



NIBLEY CITY COUNCIL MEETING AGENDA

Thursday, April 28, 2022 – 6:30 p.m.

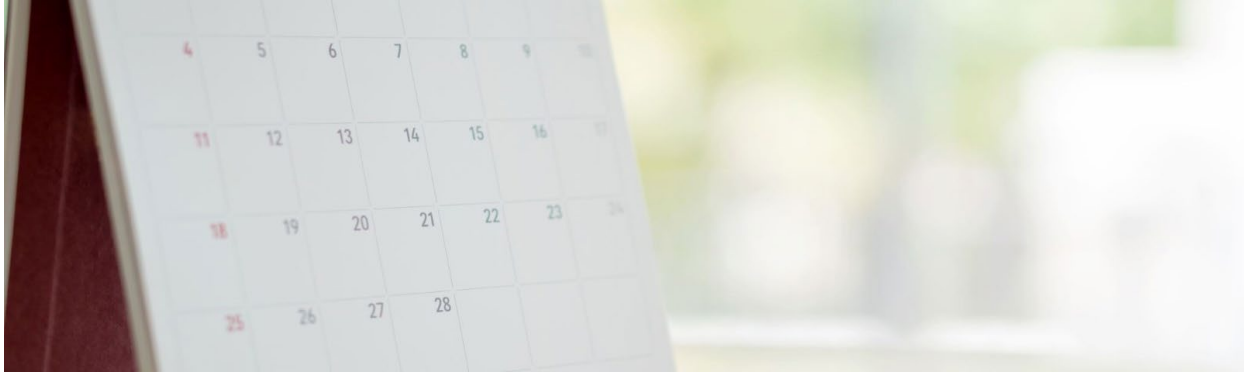
In accordance with Utah Code Annotated 52-4-207 and Nibley City Resolution 12-04, this meeting may be conducted electronically. The anchor location for the meeting will be Nibley City Hall, 455 West 3200 South, Nibley, Utah. The public may also participate in the meeting via the Zoom meeting link provided at www.nibleycity.com. Public comment should be submitted to cheryl@nibleycity.com by 6:30 p.m. and will be read into the public record.

1. Opening Ceremonies (Councilmember Larsen)
2. Call to Order and Roll Call (Chair)
3. Approval of the March 24, 2022, Meeting Minutes and the Current Agenda (Chair)
4. Public Comment Period¹ (Chair)
5. Planning Commission Report
6. Presentation: CAPSA presentation regarding Child Abuse Prevention/Sexual Assault Awareness
7. **Discussion & Consideration** – Proclamation Celebrating Arbor Day in Nibley City, UT (Rod)
8. **Public Hearing** – Ordinance 22-08: Rezone of a Portion of Parcel 03-019-0003 from Industrial (I) to Commercial (C)
9. **Discussion & Consideration** – Ordinance 22-08: Rezone of a Portion of Parcel 03-019-0003 from Industrial (I) to Commercial (C) (First Reading)
10. **Public Hearing** – Ordinance 22-07: Rezone of Parcel 03-041-0003 and a Portion of Parcel 03-041-0001 from R-1 to R-1A
11. **Discussion & Consideration** – Ordinance 22-07: Rezone of Parcel 03-041-0003 and a Portion of Parcel 03-041-0001 from R-1 to R-1A (First Reading)
12. **Public Hearing** – Ordinance 22-09: Allowing ‘Pet Services’ in Commercial (C), Neighborhood Commercial (C-N) and Industrial (I) zones
13. **Discussion & Consideration** – Ordinance 22-09: Allowing ‘Pet Services’ in Commercial (C), Neighborhood Commercial (C-N) and Industrial (I) zones (First Reading)
14. **Public Hearing** – Ordinance 22-10: Amending NCC 19.32 Residential Planned Unit Development Standards Regarding Minimum Project Acreage
15. **Discussion & Consideration** – Ordinance 22-10: Amending NCC 19.32 Residential Planned Unit Development Standards Regarding Minimum Project Acreage (First Reading)
16. **Public Hearing** – Resolution 22-12: Amending the Nibley City Engineering Design Standards and Specifications Relating to Public Infrastructure
17. **Discussion & Consideration** – Resolution 22-12: Amending the Nibley City Engineering Design Standards and Specifications Relating to Public Infrastructure (First Reading)
18. **Discussion & Consideration** – Acceptance of a Dedication of the Right-of-Way at Heritage Elementary (920 West 3200 South) from the Cache County School District

¹ Public input is welcomed at all City Council Meetings. 15 minutes have been allotted to receive verbal public comment. Verbal comments shall be limited to 3 minutes per person. A sign-up sheet is available at the entrance to the Council Chambers starting 15 minutes prior to each council meeting and at the rostrum for the duration of the public comment period. Commenters shall identify themselves by name and address on the comment form and verbally for inclusion in the record. Comment will be taken in the order shown on the sign-up sheet. Written comment will also be accepted and entered into the record for the meeting if received prior to the conclusion of the meeting. Comments determined by the presiding officer to be in violation of Council meeting rules shall be ruled out of order.

19. **Discussion & Consideration** – Resolution 22-13: A Resolution of the City Council of Nibley City, Cache County, Utah, Supporting Submittal Of The 2022 Land And Water Conservation Grant Application to Secure Grant Funding to Assist with Providing Park Improvements for the Ridgeline Park (First Reading)
20. Adjourn to Closed Session: To discuss Personnel, Pursuant to Utah Code 52-4-205
21. Discussion & Consideration – Performance Review of Justin Maughan, Nibley City Manager
22. Council and Staff Report

In compliance with the Americans With Disabilities Act, reasonable accommodations for individuals with disabilities will be provided upon request. For assistance, please call (435) 752-0431.



4-28-22 Council Meeting Change Summary

- #6—An example of the CAPSA pledge board was included in the AIR background
- #9—The legal description of the property was substituted for the prior graphic in the Ordinance coversheet
- #17—The amendment coversheet for this discussion has been amended
- #19—A copy of the grant proposal has been included and a picture of the proposed park at Ridgeline Park



Agenda Item #6

Description	Presentation – CAPSA presentation regarding Child Abuse Prevention/Sexual Assault Awareness
Presenter	CAPSA representative
Recommendation	Listen to the presentation. Ask pertinent questions. Offer support and encouragement.
Reviewed By	Mayor, City Manager

Background:

April is sexual assault awareness month. A CAPSA representative would like to present a brief presentation, and request your support in signing a pledge board.

HEARING

"I believe you"

HELPS
HEALING.

capsa
ABUSE ENDS HERE.

in partnership with
UtahState
University

Pledges to:

1. Start by Believing
2. Support Survivors
3. Help End the Silence

APRIL IS SEXUAL ASSAULT AWARENESS MONTH (SAAM)

Agenda Item #7

Description	Discussion & Consideration – A Proclamation Recognizing Arbor Day in Nibley City
Presenter	Rod Elwood, Nibley City Parks Manager
Recommendation	Move to approve the Proclamation Recognizing Arbor Day in Nibley City.
Reviewed By	Mayor, City Manager, Parks Manager

Background:

This year celebrates the 50th year of Arbor Day in the United States of America. Arbor Day Foundation's oldest program is Tree City USA. It started with 42 communities in 16 states. Today, the program includes over 3,600 communities in all 50 states.

Why do communities become members of Tree City USA?

A thriving urban forest offers many advantages to communities. Here are just a few:

- Trees help absorb the sounds of traffic in urban areas by 40%.
- Neighborhoods with trees are seven to nine degrees cooler than those without.
- Trees reduce energy costs up to 25% by shading buildings and protecting them from winter winds.
- Homes with trees have higher property values.
- Green space plays a major role in improving mental and physical health.
- Planting and maintaining trees absorbs carbon dioxide in the atmosphere, mitigating the effects of climate change.

Nibley City has been a member of Tree City USA for 11 years now. This was one of Mayor Knight's goals to become a Tree City. In this period of time Nibley City has planted over 1000 trees on 30 plus Nibley City properties. This work of planting these trees could not have been accomplished without the help of many different volunteer groups. These groups were as small as four, Cub Scout that were 8 years old to a couple of Heritage Day's service projects that involved a couple hundred people of all ages.

--Rod Elwood, Nibley City Parks Manager

A PROCLAMATION CELEBRATING ARBOR DAY IN NIBLEY CITY, UTAH

WHEREAS, in 1872, J. Sterling Morton proposed to the Nebraska Board of Agriculture that a special day be set aside for the planting of trees; and

WHEREAS, this holiday, called Arbor Day, was first observed with the planting of more than one million trees in Nebraska; and

WHEREAS, Arbor Day is now observed throughout the nation and the world; and

WHEREAS, trees reduce the erosion of our precious topsoil by wind and water, cut heating and cooling costs, moderate the temperature, clean the air, produce oxygen, and provide habitat for wildlife; and

WHEREAS, trees are a renewable resource giving us paper, wood for our homes, fuel for our fires, and countless other wood products; and

WHEREAS, trees in our City increase property values, enhance the economic vitality of business areas, and beautify our community; and

WHEREAS, trees, wherever they are planted, are a source of joy and spiritual renewal; and

WHEREAS, Nibley City makes great efforts to set the example in planting trees and encouraging citizens to do likewise; and

WHEREAS, Nibley City desires to improve its efforts to commemorate Arbor Day each year; and

WHEREAS, Nibley City has chosen to celebrate Arbor Day 2022 on Friday, April 29, in coordination with National Arbor Day; and

WHEREAS, in commemoration of Arbor Day 2022, Nibley City will be hosting a tree give away to residents at Nibley City Hall on Monday, April 25, 2022.

NOW, THEREFORE, I, Larry Jacobsen, Mayor of the City of Nibley do hereby proclaim Friday, April 30, 2022, to be ARBOR DAY in the City of Nibley, and urge all citizens to celebrate Arbor Day and to support efforts to protect our trees and woodlands.

Dated this _____ day of _____, 2022.

Larry Jacobsen, Mayor

Attest: _____
Cheryl Bodily, City Recorder

Agenda Item #8 & 9

Description	Public Hearing – Ordinance 22-08: Rezone of a Portion of Parcel 03-019-0003 from Industrial (I) to Commercial (C) and Discussion & Consideration – Ordinance 22-08: Rezone of a Portion of Parcel 03-019-0003 from Industrial (I) to Commercial (C) (First Reading)
Presenter	Levi Roberts, Nibley City Planner
Recommendation	Hold the public hearing. Move to approve Ordinance 22-08: Rezone of a Portion of Parcel 03-019-0003 from Industrial (I) to Commercial (C), for first reading.
Reviewed By	Mayor, City Manager, City Engineer

Background:

Skyler Jenks, authorized representative for Capita Group LLC and authorized by D&S Smercheck Real Estate, LLC, owner of parcel 03-019-0003, located at approximately 2850 S 800 W, has submitted a rezone application for a portion of parcel 03-019-0003. The current zoning on the property is industrial. The applicant has proposed to rezone a northern approximately 9.7 acre section of the property to commercial (C). The applicant has indicated that he would like to develop the property and has provided a concept plan of an Assisted Living Facility, adjacent to small lot, single-family and duplex units, which the applicant has indicated would be for active adult living. As each of these uses are listed as a conditional use in commercial zones, the applicant could potentially develop a similar project if the property is rezoned as commercial. However, it should be noted that approval of this rezone does not constitute approval of the concept plans.

Site Context

The site currently sits vacant and is immediately north (on the same parcel) as Logan Coach, a trailer manufacturing facility. To the east and west, there are medium-density residential homes. To the north is the Morgan Farm property, owned by Nibley City, with additional residential homes to the northwest.

General Plan Guidance

Although this property is currently zoned Industrial, the Future Land Use Map designates this property as 'medium density residential.' While the applicant's request for commercial zoning is not in line with this designation, commercial is generally more restrictive than industrial regarding uses that are incompatible with residential uses. It is Staff's opinion that the assisted living facility and the small lot senior units that the applicant has provided in the concept would be appropriate for the location and consistent with the general plan. It would provide a transition zone between existing single-family neighborhoods and the Industrial uses on the existing Logan Coach property.

That said, a commercial designation does allow for all uses listed within a commercial zone. Therefore, rezoning the property as commercial would allow for this wider range of uses, some of which could have significant impacts on surrounding properties. However, Staff has determined that a commercial zoning designation is more in line with the General Plan and is more appropriate for the site context than the existing 'Industrial' designation. As such, Staff recommends approval of this rezone request.

The Planning Commission was concerned with splitting the zoning designation for the parcel and recommends that the rezone area be assigned its own parcel ID prior to the Rezone. This could be accomplished in conjunction with a subdivision and the applicant has indicated support for this condition.

Planning Commission Recommended Condition of approval

- That the rezone area be assigned its own parcel ID prior to the Rezone.

ORDINANCE 22-08

AN ORDINANCE REZONING OF A PORTION OF PARCEL 03-019-0003 FROM INDUSTRIAL (I) TO COMMERCIAL (C)

BE IT ORDAINED BY THE NIBLEY CITY COUNCIL LOCATED AT NIBLEY, UTAH, THAT:

The northern 9.7 acre portion of Parcel 03-019-0003, more particularly described below, is hereby rezoned from Industrial I & Commercial C. This Rezone does not take effect until this area is subdivided and assigned a separate Parcel Tax ID number.

The North portion of Cache County Parcel No. 03-019-0003 located in Nibley City, Utah and in the Northwest Quarter of Section 21, Township 11 North, Range 1 East, of the Salt Lake Base & Meridian, more particularly described as follows:

Beginning at a point located S 89°45'39" E along the north section line a distance of 24.75 feet and S 0°26'23" E along the easterly right of way line of 800 West (a county road) a distance of 1,331.76 feet from the Northwest Corner of Section 21, T. 11 N., R. 1 E., of the S.L.B. & M. to the TRUE POINT OF BEGINNING: thence N 89°30'12" E a distance of 1,098.29 feet to the westerly railroad right of way; thence along said right of way S 1°01'07" W a distance of 387.01 feet; thence S 89°33'37" W a distance of 1,088.42 feet to the easterly right of way line of 800 West (a county road); thence along said right of way N 0°26'23" W a distance of 385.83 feet to the TRUE POINT OF BEGINNING.

Parcel is subject to all existing easements (not shown here).

Said parcel containing: 9.70 acres more or less.

PASSED BY THE NIBLEY CITY COUNCIL THIS _____ day of _____, 2022.

Larry Jacobsen, Mayor

ATTEST: _____
Cheryl Bodily, City Recorder



APPLICATION FOR REZONE

PROPERTY OWNER INFORMATION

Name D&S Smercheck Real Estate, LLC
 Address PO Box 324 Waterville, KS 66548-0324
 Phone 785-268-1006
 Email dans@titantrailer.com

OFFICE USE ONLY

Date Received:

Application

Fee Paid: \$

PROPERTY OWNER REPRESENTATIVE (If Applicable)

Name Skyler Jenks
 Address 3775 North 200 West
 Phone 435-232-3390
 Email skyler@capitagroup.us

PROJECT INFORMATION:

Project Address: 2850 South 800 West
 Tax I.D. Number(s): 03-019-0003
 Project Size (Acres): 10 Acres
 Current Zoning: Industrial Proposed Zoning: Commercial

SUPPORTING MATERIALS:

The following materials **must** be submitted with this Rezone Application, or the application will not be accepted by Nibley City.

 Site Plan and Map. The applicant shall submit a site plan and map of the land area proposed to be rezoned. The site plan and map shall show the following:

Identification of area proposed for rezone	
Total acreage of land proposed for rezone	
Total acreage and dimensions of individuals lots and parcels proposed for rezone	
Adjacent land uses	
Existing zoning of property	
Existing structures on the property with dimensions and setbacks	
Vicinity map	
Proposed project conceptual plan (if applicable)	



APPLICATION FOR REZONE

_____ **Applicant Statement.** A statement by the Applicant, explaining the rationale for the rezone request, shall accompany the application (attach additional sheets). The statement shall answer the following questions (please list each question and its answer underneath):

1. What is the need for the proposed zone change?
2. What will the public benefit be if the zone change is granted?
3. How does the proposal comply with the goals and policies of the Nibley City General Plan?
4. Is there any annexation of property necessary?
5. Is the anticipated use appropriate for the surrounding area?
6. What public infrastructure is in place to serve the type and intensity of the proposed use? If needed, could the infrastructure be reasonably extended, at the cost of the property owner or developer?

_____ **Taxes.** A statement from the County treasurer showing the current tax status of the property.

_____ **Posting.** Not less than ten (10) days before the public hearing, Applicant is responsible for posting a sign in a prominent place on the property containing, in lettering that may be reasonably read by passersby, the time, date, and location of the public hearing. The posting shall not be required before the application being accepted. However, the City shall require that, not less than ten (10) days before the public hearing, the Applicant provides the City with evidence of compliance with this requirement.

_____ **Application Fee.** All fees related to the rezone application shall be paid as part of the application submittal.

Please see staff for public hearing and notification requirements.

File the completed application at:

Nibley City
455 West 3200 South
Nibley, UT 84321
(435) 752-0431

APPLICANT CERTIFICATION:

I certify under penalty of perjury that this application and all information submitted as a part of this application are true, complete, and accurate to the best of my knowledge. I also certify that I am the owner of the subject property and that the authorized agent noted in this application has my consent to represent me concerning this application. Should any of the information or representations submitted in connection with this application be incorrect or untrue, I understand that Nibley may rescind any approval, or take any other legal or appropriate action. I understand that any cost of engineering, legal, fire, or other review incurred by the City shall be my responsibility to pay. I also acknowledge that I have reviewed the applicable sections of the Nibley City Code and that items and checklists contained in this application are basic and minimum requirements only and that other requirements may be imposed that are unique to individual

projects or uses
DocuSigned by:

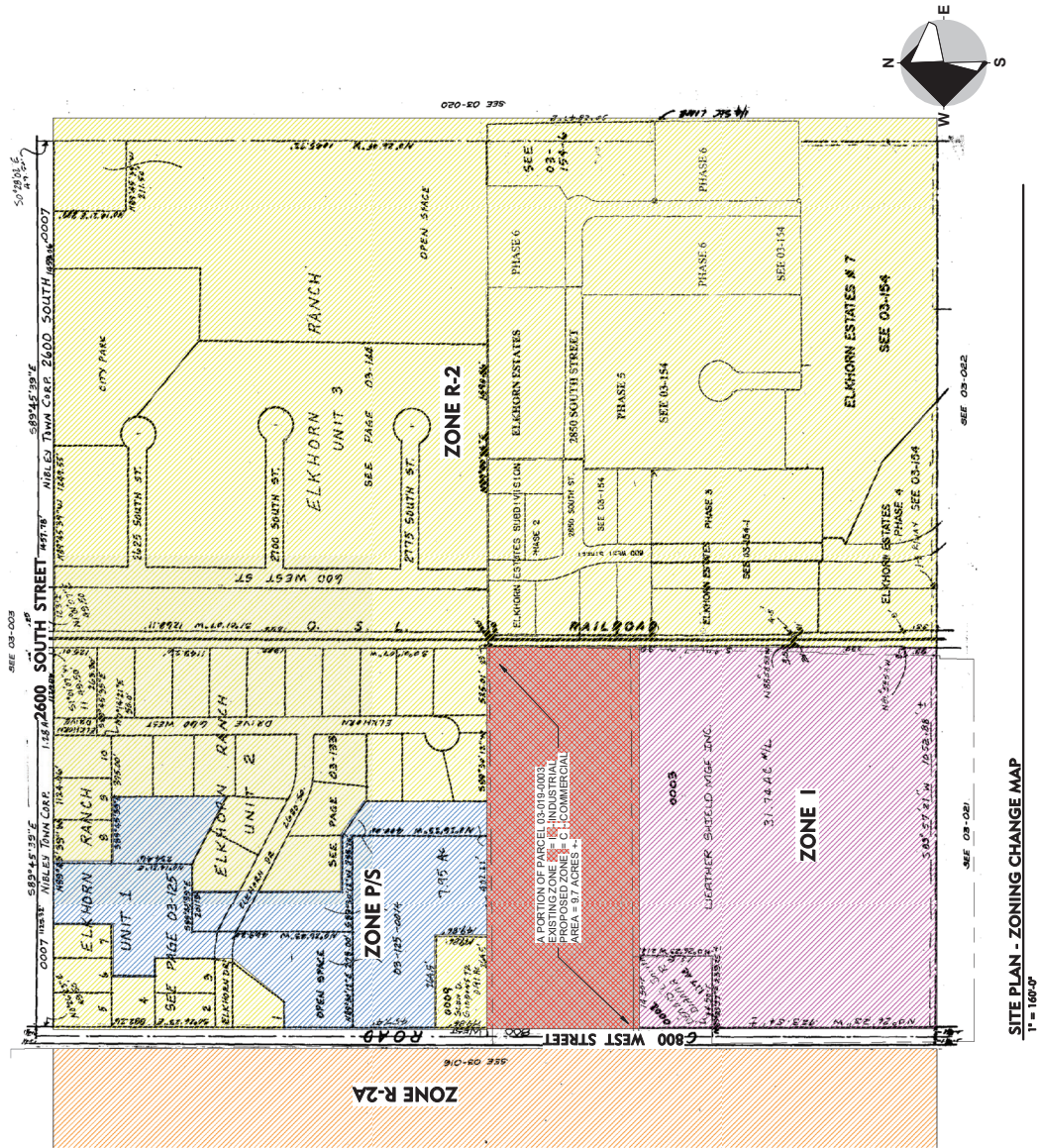
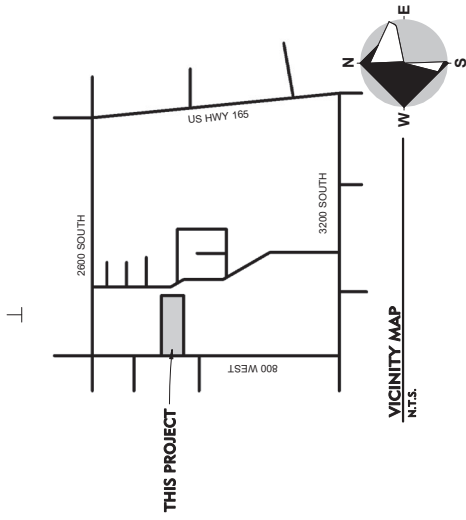
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Property Owner Signature

4/1/2022

Date

CONCEPT PLANS



CONCEPT PLANS

Sheet #

C2

4/1/2022 1:28:57 PM

Sheet Name:

SITE
CONCEPT
RETIREMENT

Project Name:

Client Address:

Client Name:

Date: 2-11-22

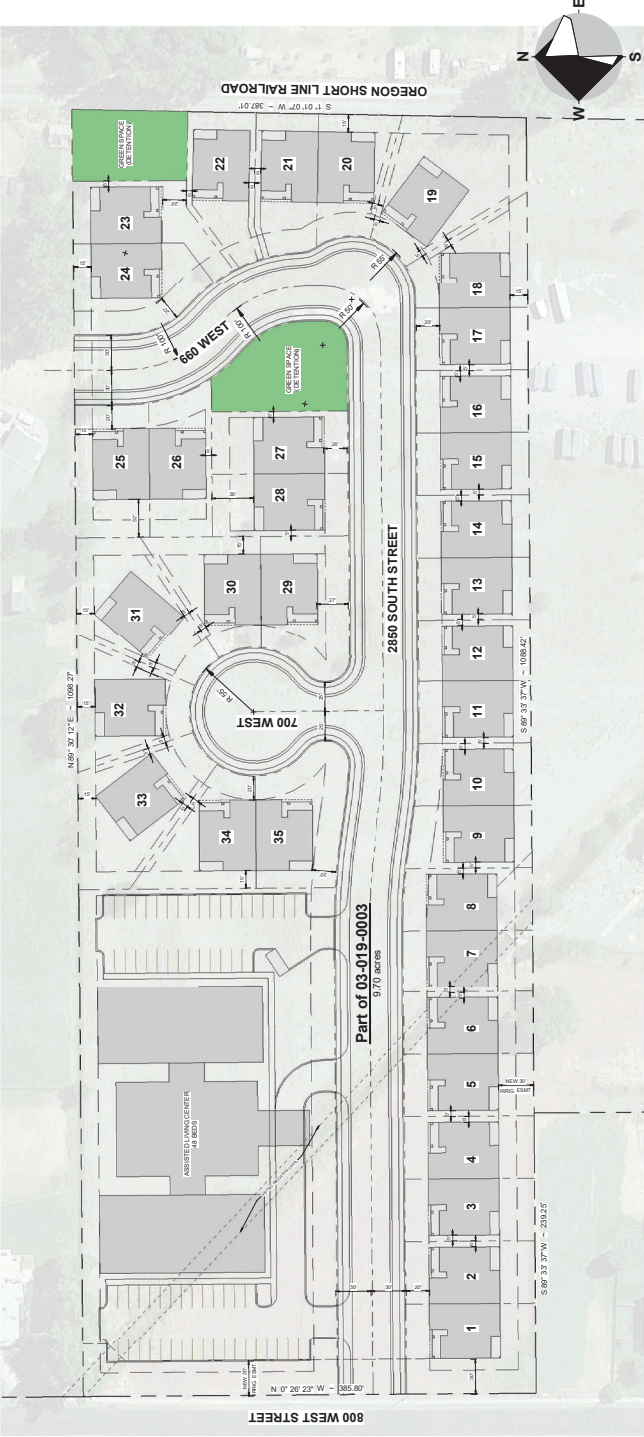
Nibley Concept

North Portion of Parcel 03-019-0003 - Cache County, Utah
Designed By: K.D. ERICKSEN
Drawn By: K.D. ERICKSEN

CAPITAGROUP

3775 NORTH 200 WEST - HYDE PARK, UTAH 84318
E-mail: kelly@capitagroup.us / ken@capitagroup.us / rolando@capitagroup.us

REVISIONS		
No.	Date	Desc.



SITE PLAN - RETIREMENT & ASSISTED LIVING
1" = 80'-0"



To Whom it may concern,

The need for this property to be rezoned is to allow for the highest and best use of providing an assisted living and active adult community.

The public benefit is there will be less truck traffic on 800 west.

The general plan currently shows that there is a residential desire for this area. What we are proposing is just that with an assisted living cent and an active adult community.

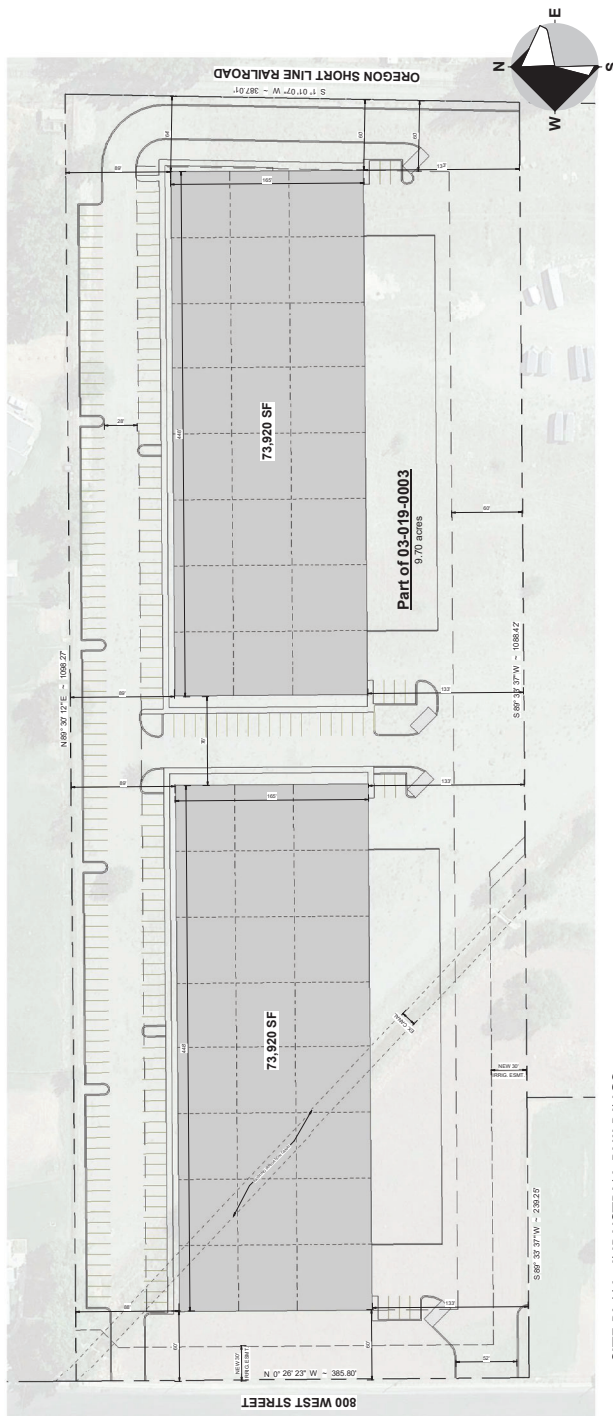
There are no annexations required.

The anticipated use is appropriate for the surrounding area.

I believe the infrastructure is sufficient for what we are proposing and if there are changes the property owner or developer could bare it.

Thanks

Skyler Jenks





SAMUEL J BRADY ARCHITECTS







Villa Dinner
This Wednesday
6pm at the Clubhouse





Parcel #03-019-0003 in 2021 - Cache County CORE

Owner(s)

History

D & S SMERCHEK REAL ESTATE LLC (07/12/2016 - Present) (Vesting: 1104383)

Owner(s)

History

D & S SMERCHEK REAL ESTATE LLC, (07/12/2016 - Present) (Vesting: 1104383)

Property Address

2990 S 0800 W
NIBLEY

Current Owner Mailing Address

PO BOX 324
WATERVILLE, KS 66548-0324

- Tax District: NIBLEY CITY W/CEM(008)
- Tax Status: Taxable
- Building Type: Comm
- Year Built: 1978
- Acres: 31.74
- Water Rights: NO
- Square Feet: 151636
- Legal Description: BEG AT A PT LOCATED S 89*45'39"E ALG SEC LINE 24.75 FT & S 0*26'23" E ALG ELY R/W LNE OF CO ROAD 1331.76 FT FROM NW COR SEC 21 T 11N R 1E N 89*30'12"E 1098.29 FT TO THE WLY RR R/W TH ALG SD R/W THE FOLLOWING 5 COURSES S 1*01'07"W 909.92 FT N 88*58'53"W 3.50 FT S 1*01'07"W 330 FT N 88*58'52"W 8 FT S 1*01'07"W 93 FT S 89*57'21"W 1052.88 FT N 26'23"W 723.54 FT N 89*33'37"E 239.25 FT N 26'23"W 214.5 FT S 89* 33'37"W 239.25 FT N 26'23"W 385.83 FT TO BEG CONT 31.74 AC

Taxation Term	Amount
Prior Year Taxes (2020)	\$41,852.28
Market Value	\$3,810,293.00
Commercial Land & Building	\$3,810,293.00
Taxable Value	\$3,810,295.00
Tax Rate	<u>x 0.010457</u>
Tax Amount	\$39,844.25
Last Payment Date	11/22/2021

Payment Category	Amount
Principal	\$39,844.25
Payments	\$39,844.25
Current Amount Due	\$0.00



Future Land Use

Update 3-25-2021

Legend

- Nibley Municipal Boundary 2020
- Annexation Declaration Boundary

Future Land Use

- Parks, Open Space, and Trails
- Agriculture
- Open Space, Agriculture, and Low Density Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Commercial and Medium to High Density Residential
- Commercial
- Industrial
- Municipal, Schools, and Churches
- Town Center



0 1,400 2,800 4,200 Feet



J-U-B ENGINEERS, INC.

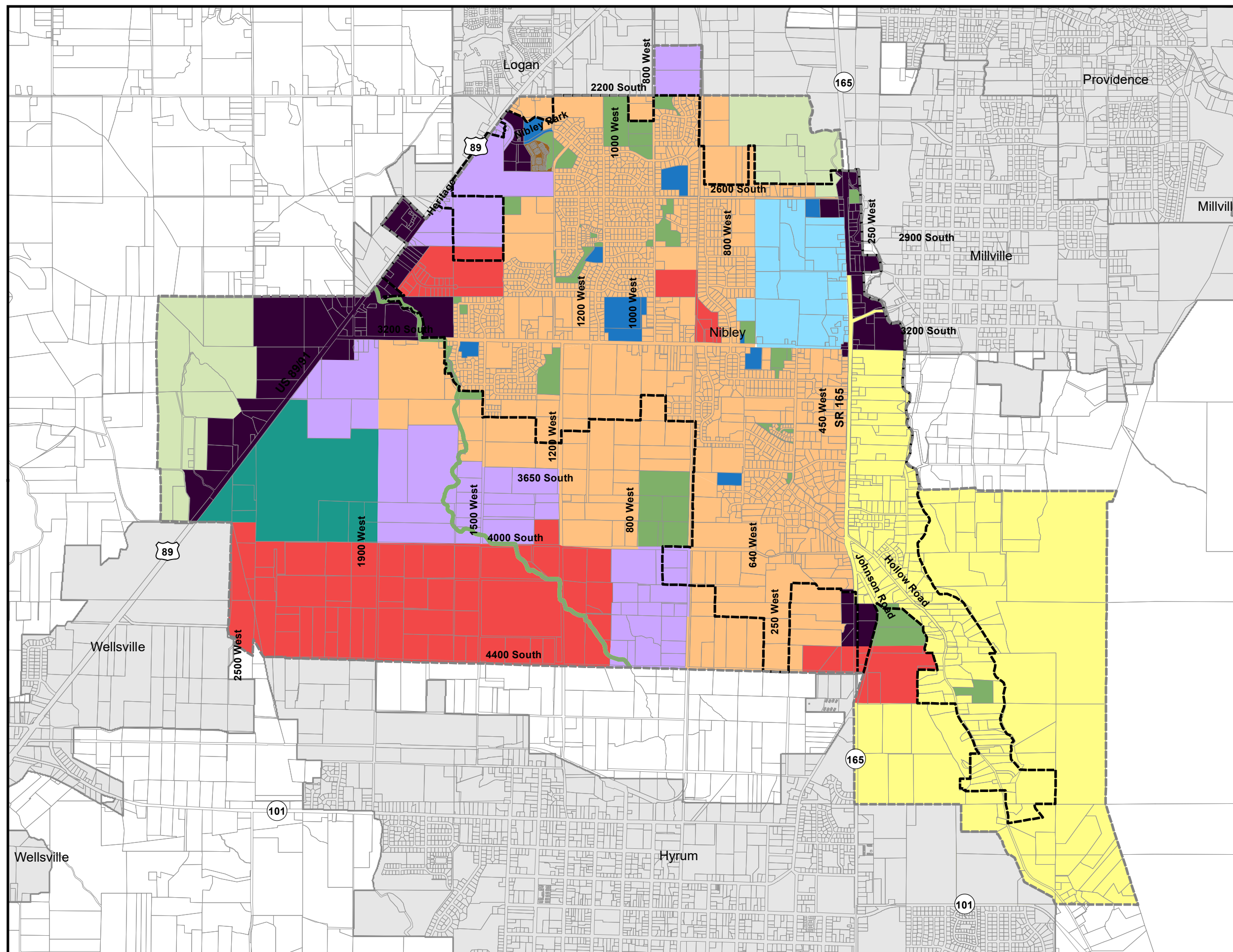


THE
LANGDON
GROUP



GATEWAY
MAPPING
INC.

J-U-B FAMILY OF COMPANIES



Agenda Item #10 & 11

Description	Public Hearing – Ordinance 22-07: Rezone of Parcel 03-041-0003 and a Portion of Parcel 03-041-0001 from R-1 to R-1A and Discussion & Consideration – Ordinance 22-07: Rezone of Parcel 03-041-0003 and a Portion of Parcel 03-041-0001 from R-1 to R-1A (First Reading)
Presenter	Levi Roberts, Nibley City Planner
Recommendation	Move to approve Ordinance 22-07: Rezone of Parcel 03-041-0003 and a Portion of Parcel 03-041-0001 from R-1 to R-1A, for first reading
Reviewed By	Mayor, City Manager, City Planner

Background:

Dustin Hansen has submitted an application to Rezone parcel 03-041-0003 and the portion of 03-041-0001 from R-1 (1 acre) to R-1A (3/4 acre). Mr. Hansen previously submitted a concept plan for an Open Space Subdivision for the approximately 10.57 acre property. The Development Committee reviewed the application and determined that the number of lots proposed would not be allowed unless the entire project were rezoned to R-1A, as approximately 40% of the property currently is designated. Based upon the calculations provided by the applicant and verified by Staff, 16 lots could be platted under an R-1A designation, whereas only 13 lots would be allowed under the existing zoning. The applicant has provided a concept plan with this rezone application. Although the exact design of the subdivision would be finalized through the subdivision approval process and is not at all tied to the rezone approval, this approximately represents what could develop on the property if the rezone is approved. It should be noted that approval of Ordinance 22-07 would not constitute approval for the subdivision.

The applicant's justification for the rezone is to accommodate the planned 250 East roadway improvements through the development and for the existing home to have a fire hydrant within code. The applicant has indicated that the additional lots proposed in the subdivision would help assist with the associated costs of the roadway and the hydrant.

Site Context

The proposed rezone site is located along the east side Highway 165 (Main St). It is surrounded by low-density residential development with larger lots and vacant agricultural fields. The existing R-1 zone is generally situated as an approximately 780-ft buffer east of Hwy 165 and 650 ft west of Hwy 165 with R-1A zoning generally adjacent to this area. Several of the lots along Hwy 165 are smaller than 1 acre and do not conform with minimum lot standards with large vacant lots in the rear, toward the Blacksmith fork River. The zoning for several of the lots is split between R-1 and R-1A. In some cases, splitting lots in two different zones can pose challenges with enforcement of ordinances, as standards may be different in different zones. If approved, this rezone would unify the zoning for parcel 03-041-0001, which is currently split between R-1 and R-1A.

General Plan Guidance

The Future Land Use Map designates this property as 'low density residential.' Although there is no specific guidance in the General Plan about the appropriate zoning designation for low density residential, R-E, R-1 and R-1A are generally considered low density residential. Residential Development and Housing Goal 1 is to 'Ensure that new residential development is compatible with existing development and protects Nibley's rural character and natural resources.'

In addition, as stated in the applicant's justification for the rezone, there is a planned north/south road at 250 east, connecting Mill Rd (3100 S) with 3850 S. The applicant will be required to complete this roadway as part of a subdivision. The applicant has indicated that the rezone will help him complete this improvement with the 3 additional lots.

It is Staff's opinion that the proposed rezone is consistent with the Future Land Use Map and goals of the general plan and is appropriate given the context of the area. The Planning Commission recommends approval of the proposed rezone.

ORDINANCE 22-07

**AN ORDINANCE REZONING OF PARCEL 03-041-0003 AND A PORTION OF PARCEL 03-041-0001
FROM R-1 TO R-1A**

BE IT ORDAINED BY THE NIBLEY CITY COUNCIL LOCATED AT NIBLEY, UTAH, THAT:

All portions of Parcels 03-041-0003 and 03-041-0001, and more particularly described below, is hereby rezoned from Residential R-1 to Residential R-1A.

Parcel 03-041-0001:

Commencing at the northwest corner of said Section 27;

Thence N1°19'12"E 90.42 feet to the north line of said Lot 6;

Thence N88°54'24"W 104.29 feet to the northwest corner of said Lot;

Thence S88°54'24"E 149.00 feet along the north line of said Lot to the Point of Beginning;

Thence S88°54'24"E 1285.88 feet, more or less, along the north line of said Lot and its extension to the west sixteenth line of said Section 22;

Thence S0°04'11"W 56.39 feet to the west sixteenth corner common to said Sections 22 and 27;

Thence S0°08'39"E 83.64 feet along the west sixteenth line of said Section 27;

Thence N88°54'24"W 320.90 feet;

Thence S1°05'36"W 192.20 feet;

Thence N88°56'46"W 850.61 feet;

Thence N1°19'12"E 124.79 feet;

Thence N88°54'24"W 262.00 feet to the east line of State Road 165;

Thence N1°19'12"E 95.00 feet along said east line;

Thence S88°54'24"E 143.50 feet;

Thence N1°19'12"E 113.00 feet to the Point of Beginning.

CONT 8.39 AC

Parcel 03-041-0003:

BEG AT NW COR SEC 27 T 11N R 1E & TH N1°19'12"E 90.42 FT TO N LN LT 6 BLK 19
MILLVILLE WEST FIELD SVY TH N88°54'24"W 104.29 FT TO NW COR LT 6 TH S88°54'24"E
5.50 FT TO E LN OF ST HWY 165 TH S1°19'12"W 208.00 FT TO TRUE POB TH S88°54'24"E
262.00 FT TH S1°19'12"W 124.79 FT TH N88°56'46"W 262.00 FT TO E LN OF ST HWY TH
N1°19'12"E 124.97 FT TO TRUE POB CONT 0.75 AC M/B

PASSED BY THE NIBLEY CITY COUNCIL THIS _____ day of _____, 2022.

Larry Jacobsen, Mayor

ATTEST: _____
Cheryl Bodily, City Recorder



APPLICATION FOR REZONE

PROPERTY OWNER INFORMATION

Name Dustin Hansen
Address 3430 South 200 East Nibley UT 84321
Phone 435 757 3616
Email bearlakemasonry@gmail.com

OFFICE USE ONLY

Date Received:

Application

Fee Paid: \$

PROPERTY OWNER REPRESENTATIVE (If Applicable)

Name _____
Address _____
Phone _____
Email _____

PROJECT INFORMATION:

Project Address: 3430 south main and up to 200 East, 3430 South 200 East Nibley, UT
Tax I.D. Number(s): 03-041-0001, 03-041-0003, 03-041-0077
Project Size (Acres): 10.57 AC (All of Hansen Property)
Current Zoning: R-1 & R-1A Proposed Zoning: R-1A

SUPPORTING MATERIALS:

The following materials **must** be submitted with this Rezone Application, or the application will not be accepted by Nibley City.

 Site Plan and Map. The applicant shall submit a site plan and map of the land area proposed to be rezoned. The site plan and map shall show the following:

Identification of area proposed for rezone	
Total acreage of land proposed for rezone	6 AC +/-
Total acreage and dimensions of individuals lots and parcels proposed for rezone	
Adjacent land uses	
Existing zoning of property	R-1
Existing structures on the property with dimensions and setbacks	
Vicinity map	
Proposed project conceptual plan (if applicable)	



Zoning Map
March 2019

PROPOSED RE-ZONE TO R-1A

- AGRICULTURAL (AGR)
- COMMERCIAL (COM)
- NEIGHBORHOOD COMMERCIAL (NBRCOM)
- INDUSTRIAL (IND)
- RESIDENTIAL (R-1)
- RESIDENTIAL (R-1A)
- RESIDENTIAL (R-2)
- RESIDENTIAL (R-2A)
- RESIDENTIAL ESTATE (RES)
- PARK / SCHOOL

Rezoning Application

Question

1. What is the need for the proposed zone change?

Answer: We would like to have the properties Rezoned to accommodate Nibley city's future road running North and South. To feasibly have the road, and the cost associated with that, the proposed lots for the subdivision would help assist in the costs associated. Also for the existing home to have a fire hydrant within code from the existing home.

Question

2. What will the public benefit be if the zone change is granted?

Answer: The public benefit would be to add the road running North and South on 200 east. Also the benefit would be to have a fire hydrants close to the river in case of fire.

Question

3. How does the proposal comply with the goals and policies of Nibley City General plan?

Answer: The proposal helps Nibley city and their master plan by adding the North and South road and Fire protection by adding a Fire hydrant along the river.

Question

4. Is there any annexation of the property necessary?

Answer: No, not that we are aware with

Question

5. Is the anticipated use appropriate for the surrounding area?

Answer: In our opinion yes.

Question

6. What public infrastructure is in place to serve the type and intensity of the proposed use? If needed, could the infrastructure be reasonably extended, at the cost of the property owner or developer?

Answer: The only infrastructure that is in place as of March 6, 2022 is the sewer. It could be reasonably extended in the areas needed for the proposed subdivision. However there is 1 existing sewer man hole that is not in the road and pre exists. It would not be able to be moved into the road.

The rationale behind the proposed rezoning is to accommodate the existing home with fire protection, while also helping Nibley city get there road running North and South.

Sincerely,

Dustin Hansen
435-757-3616

Rezone Application

8 Mar 22

The rationale behind the proposed rezoning is to accommodate the existing home with fire protection, while also helping Nibley city get there road running North and South.

Sincerely,

Dustin Hansen
435-757-3616



Cache County
1857

www.cachecounty.org/treasurer

Website is updated nightly to reflect payments.

Additional answers and resources are available online.

Cache County Treasurer's Office
Craig McAllister - Treasurer
179 North Main Street, Room 201
Logan, Utah 84321
(435) 755-1500
(877) 690-3729 Phone Payments
USE JURISDICTION CODE: 3412

2022 TAX NOTICE

DUE Wednesday, November 30,

Parcel Number: 03-041-0001



Tax Area: 008

PROPERTY ADDRESS / LEGAL DESCRIPTION

NIBLEY

Commencing at the northwest corner of said Section 27;
Thence N1°19'12"E 90.42 feet to the north line of said Lot 6;
Thence N88°54'24"W 104.29 feet to the northwest corner of said Lot;
Thence S88°54'24"E 149.00 feet along the north line of said Lot to the Point of Beginning;
Thence S88°54'24"E 1285.88 feet, more or less, along the north line of said Lot and its extension to the west sixteenth line of said Section 22;
THIS MAY NOT BE A COMPLETE LEGAL DESCRIPTION

Printed Thursday, March 10, 2022

03-041-0001

HANSEN, DUSTIN TODD
PO BOX 457
GARDEN CITY, UT 84028-0457

TAXES HEREIN ENUMERATED FOR THE CURRENT YEAR ARE DUE AND PAYABLE IN TREASURER'S OFFICE, LAST NOTICE REQUIRED BY LAW.

PROPERTY TYPE	ACRES/COUNT	MARKET VALUE	TAXABLE VALUE	TAX AMOUNT
LAND GREENBELT <i>Property values for 2022 have not been finalized. This is an ESTIMATE based on 2021 values. The final property values will be sent in October.</i>	8.39	335,600	2,880	30.12
2022 VALUES NOT SET				
*** NEW PAYMENT OPTIONS ON BACK OF NOTICE ***	TOTALS	8.39	335,600	2,880 30.12

ENTITY	TAXING UNIT	TAX RATE	TAX AMOUNT - BREAKDOWN
28	CACHE CO GENERAL FUND	<RETAINED BY COUNTY>	0.001420 4.09
38	CACHE CO HEALTH FUND	<RETAINED BY COUNTY>	0.000083 0.24
58	CACHE CO A & C	<RETAINED BY COUNTY>	0.000288 0.83
30	CACHE SCHOOL DISTRICT		0.005130 14.77
67	CACHE SCHOOL CHARTER LEVY	<i>Tax rates for 2022 have not been finalized. This is an ESTIMATE based on 2021 rates. The final tax rates will be sent in October.</i>	0.000050 0.14
60	CACHE SCHOOL STATE LEVY		0.001661 4.78
48	MULTI-CO A & C	<SENT TO STATE>	0.000012 0.03
70	CACHE MOSQUITO ABATE. DISTRICT		0.000055 0.16
36	CACHE WATER DISTRICT		0.000026 0.07
06	MILLVILLE/NIBLEY CEMETERY		0.000065 0.19
08	NIBLEY CITY		0.001667 4.80
2022 RATES NOT SET			
<i>Please see reverse side of this notice for additional information. Thank you for your timely payment.</i>			
2022 TOTAL TAXES		0.010457 \$	30.12
PREPAYMENTS			0.00
ADJUSTMENTS TO TAXES			0.00
2022 TAX DUE		\$	30.12
TOTAL DUE		\$	30.12

PLEASE BRING ENTIRE NOTICE WHEN PAYING IN PERSON IF MAILING IN PAYMENT, DETACH AND KEEP ABOVE PORTION FOR YOUR RECORDS.

2022 RATES NOT SET

Property Address: NIBLEY

Property Owner/Address: HANSEN, DUSTIN TODD
PO BOX 457
GARDEN CITY, UT 84028-0457

☐ Yes, I am interested in a coupon book.

Please include parcel number on all checks or correspondence.
Make check payable to: Cache County Treasurer

Parcel Number: 03-041-0001



☐ PLEASE NOTE ONLY A CHANGE OF MAILING ADDRESS BELOW:

HANSEN, DUSTIN TODD

Address _____

City _____ State _____ Zip _____

The Treasurer's website is updated nightly reflecting all posted payments.

THIS PROPERTY MAY BE RE-APPRAISED

PARCEL NUMBER	03-041-0001
TOTAL DUE	\$30.12

Taxes are delinquent at 5:00 p.m.
Wednesday, November 30, 2022

Printed Thursday, March 10, 2022



2022 TAX YEAR

TREASURER

179 North Main St. Suite 201 • Logan, UT 84321 • (435) 755-1500

3/10/2022

03-041-0001

Parcel Number

Owner's Name & Address

Owner(s) List (1/1/2022)

Parcel **03-041-0001** Entry **1290026**
Name **HANSEN, DUSTIN TODD**
C/O Name
Address **PO BOX 457**

City, ST Zip **GARDEN CITY, UT 84028-0457**
District **008 NIBLEY CITY W/CEM**
Year **2022** Status **TX**

1 HANSEN, DUSTIN TODD
1290026 2262/17

Property Address

Address
City **NIBLEY**
Assr. Review **10/04/2021**

PARCEL HISTORY

REMAINDER 8/91-0047; REALIGN W/0003 & 0077 5/20; SUBJ TO BLA W/ 0077 6/21

LEGAL DESCRIPTION FOR 2022

Commencing at the northwest corner of said Section 27;
Thence N1°19'12"E 90.42 feet to the north line of said Lot 6;
Thence N88°54'24"W 104.29 feet to the northwest corner of said Lot;
Thence S88°54'24"E 149.00 feet along the north line of said Lot to the Point of Beginning;
Thence S88°54'24"E 1285.88 feet, more or less, along the north line of said Lot and its extension to the west sixteenth line of said Section 22;
Thence S0°04'11"W 56.39 feet to the west sixteenth corner common to said Sections 22 and 27;
Thence S0°08'39"E 83.64 feet along the west sixteenth line of said Section 27;
Thence N88°54'24"W 320.90 feet;
Thence S1°05'36"W 192.20 feet;
Thence N88°56'46"W 850.61 feet;
Thence N1°19'12"E 124.79 feet;
Thence N88°54'24"W 262.00 feet to the east line of State Road 165;
Thence N1°19'12"E 95.00 feet along said east line;
Thence S88°54'24"E 143.50 feet;
Thence N1°19'12"E 113.00 feet to the Point of Beginning.
CONT 8.39 AC
SUBJ TO ESMNT SEE ENTRY #1290919 #1295146

PROPERTY INFORMATION

LG	LAND GREENBELT	Acres	2021	Taxable	2022 VALUES WILL BE AVAILABLE AFTER 5/21/2022	
			Market			
			351,600	3,030		
	TOTALS	8.79	351,600	3,030		
	IT	IRRIGATION TILLABLE III		7.52	300,800	30
	GZ	GRAZING I		0.87	34,800	50
	Totals			8.39	335,600	500



2022 TAX YEAR

TREASURER

179 North Main St. Suite 201 • Logan, UT 84321 • (435) 755-1500

3/10/2022

03-041-0001

Parcel Number

BUILDING & TAX INFORMATION

2021 (Final Tax Rate: 0.010457)

Taxes: 31.68

Special: + 0.00

Rollback: + 0.00

Penalty: + 10.00

Abatements: - 0.00

Payments: - SEGGED

Balance Due: 0.00

Last Payment Date: SEGGED

The 2022 property values have not been approved.

BACK TAX SUMMARY

NO BACK TAXES



www.cachecounty.org/treasurer
Website is updated nightly to reflect payments.
Additional answers and resources are available online.

Cache County Treasurer's Office
Craig McAllister - Treasurer
179 North Main Street, Room 201
Logan, Utah 84321
(435) 755-1500

(877) 690-3729 Phone Payments
USE JURISDICTION CODE: 3412

2022 TAX NOTICE

DUE Wednesday, November 30,

Parcel Number: 03-041-0077



Tax Area: 008

PROPERTY ADDRESS / LEGAL DESCRIPTION
200 E 3430 S NIBLEY
Commencing at the northwest corner of said Section 27; Thence N1°19'12"E 90.42 feet to the north line of said Lot 6; Thence N88°54'24"W 104.29 feet to the northwest corner of said Lot; Thence S88°54'24"E 1434.88 feet, more or less, along the north line of said Lot and its extension to the west sixteenth line of said Section 22; Thence S0°04'11"W 56.39 feet to the west sixteenth corner common to said Sections 22 and 27. THIS MAY NOT BE A COMPLETE LEGAL DESCRIPTION

Printed Thursday, March 10, 2022

03-041-0077

HANSEN, DUSTIN TODD
PO BOX 457
GARDEN CITY, UT 84028-0457

TAXES HEREIN ENUMERATED FOR THE CURRENT YEAR ARE DUE AND PAYABLE IN TREASURER'S OFFICE, LAST NOTICE REQUIRED BY LAW.

PROPERTY TYPE	ACRES/COUNT	MARKET VALUE	TAXABLE VALUE	TAX AMOUNT
RESIDENTIAL LAND & BUILDING	1.00	967,100	531,905	5,562.13
LAND VACANT		0	0	0.00
LAND SECONDARY	0.42	25,200	25,200	263.52
2022 VALUES NOT SET				
*** NEW PAYMENT OPTIONS ON BACK OF NOTICE ***				
TOTALS		1.42	992,300	5,825.65

ENTITY	TAXING UNIT	TAX RATE	TAX AMOUNT - BREAKDOWN
28	CACHE CO GENERAL FUND	<RETAINED BY COUNTY>	791.09
38	CACHE CO HEALTH FUND	<RETAINED BY COUNTY>	46.24
58	CACHE CO A & C	<RETAINED BY COUNTY>	160.45
30	CACHE SCHOOL DISTRICT		2,857.95
67	CACHE SCHOOL CHARTER LEVY		27.86
60	CACHE SCHOOL STATE LEVY		925.35
48	MULTI-CO A & C		6.69
70	CACHE MOSQUITO ABATE. DISTRICT		30.64
36	CACHE WATER DISTRICT		14.48
06	MILLVILLE/NIBLEY CEMETERY		36.21
08	NIBLEY CITY		928.69
2022 TOTAL TAXES			
0.010457 \$ 5,825.65			
PREPAYMENTS			
0.00			
ADJUSTMENTS TO TAXES			
0.00			
2022 TAX DUE \$ 5,825.65			
TOTAL DUE \$ 5,825.65			

PLEASE BRING ENTIRE NOTICE WHEN PAYING IN PERSON IF MAILING IN PAYMENT, DETACH AND KEEP ABOVE PORTION FOR YOUR RECORDS.

2022 RATES NOT SET

If you are interested in making prepayments for 2023 on parcels that are \$100 or more, please COMPLETELY FILL IN THE TOP BOX BELOW. A coupon book will be sent to you at no additional charge by the end of February 2023. Payments may be sent or made on-line at www.cachecounty.org/treasurer

Property Address: 200 E 3430 S NIBLEY

Property Owner/Address: HANSEN, DUSTIN TODD
PO BOX 457
GARDEN CITY, UT 84028-0457

☐ Yes, I am interested in a coupon book.

Please include parcel number on all checks or correspondence.
Make check payable to: Cache County Treasurer

Parcel Number: 03-041-0077



☐ PLEASE NOTE ONLY A CHANGE OF MAILING ADDRESS BELOW:

HANSEN, DUSTIN TODD

Address _____

City _____ State _____ Zip _____

The Treasurer's website is updated nightly reflecting all posted payments.

THIS PROPERTY MAY BE RE-APPRAISED

PARCEL NUMBER	03-041-0077
TOTAL DUE	\$5,825.65

Taxes are delinquent at 5:00 p.m.
Wednesday, November 30, 2022

Printed Thursday, March 10, 2022



2022 TAX YEAR

TREASURER

179 North Main St. Suite 201 • Logan, UT 84321 • (435) 755-1500

3/10/2022

03-041-0077

Parcel Number

Owner's Name & Address

Owner(s) List (1/1/2022)

Parcel **03-041-0077** Entry **1295146**Name **HANSEN, DUSTIN TODD**

C/O Name

Address **PO BOX 457**City, ST Zip **GARDEN CITY, UT 84028-0457**District **008 NIBLEY CITY W/CEM**Year **2022** Status **TX**1 **HANSEN, DUSTIN TODD****1295146 2275/138**

Property Address

Address **200 E 3430 S**City **NIBLEY**Assr. Review **02/17/2022**

PARCEL HISTORY

PT 03-041-0001 & 0003 5/20; SUBJ TO BLA W/ 0001 6/21

LEGAL DESCRIPTION FOR 2022

Commencing at the northwest corner of said Section 27;
Thence N1°19'12"E 90.42 feet to the north line of said Lot 6;
Thence N88°54'24"W 104.29 feet to the northwest corner of said Lot;
Thence S88°54'24"E 1434.88 feet, more or less, along the north line of said Lot and its extension to the west sixteenth line of said Section 22;
Thence S0°04'11"W 56.39 feet to the west sixteenth corner common to said Sections 22 and 27;
Thence S0°08'39"E 83.64 feet along the west sixteenth line of said Section 27 to the Point of Beginning;
Thence S0°08'39"E 192.02 feet along the west sixteenth line of said Section 27;
Thence N88°56'46"W 325.05 feet;
Thence N1°05'36"E 192.20 feet;
Thence S88°54'24"E 320.90 feet to the Point of Beginning.
CONT 1.42 AC
TOGETHER W/ A RIGHT OF WAY ENT# 1295146

PROPERTY INFORMATION

	Acres	2021	Taxable	2022 VALUES WILL BE AVAILABLE AFTER 5/21/2022
		Market		
BR BUILDING RESIDENTIAL		0	0	
LR LAND RESIDENTIAL		0	0	
LS LAND SECONDARY		0	0	
LV LAND VACANT		40,400	40,400	
TOTALS	1.01	40,400	40,400	

BUILDING & TAX INFORMATION

Square Footage: **5,432**

2021

(Final Tax Rate: 0.010457)

Year Built: **2021**Building Type: **SFR**

Taxes: 422.46

Special: + 0.00

Rollback: + 0.00

Penalty: + 10.00

Abatements: - 0.00

Payments: - SEGGED

Balance Due: 0.00

Last Payment Date: SEGGED

The 2022 property values have not been
approved.



