C. Catch Basin: The ground surrounding the catch basin must slope away from the catch basin (basin cannot be located where flooding could result in a water level higher than the maximum overflow lip of the catch basin).

D. Stand Pipes: Provide draining and freeze protection.

E. Solenoid Valve: A solenoid operated valve may be installed at this point provided the valve and housing are not constructed of plastic (must be brass or ferrous metal).

F. Galvanized Pipe: Apply tape wrap to the exterior of all galvanized pipe per AWWA C209.

TYPE A - PUMP INTERCONNECT



SHOWN FOR CONCEPTUAL USE ONLY. REQUIRES SPECIAL DESIGN AND CITY APPROVAL PRIOR TO UTILIZATION.

LEGEND		
No.	ITEM	DESCRIPTION
A	CONTROL VALVE	NOTE 1A
B	CHECK VALVE	SIZE TO MATCH EXISTING PIPE
C	SUBMSERSIBLE PUMP WITH FLOAT OPERATED CUT-OUT SWITCH	NOTE 1A
D	ELBOWS, TEES & PIPE AS REQ'D	SCREWED OR FLANGED (OR BRAZED ABOVE GROUND ONLY)
E	CATCH BASIN	NOTE 1A
F	ELECTRICAL BOX AND CONDUIT	PER ELECTRICAL CODE

Tooele City Est. 1853

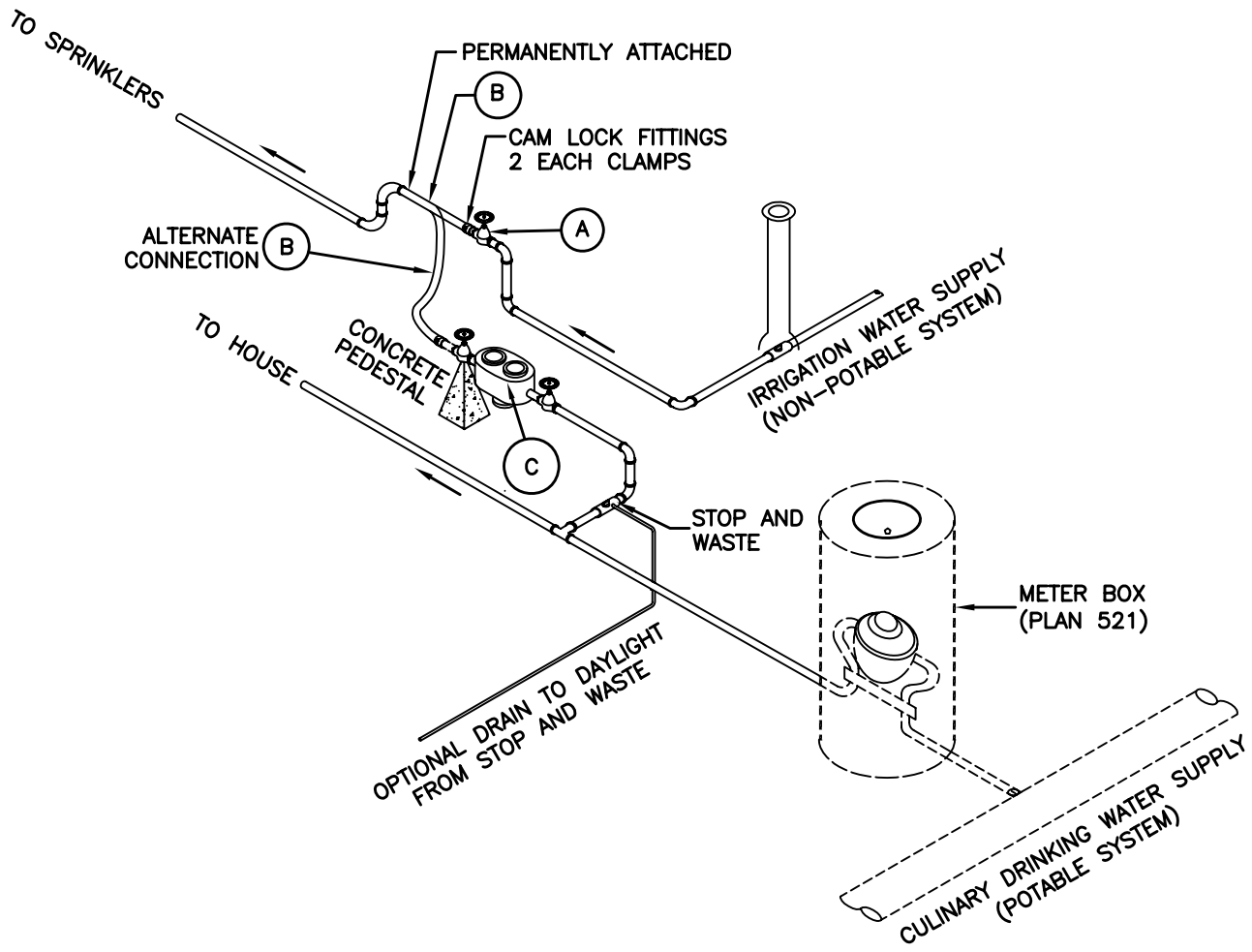
PRESSURIZED IRRIGATION WATER AND POTABLE WATER INTERFACE

