

**Irrigation Report
For
Iron Wheel Subdivision**

Date: January 30, 2018
Revised April 17, 2018
Revised October 22, 2018

Prepared by: Vortex Engineering, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
970-245-9051
VEI# F10-053

Submitted to: City of Fruita
325 E. Aspen Street
Fruita, CO 81521

Type of Design: Major Subdivision

Owners: Bookcliff Orchards, LLC
Cody Davis, Manager
637 25 Road
Grand Junction, CO 81505

Property Address: 1860 Highway 6 & 50
953, 961 and 973 19 Road
1702 Skiff Avenue
702 S. Fremont Street
Fruita, CO 81521

Tax Schedule No.: 2697-211-07-003 2697-211-08-005
2697-211-07-004 2697-211-00-011
2697-211-07-005 2697-211-00-012

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I. Introduction

A. Background

This Irrigation Report has been prepared by Vortex Engineering, Inc., and is required as part of the Iron Wheel Subdivision submittal.

B. Project Location

The Iron Wheel Subdivision consists of a combination of 6 parcels of land with an area of 57.73 acres. The project is located in the political boundary of The City of Fruita, Colorado, and bordered by 19 Road on the east, the Independent Ranchman's Canal along the southwest, the Palmer Drain on the north side, 18 ½ Road on the west and is directly north of the I ½ Road alignment. Fruita Monument High School and the Fruita 8-9 Middle School are located west and slightly northwest of the site. The applicant is requesting approval of a new subdivision comprised of 271 dwelling units (consisting of 239 single family residential lots and 32 multifamily units). A vicinity map is provided in Appendix A for reference.

C. Property Description

Existing conditions

The existing site slopes from the northeast to the south and southwest at grades varying between 0.7% and 1.3%. The site is currently undeveloped and vegetated with native grass. No existing irrigation infrastructure is present at the site.

Proposed Conditions

With the development of the project site, it is planned for irrigation with the source of irrigation water being the Grand Valley Irrigation Company (GVIC). Historically, the water was obtained through the Mainline 440 lateral. In the proposed conditions, it is estimated that the area to be irrigated is approximately 22.5 acres in size.

D. Irrigation Shares

Currently there are irrigation shares available for this property. The owner has allocated 44 shares for the development which equates to 1.95 shares per acre of irrigated area. The City requires 1.5 to 2.0 shares per acre be allotted for the development. See calculation in the appendix.

II. Irrigation System Description

The closest source for irrigation water to service the subject site is situated along the south side of the site directly from the GVIC Canal (Independent Ranchman's Canal). More specifically, the irrigation connection point is located in the southwest corner of the proposed park property in the Iron Wheel development. The proposed connection shall be made within the existing canal with a headgate device controlling the flow of water to the property. A pipe will convey water from the headgate device to an underground settlement and storage vault. A separate pump system will then deliver pressurized irrigation water to the subdivision. See sheet C6.0 thru C6.1 for layout and distribution information.

The proposed irrigation system consists of 3", 4", 6" and 8" distribution pipe which carries water from the above described point of connection throughout the development. The underground vault is sized to store volume required to irrigate the property given the watering cycle and ability to recharge from the headgate source on a daily basis. The overflow in the vault and drain down for winterization shall discharge excess water into the project detention pond for discharge into the storm drainage system. See calculations and construction plans in the Appendix.

III. Conclusions

The proposed irrigation plan complies with the City of Fruita requirements. This plan shall not adversely affect adjacent properties.

IV. Limitations /Restrictions

This report is a site-specific design for herein described irrigation system and is applicable only for the client for whom our work was performed. Use of this report under other circumstances is not an appropriate application of this document. This report is a product of Vortex Engineering & Architecture Incorporated and is to be taken in its entirety. Excerpts from this report may be taken out of context and may not convey the true intent of the report. It is the owner's and owner's agent's responsibility to read this report and become familiar with recommendations and design guidelines contained herein.

Vortex Engineering and Architectural, Inc. assumes no liability for the accuracy or completeness of information furnished by the client. Site conditions are subject to external environmental effects and may change over time. Use of this plan under different site conditions is inappropriate. If it becomes apparent that current site conditions vary from those anticipated, the design engineer should be contacted to develop any required design modifications. Vortex Engineering & Architecture, Inc. is not responsible and accepts no liability for any variation in assumed design parameters.

Vortex Engineering & Architecture, Inc. represents this report has been prepared within the limits prescribed by the owner and in accordance with the current accepted practice of the civil engineering profession in the area.

No warranty or representation either expressed or implied is included or intended in this report or in any of our contracts.

V. References

City of Fruita Regulations

Appendix A – Location Map



Appendix B – Irrigation Calculations

Title IRON WHEEL IRRIGATION

Date 1-30-18

Job No. F10-053

By JCA

1. Project Area : 57.7 Acres
2. Roads/imp. Area : 12.6 Acres
3. Parking Areas : 0.48 Acres
4. IR RD : 0.35 Acres
5. Alleys : 1.78 Acres

6. Trails/Canal Tracts (Non-irrigated) : 1.39 acres

AREA TO BE IRRIGATED: $57.7 \text{ ac.} - (12.6) - (0.48) - (0.35) - (1.78) = 41 \text{ ac.}$

239 Single family lots 33.76 ac.
1 Multi-family Parcel 1.92 ac.

Park/open space Area :
2.8 ac.
0.43 ac.
1.38 ac. } 4.61 ac.

TOTAL = 40.3 ac.

239 lots :

$\frac{1}{2}$ have 60% lot coverage (Alley loaded)
 $\frac{1}{2}$ have 35% lot coverage (traditional lots)

$33.76 (.5) = 16.88 \text{ ac.}$ 60% coverage (40% pass. irr.)
 $33.76 (.5) = 16.88 \text{ ac.}$ 35% coverage (65% pass. irr.)

Irrigated Area :

$16.88 \text{ ac.} \times .40 = 6.75 \text{ acres}$
 $16.88 \text{ ac.} \times .65 = 10.97 \text{ acres}$ } 17.72 ac.

Park open Space : (Assume 90% irrigated)

$4.61 \text{ ac.} \times 0.90 = \underline{4.15 \text{ ac.}}$

Multi-Family : (Assume 30% irrigated)

$1.92 \text{ ac.} \times 0.30 = \underline{\underline{0.58 \text{ ac.}}}$

Title IRON WHEEL IRRIGATION

Date 1-30-18

Job No.

By JCA

TOTAL IRRIGATED AREA:

SF LOTS 17.72 ac.

MF PARCEL 0.58 ac.

PARKS/OPEN 4.15 ac.

22.45 ac.

≈ 977, 922 SF

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Date 1-30-18

Job No. F10-053

By JCA

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Title IRON WHEEL IRRIGATION

Date 1-30-18

Job No.

By JCA

TOTAL IRRIGATED AREA:

SF LOTS 17.72 ac.

MF PARCEL 0.58 ac.

PARKS/OPEN 4.15 ac.

22.45 ac.

≈ 977,922 SF



Vortex Engineering, Inc.
 2394 Patterson Road, Suite 201
 Grand Junction, CO 81505
 970-245-9051 office
 970-245-7639 fax
 Web site: www.vortexeng.us

JOB IRON Wheel

SHEET NO. _____ OF _____

CALCULATED BY JCA DATE _____

CHECKED BY _____ DATE _____

SCALE _____

Filing #1	57 lots
#2	39 lots
#3	46 lots
#4	44 lots
#5	44 lots
#6	10 lots
<hr/>	
	240 lots

Filing #1
 $57(13\text{gpm}) = 741\text{gpm} \div 2(\text{odd/EVEN}) \div 2(\text{AM, PM})$
 $= \underline{185\text{gpm}}$ Max. flow

Filing #2
 $39(13\text{gpm}) = 507 \div 2 \div 2 = \underline{127\text{gpm}}$

Filing #3
 $46(13\text{gpm}) = 598 \div 2 \div 2 = \underline{149.5\text{gpm}}$

Filing #4 & #5
 $44(13\text{gpm}) = 572 \div 2 \div 2 = \underline{143\text{gpm}}$ ea
 $+ \underline{286\text{gpm}}$

Filing #6
 $10(13) = 130 \div 2 \div 2 = \underline{32.5\text{gpm}}$

pump #1
 Filing #1 (185gpm)

pump #2
 Filing #2 & #3 (127+149.5)
 $= 276.5\text{gpm}$

pump #3
 Filing #4, #5 & #6
 (143+143+32.5)
 $= 318.5\text{gpm}$

TOTAL = 780gpm

pump #1 = $\frac{185(166)}{3960} \times 80\% = 9.7\text{ Hp.}$ Install 10 Hp pump

pump #2 = $\frac{276(166)}{3960} \times 80\% = 14.5\text{ Hp}$ Install 15 Hp pump

pump #3 = $\frac{318(166)}{3960} \times 80\% = 16.6\text{ Hp.}$ Install 15 Hp pump.



