



Alamogordo City Commission

NOTICE OF MEETING

Regular Meeting Agenda

June 14, 2022 - 6:30 PM
City Hall, City Commission Chambers
1376 E. Ninth St.

Susan L. Payne Mayor
Dusty Wright Mayor Pro -Tem, District 6
Nick Paul District 1
Stephen Burnett District 2
Karl Melton District 3
Josh Rardin District 4
Sharon McDonald District 5

Brian Cesar City Manager
Petria Bengoechea City Attorney
Rachel Hughes City Clerk

MISSION STATEMENT as Adopted by the City Commission on March 24, 1995.

The City of Alamogordo is a Municipal Corporation that exists solely for the purpose of providing the best possible services to our customers, the citizens of Alamogordo. We are committed to providing these services with honesty, integrity, compassion, fairness, and a commitment to excellence.

We are committed to the long-term financial stability and responsible growth of the City and all decisions will be driven by our commitment to provide the best services possible in a financially sound and responsible manner given the economic realities facing the City.

In accordance with Section 10-15-1.D, NMSA 1978 (2010 Cumulative Supplement), this agenda has been posted on the bulletin board located in the east/west lobby of the City Hall and in the glass case located outside of the north entrance of the City Hall, distributed to the appropriate news media, and posted on the City website: <http://ci.alamogordo.nm.us> within the required time frame. As a courtesy, the entire Agenda Packet has also been posted on the City of Alamogordo website: <http://ci.alamogordo.nm.us>

The Mayor and City Commission request that all cell phones be turned off or set to vibrate. Members of the audience are requested to step outside the Commission Chambers to respond to or to conduct a phone conversation. The Alamogordo Commission Chambers is wheelchair accessible. Other special assistance for disabled attendees must be requested 48 hours in advance by contacting the City Clerk's Office at 575-439-4100.

CALL TO ORDER & ROLL CALL

Announce the presence of a Quorum.

INVOCATION & PLEDGE OF ALLEGIANCE

APPROVAL OF AGENDA

PRESENTATIONS

1. Presentation on overview proposal of Sol Zia, Inc. (Bryan Porter, Sol Zia President)

2. Presentation on set up of a new Railroad Historical Park. (*Joe Lewandowski and Vernoica Ortega, Community Services Director*)
3. Presentation on the City's current debt profile. (*John Archuleta, Stifel Public Finance, and Chris Muirhead, Modrall Sperling*)

PUBLIC COMMENT

Residents must sign up with the City Clerk to address the City Commission. Comments are limited to 3 minutes, and there will be a maximum of 21 minutes allowed for Public Comment.

CITY MANAGER'S REPORT

REMARKS AND INQUIRIES BY THE CITY COMMISSION

CONSENT AGENDA (Roll Call Vote Required for an Ordinance or Resolution)

All matters listed under the Consent Agenda are considered to be routine by the City Commission and will be enacted by one motion. There will not be separate discussion of these items. If discussion is desired, that item will be removed from the Consent Agenda and will be considered separately.

4. Approve the minutes for the May 24, 2022, Regular meeting. (*Rachel Hughs, City Clerk*)
5. Approve the statements related to the Executive Closed Session held on May 24, 2022. (*Rachel Hughs, City Clerk*)
6. Consider, and act upon, adoption and final publication of Ordinance 1650 amending sections of Chapter 17, Article 17-08 Peddlers and Solicitors of the Alamogordo Code of Ordinances to remove door-to-door licensing for commercial solicitors. (*Rachel Hughs, City Clerk*) **(Roll Call Vote Required)**
7. Consider, and act upon, Resolution 2022-29 requesting written approval from the Local Government Division of the Department of Finance and Administration, State of NM for the revised budget numbers computed as of June 14, 2022. (*Evelyn Huff, Finance Director*) **(Roll Call Vote Required)**
8. Consider, and act upon, approving the award of RFQ 2022-04 Professional Services to Update Various Code Ordinance for the City of Alamogordo to NM Local Government Law, LLC. (*Nancy Beshaler, Public Works Director*)
9. Consider, and act upon, approving the award of RFP 2022-010 Auditing Services to Carr, Riggs and Ingram. (*Evelyn Huff, Finance Director*)
10. Consider, and act upon, acceptance of a \$50,000 appropriation agreement from NM Department of Finance and Administration to Alamogordo Police Department to purchase and equip vehicles. (*Richard Denton, Police Chief*)
11. Consider, and act upon, acceptance of a \$65,000 appropriation agreement from NM Department of Finance and Administration to Alamogordo Police Department to purchase and equip vehicles and department equipment. (*Richard Denton, Police Chief*)
12. Consider, and act upon, acceptance of a \$100,000 appropriation agreement from NM Department of Finance and Administration to Community Services for park surveillance equipment. (*Veronica Ortega, Community Services Director*)
13. Consider, and act upon, acceptance of a \$50,000 appropriation agreement from NM Department of Finance and Administration to Community Services for playground ground cover and borders. (*Veronica Ortega, Community Services Director*)

ITEMS REMOVED FROM CONSENT AGENDA

NEW BUSINESS

14. Consider, and act upon, first publication of Ordinance 1651 Case Z-2022-0001(A), a map amendment to remove the condition that was placed on the property in 1998. Property located at 1001 Scenic Dr. was rezoned from R-1 Single Family Dwelling to C-1 Neighborhood Business Case 1998-0574(A), with the condition that property could only be used as an ATM machine location. *(Stella Rael, City Planner)* **(Roll Call Vote Required)**
15. Consider, and act upon, the final plat for Case S-2022-0008(A) Somerset Subdivision. *(Stella Rael, City Planner)*
16. Consider, and act upon, first publication of Ordinance 1652 amending Section 3-1 of the Alamogordo Code of Ordinances concerning Compensation in the Employee Manual. *(Kim Torres, HR Director)* **(Roll Call Vote Required)**
17. Consider, and act upon, approval of Resolution No. 2022-28 adopting the revised Technical Standards as minimum requirements for the design and construction of subdivisions, City utilities, streets, and improvements inside the public right-of-way. *(Nancy Beshaler, Public Works Director and Rusty Payne PE, Smith Engineering Company)* **(Roll Call Vote Required)**
18. Appointments to Boards and Committees. *(Susan Payne, Mayor)*

EXECUTIVE SESSION (Roll Call Vote Required)

19. Adjourn into Executive Closed Session in compliance with 10-15-1(H)(8) NMSA (as amended) to discuss a land swap of disposal of real property of 200 South Florida and acquisition of right-of-way, South of Highway 70 West of Airport. (Roll Call Vote Required)

ADJOURNMENT

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/02/2022

Report No: 1.

Submitted By: Rachel Hughs

Subject: Presentation on overview proposal of Sol Zia, Inc. *(Bryan Porter, Sol Zia President)*

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: Presentation only.

Background: Mr. Porter is presenting an overview of Sol Zia Inc.



City of Alamogordo City Commission Meeting AGENDA REQUEST FORM

Today's Date: May 31, 2022

**Request Date
of Meeting:**

June 14, 2022

Name and Title:

Bryan Porter, President

Address:

PO Box 691

Alamogordo, NM

ZIP 88311

Phone Number:

(575) 551-4332

E-Mail Address:

info@solzia.net

Item requested will be for Information only

Brief description of topic to be discussed:

**Please attach one original of any documents pertaining to the topic -
We do not allow handouts at the meeting**

(3) pages of supplements attached

Signature: 

Please return to:

**Rachel Hughs, CMC, City Clerk
City of Alamogordo
1376 E. 9th Street
Alamogordo, NM 88310**

Phone: (575) 439-4100

Fax: (575) 439-4396

E-mail: rhughs@ci.alamogordo.nm.us

Sol Zia, Inc.
PO Box 691
Alamogordo, NM 88311
(575) 551-4332

May 31, 2022

Rachel Hughs
City Clerk
City of Alamogordo
1376 E. 9th St.
Alamogordo, NM 88310

RE: Water / Wastewater Infrastructure Expansion & Upgrade Proposal

Members of the Commission:

I come before you as both a regional business owner and City of Alamogordo resident. I am providing the following overview of my proposal, and requesting an opportunity to appear at the next City Commission meeting to dialogue about the same. My goal for this first appearance is merely to expand my previous technical dialogue with Mr. Nunnelley to one that introduces the non-technical concerns and disposition of the Commission, so that I can concretely establish the interest level of the City.