Plan No. 593 R

Drawing 1 of 2

1/2023

TYPE B- BACKFLOW PREVENTER INTERCONNECT



LEGEND		
No.	ITEM	DESCRIPTION
(A)	VALVE	BALL, RESILENT SEAT, GATE OR ACCEPTABLE ALTERNATE
(B)	FLEXIBLE DISCHARGE HOSE	100 PSI WORKING PRESSURE 400 PSI BUST PRESSURE
(C)	REDUCED PRESSURE BACK-FLOW PREVENTER (RPBP DEVICE	SHUTOFF VALVES & TEST COCKS ARE INCLUDED
(D)	ELBOWS AND TEES	SCREWED, FLANGED, (OR BRAZED ABOVE GROUND ONLY)

Tooele City
Est. 1853

PRESSURIZED IRRIGATION WATER AND POTABLE WATER INTERFACE

Plan No. 593 R
Drawing 2 of 2

1/2023

Reduced Pressure Principal Assembly Station

1. GENERAL

A. Test the Reduced Pressure Principal Assembly Station within 10 days of installation by a licensed backflow device tester and report results to ENGINEER.

B. Tester is to assure CONTRACTOR and ENGINEER that the backflow preventer system meets the Utah Safe Drinking Water Act.

2. PRODUCTS

A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.

B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.

C. Concrete: Class 4000, APWA Section 03 30 04R.

D. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.