Vortex Engineering, Inc.

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JOB Iron Wheel

SHEET NO. _____ OF _____

CALCULATED BY JCA DATE _____

CHECKED BY _____ DATE _____

SCALE _____

Pump Calculations:

$$H_p = \frac{\text{gpm} \times \text{TDH (ft)}}{3960}$$

$$H_p = \frac{780 \text{ gpm} (166.3')}{3960}$$

$$H_p = 32.75 \text{ hp pump}$$

$$H_p = 32.75 \times 80\% \text{ efficient}$$

$$H_p = 40.95 \text{ hp req'd}$$

* USE 3 Pumps @ Full build-out

$$\text{Pump \#1} = 10 \text{ Hp}$$

$$\text{pump \#2} = 15 \text{ Hp}$$

$$\text{pump \#3} = 15 \text{ Hp.}$$

H_p = Pump horsepower

Flow = 780 gpm

TDH = friction loss + op. press
+ elevation change
+ pump lift

pump lift = 12'

elevation change:

$$4532 - 4524 = 8'$$

Friction loss: h_L

2331' TOTAL:

500' ~ 8" 780 gpm; $f_L = 0.9/100'$

1100' ~ 6" 400 gpm; $f_L = 1.0/100'$

731' ~ 4" 200 gpm; $f_L = 2.1/100'$

$$8" = 5(.9) = 4.5$$

$$6" = 11(1.0) = 11.0$$

$$4" = 7.3(2.1) = 15.3$$

$$h_L = 30.8$$

$$\text{Operating Press.} = 50 \text{ psi} = 115.5$$

$\times 2.31$

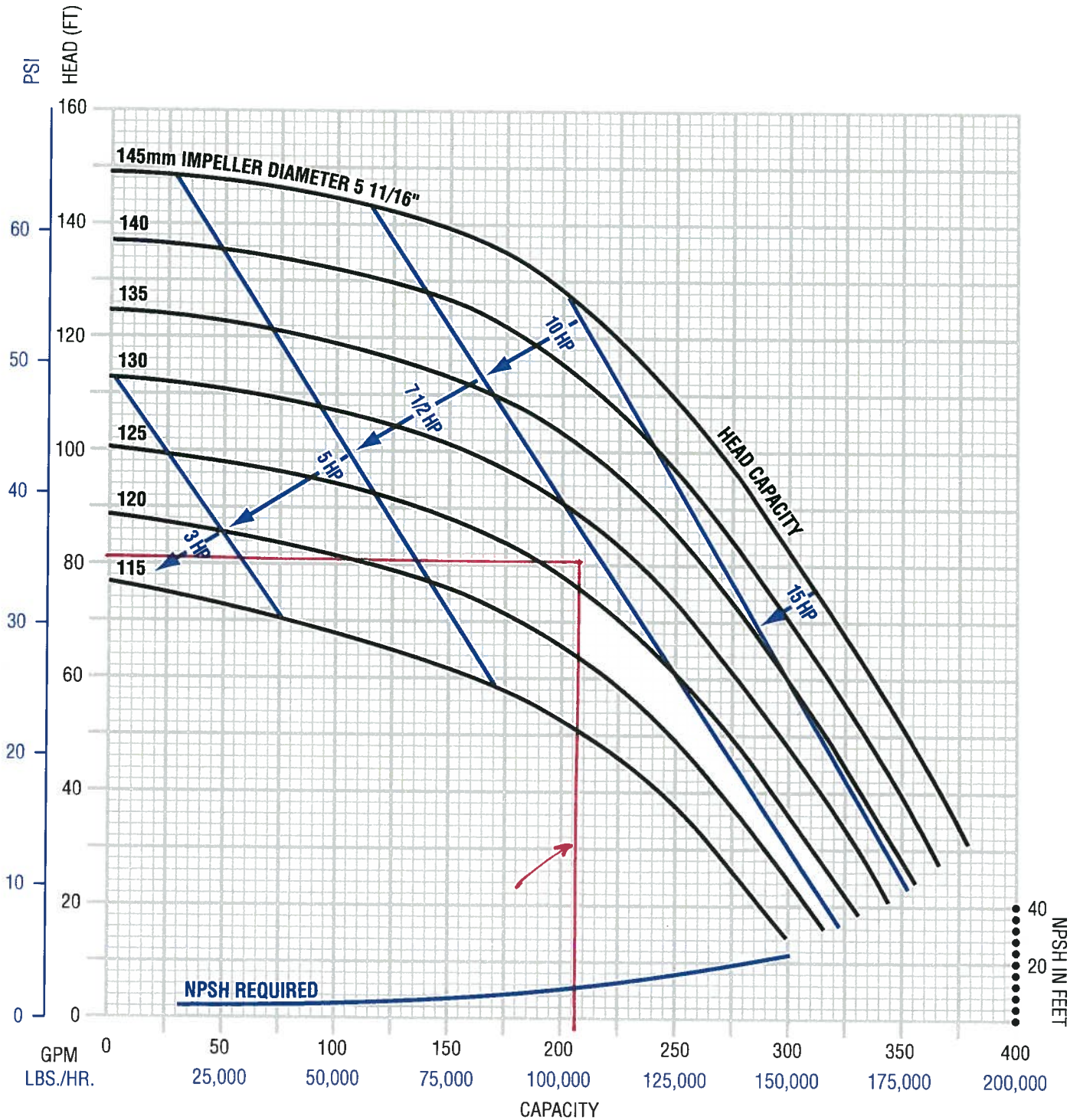
TOTAL TDH =

$$115.5' + 30.8' + 8' + 12'$$

$$\text{TDH} = 166.30'$$

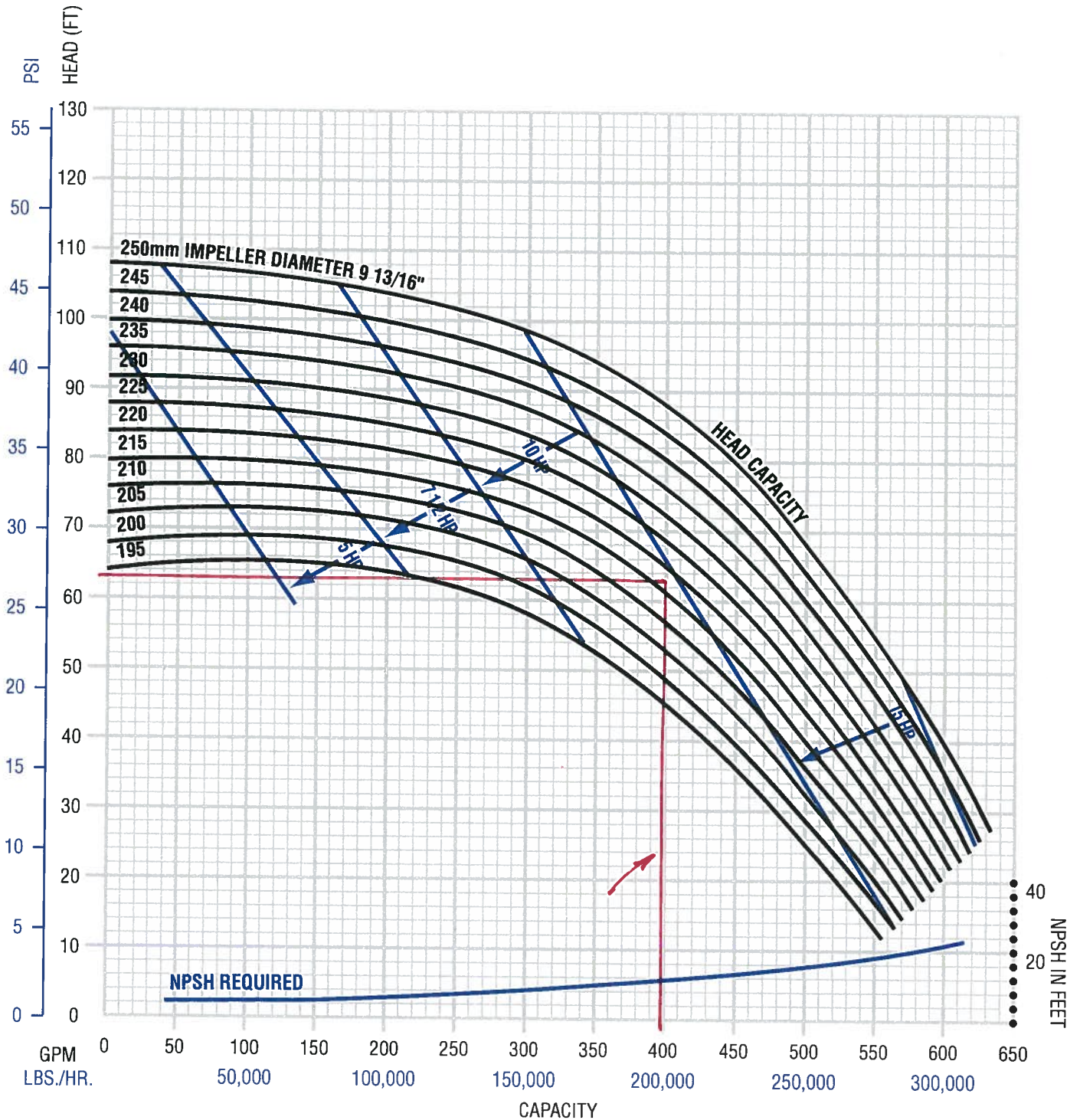
USE CLASS 160 PVC

FP/FPX/FPR Performance Curves
Model: 3522 (3500 RPM, Inlet 2.5", Outlet 2")



Performance curve based on tests using 70°F water and 0 psig inlet pressure. A tolerance of ± 5% applies to all figures. Actual performance may vary by application product. Please contact Fristam for different conditions.

FP/FPX/FPR Performance Curves
Model: 3551 (1750 RPM, Inlet 3", Outlet 2.5")



Performance curve based on tests using 70°F water and 0 psig inlet pressure. A tolerance of ± 5% applies to all figures. Actual performance may vary by application product. Please contact Fristam for different conditions.

**Iron Wheel Subdivision
Irrigation Shares Demand**

**January 30, 2018
Vortex Engineering, Inc.
Revised October 22, 2018**

Total Landscape Area:	977,748 sf	22.45 ac
Fruita Irrigation Demand Standard:	3.00 in/7 days	
Weekly Demand:	244,437 cf	
Daily Demand:	34,920 cf	261,198 gal
Number of Zones:	12	
Daily Demand Per Zone:	21,767 gal	
Irrig. Duration per Zone:	120 min	
Flow Demand:	181 gal/min	
Flow Per Share:	4.675 gal/min	
Shares Needed:	39 ***	
	44 Shares Provided	

Weekly Demand per Zone:	20,370 cf	152,366 gal
-------------------------	-----------	-------------

Legend:

input cell

AREAS TO BE IRRIGATED

Single family units	240	Lots	
Open Space	180,774	sf	4.15 acres
Lot Area	1,470,585	sf	
Lot area turf (approx. 52.5%)	771,883	sf	17.72 acres
Multi Family area	83,635	sf	
Multi Family turf (30%)	25,091	sf	0.58 acres
Total area to be irrigated	22.45	acres	977,748 sf
Area of ODD lots to be irrigated	11.22	acres	
Area of EVEN lots to be irrigated	11.22	acres	

AVAILABLE IRRIGATION WATER

Number of shares	44		
Flow per share	4.675	gpm/24hrs	
Max flow based on shares per day	205.70	gpm/24hrs	
Max Daily Volume	296,208	gal	Total inflow to Vault**
or	39,600	cf	
Max weekly volume	2,073,456	gal	
or	277,200	cf	

DEMAND DEPTH PER LOT PER WEEK = 3 in

Volume Demand for 240 lots + MF + Open Space (weekly)= 244,437 cf 3" of water

Number of zones=	12
ODD Zones	6
EVEN Zones	6
Volume Demand for each zone (weekly)=	20,370 cf
Days per week for irrigating each zone=	3

DEMAND DEPTH PER LOT PER WEEK = 3.0 in
 Days per week for irrigating each zone= 3
DEPTH OF IRRIGATION WATER PER LOT PER IRRIG. DAY = 1.00 in
 Irrig. zones in Subdivision = 12 12x24=288 eq. lots
 lots per zone = 24