Proposal Overview

Sol Zia, Inc. is attempting to bring a new commercial activity to the Alamogordo area. The activity is focused on agri-tourism, and aims to serve the stated public benefit mission of the Sol Zia PBC. This agri-tourism project is intended to provide the following public benefits:

- *Economic growth for the community via increased destination tourist traffic*
- *Economic growth for the community via new job creation*
- *Increased tax revenues for local, regional, and city governments*
- *New local, sustainable food production*
- *Net benefit to the area groundwater via increased recharge of the resource*
- *Climatic benefit via increased vegetation and atmospheric oxygenation*
- *New utility infrastructure to better position the City for future service expansion*
- *Increased residual revenue for the City via new utility services*
- *Net environmental improvement to groundwater and soil via future reductions in undertreated wastewater*
- *Improved future groundwater management through increased centralized and regulated use*
- *Additional reclaimed water supply available to the City for the golf course, parks, etc.*

The property for this activity has already been purchased, and was specially selected because of its proximity to the Alamogordo WWTP, the plant's current effluent surface discharge location, and the property's adjacency to the Alamogordo city limits.

Project Cost / Funding

The greatest strength of this proposal is the myriad public benefits available, particularly for the City, at **NO** cost to local taxpayers. Because this project will benefit natural resources, local government, and the public good as a whole, **Federal** funds are available to cover the **full** cost of the infrastructure expansion and improvements.

Timeline

Because of the nature of this project, and the benefits it offers, the typical bureaucratic delays that would normally be present are significantly reduced. This project qualifies for special "fast-track" provisions in the current Federal funding regulations. Moreover, this project has already received support from the Office of the State Engineer, NM Department of Environment, and the USDA. The fast-track benefits currently available to this project do require prompt application action.

Application

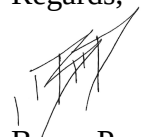
Sol Zia is prepared to handle as much or as little of the application process as the City desires, at no cost to the City.

Construction

Sol Zia is prepared to handle as much of the construction process as the City desires, at no cost to the City.

I look forward to speaking with you, and answering any questions that you may have about this proposal.

Regards,



Bryan Porter, President
Sol Zia, Inc.
(575) 551-4332
info@solzia.net

Otero County
Detention Center

Animal Shelter

Dr M.L.K. Jr. Dr

Dr M.L.K. Jr. Dr

Airport Ave

Airport Ave

Airport Ave

Sewer Access

WWTP

Bluemont Rd

Bluemont Rd

Airport Rd

Airport Rd

RD Jodija

Alamogordo-White
Sands Regional
Airport

8500'

6700'

City Limit →

1200'

Discharge

**Subject
Property**

Camino del Norte

Camino Valle Verde

Cam Ranchito

Cam Del Sur

Camino Bonita Vista

Stonewood Dr

Darnold

54

54

54

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/06/2022

Report No: 2.

Submitted By: Rachel Hughs

Subject: Presentation on set up of a new Railroad Historical Park. (*Joe Lewandowski and Vernoica Ortega, Community Services Director*)

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: Presentation only.

Background:



City of Alamogordo City Commission Meeting
AGENDA REQUEST FORM

Today's Date: June 6, 2022

Request Date
of Meeting:

June 14, 2022

Name and Title:

Joe Lewandowski

Address:

1102 24th Street

Alamogordo, NM

ZIP 88310

Phone Number:

(575) 430-8989

E-Mail Address:

opconsultants@yahoo.com

Item requested will be for Information only

Brief description of topic to be discussed:

Please attach one original of any documents pertaining to the topic -

We do not allow handouts at the meeting

Presentation on the set-up of new Railroad
Historic Park - update Commission and Public
on the new Park exhibit.

Signature: 

Please return to:

Rachel Hughs, CMC, City Clerk
City of Alamogordo
1376 E. 9th Street
Alamogordo, NM 88310

Phone: (575) 439-4100

Fax: (575) 439-4396

E-mail: rhughs@ci.alamogordo.nm.us

CITY OF ALAMOGORDO

RAILROAD PARK

Designed by Joe Lewandowski

May 2, 2022

Attached is a design and with attachments for consideration of the development of a new historical site within Alamogordo. In 2020, Alamogordo MainStreet received a grant from Union Pacific Foundation in the amount of \$25,000 that pays tribute and highlights this early railroad history of Alamogordo. The project was placed on hold due to the Covid issues that we have been living through the last two years. With that somewhat behind us now it is time to get this project back on track and completed.

Prior to the delay, the MainStreet personnel, Tularosa Basin Historical Society and the City of Alamogordo staff had started preliminary concepts and designs. MainStreet was looking to landscape and place historical items photos, storyboards, and artifacts on the "island" where the water tank is currently located. The City and TBHS has both taken the position that to locate something of this nature on the island would be a public hazard due to the automotive traffic and also the tracks location adjacent to the property. That position has not changed. With that said, I am attaching a design and attachments for consideration, that all partners may want to support. If this is the design that MainStreet, City and TBHS wished to support, then we would need to contact Union Pacific to insure the project will be funded by the grant.

The location of the project would be relocated to the southeast corner of Alameda Park. This location is still in a prominent location to be seen by all and adjacent to the water tower and historical railroad activities. Attachment A is a Google image showing both properties; water tower and Alameda Park.

The park design drawing is Attachment B. The location has great advantages for the public, parking within the Zoo parking areas and no crossing of traffic or railroad tracks. This portion of the park is historical, going all the way back to the founding of Alamogordo by the Eddy Brothers, the railroad guys. The property is larger and with no obstructions, allowing us to utilize the whole property. The park is located behind the marble pillars with chain link connecting these pillars. These are original, constructed during the founding of this park along with the oldest zoo in the southwest.

The entrance to the park would be on the northeast corner of the property, connected directly to the parking lots. As people enter the park on the concrete sidewalks and patios, they will first view the historical semaphore that was utilized at the Alamogordo Depot. Attachment C is an example of a semaphore (track switch/signal). Attachment D is the unit in place at the second depot located in Alamogordo. This unit was donated to the Tularosa Basin Historical Society a couple of years ago from a gentleman from Belen. The unit is complete with all parts, ready to install.

Going to their right they will observe an excursion car similar to what was used on rails going to Cloudcroft, taking tourists up to the cooler temperatures (similar to today in their cars). Attachment E is a historical photograph of the excursion cars utilized in this area. I have found a one (Attachment F) in the salvage yard of the Cumbres & Toltec Scenic Railroad and have been in contact with them. They are considering allowing us to acquire this excursion car. It is an 80% replica of the ones we had, but not exact. We would make the necessary modifications to replicate the historical photograph (Attachment E) including numbering to "62".