E. Paint: Epoxy based. Color to be selected by ENGINEER.

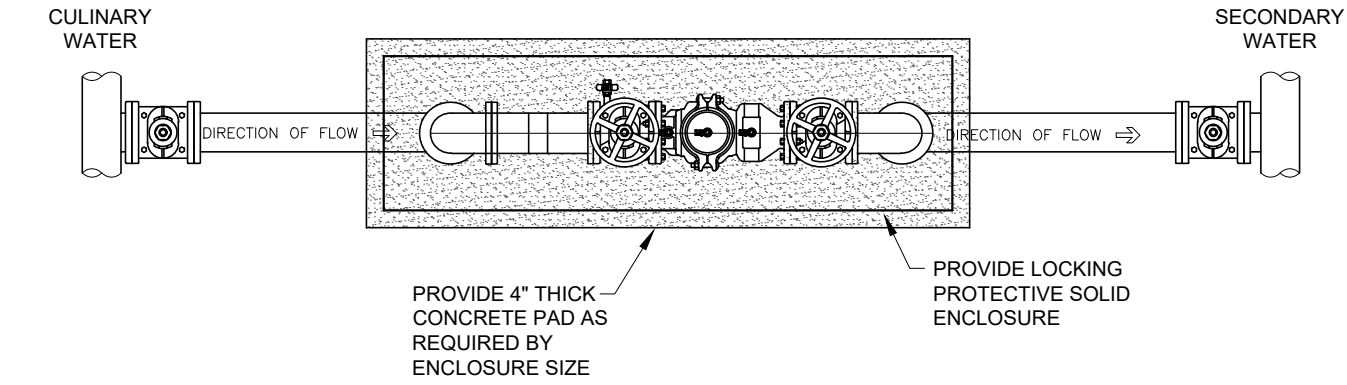
3. EXECUTION

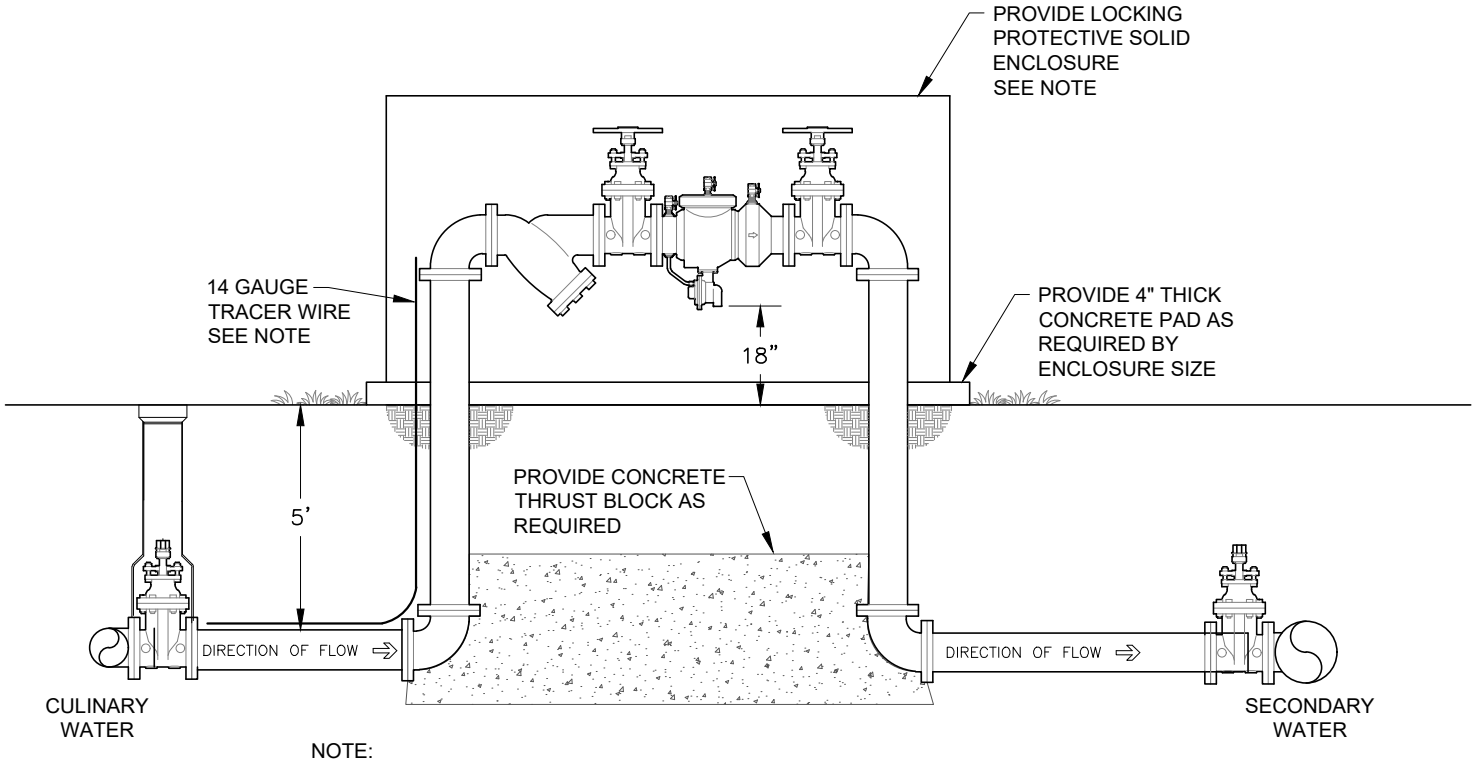
A. Install per plumbing code. It must not be susceptible to flooding and must be accessible at all times for testing, repair, inspection, etc.

B. Install backfill around concrete box. When no density compactive effort is specified, compact backfill to 95% or greater relative to a standard proctor density. Maximum lift thickness before compaction is 8-inches. See APWA Section 31 23 26R.