 Pressure at the sprinkler Head = 40 psi
 Sprinkler Type = impact

	pressure (psi)	radius (ft)	flow (gpm)	precip. (in/hr)	RainBird models
impact	40	38	4.2	0.56	Maxi-Paw (yellow nozzle)
popup	40	14	3.3	1.62	15 series MPR

Average turf area to be irrigated per lot = 3,216 sf
 Irrig. zones per lot = 6
 Ave. Zone Area per lot = 536 sf
 Sprinkler spacing = 40 ft
 One Sprinkler Area Coverage = 1,600 sf
 Quantity of sprinklers per lot zone + 2 = 3
 flow per zone = 13 gpm ** Limit flow to each lot
 Irrig. Time Based on Manuf. Depth precipitation = 107 min
Manufacturer's estimate based on in/hour at 50% throw
 1.00 in = 27 min

Rectangular Vault Size

working volume Bottom Elev (ft)= 100
 working volume Top Elev (ft)= 108
 Vault Width (ft)= 20
 Vault Length (ft)= 35
 Working Volume (ft³)= 5600
 Volume at Open Level (gal)= 41888

Summary:

Schedule:

*The lots shall be irrigated odd/even lots every other day. So, for each irrigation day, there will be:
120 lots plus open space and multi-family area irrigated in approximately 5 blocks of 24 lots each.
Each block area shall be irrigated for 6 hours (this can also be further broken down to AM and PM watering,
120 LOTS Mon, Wed, Fri60 lots in the AM (6am-9am) & 60 lots in the PM (5pm-8 pm,
120 LOTS Tues, Thurs, Sat.....60 lots in the AM (6am-9am) & 60 lots in the PM (5pm-8 pm,*

60 lots @ 13 gpm / lot = 780 gpmPeak flow at any given period x 3hrs = 140,400 gallons used

From 6-9am use 140,400 gal; and from 5-8pm use 140,400 ga.

Refresh rate = 4.675 gpm x 44 shares x 10 hrs (8pm to 6am) off hours through the night = 123,400 ga

Refresh rate = 4.675 gpm x 44 shares x 8 hrs (9am to 5pm) off hours through the day = 98,700 ga

Vault continues to fill during pump operation as well: 4.675 x 44 x 6 = 74,000 ga.

Total = 222,100 gal

Vault storage should be sufficeint to have adequate volume during pump cycle

*There fore, the vault would be the volume used in a cycle minus the refresh amount before the cycle begins
(140,400 gal - 98,700 gal) = 41,700 gal storage needed*

Vault size to store 42,000 gallons:

8' x 20' x ? = 41,700 gal/ 7.48 gal/cf ? = 35

Vault size is 8' x 20' x 35'

FROM WHEEL

Drainage and Irrigation Check Sheet

Notice to Applicant

Please fill out the following form and take it to the company(s) providing irrigation and drainage service to your property. It is important that we have the irrigation and drainage information and comments **prior to proceeding with your application**. It is the applicant's responsibility to ensure that this is complete. **If no comments or signature from the irrigation and/or drainage company(s), your application will be considered incomplete.** Thank you for your cooperation.

Property owner: Bookcliff Orchard, LLC

Mailing address: 637 25 Road, Grand Junction, CO 81505

Property address or location: 1860 Hwy, 953, 961, 973 19 Road, 1702 Skiff Avenue

E-mail address: cody@chronosbuilders.com

Mesa County Tax Parcel number : _____ - _____ - _____ - _____ Please see attached.

Parcel contains Approx. 59 acres and/or proposed number of lots _____

Drainage Information

You are the water user and you are responsible for operating and maintaining the wastewater system (pipeline or ditch) from your property to the appropriate drainage facility: 1) a natural wash, 2) the Colorado Rivers, 3) an existing drainage facility (operated by Mesa County, Grand Junction Drainage District, a municipality or other agency such as the Grand Valley Water User's Association) or 4) an irrigation canal or other ditch.