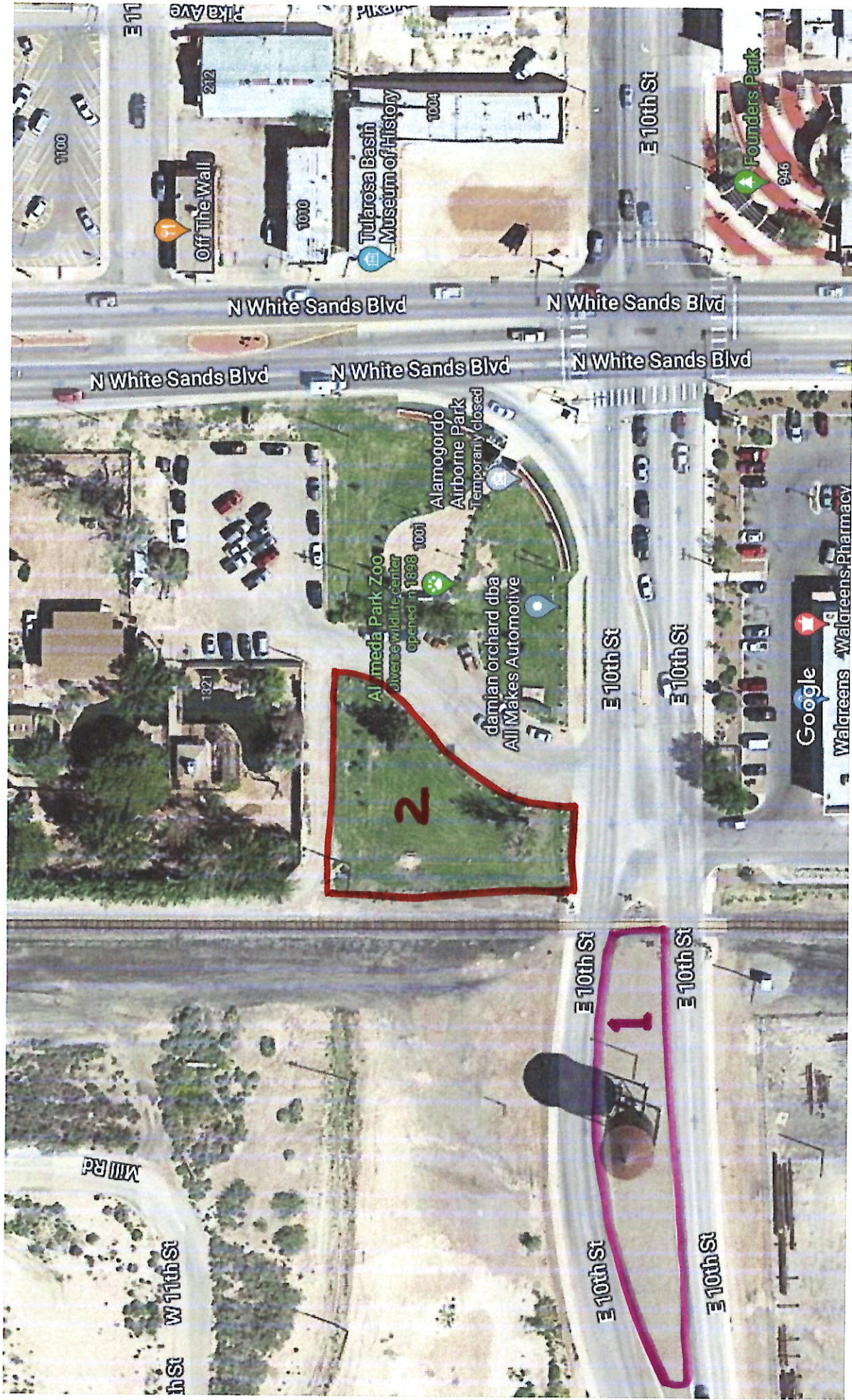
Continuing around the patio there will be historical pillars with photographs and storyboards telling the history. This is common in many parks, but we are going to be unique. Due to the location of this park, we are in the center of where the activities occurred. So when you standing at the first pillar, looking northwest, you will be looking at the old sawmill. This pillar will have the history of that activity. Going the next pillar you will again be looking in the direction of other railroad facilities that no longer exist, but we have photographs. So you can see what did exist. Next pillar is the ice plant, then the railroad maintenance facilities and sidetracks, and then the railroad tie factory, manufacturing the ties needed and so on. This corner of Alamogordo is the most photographed due to all the excitement going on here. Each pillar takes you back in time to what was. Other signage will provide more stories and photographs on the importance of the railroad. Let's face it, no railroad --- no Alamogordo.

In the center of the patio, we will place another historical structure that no longer exists; we would recreate this piece of history. The water fountain was an attraction seen as passengers exited the depot to visit Alamogordo or on their lay over. The water fountain told the visitor, there is water in the middle of this desert. When you walked out of the depot, you saw a modern town with everything right there; hotels, restaurants, stores, beautiful park and zoo. An oasis in the middle of the desert, thanks to the railroad.

Another display will be a beautiful historical piece of metalwork art created by Larry Berry, a local business owner – Basin Pipe & Metal (Attachments I, J & K). The photographs I have attached don't do it justice, you have to see it in person. In the work are components and events from the Basin, the railroad, the Mexican Trestle, forestry, ranching, stealthy, Avis Building, St Francis Church, Space Hall, space shuttle, original entrance to zoo, old water tower that used to be at the blind school and more. It is 16 feet long and 9 feet tall sitting on the ground. This piece was created in 1998 and was in the Centennial Parade celebrating Alamogordo's one hundredth birthday.

Landscaping and benches would also be improved in the area. The entrance to Alamogordo has made great strides throughout the last decade, with Airborne Memorial Park, Founders Park, great improvements to the Alameda Zoo and the restoration of the Plaza into the Tularosa Basin Museum of History. But let us not forget all the great work of the MainStreet merchants along with the Flickenger Performance Arts Theater.

I will be at your meeting of the MainStreet Merchants on May 10th to discuss and answer any questions. If you would like talk any time, just contact me at (575)430-8989 or opconsultants@yahoo.com.



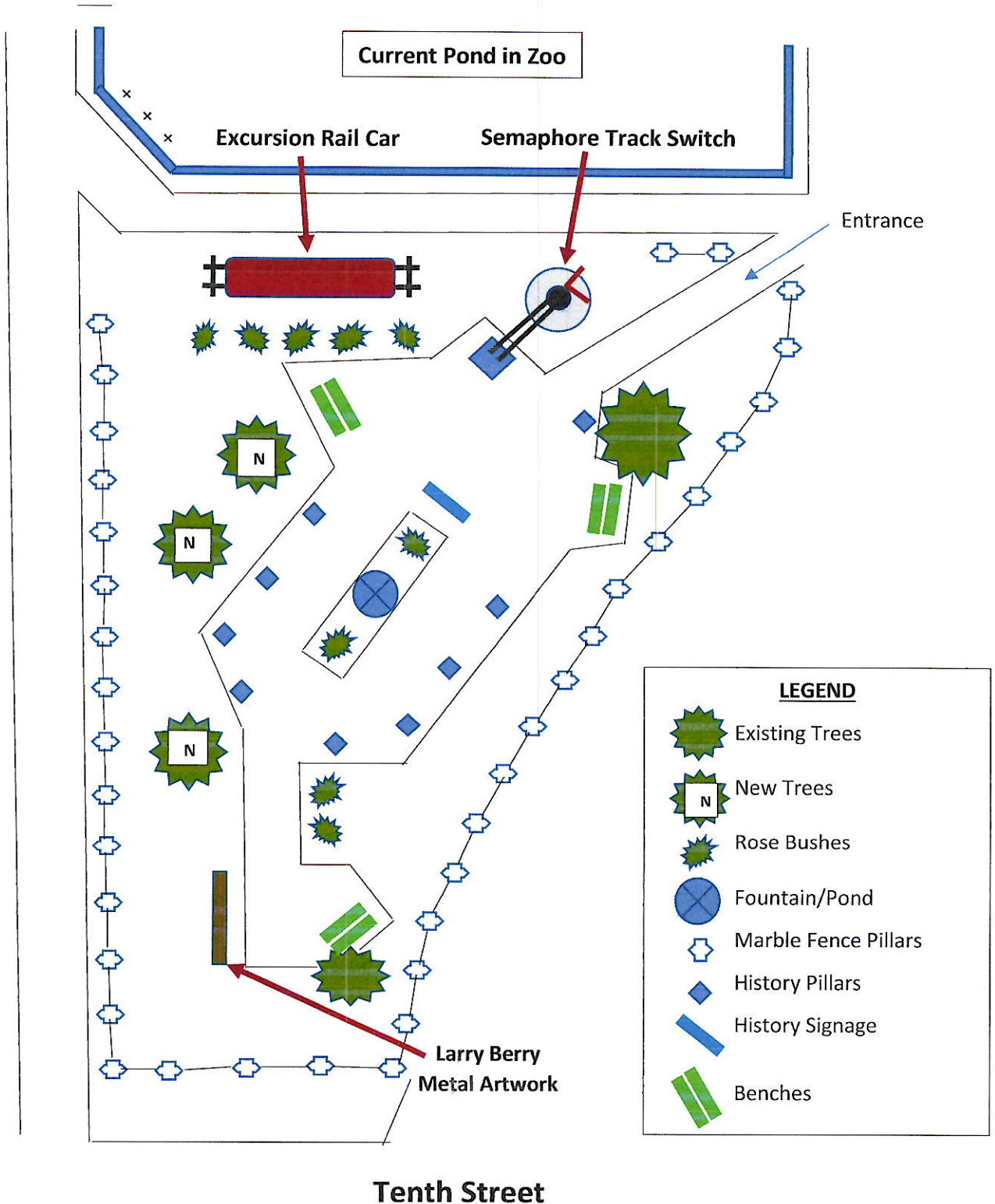
1 Railroad "Island"