**Cache
County**
1857

2022 TAX YEAR

TREASURER

179 North Main St. Suite 201 • Logan, UT 84321 • (435) 755-1500

3/10/2022

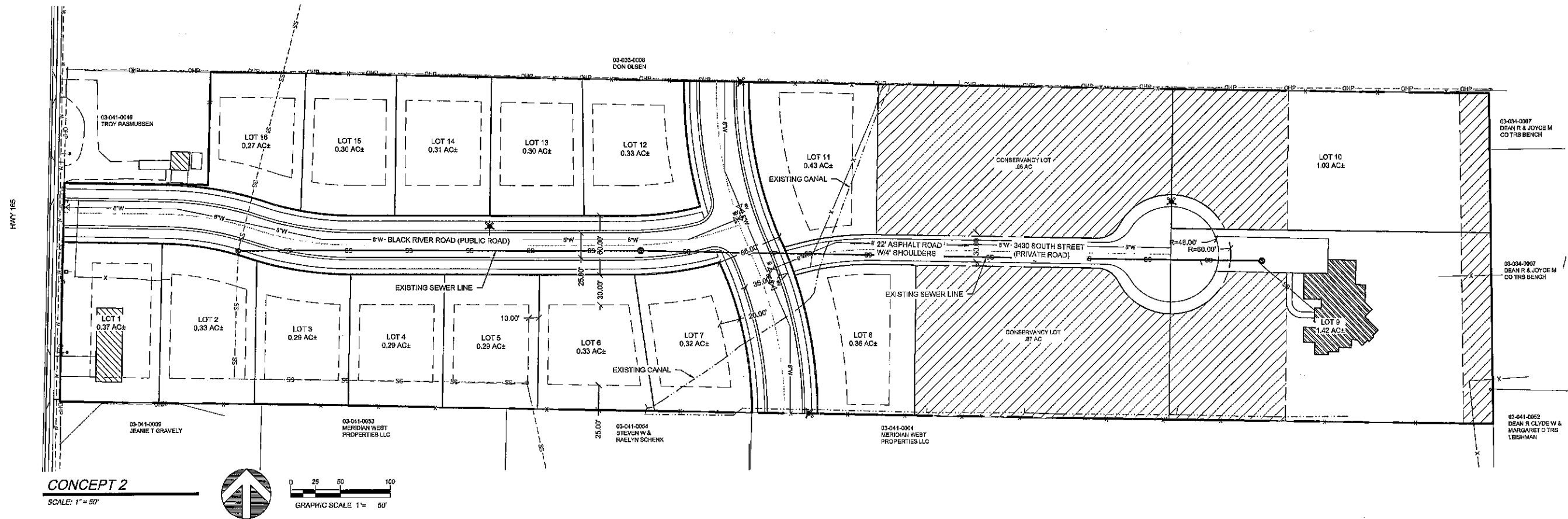
03-041-0077

Parcel Number

BACK TAX SUMMARY

NO BACK TAXES

2/7/2022 4:01 PM Z:\2020 PROJECTS\20023\HSH DUSTIN HANSEN - SUBDIVISION - NEELEY, UT\ACAD\CONCEPTS\CONCEPT [CURRENT].DWG



OPEN SPACE CALCULATION	
ZONE	R-1A
TOTAL AREA (EXCLUDING ESMT ROW)	9.15 AC
OPEN SPACE RATIO	0.30 - <0.35
OPEN SPACE AREA REQUIRED (AC)	2.75 AC
OPEN SPACE SHOWN	2.75 AC

DENSITY CALCULATION	
ZONE	R-1A
TOTAL AREA (EXCLUDING ROW)	9.15 AC
MAX LOTS / AC	.75/AC
TOTAL BASE LOTS ALLOWED	12.20 LOTS
INCENTIVE MULTIPLIER	1.30
ALLOWED LOTS	16 LOTS
FRONTAGE	95'
AVERAGE SIZE LOT	13,000 SF
MINIMUM SIZE LOT	11,000 SF

DESIGN STATS

PARCELS #03,041-0003, 0001, 0077

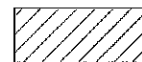
TOTAL AREA: ±10.57 AC
CURRENT ZONE: PART IN R-1 & R-1A

SETBACKS:
FRONT - 30'
SIDE - 10' & 10'
CORNER LOT - 10' & 20'
REAR - 25'

ALLOWED LOTS: (16) R-1A/ (12) R-1
TOTAL LOTS SHOWN: 16

ROAD: 66' COLLECTOR & 60' LOCAL ROW
TOTAL AC: 1.42 AC/61,661 SF

HATCH LEGEND



OPEN SPACE/CONSERVATION EASEMENT

PARCEL NUMBER
#03,041-0003, 0001, 0077

OWNER
DUSTIN HANSEN
PO BOX 457
GARDEN CITY, UT 84028
435-757-3616
bearlakemasonry@gmail.com

ENGINEER
STEVEN EARL, PE, PLS
95 GOLF COURSE RD #101
LOGAN, UT 84321
435-713-0099
searl@cachelandmark.com

CONCEPT PLAN

BLACK RIVER ESTATES

PROJECT TITLE:



Catche Landmark
Engineers
Surveyors
Planners

95 Golf Course Rd.
Suite 101
Logan, UT 84321
435-713-0099

DATE:
19 JANUARY 2022

SCALE:
1" = 50'

DESIGNER:
JMAUGHAN

CHECKED BY:
S. EARL

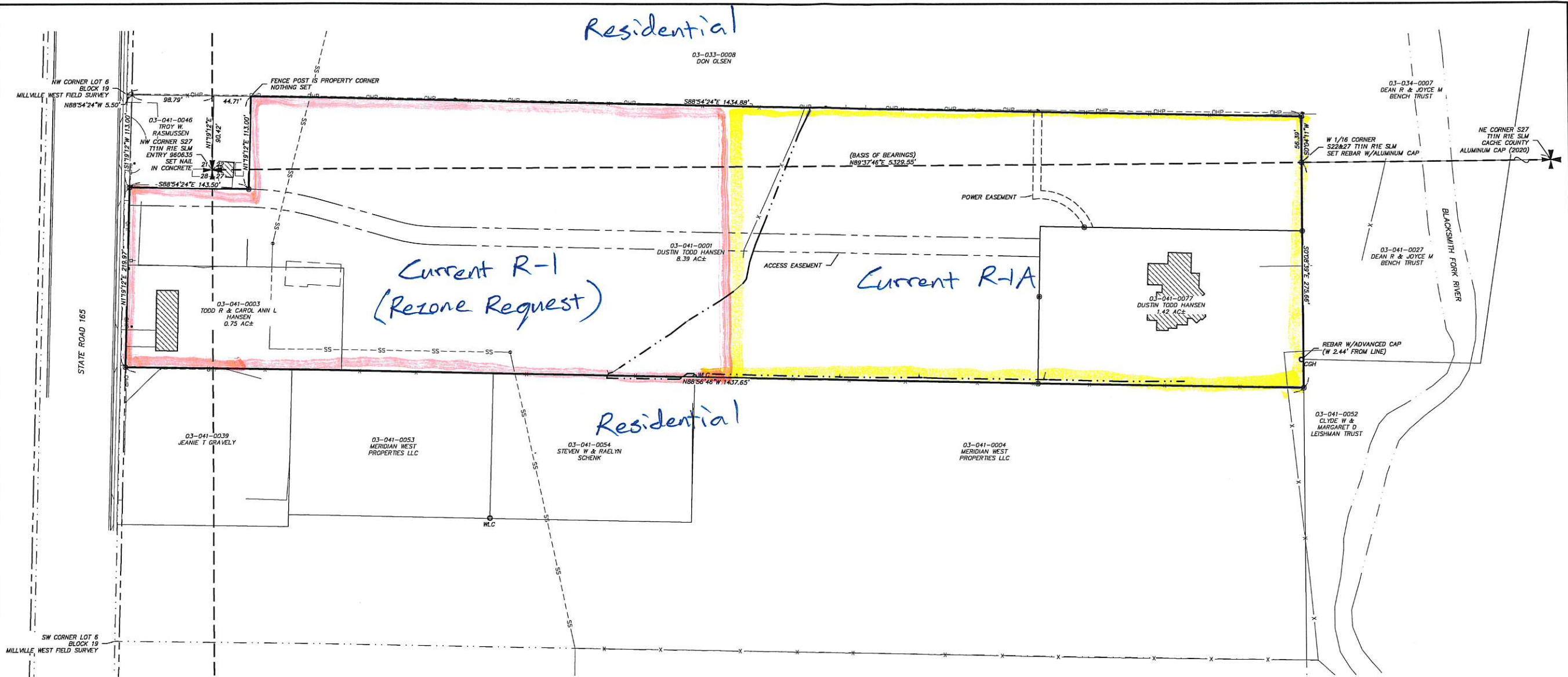
APPROVED BY:
S. EARL

PROJECT NUMBER:
20023-HSN

SHEET:

1 of 1

3/10/2022 2:39 PM z:\2020 PROJECTS\20023HSH\SUBDIVISION - NIBLEY, UT\ACAD\SURVEY\BOUNDARY\20023HSH RE-ZONE SURVEY (CURRENT).DWG



LEGAL DESCRIPTION

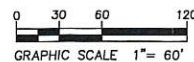
OVERALL PARCEL

PART OF SECTIONS 22, 27 AND 28, TOWNSHIP 11 NORTH, RANGE 1 EAST, SALT LAKE MERIDIAN; ALSO PART OF LOT 6, BLOCK 19, MILLVILLE WEST FIELD SURVEY, LOCATED IN NIBLEY CITY, CACHE COUNTY, UTAH, DESCRIBED AS FOLLOWS:
COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 27;
THENCE N1°19'12\"/>

CONTAINING 10.57 ACRES, MORE OR LESS.

LEGEND

- BOUNDARY
- MILLVILLE WEST FIELD SURVEY LOT LINES
- SECTION LINE
- RIGHT-OF-WAY
- PARCEL LINE
- FENCE
- SECTION CORNERS
 - SET REBAR W/ STEVEN C EARL CAP
 - REBAR W/ WAYNE L CROW CAP
 - REBAR W/ADVANCED SURVEYING CAP



SURVEY CERTIFICATE

I, STEVEN C. EARL, DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR, AND THAT I HOLD CERTIFICATE NO. 318575-2201 AS PRESCRIBED BY THE LAWS OF THE STATE OF UTAH, AND THAT I HAVE MADE AND/OR SUPERVISED THE SURVEY OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT THIS PLAT IS A TRUE AND CORRECT REPRESENTATION OF SAID SURVEY TO THE BEST OF MY KNOWLEDGE AND BELIEF.



SHEET DESCRIPTION

RE-ZONE SURVEY
FOR
TODD & DUSTIN HANSEN

PARCELS 03-041-0001, 0003 & 0077
NIBLEY, UT

S22 S27 S28 T11N R1E SLM



Cache & Landmark
Engineers
Surveyors
Planners

95 W. Golf Course Rd.
Suite 101
Logan, UT 84321
435.713.0099

DATE:
10 MARCH 2022

SCALE:
1" = 60'

CALCULATED BY:
S. EARL

CHECKED BY:
S. CROOKSTON

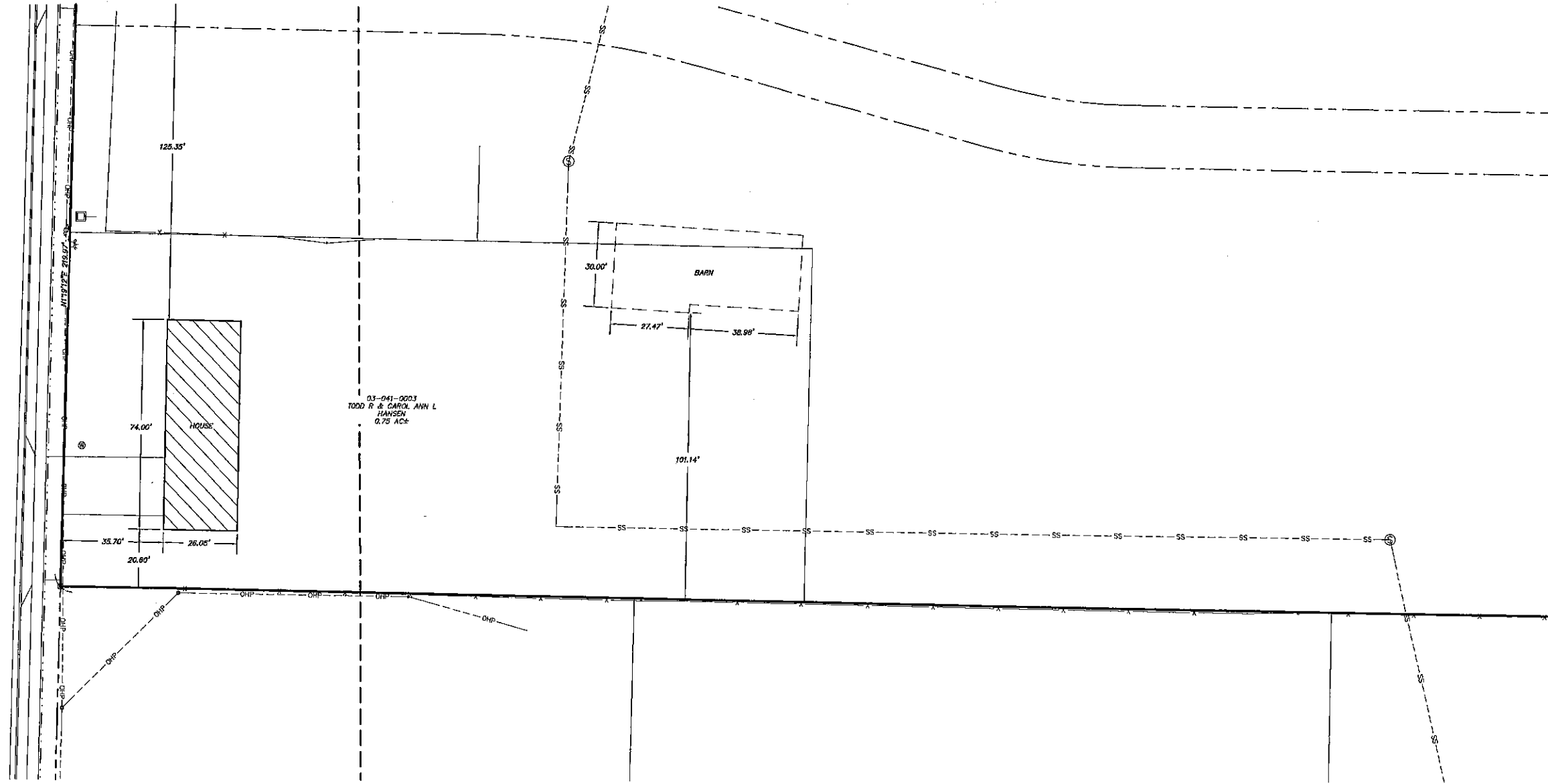
APPROVED BY:
S. EARL

PROJECT NUMBER:
20023HSH

1 / 2

3/10/2022 2:58 PM Z:\2020 PROJECTS\2002JHSHN DUSTIN HANSEN - SUBDIVISION - NIBLEY, UT\ACAD\SURVEY\BOUNDARY\2002JHSHN RE-ZONE SURVEY 2 (CURRENT).DWG

STATE ROAD 165



LEGAL DESCRIPTION

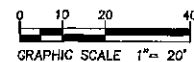
OVERALL PARCEL

PART OF SECTIONS 22, 27 AND 28, TOWNSHIP 11 NORTH, RANGE 1 EAST, SALT LAKE MERIDIAN; ALSO PART OF LOT 6, BLOCK 19, MILLVILLE WEST FIELD SURVEY, LOCATED IN NIBLEY CITY, CACHE COUNTY, UTAH, DESCRIBED AS FOLLOWS:
COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 27;
THENCE N11°12'E 90.42 FEET TO THE NORTH LINE OF SAID LOT 6;
THENCE N88°54'24"W 104.29 FEET TO THE NORTHWEST CORNER OF SAID LOT;
THENCE S88°54'24"E 149.00 FEET ALONG THE NORTH LINE OF SAID LOT TO THE POINT OF BEGINNING;
THENCE S88°54'24"E 1285.88 FEET, MORE OR LESS, ALONG THE NORTH LINE OF SAID LOT AND ITS EXTENSION TO THE WEST SIXTEENTH LINE OF SAID SECTION 22;
THENCE S01°11'W 48.39 FEET TO THE WEST SIXTEENTH CORNER COMMON TO SAID SECTIONS 22 AND 27;
THENCE S01°08'39"E 275.66 FEET ALONG THE WEST SIXTEENTH LINE OF SAID SECTION 27;
THENCE N88°56'46"W 1437.85 FEET TO THE EAST LINE OF STATE ROAD 165;
THENCE N11°12'E 219.97 FEET ALONG SAID EAST LINE;
THENCE S88°54'24"E 143.60 FEET;
THENCE N11°12'E 113.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 10.57 ACRES, MORE OR LESS.

LEGEND

- BOUNDARY
- MILLVILLE WEST FIELD SURVEY LOT LINES
- SECTION LINE
- RIGHT-OF-WAY
- PARCEL LINE
- FENCE
- SECTION CORNERS
 - SCS SET REBAR W/ STEVEN C EARL CAP
 - MLC REBAR W/ WAYNE L CROW CAP
 - CSH REBAR W/ADVANCED SURVEYING CAP



SURVEY CERTIFICATE

I, STEVEN C. EARL, DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR, AND THAT I HOLD CERTIFICATE NO. 318875-2201 AS PRESCRIBED BY THE LAWS OF THE STATE OF UTAH, AND THAT I HAVE MADE AND/OR SUPERVISED THE SURVEY OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT THIS PLAT IS A TRUE AND CORRECT REPRESENTATION OF SAID SURVEY TO THE BEST OF MY KNOWLEDGE AND BELIEF.



CL
Cache • Landmark
Engineers
Surveyors
Planners
95 W. Golf Course Rd.
Suite 101
Logan, UT 84321
435.713.0099

DATE: 10 MARCH 2022
SCALE: 1" = 20'
CALCULATED BY: S. EARL
CHECKED BY: S. CROOKSTON
APPROVED BY: S. EARL
PROJECT NUMBER: 2002JHSHN

2 / 2

RE-ZONE SURVEY
FOR
TODD & DUSTIN HANSEN

HOUSE EXHIBIT

S22 S27 S28 T11N R1E SLM

Agenda Item 12 & 13

Description	Public Hearing – Ordinance 22-09: Allowing ‘Pet Services’ as Allowed Use in Commercial (C), Neighborhood Commercial (C-N), and Industrial (I) Zones and Discussion & Consideration – Ordinance 22-09: Allowing ‘Pet Services’ as Allowed Use in Commercial (C), Neighborhood Commercial (C-N), and Industrial (I) Zones (First Reading)
Presenter	Levi Roberts, Nibley City Planner
Recommendation	Move to approve Ordinance 22-09: Allowing ‘Pet Services’ as Allowed Use in Commercial (C) and other Zones, for first reading
Reviewed By	Mayor, City Manager, City Planner

Background:

Emily Woods has petitioned the City to amend Zoning Regulations to add pet grooming services to the list of allowed uses. The applicant recently submitted a business license application to operate a dog grooming business on 2365 S Heritage Dr, in the same building as Heritage Animal Hospital. Because this category of use is currently not listed on the land use chart (NCC 19.20.020), the City would need to amend the land use chart to allow for this category of use.

It is Staff’s opinion to consider broadening the definition of ‘pet grooming services’ as simply ‘pet services’ with the following definition:

an establishment in the business of sales, grooming, training, play, or pet day care services of household pets. Does not include overnight boarding or animal breeding.

The reason for considering this broader definition is that other related pet services have a similar impact to pet grooming services and providing for this broader definition would allow such uses to be established in the future without the need for another ordinance amendment. That said, the City may consider the applicant’s request of ‘pet grooming services’ with a more narrow definition if there are concerns with the other uses included in the ‘pet services’ category.

Some anticipated impacts of pet services are related to noise and potential smells associated with animals. The limitation in the proposed definition that does not allow overnight boarding would help mitigate some noise-related impacts. However, it may be appropriate to designate pet services as a conditional use in commercial zones to help mitigate potential impacts. Staff also recommends adding pet services to industrial (I) and neighborhood commercial (C-N) zones, which would be consistent with 'veterinary clinic, small animal' as it is generally compatible with the purpose of these zones and is compatible with associated uses.

ORDINANCE 22-09

**ALLOWING 'PET SERVICES' IN COMMERCIAL (C), NEIGHBORHOOD COMMERCIAL (C-N)
AND INDUSTRIAL (I) ZONES**

WHEREAS, Nibley City regulates land uses within Nibley City boundaries; and

WHEREAS, 'pet services' and the associated uses are compatible with the purposes of commercial, neighborhood commercial and industrial zones.

WHEREAS, impacts of 'pet services' can generally be reasonably mitigated through the application of adopted standards during the conditional use permit process.

NOW, THEREFORE, BE IT ORDAINED BY THE NIBLEY CITY COUNCIL OF NIBLEY, UTAH THAT:

1. The proposed amendments to NCC 19.04.010 and NCC 19.20.020 be adopted.
2. All ordinances, resolutions, and policies of the City, or parts thereof, inconsistent herewith, are hereby repealed, but only to the extent of such inconsistency. This repealer shall not be construed as reviving any law, order, resolution, or ordinance, or part thereof.
3. Should any provision, clause, or paragraph of this ordinance or the application thereof to any person or circumstance be declared by a court of competent jurisdiction to be invalid, in whole or in part, such invalidity shall not affect the other provisions or applications of this ordinance or the Nibley City Municipal Code to which these amendments apply. The valid part of any provision, clause, or paragraph of this ordinance shall be given independence from the invalid provisions or applications, and to this end the parts, sections, and subsections of this ordinance, together with the regulations contained therein, are hereby declared to be severable.
4. This ordinance shall become effective upon posting as required by law.

PASSED BY THE NIBLEY CITY COUNCIL THIS _____ DAY OF _____, 2022.

Larry Jacobsen, Mayor

ATTEST: _____
Cheryl Bodily, City Recorder

19.04.010 Definitions

Pet Services: an establishment in the business of sales, grooming, training, play, or pet day care services of household pets. Does not include overnight boarding or animal breeding.

Commented [LR1]: Add to appropriate location within section

19.20.020 Land Use Chart
Nibley City Land Use Chart

Key

P:	Permitted Use
NP:	Not Permitted Use
C:	Conditional use
A:	Agriculture Zone
R-E:	Rural Estate Zone
R-1:	Residential Zone R-1
R-1A:	Residential Zone R-1A
R-2:	Residential Zone R-2
R-2A:	Residential Zone R-2A
R-M:	Mixed Residential Zone
P/S:	Park/School

C:	Commercial Zone
C-N:	Neighborhood Commercial Zone
I:	Industrial Zone

Use	A	R-E	R-1	R-1A	R-2	R-2A	R-M	P/S	C	C-N	I
Residential											
Assisted Living Facility	C	C	NP	NP	NP	NP	P	NP	C	C	NP
Artisan Shop	C	C	C	C	C	C	C	NP	C	C	C
Bed and Breakfast Inn	C	C	C	C	NP	NP	P	NP	C	C	NP
Building moved from another site	C	C	C	C	C	C	C	C	C	C	C
Residential/Commercial Mixed Use ⁶	C	C	C	C	C	C	C	NP	C	C	C
Group Living Facility ¹	C	C	C	C	C	C	C	NP	NP	NP	NP
Home Occupation	C	C	C	C	C	C	C	NP	NP	NP	NP
Home Office	P	P	P	P	P	P	P	NP	NP	NP	NP
Housing, Short-Term Rental ⁴	P	P	P	P	P	P	P	NP	P	P	P

Housing, Single-Family	P	P	P	P	P	P	P	NP	C	C	C
Housing, Multi-Family	NP	NP	NP	NP	NP	NP	P	NP	NP	NP	NP
Housing, Two-Family ⁵	P	P	P	P	P	P	P	NP	C	C	C
Mobile Home Park	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	C
Nursing Home	C	C	C	C	C	C	C	NP	C	C	NP
Temporary Office/Model Home	C	C	C	C	C	C	C	NP	C	C	C
Accessory Dwelling Unit ³	P	P	P	P	P	P	P	P	P	P	P
Use	A	R-E	R-1	R-1A	R-2	R-2A	R-M	P/S	C	C-N	I
Agricultural/Animal											
Ag Implement Sales and Service	C	NP	NP	NP	NP	NP	NP	NP	C	NP	C
Agricultural Production	P	P	P	P	P	P	P	P	C	C	C
Animal Crematorium	NP	NP	NP	NP	NP	NP	NP	NP	C	NP	C
Arboretum/Nature Center	C	C	C	C	C	C	C	C	C	C	C
Farmers' Market	C	C	C	NP	NP	NP	C	C	C	C	C

[illegible]

Agenda Item 14 & 15

Description	Public Hearing – Ordinance 22-10: Amending NCC 19.32 Residential Planned Unit Development Standards Regarding Minimum Project Acreage and Discussion & Consideration – Ordinance 22-10: Amending NCC 19.32 Residential Planned Unit Development Standards Regarding Minimum Project Acreage (First Reading)
Presenter	Levi Roberts, Nibley City Planner
Recommendation	Move to Deny Ordinance 22-10: Amending NCC 19.32 Residential Planned Unit Development Standards Regarding Minimum Project Acreage
Reviewed By	Mayor, City Manager, City Planner

Background:

Al Bingham, representative of Wesley Nelson Farms Inc, has petitioned Nibley City to lower the minimum development size for an R-PUD from 40 acres to 18 acres. The applicant has submitted an R-PUD application for an 18.4 acre residential development. In order to meet the regulations of NCC 19.32, the ordinance would need to be amended to allow for a lower project size. The applicant has submitted a concept plan for the project, which includes a mix of 63 single-family and 84 townhomes (147 units total). This area does not include other land owned by Wesley Nelson Farms Inc, which annexed to Nibley City in 2020 and is adjacent to this parcel. It should be noted that approval of Ordinance 22-10 would not constitute approval for the proposed R-PUD/subdivision.

General Plan and Ordinance Intent

The Nibley City General Plan, adopted in 2016 provides a list of actions to ‘assist in implementing key goals of the Land Use element of this General Plan.’ Project 3 is listed as follows:

Project 3: Develop a Planned Unit Development (PUD) Ordinance

Nibley’s previous Planned Unit Development ordinance was not useful in achieving the types of development the ordinance provided for, and was repealed. A replacement PUD ordinance would allow for development of the type described in the Town Center

study if it met the goals of this General Plan and was consistent with Nibley's character. A successful PUD ordinance would address the following objectives:

- The minimum project size would be 50 acres in order to allow for an appropriate variety of building types and uses, and provide for adequate open space and public amenities*
- A mix of residential, commercial and office uses could be allowed, if designed to be consistent with Nibley's character*
- The project would be designed to protect sensitive areas and natural features*
- Useable, public open space and amenities would be required as a part of the project*

The City since adopted a new PUD ordinance (R-PUD) in May 2019, which includes the following intent (NCC 19.32.010(A):

This section provides enabling authority and standards for the review and approval of applications for Residential Planned Unit Developments (R-PUD's). The intent of this ordinance is to achieve local economic development goals, provide a diversity of housing options, create walkable neighborhoods, and protect air, water and open space resources by providing an alternative to traditional subdivision design; by encouraging innovation and offering flexibility in design of residential developments with an emphasis on the permanent preservation and creation of a variety of amenities for the enjoyment and benefit of the citizens of Nibley.

As noted in both General Plan and the project intent, the R-PUD ordinance is meant to provide for a variety of housing types with adequate open space and amenities to support both new residents and benefit the citizens of Nibley, at large. In order to accomplish these goals within a given development, a minimum project size has been developed. This allows for enough mass to both provide a significant amount of open space, while supporting meaningful open space amenities.

Previously, the minimum project size for an R-PUD was set at 20 acres. In September 2020, this was raised to 40 acres, in part to more effectively accomplish the goals noted above.

Staff's recommendation is to deny this application as the existing ordinance, which limits developments to those larger than 40 acres, is more in line with the goals of the General Plan and the R-PUD ordinance.

The Planning Commission's recommendation is in line with Staff's recommendation.

ORDINANCE 22-10
AMENDING NCC 19.32- RESIDENTIAL PLANNED UNIT DEVELOPMENT STANDARDS
REGARDING MINIMUM PROJECT ACREAGE

WHEREAS, Nibley City regulates land use and the division of land within Nibley City boundaries; and

WHEREAS, reducing the minimum project acreage from 40 acres to 18 acres within the R-PUD overlay zone will allow for more opportunities to develop housing in Nibley City.

NOW, THEREFORE, BE IT ORDAINED BY THE NIBLEY CITY COUNCIL OF NIBLEY, UTAH THAT:

1. The proposed amendments to NCC 19.32.040 be adopted.
2. All ordinances, resolutions, and policies of the City, or parts thereof, inconsistent herewith, are hereby repealed, but only to the extent of such inconsistency. This repealer shall not be construed as reviving any law, order, resolution, or ordinance, or part thereof.
3. Should any provision, clause, or paragraph of this ordinance or the application thereof to any person or circumstance be declared by a court of competent jurisdiction to be invalid, in whole or in part, such invalidity shall not affect the other provisions or applications of this ordinance or the Nibley City Municipal Code to which these amendments apply. The valid part of any provision, clause, or paragraph of this ordinance shall be given independence from the invalid provisions or applications, and to this end the parts, sections, and subsections of this ordinance, together with the regulations contained therein, are hereby declared to be severable.
4. This ordinance shall become effective upon posting as required by law.

PASSED BY THE NIBLEY CITY COUNCIL THIS _____ DAY OF _____, 2022.

Larry Jacobsen, Mayor

ATTEST: _____
Cheryl Bodily, City Recorder

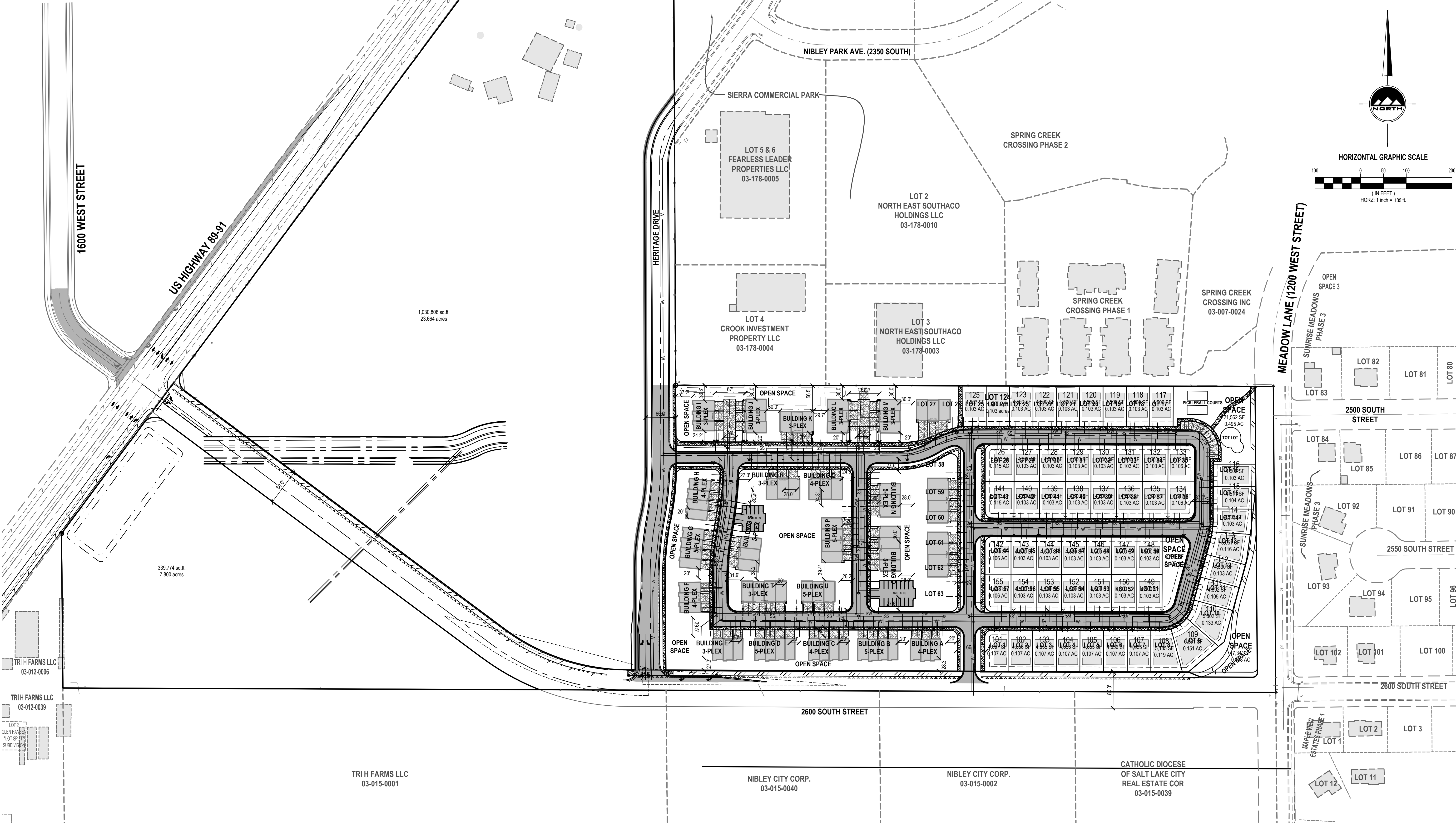
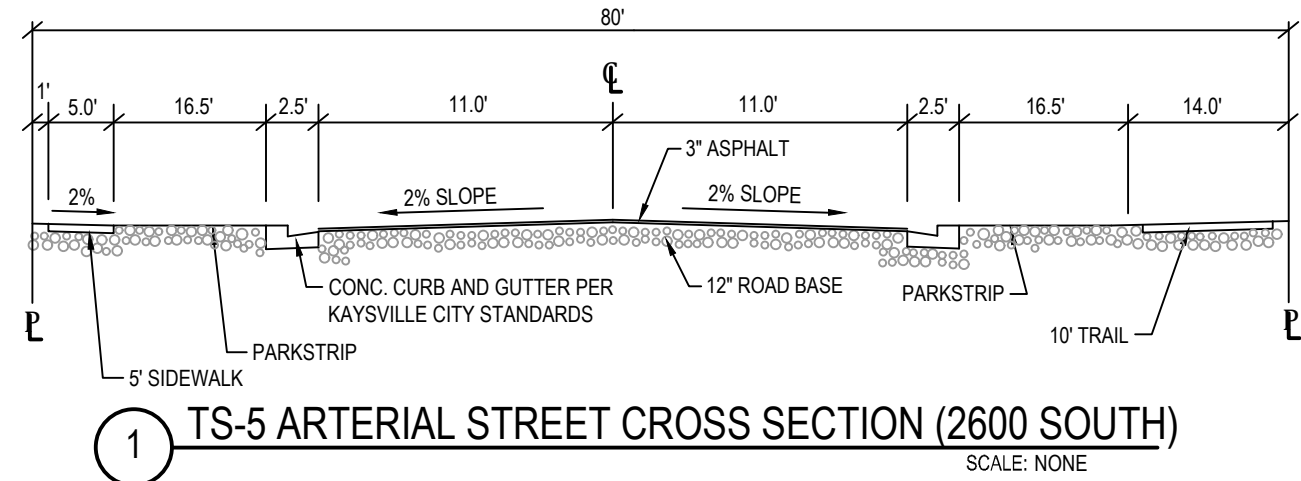
19.32.040 Area And Density Regulations

1. Minimum development size: The minimum total area for an R-PUD shall be ~~40~~18 acres

811

Know what's below.
Call before you dig.

CALL BLUESTAKES
@ 811 AT LEAST 48 HOURS
PRIOR TO THE
COMMENCEMENT OF ANY
CONSTRUCTION.



Agenda Item 16 & 17

Description	Public Hearing – Resolution 22-12: Amending the Nibley City Engineering Design Standards and Specifications Relating to Public Infrastructure & Discussion & Consideration – Resolution 22-12: Amending the Nibley City Engineering Design Standards and Specifications Relating to Public Infrastructure (First Reading) (<i>supersedes R19-09</i>)
Presenter	Darren Farar, Nibley City Engineer
Recommendation	Move to approve first reading of Resolution 22-12: Amending the Nibley City Engineering Design Standards and Specifications Relating to Public Infrastructure
Reviewed By	Mayor, City Manager, City Engineer

Background:

One of the strategic goals of the Public Works Department and the City Manager has been to update the City's Engineering Design Standards. The purpose of this goal is to update the standards to provide a standard that reflects changes to the City's codes (for example the addition of multifamily housing); changes in industry standards for design and construction techniques, materials, etc; to make correction where conflict exists within current code; and to add additional standards to areas that may not have historically provided clear direction.

In late 2021, the Public Works department began the process of reviewing the current standards, identifying areas that needed to change, be added to, and / or otherwise updated. This team included the City Engineer, the Public Works Director, the Streets Manager, the Utility Manager, and the Parks Manager. Materials that were reviewed in conjunction with developing the new standards include the City's Current Engineering Design Standards, the City's current Code, the APWA manuals of Standard Plans and Standard Specifications, Engineering Standards of other municipalities, and other relevant documents.

To date City Staff has completed an update to the water and sewer chapters of the standards and a new portion of the document that includes general notes that are added to construction plans. The updates include revisions to the standards, redlines to the APWA Standard Plans reflecting the City's allowances, an approved materials list, a

set of standard general notes to be included on all plan sets, and other procedure documents that provide specific detail to aid staff and contractors in completing more technical items such as testing that a new water line is ready to put into service.

While the standards are presented for Council approval, staff recommends that the approved material lists remain an administratively managed list for the purposes of being able to update manufacturers and models of materials as may be needed to match availability.

RESOLUTION 22-12

ADOPTING THE NIBLEY CITY DESIGN STANDARDS & SPECIFICATIONS AND RELATED MATTERS

WHEREAS, Nibley City is authorized by Utah Code sections 10-3-702 and 10-3-711(2) and Nibley City Code 21.02.040 (H) to establish the Nibley City Design Standards and Specifications providing building, safety, and design standards and regulations.

NOW, THEREFORE, be it ordained by the City Council of Nibley City, Utah, as follows:

1. The City Council finds that there is good cause and that it is in the interest of the public welfare, health, and safety to adopt the Nibley City Design Standards and Specifications as presented,
2. All ordinances, resolutions, or parts thereof in conflict herewith are, to the extent of such conflict, hereby repealed and this Ordinance shall be in full force and effect immediately upon its approval and adoption.

PASSED BY THE NIBLEY CITY COUNCIL THIS _____ day of _____, 2022.

Larry Jacobsen, Mayor

ATTEST: _____
Cheryl Bodily, City Recorder



0.1 General Notes For Plans

0.1.1 General Notes for Construction

ALL plans for construction within the Nibley City Shall have the following shown on either the Cover Sheet or the Detail Sheet

NIBLEY CITY GENERAL NOTES FOR CONSTRUCTION

- A. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
- B. ALL CONSTRUCTION SHALL CONFORM TO THE CITY ENGINEERING STANDARDS, CITY STANDARD DETAILS, CURRENT APWA MANUAL OF STANDARD SPECIFICATIONS / STANDARD PLANS, OR OTHER STANDARD APPROVED BY THE CITY ENGINEER IN WRITING.
- C. THIS SET OF PLANS HAS BEEN REVIEWED FOR COMPLIANCE WITH CITY REQUIREMENTS PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS. HOWEVER, SUCH REVIEW SHALL NOT PREVENT THE CITY FROM REQUIRING CORRECTION OF ERRORS IN PLANS FOUND TO BE IN VIOLATION OF ANY LAW OR ORDINANCE.
- D. THE CITY DOES NOT WARRANT ANY QUANTITIES SHOWN ON THESE PLANS.
- E. THE CITY APPROVAL IS FOR GENERAL LAYOUT IN THE RIGHT-OF-WAY ONLY. THIS APPROVAL IS VALID FOR A PERIOD OF ONE YEAR. CONSTRUCTION PERMITS SHALL BE OBTAINED DURING THIS PERIOD OR THE PLANS SHALL BE RESUBMITTED FOR REVIEW AND APPROVAL.
- F. AN APPROVED SET OF PLANS SHALL BE AVAILABLE ON THE JOB SITE AT ALL TIMES.
- G. THE CITY CONSTRUCTION INSPECTOR SHALL BE NOTIFIED **48 HOURS** PRIOR TO ANY CONSTRUCTION WORK AND INSPECTIONS. CONSTRUCTION WORK CONCEALED WITHOUT INSPECTION BY THE CITY CONSTRUCTION INSPECTOR SHALL BE SUBJECT TO EXPOSURE AT THE CONTRACTOR'S EXPENSE.
- H. ANY WORK PERFORMED WITHOUT THE APPROVAL OF THE CITY ENGINEER, OR DESIGNEE, AND ANY WORK/MATERIAL NOT IN CONFORMANCE WITH CITY ENGINEERING STANDARDS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- I. THE DEVELOPER IS RESPONSIBLE FOR THE REMOVAL OR RELOCATION OF ALL OBSTRUCTIONS WITHIN THE RIGHT-OF-WAY PRIOR TO STARTING NEW CONSTRUCTION.
- J. THE DEVELOPER IS RESPONSIBLE FOR ARRANGING THE RELOCATION AND ASSOCIATED COSTS OF ALL UTILITIES. A UTILITY RELOCATION



SCHEDULE SHALL BE SUBMITTED PRIOR TO THE ISSUANCE OF PERMITS.

- K. THE DEVELOPER IS RESPONSIBLE FOR OBTAINING OR DEDICATING ALL REQUIRED RIGHTS-OF-WAY AND EASEMENTS TO THE CITY PRIOR TO ISSUANCE OF PERMITS.
- L. THE CONTRACTOR SHALL CONTACT BLUE STAKE PRIOR TO CONSTRUCTION ACCORDING TO BLUE STAKE STANDARD NOTIFICATION TIMEFRAMES. THE CONTRACTOR SHALL LOCATE ALL CONFLICTS PRIOR TO CONSTRUCTION.
- M. THE CONTRACTOR SHALL BARRICADE CONSTRUCTION SITES AT ALL TIMES PER THE MUTCD. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL IN ADVANCE OF CONSTRUCTION.
- N. THE UNLAWFUL REMOVAL OF WATER FROM A CITY FIRE HYDRANT OR ANY OTHER SOURCE IS A VIOLATION OF THE MUNICIPAL CODE. CONTACT THE CITY INSPECTOR FOR SETTING UP USE.
- O. THE CONTRACTOR SHALL COMPLY WITH THE ENVIRONMENTAL PROTECTION AGENCY NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REQUIREMENTS ESTABLISHED FOR CONSTRUCTION SITES, DEQ GENERAL PERMIT FOR DISCHARGE FROM CONSTRUCTION ACTIVITIES, AND THE NIBLEY CITY STORM WATER MANAGEMENT PLAN.
- P. THESE PLANS REFLECT CONDITIONS AS THEY EXIST AT THE TIME OF DESIGN. IF EXISTING CONDITIONS HAVE CHANGED BY THE TIME OF CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE CITY AND THESE PLANS MAY HAVE TO BE AMENDED PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES.
- Q. "AS-BUILT" DRAWINGS (ONE SET OF PRINTS AND AN ELECTRONIC PDF COPY), CERTIFIED BY THE DEVELOPER'S ENGINEER, SHALL BE SUBMITTED AND APPROVED PRIOR TO ISSUANCE OF A BUILDING CERTIFICATE OF OCCUPANCY AND ACCEPTANCE OF IMPROVEMENTS BY THE CITY. (SEE THE CITY CODE FOR AS-BUILT REQUIREMENTS)

0.1.2 General Notes for Grading and Drainage Construction

All plans for on-site Grading and Drainage construction shall have the following shown on either the Cover Sheet or the Detail Sheet.

NIBLEY CITY GENERAL NOTES FOR GRADING AND DRAINAGE CONSTRUCTION

- A. ALL GENERAL CONSTRUCTION NOTES SHALL APPLY



-
- B. UNLESS SPECIFIC FINISHED FLOOR ELEVATIONS ARE SHOWN ON THE PLAT, ELEVATIONS SHALL BE A MINIMUM 6 INCHES ABOVE THE HIGHEST ADJACENT TOP OF CURB OR STREET CENTERLINE WHICH EVER IS HIGHER OR 12 INCHES ABOVE THE HISTORIC GROUNDWATER ELEVATIONS AS CERTIFIED BY A GEOTECHNICAL ENGINEER AND SPECIFICALLY IDENTIFIED FOR EACH LOT ON THE RECORDED FINAL PLAT.
 - C. A PERMIT IS REQUIRED FOR ANY SITE GRADING.
 - D. STAKING PAD AND/OR FINISHED FLOOR ELEVATIONS ARE THE RESPONSIBILITY OF THE DEVELOPER OR HIS ENGINEER. FOR LOTS IN FEMA ZONES A, AO, AH, A1-A33, AND A99, THE FINISHED BUILDING FLOOR OR STEM WALL ELEVATION SHALL BE SUBMITTED AND APPROVED PRIOR TO ANY VERTICAL CONSTRUCTION.
 - E. THE CONTRACTOR SHALL COMPLY WITH THE APPROVED STORM WATER POLLUTION PREVENTION PLAN PREPARED IN ACCORDANCE WITH THE CITY'S GENERAL UPDES STORM WATER PERMIT REQUIREMENTS.
 - F. THE GRADING CONTRACTOR SHALL DESIGNATE THE LOCATION FOR WASTING SPOIL MATERIALS AND OBTAIN A LETTER FROM THE OWNER GIVING PERMISSION FOR SAID DISPOSAL PRIOR TO STARTING ON-SITE CONSTRUCTION.
 - G. GRADING AND DRAINAGE PLAN APPROVAL INCLUDES RETENTION AND DETENTION AREAS, OTHER DRAINAGE FACILITIES AND CHANGES TO SURFACE GRADING AND STORMWATER FACILITIES AFFECTING DRAINAGE STRUCTURES, CURBS, ASPHALT PAVEMENT, AND BUILDING FLOOR ELEVATIONS.
 - H. THE CONTRACTOR SHALL PROVIDE ALL RETENTION AND DETENTION BASINS AT ELEVATIONS AS SHOWN ON THE PLANS. RETENTION BASINS SIDE SLOPES SHALL NOT EXCEED 3:1. RETENTION BASIN HIGH WATER ELEVATIONS SHALL NOT EXCEED 3-FOOT AND SHALL BE SET 12 INCHES ABOVE THE HISTORIC GROUNDWATER LEVEL. RETENTION IS NOT PERMITTED WITHIN PUBLIC RIGHTS-OF-WAY OR PUBLIC UTILITY EASEMENTS.
 - I. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND CONFIRMING DEPTHS OF ALL THE EXISTING UTILITY LINES WITHIN PROPOSED RETENTION BASIN AREAS. IF THE BASIN CANNOT BE CONSTRUCTED PER PLAN AS A RESULT OF CONFLICT WITH UNDERGROUND UTILITIES, THE CONTRACTOR SHOULD CONTACT THE CITY AND DESIGNER AND REQUEST MODIFICATION OF THE BASIN DESIGN.



0.1.3 General Notes for BMP Plan, Small Sites

All BMP Plans for Small Sites shall have the following notes shown on the BMP plan sheet or BMP detail sheet.

NIBLEY CITY GENERAL NOTES FOR SWPP PLAN

- A. ALL GENERAL CONSTRUCTION NOTES SHALL APPLY.
- B. APPROVAL OF THIS DOCUMENT INDICATES THAT NIBLEY CITY HAS REVIEWED AND FOUND THIS TO BE IN GENERAL COMPLIANCE WITH THE CITY'S STORMWATER MANAGEMENT PLAN. NIBLEY CITY IS AT NO TIME RESPONSIBLE FOR THE APPLICANT'S/OPERATOR'S DUTIES TO COMPLY WITH ANY FEDERAL, STATE, OR LOCAL LAW OR ORDINANCE.
- C. THE FACILITIES SHOWN ON THIS PLAN SHALL BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT-LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS. ADDITIONALLY, THEY SHALL BE INSTALLED AND IN OPERATION PRIOR TO ANY GRADING OR LAND CLEARING. WHEREVER POSSIBLE, NATURAL VEGETATION SHALL BE MAINTAINED TO ASSIST IN SILT CONTROL.
- D. CONSTRUCTION SHALL BE PERFORMED IN SUCH A MANNER SO THAT STORMWATER DISCHARGES DO NOT CAUSE ANY FLOODING OR DAMAGE TO ADJACENT PROPERTIES OR FLOWS OF SEDIMENT ONTO PUBLIC STREETS, SIDEWALKS, DRAINAGE CHANNELS, PUBLIC UTILITY EASEMENTS OR RIGHTS-OF-WAYS.
- E. FACILITIES SHALL BE MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONALITY. IN ADDITION, ALL CONTROLS SHALL BE MAINTAINED IN SATISFACTORY CONDITION UNTIL SUCH TIME THAT CONSTRUCTION IS COMPLETED, PERMANENT DRAINAGE FACILITIES ARE OPERATIONAL, AND THE POTENTIAL FOR EROSION HAS PASSED.
- F. THE PLANS SHALL BE AMENDED AS NECESSARY DURING THE COURSE OF CONSTRUCTION TO RESOLVE ANY PROBLEM AREAS, WHICH BECOME EVIDENT DURING CONSTRUCTION, ROUTINE INSPECTIONS, AND/OR PERIODS OF RAINFALL. IF IT IS DETERMINED THAT CURRENT CONTROLS ARE NOT EFFECTIVE AT MINIMIZING POLLUTANT DISCHARGES FROM THE SITE, IMMEDIATE EFFORTS SHALL BE MADE TO CORRECT THE PROBLEM WITHIN 72 HOURS AND/OR PRIOR TO THE



NEXT RAIN EVENT. THE AMENDED PLAN SHALL BE MAINTAINED ON-SITE.

- G. IF AT ANY TIME, THIS SITE BECOMES IMPACTED BY OTHER CONSTRUCTION, STORMWATER POLLUTION PREVENTION ACTIVITIES SHALL BE COORDINATED BETWEEN THE SITES AND DOCUMENTED ON THE PLANS.
- H. PROPERTY THROUGH WHICH A WATERCOURSE PASSES SHALL BE KEPT FREE OF CONSTRUCTION MATERIALS, TRASH, DEBRIS, EXCESSIVE VEGETATION, AND OTHER OBSTACLES OR SUBSTANCES WHICH WOULD POLLUTE, CONTAMINATE, OR SIGNIFICANTLY RETARD OR DIVERT THE FLOW OF STORMWATER THROUGH THE PROPERTY.
- I. THE SITE SHALL AT ALL TIMES REMAIN FREE OF LOOSE TRASH AND DEBRIS. APPROPRIATELY SIZED COVERED WASTE RECEPTACLES SHALL BE PROVIDED ONSITE AND STORED A MINIMUM OF 50 FEET FROM ANY DRAINAGEWAY OR DRAINAGE INLET.
- J. A COPY OF THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP), NOTICE OF INTENT (NOI) AND ALL RELATED RECORDS SHALL BE MAINTAINED ON THE SITE AND AVAILABLE FOR REVIEW UPON REQUEST. NIBLEY CITY MAY AT ANY TIME PERFORM A COMPLIANCE INSPECTION OF THE SITE.

0.1.4 General Notes for Water Main Construction

All plans for water main construction within right-of-way or easements shall have the following shown on either the Cover Sheet or the Detail Sheet.

NIBLEY CITY GENERAL NOTES FOR WATER MAIN CONSTRUCTION

- A. ALL GENERAL CONSTRUCTION NOTES SHALL APPLY.
- B. ALL CONSTRUCTION SHALL CONFORM TO THE CITY ENGINEERING STANDARDS, CITY STANDARD DETAILS, AND CURRENT APWA MANUAL OF STANDARD SPECIFICATIONS AND STANDARD PLANS.
- C. NIBLEY CITY INSPECTORS SHALL BE NOTIFIED **48-HOURS** PRIOR TO STARTING EACH PHASE OF CONSTRUCTION, AND EACH INSPECTION REQUESTED.
- D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND ELEVATION OF ANY UTILITY LINES BEFORE STARTING CONSTRUCTION. IF THE EXISTING LINE IS FOUND TO BE IN A SUBSTANTIALLY DIFFERENT LOCATION, OR WILL ADVERSELY AFFECT THE OPERATION OF THE UTILITY, THE CONTRACTOR SHALL NOTIFY THE NIBLEY CITY PRIOR TO MAKING THE CONNECTIONS. AMENDMENTS TO



THE PLANS MAY BE REQUIRED PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES.

- E. THE NIBLEY CITY IS NOT LIABLE FOR DELAYS OR DAMAGES TO UTILITIES RELATED TO THIS CONSTRUCTION.
- F. BACKFILLING SHALL NOT BE DONE UNTIL LINES ARE INSPECTED AND APPROVED BY THE CITY CONSTRUCTION INSPECTOR.
- G. MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR ACCORDING TO THE CITY'S APPROVED MATERIALS LIST, ENGINEERING STANDARDS CITY STANDARD DETAILS AND APWA MANUAL OF STANDARD SPECIFICATIONS AND STANDARD PLANS. THE APPROVED MATERIALS LIST IS AVAILABLE ON THE CITY WEBSITE.
- H. THE MINIMUM SIZE WATER SERVICE SHALL BE ONE INCH. SERVICE LINES SHALL BE CONTINUOUS UNDER PAVEMENT WITHOUT A CONNECTION OR EXTENSION.
- I. ALL TAPS SHALL USE ALL BRONZE OR STAINLESS-STEEL DOUBLE STRAP SERVICE SADDLES.
- J. THE DEVELOPER IS TO INSTALL ALL TAPS AND METER CANS. THE TAP SHALL TERMINATE WITH WATER METER SETTER WITHIN THE METER CAN PER CITY STANDARDS.
- K. METERS SHALL BE FURNISHED AND INSTALLED BY THE UTILITY AGENCY AFTER PAYMENT OF ALL PREVAILING FEES.
- L. METERS WILL ONLY BE INSTALLED IF:
 - 1. ALL BACTERIOLOGICAL TESTS HAVE BEEN RECEIVED.
 - 2. CURB AND GUTTER HAS BEEN CONSTRUCTED AND THE METER CAN IS INSTALLED TO THE SPECIFIED GRADE PER PLANS.
 - 3. THE METER CAN IS VISIBLE AND FREE OF OBSTRUCTION AND DAMAGE.
 - 4. THE METER CAN AND LID ARE PER THE CITY APPROVED MATERIALS LIST.
 - 5. THE METER CAN AND LID ARE OF THE CORRECT SIZE.
 - 6. THE WATER SERVICE LINES AND CONNECTIONS ARE FREE OF LEAKS.
- M. PAVEMENT REPLACEMENTS SHALL BE MADE PER THE CITY ENGINEERING STANDARDS, CITY STANDARD DETAILS, AND APWA MANUAL OF STANDARD SPECIFICATIONS AND STANDARD PLANS.
- N. ALL WATER SERVICE CONNECTIONS SHALL BE EXTENDED A SUFFICIENT DISTANCE ACROSS THE RIGHT-OF-WAY TO CLEAR ALL FACILITIES TO BE INSTALLED IN PUBLIC UTILITY EASEMENTS PARALLELING STREET RIGHT-OF-WAY.
- O. TRACER WIRE AND LOCATING TAPE SHALL BE INSTALLED ON ALL WATER LINES LARGER THAN 6 INCHES. LOCATING TAPE SHALL BE PLACED ONE FOOT ABOVE THE MAIN.



- P. TRACER WIRE SHALL BE BROUGHT UP ALL VALVE CANS AND FIRE HYDRANTS. WIRE SHALL BE THREADED THROUGH TO THE INSIDE OF THE VALVE CAN BY MEANS OF A HOLE IN THE CAN.
- Q. PRIVATE ON-SITE WATER AND SEWER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE CITY STANDARDS.
- R. THE CONTRACTOR MUST REQUEST A TEMPORARY METER FOR FILLING AND TESTING OF NEW WATER LINES FROM THE CITY CONSTRUCTION INSPECTOR. THIS METER SHOULD BE ORDERED TWO WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

0.1.5 General Notes for Sewer Main Construction

All plans for sewer main construction within right-of-way or easements shall have the following shown on either the Cover Sheet or the Detail Sheet.

NIBLEY CITY GENERAL NOTES FOR SEWER MAIN CONSTRUCTION

- A. ALL GENERAL CONSTRUCTION NOTES SHALL APPLY.
- B. CONTRACTOR WILL EXPOSE ANY LINES BEING TIED INTO, TO VERIFY LOCATION.
- C. THE CITY IS NOT LIABLE FOR DELAYS OR DAMAGES TO UTILITIES RELATED TO THIS CONSTRUCTION.
- D. BACKFILLING SHALL NOT BE DONE UNTIL LINES ARE INSPECTED AND APPROVED BY THE CITY CONSTRUCTION INSPECTOR.
- E. PAVEMENT REPLACEMENTS SHALL BE MADE PER THE CITY ENGINEERING STANDARDS, CITY STANDARD DETAILS, AND APWA MANUAL OF STANDARD SPECIFICATIONS AND STANDARD PLANS.
- F. SHORT TERM DEFLECTION TESTING SHALL BE PERFORMED ON THE TOTAL FOOTAGE OF INSTALLED PIPE, AFTER COMPLETE BACKFILL AND COMPACTION, BUT PRIOR TO THE INSTALLATION OF FINISHED SURFACE MATERIAL. ADDITIONAL TESTING MAY BE REQUIRED. A SHORT-TERM DEFLECTION IN EXCESS OF FIVE PERCENT SHALL BE CONSIDERED UNSERVICEABLE AND SHALL BE REPAIRED OR REPLACED AND RETESTED.
- G. A VISUAL INSPECTION OF THE INTERIOR OF THE SEWER LINE USING A TELEVISION CAMERA WILL BE PERFORMED ON THE TOTAL FOOTAGE OF ALL SEWER LINES, AFTER COMPLETE BACKFILL AND COMPACTION, BUT PRIOR TO THE INSTALLATION OF FINISHED SURFACE MATERIAL. ANY PORTION CONSIDERED UNSERVICEABLE BY THE CITY SHALL BE REPAIRED OR REPLACED AND RETESTED AT NO ADDITIONAL COST TO THE CITY. A COPY OF THE SEWER LINE VIDEO SHALL BE PROVIDED ON A FLASH DRIVE ALONG WITH A REPORT OF OBSERVATIONS. ALL



EXPENSES FOR VISUAL INSPECTION USING TELEVISION CAMERA IS THE RESPONSIBILITY OF THE CONTRACTOR.

- H. ALL TAPS SHALL BE WYE TYPE.
- I. SEWER TAPS MUST BE A MINIMUM OF 4 FEET DEEP AT PROPERTY LINES.
- J. ALL SEWER SERVICE CONNECTIONS SHALL BE EXTENDED A SUFFICIENT DISTANCE ACROSS RIGHT-OF-WAY TO CLEAR ALL FACILITIES TO BE INSTALLED IN PUBLIC UTILITY EASEMENTS PARALLELING THE RIGHT-OF-WAY.
- K. TRACER WIRE AND CAUTION TAPE SHALL BE INSTALLED ON ALL PVC SEWER LINES. TRACER WIRE SHALL BE THREADED THROUGH TO THE INSIDE OF THE MANHOLE BY MEANS OF A HOLE IN THE CONE.
- L. ALL SANITARY SEWER MANHOLES SHALL BE TESTED IN ACCORDANCE WITH ASTM C-1244-93 .
- M. PRIVATE ON-SITE WATER AND SEWER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE CITY STANDARDS.

0.1.6 General Notes for Secondary Water Main Construction

All plans for secondary water main construction within right-of-way or easements shall have the following shown on either the Cover Sheet or the Detail Sheet.