Provide a tax parcel map or air photo. Put your name, address and tax parcel number on the map or air photo and attach it to this page. On the tax parcel map or air photo, mark the route of the waste water from the parcel to one of the four (4) items listed above.

Does the tail water cross property owned by someone else? _____ yes _____ no

If yes, give the names and addresses: _____

—

Person/Entity responsible for maintenance of tail water system:

List known easement or rights-of-way: To (give name):

Is the document recorded in the Mesa County Clerk's Office? _____ yes _____ no

Irrigation Information

How will irrigation water be delivered to each lot?

- Existing underground pipeline
- Pipeline to be installed
- Other: (please explain): _____
- Existing concrete ditch
- Concrete ditch to be installed

Irrigation on parcel will be:

- Sprinkler
- Surface system (ditches, gated pipeline)

1. Is irrigation historically available for each lot? X yes _____ no

2. Canal Company name: Grand Valley Irrigation Company

3. Lateral name and number: Mainline # 440

4. Headgate Number: 440 5. Turnout number: _____

6. Heage gate is X Shared _____ Individual.

7. Headgate is organized or incorporated: _____ Yes X No
If yes, Contact person or agent:

8. Water rights for this parcel go with the land: _____ Yes X No

9. The amount for this parcel: _____ Shares
_____ Gallons per minute
_____ Cubic feet per second

Other: Could not locate irr. water in Booklift Orchard LLC.

10. Can more irrigation water be purchased? X Yes _____ No

11. Irrigation water is available:
 Anytime (on demand)
 Only at certain times (rotation)

12. Does irrigation water cross through other property? X Yes _____ No

13. If yes: Are there recorded rights-of-way or easements?
 There are no recorded easements
 There are recorded easement in Book _____ at Page _____
 Prescriptive right of use ownership

14. Is a measuring devise in place? _____ Yes _____ No At main headgate

15. Irrigation water is paid. How?
 X per share to the irrigation to the irrigation company

tax assessment

Other _____

16. Average annual cost of irrigation water \$ _____

17. Person/entity responsible for maintenance of irrigation water: All water users/
shareholders of Lateral ML 440 responsible
for water conveyance and conveyance system

1860 HWY. 953, Review Agency Comments
Parcel No., 961, 973 19 Rd., 1702 Skiff An Address:

1/27/18

IRON WEBEL SUB

Please note: Comments of signatures by these entities does not confer approval. This form is for informational purposes concerning the irrigation and drainage system constraints serving your property. All permissions, easements or rights-of-way must be obtained for irrigation water and drainage/tail water, if not already in place.

Irrigation Company: Grand Valley Irrigation Company.

Representative: Charles D. Gwenther

Comments: All parcels are in ML 440 service area however could not determine irr. water ownership by property owner.

Will continue commenting by the Fruit City parcel *See Attached previous comments IRON WEBEL

Drainage Entity: _____ DATE: _____

Representative: _____

Comments: _____

Natural Resources Conservation Service comments:

Representative: _____

Comments: _____

Other Comments: _____

GRAND VALLEY IRRIGATION COMPANY
688 26 ROAD
GRAND JUNCTION, COLORADO 81506
970-242-2762

April 4, 2017

Review Agency Comment Sheet

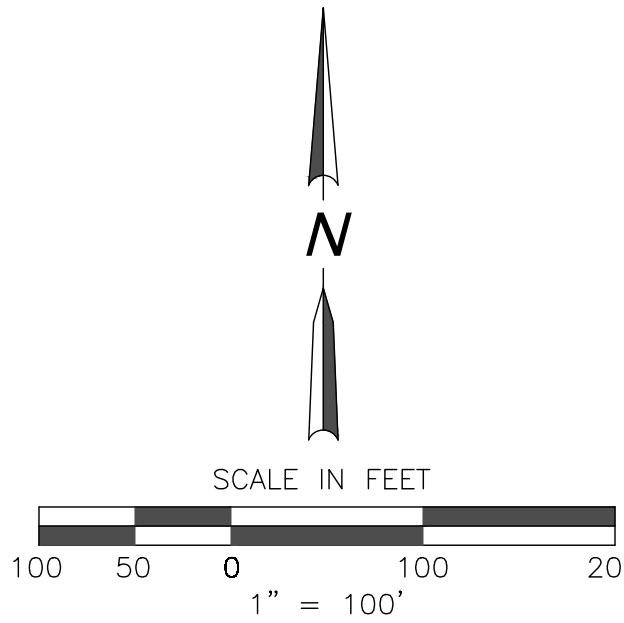
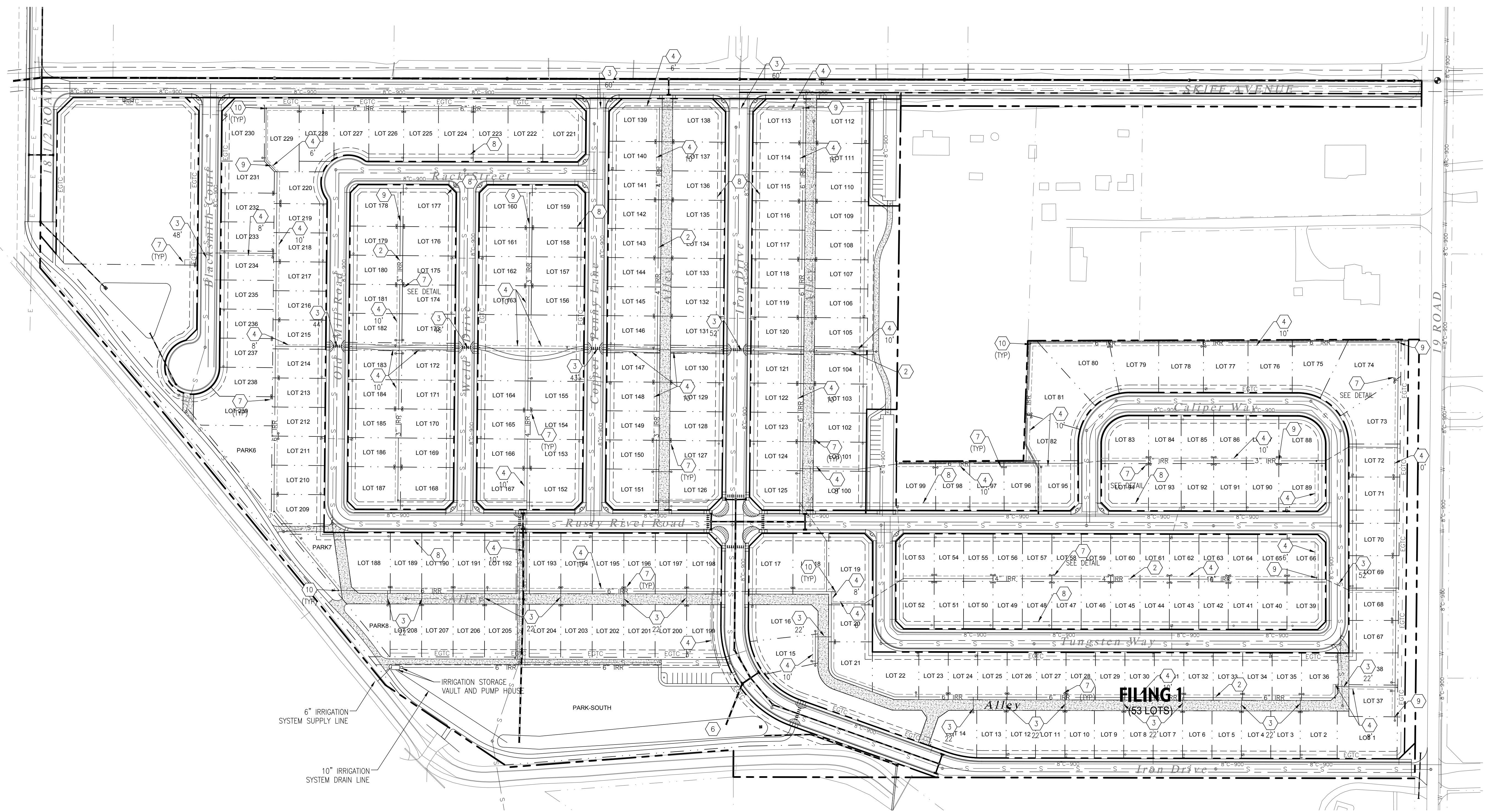
Project No: 2017-09 Iron Wheel
Project Name: Iron Wheel Subdivision
Location: 953, 961, & 979 19 Road, Fruita CO 81521