C. Except machined surfaces, coat all items in atmosphere with epoxy paint.

D. Concrete placement, APWA Section 03 30 10R. Provide 1/2-inch radius on edges. Apply a broom finish. Apply a curing agent.





NOTE:
PROVIDE 14-GAUGE TRACER WIRE AND BRING INTO PROTECTIVE SOLID CLOSURE.
TEST FOR CONTINUITY.
SEE PLAN 381R FOR TRACER WIRE.

WILKINS MODEL 375, FEBCO LF860
(OR APPROVED EQUAL)
REDUCED PRESSURE PRINCIPLE
ASSEMBLY

Tooele City
Est. 1853

REDUCED PRESSURE PRINCIPAL ASSEMBLY STATION

Plan No.
631 R

1/2023

TOOELE CITY CORPORATION

RESOLUTION 2023-10

A RESOLUTION OF THE TOOELE CITY COUNCIL AMENDING THE TOOELE CITY FEE SCHEDULE REGARDING ANIMAL SHELTER FEES.

WHEREAS, Tooele City Code §1-26-1 authorizes the City Council to establish City fees by resolution for activities regulated by the City and services provided by the City; and,

WHEREAS, Utah Code §10-3-718 authorizes the City Council to exercise administrative powers, such as establishing city fees and regulating the use of city property, by resolution; and,

WHEREAS, under the Council-Mayor form of municipal government, established and governed by the Tooele City Charter (2006) and Utah Code §10-3b-201 et seq., the Mayor exercises all executive and administrative powers; however, it has been the practice of Tooele City for all fees proposed by the Mayor and City Administration to be approved by the City Council; and,

WHEREAS, Tooele City owns and operates the Tooele City Animal Shelter, for which the City charges user fees, and the City Administration recommends that those fees be amended, as shown in the attached Exhibit A, to better cover City operation and maintenance costs without exceeding the market:

NOW, THEREFORE, BE IT RESOLVED BY THE TOOELE CITY COUNCIL that the Tooele City Fee Schedule is hereby amended as shown in Exhibit A to include revised Animal Shelter fees.

This Resolution shall become effective upon passage, without further publication, by authority of the Tooele City Charter.

IN WITNESS WHEREOF, this Resolution is passed by the Tooele City Council this ____ day of _____, 2023.

TOOELE CITY COUNCIL

(For) (Against)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

ABSTAINING: _____

MAYOR OF TOOELE CITY

(Approved) (Disapproved)

_____ _____

ATTEST:

_____
Michelle Y. Pitt, City Recorder

S E A L

Approved as to Form: _____
Roger Evans Baker, City Attorney

Exhibit A

Proposed Animal Shelter Fees
(With Market Comparison)

			Current Fees	Proposed Fee Changes
	Herriman City AS	Salt Lake Co AS	Current TCAS Fees	Proposed TCAS Fees
Impoundment/Boarding				
1st Impound	$40	$50	$30	$40
2nd Impound	$80	$100	$40	$80
3rd Impound	$160	$200	$60	$160
Subsequent Impounds	$320	$400	$60	$320
Boarding	$20 per day	$20 per day	$6 per day	$10 per day
Vaccines & Microchipping				
Rabies Vaccination (in-house)	$25	$30	do not have the means to offer	do not have the means to offer
Rabies voucher/deposit	$25	$30	$20	$30
Rabies test fee	$200	$250	$200	$250
Quarantine fee (dogs brought in for a bite breaking skin, no current rabies vaccination)	$200	$250	$50	$100
DHHP (may be required upon impound)	$25	not offered	$5	$15
Bordatella (may be required upon impound)	$15	not offered	$5	$10
Microchip (may be required upon impound)	$30	$40	$10	$25
Pet Licensing				
1 year license (unsterilized)	$40	$50	Dog $20, Cat $10	Dog AND Cat - $35
1 year license (sterilized)	$15	$25	Dog $10, Cat $5	Dog $10, Cat $5
1-year Potentially Dangerous/Dangerous dog license UNSTERILIZED	not listed	not listed	$70	$85
1-year Potentially Dangerous/Dangerous dog license STERILIZED	not listed	not listed	$60	$60
2 year license (unsterilized)	$75	not offered	not offered	N/A
2 year license (sterilized)	$25	not offered	not offered	N/A
3 year license (unsterilized)	$110	not offered	not offered	N/A
3 year license (sterilized)	$35	not offered	not offered	N/A
1-year license senior citizen (60+, sterilized)	$5	$10	not offered	$5
Replace Licensing tag	$5	$15	$5	$5
Transfer license fee	$5	$15	not offered	not offered
Late license penalty	$50 (30 days past due)	$50 (30 days past due)	Regular fee doubles after February 28th	Regular fee doubles after February 28th
Permits (issued for 1 year period)				
Commerical operations (up to 30 animals)	$200	$250	not offered	Animal CNTRL/PD
Commerical operations (over 30 animals)	$300	$400	not offered	Animal CNTRL/PD
Residential Permit	$50	$75	not offered	Animal CNTRL/PD
Single event animal exhibition	$100	$100	not offered	Animal CNTRL/PD
Multiple event animal exhibition	$400	$400	not offered	Animal CNTRL/PD
Late application renewal fee (in addition to regular fee)	$50	$50	not offered	Animal CNTRL/PD
Sterilization				
Sterilization deposit (mandatory, 2nd impound *UCA 11-46-206)	$150	$200	$100	$150
In-house sterilization	$100	$150	do not have the means to offer	do not have the means to offer
ANIMAL CONTROL FEES				
Notice of Violation (NOV)				
1st NOV (fee per violation)	$50	$75	not offered	Animal CNTRL/PD
2nd NOV (fee per violation)	$100	$150	not offered	Animal CNTRL/PD