NIBLEY CITY

GENERAL NOTES FOR SECONDARY WATER MAIN CONSTRUCTION

- A. THE NIBLEY CITY ENGINEERING DEPARTMENT (OR ITS AUTHORIZED REPRESENTATIVE) SHALL INSPECT AND APPROVE ALL TRENCHING, BEDDING, PIPE INSTALLATION, BACKFILL AND COMPACTION. NIBLEY CITY SHALL INSPECT AND APPROVE ALL PRESSURE TESTING, DISINFECTIONS, AND ALL OPERATIONAL SYSTEMS TESTS. AFTER COMPLETION OF EACH PHASE OF THE SECONDARY WATER SYSTEM, BUT BEFORE ACCEPTANCE BY NIBLEY CITY AND THE WARRANTY PERIOD, ALL PUNCH LIST ITEMS SHALL BE 100 % COMPLETED, AS GENERATED BY THE NIBLEY CITY.
- B. THE MINIMUM COVER OVER SECONDARY WATER MAINS IS 48 INCHES.
- C. BACKFILLING SHALL NOT BE DONE UNTIL MAINS ARE INSPECTED AND APPROVED BY THE CITY CONSTRUCTION INSPECTOR.
- D. PAVEMENT REPLACEMENTS SHALL BE MADE PER THE NIBLEY CITY ENGINEERING STANDARDS, AND APWA MANUAL OF STANDARD SPECIFICATIONS AND STANDARD PLANS.



- E. ANY CHANGES FROM APPROVED PLANS SHALL BE SUBMITTED TO NIBLEY CITY FOR WRITTEN APPROVAL PRIOR TO INSTALLATION.
- F. AN APPROVED METALLIC MARKING TAPE SHALL BE PLACED ABOVE THE INSTALLED SECONDARY WATER MAIN AND SHALL HAVE THE WORDS “CAUTION: SECONDARY WATER – DO NOT DRINK”.
- G. ALL SECONDARY WATER VALVE COVERS SHALL BE SQUARE AND IDENTIFIED AS “SECONDARY WATER”.
- H. A 2-INCH x 4-INCH METAL STUD (PAINTED PURPLE) SHALL BE SET ONE-FOOT BEHIND EACH SECONDARY WATER STUB-OUT.
- I. ALL SECONDARY WATER LINES SHALL BE PURPLE IN COLOR OR CONSTRUCTED WITH A PURPLE POLYETHYLENE WRAP.
- J. TRACER WIRE SHALL BE INSTALLED ON ALL LINES.

0.1.7 General Notes for Street Construction

All plans for street construction within right-of-way or easements shall have the following shown on either the Cover Sheet or the Detail Sheet.

NIBLEY CITY GENERAL NOTES FOR STREET CONSTRUCTION

- A. ALL GENERAL CONSTRUCTION NOTES SHALL APPLY.
- B. CONTRACTOR SHALL CONTINUOUSLY REFERENCE LOCATION OF ALL VALVES DURING CONSTRUCTION.
- C. ALL UNDERGROUND UTILITIES LOCATED IN THE ROADWAY SHALL BE COMPLETED BEFORE PAVING.
- D. BASE COURSE SHALL NOT BE PLACED UNTIL SUBGRADE HAS BEEN APPROVED BY THE CITY CONSTRUCTION INSPECTOR.
- E. GUTTERS SHALL BE WATER TESTED FOR DRAINAGE IN THE PRESENCE OF THE CITY CONSTRUCTION INSPECTOR.
- F. THE EXACT POINT OF MATCHING TERMINATION AND OVERLAY SHALL BE DETERMINED IN THE FIELD BY THE CITY CONSTRUCTION INSPECTOR.
- G. CURB, GUTTER, SIDEWALK, AND PAVEMENT SHALL BE SWEEPED CLEAN OF DIRT AND DEBRIS.
- H. ANY SAW CUT ALONG EXISTING ROADWAY EDGE WHICH REMOVES THE EDGE OF THE ROADWAY SHALL BE A MINIMUM OF THREE-FOOT FROM THE EDGE OF THE EXISTING ROADWAY. THE CUT DISTANCE MAY BE GREATER, BASED ON PAVEMENT CONDITIONS OR ROADWAY



ELEVATIONS BUT SHALL NOT BE LOCATED WITHIN A LANE WHEEL PATH, AND IF NEEDED SHALL BE IN HALF LANE INCREMENTS.

- I. ALL PAVEMENT MARKING, SIGNING AND CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE NIBLEY CITY ENGINEERING STANDARDS AND APWA STANDARD SPECIFICATION AND STANDARD PLANS.
- J. NIBLEY CITY DEFERS TO APWA SPECIFICATION REGARDING ENVIRONMENTAL CONDITIONS FOR PAVING (WITH TEMPERATURE BEING OF SPECIFIC NOTE). REFER TO THE CITY'S COLD WEATHER PAVING STANDARD FOR INFORMATION ON PAVING IN TEMPERATURES COOLER THAN THAT ALLOWED BY APWA.

0.1.8 General Notes for Signing and Striping

All plans for Signing and Striping shall have the following shown on either the Cover Sheet or the Detail Sheet.

NIBLEY CITY GENERAL NOTES FOR SIGNING AND STRIPING

- A. ALL GENERAL CONSTRUCTION NOTES SHALL APPLY.
- B. ALL PAVEMENT TEMPORARY AND FINAL MARKING, SIGNING AND CONSTRUCTION SHALL CONFORM TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE NIBLEY CITY ENGINEERING STANDARDS AND PLANS, AND THE APWA MANUAL OF STANDARD SPECIFICATION AND PLANS.
- C. SIGNS SHALL BE INSTALLED ON POSTS AS LISTED IN THE CITY'S STREETS APPROVED MATERIALS LIST.
- D. ALL SIGNS THAT ARE REMOVED AND NOT REINSTALLED SHALL BE SALVAGED AND DELIVERED TO THE NIBLEY CITY PUBLIC WORKS DEPARTMENT.
- E. ALL PAVEMENT SUBJECT TO A WARRANTY PERIOD (TYPICALLY ONE YEAR) WILL BE REQUIRED TO PROVIDE NEW THERMOPLASTIC MARKINGS AS A PART OF THE (END OF) WARRANTY INSPECTION.
- F. ALL PAVEMENT MARKINGS ARE TO BE MAINTAINED BY THE DEVELOPER DURING THE WARRANTY PERIOD.
- G. ALL STRIPING SHALL BE 0.015" (15MIL) REFLECTORIZED TRAFFIC PAINT OR 60MIL THERMOPLASTIC.
- H. ALL EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED MARKINGS SHALL BE REMOVED BY WATERBLASTING, OR BY OTHER CITY APPROVED METHOD (APPROVAL SHALL BE RECEIVED IN WRITING FROM THE CITY ENGINEER), PRIOR TO THE INSTALLATION



OF NEW PAVEMENT MARKINGS. REMOVALS SHALL BE TO THE SATISFACTION OF THE CITY CONSTRUCTION INSPECTOR.

- I. ALL SIGNS SHALL BE OF A MATERIAL AS LISTED IN THE CITY'S STREETS APPROVED MATERIALS LIST AND SHALL BE ATTACHED TO THE STANDARD SIGNAGE ALUMINUM PLATES. SIGN IMAGING SHALL BE IN COMPLIANCE WITH THE REFLECTIVE SHEETING MANUFACTURER'S MATCHED COMPONENT SYSTEM. SIGN IMAGING SHALL CONSIST OF AN ACRYLIC BASED ELECTRONIC CUTTABLE FILM WITH STANDARD HIGHWAY COLORS AS IDENTIFIED IN THE STREETS APPROVED MATERIALS LIST. IN ADDITION, IF CALLED OUT ON THE APPROVED PLANS TO CREATE A GRAFFITI-PROTECTIVE COATING, A PROTECTIVE OVERLAY FILM AS IDENTIFIED IN THE STREETS APPROVED MATERIALS LIST SHALL BE USED WHICH IS DESIGNATED TO COMPLY WITH THE UNDERLYING REFLECTIVE SHEETING MATCHED COMPONENT SYSTEM.
- J. THE CONTRACTOR SHALL SPOT LAYOUT THE ENTIRE PROJECT PRIOR TO STRIPING. THE CONTRACTOR SHALL CONTACT THE CITY CONSTRUCTION INSPECTOR TO MAKE ARRANGEMENTS FOR INSPECTION PRIOR TO APPLYING PAVEMENT MARKINGS. THE PERMANENT PAVEMENT MARKING PLANS SHALL BE MODIFIED WHEN DIRECTED BY THE DESIGN ENGINEER. ANY STRIPING APPLIED BEFORE LAYOUT APPROVAL SHALL BE SUBJECT TO REMOVAL, PAVEMENT RESURFACING, AND RESTRIPIING AT THE CONTRACTOR'S EXPENSE.

0.1.9 General Notes for Landscaping

All plans for Landscaping shall have the following shown on either the Cover Sheet or the Detail Sheet.

NIBLEY CITY GENERAL NOTES FOR LANDSCAPING

- A. ALL GENERAL CONSTRUCTION NOTES SHALL APPLY.
- B. ALL SIGNS, MONUMENT WALLS AND SITE LIGHTING REQUIRE SEPARATE BUILDING APPROVAL.
- C. ALL FIRE HYDRANTS SHALL REQUIRE A 7-FOOT CLEARANCE IN ALL DIRECTIONS TO ANY NEW OR EXISTING LANDSCAPE.
- D. SUBSTITUTIONS IN TYPE, AND/OR DEVIATIONS IN SIZE OR QUANTITY FROM THE APPROVED LANDSCAPE OR IRRIGATION PLANS SHALL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE NIBLEY CITY. (CONTACT THE NIBLEY CITY ENGINEER REGARDING ALL PLANTING AND IRRIGATION SUBSTITUTIONS.)



-
- E. PLANT LEGEND PROVIDED FOR CONTRACTOR'S CONVENIENCE. CONSTRUCTION PLANS TAKE PRECEDENCE.
 - F. ALL EXISTING LANDSCAPE AND IRRIGATION SYSTEMS THAT ARE DESIGNATED TO REMAIN ON THE APPROVED LANDSCAPE PLANS SHALL NOT BE DAMAGED OR DESTROYED DURING CONSTRUCTION. ANY DAMAGE THAT DOES OCCUR DURING CONSTRUCTION SHALL BE REPLACED IN KIND BY THE CONTRACTOR.
 - G. SIDEWALK AND PAVING CONSTRUCTION THAT ARE PART OF THE LANDSCAPE IMPROVEMENTS SHALL BE IN COMPLIANCE WITH ALL ON-SITE PAVING AND SHALL MEET DESIGN AND CONSTRUCTION REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA).
 - H. PRIOR TO ACCEPTANCE OF ANY BACKFLOW DEVICE, EACH DEVICE SHALL BE TESTED BY A STATE CERTIFIED TESTER AND THE RESULTS PROVIDED TO THE CITY.

All plans for Commercial or Residential development shall have the following shown on the Cover Sheet.

- I. LANDSCAPED AREAS THAT WILL BE MAINTAINED BY CITY PARKS SHALL BE CLEARLY IDENTIFIED ON THESE PLANS AND ARE SUBJECT TO THE FOLLOWING REQUIREMENTS.
 - 1. THE DEVELOPER SHALL MAINTAIN AND WARRANTY ALL PLANTED AREAS INCLUDING IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR BEGINNING IMMEDIATELY AFTER THE CITY ISSUES THE NOTIFICATION OF APPROVAL FOR THE PROJECT.
 - 2. DURING THE MAINTENANCE AND WARRANTY PERIOD, THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE PROTECTION TO ALL AREAS. ANY DAMAGED PLANTINGS AND OR IRRIGATION SYSTEMS SHALL BE IMMEDIATELY REPAIRED OR REPLACED AT THE DEVELOPER'S EXPENSE.
 - 3. MAINTENANCE SHALL INCLUDE CONTINUOUS OPERATIONS OF WATERING, WEEDING, REMOVAL OF DEAD PLANT MATERIAL, MOWING , ROLLING, FERTILIZING, SPRAYING, INSECT AND PEST CONTROL, RE-SEEDING, REPLACEMENT, AND ALL OTHER MEASURES NECESSARY TO ENSURE GOOD NORMAL GROWTH.
 - 4. WHEN THE TURF HAS ESTABLISHED SUFFICIENT ROOT STRUCTURE AND AN APPROXIMATE HEIGHT OF 3 INCHES, MOWING SHALL BEGIN IMMEDIATELY AND REDUCE IN SAFE INCREMENTS TO A HEIGHT OF 2 INCHES AND SHALL BE MAINTAINED THEREAFTER AT THE HEIGHT OF 2 INCHES.
 - 5. AT THE TERMINATION OF THE MAINTENANCE AND WARRANTY PERIOD, ALL TURF AREAS SHALL BE LIVE, HEALTHY, UNDAMAGED,



- AND FREE OF INFESTATIONS. ALL AREAS SHALL BE COMPLETELY VOID OF BARREN SPOTS LARGER THAN 3 INCHES BY 3 INCHES.
6. IF ALL PLANTINGS ARE NOT ACCEPTABLE AT THE END OF THE ONE YEAR PERIOD, THE MAINTENANCE AND WARRANTY PERIOD SHALL CONTINUE UNTIL ALL UNACCEPTABLE PLANTINGS ARE REPLACED OR REPAIRED AND THE LANDSCAPING MEETS CITY APPROVAL.
 7. AREAS MAY INCLUDE RETENTION BASINS, PARKS, RIGHTS-OF-WAY, AND STREET CENTER MEDIAN LANDSCAPING.

0.1.10 General Notes for Final Plat

All Final Plats shall have the following general notes shown on either the Cover Sheet or the Detail Sheet, unless otherwise approved by the City Engineering and Community Development Departments.

NIBLEY CITY GENERAL NOTES FOR FINAL PLAT

- A. NO STRUCTURES OF ANY KIND SHALL BE CONSTRUCTED OR PLACED WITHIN OR OVER A PUBLIC UTILITY EASEMENT EXCEPT: UTILITIES, ASPHALT PAVING, GRASS, AND WOOD, WIRE OR REMOVABLE SECTION TYPE FENCING. NIBLEY CITY SHALL NOT BE REQUIRED TO REPLACE OR PROVIDE REIMBURSEMENT FOR THE COST OF REPLACING ANY OBSTRUCTIONS, PAVING OR PLANTING THAT IS REMOVED DURING THE COURSE OF MAINTAINING, CONSTRUCTING OR RECONSTRUCTING UTILITY FACILITIES.
- B. NO STRUCTURE OF ANY KIND SHALL BE CONSTRUCTED OR ANY VEGETATION SHALL BE PLANTED NOR WILL BE ALLOWED TO GROW WITHIN, ON OR OVER ANY DRAINAGE EASEMENT WHICH WOULD OBSTRUCT OR DIVERT THE FLOW OF STORM WATER. THE CITY MAY, IF IT SO DESIRES, CONSTRUCT OR MAINTAIN DRAINAGE FACILITIES ON OR UNDER THE LAND OF THE DRAINAGE EASEMENT.
- C. IMPROVEMENTS MADE WITHIN A CITY RIGHT-OF-WAY, TRACT, OR EASEMENT THAT WILL BE MAINTAINED IN THE FUTURE BY NIBLEY CITY SHALL BE CLEARLY IDENTIFIED ON THE APPROVED PLANS AND ARE SUBJECT TO THE FOLLOWING REQUIREMENTS. IMPROVEMENTS MAY INCLUDE BUT ARE NOT LIMITED TO STREET SURFACES, CURBS, GUTTERS, SIDEWALKS, RAMPS, DRIVEWAYS, TURN BAYS, BUS BAYS, STREET LIGHTING, SIGNAGE, AND STREET STRIPING.
 1. THE DEVELOPER SHALL MAINTAIN AND WARRANTY ALL IMPROVEMENTS FOR A PERIOD OF ONE YEAR BEGINNING IMMEDIATELY AFTER THE CITY ISSUES THE NOTIFICATION OF APPROVAL FOR THE PROJECT.



2. DURING THE MAINTENANCE AND WARRANTY PERIOD, THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE PROTECTION TO ALL IMPROVEMENTS. ANY DAMAGED IMPROVEMENT SHALL BE IMMEDIATELY REPAIRED OR REPLACED AT THE DEVELOPER'S EXPENSE.
 3. MAINTENANCE SHALL INCLUDE BUT IS NOT LIMITED TO STREET SWEEPING, APPLICATION OF A SEALANT ON ALL CRACKS AND JOINTS, AND APPLICATION OF A SEALANT OVER ALL ASPHALT PAVEMENTS.
 4. AT THE TERMINATION OF THE MAINTENANCE AND WARRANTY PERIOD ALL IMPROVEMENTS SHALL BE UNDAMAGED AND SHALL MEET CITY STANDARDS.
 5. IF ALL IMPROVEMENTS ARE NOT ACCEPTABLE AT THE END OF THE ONE YEAR WARRANTY PERIOD, THE MAINTENANCE AND WARRANTY PERIOD SHALL CONTINUE UNTIL THE IMPROVEMENTS MEET CITY APPROVAL.
- D. LANDSCAPED AREAS THAT WILL BE MAINTAINED IN THE FUTURE BY NIBLEY CITY SHALL BE CLEARLY IDENTIFIED ON THE APPROVED PLANS AND ARE SUBJECT TO THE FOLLOWING REQUIREMENTS. THESE AREAS MAY INCLUDE RETENTION BASINS, PARKS, RIGHTS-OF-WAY, AND STREET CENTER MEDIAN LANDSCAPING.
1. THE DEVELOPER SHALL MAINTAIN AND WARRANTY ALL PLANTED AREAS INCLUDING IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR BEGINNING IMMEDIATELY AFTER THE CITY ISSUES THE NOTIFICATION OF APPROVAL FOR THE PROJECT.
 2. DURING THE MAINTENANCE AND WARRANTY PERIOD, THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE PROTECTION TO ALL AREAS. ANY DAMAGED PLANTING AND OR IRRIGATION SYSTEMS SHALL BE IMMEDIATELY REPAIRED OR REPLACED AT THE DEVELOPER'S EXPENSE.
 3. MAINTENANCE SHALL INCLUDE CONTINUOUS OPERATIONS OF WATERING, WEEDING, REMOVAL OF DEAD PLANT MATERIAL, MOWING, ROLLING, FERTILIZING, SPRAYING, INSECT AND PEST CONTROL, RE-SEEDING, REPLACEMENT, AND ALL OTHER MEASURES NECESSARY TO ENSURE GOOD NORMAL GROWTH.
 4. WHEN THE TURF HAS ESTABLISHED SUFFICIENT ROOT STRUCTURE AND AN APPROXIMATE HEIGHT OF 3-INCHES, MOWING SHALL BEGIN IMMEDIATELY TO A 2-INCH HEIGHT AND SHALL BE MOWED THEREAFTER AND REDUCED IN SAFE INCREMENTS TO A HEIGHT OF 2-INCHES.



5. AT THE TERMINATION OF THE MAINTENANCE AND WARRANTY PERIOD ALL TURF AREA SHALL BE LIVE, HEALTHY, UNDAMAGED, AND FREE OF INFESTATIONS. ALL AREAS SHALL BE COMPLETELY VOID OF BARREN SPOTS LARGER THAN 3 INCHES BY 3 INCHES.
 6. IF ALL PLANTINGS ARE NOT ACCEPTABLE AT THE END OF THE ONE-YEAR PERIOD, THE MAINTENANCE AND WARRANTY PERIOD SHALL CONTINUE UNTIL THE LANDSCAPING MEETS CITY APPROVAL.
- E. STRUCTURES WITHIN SIGHT VISIBILITY EASEMENTS WILL BE LIMITED TO A HEIGHT OF THREE (3) FEET; LANDSCAPING WITHIN VISIBILITY EASEMENTS WILL BE LIMITED TO GROUND COVER, FLOWERS AND GRANITE LESS THAN TWO (2) FEET (MATURE) IN HEIGHT AND/OR TREES WITH BRANCHES NOT LESS THAN SEVEN (7) FEET ABOVE THE GROUND. TREES SHALL NOT BE PLACED LESS THAN EIGHT (8) FEET APART.
 - F. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE PROPER MAINTENANCE AND REPAIR OF ALL FACILITIES ASSOCIATED WITH STORMWATER MANAGEMENT ON A PROPERTY.
 - G. THIS DEVELOPMENT IS ADJACENT TO AGRICULTURAL USES AND IS THEREFORE SUBJECT TO NOISE, DUST AND ODORS ASSOCIATED WITH SUCH A USE.
 - H. ALL NEW OR RELOCATED UTILITIES WILL BE PLACED UNDERGROUND (*EXCEPTIONS ARE TO BE NOTED*).
 - I. ALL LOT CORNERS SHALL BE MONUMENTED WITH ½" REBAR WITH CAP, TAG OR OTHER MONUMENTATION AS DESCRIBED BEARING THE REGISTRATION NUMBER OF THE SURVEYOR RESPONSIBLE FOR THEIR PLACEMENT.
 - J. NIBLEY CITY IS NOT RESPONSIBLE FOR AND WILL NOT ACCEPT MAINTENANCE OF ANY PRIVATE UTILITIES, PRIVATE STREETS, PRIVATE FACILITIES OR LANDSCAPED AREAS WITHIN THIS DEVELOPMENT.
 - K. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE PROPER MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES.
 - L. THE STREETS IN TRACT (IDENTIFY TRACT) ARE PRIVATE STREETS, TO BE OWNED AND MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION. AFTER THIS PLAT IS RECORDED, NIBLEY CITY WILL NOT ACCEPT DEDICATION OF THE STREET MAINTENANCE RESPONSIBILITIES UNLESS ALL STREET IMPROVEMENTS AND RIGHTS-OF-WAY MEET CURRENT APPLICABLE CITY STANDARDS. (*DEVELOPMENTS WITH PRIVATE STREETS*)
 - M. MAINTENANCE OF EASEMENTS THAT LIE WITHIN THE BOUNDARIES OF A SUBDIVISION LOT SHALL BE THE RESPONSIBILITY OF THE



HOMEOWNERS OR PROPERTY OWNERS ASSOCIATION, WITH THE FOLLOWING EXCEPTIONS (*RESIDENTIAL AND COMMERCIAL SUBDIVISIONS – LIST THE LOTS AND SPECIFY THE EXCEPTIONS*).

- N. MAINTENANCE OF LANDSCAPING THAT LIES WITHIN THE FRONT YARD OF A SINGLE FAMILY RESIDENCE SHALL BE THE RESPONSIBILITY OF THE HOMEOWNER UNLESS OTHERWISE NOTED ON THIS PLAT. THIS INCLUDES LANDSCAPING WITHIN THE RIGHT-OF-WAY, PRIVATE STREET TRACT, AND/OR PUE. (*RESIDENTIAL SUBDIVISIONS*)
- O. MAINTENANCE OF THE SEWER SERVICE LINE TO THE SEWER MAIN IN THE STREET AND THE WATER SERVICE LINE TO THE WATER METER SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.



CHAPTER 4

WATER

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4.1 Potable Water System Standards

4.1.1 General Information

A. Introduction

This document provides guidance and minimum design criteria for the modification and construction of water systems within Nibley City. It is intended for use in the planning, design, plan preparation, and construction processes. These standards are intended to follow State of Utah (hereafter “Utah”) regulations in assuring that City facilities are: reliably capable of supplying potable water in adequate quantities, consistently meeting applicable state drinking water quality requirements, and do not compromise general public health. In the event a part of these standards is found to conflict with Utah standards, Utah standards shall prevail.

The City maintains a citywide Water Master Plan that has been developed to ensure that the City’s water system develops in an organized manner. Contact the City Engineer for further information regarding latest editions and updates to this Master Plan.

Wherever the language of this document refers to equipment or material to be used, or the language of a standard refers to an Approved Materials List, the “Potable Water System Approved Materials List” shall be used. The “Water Line Flushing Procedures” documents shall be followed when installing new meters and water lines. These documents can be obtained from the City’s City Engineer or from the City’s website, www.nibleycity.com.

B. Abbreviations

- | | | |
|-----|------|--|
| 1. | ACP | - Asbestos Cement Pipe |
| 2. | APWA | - American Public Works Association |
| 3. | AWWA | - American Water Works Association |
| 4. | ARV | - Air Relief Valve |
| 5. | DIP | - Ductile Iron Pipe |
| 6. | FDC | - Fire Department Connection |
| 7. | HDPE | - High Density Polyethylene |
| 8. | NFPA | - National Fire Protection Association |
| 9. | PRV | - Pressure Relief Valve |
| 10. | RPP | - Reduced Pressure Principle |

- 11. PVC - Polyvinyl Chloride
- 12. SCADA - Supervisory Control and Data Acquisition
- 13. UPC - Uniform Plumbing Code
- 14. USC - University of Southern California
- 15. VFD - Variable Frequency Drive

C. Development Requirements

- 7. The Developer shall install, at his/her own expense, install all on-site and off-site improvements necessary to service a proposed development. This may include but is not limited to: pump stations, reservoirs, transmission mains, fire lines, fire hydrants, pressure reducing valves, and all other facilities necessary to service the development. The Developer shall also remit payment to the City of all City required development related fees. On-site and Off-site improvements that are oversized for the needs of the development may be candidates for partial reimbursement from the City.
- 8. Each development shall be supplied with safe, reliable, and potable water in a sufficient volume and pressure for domestic use and fire protection. A professional engineer shall provide to the City and the State of Utah an approved electronic model and required reports of the proposed water system improvements verifying that minimum flows and pressures will be met during peak day plus fire flow, peak instantaneous, and average day scenarios. The flows and pressures must meet minimum requirements for domestic use and fire flow.
- 9. For planning purposes, the pressures and flow capacities in an area can be obtained from the Water Master Plan. For final reports that are required prior to construction plan approval, current system pressures and flow capacities shall be obtained by performing a fire hydrant flow test of that part of the potable system to be extended.
 - a. Per Utah regulations, developers may also elect to have the City's designated engineer model the proposed system in the City-wide water model and complete all other regulatory requirements for system approval. Contact the City Engineer to schedule this work.



10. If a building is to be supplied with fire flows from a storage tank or facility that is not City owned, the Design Engineer must provide a report indicating that sufficient volumes exist as required by the Fire Authority.
11. Upon development of property within the City limits, the Developer shall submit construction plans for the water system. The plans shall be prepared by a Professional Engineer licensed in the State of Utah. All water lines and facilities constructed within the City limits shall be inspected and accepted by Nibley City prior to being placed into service.
12. The City requires developers to install water mains along street frontages of developments, where future extension of a water line is required by the City Engineer. The street frontage is that portion of the property adjacent to a public right-of-way and/or public utility easement. If a parcel to be developed has more than one street frontage, water mains shall be installed along each frontage.
13. For current information on ordinance requirements, review of the Nibley City Code of Ordinances is recommended.

D. City Policies

Proposed developments that alter land use and are determined by the City Engineer to have a significant impact on the City Master Water Plan, and/or propose a water system that differs from the City's Water Master Plan, shall be financially responsible to have the City's Water Master Plan and City-wide water model updated to reflect changes. The effects of Peak day Demand + Fire Flows, and all other water demand scenarios from these developments, will be reviewed by the City Engineer to verify the sizing and layout of the proposed water system elements. This information will also be used to assist the City in planning for current and future developments.

4.1.2 Water Plans

A. Modeling Requirements

1. Preliminary Water Information
 - a. Preliminary information regarding the water system for a development shall be provided for all General Plan

Amendments, Zoning, Site Plan, and Preliminary Plat applications. The preliminary information provided within these documents shall at a minimum show the conceptual location and size of the existing and proposed water distribution and transmission mains, fire hydrants, and valves within and adjacent to the site. If applicable the water zone breaks, storage and booster facilities, and other unique water system related items shall also be shown.

- i For site plan and preliminary plat developments that will be constructed in phases, a water model and related reports sufficient to confirm the water system and line sizes are adequate for the improvements is also required.

2. Water Modeling / Reporting Requirements

A water model shall be developed for each project in which the project is to be designed and constructed in a phased succession.

The water model and reports for phased developments will provide a governing plan by which each phase shall adhere. The water model and reports shall be prepared in accordance with this manual or as otherwise directed by the City Engineer and shall be signed and sealed by a Professional Engineer registered in and licensed to practice in the State of Utah.

The objective of the model and report is to provide sufficient information to adequately review the water design for a proposed project.

- a. Per Utah regulations, developers may also elect to have the City's designated engineer model the proposed system in the City-wide water model and complete all other regulatory requirements for system approval. All fees associated with this effort to be paid by the Developer. Contact the City Engineer to schedule this work.

At a minimum, the water model and report shall confirm the following:

- a. The adequacy of available storage.

- b. Capacity to meet fire plus peak day demand scenarios.
- c. Acceptable pressure during fire flow plus peak day demand scenarios.
- d. Modeling
 - i A water model demonstrating that system pressures do not exceed the maximum nor fall below the minimum pressures, as identified in this chapter, will be required. Reporting of the model results shall be provided to confirm.
 - ii The water model shall specifically verify that minimum pressures are available within the development's system during the Peak day Demand + Fire Flow demand scenario.
 - iii The water model shall be provided to the City electronically for purposes of updating the City Water Model.
 - iv The following scenarios shall be modeled:
 - (1). Average Day Demand scenario - based on 0.75 gpm/ERU. See the Water Master Plan for ERU equivalents.
 - (2). Peak Day Demand scenario – 2.49 times the Average Day Demand.
 - (3). Peak Day Demand + Fire Flow.
 - (4). Peak Instantaneous Demand – 3.63 times the Average Day Demand.
 - (5). Fire flows shall be determined per the Fire portion of this chapter.
 - (6). See the Pressure Requirements section of this chapter for minimum and maximum pressure design requirements.
 - (7). Pipeline calculations verifying that head loss per 1,000 feet of any pipe is no greater than



10 feet/feet during peak period demand conditions, and not more than 8 feet/feet under any peak day condition.

- (8). Sufficient supply for domestic demand must be provided without the use of dedicated fire pumps or backup pumps.
- (9). A data flash drive containing the electronic model and reports shall be submitted.

B. Construction Plan Requirements

1. Review Guidelines

The following paragraphs highlight construction plan requirements pertaining to the preparation of water improvement plans which are to be submitted to the City for approval:

- a. General Construction Notes and Water Construction Notes which apply to construction of Nibley City's water system are required on each set of construction plans which include work on the City's water system or a water system which is to be dedicated to the City. These notes are provided in the Administrative chapter of this manual.
- 2. Water line stationing shall be along the pipe, monument, or roadway centerline.
- 3. If a line is to be connected to an existing system, the following note shall be placed on the plans: "Contractor shall verify the location of the existing water line prior to proceeding with trenching".
- 4. The end invert elevation shall be shown on all proposed water main stubs (profile required for lines 8 inches and larger).
- 5. Where water lines cross sewer lines, storm drains, secondary water lines, or drainage culverts, the relationship shall be shown in both plan and profile and actual separations shall be called out.

6. For permitting purposes, quantities for all items of work within public rights-of-way and public easements shall be included on the cover sheet of the plans, unless otherwise approved in writing by the City Engineer.
8. The drawings shall show all utility locations, sizes, material types, easements, rights-of-way, and other structural features for current and future building construction.
9. Private water lines shall be noted as such on plans. The responsibility for operation and maintenance shall also be noted on the plans.
10. Easements of record shall be shown in plan view and noted with the easement type, width, and associated docket and page numbers and/or the Cache County Recorder's number.
11. Prior to issuance of a water construction permit, a construction schedule shall be included in table format for all water-related construction required to serve a development.

C. As-Built Drawings

A City-approved set of As-Built Drawings are required for all water system improvements constructed in the City prior to acceptance of the system and start of the 1-year warranty period. As-built plans shall be signed and sealed by a qualified Professional Registrant in the State of Utah. See Chapter 10 of this manual for applicable As-Built standards.

4.1.3 Production Systems – See Separate Document

4.1.4 Water Lines

A. General Information

The City potable water delivery system has three basic classifications of water lines which are determined by use. These classifications are transmission, distribution, and service.

1. All developments shall design and construct water transmission, distribution, services, and associated equipment



of appropriate size, material identified through the City's Master Plan and the project modeling.

2. All system materials that may come in contact with City drinking water shall be stamped with the NSF logo certifying that the material meets the requirements of ANSI/NSF Standard 61.
3. All system materials shall be "lead free" in accordance with section 1417 of the Federal Safe Drinking Water Act.
4. All system materials shall be protected from freezing. Sufficient cover and at times insulation may be required to provide adequate protection.
5. With exception for fire hydrants in which all parts have been completely refurbished; previously used materials are not allowed to be placed back in service in the City's water system.
6. The City Construction Inspector shall be contacted 48 hours prior to all water system shutdowns. The Contractor shall have all materials and equipment necessary to do the work at the job site prior to shut down.
 - a. Only City personnel shall operate City water valves. Contractors that are found to be operating City valves will be shut down until the City can provide adequate training to the Contractor.
 - b. It shall be the Contractor's responsibility to provide all affected water customers with a written notice of the proposed shutdown. Such notice shall be given a minimum of 24 hours in advance.
7. Water mains shall be identified by:
 - a. Tracer wire and locating tape labeled WATER and placed a minimum of 12" above the water main.

B. Transmission Lines

Transmission lines are used to convey potable or raw water to storage tanks or other points of distribution. In general, they have

line sizes of 16 inches and larger and are located in arterial or collector streets.

1. Major arterial street alignments shall have 12-inch minimum diameter lines.
2. When existing or future development requirements are such that a transmission water line is required, then a transmission water line of a size approved by the City Engineer and designed and sealed by a Professional Engineer shall be constructed by the Developer.
3. Design flows for transmission mains shall be based on the current City General Plan and City Water Master Plan. The flow to a new development shall be calculated to confirm that existing supply is sufficient to meet the proposed development's need. When additional improvements are required to increase the flow to a development, all necessary improvements, including but not limited to, pumping stations, reservoirs, lines, and appurtenances shall be a part of the design.
4. Peak flow calculations on transmission mains shall be based on fire flow figures in accordance with the City's standards.

C. Distribution Lines

Distribution lines have typically sizing of 8 inches to 12 inches in diameter, and are located in collector or local streets. Distribution mains are supplied by transmission lines and may have service connections.

1. See the City's Approved Materials List for approved materials.
2. Arterial street alignments shall have 12-inch minimum diameter lines.
3. Eight-inch diameter pipe shall be the minimum diameter of a distribution main installed in any street or public easement.
4. These are minimum guidelines; the City may require larger sizes, different materials, and varying locations depending on circumstances.

D. Service Connections

A service connection includes the water line from the distribution main to the meter and includes the meter and all connections.

1. Water Services to Residential Developments

- a. 1-inch water service lines shall be provided in new residential connections to properties less than 1 acre. 2-inch water service line shall be constructed to properties 1 acre or larger.
- b. The Developer is responsible for application and payment of all applicable fees.
- c. Water service lines and meters maintained by the City shall be installed within a public right-of-way, PUE, or 20-foot minimum width dedicated water line easement.
- d. All water service lines shall be constructed perpendicular to the centerline of the road and shall extend to the outside edge of the PUE.
- e. Within the right-of-way, cover for water service lines shall be a minimum of 60 inches measured from existing or proposed finished grade of pavement or natural ground, whichever measurement is greater and results in adequate pipe cover.
- f. Construction plans shall indicate the locations of service lines and sewer taps to each unit referenced, with stations and dimensions from the street center line or monument line. Location of the sewer service relative to the water service shall also be shown. Water and sewer services shall be located at opposite corners of a lot.
- g. Service connections shall not be made to mains 16 inches or larger in diameter or to water lines designed solely to transmit water from one pressure zone to another pressure zone.
- j. All service lines for potable water use shall be a separate dedicated line that is tapped off the water main within a public right-of-way, PUE, or water line easement. In commercial and multi-family developments, the potable

domestic water service shall be separate from the potable irrigation water service line.

- k. Branched water service line tees are not allowed.
- l. New water service lines shall be continuous from the main to the meter and **shall not** use coupling devices to extend service lines that are too short.
- m. Tracer wire and locating tape is required on all services and shall be installed the service line and attached to the meter setter with a grounding clamp (see the Approved Materials List)
- n. Services damaged after installation are required to be replaced back to the corporation stop.

2. Water Meters

a. General Information

Water meters 2-inch and smaller are purchased and installed by Nibley City. Review the approved materials list for information regarding City water meters. Water meters greater than 2-inch shall be purchased and installed by the Developer after approval from the City Engineer. Meter types and configurations are determined specific depending on the type of project. Contact the City Engineer to discuss your project and the meter type allowed.

- b. Each single-family residence shall have a separate water meter installed.
- c. Each individual commercial building that uses water shall have a separate water meter installed. Commercial buildings that have separate tenants may have individual water meters installed or may be served by a single larger meter on condition that the City bills a single property association.
- d. Commercial developments shall install separate potable use and potable irrigation water meters.
- e. Multi-family developments

- i. Water meters for multi-family developments may be no smaller than 2-inch. A 2-inch meter may serve a maximum of 14 units unless calculations indicate a lower allowable number of units.
- ii. The City will bill the HOA for the 2-inch meter usage, sewer usage, and solid waste; the HOA shall be responsible for collecting proportional shares of the bill from each unit.
- iii. The HOA shall be responsible for maintenance of the service lines past the City meter.
 - (1). It is acceptable to install the system as a manifold within the meter barrel just off the City meter with individual service lines running to each housing unit. In this design a shut off curb stop style valve shall be located on each line and a maximum number of service lines in the City's barrel is 6.
 - (2). If the system is designed with a main line after the City meter with individual services extending off the main line, the City requires a curb stop style valve be placed on each individual service line.
- f. There shall only be one water meter per service line.
- g. Manifolding, combining, or connecting several smaller meters to meet a flow demand that could be provided by a single larger meter is not permitted.
- h. Water meters shall be sized and designed in accordance with these standards and requirements of the UPC as adopted by the City. Any field changes shall require a letter from the developer with an approval from a registered engineer and the City Engineer.
- i. Water Meter Installation

All water meters shall be provided by the City, after payment of all prevailing fees.

- i. All 1-inch to 2-inch water meters shall be installed by City Public Works personnel.
 - ii. Water meters 3 inches to 6 inches shall be installed by the Developer in accordance with City Standards and APWA Standard Specifications as amended by the City. After installation, City personnel will inspect and accept the work if all requirements for installation are met.
 - j. Water Meter Locating
 - i. Water meters shall be typically located 5-feet behind the sidewalk in the PUE. Where outstanding conditions exist, meters may be located between the curb and sidewalk.
 - ii. Water meters shall not be located in driveways, sidewalks, manmade or natural drainage channels, or retention/detention basins.
 - iii. Water meters shall not be fenced in or enclosed and must be accessible by City personnel at all times.
 - iv. If an existing water service/meter must be relocated, a contractor or property owner may relocate the service a maximum distance of 10 feet, provided the joint is not below concrete, asphaltic pavement or other permanent surfaces without prior approval from the City Engineer. If the desired relocation is greater than 10 feet, the old service must be severed and shut off at the corporation stop on the main; a new service shall be installed by a licensed contractor. Both services shall be noted on the “as-built” drawings.
3. Water Meter Barrels (cans) and Vaults
- a. General Requirements

- i. Finished grade of the meter lid shall be within one inch of nearest concrete surface. If no concrete exists, finished grade shall be within one inch of surrounding existing surface
 - ii. Water meter lids shall be constructed with a 2-inch recessed hole for installation of a meter antenna.
 - b. Single-Family Residential Water Meter Cans
 - i. A minimum 18 1/2 clear space shall be provided for access through the meter can lid.
 - ii. The inside diameter of the can shall be 21 inches and shall be of a white HDPE pipe or black corrugated HDPE pipe.
 - c. Commercial, Industrial & Multi-Family Residential Water Meter Cans
 - i. A minimum 29 7/8 clear space shall be provided for access through the meter can lid.
 - ii. The inside diameter of the can shall be 36 inches and shall be of a white HDPE pipe or black corrugated HDPE pipe.
 - d. Water Meter Vaults 3 to 6 inches and Larger
 - i. Water meter vaults for sizes 3 to 6 inches shall be installed in a vault as shown in the APWA Standard Details as amended by the City.
 - ii. Vaults for water meters larger than 6 inches shall be reviewed and approved by the City Engineer on a case-by-case basis.
- 4. Taps
 - a. Both installation of tapping sleeves and the tapping of an energized water main shall be performed by the Developer, after approval is received by the City Engineer. A City inspector shall be present for the tapping of all energized water mains.

- b. A 3-foot minimum separation is required between service taps, and between a service tap and a pipe connection on a main water line.
- c. A double strap low lead brass or stainless-steel saddle shall be installed on newly installed water service taps.
- d. Service taps are prohibited on any line primarily designed to service fire sprinkler systems and/or fire hydrants.
- e. Taps
 - i. The Contractor shall make all taps from the City's operational water system.
 - ii. The Developer is responsible for preparing application and payment of all applicable fees prior to taps being made.

E. Water Quality Division

- 1. Water lines shall be disinfected in strict conformance with AWWA, APWA, and the City's "Flushing and Disinfecting Procedures". Dry powdered calcium hypochlorite compounds shall not be placed within pipelines during construction.
- 2. Notify the City Construction Inspector when samples are ready to be taken to verify disinfection of water lines. The City Construction Inspector must be present, and samples shall be collected in strict conformance with AWWA, APWA, and the State of Utah Standard Specification. The Contracting Agency is Nibley City, and it is the responsibility of the Developer to hire a certified lab to process the samples.

F. Pipe Materials

- 1. Standard material for water lines located within a City right-of-way or PUE shall be per the City Approved Materials List and installed per this manual, City Standard, and AWWA / APWA Standard Specifications and Details as amended by the City.

3. Private Water lines located within private property and not within a City right-of-way, PUE, or water line easement may be constructed of blue C900 PVC Class 200 pipe.
4. PVC is the preferred pipe material for Nibley City. For all concrete cylinder pipe, ductile iron pipe, or other metallic pipe installations, soil corrosivity tests shall be conducted and reported in accordance with the American Ductile Iron Pipe Research Association. Reports shall be filed with the City Engineer.

G. Locating Water Lines

1. Water lines shall not directly connect to sewer mains or secondary water lines, shall not be constructed in the same trench, and shall maintain a minimum 10 feet of horizontal separation and 1.5 feet of vertical separation above said lines.
2. Where conditions prevent adequate horizontal and vertical separation between a water line and a sewer and/or secondary water lines, the water line shall be constructed of welded HDPE (minimum Class 250) extending 10' on either side of the crossing. The line to be connected on either end with flanged connections. More restrictive State of Utah codes may prevail.
3. Separation of water and electrical, gas, communication lines, or other dry utility lines shall be no closer than 1.5 feet unless specifically approved in writing by the City Engineer.
4. Locating Water Lines within City rights-of-way
 - a. Rights-of-way and/or utility easements shall be dedicated to the City prior to the City accepting ownership.
 - b. Water line location in rights-of-way shall be centered on easements unless otherwise approved by the City Engineer.
5. Survey staking shall be set for all trenching of waterlines 12 inches or greater in diameter.
6. Locating Water Lines within Easements

- a. A water line shall not be installed unless the property owner has granted all necessary easements and rights-of-way to the City.
 - b. All water lines which cross open areas, or any area outside a dedicated right-of-way shall be located within a minimum 15-foot-wide water line easement that is dedicated to the City.
 - c. Easements wider than 15 feet will be required if multiple utilities are co-located, or if additional area is required for maintenance equipment access due to the size and/or depth of the lines.
 - d. No structures of any kind shall be constructed or placed within or over a utility easement except utilities, wire (or removable section-type) fencing, wood chips, decomposed granite, grass, or asphalt paving.
 - e. Easements shall at all times be clear and accessible to City service equipment such as trucks, backhoes, etc. Easements shall be accessible from City rights-of-way or other City owned easements.
 - f. Easements shall be dedicated prior to the commencement of construction activities.
6. Locating Water Lines in Areas not Accessible by Normal Excavation Methods
 - a. All pipe constructed in inaccessible areas must be welded HDPE extending one 10-feet before and after the section.
 - b. All sleeves for water line pipes must be C900 PVC, welded steel, or HDPE Class 200 pipe or better.

H. Cover and Bedding Requirements

1. Water mains and services shall have a minimum cover of 60 inches over the top of pipe to top of finished grade.
2. Cover for water mains shall be measured from existing or proposed finished grade of pavement or natural ground, whichever measurement is greater and results in adequate pipe protection during construction.

3. The proposed depth shall be clearly noted in each construction plan sheet. Any changes in depth required to avoid conflicting utilities, etc., shall be noted.
4. When ACP or other poor condition water lines are exposed during construction, the water line shall be removed to the nearest joint and replaced with PVC (minimum Class 200) with restrained joints.

I. Pressure Requirements

Pressure extremes in water systems result in potential for contamination to enter the network. Low pressures in the water system may allow polluted fluids to be forced into the system. High pressures may cause ruptures or breaks in some elements of the network.

1. Engineers designing domestic water systems shall design to 20 psi under fire flow conditions as the minimum basis of design for pressure at the highest ground level to be served (highest finished floor elevation). Operating water system pressure during average day scenarios shall be a minimum of 40 psi and shall not exceed 120 psi. Ultimate pressure requirements shall be approved by the City Engineer.
2. All water mains and service lines shall be designed for a minimum normal internal working pressure of 200 psi plus appropriate allowances for water hammer.
3. Water hammer may produce momentary pressures greatly in excess of normal static pressures, thus increasing the probability of water main failure. Suitable provisions shall be made to protect the system from water hammer.
 - a. Thrust blocking is required on all hydrant tees and 90-degree fittings per APWA plan No 511.
 - b. Mechanical joint restraints shall be used on all other tees, dead ends, vertical, and horizontal bends see APWA amendment details 561A, B.
4. In cases where greater than the above noted maximum pressures are required for effective operation, all elements of the system shall be designed accordingly. Pressure

information for existing water lines may be obtained by having a fire hydrant flow test performed on the existing system.

- a. A Right-of-Way Permit issued by the City Engineer is necessary to perform the fire hydrant flow test.
- b. These tests may be performed by a private fire protection company who must certify the results of the tests and submit them to the City Engineer.
- c. Fire hydrant flow testing shall be arranged through the City and a City Public Works staff shall be present throughout the duration of the test. A minimum of 48 hours' notice shall be given prior to testing.

J. Miscellaneous Requirements and Specifications

1. All new water mains shall be designed in a looped configuration, with exceptions being dead-end lines with lengths less than or equal to the maximum allowable length (as determined by fire hydrant limitations).
2. Trenching, backfilling, and compacting shall be in accordance with City Standard Specifications unless otherwise specified in this manual.
3. Temporary and permanent water lines that terminate at the end of a cul-de-sac shall have a fire hydrant at the non-connected end. In no case shall a fire hydrant be located in a natural or manmade irrigation or stormwater conveyance, detention or retention basin, sidewalk, or driveway.
4. No water line shall be deflected or swept (either vertically or horizontally) in excess of the maximum recommended deflection specified by the manufacturer of the pipe or coupling. The appropriate use of bends or offsets shall be used where the maximum deflection is exceeded. Fittings may be required where more than two pipe lengths are deflected.
5. The minimum clearance under culverts, storm drain lines, or similar facilities shall be 2 feet.



7. Water lines to be abandoned shall be approved by the City Engineer.

4.1.5 Valves and Zone Splits

A. General Valve Requirements

1. Valve Specifications

- a. All gate valves shall be resilient seated, solid wedge gate, and shall open left.
- b. Butterfly valves shall be required on water mains larger than 12 inches.
- c. At selected locations between the City's water zones, special water zone valves shall be installed if not previously existing.
- d. Valve box installations and grade adjustments shall be performed per APWA Standard Details as amended by the City.

2. Spacing

- a. Valve spacing for transmission mains with no branches shall be no less than 1/4-mile and no more than 1/2-mile.
- b. The maximum spacing of valves on distribution mains shall be 800 feet for residential zones and 500 feet in all commercial and industrial developments.
- c. Valve Isolation
 - i. Shall be installed on all legs minus one of "T" and "Cross" intersection fittings unless otherwise approved / required by the City Engineer.
 - ii. The maximum number of valves required to isolate an area is four, with two or three being the preferred number.

- iii. No more than two fire hydrants shall be out of service at any given time due to any given valve closure.
 - iv. No more than 30 homes shall be without water due to a single valve closure.
 - d. Valves shall be spaced and located such that they are beneficial to the operation and maintenance of the system. The City Engineer shall approve all valve locations.
 - e. Where valves are to be located off of a tee or cross, the valves shall be flanged to the tee or cross.
 - f. Valves shall be provided to allow for the isolation of lines crossing rivers, culverts, storm drain lines, manmade and natural drainage ways, canals, railroads, highways, bridges, airports, etc. as directed by the City Engineer.
 - g. All mains branching from feeder mains or loops shall be valved adjacent to the feeders so that the branch mains can be taken out of service without interrupting the supply to other locations.
 - h. Any water line that will be extended in the future shall have a valve, along with a 13-foot minimum stub and a fire hydrant at the non-connected end.
3. Operation
- a. Only City personnel are authorized to open and close all existing water valves at all times and in all circumstances: flushing, pressure testing, chlorinating, etc.
 - b. Valves that control the Water System Zone Split shall be designated by permanently imprinting the letters “ZS” on the lid.
 - c. Valves intended to remain closed shall be designated by painting those valve covers white.
4. Backfilling and Compaction

- a. The area immediately surrounding any City valve shall be compacted. A test(s) verifying the compaction of the soil around the valve shall be provided to the City for each 3-foot depth of trench backfill, and prior to placement of any portion of pavement section materials (roadbase or asphaltic concrete).
- b. Compaction testing around valves shall be performed as follows:
 - i. A minimum one test per valve per water valve cluster shall be performed unless additional tests are required by the City Inspector. The test(s) shall be performed within 2 horizontal feet of the valve and directly over the water main. Care shall be taken to prevent damage to the pipe and valve during compaction and testing.
 - ii. Additional compaction tests may be required as determined on a case-by-case basis. The need for additional tests will be identified by City Engineer representatives.

B. Underground Chambers

Underground chambers (vaults, manholes, pits, cans, etc.) that house air release valves, meters, PRVs, etc. shall be constructed in a manner that prevents freezing of the infrastructure according to the following:

1. Shall be provided with a drain to daylight if possible. Where not possible, gravel based absorption pits and / or a pump system may be required if the site is subject to flooding.
 - a. Chambers shall not be connected to the sewer system.

C. Air Release Valves

Air release valves shall be installed on all water mains 8 inches or larger unless otherwise required by the City Engineer and as follows:

1. When water line changes from a positive slope to a zero slope or negative slope in primary direction of flow.

2. When vertical alignment changes to undercross or overcross another facility (i.e. utility, canal, etc.), air release valves shall be installed on the upstream (higher elevation) side of the crossing.
3. All air release valves shall be a combination air/vacuum release type per the City Approved Materials List.
4. The open end of air relief vent pipe from automatic valves shall be provided with a #14 mesh, non-corrodible screen and a downward elbow extended to at least one foot above grade.
5. Shall not be directly connected to the sewer.
6. Shall be installed in a meter can and with a drain to prevent it from freezing.
7. Shall be provided with a shut off valve.

D. Pressure Reducing Valves

1. Transmission and Distribution Lines
 - a. PRVs on transmission and distribution lines shall be rated to maintain pressures between 40 psi and 120 psi within the distribution system.
 - b. PRVs shall be designed in accordance with the City Standards and APWA standard details as amended by the City.
 - c. Pressure gauges shall be installed on the upstream and downstream sides of the PRV after the isolation valves. Pressure gauges shall be connected to the City's SCADA system for live monitoring of pressure conditions.
 - d. A flow meter shall be located at a distance downstream of the PRV according to manufactures recommendations and shall also be connected to the City's SCADA system for live monitoring of flows through the PRV.

- e. PRVs shall be located in the right-of-way or water easement accessible from the right-of-way.

2. Residential Services

The City operates its system from wells and pump stations that commonly have pressures exceeding 80 psi. Changes in demand, supply, and the distribution system also vary the pressure at single family residences.

- a. An individual PRV is required to be placed at each structure.

- E. Zone Splits

The City's water distribution system may be divided into various water zones as defined by the City Master Water Plan. If approved, each zone shall operate as an independent water distribution system. Cross-connections between zones are prohibited.

1. Valves

See the Valve section of this chapter.

2. Special Requirements for Developments Bordering Zone Splits

If a proposed development is located adjacent to a zone split boundary, the Developer shall extend, as necessary, redundant water mains within the development's side of the zone split boundary to close the zone loop.

3. Plans

Plans for water distribution mains adjacent to a zone split boundary shall clearly indicate the different zones involved and the location of the zone split boundary.

4.1.6 Fire Lines and Associated Equipment

- A. Fire Lines

1. Location of on-site fire lines and taps should be determined by the site relationships of the fire department connection, emergency access, and fire hydrant locations. Fire lines sizes

shall be determined by City design criteria and flow test data provided by the Design Engineer for the design of the project. All fire systems that connect to a potable water distribution system shall include a double detector check valve backflow assembly, utilizing a meter provided by the Service Provider at each connection.

2. Fire line designs shall be based on a flow test per the Fire Flow Requirements section of this manual. The drawings shall be of uniform size (24-inch by 36-inch) and shall be drawn to scale. One set of the approved civil water plans shall accompany this submittal. Applicable City and NFPA 24 construction notes shall also be included on the construction drawings.
3. All fire lines shall be dedicated for fire use only. No other water lines or water service lines shall be connected to a dedicated fire line. Installation shall be completed per the City-approved construction plans.
4. All hydrants that are supplied by a private fire line shall be private and shall be owned and maintained by the HOA up to the valve in the street. A fire line is defined as a water line that extends off the City main for the purpose of supplying a fire hydrant and has no services.
5. Private fire line mains shall be installed and inspected per the NFPA 24 Standard, and shall include an isolation valve for each individual fire line.
6. The Owner shall be responsible for maintenance of all water lines beyond the City meter including service lines and valves, fire lines, backflow devices, etc. For commercial fire lines that are not metered, private maintenance responsibility begins after the valve located at the T in the City's main.

B. Fire Hydrants

1. General Requirements
 - a. Fire hydrants and associated bypass assemblies shall be installed as identified in the APWA standard details as amended by the City and this chapter.

- b. The Developer shall provide the fire hydrant, materials, and all labor required for installation.
 - c. All new fire hydrant installations will be installed per manufacturer's specifications.
 - d. Where the finished grade around existing fire hydrants is changed, an extension kit, installed per manufacturer's specifications, may be used. Refer to the City Approved Materials List for approved products.
 - e. One valve shall be placed between each fire hydrant and the water main.
 - f. Fire hydrant laterals shall be a minimum of 6-inches in diameter.
 - g. Valves for fire hydrant connections shall be flanged to the tee.
 - h. Hydrant drains shall be installed with 1-inch gravel pack in quantities as required by the manufacturer and the APWA standards as amended by the City.
 - i. Hydrant locator flag shall be installed on all new hydrants
 - i. Bolt Mounted with spring
 - ii. Fiber Glass shaft
 - i. All public fire hydrants shall be painted red. See the City Approved Materials List for approved paints.
2. Spacing
- a. The spacing of fire hydrants is to be measured along the street or roadway in which a fire hose would be laid. Generally, this spacing is measured along the curb line.
 - b. Fire hydrants shall be located outside of street improvements but within the right-of-way or public utility easement. General spacing for fire hydrants shall be:

- i. 500 feet maximum in a single-family residential development.
 - ii. 350 feet maximum in a multi-family residential or commercial development unless otherwise allowed / required by the International Fire Code.
 - iii. 1,000 feet maximum for transmission mains.
 - iv. Fire hydrants shall not be installed on any portion of a dead-end line which is more than 660 feet from a looped water line.
 - (1). Hydrants on temporary dead lines greater than 660 feet may be allowed upon request and approval by the City Engineer.
 - v. A fire hydrant shall be located within 150 feet of a commercial building fire department connection (FDC).
 - vi. Fire hydrant spacing shall be maintained along required Fire Authority access roads.
3. Locations
- a. Private and public fire hydrants shall be accessible to the Fire Authority.
 - b. A 7-foot minimum clearance shall be maintained around the fire hydrant from landscape material with a maturity height exceeding 6 inches.
 - c. Fire hydrant protection is required where no curb is present.
4. Backfilling and Compaction
- a. The area immediately surrounding any City fire hydrant shall be compacted per APWA Standards as amended by the City. Test(s) verifying the compaction of the roadbase around the hydrant shall be provided to the City for each 3-foot depth of trench backfill, and prior to placement of any portion of pavement section materials (asphaltic concrete).

- b. Compaction testing around hydrants shall be performed as follows:
 - i. A minimum one test per hydrant per 3-foot depth of trench backfill shall be performed. The test(s) shall be performed within 2 horizontal feet of the hydrant. Care shall be taken to prevent damage to the hydrant, valve, or water main during compaction and testing.
 - ii. Additional compaction tests may be required as determined on a case-by-case basis. The need for additional tests will be identified by City Engineer representatives.

C. Fire Department Connections

1. General Requirements

- a. FDCs from service lines (4 inches and larger), and all hydrant connections, shall be constructed of PVC (minimum Class 200 or equal) to the supply line.
- b. All FDCs shall be located in a visible location and shall have an unobstructed access, as approved by the Fire Authority.
- c. FDCs shall be located and arranged so that the hose can be readily attached without obstructions.
- d. FDCs shall be installed on the customer side of the water double detector check valve and shall be painted red.
- e. Signage for FDCs shall be used if the FDC is not easily visible and shall be in conformance with the most currently adopted Fire Code.
- f. There shall be a minimum of 18 inches to the bottom and a maximum of 48 inches to the top of the FDC.
- g. Fire risers and FDCs located at the building do not need to be co-located.

D. Fire Flow Requirements

1. Water distribution facilities shall be sized to deliver a minimum fire flow of:
 - a. 3,500 gpm to commercial, industrial, and multi-family residential properties.
 - b. 1,500 gpm to 1- and 2-family dwelling unit residential properties.
2. Fire flow for buildings with approved automatic sprinkler systems shall be determined based on the requirements of the Fire Code.
3. Fire flow tests are valid for a period of six months, unless a known significant change has been made to the City's system or private water system within the 6 month period.

E. Fire Equipment & Storage Facilities

4. When required by the City Engineer, double detector check valve backflow assembly is required on all fire line connections to a City water main. Information on backflow prevention may be found in the Cross-Connection Section of this chapter.

4.1.7 Cross-Connection Control

It shall be the responsibility of the City to protect the public water system from health hazards and non-health hazards by the implementation of a cross-connection control program. The program shall consist of inspection by the City Public Works Department and implementation of a backflow prevention and maintenance program, as outlined in the "Manual of Cross-Connection Control" published by USC.

All cross-connection (backflow) devices shall conform to the State of Utah adopted codes.