MANDATORY REQUIREMENTS:

1. All apparent and recorded easements and rights-of-way of the Grand Valley Irrigation Company (GVIC) must not be encroached or trespassed upon, into or under, 25 feet minimum from WATER's edge, both sides of canal. This includes to the tow of slope of canal bank, whichever is greater.
2. NO new irrigation delivery point from the GVIC canal delivery system.
3. NO access to or from the property via the GVIC canal and canal rights-of-way will be permitted or allowed.
4. At no time during the development and or completion of the subject property shall the GVIC canal or canal rights-of-way be obstructed, impaired or interfered with in any manner whatsoever. In addition, there can be no interference with the access to the canal rights-of-way from public or private streets and roads. This includes any type of proposed or dedicated trails.
5. NO future or proposed sewer line crossing GVIC canal system.
6. The existing access point to the South of Highway 6 & 50 will not remain for any type of access including emergency service. GVIC will remove this access point!
7. How does the irrigation tail water from the McBride, Garner & Langford property drain across the proposed development?
8. The south collector drain that flows under GVIC canal needs to be addressed correctly. There is a conflict between the irrigator, GVIC and the Drainage District over this undershot.
9. Please also note: *Self help or self cure* is not allowed or acceptable in this matter.

Reviewed By: Phil Bertrand
Date: 04/04/17
Telephone: 970-242-2762

Appendix C – Irrigation Plans and Details



IRRIGATION PLAN
SCALE: 1" = 100'

IRRIGATION SYSTEM NOTES:

- IRRIGATION PIPING SHALL CONSIST OF THE FOLLOWING:
 - IRRIGATION SYSTEM SHALL BE MINIMAL CLASS 160 PVC.
 - MINIMUM OF 2 FEET OF COVER.
 - CLEANOUTS AS SHOWN ON THE DRAWINGS AND AT ALL CHANGES OF DIRECTION OF 90 DEGREES AND GREATER.
 - IRRIGATION LINES BENEATH ROADWAYS AND DRIVEWAYS SHALL BE PLACED IN A SLEEVE EXTENDING A MINIMUM OF 3 FEET BEYOND PAVING.
 - A 90 DEGREE CHANGE IN DIRECTION SHALL BE CONSTRUCTED WITH 2 - 45 DEGREE BENDS. ALL FITTINGS ON MAINS SHALL HAVE THRUST BLOCKS.
 - BURIED VALVES SHALL BE STANDARD CAST BRASS GLOBE VALVES.
 - IRRIGATION SYSTEM SHALL BE PRESSURE TESTED AT 80 PSI. LEAKAGE (L) IN GALLONS PER HOUR SHALL NOT EXCEED THE FOLLOWING:
 $L = (S \times D \times P^{0.5}) / 133,200$
 L = LEAKAGE IN GALLONS PER HOUR, S = LENGTH IN FEET, D = DIAMETER IN INCHES, P = TEST PRESSURE IN PSI
 - ALL IRRIGATION LINES SHALL HAVE TRACER WIRE EXTENDED TO GRADE AT ALL CLEANOUTS, VALVES, & RISERS.
 - INSTALL THRUST BLOCKS ON TEES, BENDS AND DEAD-ENDS ON ALL MAIN LINE DISTRIBUTION PIPING.

CONSTRUCTION NOTES:

- CONNECT TO EXISTING IRRIGATION LINE
- PROPOSED IRRIGATION LINE (SIZE AS NOTED)
- PROPOSED IRRIGATION SLEEVE (2X PIPE DIA.) LENGTH NOTED
- IRRIGATION AND DRAINAGE EASEMENT (WIDTH AS NOTED)
- PROPOSED DRAIN VALVE
- PROPOSED DETENTION POND
- INSTALL IRRIGATION SERVICE - SEE DETAIL SHEET C6.1
- 14' MULTI-PURPOSE EASEMENT
- AIR RELIEF VALVE AT HIGH POINT
- IRRIGATION CLEANOUT - SEE DETAIL SHEET C6.1

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

Know what's below.
Call before you dig.
Colorado 811
1-800-922-1987
co811.org

VORTEX ENGINEERING, INC.
CONSTRUCTION MANAGERS & SITE PLANNERS
PROJECT MANAGERS
CIVIL & CONSULTING ENGINEERS
2304 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax: (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE NO. 18828

FOR REVIEW - NOT FOR CONSTRUCTION

REV.	DATE	REVISION	BY
1	04/13/18	REVISED PER REVIEW COMMENTS DATED 03/18/18	DLS

Irrigation Plan - Overall
Iron Wheel Subdivision
Preliminary Plan
953 19 Road
Fruita, Colorado 81521

PROJECT NO: F10-053
DATE: 02/02/18
SCALE: 1" = 100'
CAD ID: 6irr.dwg

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE
ACCEPTANCE OF THESE PLANS DOES NOT RELIEVE THE DEVELOPER, CONTRACTOR, OR THE ENGINEER FROM CONFORMANCE WITH THE CITY OF FRUITA DESIGN CRITERIA AND CONSTRUCTION SPECIFICATIONS MANUAL.