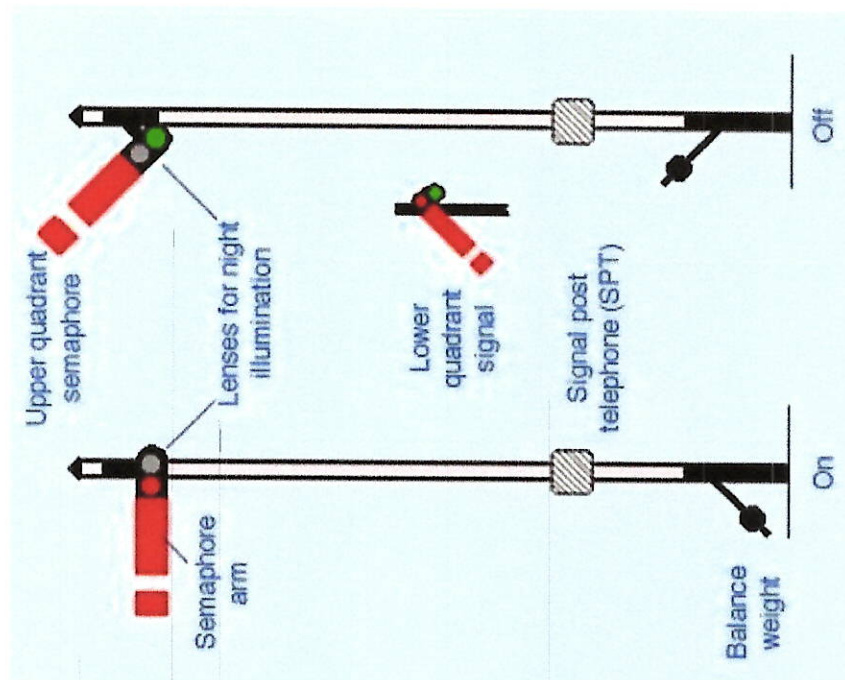
2 Proposed Site

(D)

CITY OF ALAMOGORDO RAILROAD PARK

Designed by Joe Lewandowski





Semaphor e



P4497

Description

Alamogordo railroad depot

①



Alamogordo & Sacramento Railroad ca 1900

P-1316

Description

Excursion train - 3 open cars & engine showing; cars filled with tourists, people beside train, a dog. Alamogordo & Sacramento Mountain train