A. Implementation

1. Air-gap separation shall be required for developments where entry is or will be restricted and cross-connection inspections cannot be made with sufficient frequency or can only be made

on short notice. Air-gap separation shall be required in, but not limited to, areas where the following high-hazard conditions exist:

- a. Public water system is used to supplement secondary water.
 - b. Wastewater is pumped and/or treated.
 - c. Hazardous substances are handled or stored.
 - d. Irrigation systems exist into which fertilizers, herbicides, or pesticides could be injected.
 - e. Unapproved water supply exists which is interconnected with the public water system.
 - f. As required by DWR, or the City Engineer.
2. RPP (or at times DC Valve Assembly backflow prevention) devices shall be required in locations where air-gap is not required, or where entry is not restricted and cross-connection inspection can be made with sufficient frequency or on short notice. Specific uses of these backflow prevention devices are as follows:
- a. An RPP backflow prevention device may be installed on all lines that connect to the City's potable water system but shall be installed at all connections in which a double check detector backflow prevention device is not permitted.
 - b. Double check valve assembly backflow prevention devices may only be installed on dedicated fire lines that supply fire flow to a structure. DC assemblies shall not be installed in the following situations:
 - i. When a chemical is used in the fire suppression system.
 - ii. When an on-site private storage tank for fire suppression is located on the premises.
 - iii. When an on-site booster pumping system is located on the fire line or private storage tank.

3. Detection Assemblies

- a. RPP detection assemblies may be used on all fire suppression systems but shall be used on all private waterlines that tap into the City's potable water system with the exception of fire lines that do not. RPP detection assemblies shall be required on all Class V and VI fire sprinkler systems. An RPP detection assembly shall also be required when any hazardous or nonhazardous solutions are added to the fire sprinkler systems or used as part of the fire protection system.
- b. DC detection assemblies may be used on all nonresidential fire sprinkler systems where the City's potable water supply is used. A DC detection assembly may be considered for fire sprinkler systems in residential dwellings that are constructed with approved potable water piping and materials. A DC detection assembly may be used on Class I, II, III and IV fire protection systems.

B. Installation

The Owner, at their own expense, shall purchase, install, operate, certify, and maintain any approved backflow prevention device required by the City.

Installation of approved backflow prevention devices shall be as follows:

1. All backflow prevention devices shall be constructed with a security enclosure that is heated during cold weather.
2. An air-gap separation (referred to as a swing connection) shall be located as close as practical to the user's connection at the meter. The piping between the user's connection and the receiving tank shall be entirely visible. The air-gap separation shall be at least twice the diameter of the supply pipe, measured vertically from the flood rim of the receiving vessel to the supply pipe. In no case shall this separation be less than 1 inch.

3. RPP and DC Valve Assembly backflow prevention devices and detection assemblies shall be constructed in a manner that protects from freezing.
 - a. RPP and DC Valve Assembly backflow prevention devices and assemblies shall be installed according to State of Utah requirements and in a manner where it is accessible for testing.

C. Maintenance

Maintenance of backflow prevention devices shall be as follows:

1. Backflow prevention devices shall be tested and recertified every year and immediately after installation, relocation, or repair. Devices shall not be placed in service unless they are functioning as required.

4.1.8 Secondary Water Systems

Subdivisions that construct pressurized secondary water systems to provide irrigation water lots shall comply with the requirements in this code regarding the construction of such systems.

A. Materials

1. Secondary water system shall be constructed of PVC or HDPE pipe rated for the 25% greater pressure than the design pressure of the system.
2. Pipe shall be purple in color and shall be marked with purple non-potable water marking tape and tracer wire.

B. Systems of City Water and Secondary Water

1. All new properties within a secondary water subdivision shall be upfitted with a swing check connection that requires a physical gapped disconnect from the secondary water system for connection to the City potable water system.

2. IN NO CASE SHALL THE SECONDARY WATER SYSTEM BE PHYSICALLY CONNECTED TO THE HOUSE IRRIGATION SYSTEM AT THE SAME TIME THE CITY'S POTABLE WATER SYSTEM IS CONNECTED TO THAT SAME HOUSE IRRIGATION SYSTEM. THE IRRIGATION SYSTEM SHALL BE CONSTRUCTED SO THAT ONLY THE CITY OR THE SECONDARY SYSTEM IS CONNECTED AT ANY GIVEN TIME

C. Ownership

1. Secondary water systems are privately owned and maintained generally by a home owners association. The City is not responsible for operation and maintenance needs related to these systems.

Abbreviations and symbols for water

1. GENERAL

- A. Lettering Size: 10 point at final production.
- B. Lettering Style. Capital letters preferred.
- C. Existing Improvements. Shown in light shaded dashed line.
- D. New Improvements. Shown in solid continuous line.

2. PRODUCTS (Not used)

3. EXECUTION (Not used)

SYMBOLS	DEFINITIONS
	CENTER LINE
	CONSTRUCTION CENTER LINE
	PROPERTY OR R/W LINE
	EASEMENT LINE
	MONUMENT LINE
	FENCE
	CONTOUR LINE
	CONTOUR ELEVATION
	BANK SLOPES
	STORM DRAIN LINE
	WATER LINE
	GAS LINE
	TELEPHONE CABLE
	ELECTRIC CABLE
	SANITARY SEWER LINE
	ASPHALT PAVING
	FIRE HYDRANT
	WATER VALVE
	WATER METER
	MANHOLE
	CATCH BASIN
	CLEANOUT BOX
	POLE AND ANCHOR
	STREET LIGHT
	UNDISTURBED EARTH
	STRUCTURE

SYMBOLS	DEFINITIONS
	CURB & GUTTER
	SIDEWALK
	RAILROAD TRACKS
	GUARD RAIL
	OPEN DITCH, CANAL
	CULVERT
	SECTION CORNER
	SOIL BORING
	MONUMENT
	BENCH MARK
	SIGN
	POWER POLE
	TELEPHONE POLE
	DECIDUOUS TREE
	CONIFEROUS TREE
	P.I.
	P.C. OR P.T.
PROFILE	
	GROUND PROFILE
	CULVERT
	P.V.I.
	P.V.C. OR P.V.T.
	GROUND WATER ELEVATION

NOTE:

EXISTING FACILITIES MAY BE SHOWN IN SCREENED OR DASHED LINES

27" Frame and cover

1. GENERAL

A. This frame and cover fits manholes in Plan 505.

2. PRODUCTS

A. Castings: Grey iron class 35 minimum, ASTM A48, coated with asphalt based paint or better (except on machined surfaces).

1) Cast the heat number on the frame and cover.

2) Give the frame and cover a machine finish so the cover will not rock.

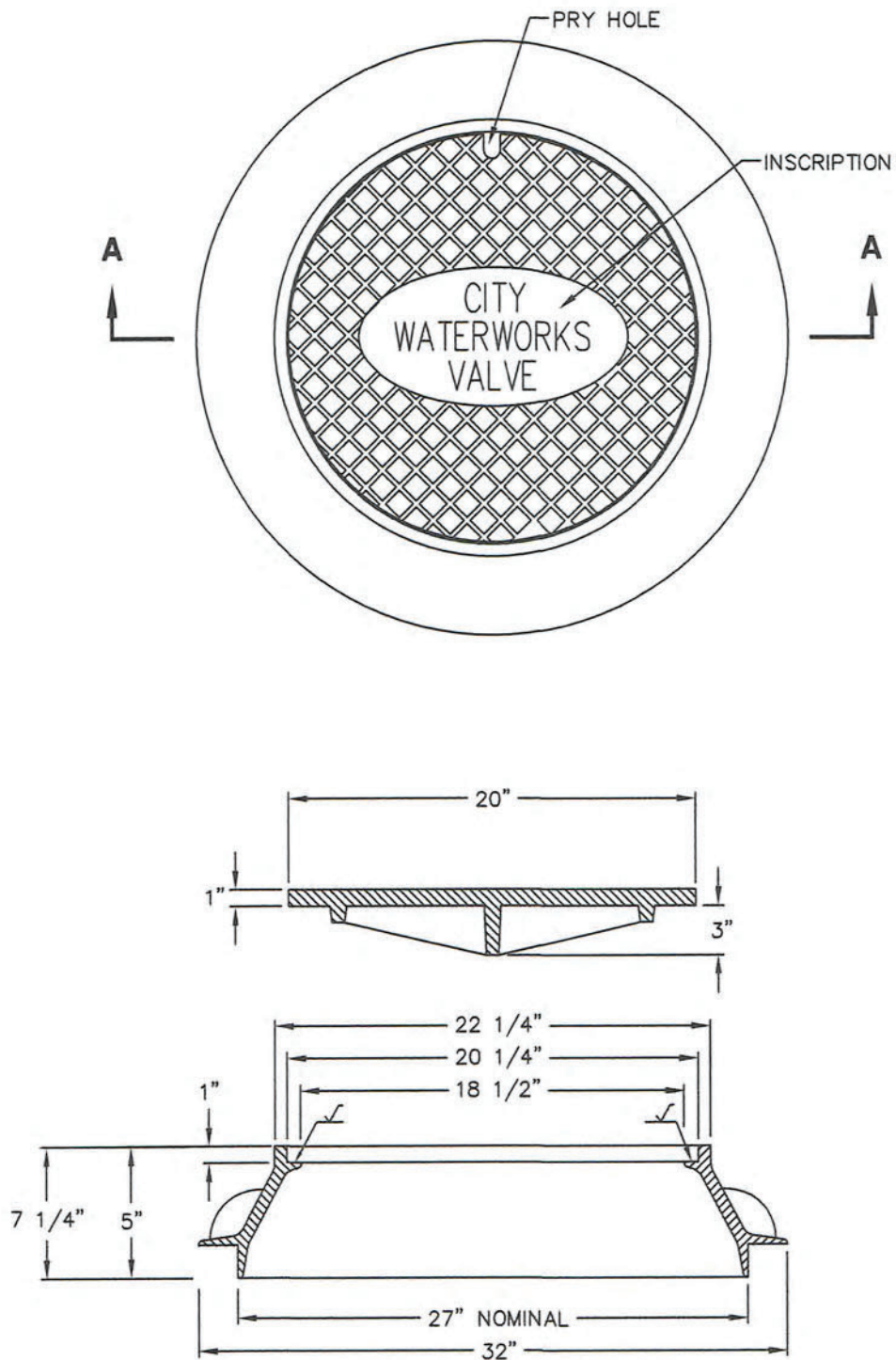
3) √ designates machined surface.

4) Cast the name of the agency or its acronym as the first line. Cast the word "WATERWORKS" as the second line. Cast the word "Valve" (or applicable word) as the third line. Cast all letters on the cover in upper case flush with the surface finish.

3. EXECUTION (Not used)

Nibley City Amendments:

1. Only allowed on 21" meter cans that house smaller than 1" meters.
2. Must be constructed with a 2" recessed hole to mount a meter antenna.
3. See the Nibley City Approved Materials List for information on specific product types and manufactures.



SECTION A-A

Nibley City Amendments:

1. Only allowed on 21" meter cans that house smaller than 1" meters.
2. Must be constructed with a 2" recessed hole to mount a meter antenna.
3. See the Nibley City Approved Materials List for information on specific product types and manufactures.

38" Frame and ~~double~~ cover

1. GENERAL

A. This frame and cover fits manholes in Plan 505.

2. PRODUCTS

A. Castings: Grey iron class 35 minimum, ASTM A48, coated with asphalt based paint or better (except on machined surfaces).

1) Cast the heat number on the frame and cover.

2) Give the frame and cover a machine finish so the cover will not rock.

3) √ designates machined surface.

4) Cast the name of the agency or its acronym as the first line. Cast the word "WATERWORKS" as the second line. Cast the word "Valve" (or applicable word) as the third line. Cast all letters on the cover in upper case flush with the surface finish.

3. EXECUTION (Not used)

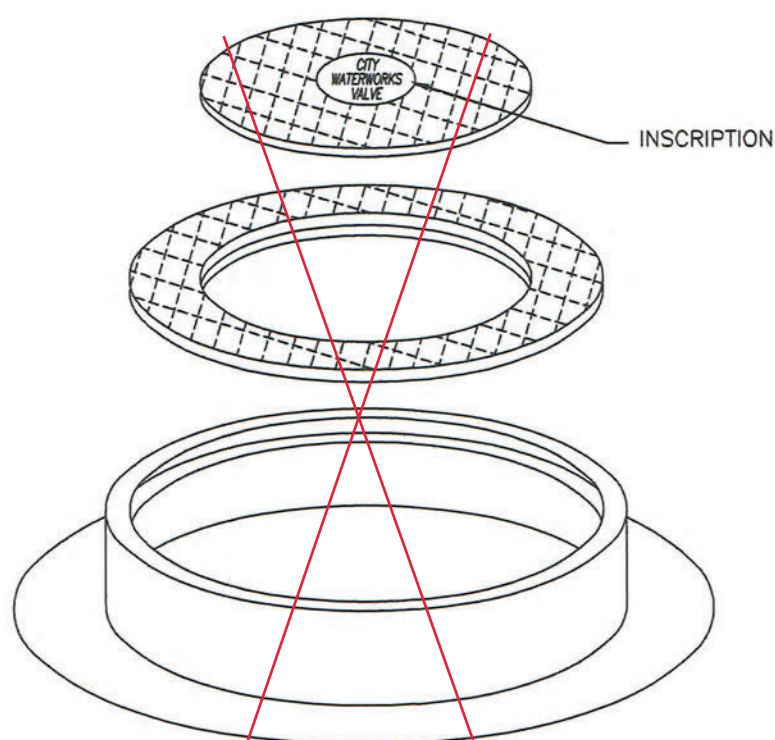
Nibley City Amendments:

1. Only allowed on 36" meter cans that house 2" meters.

2. Must be constructed with a 2" recessed hole to mount a meter antenna.

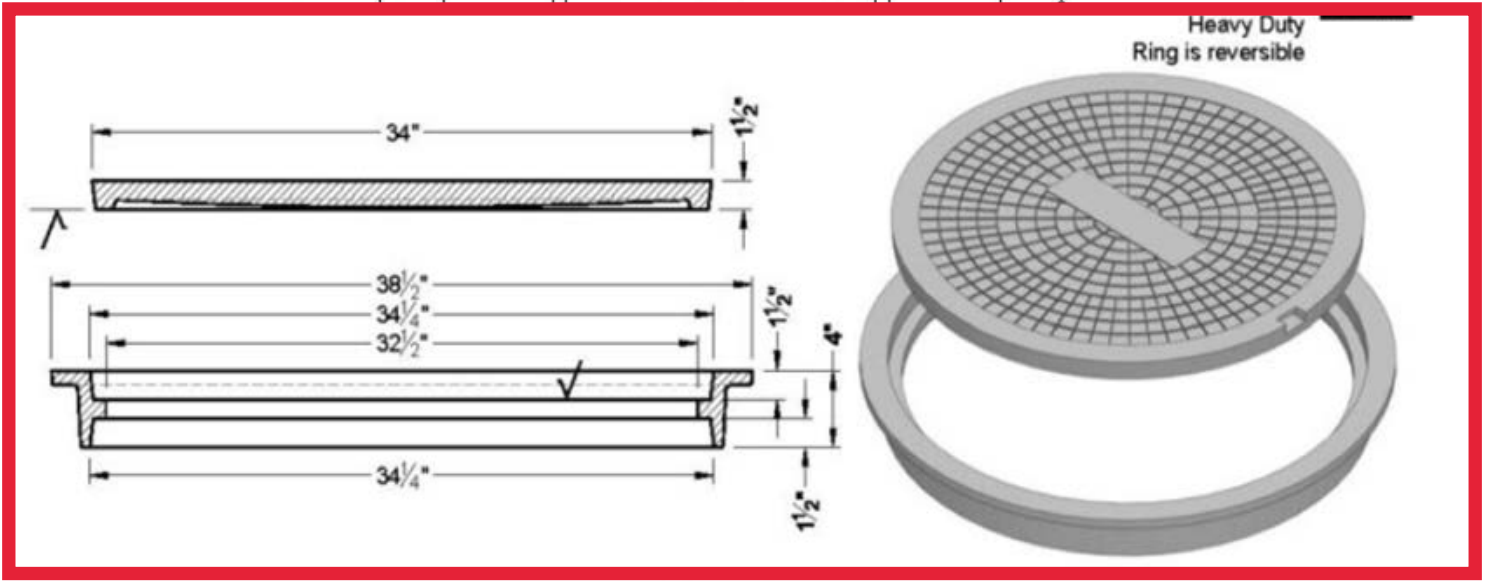
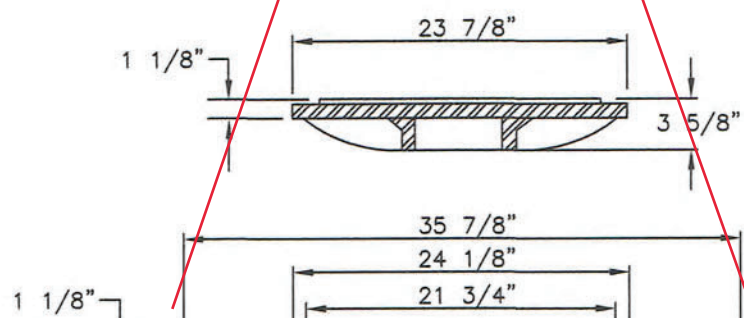
3. See the Nibley City Approved Materials List for information on specific product types and manufactures.

- Nibley City Amendments:**
1. Only allowed on 36" meter cans that house 2" meters.
 2. Must be constructed with a 2" recessed hole to mount a meter antenna.
 3. See the Nibley City Approved Materials List for information on specific product types and manufactures.



OBLIQUE

Change to a single piece lid 31 1/2" in diameter.
(Reference B-1800 Frame and Cover specifications)



Concrete meter boxes

1. GENERAL

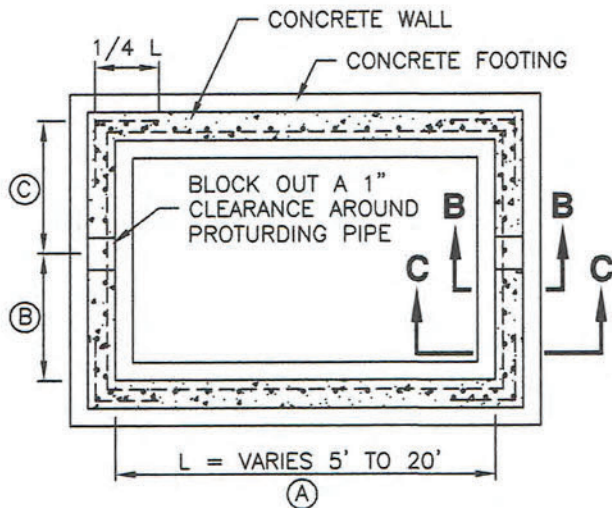
- A. Before backfilling secure inspection of installation by ENGINEER.

2. PRODUCTS

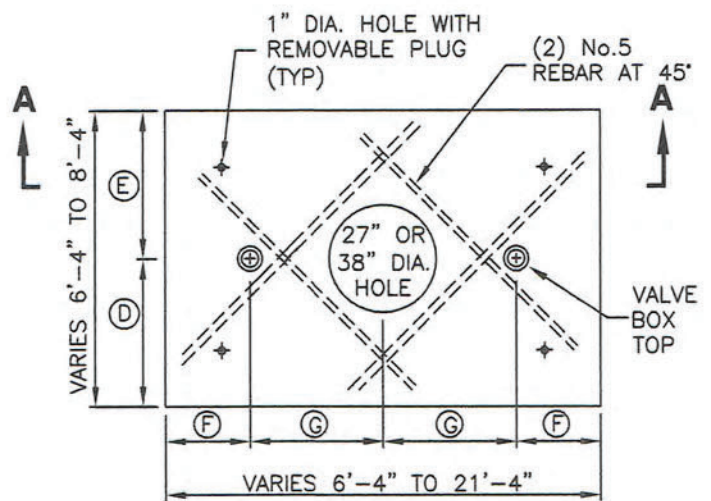
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
- B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- C. Concrete: Class 4000, APWA Section 03 30 04. Use type II cement (low alkali).
- D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.

3. EXECUTION

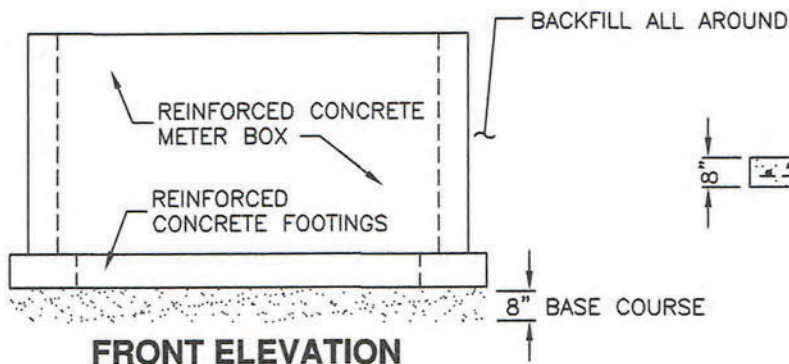
- A. Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
- B. Concrete Placement: APWA Section 03 30 10. Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
- C. Fill annular space around pipe wall penetrations with waterproof sealer.
- D. Place frame and cover directly over valve or meter location.
- E. Backfill: Provide backfill against the manhole shaft. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.



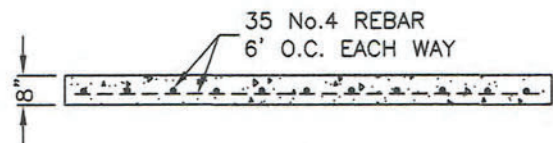
BOX PLAN



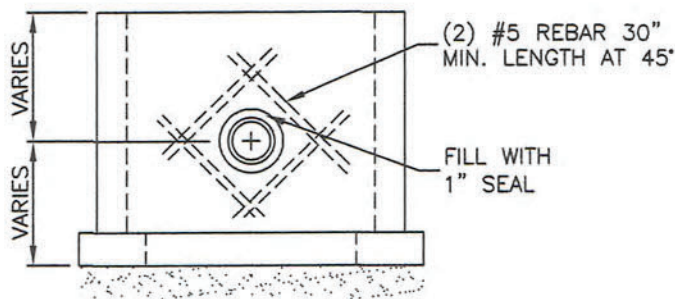
LID PLAN



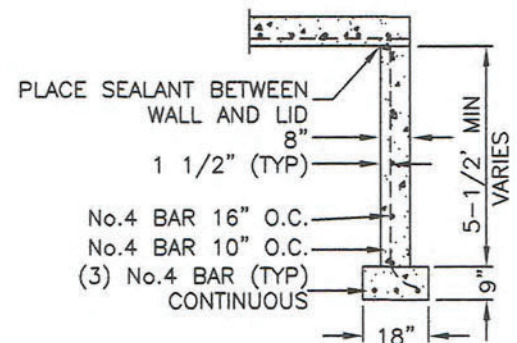
FRONT ELEVATION



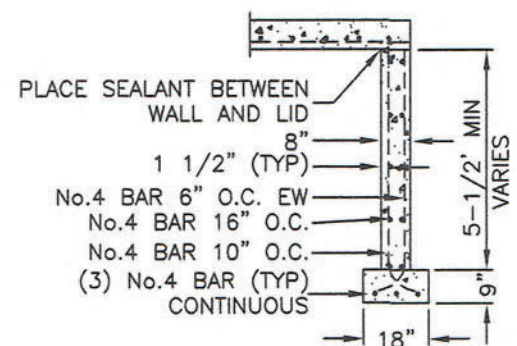
SECTION A-A



SIDE ELEVATION



SECTION B-B



SECTION C-C

TABLE OF DIMENSION					
No.	METER SIZE				
	10"	8"	6"	3" & 4"	1 1/2" & 2"
(A)	20'-0"	11'-0"	11'-0"	9'-0"	5'-0"
(B)	3'-10"	3'-5"	3'-5"	3'-0"	2'-6"
(C)	6'-2"	3'-5"	3'-5"	2'-0"	2'-6"
(D)	4'-6"	4'-1"	4'-1"	3'-8"	2'-6"
(E)	6'-10"	4'-1"	4'-1"	2'-8"	2'-6"
(F)	4'-8"	3'-5 3/4"	3'-10 1/4"	3'-5 1/2"	CENTER
(G)	5'-4"	2'-8 1/4"	2'-3 3/4"	1'-8 1/2"	

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 00.

2. PRODUCTS

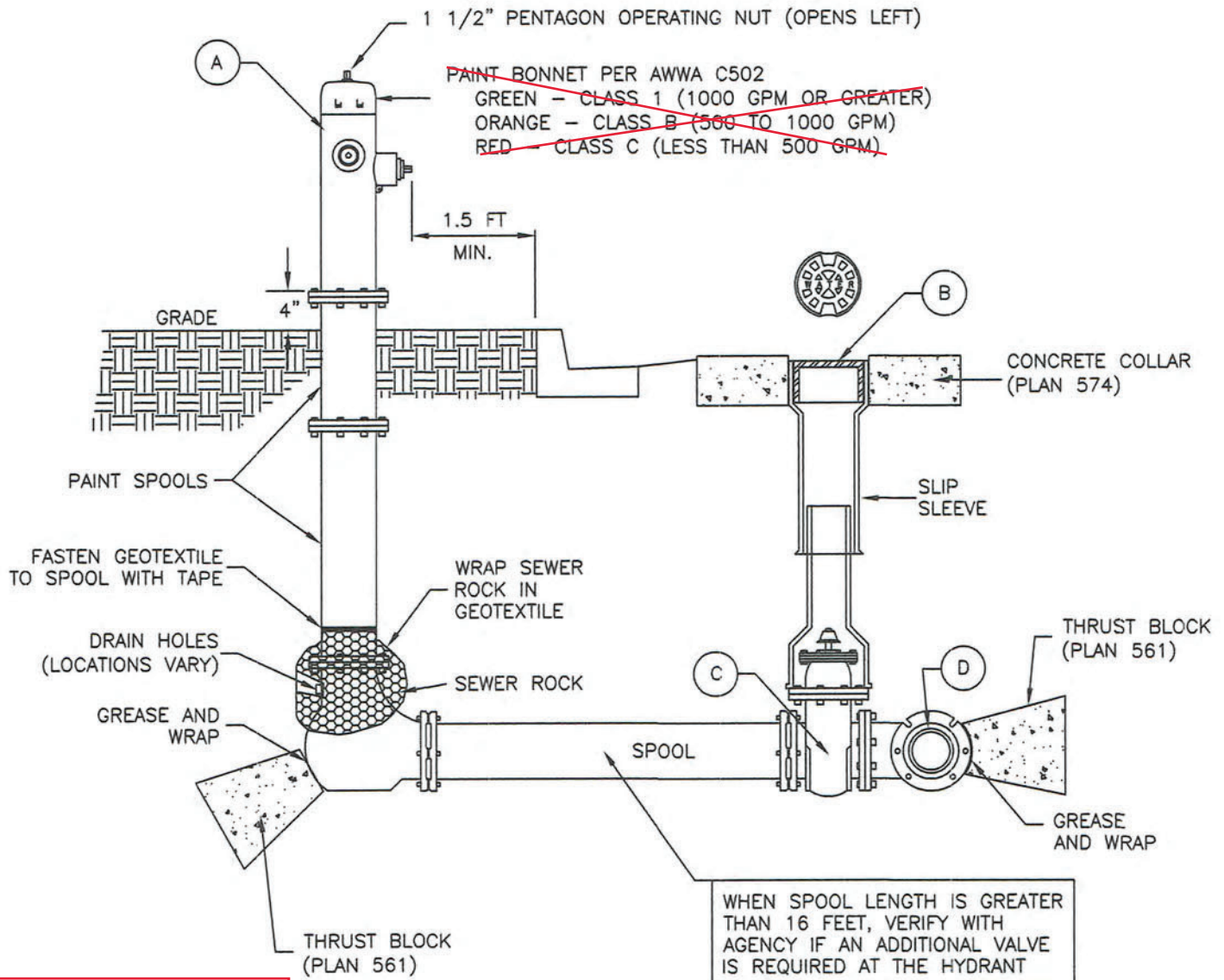
- A. Hydrant: Dry barrel, AWWA C502.
- B. Thrust Blocks: Concrete Class 4000, APWA Section 03 30 04.
- C. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
- D. Backfill: APWA Section 31 05 13. Maximum particle size 2-inches.
 - 1) Sewer Rock: ASTM Size No. 3 (2" to 1") or larger.
 - 2) Other 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 surfaces. Wrap with polyethylene sheet and tape wrap.
 - 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. Backfill: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

Nibley City Amendments:

- 1. Install tracer wire from the valve can to the hydrant with exposed wires inside the valve can and taped to the exposed side of the hydrant.
- 3. See the Nibley City Approved Materials List for information on specific product types and manufactures.



Nibley City Amendments:

1. Install tracer wire from the valve can to the hydrant with exposed wires inside the valve can and taped to the exposed side of the hydrant.
3. See the Nibley City Approved Materials List for information on specific product types and manufactures.

LEGEND			
No.	*	ITEM	DESCRIPTION
(A)		FIRE HYDRANT	AWWA C502
(B)		VALVE BOX WITH LID	2-PIECE CAST IRON
(C)		GATE VALVE WITH 2" X 2" NUT	AWWA C509
(D)		TEE WITH 125 # FLANGE	AWWA C110

* FURNISHED BY UTILITY AGENCY

SECTION

~~3/4" and 1" meter~~

Not allowed in streets.

1. GENERAL

- A. ~~In street surfaces or other vehicular traffic areas (like driveway approaches), install the same type of meter box as required for 1 1/2" and 2" service meters. See Plan 522.~~
- B. 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

Replace "box" with "can" or "barrel" all instances.

- A. Meter Placement:
 - 1) All meters are to be installed in the park strip or within 7 feet of the property line (street side).
 - 2) Do not install meters under driveway approaches, sidewalks, or curb and gutter.
- 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: Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26. Maximum lift thickness before compaction is 8-inches.

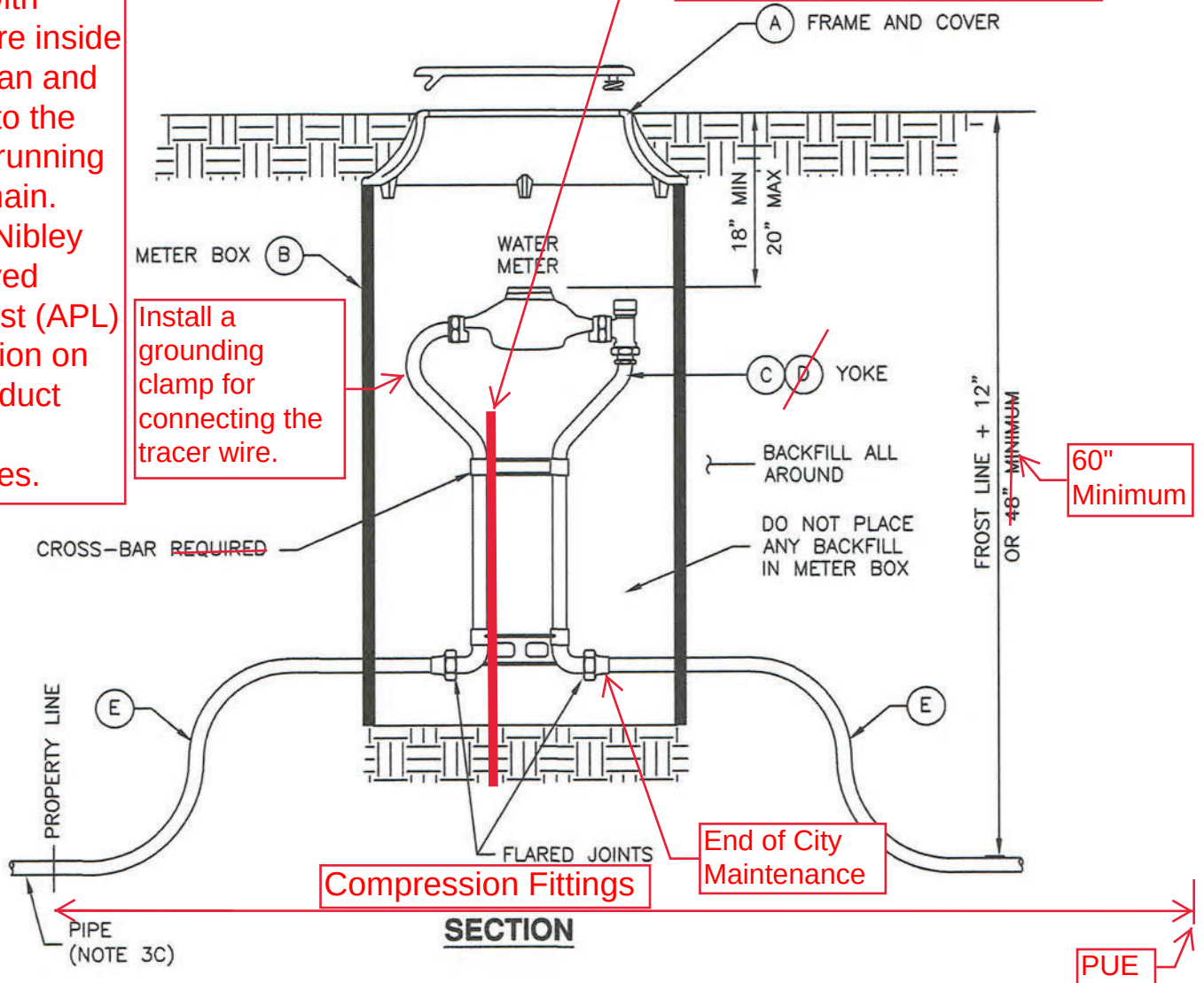
Nibley City Amendments:

- 1. Install tracer wire from the water main to the meter with exposed wires inside the meter can and connected tot the tracer wire that runs along the main.
- 2. See the Nibley City Approved Materials List for information on specific product types and manufactures.

Nibley City Amendments:

1. Install tracer wire from the main to the meter with exposed wire inside the meter can and connected to the tracer wire running along the main.
2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

Install a 3/4" PVC pipe buried a minimum 6" deep and attached to the setter in 2 places with zip ties. Length to extend up to 75% of the setter.



Compression Fittings

End of City Maintenance

PUE

Replace "box" with "can" or "barrel" all instances.

LEGEND			
No.	*	ITEM	DESCRIPTION
(A)		FRAME AND COVER	CAST IRON COVER 502
(B)		METER BOX (18" TO 21" DIAMETER) (30" TO 36" DEEP)	CORRUGATED PE, PVC, CMP OR MATERIAL ACCEPTABLE TO AGENCY
(C)		3/4" METER YOKE	OPTIONAL BACKFLOW PROTECTION PER AGENCY REQUIREMENTS
(D)		1" METER YOKE	OPTIONAL BACKFLOW PROTECTION PER AGENCY REQUIREMENTS
(E)		COPPER PIPE	HDPE (per Approved Materials List)

As required by the City Engineer

* FURNISHED BY UTILITY AGENCY

~~1 1/2" and 2" meter~~

1. **GENERAL**

MAG

- A. ~~Turbine~~ meters are required on all systems used exclusively for irrigation or fire protection.
- B. Where domestic use is applicable, use a standard 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)~~.
 - 2) Do not install meters under driveway approaches, sidewalks, or curb and gutter.
 - 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: Maximum lift thickness before compaction is 8-inches. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

in the PUE behind sidewalk or as approved by the City Engineer if a PUE cannot be dedicated by the applicant.

Meter Barrel: 36" corrugated HDPE, PVC, or other as approved.

At a lot corner adjacent to the street, combined with an adjacent water meter where possible.

Nibley City Amendments:

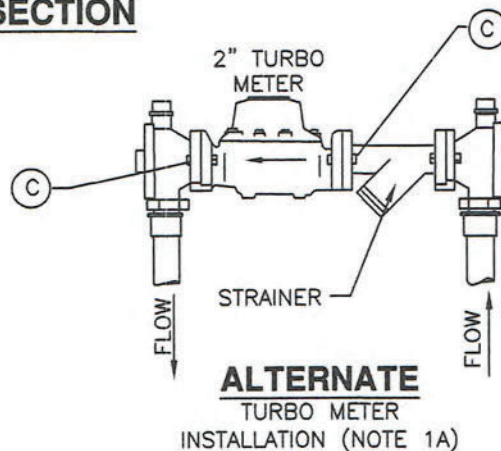
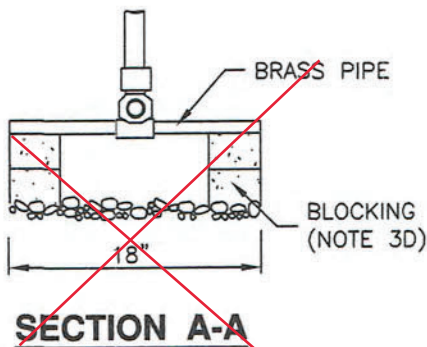
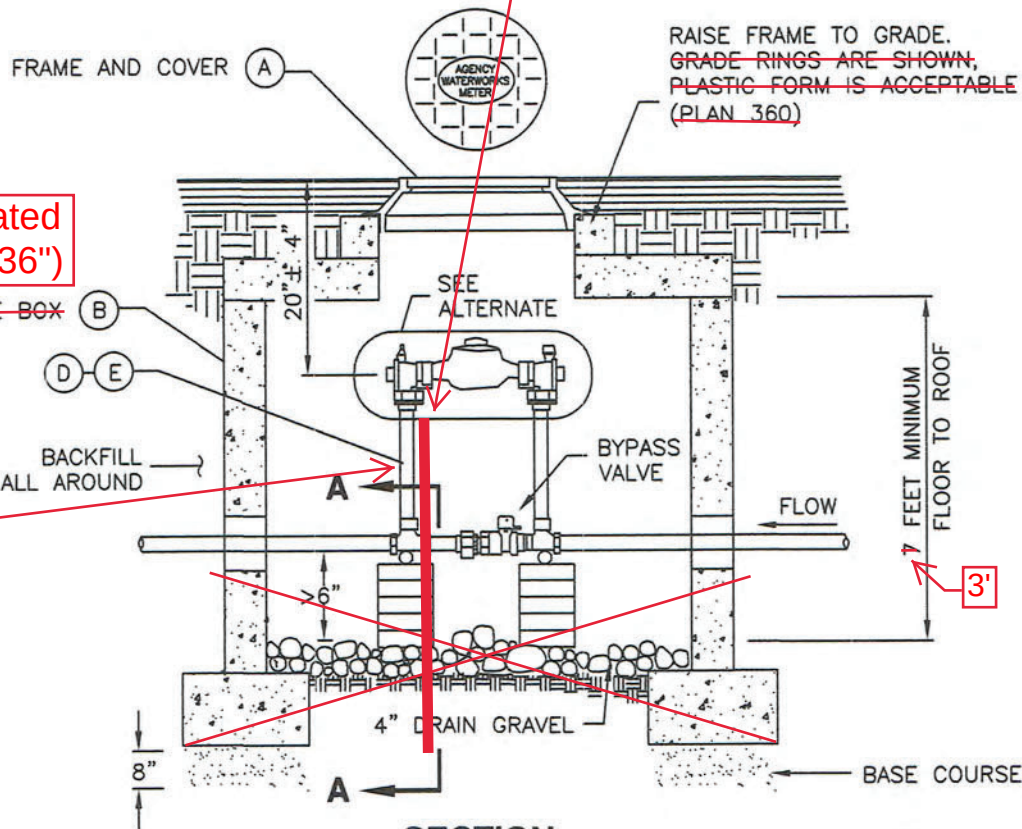
- 1. Install tracer wire from the main to the meter with exposed wire inside the meter can and connected to the tracer wire running along the main.
- 2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

Install a 3/4" PVC pipe buried a minimum 6" deep and attached to the setter in 2 places with zip ties. Length to extend up to 75% of the setter.

Corrugated Barrel (36")

Install a grounding clamp for connecting the tracer wire.

Nibley City Amendments:
 1. Install tracer wire from the main to the meter with exposed wire inside the meter can and connected to the tracer wire running along the main.
 2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.



LEGEND			
No.	*	ITEM	DESCRIPTION
(A)		27\" FRAME AND COVER 38\"	PLAN 502- 503
(B)		CONCRETE BOX	PLAN 505
(C)		STAINLESS STEEL METER BOLTS	5/8\" x 2 3/4\" BRASS
(D)		1 1/2\" CUSTOM SETTER WITH BYPASS	
(E)		2\" CUSTOM SETTER WITH BYPASS	

* FURNISHED BY UTILITY AGENCY

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 16.

2 PRODUCTS

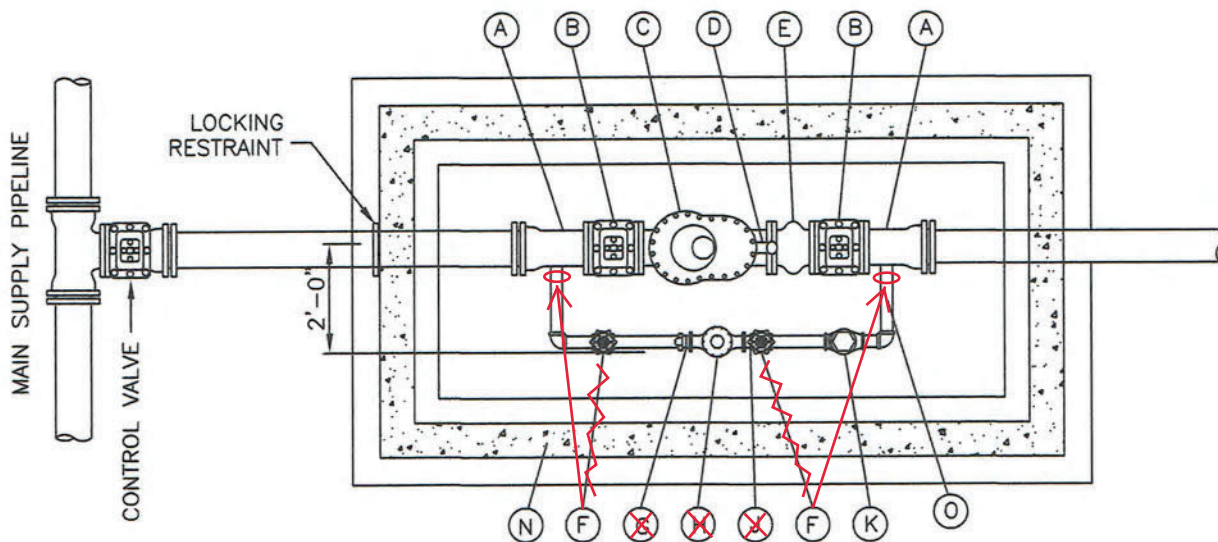
- A. Small Fittings: Brass. Do not use galvanized materials.
- B. Blocking: Clay brick or concrete block.
- C. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.

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.

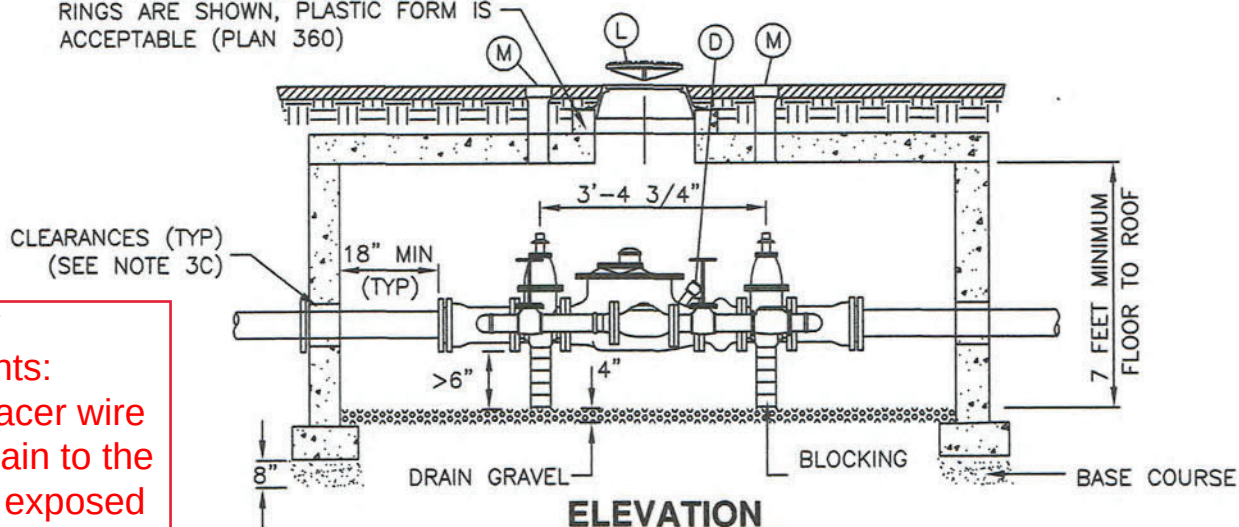
Nibley City Amendments:

- 1. Install tracer wire from the main to the meter with exposed wire inside the meter can and connected to the tracer wire running along the main.
- 2. Union connections are not allowed.
- 3. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.



PLAN

RAISE FRAME TO GRADE. GRADE RINGS ARE SHOWN, PLASTIC FORM IS ACCEPTABLE (PLAN 360)



ELEVATION

LEGEND

No.	*	ITEM	DESCRIPTION
(A)		3" OR 4" FLANGE x M.J. ADAPTER	
(B)		3" OR 4" GATE VALVE WITH 2"x2" OPERATING NUT	
(C)		3" OR 4" COMPOUND METER	
(D)		2" TEST ASSEMBLY	
(E)		3" OR 4" CHECK VALVE	
(F)		2" GATE VALVE	Curb Stop
(G)		2" METER FLANGE	
(H)		2" DISPLACEMENT METER	
(J)		2" MALE METER FLANGE	
(K)		2" CHECK VALVE	
(L)		27" FRAME AND COVER	38" PLAN 502 503
(M)		TOP SECTION OF VALVE BOX WITH LID	PLAN 574
(N)		CONCRETE BOX	PLAN 505
(O)		COPPER PIPING	Stainless Steel

* FURNISHED BY AGENCY

Nibley City Amendments:

1. Install tracer wire from the main to the meter with exposed wire inside the meter can and connected to the tracer wire running along the main.
2. Union connections are not allowed.
3. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

6" to 10" MAG

~~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 16.

2 PRODUCTS

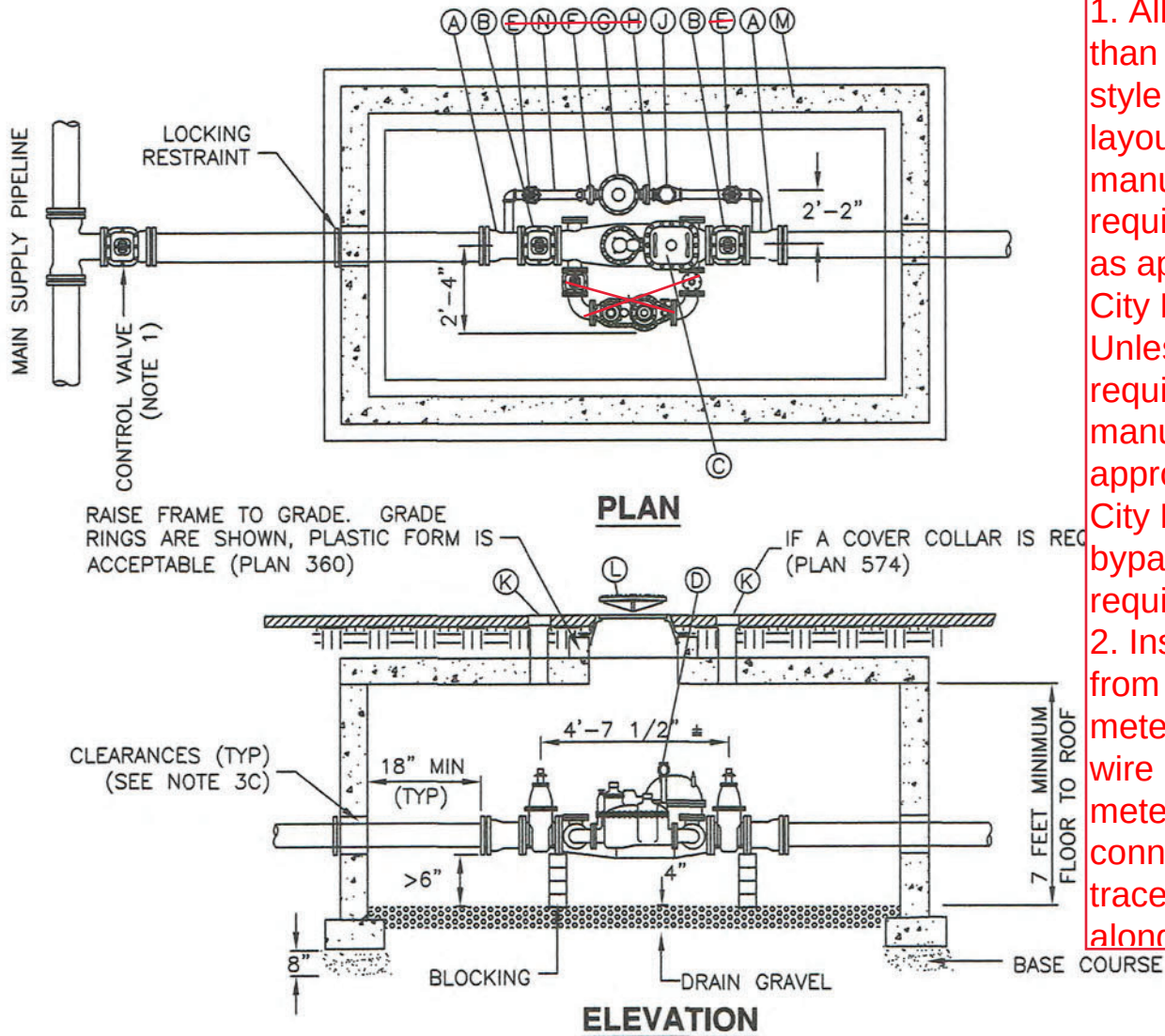
- A. Small Fittings: Brass. Do not use galvanized materials.
- B. Blocking: Clay brick or concrete block.
- C. Drain Gravel: Sewer rock, ASTM size no. 3 (2" to 1") or equal, APWA Section 31 05 13.

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.

Nibley City Amendment:

- 1. All meters larger than 4" shall be mag style meters with layout that meet manufacture's requirements and as approved by the City Engineer. Unless specifically required by the manufacture and approved by the City Engineer, bypass' are not required.
- 2. Install tracer wire from the main to the meter with exposed wire inside the meter can and connected to the tracer wire running along the main.
- 3. Union connections are not allowed.
- 4. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.



Nibley City Amendment:

1. All meters larger than 4" shall be mag style meters with layout that meet manufacture's requirements and as approved by the City Engineer. Unless specifically required by the manufacture and approved by the City Engineer, bypass' are not required.
2. Install tracer wire from the main to the meter with exposed wire inside the meter can and connected to the tracer wire running along the main.

8", 10"

LEGEND		
No.	ITEM	DESCRIPTION
(A)	6" FLANGE x M.J. ADAPTER	
(B)	6" GATE VALVE WITH 2"x2" OPERATING NUT	
(C)	6" x 3" METER	
(D)	2" TEST ASSEMBLY	
(E)	2" GATE VALVE	
(F)	2" METER FLANGE	
(G)	2" DISPLACEMENT METER	
(H)	2" MALE METER FLANGE	
(J)	2" CHECK VALVE	
(K)	TOP SECTION OF VALVE BOX WITH LID	Plan 574
(L)	27" FRAME AND COVER 38"	PLAN 574 503
(M)	CONCRETE BOX	PLAN 502 505
(N)	COPPER PIPING Stainless Steel	PLAN 505

* FURNISHED BY AGENCY

Nibley City Amendment:

3. Union connections are not allowed.
4. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

8" Compound meter with 2" bypass

1. GENERAL

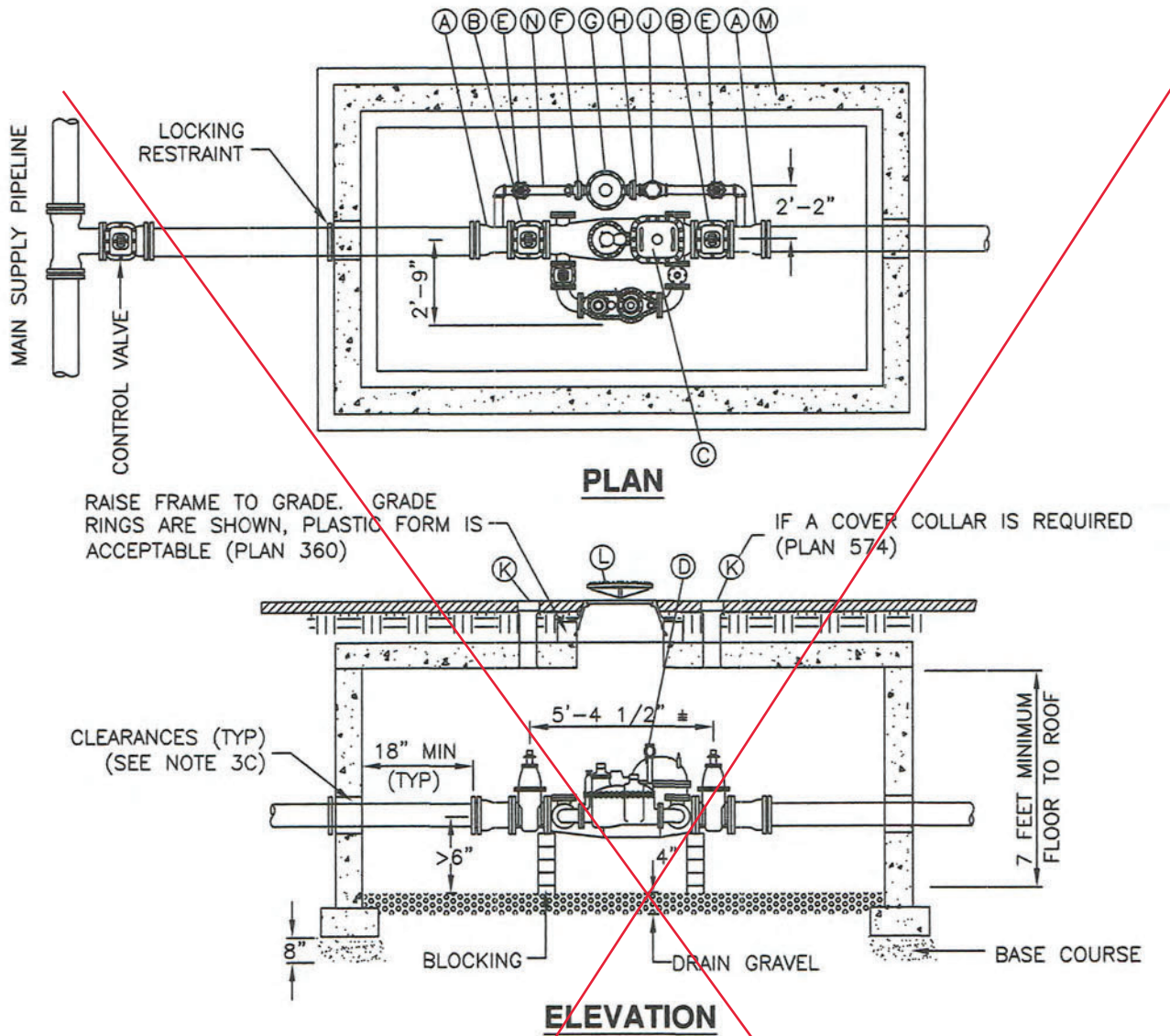
- A. Configuration may be changed at ENGINEER's discretion.
- B. Additional requirements are specified in APWA Section 33 12 16.

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.



LEGEND			
No.	*	ITEM	DESCRIPTION
(A)		8" FLANGE x M.J. ADAPTER	
(B)		8" GATE VALVE WITH 2"x2" OPERATING NUT	
(C)		8" x 4" METER	
(D)		2" TEST ASSEMBLY	
(E)		2" GATE VALVE	
(F)		2" METER FLANGE	
(G)		2" DISPLACEMENT METER	
(H)		2" MALE METER FLANGE	
(J)		2" CHECK VALVE	
(K)		TOP SECTION OF VALVE BOX WITH LID	
(L)		27" FRAME AND COVER	PLAN 574
(M)		CONCRETE BOX	PLAN 502
(N)		COPPER PIPING	PLAN 505

* FURNISHED BY AGENCY

10" Turbo meter with 6" turbo meter and 2" bypass

1. GENERAL

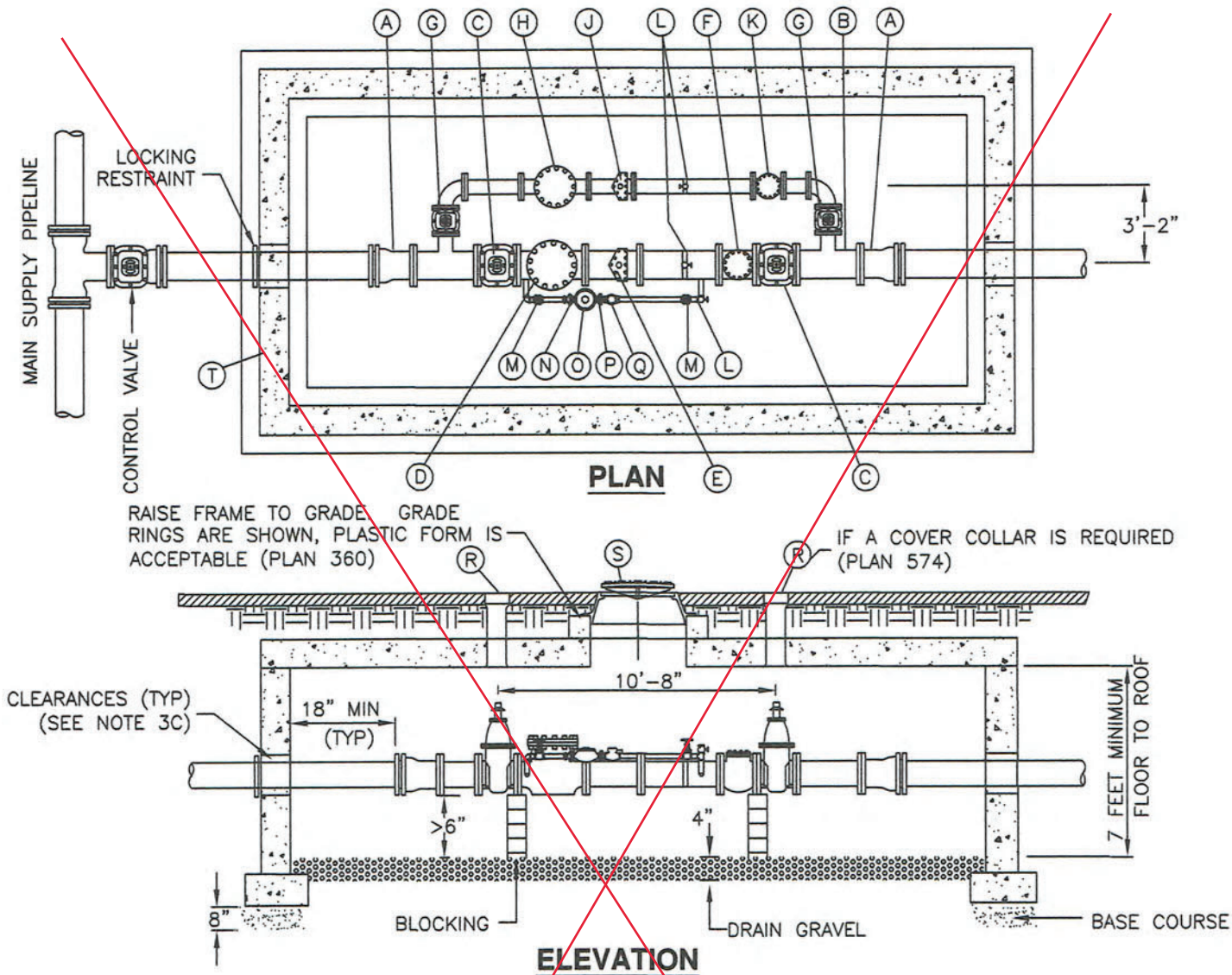
- A. Configuration may be changed at ENGINEER's discretion.
- B. Additional requirements are specified in APWA Section 33 12 16.