~SHEET~
C6.0

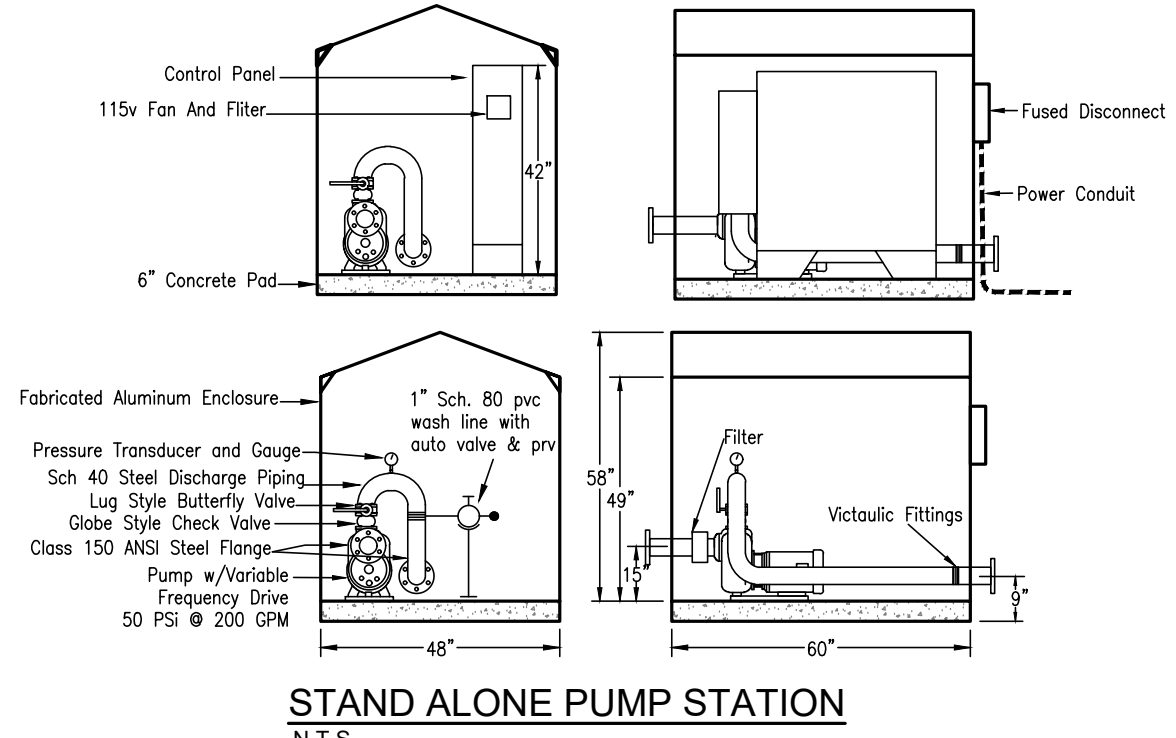
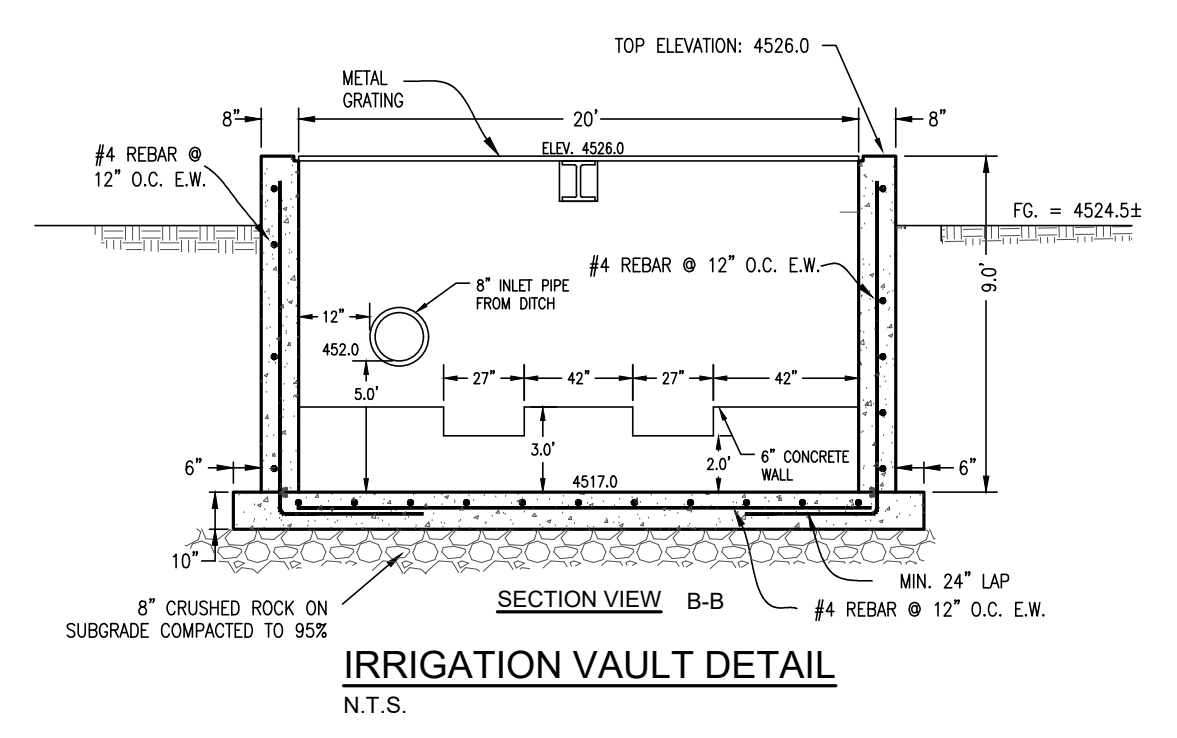
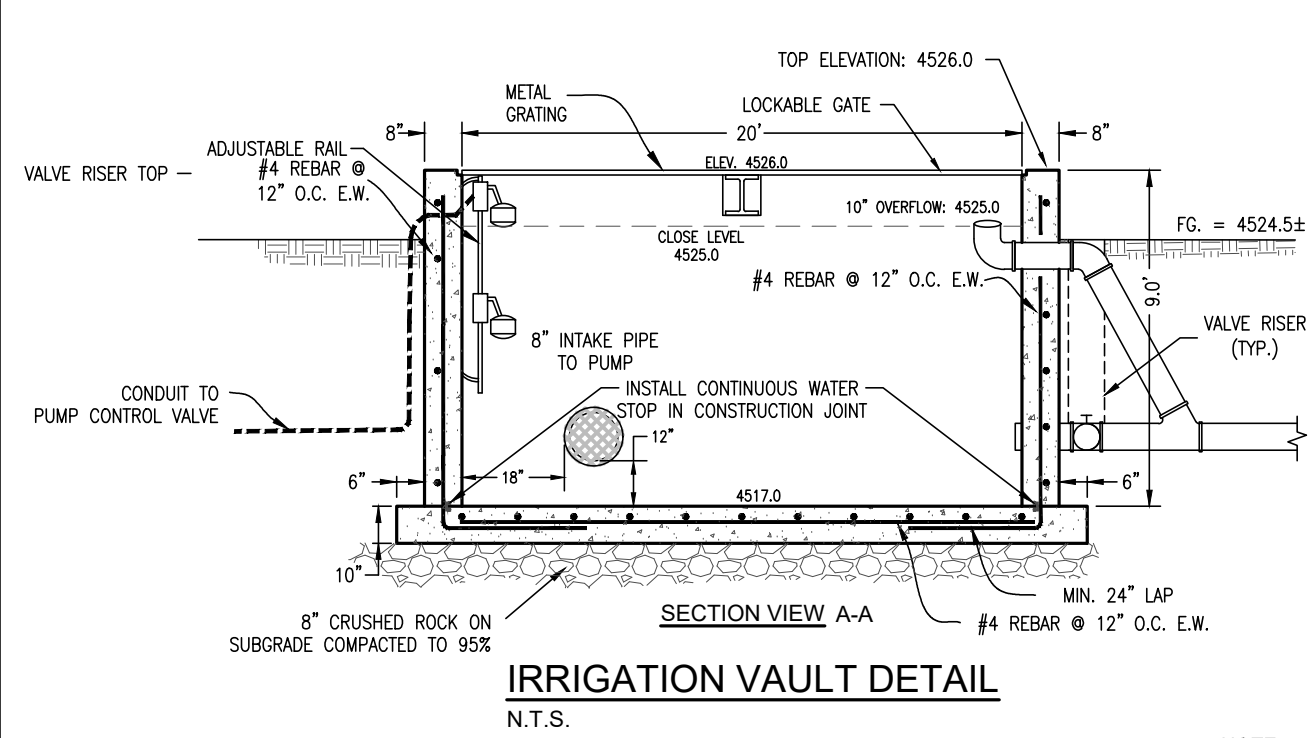
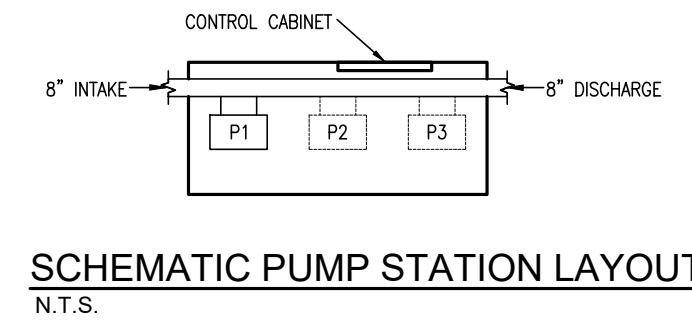
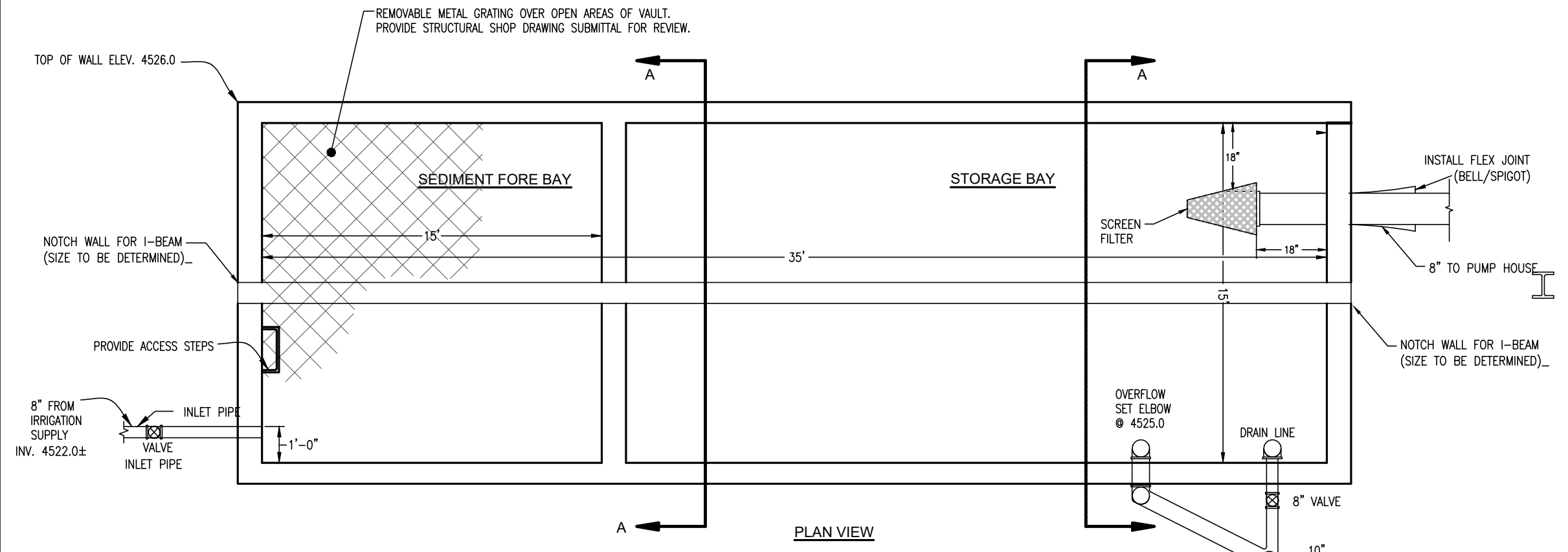
CITY OF FRUITA ENGINEERING DIVISION REPRESENTATIVE _____ DATE _____