3rd NOV (fee per violation)	$200	$300	not offered	Animal CNTRL/PD
Subsequent NOV (fee per violation)	$250	$400	not offered	Animal CNTRL/PD
Livestock				
Dead livestock removal	$300	$400	do not have the means to offer	do not have the means to offer
Dead livestock disposal	$200	$250	do not have the means to offer	do not have the means to offer
Brand inspection fee	$30	$50	do not have the means to offer	do not have the means to offer
Livestock transportation (per incident, per animal)	$50	$100	do not have the means to offer	do not have the means to offer
Livestock Board PER DAY	$20 per day	$20 per day	$25 per day	$25 per day
Euthanasia and Disposal - Companion Animals				
Euthanasia & Disposal of small animals (hamsters, mice, etc.	$5	$10	not offered	not offered
Euthanasia (dog and cat)	$50	$75	not offered	not offered
Disposal (dog or cat)	$50	$75	$5	Cat - $50, Dog- $100
Euthanasia (large animal)	$150	not offered	do not have the means to offer	do not have the means to offer
Disposal (large animal)	$200	not offered	do not have the means to offer	do not have the means to offer
Other Fees				
Surrender fee	$100	$150	$10	Dog $100, Cat $20
Surrender fee (dog - bite history/vicious)	$250	$300	$0-$10	$150
Field service surrender fee (in addition to regular surrender fee)	$50	$100	FREE	In addition to regular surrender fee $20
Field Service Fees	$50	$100	do not have the means to offer	do not have the means to offer

NOTE: Adoption fees are separate from this fee schedule.

Compiled by L.Lewis on 1/17/2023

TOOELE CITY CORPORATION

RESOLUTION 2023-11

A RESOLUTION OF THE TOOELE CITY COUNCIL REAPPOINTING AMANDA GRAF TO THE ADMINISTRATIVE CONTROL BOARD OF THE NORTH TOOELE CITY SPECIAL SERVICE DISTRICT.

WHEREAS, the Tooele City Council created the North Tooele City Special Service District ("District") on June 16, 1999, pursuant to Sections 17A-2-1301 through 17A-2-1332, Utah Code (since renumbered to U.C.A. Title 17D, Chapter 1); and,

WHEREAS, the aforementioned Utah Code sections allow for the establishment of an administrative control board ("Board") for the District, the powers of that Board being specified by the Utah Code and by the governing authority of the District, which is the Tooele City Council; and,

WHEREAS, the term of board members is generally four years (U.C.A. Section 17D-1-304); and,

WHEREAS, Amanda Graf's term expired December 31, 2022, and the Board and the City Council desire her reappointment:

NOW, THEREFORE, BE IT RESOLVED BY THE TOOELE CITY COUNCIL that Amanda Graf is hereby reappointed to serve as a member of the Administrative Control Board of the North Tooele City Special Service District, effective January 01, 2023, for a term ending December 31, 2026, as further indicated below:

Name	**Term of Service**	**Original Appointment**
Jed Winder	01-01-22 to 12-31-25	since 03-19-08
Jeff Hammer	01-01-21 to 12-31-24	since 01-18-17
Katrina Call	01-01-21 to 12-31-24	since 06-30-17
Amanda Graf	01-01-23 to 12-31-26	since 03-20-19
Brian Roth	11-04-20 to 12-31-24	since 11-04-20

This Resolution shall become effective immediately upon passage without further publication, by authority of the Tooele City Charter.

IN WITNESS WHEREOF, this Resolution is passed by the Tooele City Council this _____day of _____, 2023.

TOOELE CITY COUNCIL

(For) (Against)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

ABSTAINING: _____

MAYOR OF TOOELE CITY

(Approved) (Disapproved)

_____ _____

ATTEST:

_____

Michelle Y. Pitt, City Recorder

S E A L

Approved as to Form: _____

Roger Evans Baker, City Attorney

Tooele City Council and the Tooele City Redevelopment Agency
Work Meeting Minutes

Date: Wednesday, January 18th, 2023
Time: 6:30 p.m.
Place: Tooele City Hall, Council Chambers
90 North Main Street, Tooele, Utah

City Council Members Present:
Justin Brady
Maresa Manzione
David McCall
Tony Graf
Ed Hansen

City Employees Present:
Mayor Debbie Winn
Adrian Day, Police Department Chief
Roger Baker, City Attorney
Shannon Wimmer, Finance Director
Darwin Cook, Parks and Recreation Director
Jim Bolser, Community Development Director
Jared Stewart, Economic Development Director
Jamie Grandpre, Public Works Director
Michelle Pitt, City Recorder
Holly Potter, Deputy City Recorder

Minutes prepared by Katherin Yei

1. Open City Council Meeting
Chairman Brady called the meeting to order at 6:30 p.m.

2. Roll Call
Justin Brady, Present
Maresa Manzione, Present
David McCall, Present
Tony Graf, Present
Ed Hansen, Present

3. Mayor's Report
Mayor Winn reported on the following:
Tooele High School is hosting a community outreach open house for the local youth on Thursday. The water conservation program will have a presentation by the Tooele County Extension on February 18th.

4. Council Member's Report
The Council Members reported on the events they attended during the week.

5. Discussion Items

A. Crestview Rezone
Presented by Jim Bolser, Community Development Director

Mr. Bolser presented a rezone for the property located near Home Depot. A Land Use Amendment had been approved to high-density residential. The section of the property zoned RR-5 is proposed to be changed to R1-10 and MR-16. A concept plan has been submitted showing single-family lots and townhomes. The application is at the initial stages due to the developability of the property in regards to water rights. Staff would like feedback from the Council as to where to go with the application.

The Council asked the following questions:
Does the applicant have a preference?
If the rezone is approved, does the application stay as is?
When can the applicant ask for a refund?

Mr. Bolser addressed the Council's questions. From the email correspondence, the applicant would like to continue moving forward. If the rezone was approved, the property would remain rezoned until the applicant decided to do something. The applicant can request a refund at any point.

The Council is in favor of allowing the application to sit until the applicant is ready.

Mr. Baker addressed the Council. Currently, this item is a legislative decision, and a great deal of legislative discretion is still allowed. If they decide to approve the rezone, thereafter the administrative process begins, and they lose their discretion to impose conditions on approval. The only inquiry will be whether a land use application complies with City ordinances; if it does, it must be approved. If at that stage the City Council wants a park, the City will have to compensate the developer for the value of the land and improvements.

Mayor Winn gave an update on the GTM Well. Tooele City paid over $150,000 to have a pump put in the bottom of the well to find out that status of the water and if the well would be a good source. There was water in the well, but after two tests, the results came back that the water was not potable and could not be used in our system the way that it was. Contaminate levels were high enough that the water cannot even be used for secondary water because it would kill plants. Tooele City invested the money just to find out if it would be a source.
Tooele again met with Mr. Holste after the City was contacted by a gentleman who has a way to treat water. He believed he could treat the water to make it potable for use by the City. At that time, the City needed water for him to test. The pump had already been pulled out of the well. The pump needs to be put back in the well at a deep enough level to draw out water at a rate of 1,000 gallons or 800 gallons per minute.