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

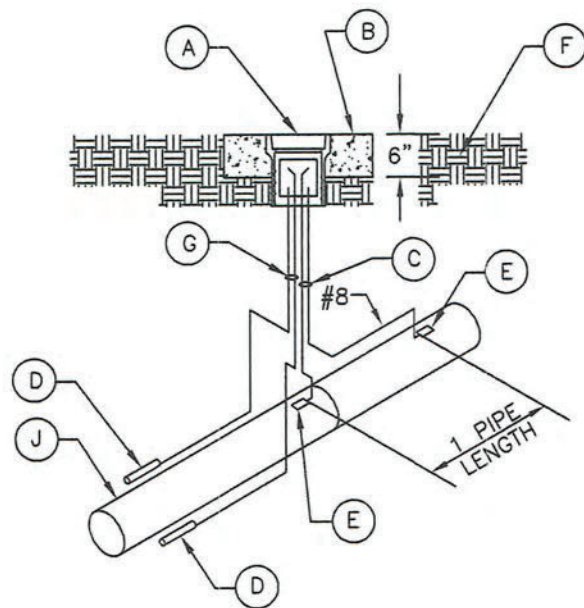
- A. Control Valve: Install valve with valve box adjacent to main.
- B. Center frame and cover over water meter.
- C. Allow 1-inch clearance around waterline where water line passes through concrete box wall. Seal opening with compressible seal.



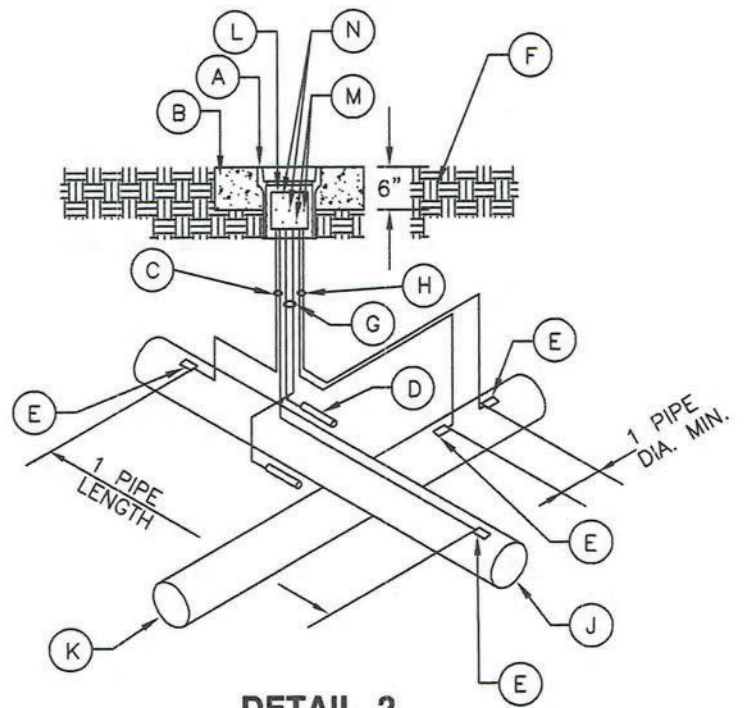
LEGEND			
No.	*	ITEM	DESCRIPTION
(A)		10" FLANGE x M.J. ADAPTER	
(B)		10" x 6" FLANGE TEE	
(C)		10" GATE VALVE WITH 2"x2" OPERATING NUT	
(D)		10" F.S. STRAINER	
(E)		10" TURBO METER	
(F)		10" CHECK VALVE	
(G)		6" GATE VALVE	
(H)		6" F.S. STRAINER	
(J)		6" TURBO METER	
(K)		6" CHECK VALVE	
(L)		2" TEST TAP	
(M)		2" GATE VALVE	
(N)		2" METER FLANGE	
(O)		2" DISPLACEMENT METER	
(P)		2" MALE METER FLANGE	
(Q)		2" CHECK VALVE	
(R)		TOP SECTION OF VALVE BOX WITH LID	PLAN 574
(S)		27" FRAME AND COVER	PLAN 502
(T)		CONCRETE BOX	PLAN 505

* FURNISHED BY AGENCY

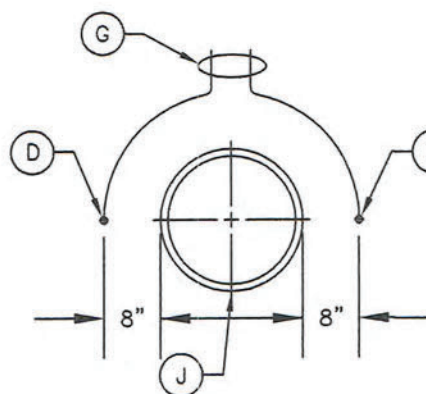
Electrolysis monitoring station details



DETAIL 1



DETAIL 2



DETAIL 3

TYPICAL REFERENCE ELECTRODE 1/2" ROUND BY 9" ZINC WITH No. 12 STEEL WIRE CORE TO WHICH IS ATTACHED, BY A COMPRESSION FIT COPPER SLEEVE, A LENGTH OF PVC COATED No. 12 COPPER WIRE. THE SLEEVE JOINT IS WRAPPED WITH 2 MIL THICK PVC TAPE.

LEGEND

No.	DESCRIPTION
(A)	FLUSH MOUNTED VALVE BOX AND LID
(B)	CONCRETE SLAB (6"x18"x18")
(C)	1-#8 & 1-#12 AWG COPPER WIRE WITH WHITE TW INSULATION
(D)	REFERENCE ELECTRODE
(E)	THERMITE WELD WIRE CONNECTION (TYPICAL)
(F)	EXISTING SOIL
(G)	2-#12 AWG COPPER WIRE WITH YELLOW TW INSULATION
(H)	1-#8 & 1-#12 AWG COPPER WIRE WITH BLUE TW INSULATION
(J)	NEW WATERMAIN
(K)	FOREIGN PIPELINE
(L)	PENSTOCK TERMINALS
(M)	FOREIGN PIPELINE TERMINALS
(N)	REFERENCE ELECTRODE AND ELECTRODE TERMINAL TERMINATED ON A PHEONOLIC PLATE

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. Backfill: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

Nibley City Amendments:

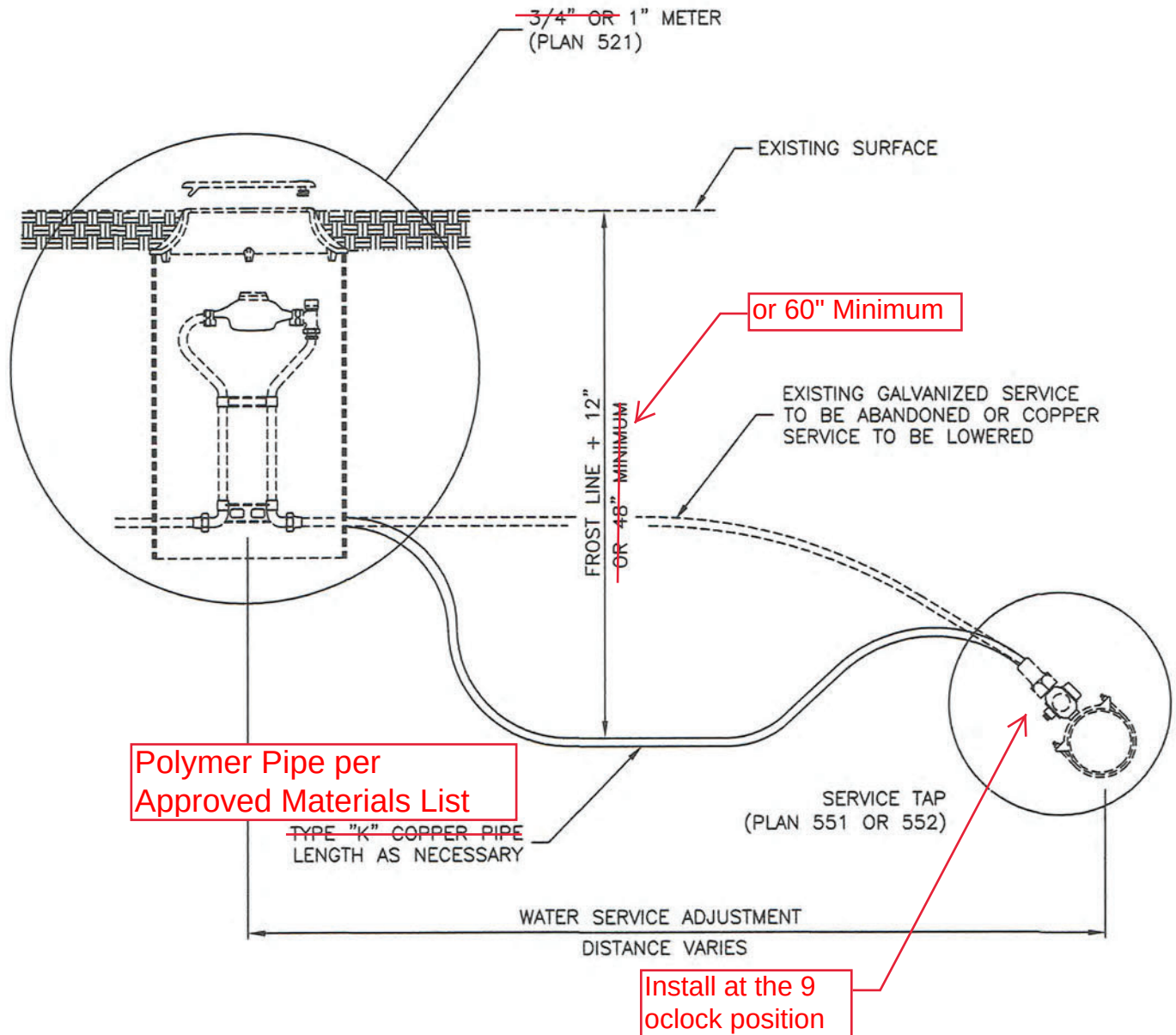
1. Install tracer wire from the main to the meter with exposed wire inside the meter can and connected to the tracer wire running along the main.

2. Union connections are not allowed.

3. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

Nibley City Amendments:

1. Install tracer wire from the main to the meter with exposed wire inside the meter can and connected to the tracer wire running along the main.
2. Service lines shall be one continuous piece (couplers of any kind are not allowed).
3. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.



Water service line loop

1. GENERAL

- A. 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 04.~~
- D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
- E. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- F. Grease: Non-oxide poly-FM.

3. EXECUTION

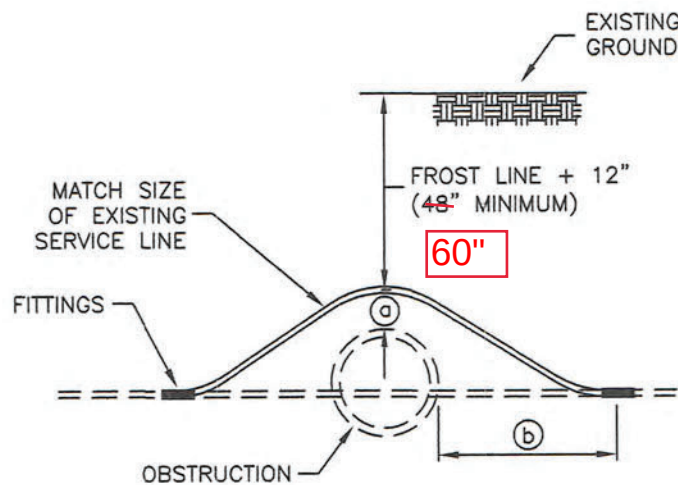
- A. ~~Thrust Blocks: Not required for flange or welded pipe systems. Before pouring thrust block concrete, wrap pipe system with plastic sheet to prevent bonding of concrete to pipe system.~~
- B. ~~Fittings: Use copper to copper flare fittings or copper to iron pack joint coupling with locking split clamp on iron pipe side and flare on copper side. All couplings to be brass.~~
- C. ~~Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.~~
- D. ~~Steel Spool: Weld in place and provide slip on flange except when fitting in pipe system could move. Epoxy line per AWWA C210, C213, and coated per AWWA C208, or C214.~~
- E. Location: Loop water mains over top of sewer lines.
- F. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

Nibley City Amendments:

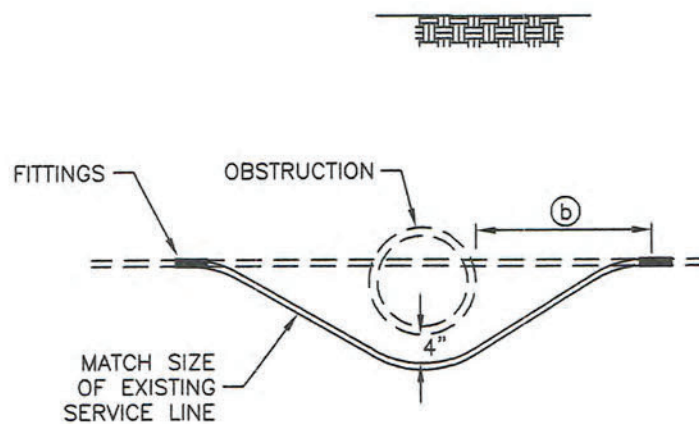
- 1. Install tracer wire along the main and services.
- 2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

Nibley City Amendments:

1. Install tracer wire along the main and services.
2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.



STYLE A



STYLE B

TABLE OF DIMENSIONS		
	OBSTRUCTION	
	SEWER MAIN	OTHER
Ⓐ	18"	12" MIN.
Ⓑ	10'-0"	12" MIN.

Water main line loop

1. GENERAL

- A. 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 04.~~
- D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
- E. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- F. Grease: Non-oxide poly-FM.
- G. Couplings: Brass.

3. EXECUTION

- ~~A. Thrust Blocks: Not required for flanged or welded pipe systems. Before pouring thrust block concrete, wrap pipe system in plastic sheet to prevent bonding of concrete to pipe system.~~
- ~~B. Fittings: Use copper to copper flare fittings or copper to iron pack joint coupling with locking split clamp on iron pipe side and flare on copper side.~~
- ~~C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.~~
- ~~D. Steel Spool: Weld in place and provide slip on flange except when fitting in pipe system could move. Epoxy line per AWWA C210, C213, and coated per AWWA C208, or C214.~~
- E. Location: Loop water mains over top of sewer lines.
- F. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

Nibley City Amendments:

- 1. Install tracer wire along the main and services.
- 2. When installing new water line, pipe deflection shall be the primary method of achieving the separation standards identified.
- 3. When deflection is not an option, use mechanical restraints with lengths per the detail provided in the written portion of chapter 5.
- 4. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

STYLE A

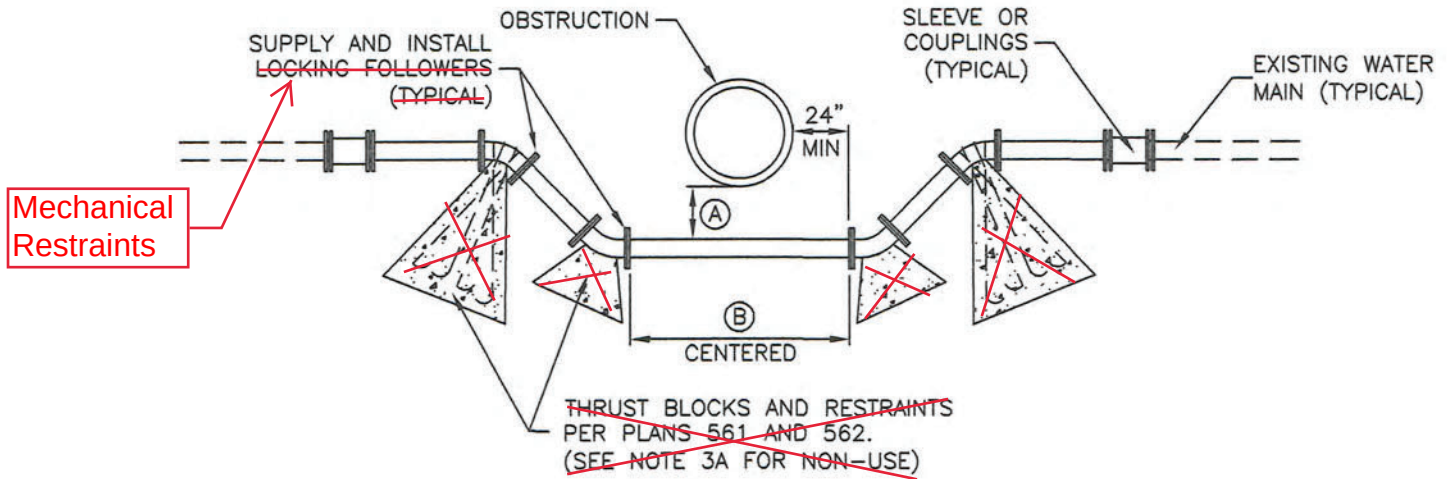


TABLE OF DIMENSIONS		
OBSTRUCTION	(A)	(B)
SEWER	18" MIN	20' MIN
OTHER	12" MIN	O.D. + 48"

Nibley City Amendments:

1. Install tracer wire along the main and services.
2. When installing new water line, pipe deflection shall be the primary method of achieving the separation standards identified.
3. When deflection is not an option, use mechanical restraints with lengths per detail 561A, B.
4. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

Water main line loop

1. GENERAL

- A. Before backfilling, secure inspection of installation by ENGINEER.

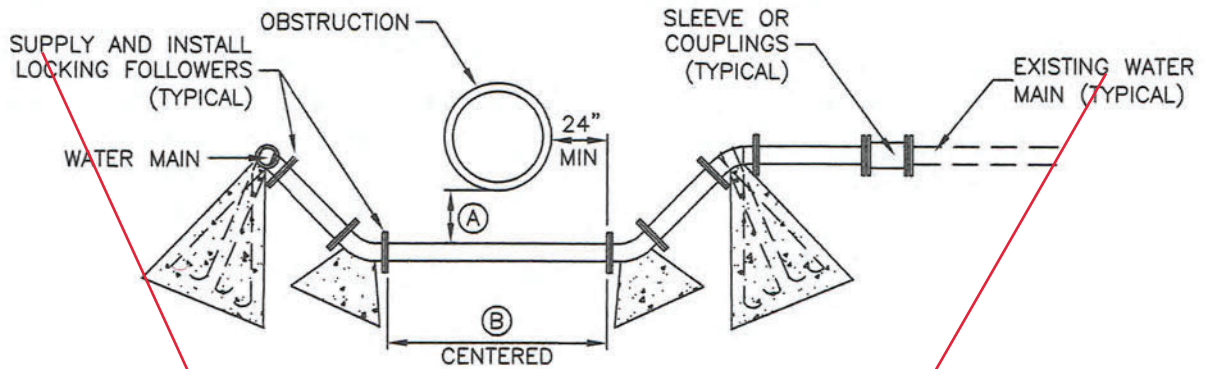
2. PRODUCTS

- 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 04.
- D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
- E. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- F. Grease: Non-oxide poly-FM.

3. EXECUTION

- A. Thrust Blocks: Not required for flange or welded pipe systems. Before pouring thrust block concrete, wrap pipe system with plastic sheet to prevent bonding of concrete to pipe system.
- B. Fittings: Use copper to copper flare fittings or copper to iron pack joint coupling with locking split clamp on iron pipe side and flare on copper side. All couplings to be brass.
- C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
- D. Steel Spool: Weld in place and provide slip on flange except when fitting in pipe system could move. Epoxy line per AWWA C210, C213, and coated per AWWA C208, or C214.
- E. Location: Loop water mains over top of sewer lines.
- F. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

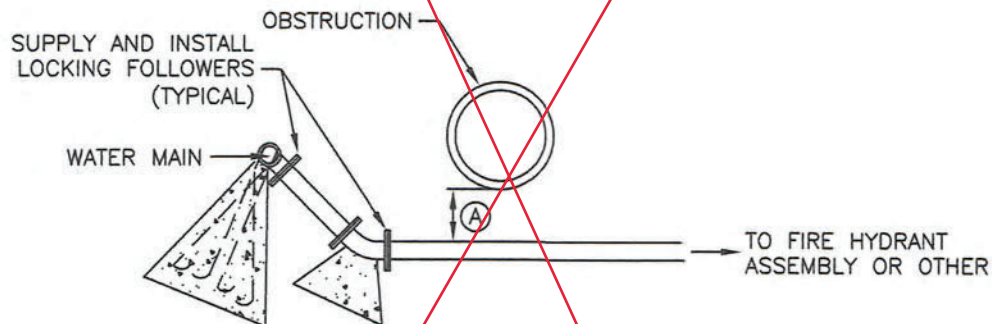
STYLE B AND C



THRUST BLOCKS AND RESTRAINTS
PER PLANS 561 AND 562.
(SEE NOTE 3A FOR NON-USE)

TABLE OF DIMENSIONS		
OBSTRUCTION	A	B
SEWER	18" MIN	20' MIN
OTHER	12" MIN	O.D. + 48"

STYLE B



THRUST BLOCKS AND RESTRAINTS
PER PLANS 561 AND 562.
(SEE NOTE 3A FOR NON-USE)

TABLE OF DIMENSIONS	
OBSTRUCTION	A
SEWER	18" MIN
OTHER	12" MIN

STYLE C

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 00.
- C. Before backfilling, secure inspection of installation by ENGINEER.

2. PRODUCTS

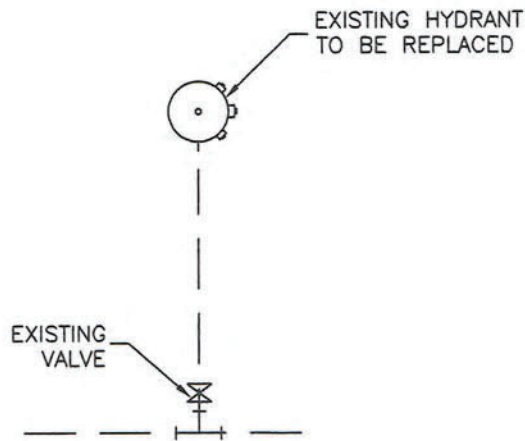
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
- B. Piping: Match existing pipe, fittings, coupling sizes and materials.
- C. Thrust Blocks:
 - 1) Temporary - Use wood.
 - 2) Permanent - Concrete Class 4000, APWA Section 03 30 04.
- 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.~~ Replace existing with new.
- D. Thrust Blocks: Not required on flanged or welded pipe systems. Before pouring concrete, wrap pipe system plastic sheet to prevent bonding of concrete to pipe system.
- E. Backfill: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
- 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).

Nibley City Amendments:

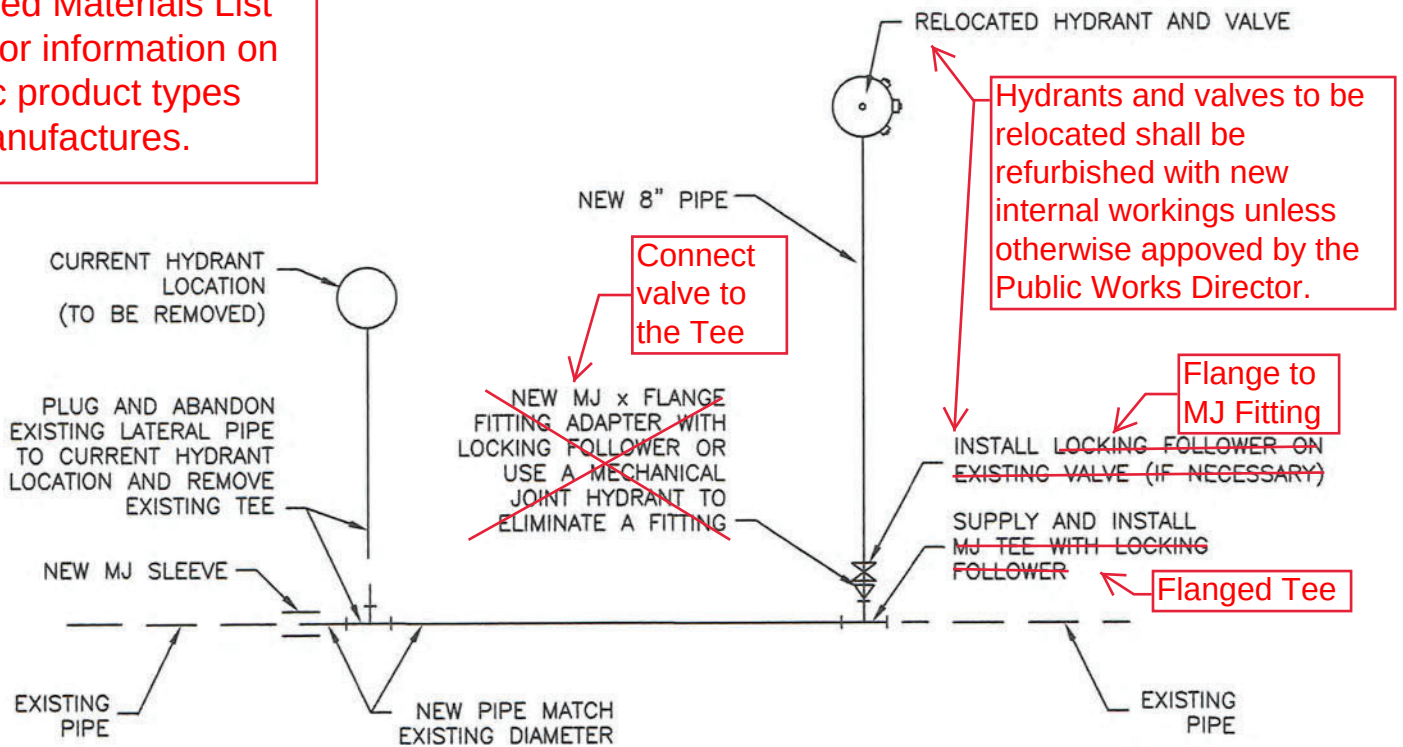
- 1. Install tracer wire along the main and services.
- 2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.



REPLACEMENT OF FIRE HYDRANT

Nibley City Amendments:

1. Install tracer wire along the main and services.
2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.



NOTE: THRUST BLOCKS REQUIRED
(PLAN 561 AND 562)

RELOCATION OF FIRE HYDRANT

~~3/4" and 1" Service taps~~

1. GENERAL

- A. Before backfilling around taps, secure inspection of installation by ENGINEER.

2. PRODUCTS

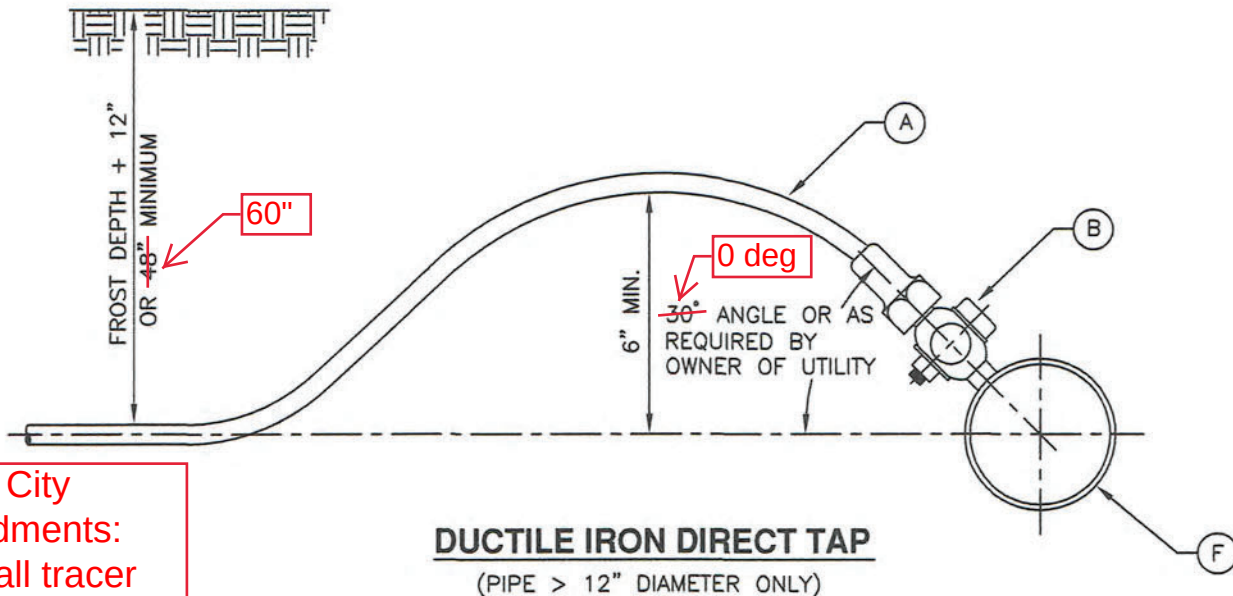
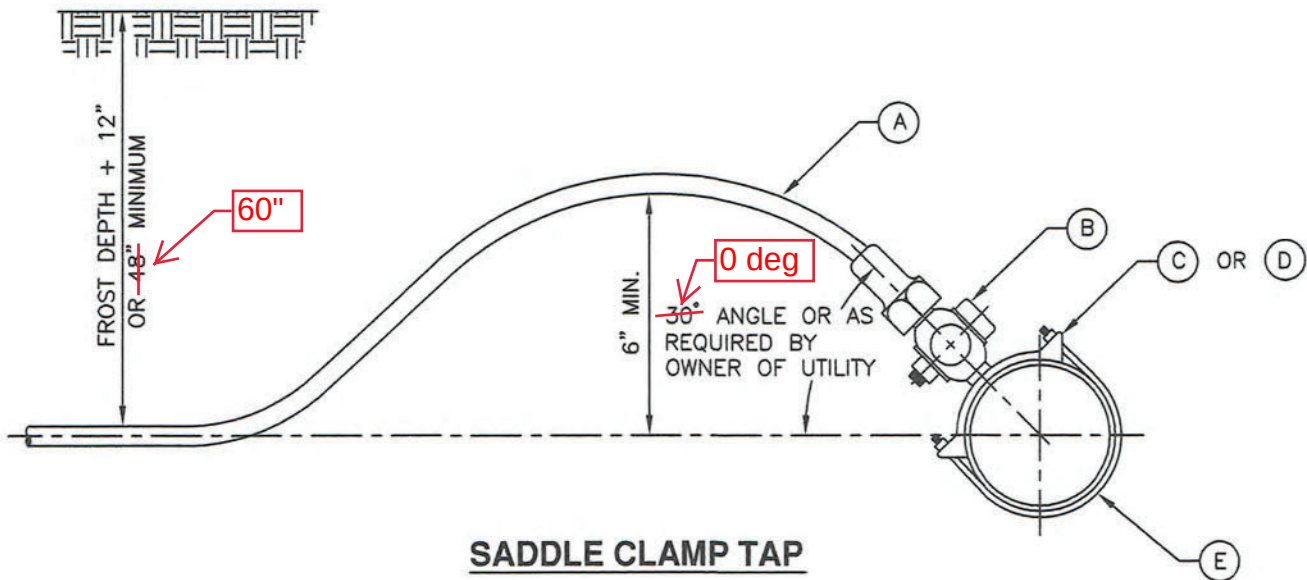
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
- B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- C. Tape: Teflon tape is required on all taps.

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: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

Nibley City Amendments:

- 1. Install tracer wire along the main and services.
- 2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.
- 3. All taps shall be a minimum of 1".



Nibley City Amendments:

1. Install tracer wire along the main and services.
2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.
3. All taps shall be minimum 1".

LEGEND			
No.	*	ITEM	DESCRIPTION
(A)		COPPER PIPE Poly Pipe	TYPE K - SOFT See Approved Materials List
(B)		CORPORATION STOP	BRASS
(C)		SERVICE SADDLE CLAMP	(D.I., C.I., A.C.) **
(D)		SERVICE SADDLE CLAMP	(P.V.C.)
(E)		WATER MAIN PIPE	(D.I., C.I., A.C., P.V.C.)
(F)		WATER MAIN PIPE	(DUCTILE IRON (D.I.) ONLY)

* FURNISHED BY UTILITY AGENCY
 ** DI & CI PIPE MAY BE DIRECT TAPPED

~~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

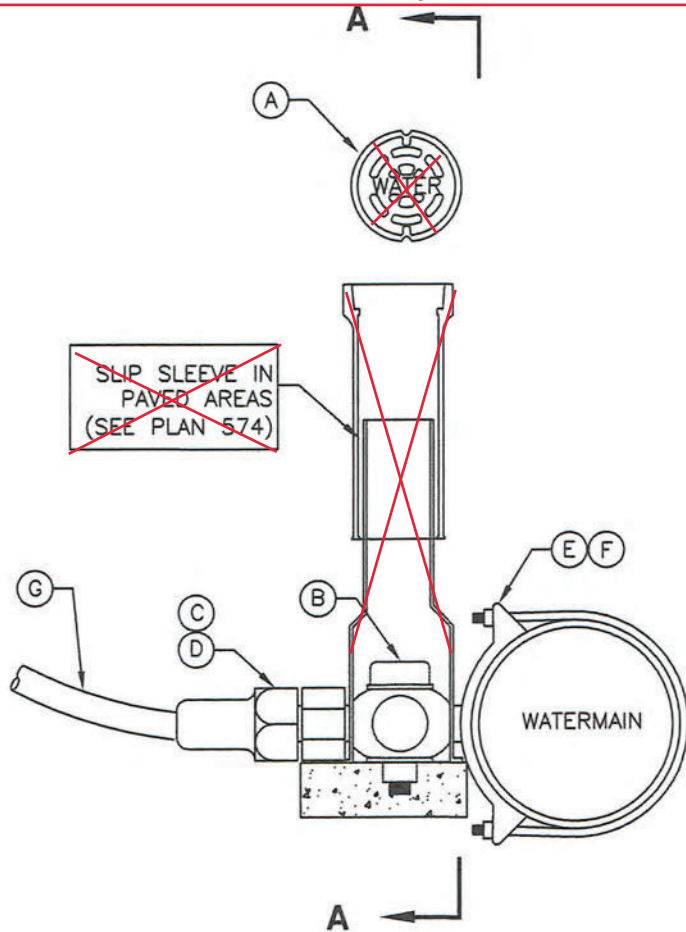
- A. Tapping: Place taps a minimum of 36-inches apart. Use a tapping tool that is sized corresponding to the size of the service line to be installed. No taps within 36-inches of end of pipe.
- B. PVC or AC Pipe: A service saddle clamp is required on all PVC and AC pipe taps unless specified otherwise.
- C. Backfill: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
- 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.~~

Nibley City Amendments:

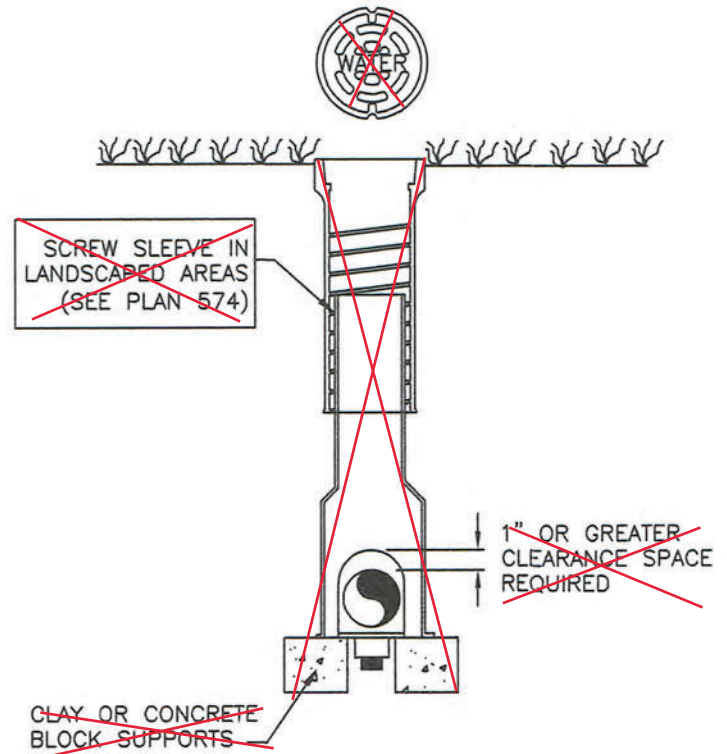
- 1. Install tracer wire along the main and services.
- 2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.
- 3. Valve Cans are not required on 1 1/2" and 2" services.

Nibley City Amendments:

1. Install tracer wire along the main and services.
2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.
3. Valve Cans are not required on 1 1/2" and 2" services.



ELEVATION



SECTION A-A

LEGEND			
No.	*	ITEM	DESCRIPTION
(A)		VALVE BOX WITH LID	2-PIECE CAST IRON
(B)		CORPORATION STOP	BRASS
(C)		COPPER ADAPTER ← Poly Adapter	
(D)		FLARE OR PACK JOINT COPPER ADAPTER ← Poly Adapter	
(E)		SERVICE SADDLE CLAMP	D.I., A.C., C.I.
(F)		SERVICE SADDLE CLAMP	P.V.C.
(G)		COPPER PIPE (SERVICE LINE)	TYPE K (SOFT) ← Poly Pipe

* FURNISHED BY UTILITY AGENCY

Direct bearing thrust block

1. GENERAL

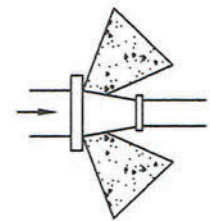
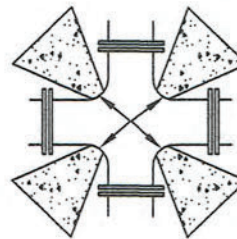
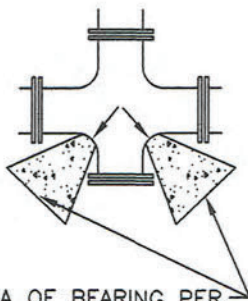
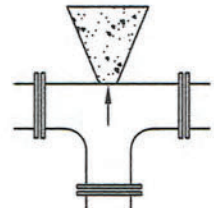
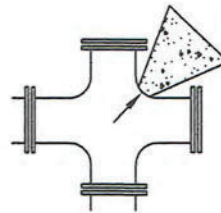
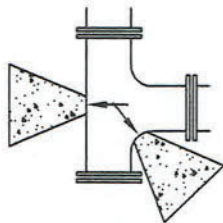
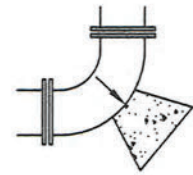
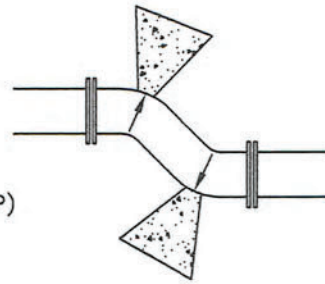
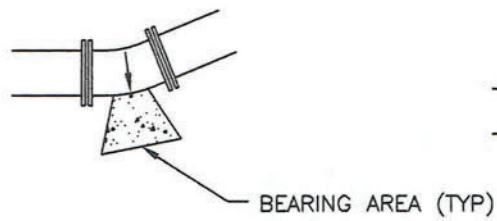
- A. Thrust design for pipe sizes or configurations not shown require special design.
- B. Bearing areas, volumes, and special thrust blocking details shown on Drawings take precedence over this plan.
- C. Restraint sizing is based upon a maximum operating pressure of 150 psi and a test pressure of 200 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

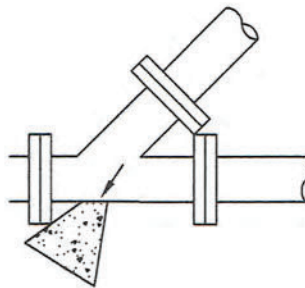
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
- B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- C. Thrust Blocks: Concrete Class 4000, APWA Section 03 30 04.
- D. Grease: Non-oxide poly-FM.

3. EXECUTION

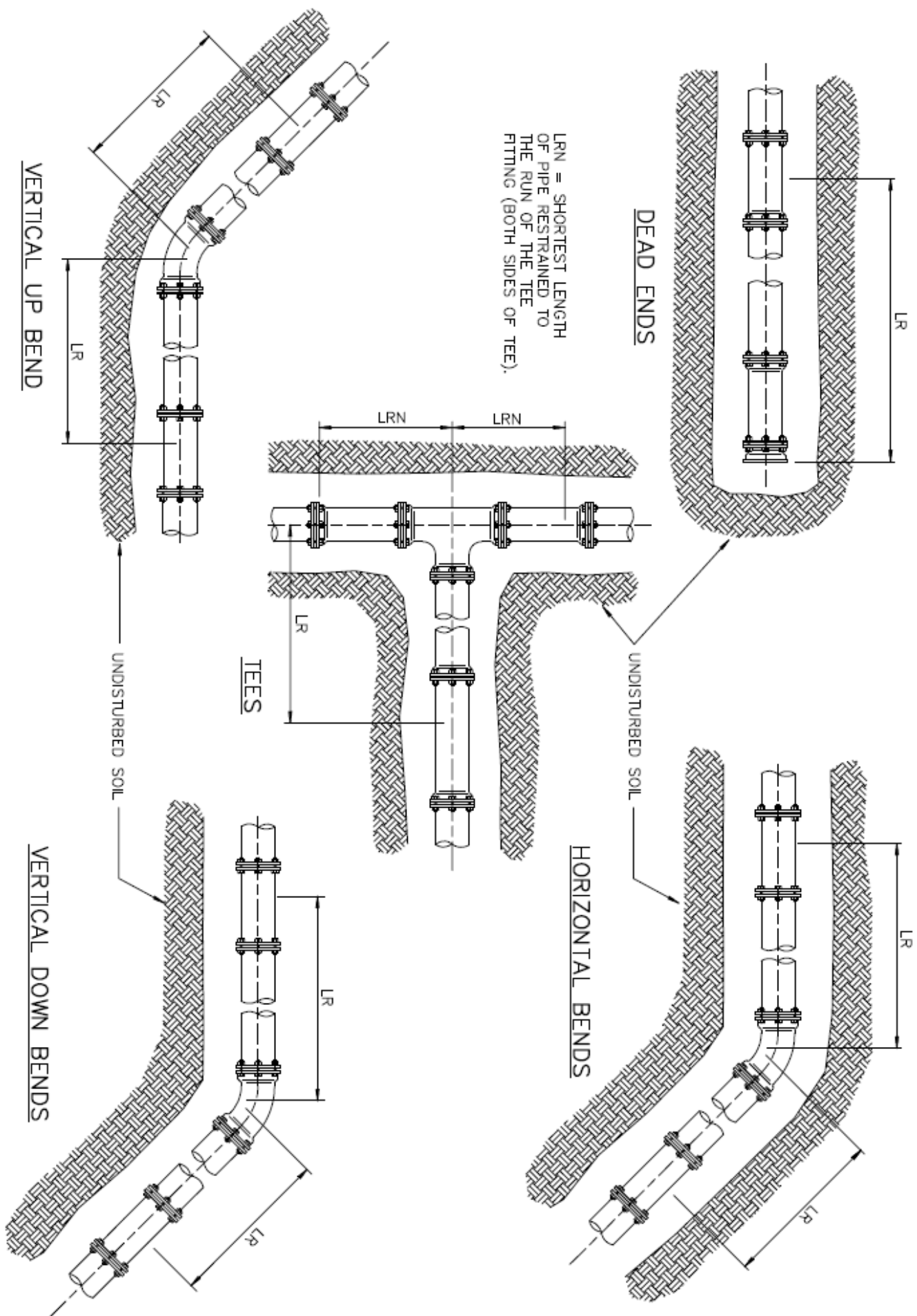
- A. Pour concrete against undisturbed soil.
- B. Pipe Joints: Do not cover with concrete. Leave completely accessible.
- C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
- D. Locking restraint devices may be used in conjunction with concrete thrust blocking (at discretion of ENGINEER).
- E. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.



THE AREA OF BEARING PER THRUST BLOCK TO EQUAL 1/2 THE AREA SPECIFIED FOR THE LARGEST PIPE OR FITTING SIZE



MINIMUM BEARING AREA IN SQ. FT.					
SIZE OF PIPE	TEES, VALVES DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS	11 1/4° BENDS
4"	2	3	2	2	2
6"	4	5.5	3	2.5	2
8"	6.5	9.5	5	2.75	2.5
12"	14	20	11	5.5	3
14"	19	26.5	14.5	7.5	4
16"	24	34	18.5	9.5	6
20"	27	52	28.5	14.5	9
24"	53	74	41	21	12
30"	81	114	62	32	16



561A-N

RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE												
NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22-1/2° BEND FITTINGS		
	90°	45°	22-1/2°	LRN=0°	LRN=10°	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	18	7	4	30	8	31	18	13	7	6	3	31
6	25	10	5	43	20	44	25	18	10	9	5	44
8	32	13	6	56	34	58	32	24	13	11	6	58
10	38	16	8	68	45	69	38	29	16	14	8	69
12	45	19	9	80	57	81	45	34	19	16	9	81
14	51	21	10	91	68	92	51	38	21	18	10	92
16	57	24	11	103	79	104	57	43	24	21	11	104
18	62	26	12	113	90	115	62	48	26	23	12	115
20	68	28	14	125	100	126	68	52	28	25	14	126
24	79	33	16	145	121	147	79	61	33	29	16	147

RESTRAINED LENGTHS, LR, FOR DUCTILE IRON WITH POLYETHYLENE WRAP AND PVC PIPE												
NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22-1/2° BEND FITTINGS		
	90°	45°	22-1/2°	LRN=0°	LRN=10°	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	26	11	5	69	18	72	26	30	11	14	5	72
6	36	15	7	99	47	102	36	42	15	20	7	102
8	47	19	9	130	78	133	47	55	19	26	9	133
10	56	23	11	157	103	159	56	66	23	32	11	159
12	65	27	13	185	131	187	65	77	27	37	13	187
14	74	31	15	211	156	214	74	89	31	42	15	214
16	82	34	16	238	183	241	82	100	34	48	16	241
18	90	37	18	263	207	266	90	110	38	53	18	266
20	98	41	20	289	233	292	98	121	41	58	20	292
24	113	47	22	337	280	340	113	141	47	68	22	340

NOTES:

1. ALL JOINTS WITHIN THE SPECIFIED LENGTH LR MUST BE RESTRAINED.
ALL LENGTHS ARE GIVEN IN FEET.
2. THE MAXIMUM TEST PRESSURE SHALL NOT EXCEED 200 PSI
3. THE MINIMUM DEPTH OF BURY SHALL BE 3' TO TOP OF PIPE.
4. RESTRAINED LENGTHS MAY BE REDUCED WHEN SUPPORTED BY ENGINEERING CALCULATIONS.

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

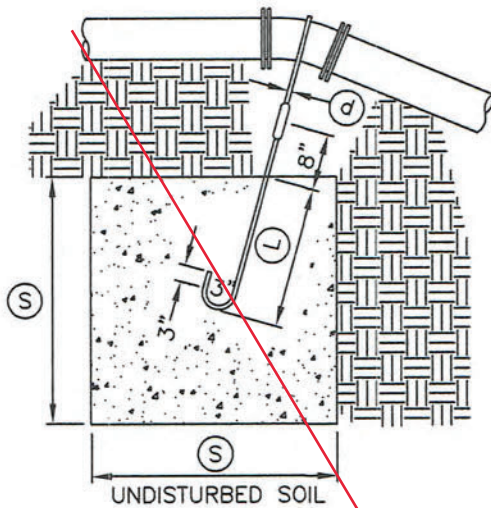
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
- B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- C. Concrete: Class 4,000 minimum, APWA Section 03 30 04.
- D. Reinforcement: Deformed, 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: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.

Nibley City Amendments:

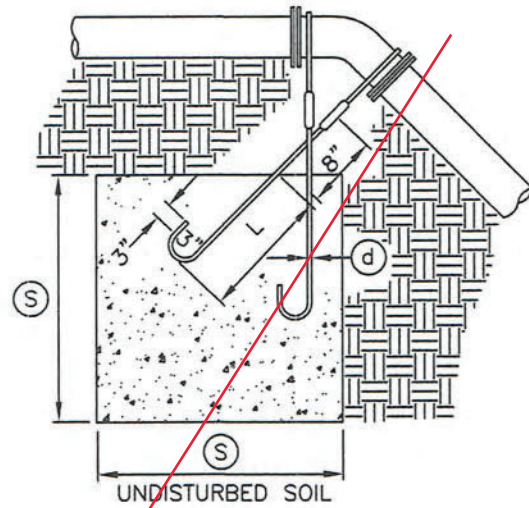
1. Where required, use appropriate mechanical joints in place of Tie-down thrust restraints per detail 561A, B.



TYPE A RESTRAINT

FOR 11 1/4" - 22 1/2" VERTICAL BENDS

TABLE OF DIMENSIONS					
PIPE SIZE NOMINAL DIAMETER - INCH	VERTICAL BEND IN DEGREES	CONCRETE BLOCKING IN CUBIC FEET	SIDE OF CUBE - FEET	DIAMETER OF SHANK OR REBAR RODS - INCH	DEPTH OF ROD CONCRETE - FEET
4"	11 1/4°	8	2.0	5/8"	1.5
	22 1/2°	15.6	2.5	5/8"	2.0
6"	11 1/4°	15.6	2.5	5/8"	2.0
	22 1/2°	34.3	3.25	5/8"	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	5/8"	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"	3.0
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 NOMINAL DIAMETER - INCH	VERTICAL BEND IN DEGREES	CONCRETE BLOCKING IN CUBIC FEET	SIDE OF CUBE - FEET	DIAMETER OF SHANK OR REBAR RODS - INCH	DEPTH OF ROD CONCRETE - FEET
4"	45°	1	3.0	5/8"	2.0
				5/8"	
6"		2.37	4.0	5/8"	2.5
				5/8"	
8"		3.97	4.75	5/8"	3.0
				5/8"	
12"		9.04	6.25	5/8"	4.0
				5/8"	
16"		17.24	7.75	3/4"	4.0
				3/4"	
20"		26.52	9.21	3/4"	4.0
				3/4"	
24"		37.82	10.07	3/4"	4.0
				3/4"	
30"		58.26	11.63	3/4"	4.0
				3/4"	

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

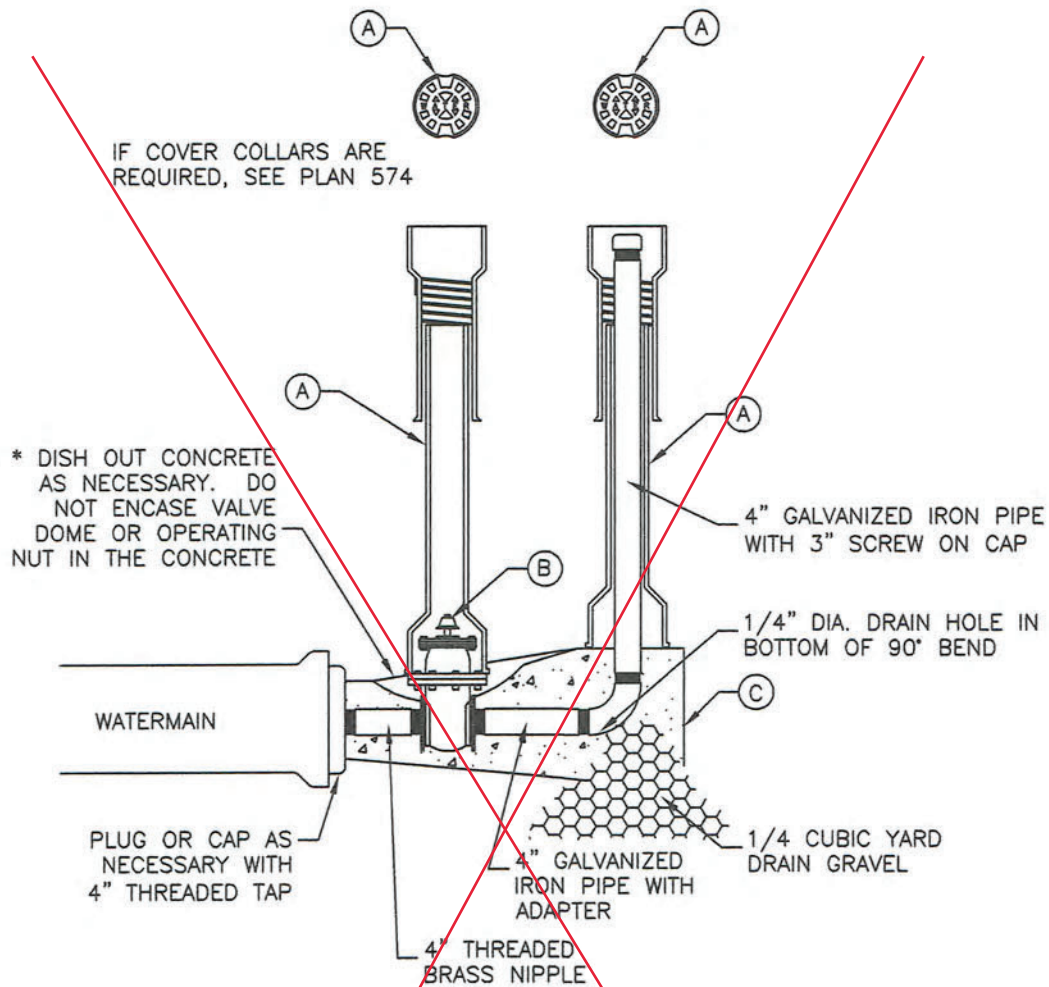
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
- B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- C. Concrete: Class 4000, APWA Section 03 30 04.

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. Backfill and Base Course Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater of a modified proctor density, APWA Section 31 23 26.

Nibley City Amendments:

- 1. Not allowed. Install a temporary or permanent hydrant where washout valves would be needed.



LEGEND		
No.	ITEM	DESCRIPTION
(A)	VALVE BOX WITH LID	2 PIECE CAST IRON
(B)	4" GATE VALVE WITH SCREW ENDS	2" x 2" OPERATING NUT
(C)	CONCRETE THRUST BLOCK	PLAN 561

Nibley City Amendments:

1. Not allowed. Install a temporary or permanent hydrant where washout valves would be needed.

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 16.

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.

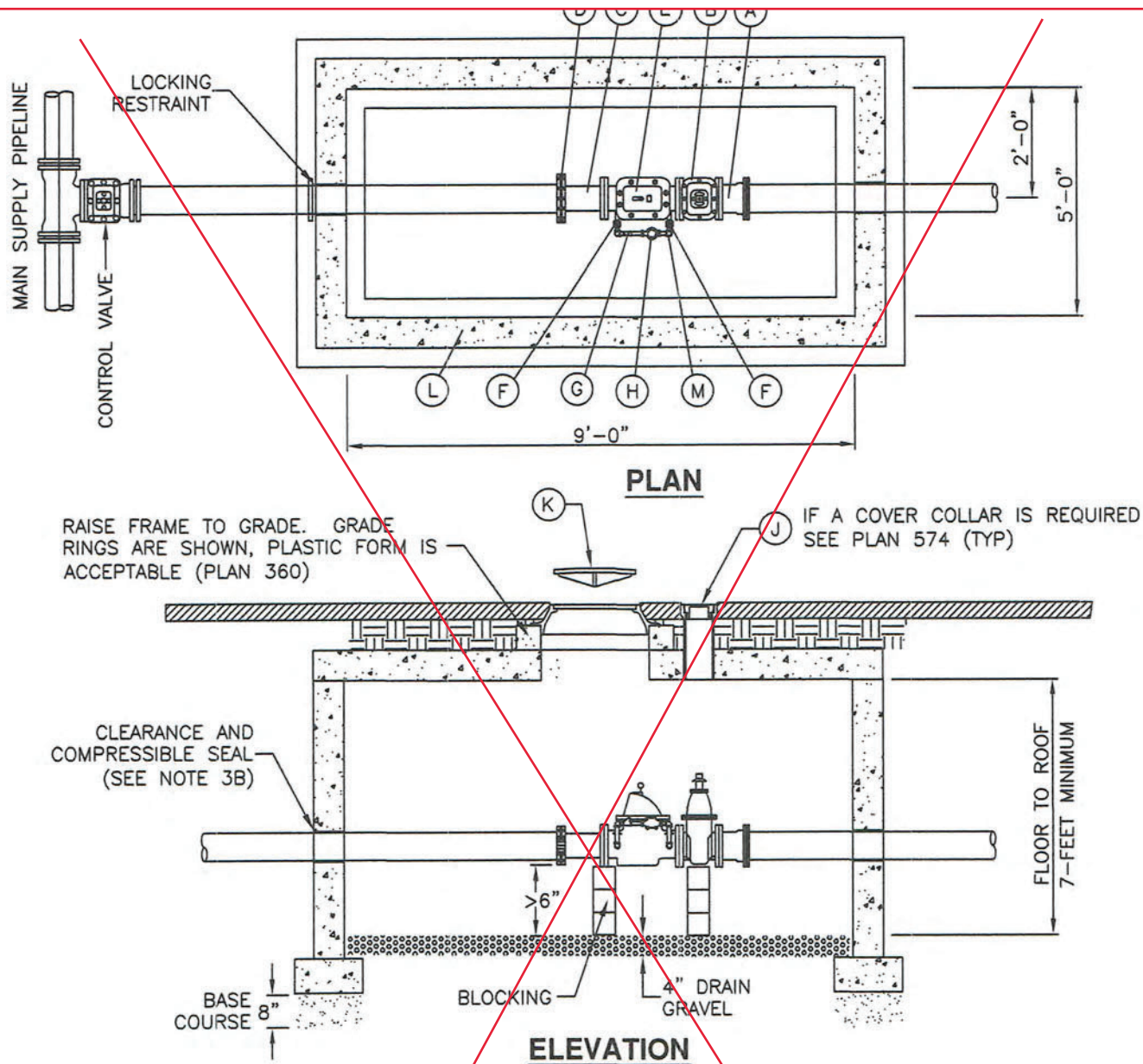
SPOOLS	
Pipe Size	Pipe Length
6"	10"
8"	8 1/4"
10"	6"

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.

When required, backflow prevention devices shall be located above ground and within a climate controlled structure.

When required, backflow prevention devices shall be located above ground and within a climate controlled structure.