NO.	DATE	REVISION	BY
1	04/20/18	REVISED PER REVIEW COMMENTS DATED 03/19/18	DLS
2	10/17/18	REVISED PER REVIEW COMMENTS DATED 09/05/18	KA

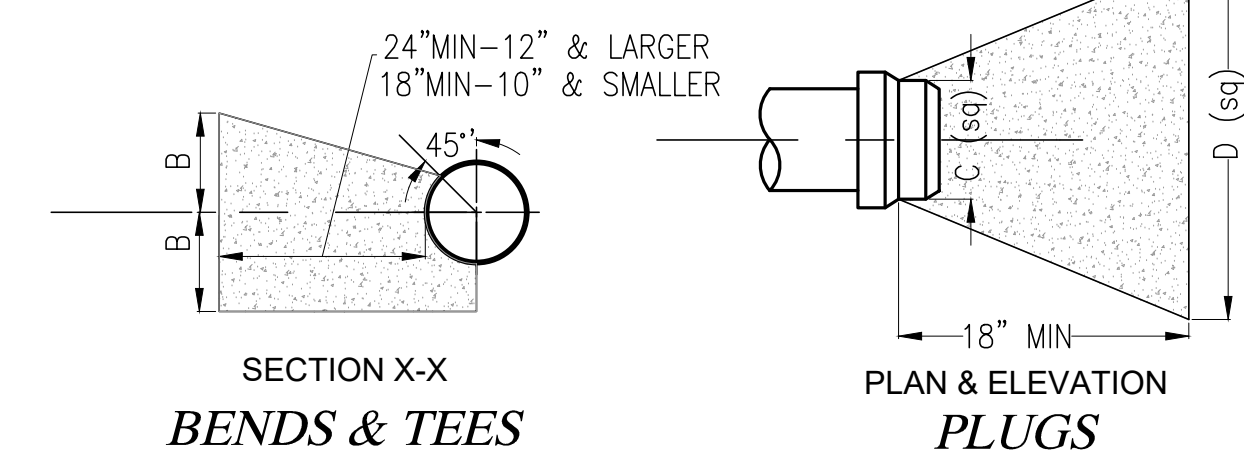
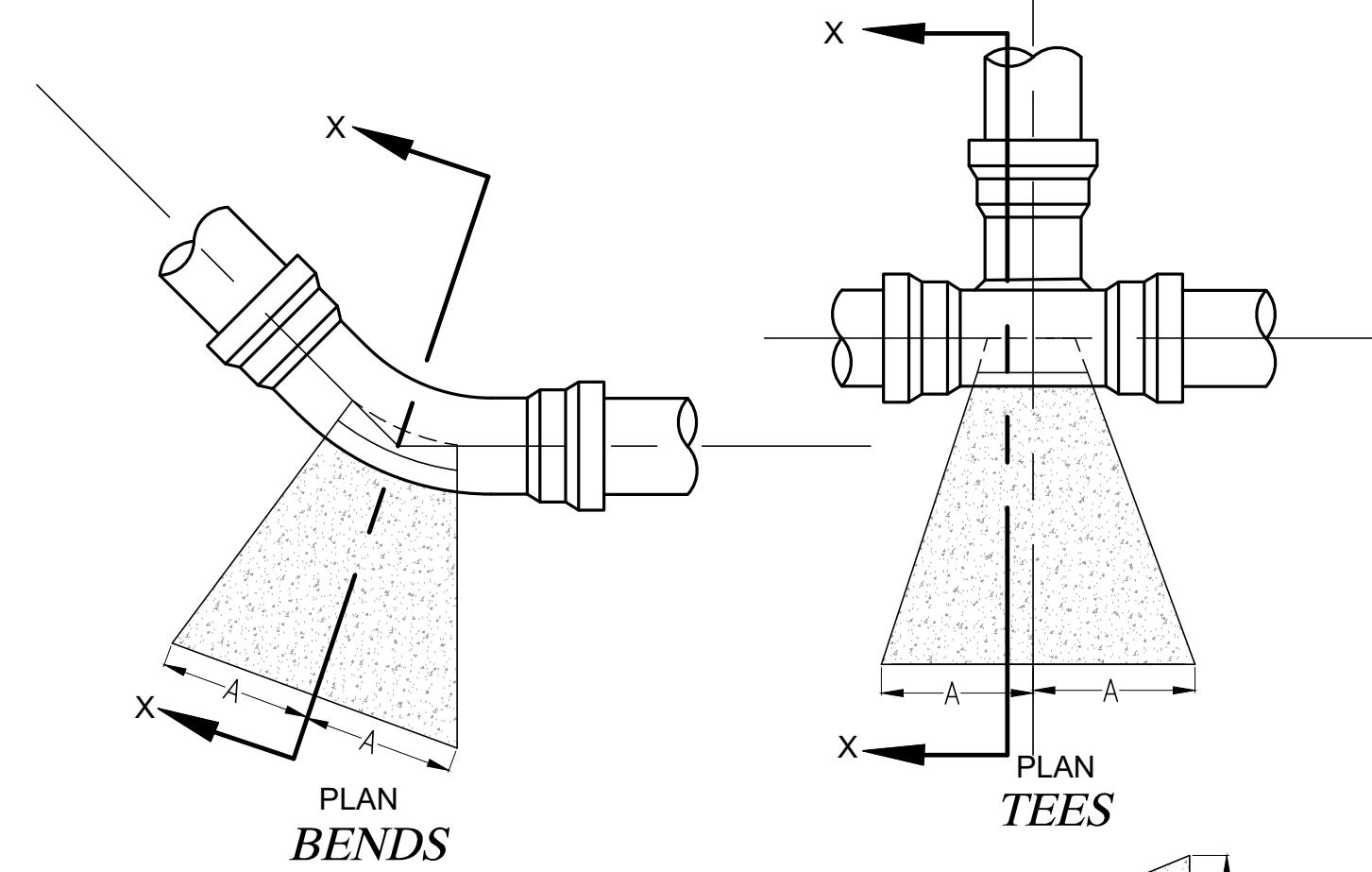
FOR REVIEW - NOT FOR CONSTRUCTION

Irrigation Details
Iron Wheel Subdivision
Filing 1
 953 19 Road
 Fruita, Colorado 81521