Ⓔ





Entrance - Alameda Park

P-2340

Description

Alameda Park Entrance





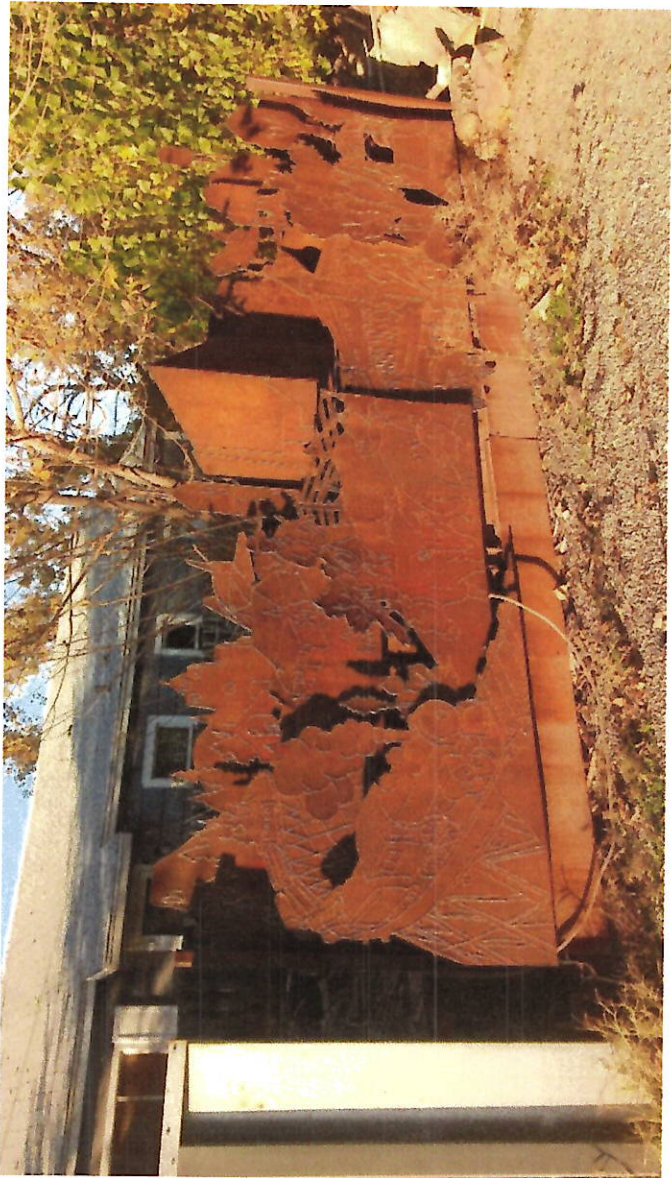
Southwestern Hotel and Alamogordo Depot

P-2241

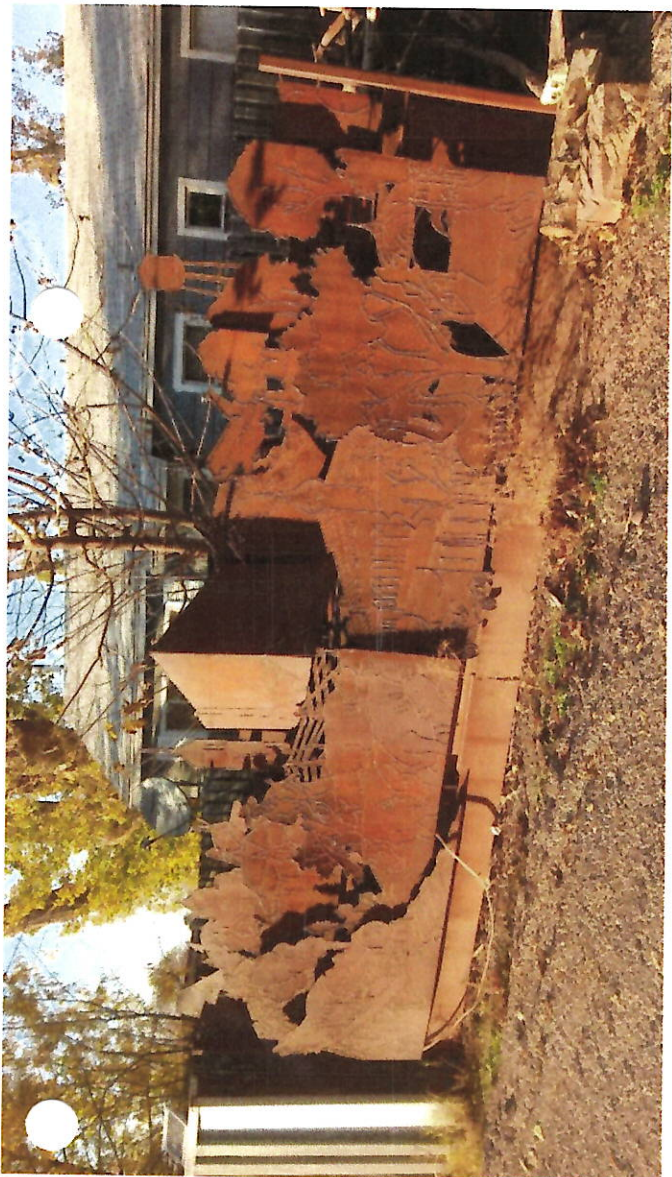
Description

Alameda Park entrance showing fountain Copy of old post card
Alamogordo depot on the right, Southwestern Hotel on left.