6" Pressure reducing valve with 2" bypass

1. GENERAL

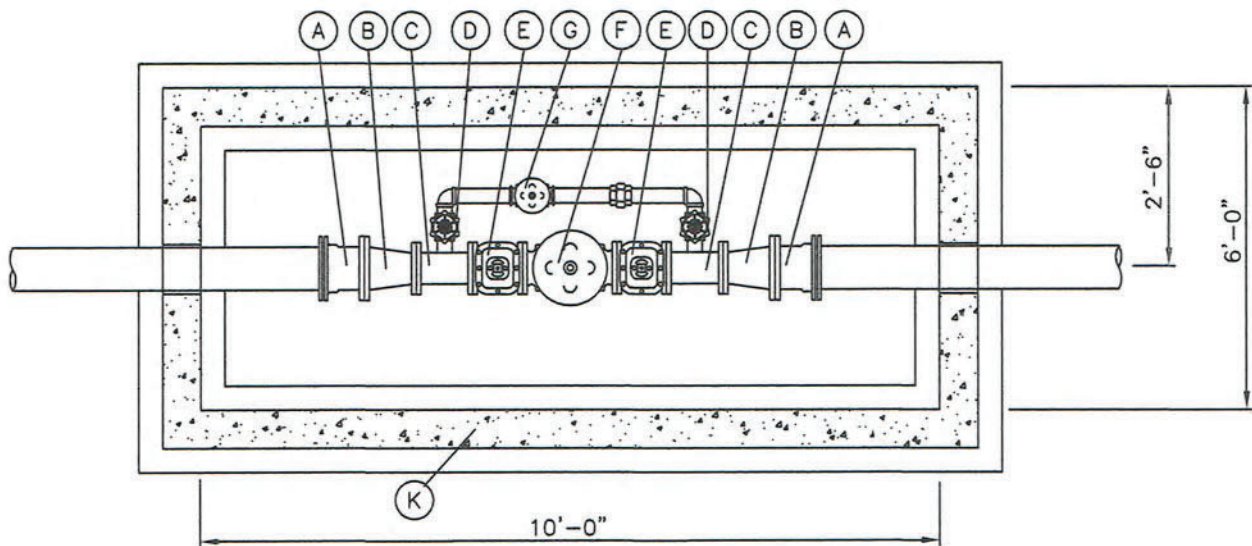
- A. Configuration may be changed at ENGINEER's discretion.
- B. Additional requirements are specified in APWA Section 33 12 16.

2. PRODUCTS

- A. Small Fillings: Brass. Do not use galvanized materials.
- B. Blocking: Clay brick or concrete block.
- C. Taps: Provide two 3/4" I.P. taps with plugs for pressure gages.
- D. 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.

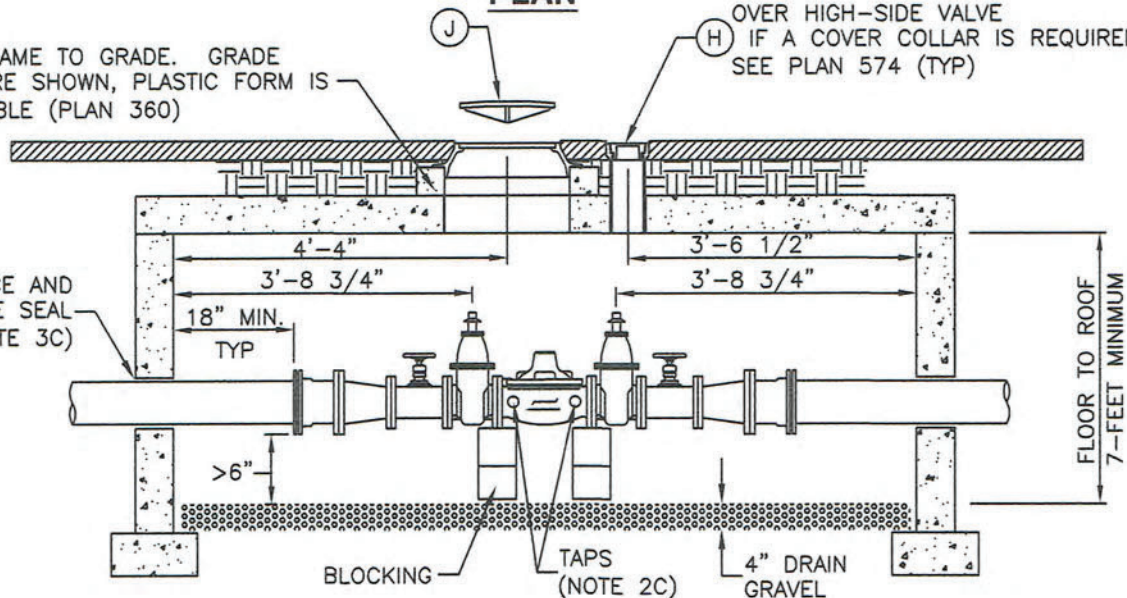


PLAN

RAISE FRAME TO GRADE. GRADE RINGS ARE SHOWN, PLASTIC FORM IS ACCEPTABLE (PLAN 360)

OVER HIGH-SIDE VALVE IF A COVER COLLAR IS REQUIRED SEE PLAN 574 (TYP)

CLEARANCE AND COMPRESSIBLE SEAL (NOTE 3C)



ELEVATION

LEGEND

No.	*	ITEM	DESCRIPTION
(A)		8" M.J.x FLANGE ADAPTOR	CEMENT LINED
(B)		8" x 6" FLANGED REDUCER	CEMENT LINED
(C)		8" FLANGED STEEL SPOOL WITH 2" OUTLET	EPOXY COATED AND LINED
(D)		2" GATE VALVE	
(E)		6" GATE VALVE WITH 2"x2" OPERATING NUT	
(F)		6" PRESSURE REDUCING VALVE	
(G)		2" PRESSURE REDUCING VALVE	
(J)		27" FRAME AND COVER ← 38"	PLAN 502 503
(H)		TOP SECTION OF VALVE BOX WITH LID	
(K)		CONCRETE BOX	PLAN 505

* FURNISHED BY AGENCY

Cover collar for water valve box

1. GENERAL

- A. In a pavement surface, fill an annular space around a frame and cover casting with concrete. The concrete will support the casting under traffic loadings.

2. PRODUCTS

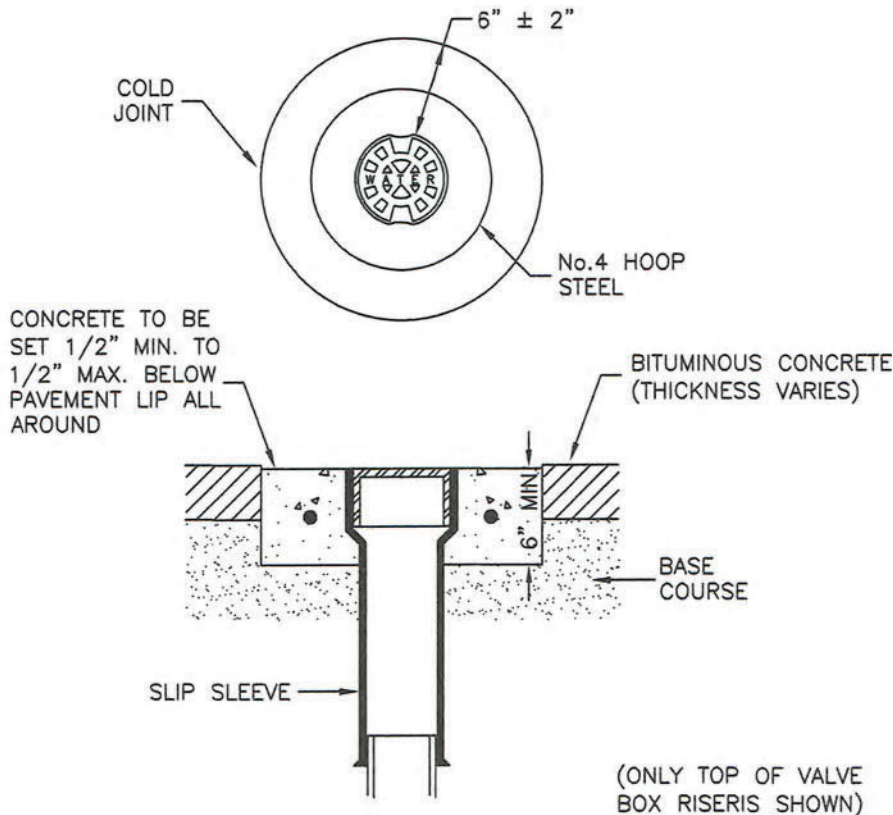
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
- B. Concrete: Class 4000, APWA Section 03 30 04.
- C. Concrete Curing Agent: Type ID Class A (clear with fugitive dye), membrane forming compound, APWA Section 03 39 00.

3. EXECUTION

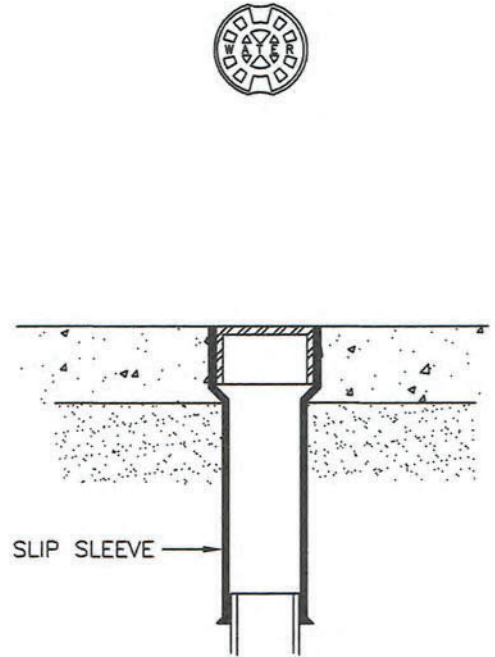
- A. Base Course: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
- B. Pavement Preparation: Provide a neat vertical and concentric joint between concrete collar and existing bituminous concrete surface. Clean edges of all dirt, oil, and loose debris.

Nibley City Amendments:

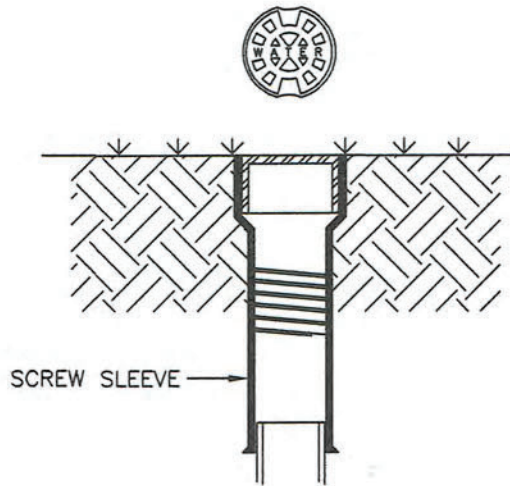
- 1. Install tracer wire along the main and services.
- 2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.



**BITUMINOUS
PAVEMENT**



**PORTLAND CEMENT
CONCRETE PAVEMENT**



LANDSCAPED AREA

Nibley City Amendments:

1. Install tracer wire along the main and services.
2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.
3. Valve Cans are not required on 2" services.

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 04.
- 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 07.
- I. Water Tight Wall Seal: Waterproof, compressible.

3. EXECUTION

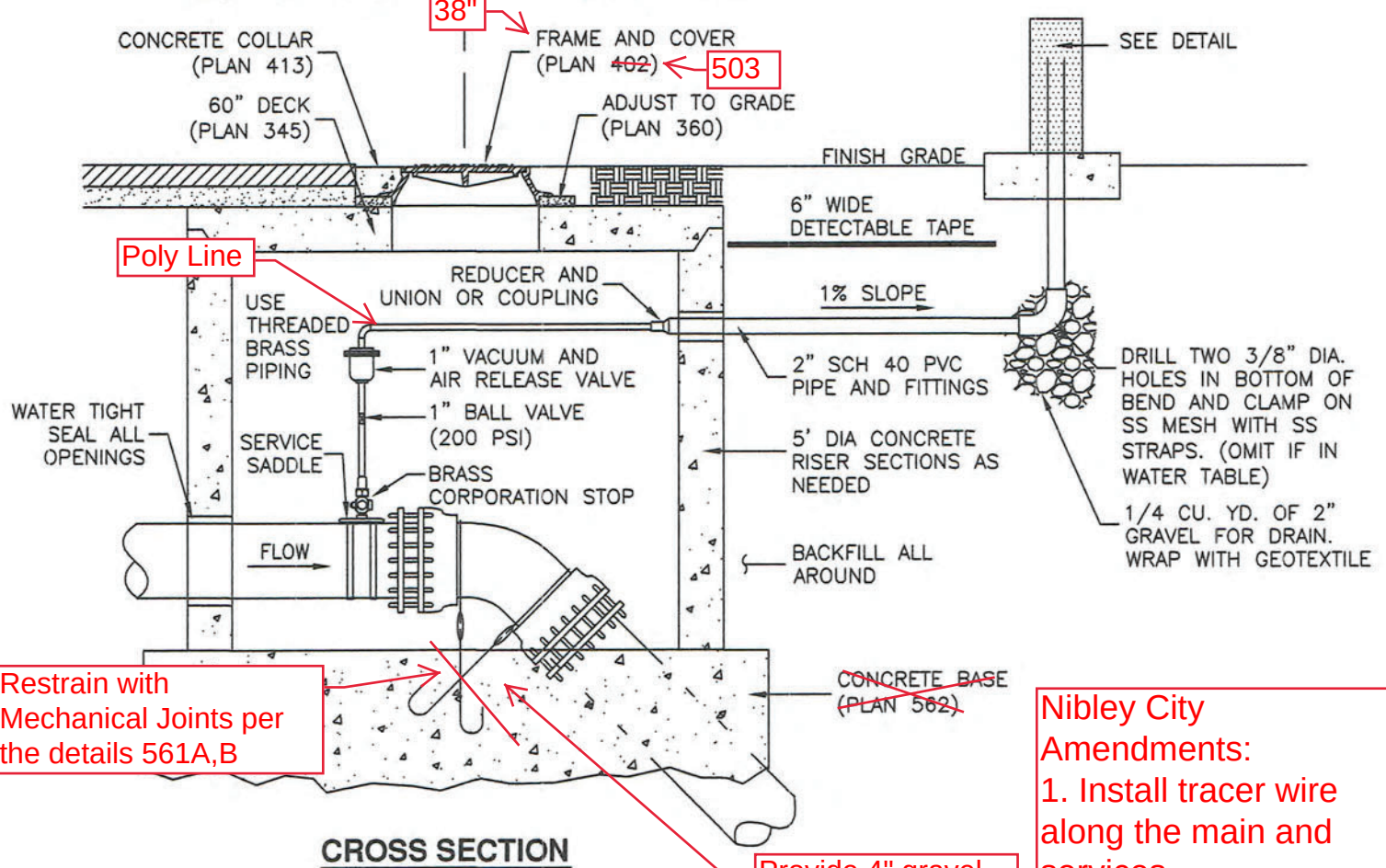
- A. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
- B. Apply tape wrap to the exterior of all buried steel pipe per AWWA C209.
- C. Concrete Placement: APWA 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.

Nibley City Amendments:

- 1. Install tracer wire along the main and services.
- 2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

ROADWAY SURFACE RESTORATION

LANDSCAPED SURFACE RESTORATION



Restrain with Mechanical Joints per the details 561A,B

Provide 4" gravel drain across the bottom in place of the concrete.

Nibley City Amendments:
1. Install tracer wire along the main and services.

OPEN TO AIR. SECURE A No 14 MESH NON-COORDABLE SCREEN OVER THE OPEN END. ATTACH WITH STAINLESS STEEL HOSE CLAMP

DRILL (30) 1/2" DIA. HOLES IN FIVE ROWS AT 6 HOLES PER ROW

GALVANIZED STEEL ENCLOSURE

DRILL 1" DRAIN HOLE
STAINLESS STEEL FASTENERS ALL AROUND

IN VEHICULAR TRAFFIC AREAS INSTALL (2) 6" DIA. CONCRETE FILLED SCHEDULE 40 STEEL PIPE.

BOLLARD

BASE COURSE

15" THICK CONCRETE FOUNDATION

DETAIL

Nibley City Amendments:
2. See the Nibley City Approved Materials List (APL) for information on specific product types and manufactures.

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.

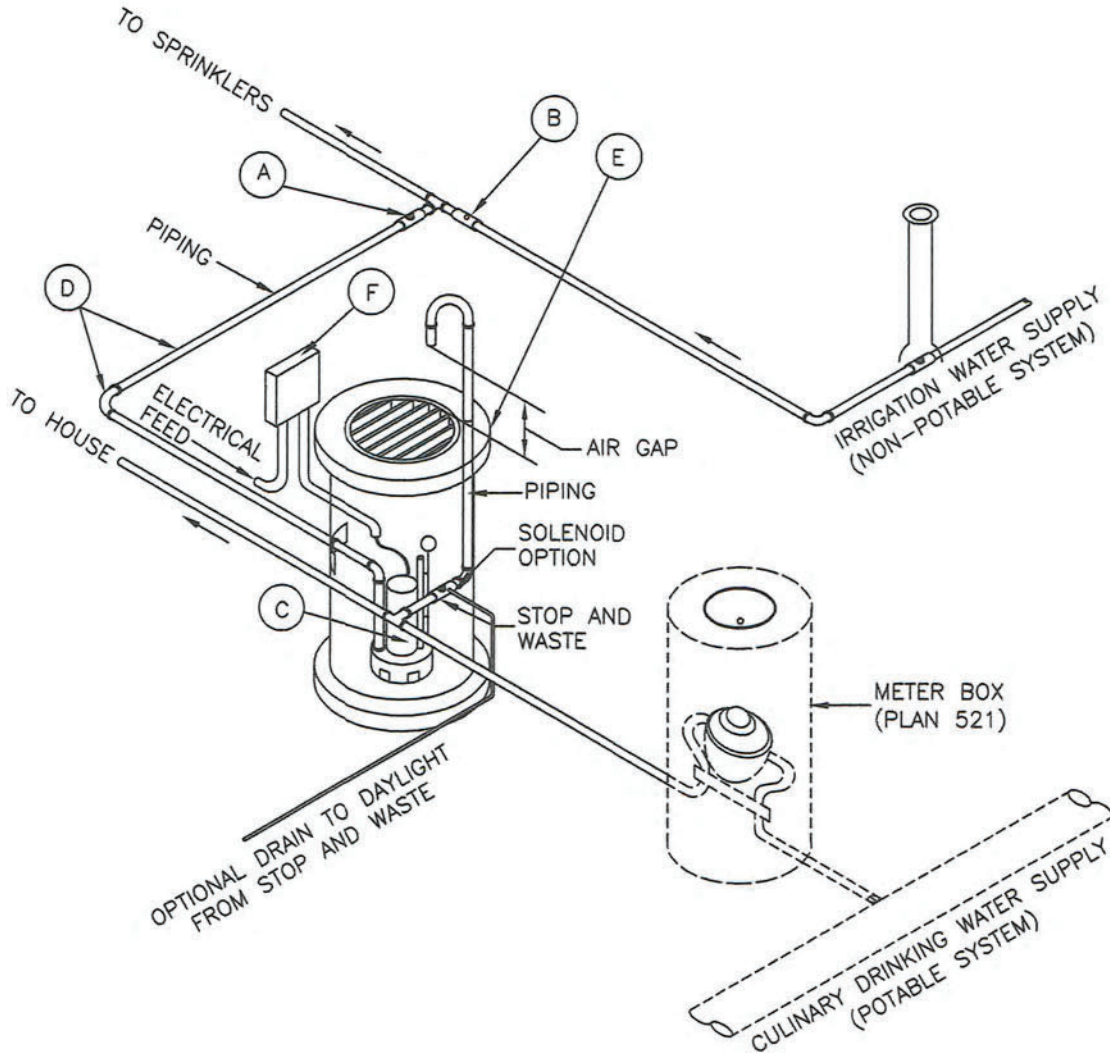
2. PRODUCTS

- 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



LEGEND		
No.	ITEM	DESCRIPTION
(A)	CONTROL VALVE	NOTE 1A
(B)	CHECK VALVE	SIZE TO MATCH EXISTING PIPE
(C)	SUBMERSIBLE 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

Pressurized irrigation water and potable water interface

1. GENERAL

- A. There may be up to 20 psi loss of head through the reduced pressure backflow preventer (RPBP) device. This is normal and the agency should expect a decrease in area coverage. Agency should design or modify the system for the lower pressure.

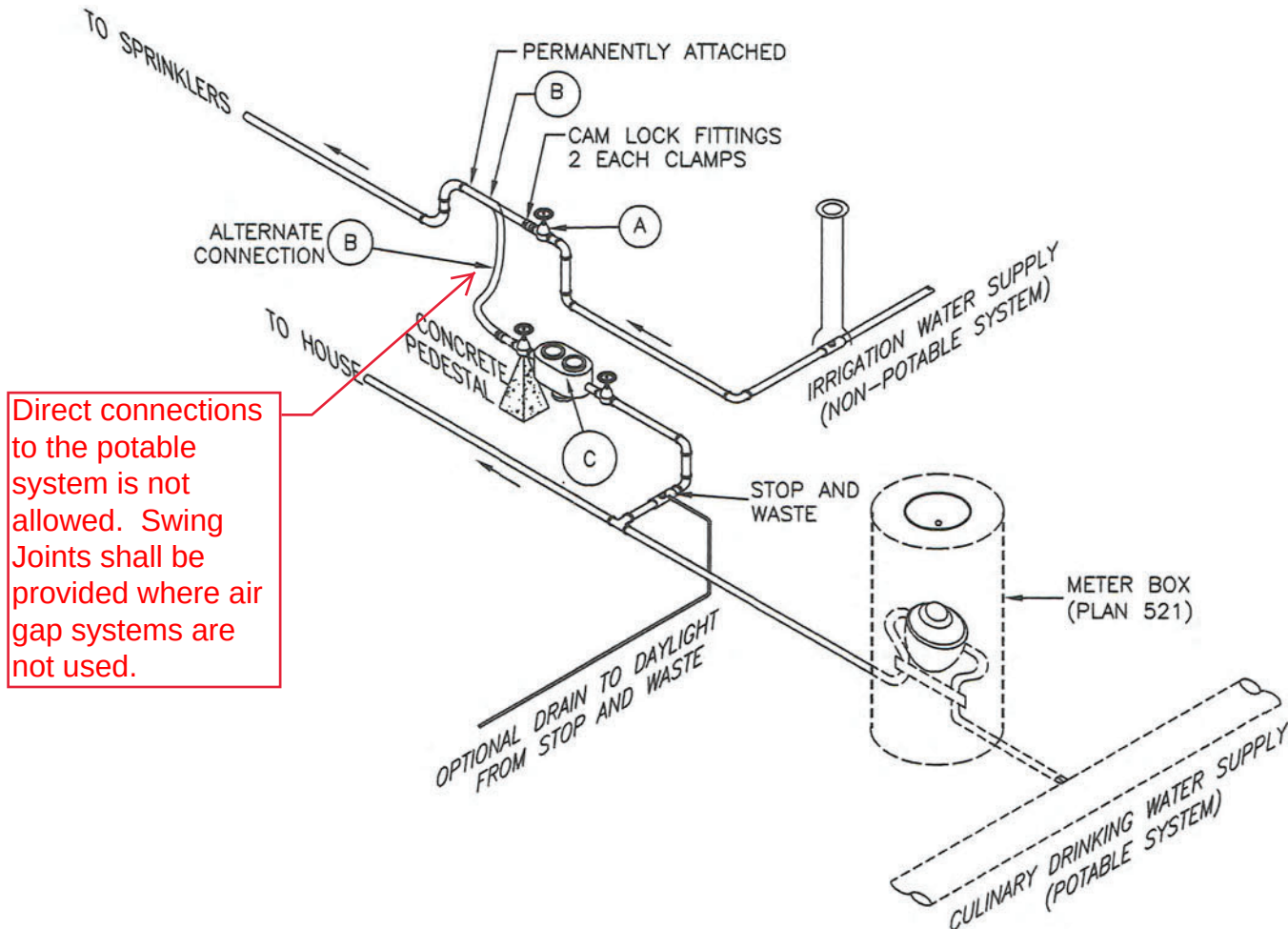
2. PRODUCTS

- A. Piping Materials.
 - 1) All above ground parts are to be copper or galvanized iron only.
 - 2) Below ground parts on the non-potable water system may be made of PVC or polyethylene at the agency's discretion.
- B. Cam Lock Fittings: Provide 3/4" long male insert attached to the flexible hose.

3. EXECUTION

- A. Separate Systems: Connect hose to only one system at a time. The other system is to remain separate. Do not direct connect potable and non-potable water systems with or without backflow prevention devices.
- 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. Testing: The RPBP device requires testing within 10 days of initial installation by a licensed backflow device tester and annually thereafter or more frequently at agency's option and expense.
- D. Backflow Preventer: Install the RPBP device above ground per the plumbing code. It must not be susceptible to flooding and must be accessible at all times for testing, repair, inspection, etc.
- E. Stand Pipes: Provide draining and freeze protection.
- F. Galvanized Pipe: Apply tape wrap to the exterior of all galvanized pipe per AWWA C209.

TYPE B- BACKFLOW PREVENTER INTERCONNECT



LEGEND		
No.	ITEM	DESCRIPTION
(A)	VALVE	BALL, RESILIENT 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)

Approved Materials List for Water Distribution Potable System Materials Testing and Inclusion Procedures

Manufacturers who would like materials considered for the approved materials list shall:

1. Comply with all the design criteria set forth for the approved materials.
2. Supply, at the manufacturer's expense, the materials to be tested. (Quantity to be determined by the Nibley City Public Works Department)
3. Any project using brass or bronze service material that comes in contact with potable water must meet AWWA C-800, NSF 61-8 and Federal Law.
4. Preference will be given to materials manufactured and assembled in the United States.

Once the materials have been received, the Water Division will visually inspect materials for defects and compliance with all City standards. The Water Division will install or oversee the installation of all materials in the distribution system or other test sites as determined to be in the best interest of the City. Materials will be tested and evaluated for a minimum of one year, commencing on the date of installation. Evaluations will include but are not limited to:

1. Ease of installation
2. Availability of parts
3. Operational issues
4. Quality of manufactured materials
5. Number of moving parts
6. Reliability of service

If the materials supplied, at any time in the testing period fail, the testing will be concluded immediately. If the materials successfully complete the testing period, Water Distribution will recommend the product to be included in the Nibley City Approved Materials List.

The Approved Materials List will be updated at least annually at the first of each year. Except for emergencies, new Manufacturers and Models that have been approved by the City for inclusion on the list will be added at that time.

A maximum number of manufacturers will be approved for each category. Once a category has been satisfied, manufacturers successfully completing the test requirements will be added to a waiting list. Pending materials will be listed sequentially according to successful completion of testing. Materials presently on the Approved Materials List may be omitted from the list due to:

1. Change in service/availability.
2. Change in product design.
3. Bankruptcy
4. Consistent product failure
5. Other issues that found to reasonably be cause for omission as determined by the City Engineer.

If an approved material is taken off the list for any of the above reasons, the first pending material will be added to the list.

Water Distribution Materials

Fire Hydrants (4 Manufacturers)

Requirements

- Meet AWWA Standard C502 and C550
- UL 246 approved
- Dry barrel hydrant
- Method of lubrication shall be food grade oil or grease
- Operating nut shall be 1-1/2 inches pentagon (standard)
- Direction of opening shall be counterclockwise (left)
- Hose and pumper threads (male) shall be brass and field replaceable
- Threads shall be "National Standard"
- 2 hose nozzles (2-1/2 inches) and 1 pumper nozzle (4-1/2 inches)
- Inlet connection shall be mechanical joint
- Shall include "traffic flange"
- Size of hydrant valve opening shall be 5-1/4 inches
- All public hydrants shall be painted red



<u>MANUFACTURER</u>	<u>MODEL</u>
Muller	Super Centurion 250

Fire Hydrant Grade Adjustments (1 Manufacturers)

Requirements

- Extensions shall not be used to reach finish grade for new fire hydrant installations.
- Where the finish grade around an existing fire hydrant is changed, an extension kit, installed per the manufacturer's specifications, may be used.
- Only one extension may be used per hydrant. The extension kit must be manufactured by the original fire hydrant manufacturer; no aftermarket parts are allowed.

<u>MANUFACTURER</u>	<u>MODEL</u>
Grade Loc	Assured Flow Sales



Fire Hydrant Grease (2 Manufacturers)

<u>MANUFACTURER</u>	<u>MODEL</u>
Mystik	FG-2 Food Machinery Grease
Clarion	Food Machinery Grease



Fire Hydrant Locks (2 Manufacturers)

Requirements

- Must prevent unauthorized operating of hydrants
- Readily attaches to all hydrant makes and models
- Must be strong enough to withstand vandalism and weather extremes
- Hydrant must be operated without removal of lock utilizing magnetic type wrench only

<u>MANUFACTURER</u>	<u>MODEL</u>
Hydra-Shield	Custodian
USA Blue Book	Hydrant Lok



Gate Valves (5 Manufacturers)

Requirements

- Meet AWWA Standards C515 and C550
- Valves body shall be ductile iron and meet or exceed reduced wall standards
- Valve wedge shall be fully encapsulated with nitrile rubber
- Valves shall be epoxy-coated inside and out
- Stem o-rings shall be replaceable with the valve fully open at rated working pressure
- Direction of open shall be counterclockwise (left)
- All fasteners shall be stainless steel

<u>MANUFACTURER</u>	<u>MODEL</u>
Mueller	Series 2361 or 2362
Clow	Style 2638 or 2639
Kennedy	Style 7000
M&H	Style 7000
American Flow Control	AFC 2500-1



Air/Vacuum Release Valves (1 Manufacturers)

Requirements

<u>MANUFACTURER</u>	<u>MODEL</u>
ARI	No. D-060NT – Combination air valve “Barak” w/ 1-1/2” x 2” ARI Bug Screen



Butterfly Valves (4 Manufacturers)

Requirements

- Butterfly valves are required on distribution mains larger than 16 inches.
- Meet applicable AWWA Standards C504 Standard
- The valve disc shall be fully encapsulated in nitrile rubber
- Valves shall be epoxy coated inside and out
- All fasteners shall be stainless steel
- Direction of open shall be counterclockwise (left)

<u>MANUFACTURER</u>	<u>MODEL</u>
Mueller	Lineseal III
Clow	Series 4500 or 1450
Kennedy	Series 4500 or 1450
M&H	Series 4500 or 1450



Pressure Reducing, Sustaining and Altitude Valves (2 Manufacturers)

Requirements

- Ductile iron body
- Diaphragm type, class 150
- Epoxy coated inside and out
- Tested at a minimum pressure of 175 psi
- 150 lb flanged ends

<u>MANUFACTURER</u>	<u>MODEL</u>
CLA-VAL	No. 92-01, 50-01, and 650-01



Water Meters (1 Manufacturer)

Requirements

- Appropriate make, model, and manufacturer is to be determined by the Water Distribution Department. All meters are supplied by Water Distribution.

<u>SIZE</u>	<u>TYPE</u>	<u>MANUFACTURER</u>
1"	Magnetic / Positive Displacement	Neptune
2"	Magnetic / Positive Displacement	Neptune / Master Meter
3" to 8"	Magnetic	Master Meter
8" and Larger	Per City Engineer's Direction	Master Meter
Fire Hydrant Meter	3"	Master Meter



Radio Read Meter Reading Devices (1 Manufacturer)

<u>MANUFACTURER</u>	<u>MODEL</u>
Neptune	E-coder R900i



Water Service Saddles (3 Manufacturers)

Requirements

- Meet applicable AWWA C800 and NSF 61 Standards
- Double strap brass or stainless-steel saddle
- Thread shall be female iron pipe

<u>MANUFACTURER</u>	<u>MODEL</u>
Ford	Style 202B
AY McDonald	3826
Mueller/Jones	BR2B/J-979



Water Mains (All Manufacturers)

Requirements

- All mains shall be Blue PVC per AWWA C-900
- Meet ASTM Standard D3139 & F477; UL 157
- Minimum class DR 18 (235 psi)



Water Service Lines

Requirements

- Minimum size service line is 1"
- ASTM 2737
- 250 psi minimum pressure rating (SDR 9)
- AWWA C901 – 1" to 3"; AWWA C906 3" & Greater
- Diameter of service line material must be to the nearest inch in size – no half inch increment pipe



Corporation Stops (3 Manufacturers)

Requirements

- Meet applicable AWWA C800 and NSF 61 Standards
- Inlet threads shall be iron pipe
- Shall utilize a ball valve
- For service line installations, the outlet shall utilize a compression style pack joint with a set screw
- For downstream end of blow off installations, the outlet shall utilize male iron pipe threads

<u>MANUFACTURER</u>	<u>MODEL</u>
Ford	FBRW1100-TA
AY McDonald	4104B-22
Mueller/Jones	P25028-10/E-1935



Meter Valves/Curb Stops (3 Manufacturers)

Requirements

- Meet applicable AWWA C800 and NSF 61 Standards
- Angle stop ball valve with 90-degree Tee Head rotation
- Padlock wings
- The inlet shall utilize a compression style pack joint with set screw
- 1" curb stops shall have a swivel meter coupling to allow for meter installation
- 2" curb stops shall be flanged, have elongated bolt holes allowing for either 2" and 1 1/2" meters, and allow for drop in rubber gaskets

<u>MANUFACTURER</u>	<u>MODEL</u>
Ford	BFA43-777W, BA43-444W
AY McDonald	4602B-22
Mueller/Jones	P-24258, P-24276/E-1963, E-1975



Backflow and Cross-Connection Devices

Requirements

- Refer to the approved assemblies list published by the USC Foundation for Cross-Connection Control and Hydraulic Research for backflow prevention and cross-connection devices and assemblies that are approved for use in the City.

Tapping Sleeves (2 Manufacturers)

Requirements

- Meet AWWA C223-02
- No Size on size applications

<u>MANUFACTURER</u>	<u>MODEL</u>
Powerseal	3490AS
Smith Blair	663



Full Circle Repair Clamps (3 Manufacturers)

<u>MANUFACTURER</u>	<u>MODEL</u>
Romac	SS1, SL1
Ford (Single Band)	F1
Smith-Blair	221, 226, 229, 238



Flex Couplings (3 Manufacturers)

<u>MANUFACTURER</u>	<u>MODEL</u>
Romac	XR-501 Extended Range
Ford	FC2W Transition Coupling
Total Piping Solutions	HyMax 2 Series



Restrained Flange Coupling Adapters (3 Manufacturers)

<u>MANUFACTURER</u>	<u>MODEL</u>
Smith-Blair	912
Romac	FC400/FCA 501/RFCA
Ford	FFCA



Restrained Joints - Gasket Style (4 Manufacturers)

<u>MANUFACTURER</u>	<u>MODEL</u>
American Cast Iron Pipe Co.	Flex Ring Joint
American Pipe	Fast Grip Gasket
McWane	Sure Stop 350 Gasket
Griffin Pipe	Talon Gasket



Restrained Joints - Mechanical Style (5 Manufacturers)

<u>MANUFACTURER</u>	<u>MODEL</u>
EBBA Iron	1100 Series
Romac	Roma Grip
Ford	UFR 1400
Star Pipe Products	Stargrip Series 3000
Griffin Pipe	Tough Grip



Water Meter Barrels / Pits

Requirements

- 21" diameter for 1" meters; 36" diameter for 2" meters
- White HDPE smooth single wall or Corrugated dual wall HDPE
- 3" wide by 3.25" tall notch at 0 and 180 degrees
- 36" length

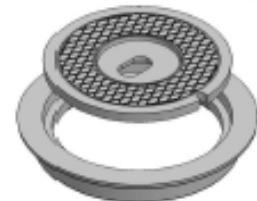


Water Meter Barrel Covers

Requirements

- Lid Diameter: 1" Meter - 12"; 2" meters 31 1/2"
- Overall Diameter: 1" Meter - 23"; 2" meters 39 1/8"

<u>METER SIZE</u>	<u>MANUFACTURER</u>	<u>MODEL</u>
1"	D&L	L-2244
2"	D&L	A-1700



Water Line Fittings

Requirements

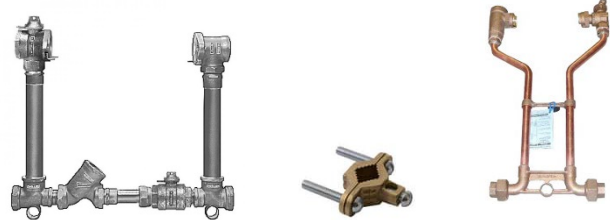
- Ductile Iron
- Flanged
- Blue Bolts
 - Fluoropolymer Coating
 - Corrosion-resistant, high-strength low-alloy steel
 - ANSI/AWWA C111/A21.11



Water Meter Setter

Requirements

- For 1" and 2" meters
- 18" setter length
- Copper tubing
- Lead free
- Padlock wings
- Optional cross bar
- Angle key Valve on City side
- Brass components ASTM B584 & NL (in contact); ASTM B62 & B584 (non contact)
- Angle dual check valve on customer side
- Compression fittings at City and customer connections
- 18" long - 3/4" schedule 40 PVC pipe set next to setter to keep it up right
 - Attach with zip ties
- Ground clamp on setter for attaching tracer wire.



<u>METER SIZE</u>	<u>MANUFACTURER</u>	<u>MODEL</u>
1"	AY McDonald	720-418CDD44
1"	Ford	VH-74-18W-11-44-NL
1"	Muller	H-14195-6DN
2"	AY McDonald	721-718WDGG77
2"	Ford	VBHH-77-18B-44-77-NL
2"	Muller	B-2423-2N

Water Stub Markers (1 Manufacturer)

Requirements

- Blue in color
- Fiberglass
- 66" length
- Ultraviolet resistant / Temperature stable
- 3.75" Wide
- 2 7/8" x 12 1/2" sized decal



<u>MANUFACTURER</u>	<u>MODEL</u>
Cristy's	Pipeline and Cable Marking Posts
3-Rail	Fiberglass Posts

Valve Boxes (3 Manufacturers)

Requirements

- Top and Bottoms to be domestic
- 24-pound universal lid required in all arterial streets
- Installed per amended APWA standards with concrete collar

<u>MANUFACTURER</u>	<u>MODEL</u>
Tyler Union	6855/145325/145451
Bingham & Taylor	GRE-5B64S/5T55SCL35/5LHVTSK4WCL35/CUL5LWRDBLACK
EJ Iron Works	6800/8555



Pipe Wrap Tape

Requirements

- 2" Wide
- 20 Mill Thickness
- Suitable for use between at 60° C
- Moisture resistant
- Adheres to metal and plastic
- Non-corrosive, pressure-sensitive adhesive
- Does not require heat, moisture, or other manner of preparation to apply



Polymer Pipe Wrap

Requirements

- Blue in Color
- Polyethylene Material
- AWWA C-105



Tracer Wire

Requirements

- #12 AWG wire
- 2,500-foot minimum roll length
- Grease Connectors – Hughes Dri-Splice DS-100; DS-400; DS-500



Buried Water Line Marking Tape

Requirements

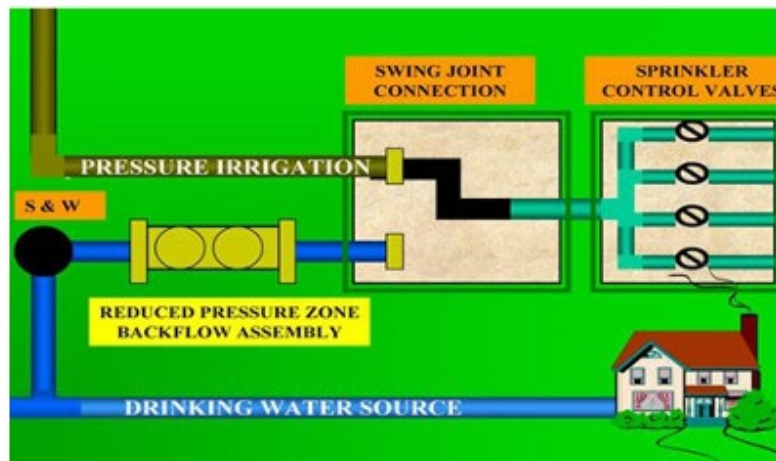
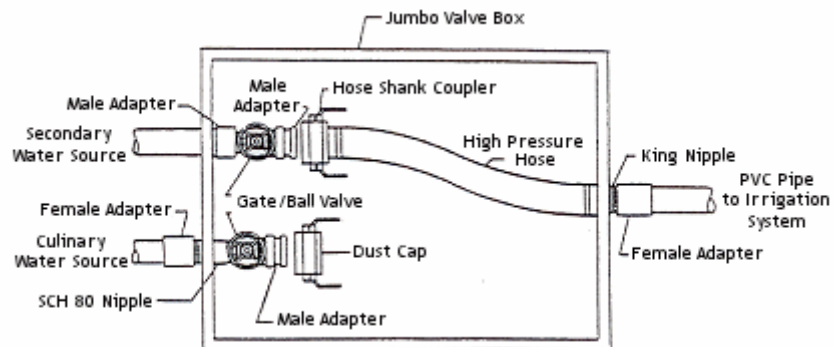
- 3" minimum width
- 4 Mill minimum
- Blue in color
- Black lettering "BURIED WATERLINE"



Secondary Water Swing Connection

Requirements

- Must provide a full airgap disconnect between the two systems
- Must be documented by City Staff
- State of Utah requires a backflow prevention device between the connection and the City meter



Nibley City

Water Main Flushing and Disinfection

01/18/2022

Regulatory Standards

Nibley City requires that all contractors working in the City adhere to the following guideline for new water main disinfection to prevent contamination of the City's potable water system. The disinfection of all water mains shall be in compliance with AWWA C651-14, the current edition of Utah APWA 33-13-00 Specifications, and this guideline.

Personnel performing flushing and disinfection procedures shall be properly trained and be familiar with AWWA Standards. This standard was written for public and private water lines connected to the Nibley City potable water system. Flushing and disinfection of service lines and internal building lines shall adhere to flushing and disinfection guidelines and standards in the applicable building code.

Valve Operation

At no time will contractors be permitted to open or close any valve tied into the City's water system. Only authorized City personnel can operate these valves for any purpose, which may include disinfecting, flushing, placing a new water main into service, and placement of water meter cans. Once a new main is connected to the City's water supply, only authorized City personnel are permitted to close valves for the purpose of isolating water lines to facilitate construction or emergencies. Contractors shall coordinate operation of valves with the City Inspector assigned to the project. Operations which require opening or closing of valves shall be scheduled with the Public Works Department through the City Inspector a minimum of 48 hours prior to the work being performed.

If an emergency shutdown is required, call the Nibley City Public Works Department at 435-753-4413 day or night.

Isolation of New Water Mains

As identified in AWWA C651-14, the new main shall be isolated from the active distribution system by physical separation until disinfecting water has been flushed out and satisfactory bacteriological testing has been completed. Water needed to fill the new main for testing and flushing purposes shall only be potable City water, supplied through a temporary flushing / disinfection connection as identified in Figure 1 of AWWA C651-14.

Protection of Pipe, Valves, and Fittings

At all times, the Contractor shall protect valves, fittings, and the interior of pipe against contamination. Stockpiled material shall be stored off the ground to minimize the entrance of foreign material and mud. During placement, openings shall be covered with watertight plugs at the close of the day's work or during short stoppages of work such as rest breaks. If at any time after placement, stormwater enters the pipe, then corrective measures shall be taken per AWWA C651-14 section 5.1.1.3.

Loading the Main for Pressure and Leak Testing

Once the water main and all appurtenances have been installed and the Inspector has received confirmation that the trench backfill has passed compaction requirements, the City will permit the main to be loaded for testing. Section of main greater than ½ mile in total pipe length shall be broken up into

two separate tests unless otherwise approved by the City Engineer and/or the Public Works Director. The Contractor shall utilize a reduced pressure type backflow prevention device with a metering device to supply potable water through a temporary connection to the new main from an existing City water source. The device shall be tested and certified by a State Certified Tester prior to use and anytime the device has been repaired or maintenance performed. As a minimum, the device shall be certified within one year of use. A copy of the certification shall be given to the City Inspector and a copy shall be kept on site attached to the device at all times. No device shall be connected to the City source until approved by the City Inspector and shall be immediately removed once the bacteriological sampling has been completed. All pipe and connectors between the existing City main and the backflow device shall be disinfected per AWWA C651-14 prior to use. The device shall be physically separated from the new main during hydrostatic pressure testing. Valves shall be closed at the end of each shift and when not in use.

Flushing

The City requires that mains be cleared of all debris and soil that may have accumulated during construction prior to starting the disinfection process. The most practical way to achieve this is to flush the main. Only potable City water can be used to fill and flush potable water lines. From the point of the temporary tie in, potable water from the City's system will be utilized to flush the new main. The main shall be flushed at a minimum velocity of 3 feet per second. The Contractor should refer to AWWA AWWA C651-14 Table 3 to determine the inlet and outlet pipe size requirements to achieve the required velocity. Once flushed, the Contractor may continue with disinfection of the main. At least 48 hours prior to the filling and/or flushing of any potable water line, the Contractor must contact the City Inspector to coordinate with the Public Works Department the use of potable water.

Disinfection of Mains

Chlorination of all water mains shall be per AWWA C651-14. The method of chlorination used by the Contractor shall be approved by the City Inspector prior to use. The Contractor is responsible for supplying equipment such as a pitot gauge, meter, or similar devices to verify proper chlorination procedures are performed per standards.

The water shall be chlorinated so that after a 24-hour holding period in the main, there will be a minimum free chlorine residual of 10 mg/L, unless at any time after placement, stormwater enters the pipe, then corrective measures shall be taken per AWWA C651-14 section 4.3.8 and sampling shall be per section 5.1.1.3. This minimum concentration is to be present at all risers. Each riser is to be flushed to ensure the chlorine solution contacts all portions of the pipe. In the presence of the City Inspector, valves, hydrants, and all other appurtenances that are part of the new system shall be operated while the line is filled with the chlorine solution. At the end of the 24-hour period, the City Inspector will verify that treated water in all portions of the main have a minimum concentration of 10 mg/L chlorine prior to flushing for bacteriological testing.

After confirmation of the 10 mg/L minimum chlorine residual, the Contractor may be permitted to flush the line; flushing shall be coordinated with the Public Works Department through the City Inspector. Flushing is typically limited to the off-peak usage hours of 10:00am to 2:00pm, or as determined by the City Inspector and the Public Works Department. Flushing shall continue until the replacement water

throughout the new pipeline can be proved, by laboratory testing, comparable in quality to the water served to the public from the existing water system.

If residual chlorine levels exceed 50 ppm, the Contractor will be required to use a neutralizing agent or diffuser to neutralize the chlorinated water during discharge. Refer to AWWA C651-14 Appendix B.

Bacteriological Testing and Acceptance

After disinfection of the main is complete and the main flushed, the Contractor will schedule testing to verify the absence of coliform organisms and HPC bacteria. The City Inspector shall determine the locations where the Contractor will place the sample risers.

The number of sampling locations shall be as follows:

- Waterlines up to but less than 150 feet in length require one sampling riser installed as near the end as possible;
- Waterlines 150 to 300 feet in length, two sampling risers, one near each end of the line;
- Waterlines 300 to 3,000 feet in length, a minimum of three sampling risers;
- In addition, dead ends on main lines should be represented with a sampling riser;
- If any trench water has entered the main during construction, then additional risers shall be placed to conform with AWWA C651-14, section 5.1.1.3

The Contractor is responsible for hiring an independent lab for the sampling and testing of water in the new main. The lab performing sampling shall obtain samples in the presence of the City Inspector. The lab shall be certified by the State of Utah for testing water quality. All sampling and testing shall be in accordance with the State Standards. The first sample shall be taken within 24 hours of flushing the new main. A second set of samples shall be obtained 24 hours after the first set of samples are taken. A copy of the test results along with a Chain of Custody form shall be submitted to the City Inspector.

Connection of New Main

Once approved by the City Inspector, the Contractor will be required to connect the new main to the existing City water supply. The Contractor shall make all required connections within 3 days of notification. The City Inspector will coordinate the work through the Public Works Department.

Connection pieces shall be disinfected per AWWA C651-14 section 4.10 in the presence of the City Inspector. Once all connections are complete, the City Inspector will arrange for the main to be placed into service.



CHAPTER 4

SEWER

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5.1 General Information

5.1.1 Purpose

A. Introduction

This document provides guidance and minimum design criteria for the modification and construction of water systems within Nibley City. It is intended for use in the planning, design, plan preparation, and construction processes. These standards are intended to follow State of Utah (hereafter “Utah”) regulations in assuring that City facilities are reliably capable of collecting, transporting, and treating wastewater generated in the City’s service area. In the event a part of these standards is found to conflict with Utah standards, Utah standards shall prevail.

The City maintains a citywide Wastewater Master Plan that has been developed to ensure that the City’s sewer system develops in an organized manner. Contact the City Engineer for further information regarding latest editions and updates to this Master Plan.

Wherever the language of this document refers to equipment or material to be used, or the language of a standard refers to an Approved Materials List, the “Sewer Collections System Approved Materials List” shall be used. The “Lift Station Design Standards” document shall be followed when installing a new lift station. These documents can be obtained from the City’s City Engineer or from the City’s website, www.nibleycity.com.

B. Abbreviations

ANSI - American National Standards Institute
APWA – American Public Works Association
ASTM - American Society for Testing and Materials
AWWA - American Water Works Association
BRDHS – Bear River Department of Health Services
EPA - Environmental Protection Agency
HDPE – High Density Polyethylene
gpcd - gallons per capita per day
gpd - gallons per day
gpm - gallons per minute
POTW - Publicly Owned Treatment Work
PUE - Public Utility Easement
PVC - Polyvinyl Chloride
UAC – Utah Administrative Code
UDEQ - Utah Department of Environmental Quality

5.1.2 Ordinance Requirements

A. Mandatory Extension

The City requires sewer lines to be installed along the entire length of property line frontage of the property to be developed whenever future extension of the line is possible. The property line frontage is that portion of the property along a public right-of-way. If a parcel to be developed has more than one property line frontage, the City will require a sewer line to be installed along all frontages.

B. Construction Plans

Upon development of property for which City water or sewer service is available, the Developer shall submit a plan, prepared by a Professional Engineer licensed in the State of Utah, for the sewer system.

C. Fees & Construction Costs

The Developer shall install, at his or her expense, construct all on-site and off- site improvements necessary to serve the development. This includes payment of all required development fees.

D. Non-residential Discharge

The City may require users who have a nonresidential discharge to monitor their discharges and obtain an Industrial Waste Discharge Permit. The permit may be obtained from the City Engineer.

E. Nibley City Code

For more specific information on ordinance requirements, review of the Nibley City Code is recommended.

<https://nibley.municipalcodeonline.com/book?type=ordinances#name=Preface>

5.1.3 Standards of Design and Construction

A. Referenced Standards

The technical specifications shall require that installation be in accordance with the requirements based on the criteria, standards and procedures established by:



1. Utah Administrative Code R309 & R317;
2. Current American Public Works Association (APWA) Standards and Specs as amended by Nibley City;
3. Recognized industry standards and practices;
4. The product manufacturer's recommendations and guidance;
5. The Following codes, as adopted by the State of Utah:
International Building Code, International Plumbing Code,
International Mechanical Code and National Electrical Code;
6. American Society of Testing Materials (ASTM);
7. American National Standards Institute (ANSI);
8. Occupational Safety and Health Administration (OSHA), US
Department of Labor or its succeeding agencies;
9. American Society of Civil Engineers (ASCE); and
10. American Water Works Association (AWWA);

5.1.4 City Policies

A. Design Basics

Sanitary sewers shall be designed to serve the ultimate population density expected in the tributary area. The design must be in conformance with the current City approved Wastewater Master Plan, and as such, shall take future connections into consideration.

B. Private Sewer Mains

Except in planned commercial centers, sewer lines shall not be privately owned if future connection to the proposed sewer lines will be necessary to serve adjacent parcels, as determined by the City Engineer.

1. Sewer service lines shall be privately owned and maintained.

2. Private sewer lines shall meet City Engineering design standards for approval. Privately owned and maintained sewer lines shall not be located within the street right-of-way or a PUE.

C. EPA Regulation

The City is required by the U.S. EPA to develop and implement a program to control discharges that might harm the publicly owned treatment work (POTW). The program establishes local discharge limits for non-residential users and provides for a permitting process based on user discharges and business types. Specific information may be obtained by calling the City Engineer at 435-752-0431.

5.1.5 Sewer System

A. Requirement to Connect

All developments are required to connect to the City's sewer system if located within 300 feet of a City sewer main or the property is within a water source protection zone as defined by the Nibley City Code. Where connection isn't feasible according to City Code, onsite disposal systems may be allowed as approved by the City Engineer.

B. Sewer Pipe Classifications

The City's sewer system includes 6 classifications of sewer lines which are determined by use. These classifications are:

1. Service Line – This is the line from the building to the public or private sewer main or onsite disposal; also called house connection.
2. Lateral Sewer - An 8 to 10-inch diameter sewer line that discharges into a larger sewer main and collects sewage from service lines.
3. Main Sewer/Trunk Sewer – A 12-inch to 16-inch diameter principal sewer line to which lateral sewer lines are tributary. Service lines may connect directly to main / trunk sewer lines.

4. Interceptor Sewer - A larger than 16-inch diameter sewer line that receives flow from a number of sewers mains or laterals and conducts such wastewaters to a point for treatment or disposal. Service lines are generally not allowed to connect to interceptor sewer lines.
5. Force Mains – A pressurized sewer line that receives sewer flows from a sewer lift station.

C. Sewer Line Sizing

1. All developments shall provide for trunk / main, lateral, and service lines as required to provide sewer service for not only the individual development, but for the ultimate service area, as deemed necessary by the City Engineer.
2. Sewer lines shall be sized to accommodate their ultimate service area. Reference shall be made to the City's Wastewater Master Plan for the sizes and locations of sewer mains within the City. The minimum size line for a public main is 8-inch diameter.

D. Public Sewage Lift Stations

The City Wastewater Master Plan has estimated wastewater generation from the entire City. Refer to this plan for information regarding the approved location for public sewage lift stations. Public lift stations in size and location other than those identified in the City Wastewater Master Plan will not be permitted without written approval by the City Engineer.

E. Wastewater Design Report

At a minimum, Preliminary and Final Wastewater Reports shall be prepared by a Civil Engineer registered to practice in the State of Utah for each development within the City. The cost of said reports shall be the responsibility of the Developer. These reports shall be designed per the requirements of this manual and the City Wastewater Master Plan.

F. Updating The City's Model

Information provided in the City Wastewater Master Plan has been developed based upon the zoning land uses existing at the time of completion. If a proposed development changes the land use of an area in such a manner that it significantly impacts the functionality of the

City Wastewater Master Plan, the Developer will be financially responsible to update the City Wastewater Model prior to obtaining permits for construction.

5.1.6 Plan Preparation

A. Preliminary Wastewater Report

A Preliminary Wastewater Report regarding the wastewater system for a development shall be provided to the City for all Preliminary Plat applications that contemplate a phased approach to construction or have greater than 50 lots. The preliminary information provided within this report shall at a minimum calculate that amount of wastewater generated by the development, show the proposed location, sizes, inverts and rim elevations of existing and proposed sewer mains, manholes, lift stations, force mains, etc within and adjacent to the site. The report shall include calculations to substantiate proposed sizes are sufficient for the required capacity. The text shall describe the property, identify the wastewater treatment facility that will be accepting flows, and discuss any unique scenarios that may not be obvious by inspection of the plans. The Preliminary Wastewater Report will form the basis of design for each phase of development as it is submitted for approval. It is understood that plans are conceptual in this stage

1. All development projects shall be responsible for determining their specific wastewater system needs. Services for proposed developments shall not be provided at the expense of existing customers. Preliminary and Amended Wastewater Reports shall state this in the introduction.
2. The design of the wastewater system can typically end at the point of connection to the City's existing sewer system. In cases where a development requires a change to the City's general plan or zoning plan, additional improvements may be required beyond the point of connection to accommodate the proposed change.
3. If a property is desired to be rezoned, or a RPUD is sought which could result in increased line sizes within the project area or in its downstream receiving sewer lines or would otherwise significantly alter the sewer main alignments as shown in the City's current Wastewater Master Plan; the developer shall also be required to reimburse the City for the cost of amending the City's sewer master plan and City-wide sewer model.

4. Calculations should be based on Manning's equations using a Manning's "n" of 0.013, as well as the invert elevations and pipe diameters of all existing and proposed pipes.
5. Wastewater flows generated within the development shall be calculated as specified in the Design Flows section of this chapter.
6. Off-site wastewater flows are included in the City's current Wastewater Master Plan unless newer information is provided by the City.
7. An electronic file containing calculations may be submitted along with the sewer reports but does not replace the need to provide this information in the written report. Common spreadsheet formats compatible with Microsoft Excel are acceptable.
8. Compliance with the current City Wastewater Master Plan for the respective area:
 - a. Each sewer report shall include a map showing the following:
 - i. All proposed onsite and off-site facilities; these include but are not limited to interceptors, sewer lift stations, and force mains.
 - ii. Proposed street locations, parcel boundaries, and proposed lots within each parcel.
 - iii. Contour lines at 2-foot intervals showing the elevation of the land surface shall be provided. If drainage requirements will require extensive grading, then finished grades should also be shown. Sufficient information must be provided to evaluate pipe cover and separation from other utilities.
 - b. A separate area location map shall be provided showing existing and proposed streets, as well as existing parcels surrounding the project to a distance of not less than 1 mile from the exterior boundaries of the project. The County Assessor's maps can provide the information required to prepare these composite maps.

- c. The scale of all maps must be sufficient to show all required information clearly.
9. When the City Engineer determines that a final design for a phase of development is significantly different than what was approved in the Preliminary Report (ie significant changes the design or layout of the system), the Preliminary Report will be required to be amended at the expense of the Developer requesting the change.

5.1.7 Site Plans and Preliminary Plats

A. Plan Layout

All site plans and preliminary plats shall provide a full-sized (24- inch x 36-inch) exhibit that shows and labels the following:

1. All existing wastewater lines, proposed wastewater lines, sizes, slope, and material types.
2. Lift stations and associated force mains.
3. All existing infrastructure shall be shown in dashed screened black line types. All proposed improvements such as wastewater lines, lift stations, and force main lines shall be shown in dark lines.
4. All existing and proposed wastewater line easements.

5.1.8 Construction Plan Requirements

A. Reviews and Approvals

1. All improvement plans which include work within the City shall be submitted for review and approval by City Staff. Plan review submittals are made to the City Engineer.

B. Plan Review Guidelines

No permits for public sewer installation will be issued until the Owner / Developer has provided the necessary easements and rights-of-way. The instruments of dedication must be approved by the City and recorded at the Cache County Recorder's Office. The following

paragraphs highlight construction plan requirements pertaining to the preparation of sewer improvement plans which are to be submitted to the City for approval:

1. Plans shall be prepared per the City's construction plan development guidelines.
2. General Construction Notes and Sewer Construction Notes which apply to construction of Nibley City's sewer system are required on each set of construction plans which include work on the City's sewer system or a sewer system which is to be dedicated to the City. These notes are provided within this manual.
3. Sewer line stationing shall be shown along the pipe, monument, or roadway centerline.
4. Protection for sewer / water line crossings shall be shown in both plan and profile. The beginning and ending stations of the protection shall be called out.
5. If a line is to be connected to an existing system, the following note shall be placed on the plans: "Contractor shall verify the location of the existing sewer line before proceeding with trenching."
6. Both slope and elevation shall be shown on all proposed sewer main stubs. A profile is required for lines 8 inch and larger.
7. Where sewer lines cross water lines, storm drains, reclaimed water lines or drainage culverts, the relationship shall be shown in both plan and profile and actual separations shall be called out.
8. For permitting purposes, quantities for all items of work within public rights-of-way and public easements shall be included on the cover sheet of the plans.
9. Sewer line invert elevations shall be called out for all plans showing sewer line construction.
10. The drawings shall show all utility locations, sizes, material types, easements, rights-of-way, and other structural features of the sewer for current and future building construction.
11. Lift station details shall show all invert elevations, structural elevations, existing and finished grades, control setting elevations,

structural design of wet wells and dry wells, valves and piping, surge control devices, pump suction, discharge details, and any other details which will provide a clear understanding of the design.