PROJECT NO: F10-053
 DATE: 02/27/18
 SCALE: n/a
 CAD ID: 6irr.dwg



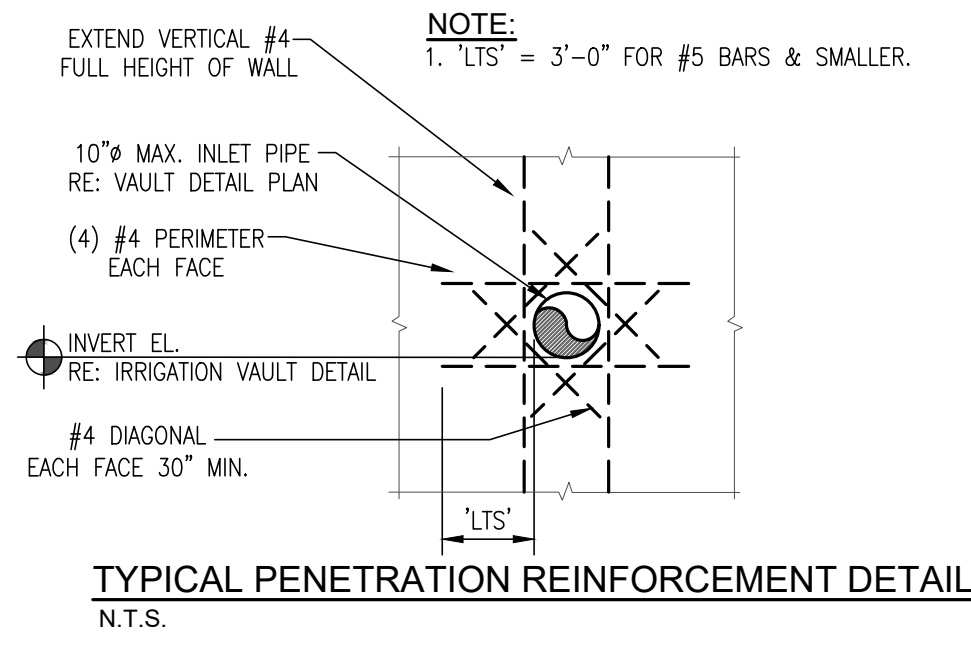
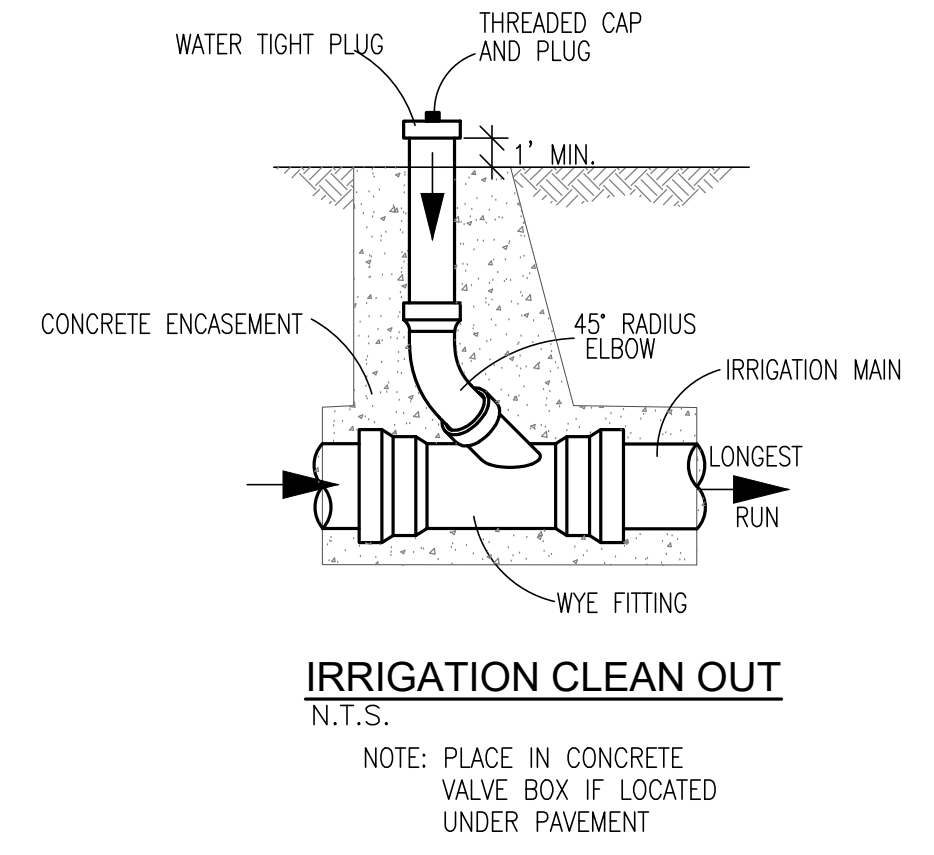
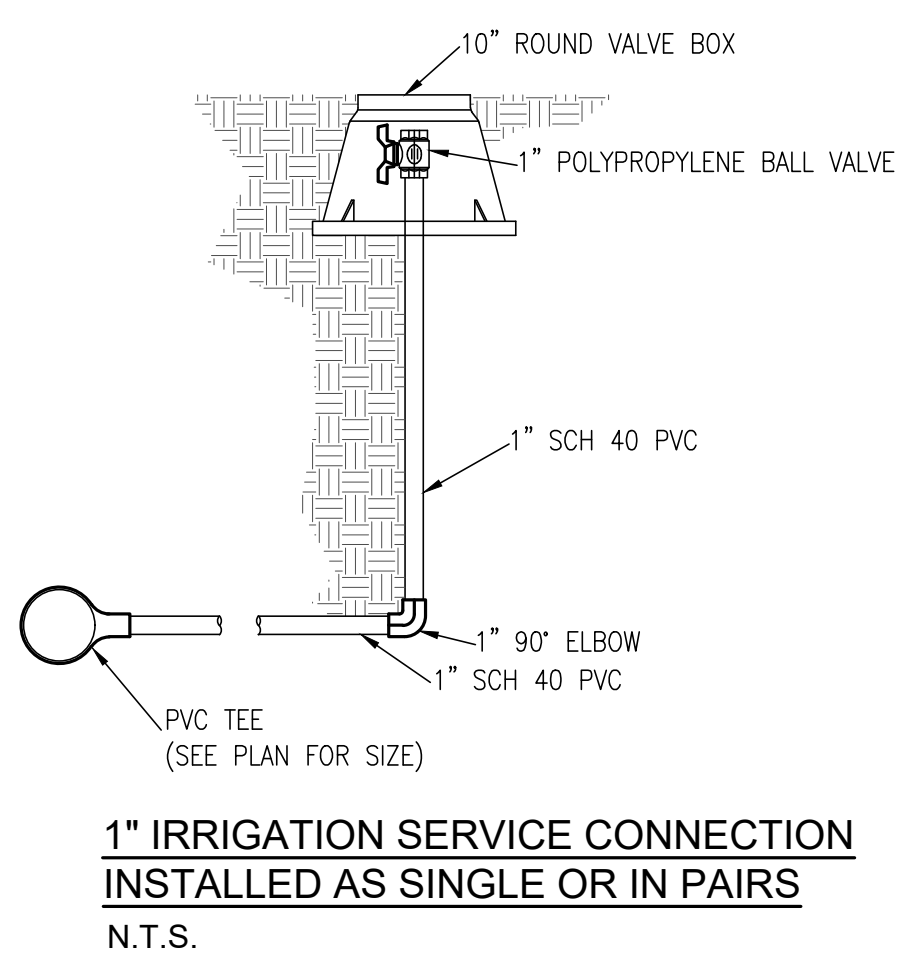
- NOTE:**
- PUMP SYSTEM TO BE INITIALLY SIGNED FOR FILING 1.
 A SECOND PUMP TO BE ADDED FOR FILING 2 & 3
 A THIRD PUMP TO BE ADDED FOR FILING 4, 5 & 6.
 - PROVIDE PUMP OPERATION SCHEMATIC AND SHOP DRAWING FOR PUMPING FACILITY.



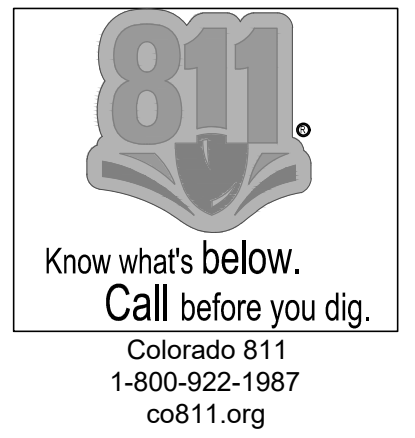
THRUST BLOCK SIZING

SIZE	90°		45°		22.5°		TEE'S		PLUGS	
	A	B	A	B	A	B	A	B	C	D
4"	5"	7"	4"	5"	2"	5"	5"	5"	7"	10"
6"	8"	10"	6"	8"	3"	8"	8"	8"	10"	15"
8"	12"	12"	8"	10"	5"	9"	9"	12"	12"	20"
10"	16"	14"	10"	12"	6"	10"	11"	14"	14"	25"
12"	19"	16"	12"	14"	8"	11"	14"	16"	16"	30"
14"	23"	18"	14"	16"	10"	12"	16"	18"	18"	34"
16"	26"	20"	16"	18"	11"	13"	18"	20"	20"	38"

ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND



LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.



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CITY OF FRUITA ENGINEERING DIVISION REPRESENTATIVE _____ DATE _____