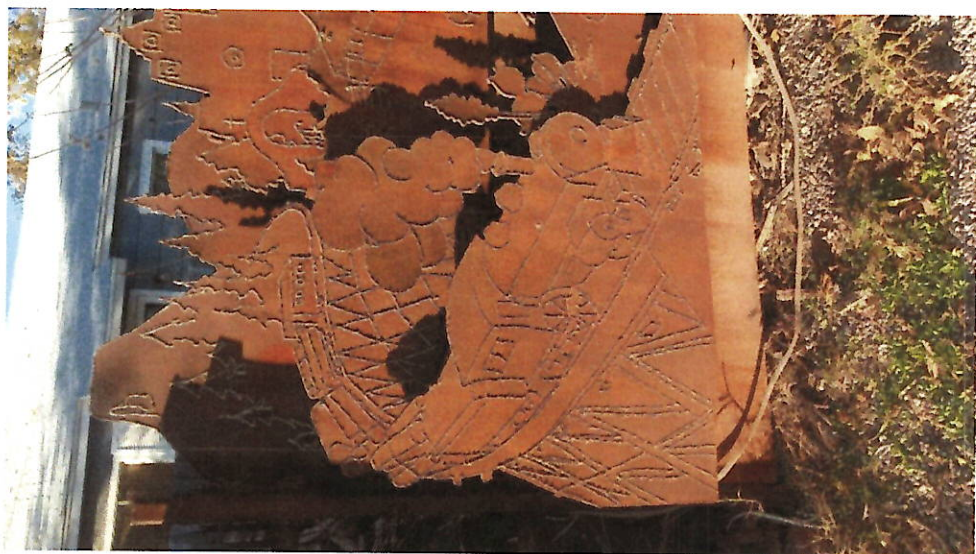




①



5



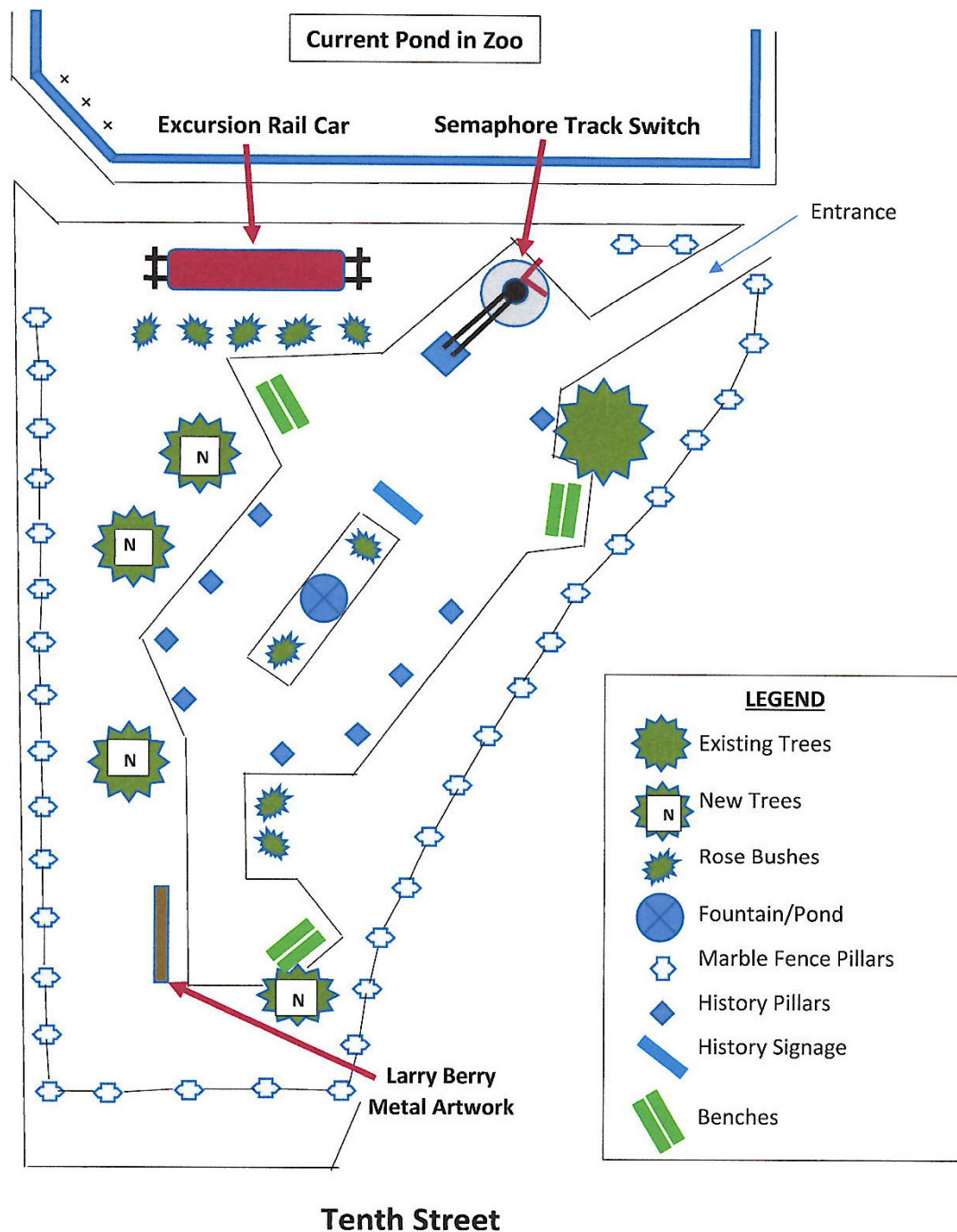




Railroad Historic Park

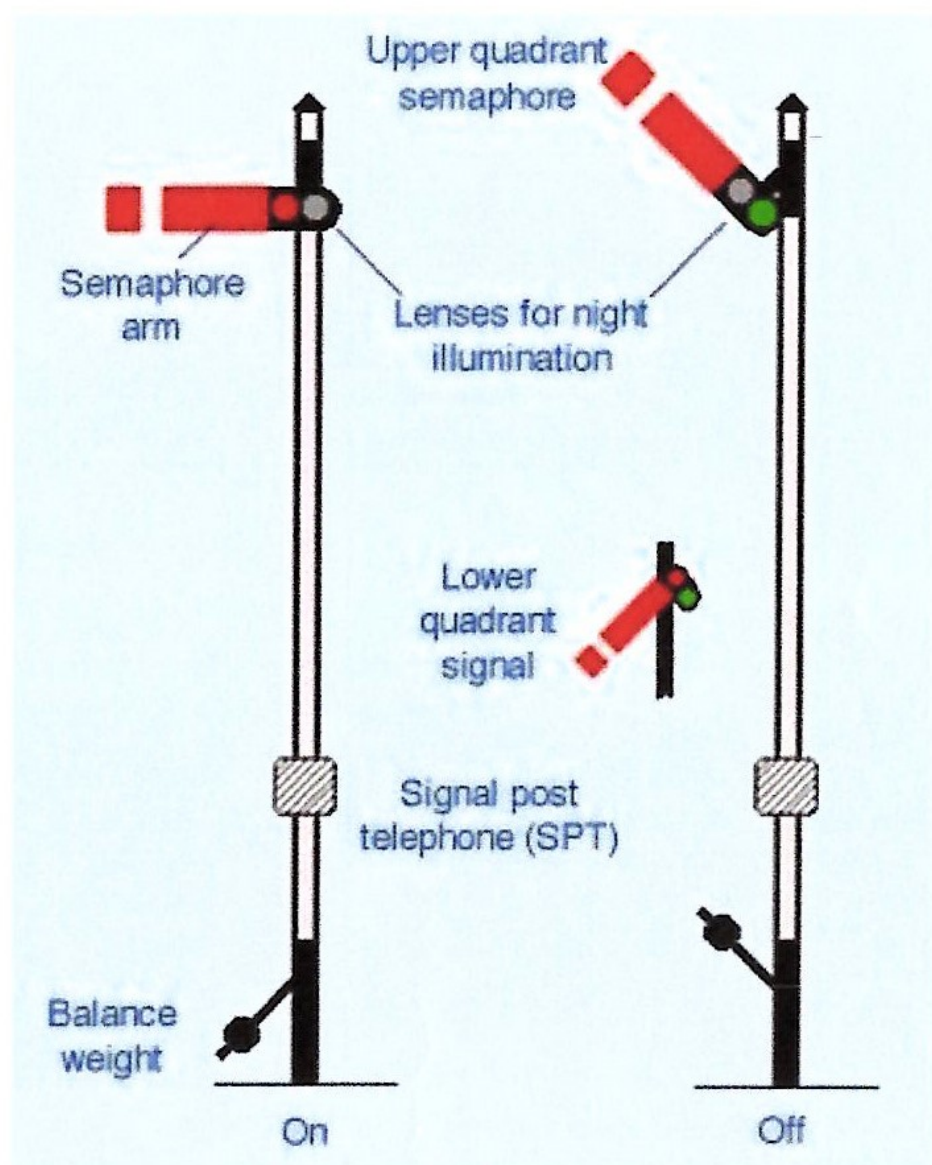
1 Railroad "Island"

2 Proposed Site



Railroad Historic Park Design

Partnership with:
City of Alamogordo
Alamogordo Main Street
Tularosa Basin Historical Society
Union Pacific





Alamogordo & Sacramento Railroad ca 1900

Excursion Car

Alamogordo & Sacramento Mountain RR

**Found In Chama the salvage yard
This unit if available would be restored
with volunteers and donations.**





**Water Fountain
Looking South to
the Depot and
Southwestern Hotel
1900**

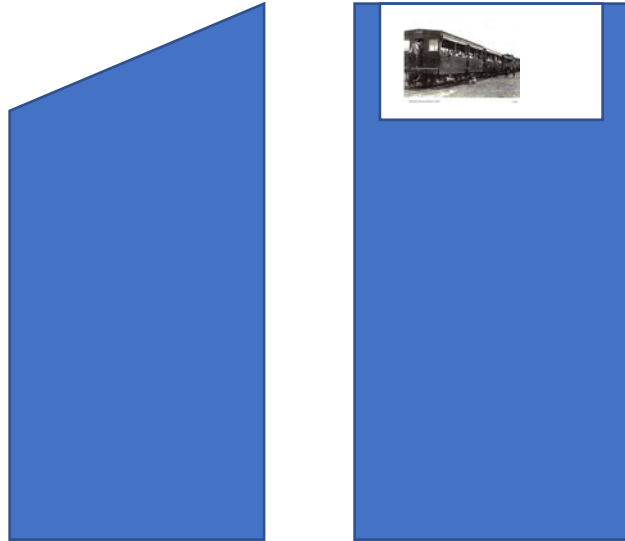
**Water Fountain at
the Entrance to the
Alameda Zoo
1900**



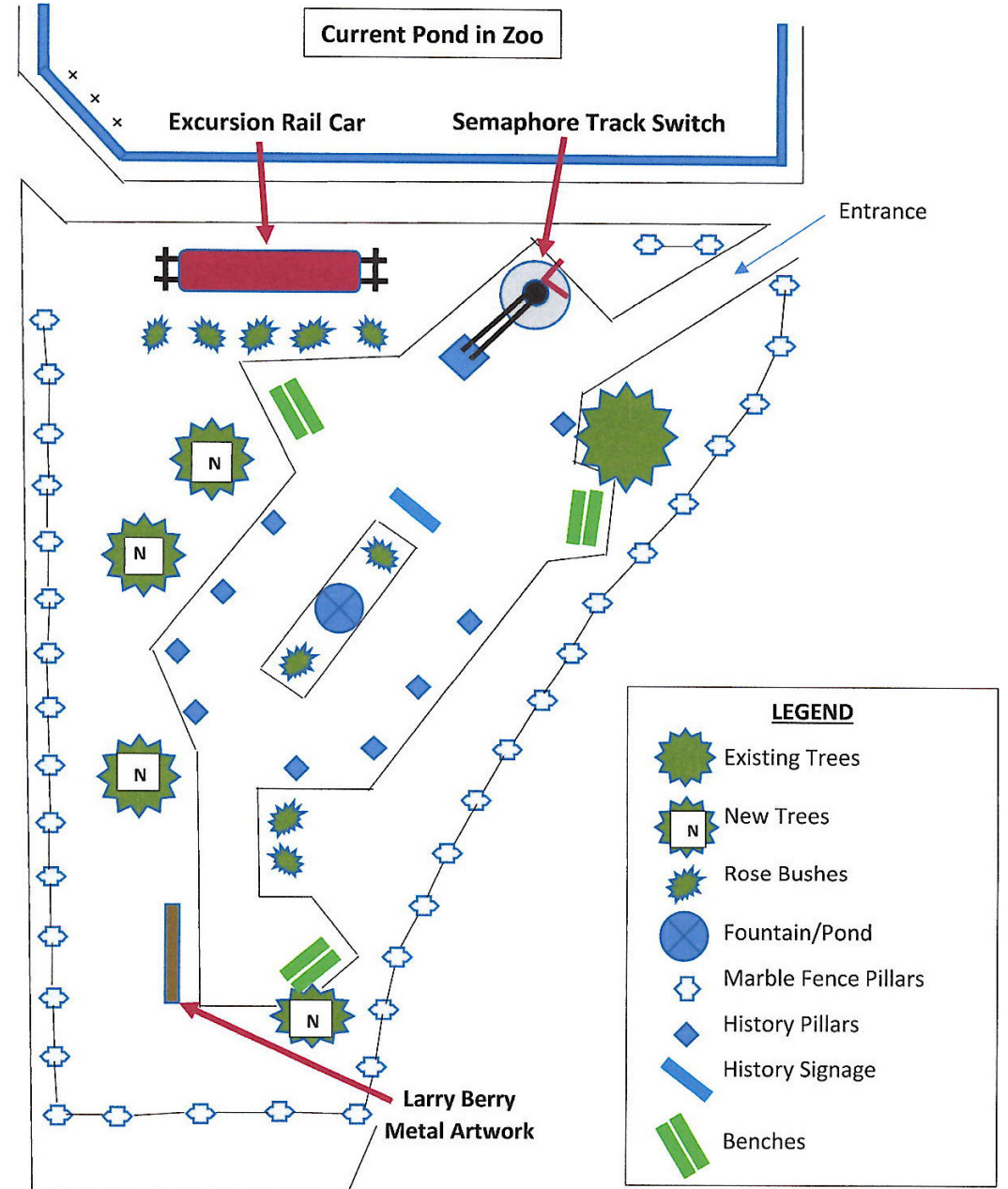


Larry Berry's Metal Artwork Images of the Basin





Historical Photographs and Storyboards Pillars



AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/10/2022

Report No: 3.