12. All force main lines shall be shown in profile. Plans and profiles of force mains shall show size, invert and grade elevations, materials of construction, utility location, and any other details which define the force main construction requirements.
13. Private sewer lines shall be noted as such on plans. The responsibility for operation and maintenance should also be called out.
14. Easements of record shall be noted and shown in plan view, including docket and page numbers and / or the Cache County Recorder's number.
15. All plan documents for sewers and / or wastewater treatment works shall be prepared by a Registered Professional Engineer licensed in the State of Utah.

5.1.9 As-Built Drawings

A City-approved set of as-built drawings are required for all sewer system improvements constructed in the City prior to acceptance of the system and start of the 1-year warranty period. As-built plans shall be signed and sealed by a qualified professional registered in the State of Utah.

5.1.10 Technical Design Requirements

A. Materials and Details

In selecting pipe material for sewers, consideration shall be given to the chemical characteristics of the wastewater (especially in industrial waste flow areas), the possibility of septicity, exclusion of infiltration, external and internal pressures, abrasion, and similar problems encountered with the established grades.

1. Approved PVC or HDPE may be used for main lines and service lines, between 4 and 15 inches. Materials and details for trunk sewer mains larger than 15-inch diameter will be reviewed on a case-by-case basis.

2. No sewer lines (Public or Private) other than service lines shall be less than 8 inches in diameter.
3. Pipe material and slope shall not change between manholes.
4. Where standard-strength pipe is not structurally sufficient, and sufficient cover cannot be maintained, additional strength must be obtained by using higher class pipe. Special bedding specifications and / or special construction methods may also be required.
5. All types of pipe materials used in design shall have established ASTM, ANSI, or NSF standards of manufacture or seals of approval, and shall be designated for use as sewer pipe.
6. Pavement replacement type and compaction type shall be indicated per City Standards, this manual, and APWA standards, and shall be identified on each sheet.

B. Hydraulic Design

1. Sewer lines shall be designed for the estimated ultimate tributary population. The City Engineer may approve the design for reduced capacities provided the capacity of the system can be readily increased when required. The maximum anticipated capacity required by institutions, industrial parks, etc. must be considered in the design.
2. Sewer lines shall be designed to flow no greater than three-quarters (75%) full.
3. Sewer lines shall be designed in accordance with the following:
 - a. Sewer lines 8 to 10 inches in diameter:
 - i Shall be designed with peak capacities of not less than 1000 gpdu when flowing full.
 - b. Sewer mains larger than 10 inches in diameter:
 - i Shall be designed using the criteria identified in the City's Wastewater Master Plan. The current master plan can be downloaded from the City's website.

4. Sewer line slopes shall be sufficient to maintain a velocity of 2 fps. Calculations are to be based upon Manning's Formula, using an "n" value of 0.013. To prevent abrasion and erosion of the pipe material, the maximum velocity shall not exceed 9 fps.
5. Hydrogen sulfide problems must be analyzed in the Design Report and be provided for in the design of the system where required.
6. All velocities should be analyzed under peak hour flow conditions.
7. The following table indicates the minimum and maximum slopes generally considered necessary to obtain desired velocities. Exceptions require the written approval of the City Engineer:

TABLE 5.11-1 - Slopes for Sanitary Sewers (n = 0.013)

Pipe Size (inches)	Minimum Slope <i>2.0 fps</i> (ft/ft)	Maximum Slope <i>9.0 fps</i> (ft/ft)
4	0.0084	0.1703
6	0.0049	0.0992
8	0.0033	0.0676
10	0.0025	0.0502
12	0.0019	0.0394
15	0.0014	0.0292
18	0.0011	0.0229
24	0.00077	0.0156

8. Flatter Slopes

Slopes flatter than those required for the 2-feet-per-second velocity criterion, may be permitted by the City Engineer provided that:

- a. there is no other practical alternative;

- b. the depth of flow is not less than 30 percent of the diameter at the average design rate of flow; and
- c. the design engineer has furnished with the report the computations showing velocity and depth of flow corresponding to the minimum, average and peak rates of flow for the present and design conditions in support of the request for a variance.

9. Steep Slopes

- a. Where velocities greater than 9 feet per second are attained, special provision shall be made to protect against displacement by erosion and shock.
- b. Sewers on 20 percent slopes or greater shall be anchored securely against lateral and axial displacement with suitable thrust blocks, concrete anchors, or other equivalent restraints, spaced as follows:
 - i Not over 36 feet center to center on grades 20 percent and up to 35 percent;
 - ii Not over 24 feet center to center on grades 35 percent and up to 50 percent;
 - iii Not over 16 feet center to center on grades 50 percent and over.
- c. Where velocities greater than 15 feet per second would be attained, drop manholes may be used to aid in reducing the velocity. Drop manholes may not be used under any other circumstances unless specifically approved by the City Engineer.

10. Design Flows

- a. The Peak Hour wastewater generation rate used to determine line size capacities shall equal:
 - i 4 times the Average Day generation rate for lines 10-inch and smaller.



- ii 2.5 times the Average Day generation rate for lines larger than 10 inches.
- b. Table 6.3-1 below lists average day wastewater generation rates. In the absence of more specific or updated information in the Master Wastewater Plan, the following shall be used to calculate wastewater generation rates.

TABLE 5.11-2 – Average Day Wastewater Generation Rates
(not including I&I)

Land Use	WW Generation (gpdu)	WW Generation (gpac)
1 DU per acre	350	
Residential < 2 DU per acre	320	
Residential - 2 to 4 DU per acre	290	
Residential - 4 to 6 DU per acre	260	
Residential - 6 to 10 DU per acre	230	
Residential - 10 to 20 DU per acre	210	
Residential - 20+ DU per acre	190	
Commercial		1000
Industrial		820
Public / Quasi Public (Schools, Government)		1,020

- 11. Commercial and industrial capacities shall be calculated and documented by the Engineer or Architect based on fixtures and any expected process or wash down flows. Calculations shall not be considered final until approved by the City Engineer.
- 12. The City Engineer will consider other rates of flow for the design if such basis is justified on the basis of supporting documentation.

C. Right-of-Way

1. All City sewer lines shall be located underneath asphalt pavement within a street right-of way unless otherwise approved by the City Engineer.
2. Sewer lines in local residential streets shall typically not cross street centerline, unless approved by the City Engineer.
3. The outside edge of manhole shall be located at least 2 feet from the street centerline or near edge of curb and gutter.
4. All sewer lines shall be aligned parallel to the property lines or the street centerlines, or as close to parallel as possible.
5. Sewer mains shall not be located under a raised street median or stormwater basin unless otherwise approved by the City Engineer.

D. Easement Requirements

1. No sewer line shall be installed in an easement unless the City Engineer has approved the placement of the line in an easement and the property owner has dedicated the necessary easements.
2. If approved, sewer lines outside of public rights-of-way shall be placed in easements not less than 20 feet wide. A 30-foot wide easement is required for lines deeper than 10 feet; for pipes with diameters greater than 16 inches the City Engineer shall determine the required easement width. Sewer lines shall be accessible from a public right-of-way or other accessible public easement at all times.
3. Easements larger than 20 feet in width may be required if other utilities are co-located in the easement or if additional area is needed for maintenance and equipment access due to the size and/or depth of the lines.
4. Easements shall be free of obstructions, shall not be located in a fenced area, and shall at all times be accessible to City service equipment such as trucks, backhoes, etc.
5. Easements shall be dedicated prior to obtaining any sewer construction permit.

E. Sewer Pipe Locations and Separations

1. Service Lateral Locations

- a. Service lines shall not be located under driveways or driveway wings with the following exceptions:
- b. A service line may be located beneath a driveway wing of a residential lot, if the narrowness of the lot does not permit an alternative location (as approved by the City Engineer).
- c. The engineering plans shall contain the following statement: "If a sewer service falls under a driveway during the construction of a home, it shall be relocated or a cleanout shall be installed at the outside PUE line, at the City's discretion".

2. Separation of Water and Sewer Lines

Caution should be taken in the design and construction of sewer lines to protect all water supplies from wastewater contamination. To minimize the potential of contamination, the Engineer shall design the horizontal and vertical separation of water and sewer lines in accordance with State Codes, City Standard Specifications and City Standard Details.

- a. The minimum separation between sewer lines / sewer service lines and water lines / water service lines shall be 2 feet vertical and 10 feet horizontal, all as measured from nearest wall to nearest wall.

3. Separation from Gas Lines

The minimum horizontal distance from a sewer line to a parallel gas line shall be 6 feet, from nearest edge to nearest edge.

4. Separation from Water Course

- a. Sewer lines crossing less than two feet below a water course or under large structures such as box culverts and bridges, shall require the use of HDPE carrier pipe housed within welded steel or HDPE casing pipe.

- b. Sewers crossing over other utilities and culverts must be a minimum of one foot above, as measured from nearest edge to nearest edge.

F. Sewer Lines Cover and Depth

- 5. All private, public, and service wastewater lines shall have a minimum of 4 feet of cover, as measured from finished ground at the property line or easement line. A sewer line may be installed with less than 4 feet of cover over the top of the pipe with special written approval from the City Engineer.
- 6. Depths of sewer trunk lines identified in the City's Wastewater Master Plan shall be of sufficient depth to follow the design of the Wastewater Master Plan, per City Engineer.
- 7. All sewer lines that extend across / beneath areas that can be inundated with water or are within the groundwater table shall be constructed to prevent damage to the pipe due to scour, freezing, and floating. All sewer lines and manholes shall be water tight so as to eliminate all infiltration of the surrounding water.
- 8. All sewer pipe approved within a water course shall be constructed of HDPE material that extends 10 feet each side and shall be constructed:
 - a. 2-feet below the 100-year scour limit.
 - b. 1-foot below a bedrock surface.
 - c. A minimum 3-feet below any other material.
 - d. As close to perpendicular to stream flows as possible.
 - e. A 6-inch thick concrete cap shall be constructed in-place over the sewer line. 4-foot minimum width.
- 9. Sewers shall be installed at a depth sufficient to ensure gravity drainage of wastes from each service. Sewer design shall ensure adequate drainage from the ultimate drainage area and shall allow for the future extension of service to adjacent parcels.
- 10. All sewer lines shall be designed to absorb superimposed live loads and backfill overburden without damage to the pipe material, and without adversely affecting the hydraulic

characteristics of the pipe. The Engineer shall specify minimum depths of cover to be provided during the construction of roadways or other facilities affecting cover over the sewer line.

- a. PVC pipes shall be a minimum SDR 35 class pipe for depths up to 15 feet and a minimum SDR 26 for depths 15 to 30 feet.
 - b. HDPE pipes shall be a minimum class of DR-11.
11. If approved by the City Engineer, shallow sewer lines shall be evaluated for the requirement of insulation against freezing.
 12. Tracer wire and marking tape shall be constructed over all sewer line and sewer service improvements. Tracer wire shall run up the sides of each manhole and extended into the manhole cone just below the top by means of a drilled hole.
 - a. All splices shall be with gel filled wire connectors.
 - b. At vault and manhole locations, wires shall be coiled inside and secured in a location that is readily accessible near the entrance to allow access to the wires without completely entering the vault.

G. Intersecting Lines

1. When the diameter of a sewer line changes within a manhole, the inside crown elevations of the two pipes shall match.
2. Manholes with the through-line having a change in direction greater than 30 degrees shall have a minimum 0.10-foot drop through the manhole.
3. For manholes with a line intersecting the through-line, the intersection line invert shall be 0.10 feet above the flow line of the through-line.
4. The maximum angle between the upstream sewer line and downstream sewer line shall be no greater than 90 degrees.

H. Items that are not allowed

1. Horizontal curvilinear sewers will not be accepted.

2. Not allowed unless specifically approved in writing by the City Engineer.
3. Aerial Crossings.

I. Tie-in to Existing System

1. Construction plans shall call for the Contractor to tie-in new work to the existing, active system only after completion of the new work, and with specific approval of the Engineering Inspector to make the tie-in.

J. Manholes

1. Materials and Details

- a. Manholes with only through lines and no other connection may be as small as 4 feet in diameter. All other manholes shall be 5 feet in diameter.
- b. Manhole frames and covers shall be Class 35, ASTM A48 as more fully identified in the approved materials list.
- c. Manholes used in the City wastewater system will not contain built-in steps.
- d. The interior of all manholes shall be coated with a City-approved corrosion resistant coating. See the City Approved Materials List for Wastewater.
- e. All manholes and rings shall be constructed of concrete or polymer; plastic substitutes will not be permitted.
- f. Reinforced concrete adjusting rings shall have a total height of no more than 24 inches but no less than 6 inches.
- g. Concentric cones with access openings of a minimum 25-inch diameter shall be provided.
- h. The flow channel through manholes should be made to conform in shape and slope to that of the sewers. The depth of flow channels should be between one-half and three-quarters of the diameter of the sewer. Adjacent floor area should drain to the channel with the minimum slope of 1 inch per foot.

- i. Sewer manholes shall be tested per ASTM C-1244-93.
- j. The flow channel through the manhole shall be precast or steel-trowel finished to conform in shape and slope to that of the sewer lines. The manhole shelf shall be brush or broom finished, with a slope of one inch per foot. The manhole bottom should be filleted to prevent solid depositions and channeled to ensure satisfactory flow to the lower invert.
- k. Manholes shall be watertight and protected from storm water and groundwater infiltration unless specifically approved in writing by the City Engineer or Public Works Director.
- l. Manholes shall typically not be located in drainage areas, below the high-water elevation of a retention basin or below the FEMA 100-year floodplain elevation whenever possible.
- m. If the City Engineer approves a design allowing manholes to be located in a drainage area / floodplain, bolted water-tight manhole covers, or water-tight manhole inserts shall be used to prevent inflow. The manhole shall be a monolithically poured structure, designed such that infiltration or exfiltration cannot occur. Providing for the elimination of infiltration and/or exfiltration is the Engineer's responsibility in the design of the system.
- n. Locked manhole covers may be desirable in isolated easement locations or where vandalism may be a problem as directed by the City Engineer.
- o. Two layers of mastic seal shall be installed per joint. See the Approved Materials list for approved products.
 - i Mastic Seal shall be heated to within the manufacturer's recommendations prior to placement. The cone or barrel shall be placed on the mastic before temperatures fall below the manufacturers recommendations.
- p. All exterior manhole joints shall be wrapped with a joint seal prior to backfill. See the Approved Materials list for approved products.

- q. Electrical equipment installed or used in manholes shall conform to appropriate National Electrical Code, as adopted by the State of Utah, requirements.

K. Manhole Spacing

1. Spacing requirements

- a. Manholes are required at all changes in grade or pipe size, at all changes in alignment, and at locations necessary to ensure the sewer line does not cross the street centerline.
- b. Unless otherwise specially approved in writing by the City Engineer, Maximum manhole spacing shall be:
 - i 400 feet for 8 to 10-inch sewer lines.
 - ii 500 feet for sewer lines larger than 10-inch.
- c. Manholes in City streets must be located near the center of a traffic lane. Manholes should not be located in bike trails, equestrian trails, sidewalks, or crosswalks.
- d. Cleanouts
 - i Cleanouts are not allowed in the City right- of-way or dedicated easement. If there are services between the last manhole and the end of the line, a manhole shall be required at the end of the line.
 - ii A double cleanout shall typically be located within the building envelope.
 - iii Cleanouts shall be constructed every 100 feet on a sewer service line.
- e. Manholes on boundaries of the subdivision shall have stubs with shaped inverts in appropriate directions for future connections.
- f. Centerline stations and offsets shall be shown on all manholes.

- g. A sewer manhole shall be required at the upstream end of a cul-de-sac. All manholes shall be located in such a manner as to provide easy access for the City's cleaning equipment.

2. Intersecting Lines Within Manholes

- a. Manholes with lines intersecting at angles more than 30 degrees shall have a minimum 0.10-foot drop across the manhole.
- b. When sewer lines of differing sizes enter the same manhole, the crowns of all pipes shall match (ie set to the same elevation).
- c. In large trunk lines, inverts at junctions should be designed to maintain the energy gradient across the junction and prevent backflow.

3. Drop Manholes

- a. Drop manholes may not be used for through line applications unless specifically approved in writing by the City Engineer.
- b. A drop connection per APWA detail 433 as modified by Nibley City is allowed for lateral connections that intersect with the sewer main or trunk line.
 - i. Where the drop is less than 18 inches, the invert should be filleted and channelized with concrete rather than construction of a drop.

4. Monitoring Manholes

- a. The City shall determine whether or not a commercial or industrial sewer service will be required to have a monitoring manhole to test the flow and composition of their sewage. As a general rule, commercial / industrial sewer users with a projected water consumption of 25,000 gpd or greater, sewer discharges of a categorical industrial nature, or other situations as deemed necessary by the City Engineer, shall be required to have a monitoring manhole.
- b. Sewer service lines with diameters smaller than 6 inches that feed into monitoring manholes shall have no taps or bends

for two pipe lengths upstream and one pipe length downstream.

- c. Design details for monitoring manholes on sewer service lines 6 inches or larger, or with a peak flow greater than 40 gpm, shall be approved by the City.
- d. Monitoring manholes shall be located in a minimum 20-foot-wide PUE which extends from a 20-foot radius around the manhole to the existing public sewer. The monitoring manhole shall be accessible at all times to monitoring crews and vehicles.

5. Manholes Vector Spraying

If so requested by the Public Works Director at the time of construction manholes shall be sprayed with a vector spray meeting the following criteria:

- a. Approved insecticides are identified in the City's Approved Materials List for Wastewater Collection Systems.
- b. A warranty for the insecticide application shall run concurrently with the one-year sewer system warranty period.
- c. A record of the insecticide applications and warranty information shall be provided to the City Public Works Department.
- d. The insecticide shall be applied to a depth of 12 feet with an average coverage of 140 square feet per manhole. Sewer outlets and inlets to manholes shall also be treated.
- e. The product and coating shall be applied per the manufacturer's label rate and EPA labels.
- f. Each manhole that has been treated shall be marked with an identifying color or number as determined by the City Public Works department.
- g. Only qualified and state-licensed personnel shall be permitted to perform the work of applying the insecticide.

L. Service Lines

1. Service Line Connections

- a. Each individually owned unit or building shall have a separate sewer line connected to the public sanitary sewer system unless otherwise approved by the City Engineer.
- b. Sewer services to residential households do not constitute a sewer project and will generally not be required to submit construction plans to be reviewed and approved by the City Engineer.
 - i All permits shall be secured and fees shall be paid before any work is commenced on a sewer connection.
 - ii All service lines shall be constructed by a licensed Contractor at the expense of the Developer / Owner. Prior to the construction of any service line, the Contractor shall contact City Inspections for inspection services not less than 24 hours prior to tapping.
- c. New sewer service lines shall be constructed per the City standards and APWA Standard Details and specifications.
- d. A three-foot minimum separation between service line connections on a sewer main is required.
- e. All service lines shall be dimensioned and stationed on the plans. Typical dimensions to water service lines shall be shown.
- f. Service lines installed for future connection shall be marked by placing a fiberglass marker (see the approved materials list).
- g. When installed, all service lines must be perpendicular to the lateral. The flow line of the sewer service line shall not be more than 4 inches below the crown of the line to be tapped.
- h. No service lines will be made directly into manholes or sewers 16 inches or greater in diameter.
- i. Plans shall be reviewed by the Design Engineer for backflow prevention valves. These are required where

finished floor elevations are below both upstream and downstream manhole rim elevations.

- j. Waste that is determined to be detrimental to the City's wastewater system or designated treatment facilities shall not be discharged into the wastewater collection system. In some cases a private pre-treatment system may be permitted. Contact the City Engineer to discuss options.
- k. Grease, oil, or sand interceptors which are acceptable to the City and approved by the City Engineer shall be provided between the building and the connection to the City's sewer system for laundry, restaurant, automobile service, and other similar facilities when, in the opinion of the City Engineer, they are necessary for the proper handling of liquid wastes. Interceptors shall be supplied and maintained by the Owner.
- l. No sewer service lines will be allowed between a sewer trunk and an odor control manhole.

2. Service Line Size

- a. Service lines for private single family residential buildings shall be a minimum diameter of 4 inches and a maximum of 6 inches. In subdivisions, a 4-inch diameter tap shall be provided for each platted lot.
- b. Commercial and industrial buildings shall have a 6-inch minimum private service line and shall provide service adequate for discharge.
- c. Private sewer service lines are allowed to serve no more than 3 detached single family houses if the homes are constructed on a private lane. Homes constructed with frontage to the public right of way shall connect directly to the City's public sewer system.
- d. Condominium and town home buildings that serve multiple units shall also have a 6-inch minimum private service line.
 - i Up to 12 condominium or town house residential units may be connected to a single 6-inch service line without detailed support engineering.

- ii Detailed engineering shall demonstrate that the size of the service line is sufficient to carry the flow. In no case shall more than 12 condominium or town home units be connected to a single sewer service line.
- e. Commercial lots without buildings shall have no service lines unless requested by owners; then only 6-inch or larger service lines shall be allowed.
- f. Clean outs are not allowed on public or private service lines larger than 6 inches. Manholes shall be provided at terminations, changes in direction, and at the appropriate spacing locations.
- g. Property owners are responsible for maintenance of sewer laterals from the sewer main in the public right of way to the structure.

3. Service Line Location

- a. In residential single-family developments, service lines shall be located so as to avoid conflicts with driveway locations. Generally service line stubs shall be located 5 feet from the property line and shall be set adjacent to the sewer service line of an adjoining property.
- b. Proposed tap locations shall be shown on all plans.
- c. Sewer service lines shall be located a minimum of 2 feet below a water main or water service line. When it is not possible to maintain sufficient clearance, or if the sewer service will pass over the water main, the sewer service must be constructed such that no joints are located within 10 feet on either side of the crossing.

4. Construction Details

- a. All construction shall be per this manual and APWA Standard Details and Specifications.
- b. Sewer laterals shall be backfilled to the same standards as the sewer main line and other pipes.

M. Inspections

1. Televised Inspections

- a. All newly installed sewers shall be inspected by closed-circuit television methods acceptable to the City. Any defects discovered during televised inspection shall be corrected at no cost to the City. After correction of defects has been completed, affected sewer sections shall be re-televised at no cost to the City. A flash drive containing video of all televised inspections shall be provided to the City prior to final acceptance of the sewer.
- b. All televised inspections shall comply with the City's "Sewer Television Inspection Standards".

2. Sewer System Testing

- a. Sewer lines and services shall be commissioned per APWA specifications 33 08 00.
 - i The CCTV camera shall have a ruler mounted to the camera device for the purpose of clearly identifying the level of water remaining in the line.
 - ii The City's inspector shall be present when test water is introduced to a section of sewer line that is to be tested. Videoing of the section to be tested shall start no sooner than a half hour after introduction of water and no later than 1 ½ hours after introduction of water. The City inspector shall be present when dumping water into the system and when the camera operation starts.
 - iii Sags greater than an 1 ½ in depth shall be repaired and the entire line shall be videoed again to demonstrate that the repair is adequate.
- b. There shall be no water entering the system by means of infiltration. Any amount of infiltration shall be located and fixed prior to approval.

5.1.11 Lift Stations

See the City's Lift Station design standard for requirements of public and private lift stations.

A. Force Mains

1. Velocity Requirements
 - a. The design velocity of flow in the force main shall be between 4 fps and 6 fps.
2. All types of pipe materials used in design of force mains shall be PVC or HDPE.
3. Force mains shall be identified as such with marking tape one foot above the pipe and shall be provided with tracing wire.
 - a. Provide a connection point every 500 linear feet where the tracing wire can be accessed and used for location purposes.

B. Air Release Valves

1. Approved air release valves designed for sewage shall be provided on force mains at all peaks in elevation. See the City Standard Details for air release valve requirements and the Approved Materials List for approved models.

C. Force Main Cleanouts and Manholes

1. Two-way cleanouts shall be provided every 800 feet or one-way cleanouts every 400 feet. See the City Standard Details.
2. Refer to APWA detail 433 alternate 2 with the following modifications for details regarding force main discharge into a manhole construction:
 - a. The Tee & Wye shall be replaced with a cross that also includes a screw-in plug on the top.
 - b. All manholes that serve as a force main discharge location shall be constructed of polymer concrete as defined in the approved materials list.

D. Water Line Separation

1. The minimum separation between force mains and water lines shall be 2 feet vertical and 10 feet horizontal, all as measured from nearest wall to nearest wall.

E. Force Main Testing

1. Prior to issuance of a Certificate to Operate, all force mains shall be pressure tested. Preparatory to testing, the section of the pipeline to be tested shall be filled with water and placed under a slight pressure for at least 48 hours. The pipeline shall then be brought up to working pressure plus 50 psi, or to 125% of working-class pressure, whichever is greater. This pressure shall be maintained on the section under test for a period of not less than 4 hours.
2. Accurate means shall be provided for measuring the quantity of water required to maintain full test pressure on the line for the test period. Maximum allowable leakage is to be determined by the following formula:

$$L = [JD (Pt)]/4500$$

Where:

L = Maximum allowable leakage in gallons per hour for the section of pipeline tested

J = number of joints in length tested

D = diameter of pipe in inches

Pt = test pressure in psi

5.1.12 Wastewater Treatment

A. Treatment Plants

1. The subject of wastewater treatment plant design is beyond the scope of this design manual. Currently all wastewater collected by the City is treated at the Logan treatment plant.

B. Onsite Treatment (Septic Systems)

1. When sewer service is not available as defined by the City code, a temporary septic system may be allowed with the approval of both the City and the Bear River Department of Health Services.

2. Septic systems are not allowed in source protection zones without special approval as defined in City code.
3. When septic systems are approved, a “dry” sewer line shall be installed along the entire length of the property line frontage for future connection. The property line frontage is that portion of the property along a public right-of-way. If a parcel to be developed has more than one property line frontage, the City will require a sewer line to be installed along all frontages that are planned to have a sewer line.
4. The operation and maintenance of septic systems are the responsibility of the Owner. The City will not accept any septic system for operation and maintenance.

C. Reclaimed Water

The City’s reclaimed water is currently managed by Logan City and is not available for other uses.

Abbreviations and symbols for sewer

1. GENERAL

- A. Lettering Size: 10 point at final production.
- B. Lettering Style. Capital letters preferred.
- C. Existing Improvements. Shown in light shaded dashed line.
- D. New Improvements. Shown in solid continuous line.

2. PRODUCTS (Not used)

3. EXECUTION (Not used)

SYMBOLS	DEFINITIONS
	CENTER LINE
	CONSTRUCTION CENTER LINE
	PROPERTY OR R/W LINE
	EASEMENT LINE
	MONUMENT LINE
	FENCE
	CONTOUR LINE
	CONTOUR ELEVATION
	BANK SLOPES
	STORM DRAIN LINE
	WATER LINE
	GAS LINE
	TELEPHONE CABLE
	ELECTRIC CABLE
	SANITARY SEWER LINE
	ASPHALT PAVING
	FIRE HYDRANT
	WATER VALVE
	WATER METER
	MANHOLE
	CATCH BASIN
	CLEANOUT BOX
	POLE AND ANCHOR
	STREET LIGHT
	UNDISTURBED EARTH
	STRUCTURE

SYMBOLS	DEFINITIONS
	CURB & GUTTER
	SIDEWALK
	RAILROAD TRACKS
	GUARD RAIL
	OPEN DITCH, CANAL
	CULVERT
	SECTION CORNER
	SOIL BORING
	MONUMENT
	BENCH MARK
	SIGN
	POWER POLE
	TELEPHONE POLE
	DECIDUOUS TREE
	CONIFEROUS TREE
	P.I.
	P.C. OR P.T.
PROFILE	
	GROUND PROFILE
	CULVERT
	P.V.I.
	P.V.C. OR P.V.T.
	GROUND WATER ELEVATION

NOTE:

EXISTING FACILITIES MAY BE SHOWN IN SCREENED OR DASHED LINES

30" Frame and cover

1. GENERAL

A. The frame and cover fits the manhole in Plan 411.

2. PRODUCTS

A. Castings: Grey iron class 35 minimum, ASTM A48, coated with asphalt based paint or better (except on machined surfaces).

1) Cast the heat number on the frame and cover.

2) Give the frame and cover a machine finish so the cover will not rock.

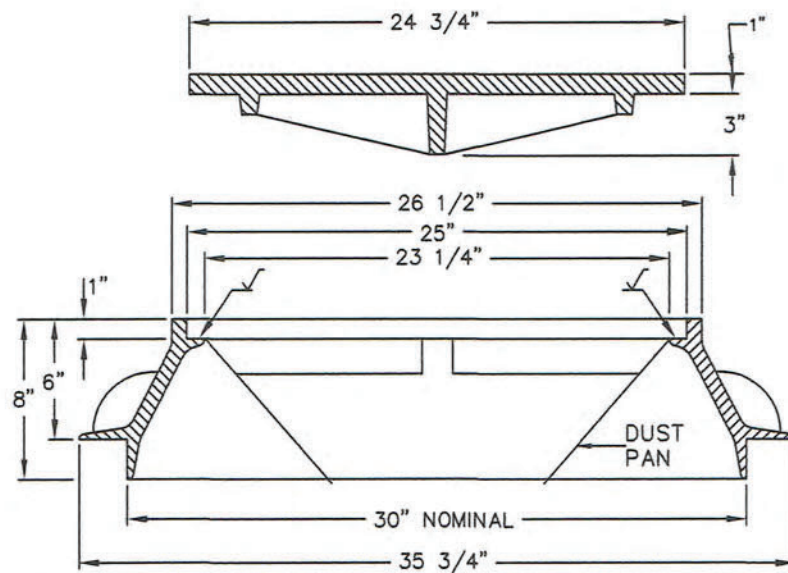
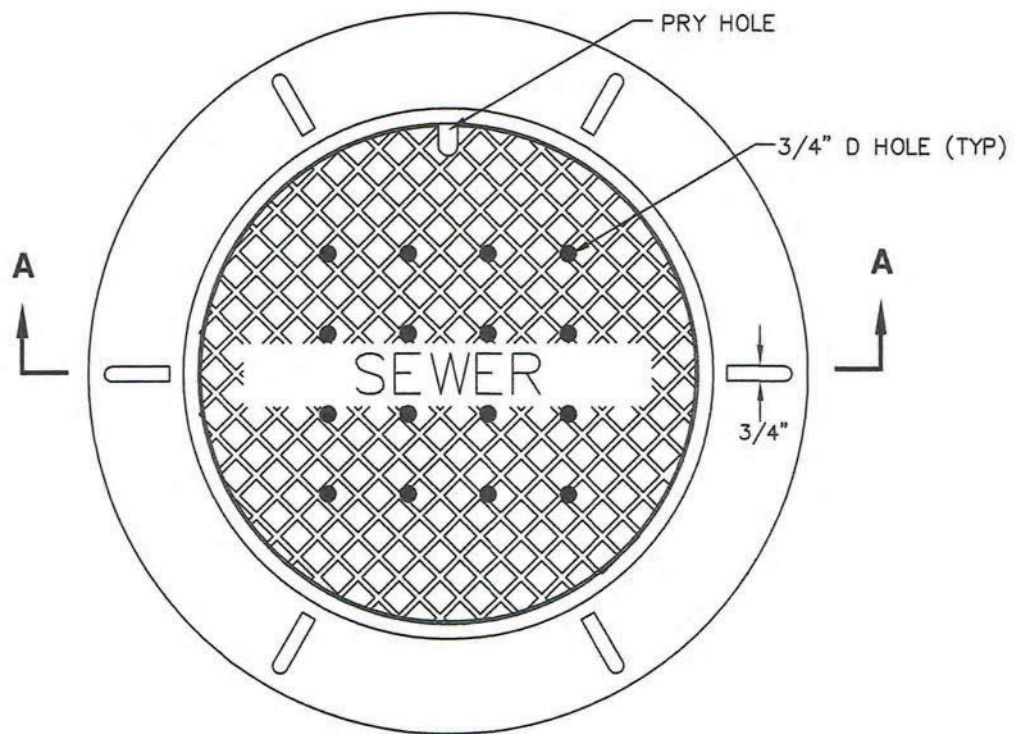
3) √ designates machined surface.

4) Cast the words "SEWER" on the cover in upper case flush with the surface finish.

3. EXECUTION

Provide locking manhole covers or watertight manhole covers as identified by the City Engineer. Generally these are required in areas such as

A. ~~Except in paved streets, provide locking manhole covers in~~ easements, alleys, parking lots, and all other places. Drill and tap two holes to a depth of 1-inch at 90 degrees to pry hole and install 3/4 x 3/4-inch allen socket set screws.



SECTION A-A

Sanitary sewer manhole

1. GENERAL

- A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the manhole.
- B. Manhole size.
 - 1) Diameter is 4 feet: For sewers under 12" diameter.
 - 2) Diameter is 5 feet: For sewers 12" and larger, or when 3 or more pipes intersect the manhole.

that have no more than two intersecting pipes.

or manholes that receive force main discharges.

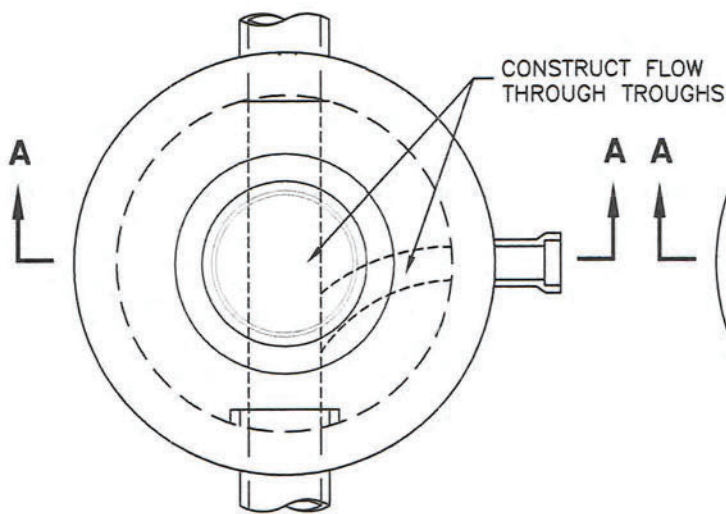
2. PRODUCTS

- 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 04.
- D. Riser and Reducing Riser: ASTM C478.
- E. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
- F. Grout: 2 parts sand to 1 part cement mortar, ASTM C1329.
- G. Stabilization-Separation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.

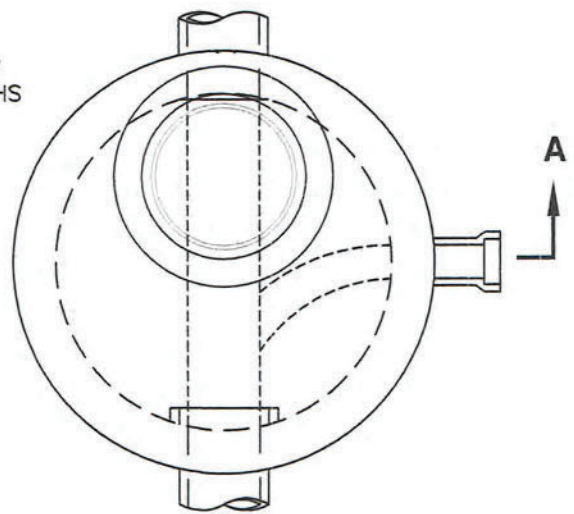
3. EXECUTION

- A. Foundation Stabilization: Get ENGINEER's permission to use a sewer rock or a granular backfill borrow in a geotextile wrap to stabilize an unstable foundation.
- B. Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
- C. Invert Cover. During construction, place invert covers over the top of pipe in manholes that currently convey sewerage. See Plan 412.
- D. Pipe Connections: Grout around all pipe openings.
- E. Pipe Seal: Install rubber-based pipe seals on all plastic pipes when connecting plastic pipes to manholes. Hold water-stop in place with stainless steel bands.
- F. Joints: Place flexible gasket-type sealant in all riser joints. Finish with grout.
- G. Adjustment: If the required manhole adjustment is more than 1'-0", remove the cone and grade rings and adjust the manhole elevation with the appropriate manhole section, the cone section, and the grade rings or plastic form to make frame and lid match finish grade.
- H. Finish: Provide smooth and neat finishes on interior of cones, shafts, and rings. Imperfect moldings or honeycombs will not be accepted.
- I. Backfill: Provide backfill against the manhole shaft. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.

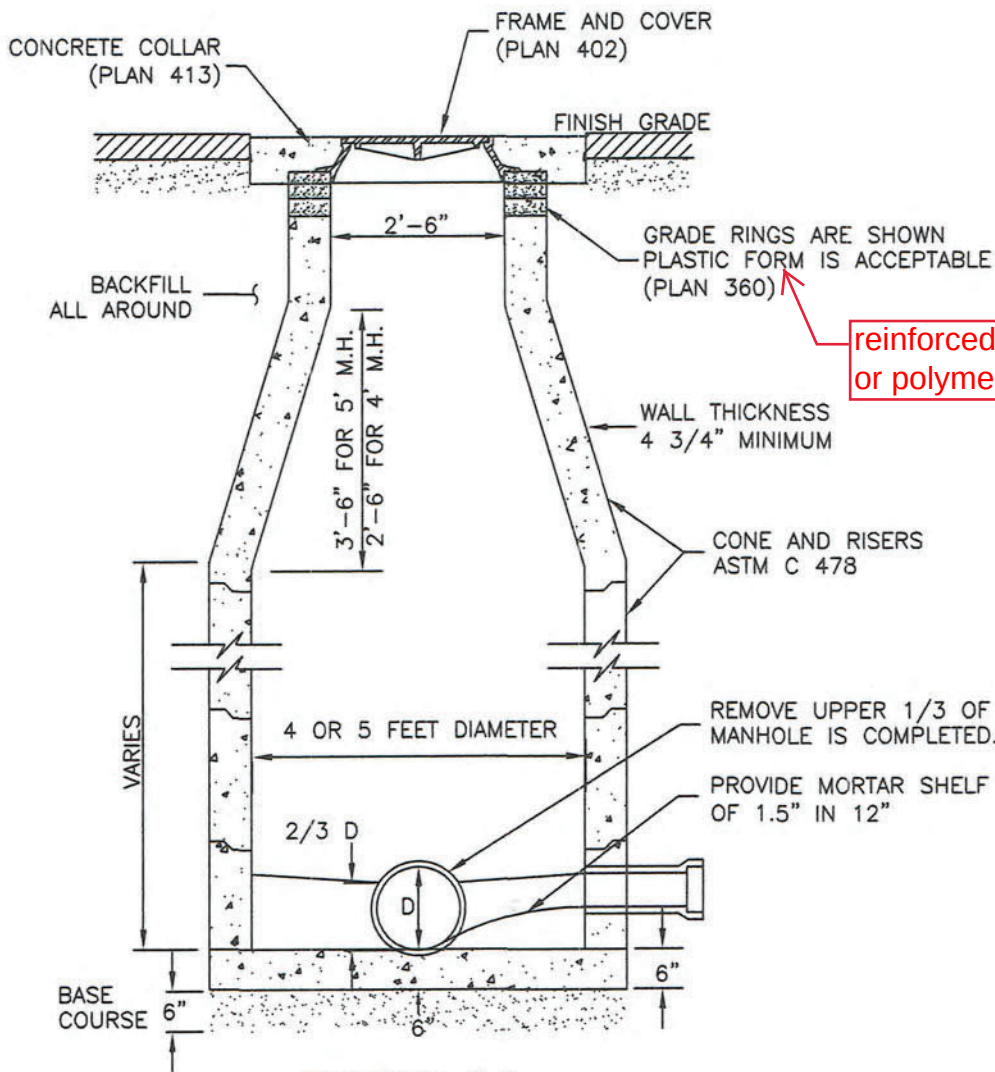
18"



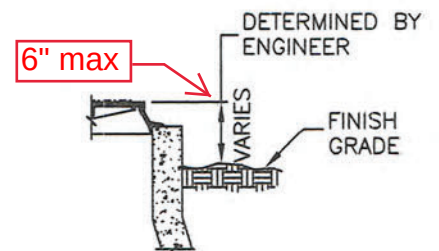
PLAN
(CONCENTRIC RISER)



PLAN
(ECCENTRIC RISER)



SECTION A-A



DETAIL
(UNIMPROVED AREAS)

Cones shall be concentric.

Invert cover

1. GENERAL

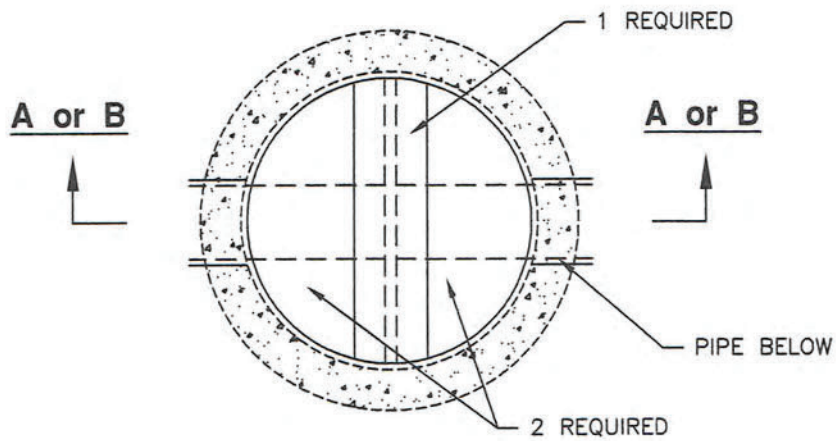
- A. Invert covers are installed to prevent debris from entering the inflow or outflow pipes during construction.

2. PRODUCTS

- A. Plywood: 5/8" thick exterior grade, APWA Section 06 10 00.

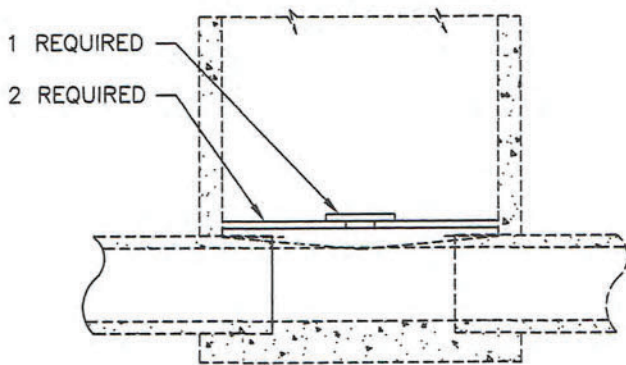
3. EXECUTION

- A. Option 1: Install invert cover over manhole shelf.
- B. Option 2: If a pipe enters above the mainline pipe, install 2' x 4" bracing to raise invert cover above top of the highest pipe inlet. Install solid bracing attached to wall.
- C. If manhole is not round, cut invert cover to match shape.
- D. Do not interfere with flow in pipeline.
- E. Nail all three pieces of each invert cover securely together.



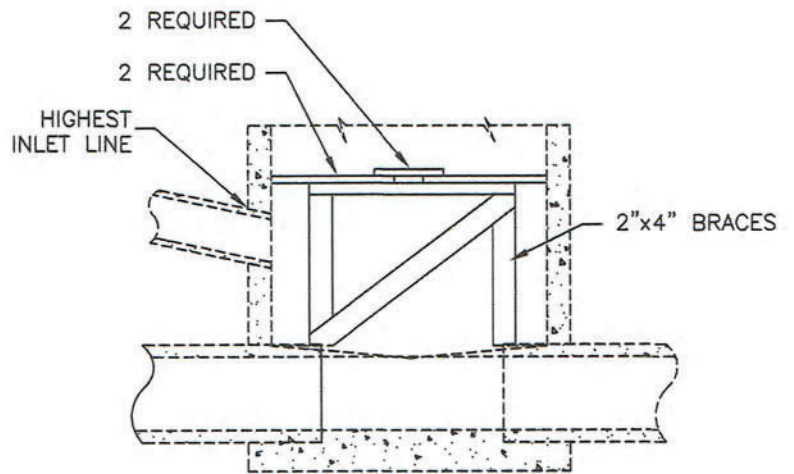
PLAN

(INVERT COVER IN PLACE)



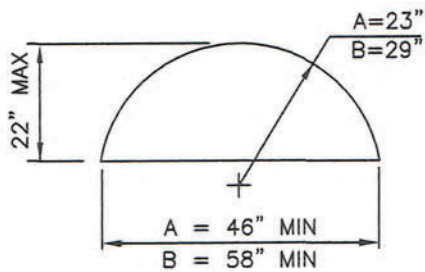
SECTION A-A

OPTION 1

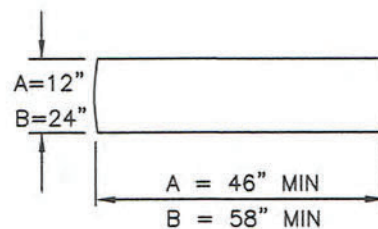


SECTION B-B

OPTION 2



2 REQUIRED



1 REQUIRED

USE DIMENSION A FOR 48" MANHOLES
USE DIMENSION B FOR 60" MANHOLES

Cover collar for sanitary sewer manhole

1. GENERAL

A. In a pavement surface, the concrete will support the frame under traffic loadings.

2. PRODUCTS

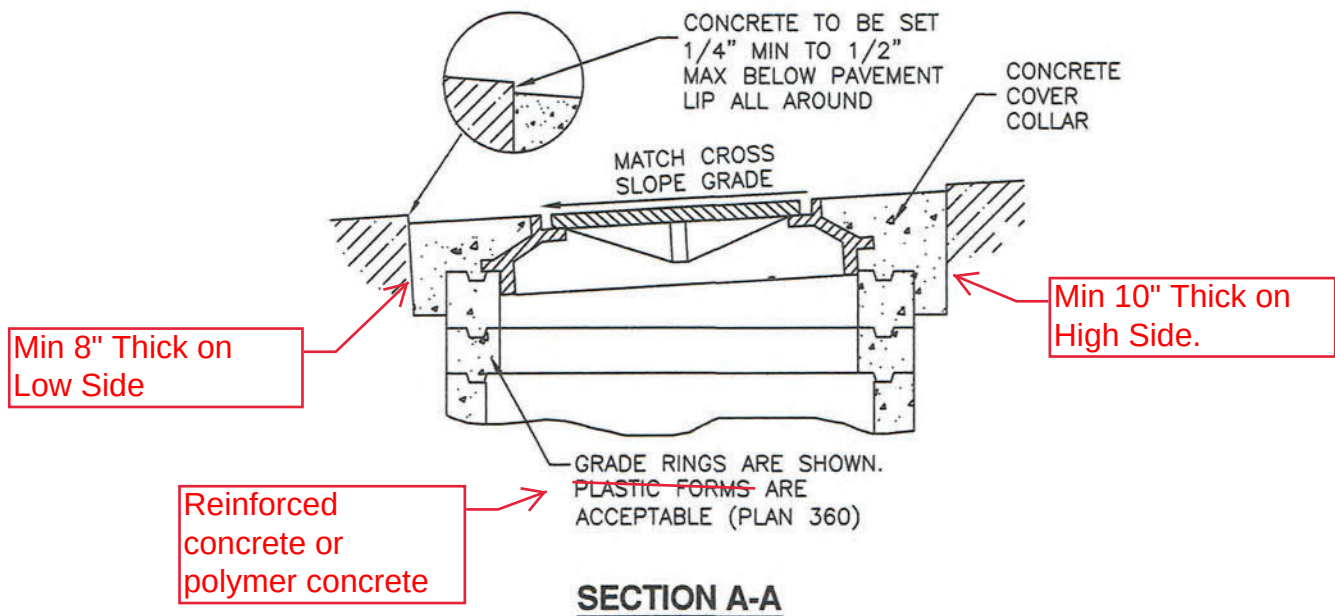
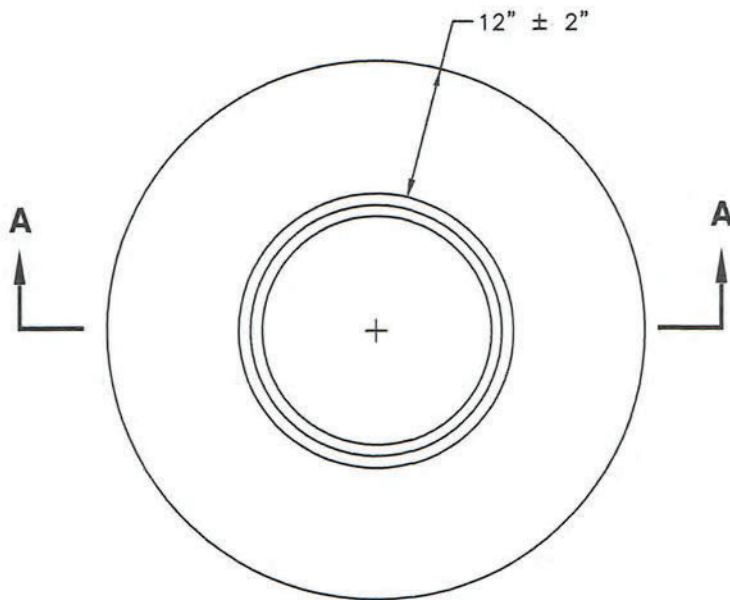
A. Concrete: Class 4000, APWA Section 03 30 04.

B. Concrete Curing Agent: Type ID Class A (clear with fugitive dye), membrane forming compound, APWA Section 03 39 00.

3. EXECUTION

A. Pavement Preparation: Provide a neat vertical and concentric joint between the concrete collar and the bituminous pavement surface. Clean edges of all dirt, oil, and loose debris.

B. Concrete Placement: Fill the annular space around the frame and cover casting with concrete. Apply a broom finish. Apply a curing agent.



Sewer lateral connection

1. GENERAL

- A. Before installation, secure acceptance by ENGINEER for all pipe, fittings, and couplings to be used.
- B. Before backfilling, secure inspection of installation by ENGINEER. Give at least 24 hours notice.
- C. Verify if CONTRACTOR or agency is to install the wye.

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. Provide agency approved wye or tee with appropriate donut.
- D. Stainless steel straps required.

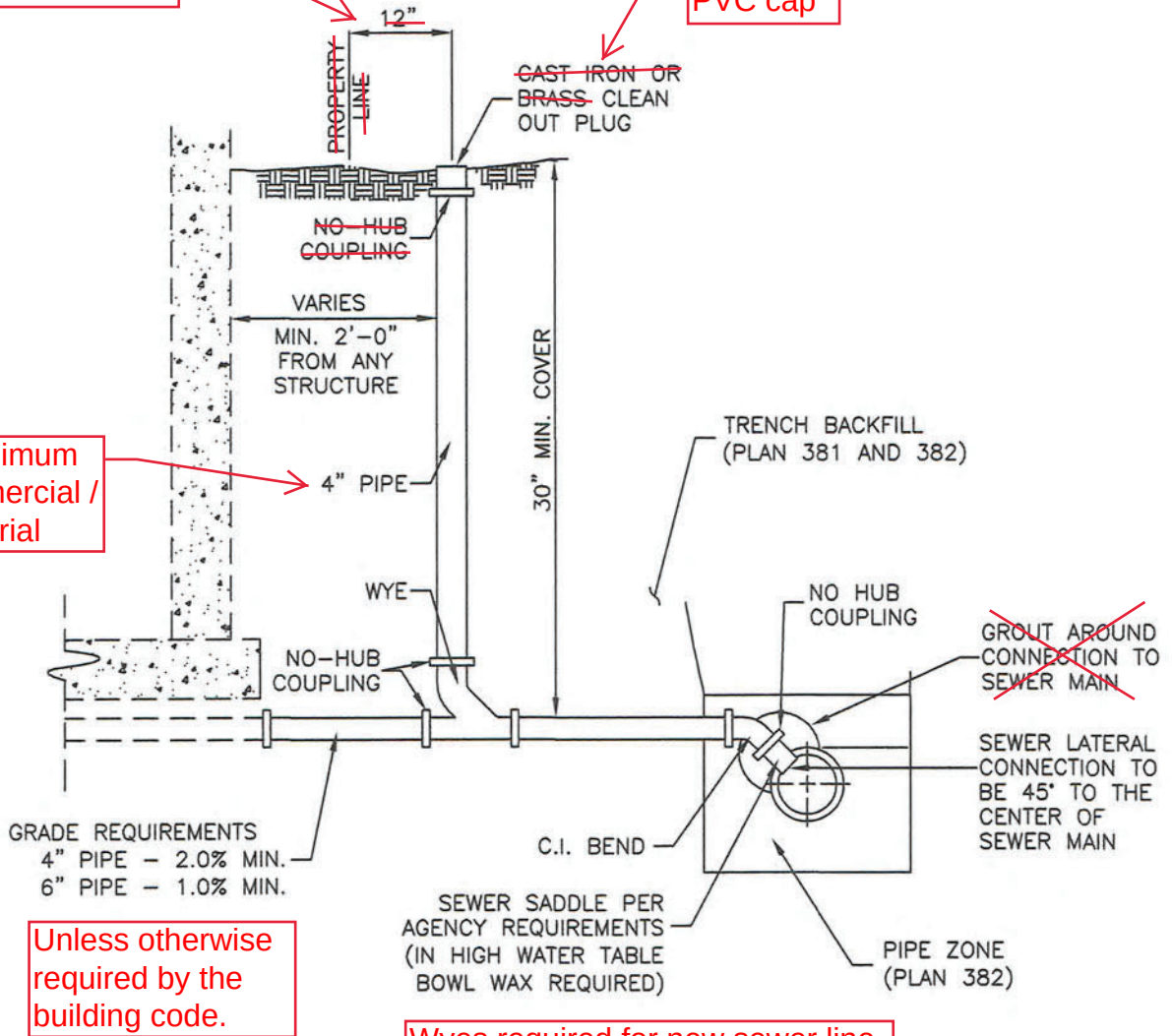
3. EXECUTION

- A. Tape wrap pipe as required by soil conditions.
- B. Remove core plug from sewer main. Do not break into sewer main to make connection.
- C. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.

Locate within 2 to 10' of Structure

Threaded
PVC cap

6" minimum
Commercial /
Industrial



Unless otherwise
required by the
building code.

Wyes required for new sewer line
construction. Saddles allowed for
connecting to existing sewer lines.

Sewer lateral relocation

1. GENERAL

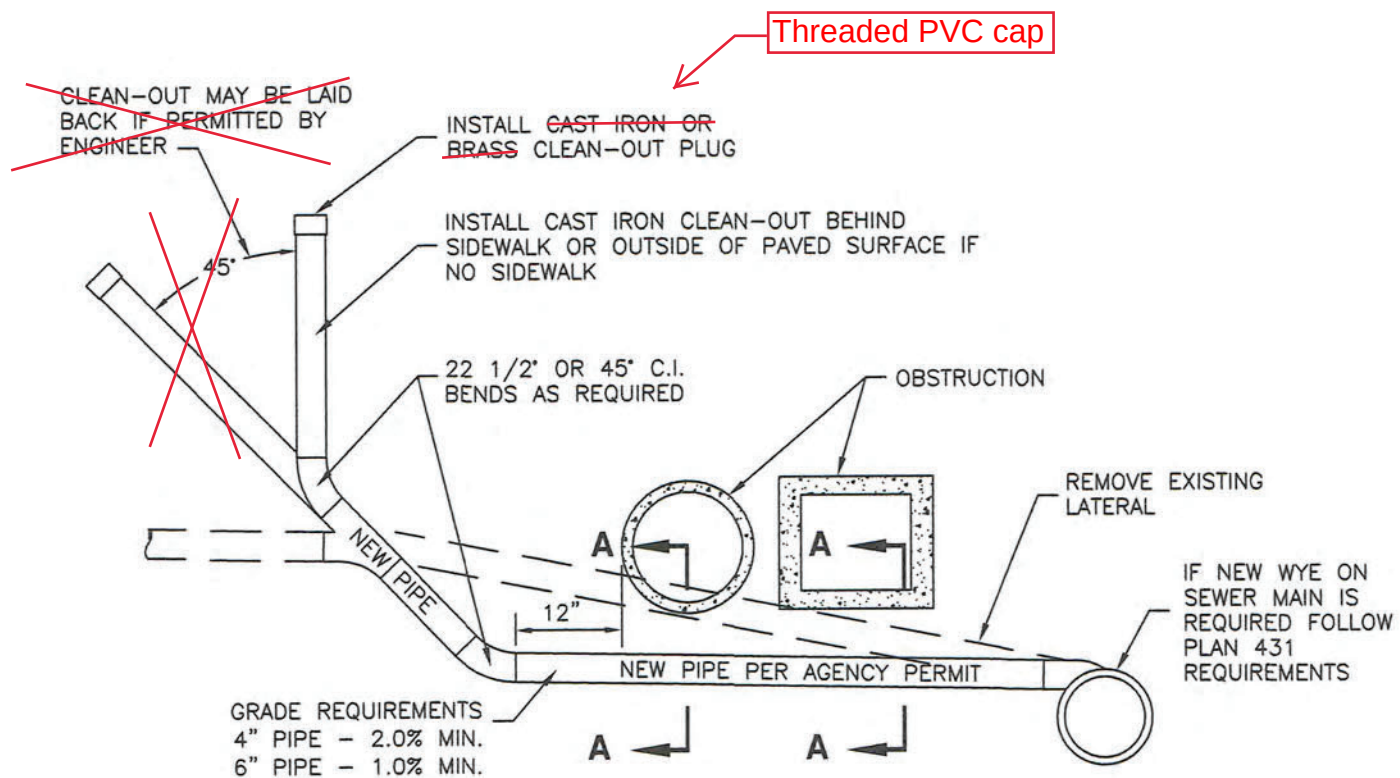
- A. Before installation, secure acceptance by ENGINEER for all pipe, fittings, and couplings to be used.
- B. Before backfilling, secure inspection of installation by ENGINEER. Give at least 24 hours notice.
- C. Verify if CONTRACTOR or agency is to install the wye or donut.

2. PRODUCTS

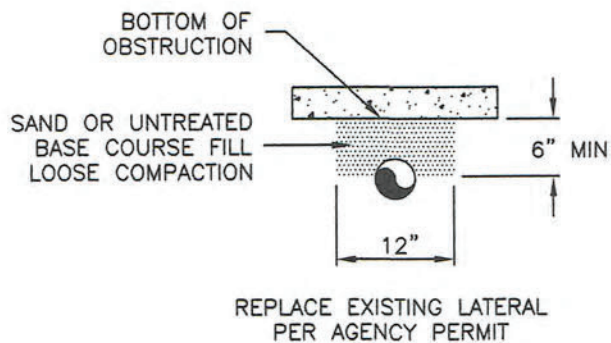
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
- B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- C. Provide agency approved wye or tee with appropriate donut.

3. EXECUTION

- A. ~~Tape wrap metal pipe and metal fittings.~~ Only PVC and HDPE allowed.
- B. Do not install couplings under the obstruction.
- C. Under the obstruction, loosely compact granular material or sand. Flowable fill not allowed.
- D. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.