The tester can't test, determine if it can be treated, give a cost to treat, or inform the City of the potential until there is water to test. At the last meeting, Mr. Holste committed to hire the drilling company to come back in at his cost and put a pump in to his well to get water to test. The City is currently waiting for Mr. Holste to do what was committed. If this well produces potable water, the City could take further action. The City cannot make commitments until they find out if the well can produce enough water and be treated in a costly manner.

6. Closed Meeting - Litigation, Property Acquisition, and/or Personnel
There is no closed meeting.

7. Adjourn
Chairman Brady adjourned the meeting at 6:52 p.m.

The content of the minutes is not intended, nor are they submitted, as a verbatim transcription of the meeting. These minutes are a brief overview of what occurred at the meeting.

Approved this ____ day of February, 2023

_____
Justin Brady, City Council Chair

Tooele City Council Business Meeting Minutes

Date: Wednesday, January 18, 2023
Time: 7:00 p.m.
Place: Tooele City Hall, Council Chambers
90 North Main Street, Tooele, Utah

City Council Members Present:
Ed Hansen
Justin Brady
Maresa Manzione
Tony Graf
Dave McCall

City Employees Present:
Mayor Debbie Winn
Jim Bolser, Community Development Director
Adrian Day, Police Department Chief
Roger Baker, City Attorney
Shannon Wimmer, Finance Director
Michelle Pitt, City Recorder
Holly Potter, Deputy City Recorder
Jamie Grandpre, Public Works Director
Darwin Cook, Parks and Recreation Director
Jared Stewart, Economic Development Director

Minutes prepared by Katherin Yei

Chairman Brady called the meeting to order at 7:00 p.m.

1. Pledge of Allegiance
The Pledge of Allegiance was led by Jamie Grandpre.

2. Roll Call
Tony Graf, Present
Ed Hansen, Present
Justin Brady, Present
Maresa Manzione, Present
Dave McCall, Present

3. Public Comment Period

Garrick Hunisman shared his appreciation of the City Council, staff, and Planning Commission.

4. Public Hearing & Motion on Ordinance 2023-02 An Ordinance of the Tooele City Council Vacating a Dedicated Public Utility Easement on Lot 521 of the Settlement Pointe Subdivision, Phase 5

Presented by Jim Bolser, Community Development Director

Mr. Bolser presented an ordinance to vacate a dedicated public utility easement. The applicant has received a sign off from all required utilities stating they have no current or future needs of the easement. The site is a residential site, north of 900 South on lot 521 of the Settlement Pointe Subdivision. They are wanting to put in an accessory structure.

The public hearing was open. No one came forward. The public hearing was closed.

Mr. Baker addressed the Council. While this is a legislative matter, the state statute does require the Council to make a finding that the easement vacation won't harm or cause damage to the public or any private person.

Council Member Manzione motioned to approve Ordinance 2023-02 An Ordinance of the Tooele City Council Vacating a Dedicated Public Utility Easement on Lot 521 of the Settlement Pointe Subdivision. Council Member McCall seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

5. Public Hearing & Motion on Ordinance 2023-06 An Ordinance of Tooele City Reassigning the Zoning for Approximately 0.85 Acres of Property Located at the North West Corner of the Intersection of 2200 North and Berra Boulevard From RR-5 Residential to R1-8 Residential

Presented by Jim Bolser, Community Development Director

Mr. Bolser presented a Zoning Map Amendment for the northwest corner of 2200 North and Berra Boulevard. The zoning is currently RR-5. The request is to rezone to R1-8. The applicant would like to build a seminary building near the new high school. In the RR-5 zone, there are large setbacks that would be excess for the intended use; whereas the R1-8 zone setbacks would be more reasonable. The Planning Commission has forwarded a unanimous positive recommendation.

The public hearing was open. No one came forward. The public hearing was closed.