Submitted By: Evelyn Huff

Subject: Presentation on the City's current debt profile. (*John Archuleta, Stifel Public Finance, and Chris Muirhead, Modrall Sperling*)

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation:

Background: John Archuleta of Stifel Public Finance and Chris Muirhead of Modrall Sperling will present the current status of the City of Alamogordo's debt profile.



CITY OF ALAMOGORDO, NM

Historical Data & Debt Profile

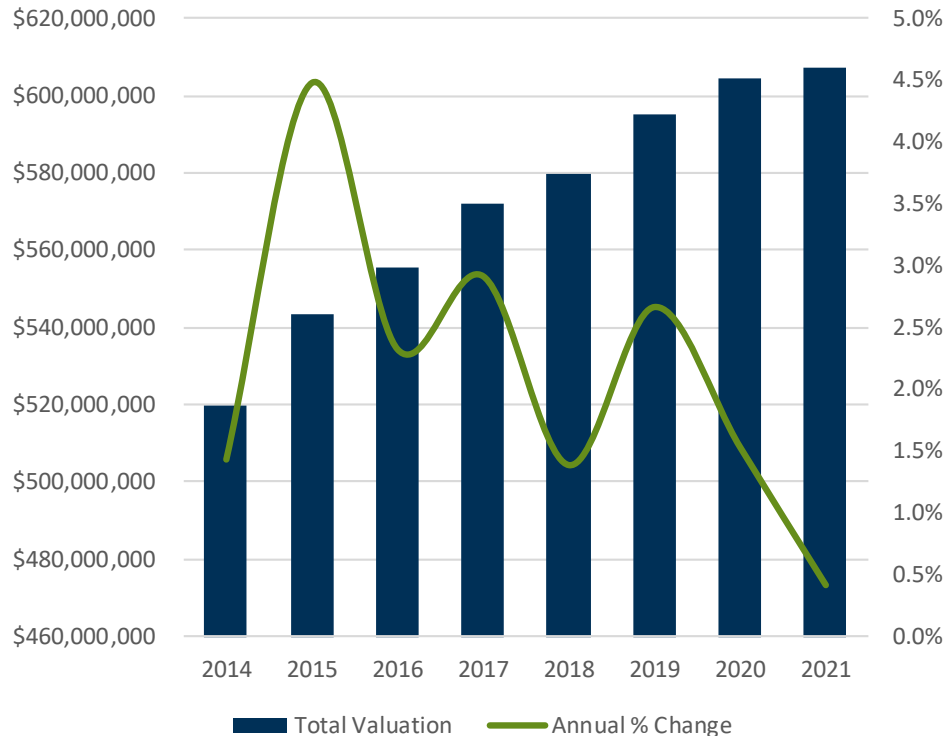
June 2022

6565 Americas Parkway NE, Suite 860
Albuquerque, NM
(505) 336-2065

STIFEL | Public Finance

G General Obligation Data & Debt Profile

Historical Assessed Valuation



City of Alamogordo, New Mexico				
Tax Year	Residential	Non-Residential	Total Valuation	Annual % Change
2014	\$384,950,854	\$134,888,017	\$519,838,871	1.4%
2015	398,054,488	145,041,818	543,096,306	4.5%
2016	409,941,499	145,773,740	555,715,239	2.3%
2017	418,328,441	153,569,793	571,898,234	2.9%
2018	427,050,088	152,787,039	579,837,127	1.4%
2019	433,935,803	161,347,553	595,283,356	2.7%
2020	443,064,644	161,332,354	604,396,998	1.5%
2021	449,043,362	157,881,467	606,924,829	0.4%

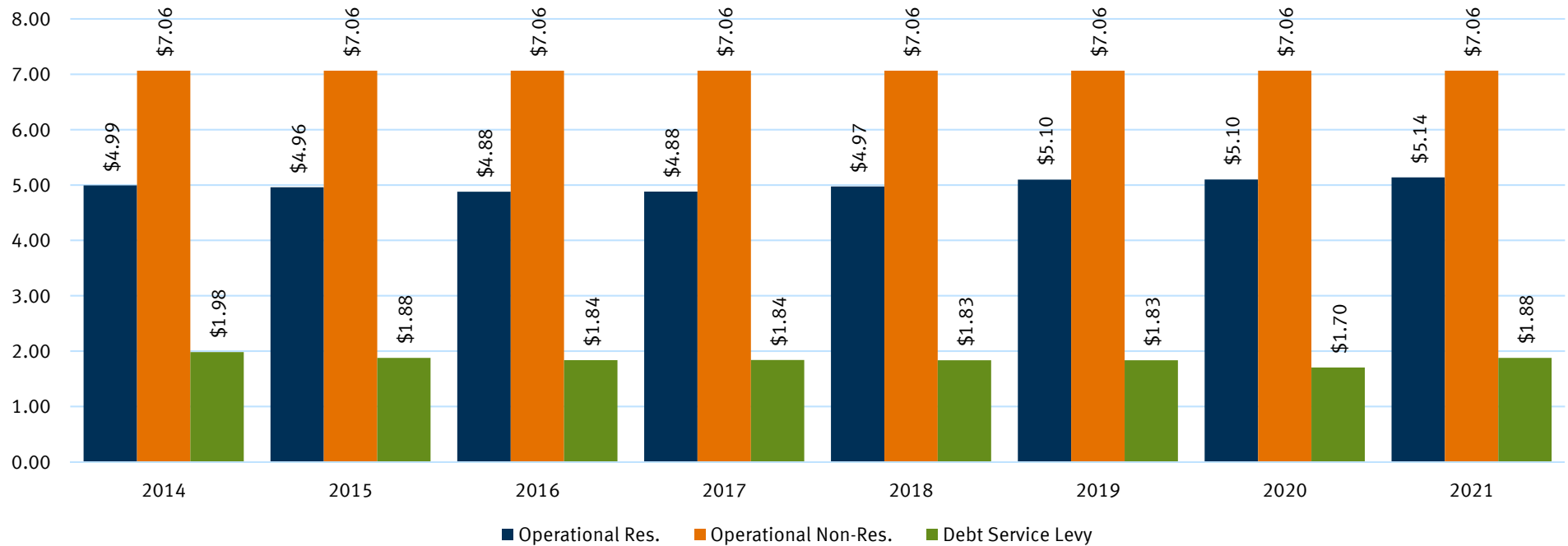
General Obligation Bonding Capacity

2021 Final Limitation (4% of \$606,924,829)	\$24,276,993
Less: Outstanding G.O. Debt (As of 1/1/2022)	14,190,000
Additional G.O. Bonding Capacity	\$10,086,993