SECTION



SECTION A-A

1. GENERAL

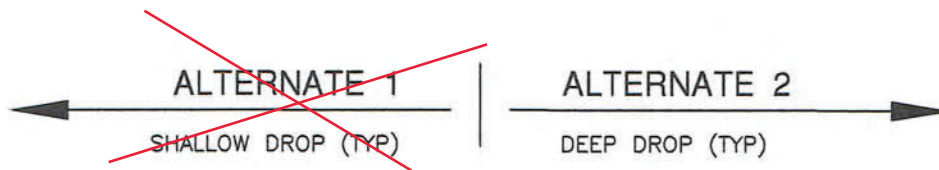
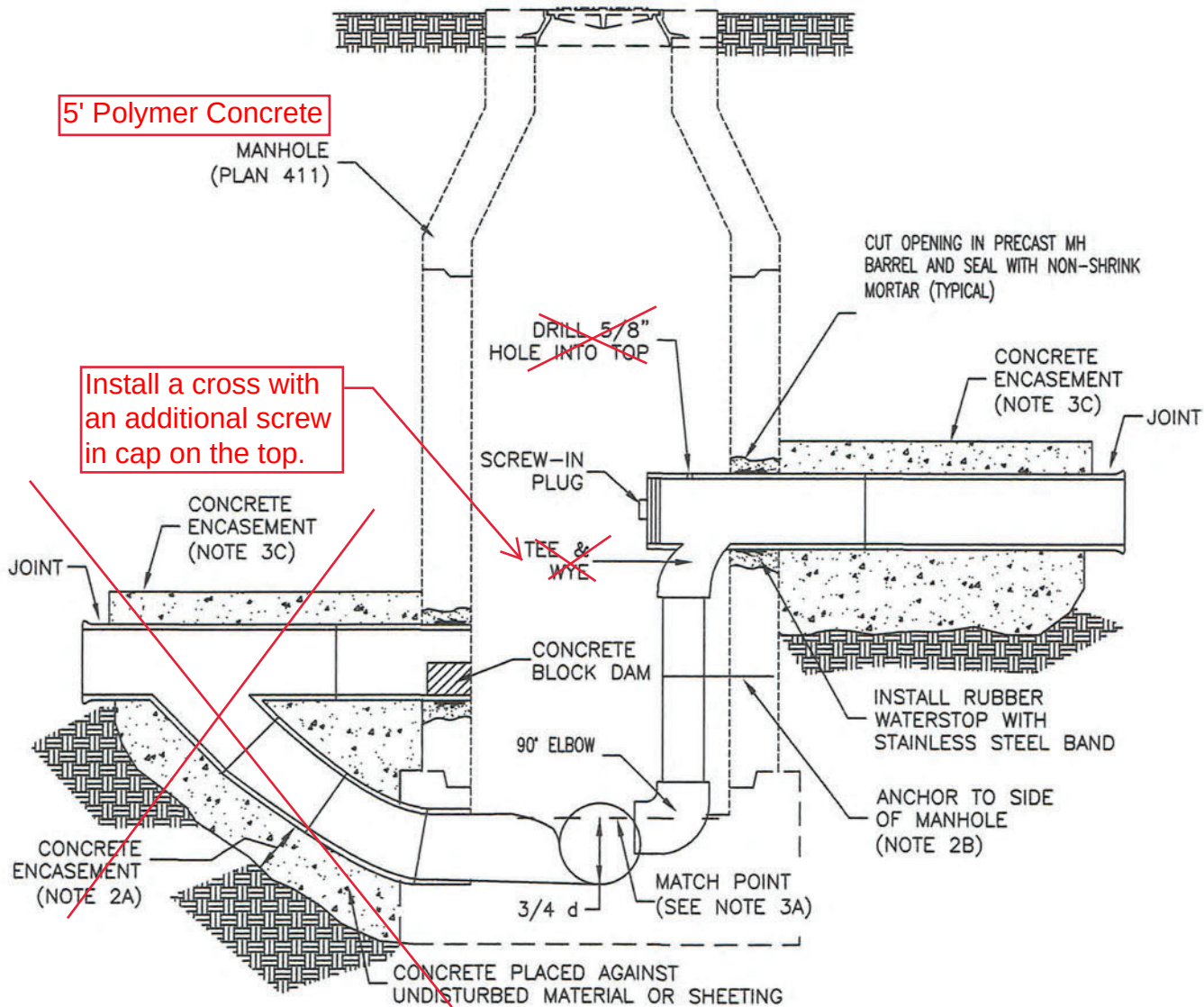
- A. Only one drop pipe is allowed inside the manhole.
- B. Size of drop pipe is to be the same diameter as sewer mainline pipe that it serves.

2. PRODUCTS

- A. Concrete: Class 4000, APWA Section 03 30 04.
- B. Anchors: Use stainless steel anchors that are acceptable to ENGINEER.

3. EXECUTION

- A. At the match point, match the 3/4 diameter points of the pipes.
- B. If the drop is more than 18-inches, anchor the riser to the wall every 12-inches.
- C. Extend concrete encasement to first joint beyond excavation for drop connection.



SECTION

Grease trap

1. GENERAL

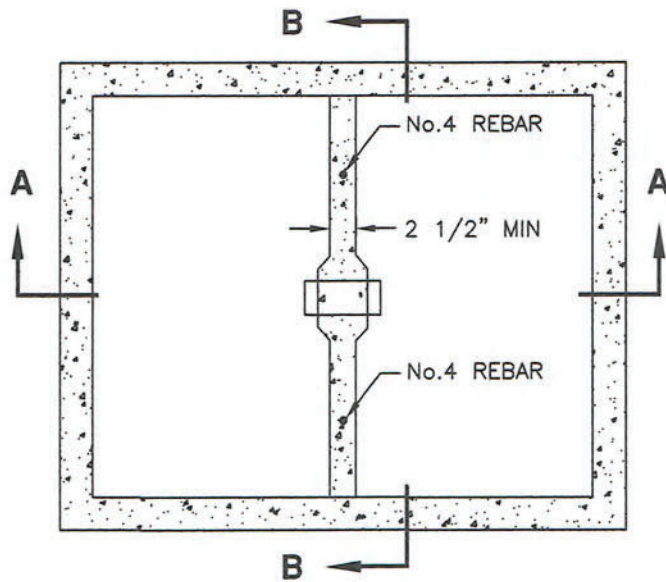
- A. Before backfilling around concrete box, secure inspection of installation by ENGINEER.

2. PRODUCTS

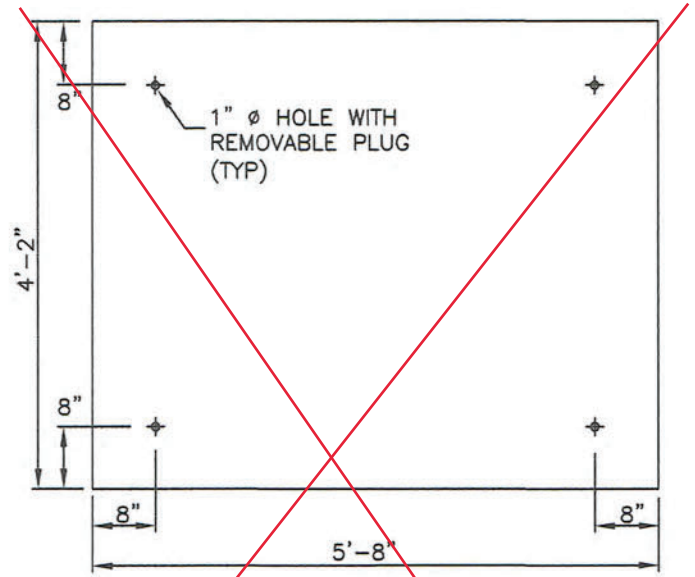
- A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
- B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
- C. Concrete: Class 4000, APWA Section 03 30 04.
- D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615.
- E. PVC Pipe: APWA Section 33 05 07.

3. EXECUTION

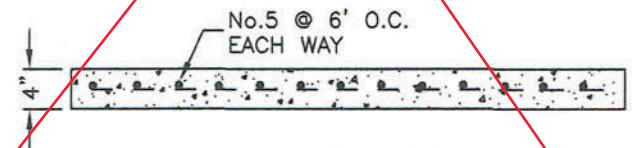
- A. Base Course Placement: APWA Section 32 11 23. Maximum lift thickness is 6-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
- B. Reinforcement Placement: APWA Section 03 20 00.
- C. Concrete Placement: APWA Section 03 30 10. Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
- D. Fill annular space around pipe wall penetrations with waterproof sealer.
- E. Backfill: Provide backfill against the box walls. Pea gravel and recycled RAP aggregate is NOT ALLOWED. Water jetting is NOT allowed. Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.



BOX PLAN

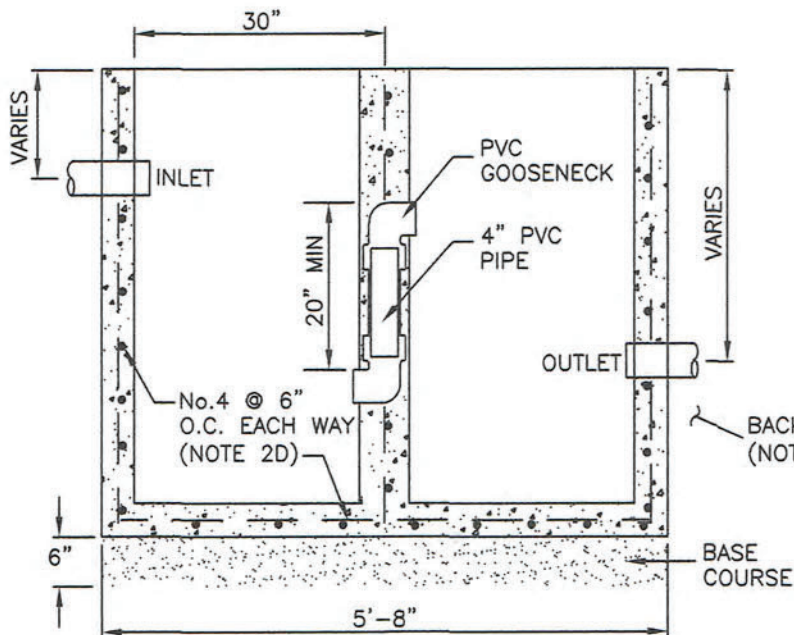


LID PLAN

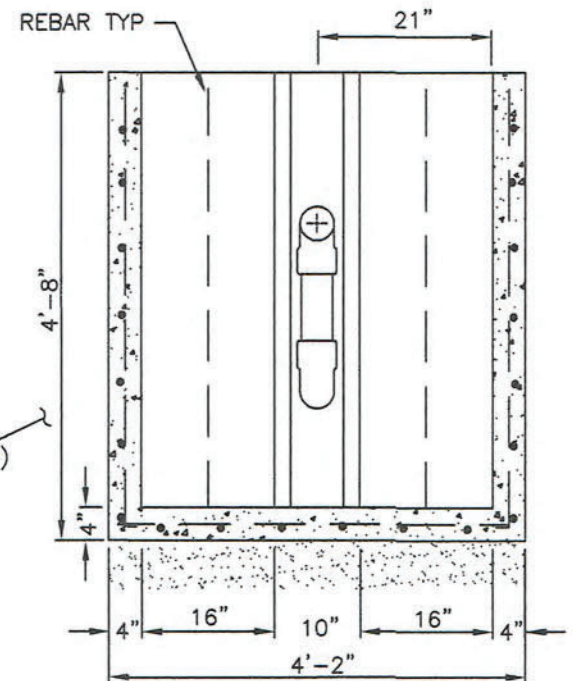


LID SECTION

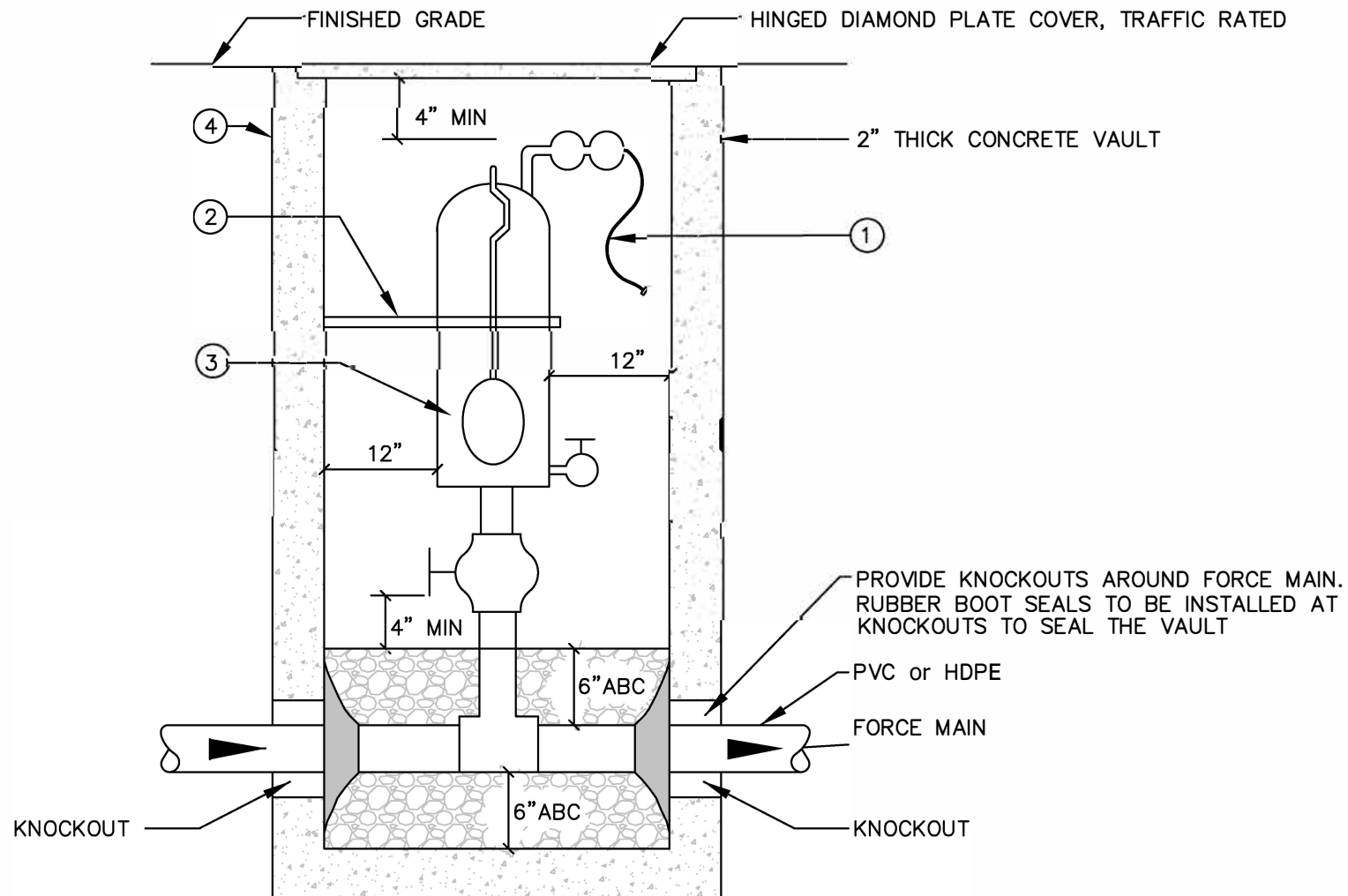
The dimensions shown are minimum dimensions only. Larger grease traps or interceptors are required according to the application as determined by the City Engineer.



SECTION A-A



SECTION B-B



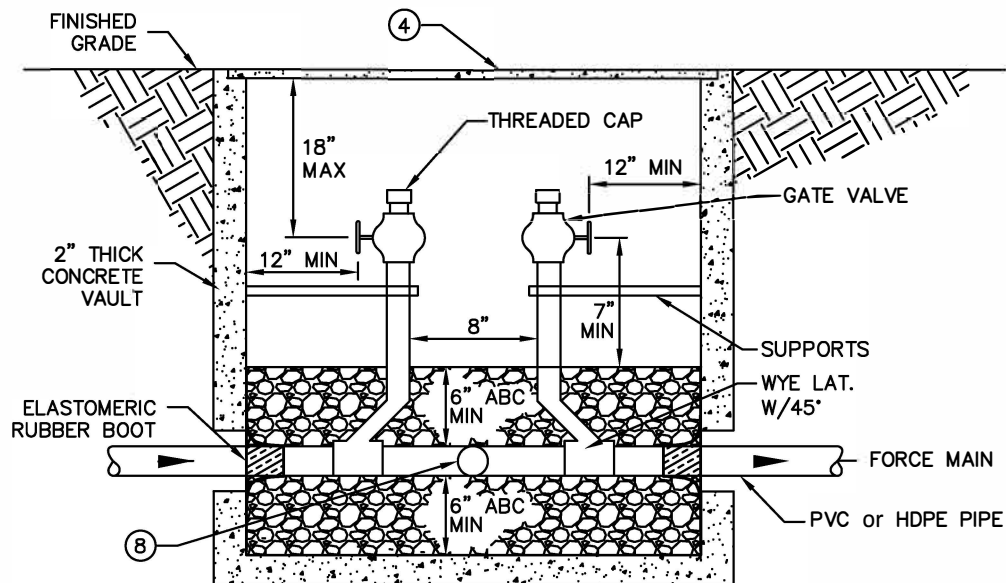
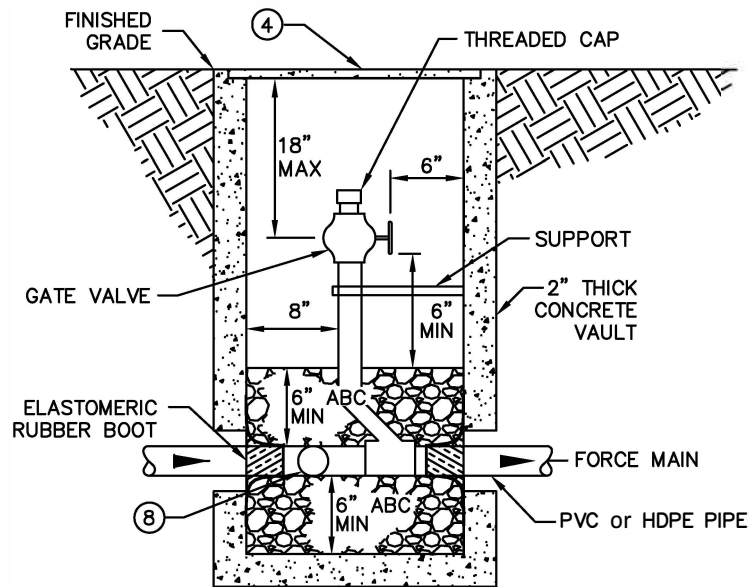
NOTES:

1. BLACK FLUSHING HOSE WITH QUICK COUPLER ATTACHED AT FREE END, 2 FEET IN LENGTH.
2. SUPPORT FOR AIR RELEASE VALVE.
3. SEWAGE AIR RELEASE VALVE.
4. ROTATE VAULT AS REQUIRED TO KEEP BEHIND BACK OF CURB.

DETAIL NO.

FORCE MAIN AIR RELEASE VALVE

DETAIL NO.



NOTES:

1. ONE-WAY CLEANOUTS SHALL BE INSTALLED ON MAXIMUM 400- FOOT CENTERS ALONG FORCE MAIN. ROTATE VAULT AS REQUIRED TO KEEP BEHIND BACK OF CURB.
2. TWO-WAY CLEANOUTS SHALL BE INSTALLED ON A MAXIMUM 800-FOOT CENTERS ALONG FORCE MAIN. ROTATE VAULT AS REQUIRED TO KEEP BEHIND BACK OF CURB.
3. AN AIR RELEASE VALVE SHALL BE INSTALLED ADJACENT TO ANY FORCE MAIN CLEANOUT.
4. DIAMOND PLATE COVER, TRAFFIC-RATED.
5. RISER PIPES TO BE SAME DIAMETER AS FORCE MAIN (PLUG END WITH THREADED CAP).
6. PROVIDE KNOCKOUTS AROUND FORCE MAIN. RUBBER BOOT SEALS TO BE INSTALLED AT KNOCKOUTS TO SEAL THE VAULT.
7. PROVIDE 12" ABC MATERIAL AROUND FORCE MAIN.
8. PROVIDE GATE VALVE FOR FORCE MAINS WITH DIAMETERS OF 2" OR LESS.
9. A MINIMUM 12" OF CLEARANCE SHALL BE MAINTAINED BETWEEN THE VAULT WALLS AND THE CLEANOUT EQUIPMENT.
10. FORCE MAINS SHALL BE A MINIMUM OF 5' DEEP

DETAIL NO.

FORCE MAIN CLEANOUTS

DETAIL NO.

Nibley City Sewage Lift Station Standards

4.1 Purpose

The purpose of this standard is to provide direction for the construction of small public and private lift stations that propose to discharge into the Nibley City Wastewater Collection System

4.2 General Requirements for all Lift Stations

4.2.1 Site Selection

- A. In selecting a site for a sewage pumping facility, consideration should be given to:
 - 1. Accessibility
 - 2. Drainage Characteristics
 - 3. Visual Impact
 - 4. Function and Design Constraints
- B. The potential for flooding should be considered when selecting a pump station location. The station's equipment shall be protected from damage and remain operable, and accessible to large equipment during a 100-year flood event.

4.2.2 Lift Station Design

- A. Sewage lift station requirements are provided by UAC Section R317-3-3. The current version as of 3/10/2022 is included below. Additional requirements specific to the City can be obtained from the City Engineer before beginning design. At a minimum, telemetry, dual pumps, generator, three-phase power, and odor control will be required.
- B. It is recommended that, prior to the preparation of construction drawings, a Preliminary or Basis of Design Report be prepared and submitted to the City for acceptance. The Preliminary Report should clearly identify why a lift station is needed; provide a map illustrating the sub basin contributing to the lift station with invert and rims of the sewer lines and manholes in the subbasin; outline the type of equipment and controls proposed for the station.
- C. A Final Design Report, prepared by a Registered Professional Engineer licensed in the State of Utah, must accompany all lift station design drawings. The final report shall update the preliminary report with any changes or provide additional details not included in the preliminary report.

4.2.3 Sewer Lift Station Design Standards

- A. The lift station site shall be laid out as follows:

1. A minimum 16-foot wide entry gate
 2. A minimum 16-foot wide all weather drive into the site from the gate to allow maintenance equipment to access the site up to the wet well location and for staff to work around that equipment.
 - a. The 16-foot shall be a clear width between the near edge of the wall and the closest above ground lift station appurtenance.
 3. A minimum 8 foot clear width shall be provided around the remaining lift station site between the near edge of the fence and above ground lift station appurtenance.
- B. There shall be a minimum of two pumps at each site. Pumps shall be capable of passing 2-1/2-inch solids, and shall be equipped with stainless steel motor shafts.
- C. Check valves shall be silent closing type and located in a separate vault.
- D. Ball Check isolation valves shall be constructed after check valves.
- E. Three-phase 480-Volt power shall be provided.
- F. Field prints shall include all electrical information.
- G. Phase protection shall be provided for all three-phase motors and pumps.
- H. An hour meter shall be provided for each pump.
- I. Pump failure indicator lights shall be provided on the control panel and the exterior of the station.
- J. An access hatch and permanent ladder shall be installed in the wet well. The ladder shall be Type 304 stainless steel or greater.
- K. All lift station control panels shall be designed to include systems that communicate with the City's SCADA system via radio telemetry.
- L. Only submersible pumps shall be used.
 1. Pumps shall be connected to stainless steel guide rails and retrieval chains with quick release points at the pump.
- M. Approved submersible pump stations shall be supplied per manufacture and model identified in the Wastewater Approved Materials List found on the City's website. All pumps shall be connected to the City's SCADA system.
- N. A minimum of three sets of the operation and maintenance manuals shall be prepared and provided to the Public Works Department prior to the final inspection.
- O. Force main shall be identified as such with marking tape and tracer wire one foot above the pipe.
- P. Force main cleanouts shall be installed per Engineering Design Standards.

- Q. If the Lift Station is located within 100 feet of a residential home, a block wall shall be constructed around the perimeter of the lift station site to provide noise and visual abatement.
- R. Odor control measures must be identified in the Design Concept Report and incorporated into the design.
- S. Ventilation of the wet well to be connected to the dry well with a fan mounted in the dry well vault for access and maintenance.
- T. The lift station wet well shall be constructed of polymer concrete.
- U. Spare parts shall be provided as recommended by the manufacturers.
- V. Electrical specifications information is to be provided on field prints as follows:
- W. An emergency generator shall be provided and shall include the following:
 - 1. Double walled skid fuel tank large enough to hold fuel sufficient to run the generator for 48 hours under a full electrical load.
 - 2. The generator shall run on diesel fuel
 - 3. A weatherproof sound attenuating cover shall be provided for the generator.
 - 4. Connected to the City's SCADA system.
- X. Sight lighting shall be provided in a manner to light the entire lift station site but shall not spill out onto neighboring residential properties.
- Y. A telemetry radio and antenna shall be provided at a height that allows for connection to a City receiving radio. A radio study may be required to determine the height of the radio.
- Z. A MAG meter that is set up for and connected to the City's SCADA system shall be installed in the dry well

4.2.4 Electrical specifications

- A. Size and type of conduits
 - 1. Size and type of over-current protection for all disconnects
 - 2. Phase protection for all three-phase motors and pumps
 - 3. Floats shall be used for all controls and alarms.
 - 4. Failure indicator lights on control panel
 - 5. Hour meter totalizer for each pump
 - 6. Flashing light to warn of pump failure
 - 7. Alarm circuitry to one terminal board for telemetry

8. No electrical connections in wet well
9. All lift station equipment shall conform to the City's current SCADA standards.

NOTE: It is recommended that designers coordinate their pump station design with the City Engineer prior to final plan preparation.

UAC R317-3-3.
Sewage Pumping Stations.

- 3.1. General. Sewage pumping station structures, and electrical and mechanical equipment shall be protected from physical damage that would be caused by a 100-year flood. Sewage pumping stations must remain fully operational and accessible during a 25-year flood.
- 3.2. Design
 - A. Pumping Rates. The pumps and controls of main pumping stations, and especially pumping stations pumping to the treatment works or operated as part of the treatment works, should be selected to operate at varying delivery rates to permit discharging sewage at approximately its rate of delivery to the pump station.
 - B. System - Head Calculation
 1. The design engineer shall submit system-head calculations and curves. System-head curves for C values of 100, 120 and 140 in the Hazen William's equation for calculating head loss corresponding to minimum, median and maximum water levels shall be developed.
 2. A system-head curve for C value of 120 corresponding to median (normal operating) water level shall be used to make preliminary selection of motor and pump. The pump and motor must operate satisfactorily over the entire range of system-head curves for C values of 100 and 140 corresponding to minimum and maximum water levels intersected by the head-discharge relationship of a given pump.
 3. Pumps and motors shall be sized for the 10-year peak flows; preferably the 20-year sewage flow requirements. These operating points shall be shown on the system-head curves.
 - C. Accessibility. The pumping station shall be readily accessible by maintenance vehicles during all weather conditions. The facility should be located off the traffic way of streets and alleys.
 - D. Grit. Where it is necessary to pump sewage before grit removal, the design of the wet well and pump station piping shall be such that operational problems from the accumulation of grit are avoided.

E. Odor and Corrosion Control. The pumping station design should incorporate measures for:

1. mitigating the effects of sulfide corrosion to structure and equipment; and
2. effective odor control when a populated area is within close proximity.

F. Structures

1. Dry wells, including their superstructure, shall be completely separated from the wet well.
2. Provision shall be made to facilitate maintenance and removal of pumps, motors, and other mechanical and electrical equipment.
3. Safe means of access and proper ventilation shall be provided to dry wells and to wet wells containing either bar screens or mechanical equipment requiring inspection or maintenance.
 - a. For built-in-place pump stations, a stairway with rest landings shall be provided at vertical intervals not to exceed 12 feet (3.7 meters). For factory-built pump stations over 15 feet (4.6 meters) deep, a rigidly fixed landing shall be provided at vertical intervals not to exceed 10 feet (3.0 meters). Where a landing is used, a suitable and rigidly fixed barrier shall be provided to prevent an individual from falling past the intermediate landing to a lower level.
 - b. Where space requirements are insufficient, the design may provide for a manlift or elevator in lieu of landings in a factory-built station if the design includes an emergency access or exit.
 - c. Local, state and federal safety requirements, including those in applicable fire code, the Uniform Building Code, etc., must be reviewed and complied with. Those requirements, if more stringent than the ones stated above, shall be incorporated in the design.
4. Construction Materials. The materials selected in construction and installation must be safe and able to withstand adverse operating environmental conditions caused by presence of hydrogen sulfide and other corrosive gases, greases, oils, and other constituents frequently present in sewage.

3.3. Pumps and Pneumatic Ejectors

A. Multiple Units

1. At least two pumps or pneumatic ejectors shall be provided. A minimum of three pumps shall be provided for stations handling flows greater than 1 million gallons per day (3,785 cubic meters per day).
2. If only two units are provided, they should have the same capacity. Each shall be capable of handling flows in excess of the expected maximum

flow. Where three or more units are provided, they should be designed to fit actual flow conditions and must be of such capacity that with any one of the largest units out of service, the remaining units shall have capacity to handle maximum sewage flows.

B. Protection Against Clogging

1. Pumps handling sewage from 30 inch (76 centimeters) or larger diameter sewers shall be protected by readily accessible bar racks from clogging or damage.
2. Bar racks should have clear openings not exceeding 1-1/2 inches (6.4 centimeters). The design shall provide for a mechanical hoist.
3. The design engineer shall consider installation of mechanically cleaned and duplicate bar racks in the pumping stations handling larger than five million gallons per day (18,900 cubic meters per day) rate of flow.
4. Small pumping stations pumping less than one million gallons per day (3,785 cubic meters per day) shall be equipped with bar racks or inline grinding devices, etc., to prevent clogging.

C. Pump Openings. Except where grinder pumps are used, pumps shall be capable of passing spheres of at least 3 inches (7.6 centimeters) in diameter, and pump suction and discharge piping shall be at least 4 inches (10.2 centimeters) in diameter.

D. Priming. The pump shall be so placed that it will operate under a positive suction head under normal operating conditions, except for submersible pumping stations.

E. Electrical Equipment. Electrical systems and components (e.g., motors, lights, cables, conduits, switchboxes, and control circuits) in raw sewage wet wells, or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors may be present, shall comply with the National Electrical Code requirements for Class 1 Group D, Division 1 locations. In addition, equipment located in the wet well shall be suitable for use under corrosive conditions. Each flexible cable shall be provided with watertight seal and separate strain relief. A fused disconnect switch located above ground shall be provided for all pumping stations. When such equipment is exposed to weather, it shall as a minimum, meet the requirements of weatherproof equipment (NEMA 3R).

F. Intake. Each pump should have an individual intake. Turbulence should be avoided near the intake in wet wells. Intake piping should be as straight and short as possible.

G. Dry Well Dewatering. A separate sump pump equipped with dual check valves shall be provided in dry wells to remove leakage or drainage. Discharge shall be located as high as possible. A connection to the pump suction is also recommended as an auxiliary feature. Water ejectors connected to a potable water supply will not be approved. All floor and walkway surfaces should have an adequate slope to a point of drainage. Pump seal water shall be piped to the sump.

H. Controls

1. Type. Control systems for liquid level monitoring shall be of the air bubbler type, the capacitance type, the encapsulated float type, or the non-contact type. The selection of type of controls must be based on wastewater characteristics and other site related conditions. The Director may approve the existing float-tube control systems on pumping stations being upgraded. The electrical equipment shall comply with the National Electrical Code requirements for Class I, Group D, Division 1 locations.
2. Location. The level control system shall be located away from the turbulence of incoming flow and pump suction.
3. Alternation. The design engineer must consider automatic alternation of the sequencing of pumps in use.

I. Valves

1. Suction Line. An isolation valve shall be placed on the suction line of each pump except on submersible pumps.
2. Discharge Line
 - a. Isolation and check valves shall be placed on the discharge line of each pump. The check valve shall be located between the isolation valve and the pump.
 - b. Check valves shall not be placed in the vertical run of discharge piping unless the valve is designed for that specific application.
 - c. Ball valves may be permitted in the vertical runs.
 - d. All valves shall be suitable for the material being handled, and capable of withstanding normal operating pressure and water hammer.
 - e. Where limited pump backspin will not damage the pump and low discharge head conditions exist, a short individual force main for each pump, may be approved by the Director in lieu of a discharge manifold.
3. Location. Valves shall not be located in wet well. They shall be located in a dry well adjacent to the pumps or in an adjacent isolated pit appropriately protected from physical, weather or freezing damage, with proper access for operation and maintenance.

J. Wet Wells

1. Divided Wells. Wet well should be divided into multiple sections, properly interconnected, to facilitate repairs and cleaning, and non-turbulent hydraulic operating condition to each pump inlet.

2. Size. The wet well size and level control settings shall be appropriate to avoid heat buildup in the pump motor due to frequent starting (short cycling), and septic conditions due to excessive detention time.
 3. Floor Slope. The wet well floor shall have a minimum slope of one to one to the hopper bottom. The horizontal area of the hopper bottom shall be not greater than necessary for proper installation and function of the pump inlet.
- K. Ventilation. All pump stations must be ventilated to maintain safe operating environment. Where the pump pit is below the ground surface, mechanical ventilation is required, so arranged as to independently ventilate the dry well and the wet well if screens or mechanical equipment requiring maintenance or inspection are located in the wet well. There shall be no interconnection between the wet well and dry well ventilation systems. In pits over 15 feet (4.6 meters) deep, multiple inlets and outlets are recommended. Dampers should not be used on exhaust or fresh air ducts. Fine screens or other obstructions in air ducts should be avoided to prevent clogging. Switches for operation of ventilation equipment should be marked and located for convenient operation from outside of the enclosed environment. All intermittently operated ventilating equipment shall be interconnected with the respective pit lighting system. Automatic controls are recommended for intermittently ventilated pump stations. Fan parts should be of non-corrosive material. All parts adjacent to moving ones should be of non-sparking materials. Consideration should be given to installation of automatic heating and dehumidification equipment.
1. Wet Wells. Ventilation may be either continuous or intermittent. Ventilation, if continuous, shall provide at least 12 complete air changes per hour; if intermittent, at least 30 complete air changes per hour. Ventilating equipment should force air into wet well rather than exhaust it from wet well.
 2. Dry Wells. Ventilation may be either continuous or intermittent. Ventilation, if continuous, shall provide at least 6 complete air changes per hour; if intermittent, at least 30 complete air changes per hour.
- L. Flow Measurement. Continuous measuring and recording of sewage flow shall be provided at all pumping stations with a design pumping capacity greater than one million gallons per day (3,785 cubic meters per day).
- M. Water Supply. There shall be no physical connection between any potable water supply and a sewage pumping station which under any condition might cause contamination of the potable water supply. The potable water supply to a pumping station shall be protected against cross connection or backflow.
- 3.4. Self-Priming Pumps. Self-priming pumps shall be capable of rapid priming and repriming at the lead pump on elevation. Such self-priming and repriming shall be accomplished automatically under design operating conditions. Suction piping should not exceed the size of the pump suction and shall not exceed 25 feet (7.6 meters) in total length. Priming lift at the lead pump on elevation shall include a safety factor of at least 4 feet (1.2 meters) from the maximum allowable priming lift for the specific equipment at design

operating conditions. The combined total of dynamic suction lift at the pump off elevation and required net positive suction head at design operating conditions shall not exceed 22 feet (6.7 meters).

- 3.5. Submersible Pump Stations. Submersible pump stations may be used for flows less than 0.25 million gallons per day (946 cubic meters per day). The Director may approve submersible pump stations for flows greater than 0.25 million gallons per day (946 cubic meters per day), based on operational, reliability and maintenance considerations. The submersible pumps stations shall meet the design requirements stated above, except as modified in this section.

A. Construction. Submersible pumps and motors shall be designed specifically for raw sewage use, including totally submerged operation during a portion of each pumping cycle. An effective method to detect shaft seal failure or potential seal failure shall be provided, and the motor shall be of squirrel-cage type design without brushes or other arc-producing mechanisms.

B. Pump Removal. Submersible pumps shall be readily removable and replaceable without dewatering the wet well or disconnecting any piping in the wet well.

C. Electrical

1. Power Supply and Control. Electrical supply, control and alarm circuits shall be designed to allow for disconnection of the equipment from outside and inside of pumping station. Terminals and connectors shall be protected from corrosion by location outside of wet well or through use of watertight seals. If located outside of the pumping station, weatherproof equipment shall be used.

2. Controls. The motor control center shall be located outside of the wet well and be protected by a conduit seal or other appropriate measures meeting the requirements of the National Electrical Code, to prevent the atmosphere of the wet well from gaining access to the control center. The seal shall be so located that the motor may be removed and electrically disconnected without disturbing the seal.

3. Power Cord. Pump motor power cords shall be designed for flexibility and serviceability under severe service conditions and shall meet the requirements of the Mine Safety and Health Administration for trailing cables. Ground fault interruption protection shall be used to deenergize the circuit in the event of any failure in the electrical integrity of the cable. Power cord terminal fittings shall be corrosion-resistant and constructed in a manner to prevent the entry of moisture into the cable, shall be provided with strain relief appurtenances, and shall be designed to facilitate field connecting.

- 3.6. Valves. Valves shall be located in a separate valve pit. Accumulated water shall be drained to the wet well or the soil. If the valve pit is drained to the wet well, an effective method shall be provided to prevent sewage gases and liquid from entering the pit during surcharged wet well conditions.

- 3.7. Alarm Systems.

- A. Alarm systems shall be provided for pumping stations. The alarm shall be activated in cases of power failure, high water level in dry or wet well, pump failure, use of the lag pump, air compressor failure, or any other pump malfunction.
- B. Pumping station alarms shall be telemetered, including identification of the alarm condition, to the operating agency's facility that is manned 24 hours a day. If such a facility is not available and 24-hour holding capacity is not provided, the alarm shall be telemetered to the operating agency's facility during normal working hours and to the home of the person(s) responsible for the lift station during off-duty hours.
- C. The Director may approve audio-visual alarm systems with a self-contained power supply in lieu of the telemetering system outlined above, depending upon location, station holding capacity and inspection frequency.

3.8. Emergency Operation

- A. Pumping stations and collection systems shall be designed to prevent bypassing of raw sewage and backup into the sewer system. For use during possible periods of extensive power outages, mandatory power reductions, or uncontrolled storm events, a controlled high-level wet well overflow or emergency power generator shall be provided. Where a high level overflow is utilized, storage or retention tanks, or basins, shall be provided having at least a 2-hour retention capacity at the anticipated overflow rate.
- B. The applicant must review the requirements of R317-6 (Ground Water Quality Protection Rule) for compliance with the said rule for earthen retention basins.
- C. The operating agency shall provide:
 - 1. an in-place or portable pump, driven by an internal combustion engine or an emergency generator capable of pumping from the wet well to the discharge side of the station for pump stations with a capacity in excess of one million gallons per day (3,785 cubic meters per day), and
 - 2. an engine-driven generating equipment or an independent source of electrical power or emergency generators capable of pumping from the wet well to the discharge side of the station for pump stations with a capacity in excess of five million gallons per day (18,925 cubic meters per day).

3.9. Auxiliary and Emergency Equipment Requirements

- A. General. The following general requirements shall apply to all internal combustion engines used to drive auxiliary pumps, service pumps through special drives, or electrical generating equipment.
 - 1. Engine Protection. The engine must be protected from damaging operating conditions. Protective equipment shall shut down the engine and activating an alarm on site unless continuous manual supervision is

planned. Protective equipment shall monitor for conditions of low oil pressure and overheating, Oil pressure monitoring is not required for engines with splash lubrication.

2. Size. The engine shall have adequate rated power to start and continuously operate all connected loads.
 3. Fuel Type. The type of fuel must be carefully selected for maintaining reliability and ease of starting, especially during cold weather conditions. Unused fuel from the fuel storage tank should be removed annually, and the tank refilled with fresh fuel.
 4. Engine Ventilation. The engine shall be located above grade with adequate ventilation of fuel vapors and exhaust gases.
 5. Routine Start-up. All emergency equipment shall be provided with instructions indicating the need for regular starting and running of such units at full loads.
 6. Protection of Equipment. Emergency equipment shall be protected from damage at the restoration of regular electrical power.
- B. Engine-Driven Pumping Equipment. Where permanently installed or portable engine-driven pumps are used, the following requirements in addition to general requirements apply:
1. Pumping Capacity. Engine-driven pump(s) shall be capable of pumping at the design pumping rates unless storage capacity is available for flows in excess of pump capacity. Pumps shall be designed for anticipated operating conditions, including suction lift if applicable.
 2. Operation. Provisions shall be made for automatic and manual start-up and load transfer. The pump must be protected against damage from adverse operating conditions. Provisions should be considered to allow the engine to start and stabilize at operating speed before assuming the load. Where manual start-up and transfer is justified, storage capacity and alarm system must meet the requirements stated hereinabove.
 3. Portable Generating Equipment. Where portable generating equipment or manual transfer of power to the pumping equipment is provided, sufficient storage capacity shall be provided in the design of pumping station, to allow time for detection of pump station failure and transportation and connection of generating equipment. The use of special electrical connections and double throw switches are recommended for connecting portable generating equipment.

3.10. Instructions and Equipment

- A. Sewage pumping stations and their operators must be supplied with a complete set of operational instructions, including emergency procedures, maintenance schedules, special tools, and necessary spare parts.
- B. Local, state and federal safety requirements, including those in applicable fire code, the Uniform Building Code etc., must be reviewed and

complied with. Those requirements take precedence over the foregoing requirements, if more stringent, and should be incorporated in the design.

3.11. Force Mains

- A. Velocity. A velocity of not less than 2 feet per second (0.61 meter per second) shall be maintained at the average design flow, to avoid septic sewage and resulting odors.
- B. Air Relief Valve. An automatic air relief valve shall be placed at high points in the force main to prevent air locking.
- C. Termination. Force mains should enter the gravity sewer system at a point not more than 2 feet (30 centimeters) above the flow line of the receiving manhole.
- D. Design Pressure. The force main and fittings, including reaction blocking, shall be designed to withstand normal pressure and pressure surges (water hammer).
- E. Special Construction. Force main construction near streams or used for aerial crossings shall meet the requirements stated in Sewers.
- F. Design Friction Losses
 - 1. Friction losses through force mains shall be based on the Hazen and Williams formula or other hydraulic analysis to determine friction losses. When the Hazen and Williams formula is used, the design shall be based on the value of C equal to 120; for unlined iron or steel pipe the value of C equal to 100 shall be used.
 - 2. When initially installed, force mains will have a significantly higher C factor. The higher C factor should be considered only in calculating maximum power requirements.
- G. Separation from Water Main. The applicant or the design engineer must review the requirements stated in R309-112.2 - Distribution System rules, Drinking Water and Sanitation Rules, to assure compliance with the said rule.
- H. Identification. A clearly labelled tracer location tape shall be placed two feet above the top of force mains less than or equal to 24 inch (61 centimeters) in diameter, along its entire length.

Agenda Item 18

Description	Discussion & Consideration – Acceptance of the Dedication of Right-of-Way at Heritage Elementary School (920 West 3200 South) from the Cache County School District
Presenter	Justin Maughan, Manager
Recommendation	Wait for further information from the CCSD
Reviewed By	Mayor, City Manager, City Planner

Background:

Heritage Elementary on 3200 South in Nibley was constructed in 2009. At that time a roadway was constructed that went from 3200 South north along the eastern edge of the school to a roundabout at the northeastern corner of the school building. At the time, the roadway was designed and intended, to the best of staff's knowledge, to be dedicated to the City and become public right of way. However, that process was never officially completed, and the roadway was not dedicated to the City.

The City has been maintaining the roadway since it was constructed. City staff have been plowing, salting, signing and stripping the roadway. The City has been paying the electric bill for the street lights along the roadway. City funds and staff time were used to construct the sidewalk along the east side of the roadway.

Future plans for the extension of any roadway are not definitive at this time, but it is likely the roadway will extend to the north of the existing roundabout, and then curve to the west connecting at 3020 South.

Currently the remainder of the property at the site is farmed. There are no definitive future plans for the site at this time. The idea of a middle school has been discussed briefly. Other ideas in conjunction with the middle school, are possibly developing a few single-family homes in the northwest corner of the property to help offset costs.



Update since 3-24-22 meeting:

Mayor Jacobsen and City Manager Justin Maughan, met with the Cache School District to discuss this further. It was recommended by that meeting to just continue as we have been for now, while the school district analyzes what to do with the property.

Agenda Item #19

Description	Discussion & Consideration – Resolution 22-13 A Resolution Of The City Council Of Nibley City, Cache County, Utah, Supporting Submittal Of The 2022 Land And Water Conservation Grant Application To Secure Grant Funding To Assist With Providing Park Improvements For The Ridgeline Park (First Reading)
Presenter	Jusitn Maughan, City Manager
Recommendation	Move to approve Resolution 22-13 A Resolution Of The City Council Of Nibley City, Cache County, Utah, Supporting Submittal Of The 2022 Land And Water Conservation Grant Application To Secure Grant Funding To Assist With Providing Park Improvements For The Ridgeline Park, and waive the second reading.
Reviewed By	Mayor, City Manager, Recreation Director

Background:

The current fiscal year budget, set aside \$20k for assistance of a grant writer. Staff became aware of a grant program through a colleague of Chad's, that was targeted toward parks and recreation. It is the 2022 Land and Water Conservation Grant through the Federal Government. The Federal Government takes revenue generated through oil and gas leases, and passes a portion along to the State for disbursement for recreational projects. This colleague of Chad, gave us the contact of a Mr. Ron Clegg, who is an engineer who has been successful in obtaining this grant previously on a number of occasions. Staff solicited Mr. Clegg, and with his assistance has prepared a grant application on an accelerated time schedule, as the applications are due on May 1st.

Staff followed guidance during the last City Council meeting, and has prepared a grant application for Ridgeline Park focusing on sidewalks, pavilion, playground, and then added a pickleball court complex to round out a \$2,000,000.00 project. If successful in obtaining the grant, the City will be responsible to front the \$2M dollars, and will then be refunded 50%, or \$1,000,000 of the cost of the project. The proposed plan to pay the \$2M would be to pay \$1M from the Capital Projects fund, and the additional \$1M from Park Impact Fees.

The only “catch” to the grant, is that if successful and funds are used, that the property will have to be permanently dedicated for use as a recreational space.

As part of the formal application, the attached resolution will need to be approved by the Council at this meeting.

RESOLUTION 22-13

**A RESOLUTION OF THE CITY COUNCIL OF NIBLEY CITY, CACHE COUNTY, UTAH,
SUPPORTING SUBMITTAL OF THE 2022 LAND AND WATER CONSERVATION GRANT
APPLICATION TO SECURE GRANT FUNDING TO ASSIST WITH PROVIDING PARK
IMPROVEMENTS FOR THE RIDGELINE PARK**

WHEREAS, Nibley City desires to develop the Ridgeline Park located at 381 Ropateto Drive, Nibley, Utah; and

WHEREAS, the City supports and approves submitting a 2022 grant application for Land and Water Conservation Funds.

WHEREAS, the City recognizes that the grant requires a 50% match of city funds.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Nibley City, Cache County, State of Utah, as follows:

1. The Nibley City Council supports and approves the submittal of the 2022 Land and Water Conservation Fund application.
2. The City is committed to providing the required matching funds identified in the grant application up to \$1,000,000.

PASSED BY THE NIBLEY CITY COUNCIL THIS _____ day of _____, 2022.

Larry Jacobsen, Mayor

ATTEST: _____
Cheryl Bodily, City Recorder

SEAL:



Ridgeline Park | Phase 1



04.22.22



Ridgeline Park- Concept C3

PHASE 1 Preliminary Construction Cost Estimate

4/22/2022

Item	Item Description	Qty.	Units	Unit Price	Total
1	MOBILIZATION / DEMOBILIZATION	1	L.S.	\$ 95,552.21	\$ 95,552.21
2	TRAFFIC CONTROL	1	L.S.	\$ 10,000.00	\$ 10,000.00
3	SITE CLEARING AND GRUBBING (including tree removal)	110,512	S.F.	\$ 0.25	\$ 27,627.88
4	DEMOLITION & REMOVAL	15,000	S.F.	\$ 2.50	\$ 37,500.00
5	TEMPORARY CONTROLS	1	L.S.	\$ 15,000.00	\$ 15,000.00
6	SITE GRADING (Spread and Compact)	6,140	C.Y.	\$ 15.00	\$ 92,092.92
7	STORM DRAINAGE	1	L.S.	\$ 25,000.00	\$ 25,000.00
8	SANITARY SEWER	1	L.S.	\$ 15,000.00	\$ 15,000.00
9	WATER SERVICE	1	L.S.	\$ 10,000.00	\$ 10,000.00
10	ELECTRICAL	1	L.S.	\$ 25,000.00	\$ 25,000.00
11	SITE LIGHTING	1	L.S.	\$ 25,000.00	\$ 25,000.00
12	ASPHALT PARKING LOT	22,612	S.F.	\$ 5.00	\$ 113,060.00
13	CURB & GUTTER	797	L.F.	\$ 30.00	\$ 23,910.00
14	DRIVE APPROACH	1	EA.	\$ 5,000.00	\$ 5,000.00
15	6' CONCRETE SIDEWALK	6,390	S.F.	\$ 8.00	\$ 51,120.00
16	10' CONCRETE SIDEWALK	23,761	S.F.	\$ 8.00	\$ 190,088.00
17	CONCRETE PAD	4,772	S.F.	\$ 8.00	\$ 38,176.00
18	PICKLEBALL COURTS (set of 4)	1	L.S.	\$ 250,000.00	\$ 250,000.00
19	ADA RAMPS	4	EA.	\$ 3,500.00	\$ 14,000.00
20	CONCRETE MOWSTRIP/EDGER	250	L.F.	\$ 30.00	\$ 7,500.00
21	RESTROOM	1	L.S.	\$ 70,000.00	\$ 70,000.00
22	NATURALIZED WATER FEATURE	360	L.F.	\$ 300.00	\$ 108,000.00
23	30'X30' PAVILION	1	EA.	\$ 50,000.00	\$ 50,000.00
24	BOARDWALK	1,000	S.F.	\$ 75.00	\$ 75,000.00
25	ICONIC FEATURE	2	EA.	\$ 15,000.00	\$ 30,000.00
26	PARK BENCH	6	EA.	\$ 2,500.00	\$ 15,000.00
27	PICNIC TABLE	8	EA.	\$ 2,000.00	\$ 16,000.00
28	TRASH RECEPTACLES	6	E.A.	\$ 1,500.00	\$ 9,000.00
29	BIKE RACK	1	EA.	\$ 1,000.00	\$ 1,000.00
30	DRINKING FOUNTAIN	1	E.A.	\$ 5,000.00	\$ 5,000.00
31	PLAYGROUND EQUIPMENT	1	L.S.	\$ 250,000.00	\$ 250,000.00
32	PLAYGROUND SURFACING	5,794	S.F.	\$ 18.00	\$ 104,283.00
33	PLAYGROUND SHADE SAILS	0	EA.	\$ 25,000.00	\$ -
34	BOULDERING AREA	4,220	S.F.	\$ 10.00	\$ 42,200.00
35	DECIDUOUS TREE (2" CAL.)	24	EA.	\$ 650.00	\$ 15,600.00
36	EVERGREEN TREE (6' HT.)	0	EA.	\$ 600.00	\$ -
37	ORNAMENTAL TREE (2" CAL.)	12	EA.	\$ 500.00	\$ 6,000.00
38	LANDSCAPE BOULDERS	20	EA.	\$ 500.00	\$ 10,000.00
39	SOD (includes 4" topsoil)	15,880	S.F.	\$ 2.00	\$ 31,760.00
40	MEADOW GRASS (includes 4" topsoil)	9,353	S.F.	\$ 0.50	\$ 4,676.50
41	SHRUB BED (includes 12" topsoil, fabric, mulch)	7,760	S.F.	\$ 8.00	\$ 62,080.00
42	IRRIGATION SYSTEM - TURF	15,880	S.F.	\$ 1.50	\$ 23,820.00
43	IRRIGATION SYSTEM - MEADOW GRASS	1,030	S.F.	\$ 1.00	\$ 1,030.00
44	IRRIGATION SYSTEM - DRIP	7,760	S.F.	\$ 2.00	\$ 15,520.00
45	PERMITS AND FEES/BOND	0	L.S.	\$ 250,000.00	\$ -
SUB-TOTAL COST=					\$ 2,016,596.51
10% Contingency					\$ 201,659.65
TOTAL ESTIMATED COST=					\$ 2,218,256.16



Ridgeline Park- Concept C3

Preliminary Construction Cost Estimate

4/22/2022

Item	Item Description	Qty.	Units	Unit Price	Total
1	MOBILIZATION / DEMOBILIZATION	1	L.S.	\$ 319,838.63	\$ 319,838.63
2	TRAFFIC CONTROL	1	L.S.	\$ 10,000.00	\$ 10,000.00
3	SITE CLEARING AND GRUBBING (including tree removal)	470,598	S.F.	\$ 0.25	\$ 117,649.50
4	DEMOLITION & REMOVAL	15,000	S.F.	\$ 2.50	\$ 37,500.00
5	TEMPORARY CONTROLS	1	L.S.	\$ 15,000.00	\$ 15,000.00
6	SITE GRADING (Spread and Compact)	26,144	C.Y.	\$ 6.00	\$ 156,866.00
7	STORM DRAINAGE	1	L.S.	\$ 50,000.00	\$ 50,000.00
8	SANITARY SEWER	1	L.S.	\$ 25,000.00	\$ 25,000.00
9	WATER SERVICE	1	L.S.	\$ 20,000.00	\$ 20,000.00
10	ELECTRICAL	1	L.S.	\$ 50,000.00	\$ 50,000.00
11	SITE LIGHTING	1	L.S.	\$ 50,000.00	\$ 50,000.00
12	ASPHALT PARKING LOT	36,586	S.F.	\$ 5.00	\$ 182,930.00
13	CURB & GUTTER	2,400	L.F.	\$ 30.00	\$ 72,000.00
14	DRIVE APPROACH	1	EA.	\$ 5,000.00	\$ 5,000.00
17	6' CONCRETE SIDEWALK	3,843	S.F.	\$ 8.00	\$ 30,744.00
18	10' CONCRETE SIDEWALK	40,760	S.F.	\$ 8.00	\$ 326,080.00
19	SPECIALTY CONCRETE PAVEMENT	15,349	S.F.	\$ 16.00	\$ 245,584.00
20	ADA RAMPS	4	EA.	\$ 3,500.00	\$ 14,000.00
21	CONCRETE MOWSTRIP/EDGER	507	L.F.	\$ 15.00	\$ 7,605.00
22	LARGE PAVILION/RESTROOM	1	L.S.	\$ 300,000.00	\$ 300,000.00
23	PICKLEBALL COURTS (set of 4)	3	L.S.	\$ 250,000.00	\$ 750,000.00
24	PICKLEBALL LIGHTING (per set of 4)	3	L.S.	\$ 150,000.00	\$ 450,000.00
25	PICKLEBALL SHADE SAILS	6	EA.	\$ 20,000.00	\$ 120,000.00
26	NATURALIZED WATER FEATURE	360	L.F.	\$ 300.00	\$ 108,000.00
27	30'X30' PAVILION	4	EA.	\$ 50,000.00	\$ 200,000.00
29	20'X20' PAVILION	4	EA.	\$ 35,000.00	\$ 140,000.00
30	BOARDWALK	7,993	S.F.	\$ 75.00	\$ 599,475.00
31	WETLAND TOWER	1	EA.	\$ 50,000.00	\$ 50,000.00
32	ICONIC FEATURE	5	EA.	\$ 15,000.00	\$ 75,000.00
33	WAYFINDING & SIGNAGE	1	L.S.	\$ 25,000.00	\$ 25,000.00
34	PARK BENCH	25	EA.	\$ 2,500.00	\$ 62,500.00
35	PICNIC TABLE	30	EA.	\$ 2,000.00	\$ 60,000.00
36	TRASH RECEPTACLES	20	E.A.	\$ 1,500.00	\$ 30,000.00
38	BIKE RACK	2	EA.	\$ 1,000.00	\$ 2,000.00
39	BIKE COURSE	7,920	S.F.	\$ 4.00	\$ 31,680.00
40	PUMP TRACK	4,620	S.F.	\$ 12.00	\$ 55,440.00
41	9 SQUARE FRAMES	2	E.A.	\$ 1,500.00	\$ 3,000.00
42	GAGA PIT	2	E.A.	\$ 1,500.00	\$ 3,000.00
43	DRINKING FOUNTAIN	2	E.A.	\$ 5,000.00	\$ 10,000.00
44	PLAYGROUND EQUIPMENT	1	L.S.	\$ 450,000.00	\$ 450,000.00
45	PLAYGROUND SURFACING	11,587	S.F.	\$ 18.00	\$ 208,566.00
47	PLAYGROUND SHADE SAILS	4	EA.	\$ 25,000.00	\$ 100,000.00
48	BOULDERING AREA	8,848	S.F.	\$ 10.00	\$ 88,480.00
49	DECIDUOUS TREE (2" CAL.)	172	EA.	\$ 650.00	\$ 111,800.00
50	EVERGREEN TREE (6' HT.)	13	EA.	\$ 600.00	\$ 7,800.00
51	ORNAMENTAL TREE (2" CAL.)	28	EA.	\$ 500.00	\$ 14,000.00
52	LANDSCAPE BOULDERS	50	EA.	\$ 500.00	\$ 25,000.00
53	SOD (includes 4" topsoil)	149,700	S.F.	\$ 2.00	\$ 299,400.00
54	MEADOW GRASS (includes 4" topsoil)	157,562	S.F.	\$ 0.50	\$ 78,781.00
56	SHRUB BED (includes 12" topsoil, fabric, mulch)	14,978	S.F.	\$ 8.00	\$ 119,824.00
57	IRRIGATION SYSTEM - TURF	149,700	S.F.	\$ 1.50	\$ 224,550.00
58	IRRIGATION SYSTEM - MEADOW GRASS	157,562	S.F.	\$ 1.00	\$ 157,562.00
59	IRRIGATION SYSTEM - DRIP	14,978	S.F.	\$ 2.00	\$ 29,956.00
60	PERMITS AND FEES/BOND	0	L.S.	\$ 250,000.00	\$ -

SUB-TOTAL COST= \$ 6,726,611.13

10% Contingency \$ 672,661.11

TOTAL ESTIMATED COST= \$ 7,399,272.24

Agenda Item #20

Description	Discussion & Consideration – Performance Review of Justin Maughan, Nibley City Manager
Presenter	Larry Jacobsen, Mayor
Recommendation	Move to approve the performance review for Justin Maughan, Nibley City Manager.
Reviewed By	Mayor, City Manager

Background:

The Council will go to closed session to discuss with Justin Maughan, City Manager, his work performance for the past year. Larry has started the process with written comments and Justin has added his written comments to that document. The Council is encouraged to review that document and offer additional comments during this agenda item. The Council's comments will be added to the document in real-time during the closed session.