Council Member Graf motioned to approve Ordinance 2023-06 An Ordinance of Tooele City Reassigning the Zoning for Approximately 0.85 Acres of Property Located at the North West Corner of the Intersection of 2200 North and Berra Boulevard From RR-5 Residential to R1-8 Residential. Council Member Hansen seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

6. Resolution 2023-06 A Resolution of the Tooele City Council Acknowledging the Mayor's Appointments of Melodi Gochis and Doug Newell to the Planning Commission
Presented by Debbie Winn, Mayor

Mayor Winn presented the appointment of Melodi Gochis and Doug Newell as members to the Planning Commission.

Council Member Manzione motioned to approve Resolution 2023-06 A Resolution of the Tooele City Council Acknowledging the Mayor's Appointments of Melodi Gochis and Doug Newell to the Planning Commission. Council Member McCall seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

7. Resolution 2023-04 A Resolution of the Tooele City Council Authorizing Payment of a Fee-in-Lieu of Water Rights Conveyance for NAPA Auto Parts Development
Presented by Jared Stewart, Economic Development Director

Mr. Stewart presented a fee-in-lieu of water rights conveyance for NAPA Auto Parts. They are requesting 1.6 acre-feet. They have a projected $2.5 million capital investment, 5 new jobs, and will produce taxable sales.

Council Member McCall motioned to approve Resolution 2023-04 A Resolution of the Tooele City Council Authorizing Payment of a Fee-in-Lieu of Water Rights Conveyance for NAPA Auto Parts Development. Council Member Hansen seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

8. Resolution 2023-05 A Resolution of the Tooele City Council Authorizing the Execution of Lease Documents for Leasing a Parks and Recreation Backhoe
Presented by Darwin Cook, Parks & Recreation Director

Mr. Cook presented a lease for the Parks and Recreation backhoe. A part of the three-year budget, was to upgrade the backhoe at the cemetery. Due to other items and projects taking place, they have not been able to purchase a new one. The current backhoe is not in proper working condition. The JCB backhoe is being held for the City in Salt Lake. They are recommending a 5-year lease with a payment of $21,865. The funding will come from a project for irrigation in the cemetery budget and remaining funds from a payed off equipment at the golf-course. In the sixth year, there will be a buy out option to purchase the backhoe.

Council Member Graf motioned to approve Resolution 2023-05 A Resolution of the Tooele City Council Authorizing the Execution of Lease Documents for Leasing a Parks and Recreation Backhoe. Council Member Manzione seconded the motion. The vote was as

follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

9. Resolution 2023-07 A Resolution of the Tooele City Council Amending the Tooele City Fee Schedule for the Dow James and Youth Center Buildings
Presented by Darwin Cook, Parks & Recreation Director

Mr. Cook presented updated and new fees for Dow James and the Youth Center.

The updated Health and Recreation fee is $10. Key deposit will stay on the fee schedule as is. Staff is working on adding keyless entry.

The Council asked the following questions:
Are the majority of rentals done from the community?
If the Youth Center name is changed, will the fees remain the same?

Mr. Cook addressed the Council. The majority of requests are from sports groups within Tooele County.

Mayor Winn addressed the Council. By changing the name, they would like the community to know they are welcome to use it.

Council Member Hansen motioned to approve Resolution 2023-07 A Resolution of the Tooele City Council Amending the Tooele City Fee Schedule for the Dow James and Youth Center Buildings. Council Member McCall seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

10. Invoices & Purchase Orders
Ms. Pitt presented the following invoices:

Mountainland Supply Co. for 204, ¾" water meter in the amount of $31,302.63.
Dell Marketing LP for Dell ME5024 Storage Device in the amount of $31,653.48.

Council Member McCall motioned to approve the invoices. Council Member Graf seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf, "Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

11. Minutes
There are no changes to the minutes.

Council Member Graf motioned to approve Minutes. Council Member McCall seconded the motion. The vote was as follows: Council Member Hansen, "Aye," Council Member Graf,

"Aye," Council Member Brady, "Aye," Council Member Manzione, "Aye," Council Member McCall, "Aye." The motion passed.

12. Adjourn

Chairman Brady adjourned the meeting at 7:36pm.

The content of the minutes is not intended, nor are they submitted, as a verbatim transcription of the meeting. These minutes are a brief overview of what occurred at the meeting.

Approved this ___ day of February, 2023

_____

Justin Brady, City Council Chair