City's Authorized but Unissued Bonds **\$0**

Year End	Additional Capacity
Current	\$10,086,993
2022	10,741,993
2023	11,456,993
2024	12,231,993
2025	13,066,993
2026	13,966,993
2027	14,941,993
2028	15,981,993
2029	17,096,993
2030	18,331,993
2031	19,666,993
2032	21,101,993
2033	22,646,993
2034	24,276,993

Historical Mill Levy Tax Rates (\$1/\$1,000 of Assessed Valuation)

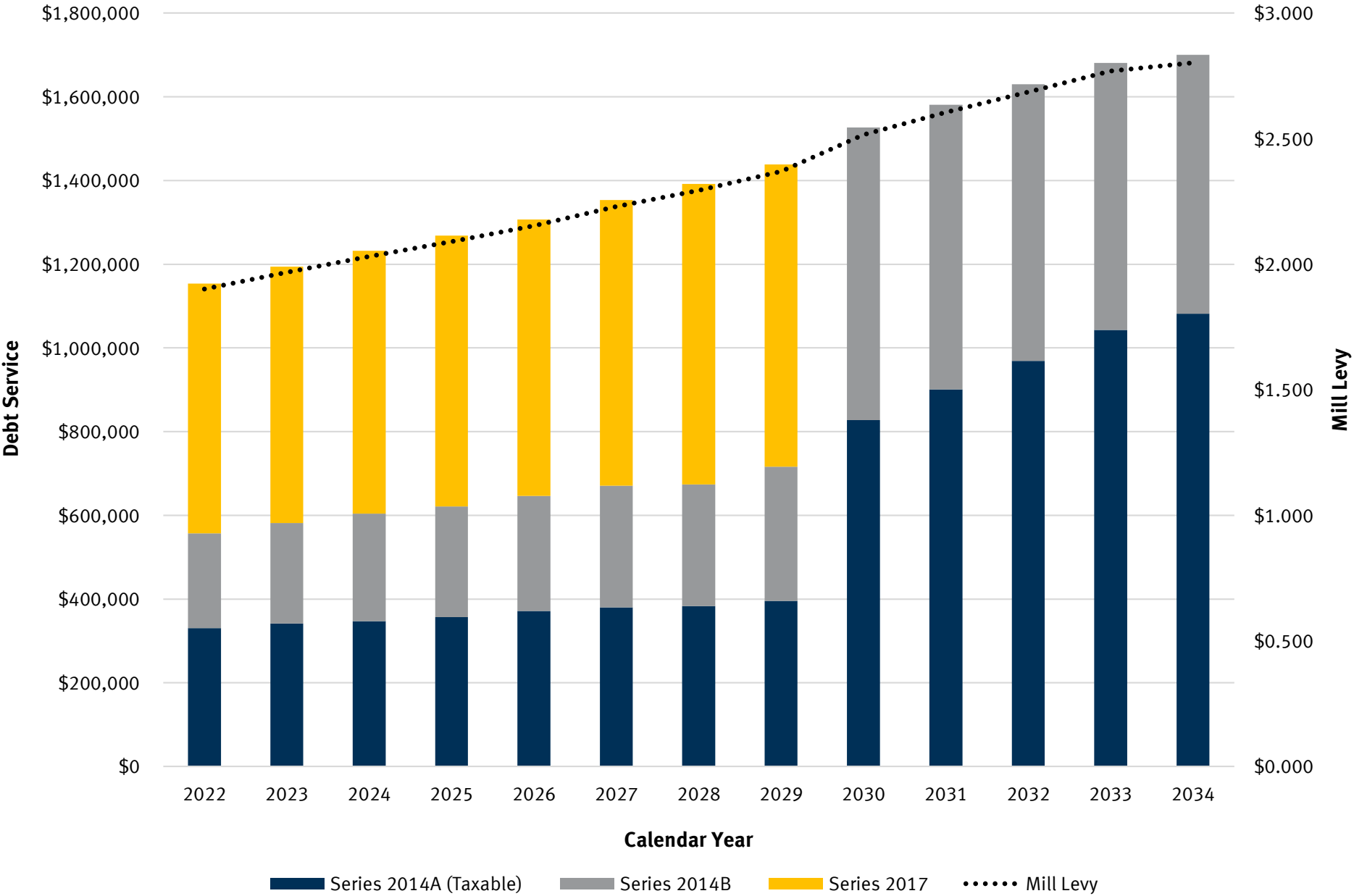


City of Alamogordo, New Mexico Historical Tax Rates					
Tax Year	Operational Tax Rates		Debt Service Levy	Totals	
	Residential	Non-Residential	Applies to All	Residential	Non-Residential
2014	4.991	7.064	1.981	6.972	9.045
2015	4.959	7.064	1.876	6.835	8.940
2016	4.877	7.064	1.837	6.714	8.901
2017	4.881	7.064	1.838	6.719	8.902
2018	4.972	7.064	1.833	6.805	8.897
2019	5.097	7.064	1.833	6.930	8.897
2020	5.098	7.064	1.704	6.802	8.768
2021	5.137	7.064	1.876	7.013	8.940

Existing Debt – General Obligation Bonds

Issuer:	City of Alamogordo, New Mexico				City of Alamogordo, New Mexico				City of Alamogordo, New Mexico					
Type:	General Obligation Bonds				General Obligation Bonds				General Obligation Refunding Bonds					
Series:	Series 2014A (Taxable)				Series 2014B				Series 2017					
Dated Date	12/24/2014				12/24/2014				11/30/2017					
Original Par:	\$6,000,000				\$4,500,000				\$5,455,000					
Current Par:	\$5,430,000				\$4,075,000				\$4,685,000					
Enhancement:	None				None				None					
Call Provisions:	8/1/2024				8/1/2024				8/1/2026					
Due:	1-Aug				1-Aug				1-Aug					
Fiscal Year	Principal	Coupon	Interest	Annual DS	Principal	Coupon	Interest	Annual DS	Principal	Coupon	Interest	Annual DS	Total DS	Mill Levy
2022	\$100,000	4.000%	\$230,738	\$330,738	\$85,000	2.000%	\$141,256	\$226,256	\$470,000	3.000%	\$127,100	\$597,100	\$1,154,094	\$1.902
2023	115,000	4.000%	226,738	341,738	100,000	2.500%	139,556	239,556	500,000	3.000%	113,000	613,000	1,194,294	1.968
2024	125,000	4.000%	222,138	347,138	120,000	2.500%	137,056	257,056	530,000	3.000%	98,000	628,000	1,232,194	2.030
2025	140,000	4.000%	217,138	357,138	130,000	3.000%	134,056	264,056	565,000	3.000%	82,100	647,100	1,268,294	2.090
2026	160,000	4.000%	211,538	371,538	145,000	3.000%	130,156	275,156	595,000	3.000%	65,150	660,150	1,306,844	2.153
2027	175,000	4.000%	205,138	380,138	165,000	3.000%	125,806	290,806	635,000	2.250%	47,300	682,300	1,353,244	2.230
2028	185,000	4.000%	198,138	383,138	170,000	3.000%	120,856	290,856	685,000	2.375%	33,013	718,013	1,392,006	2.294
2029	205,000	4.000%	190,738	395,738	205,000	3.125%	115,756	320,756	705,000	2.375%	16,744	721,744	1,438,238	2.370
2030	645,000	4.125%	182,538	827,538	590,000	3.250%	109,350	699,350					1,526,888	2.516
2031	745,000	4.250%	155,931	900,931	590,000	3.250%	90,175	680,175					1,581,106	2.605
2032	845,000	4.250%	124,269	969,269	590,000	4.000%	71,000	661,000					1,630,269	2.686
2033	955,000	4.375%	88,356	1,043,356	590,000	4.000%	47,400	637,400					1,680,756	2.769
2034	1,035,000	4.500%	46,575	1,081,575	595,000	4.000%	23,800	618,800					1,700,375	2.802
Total:	\$5,430,000		\$2,299,969	\$7,729,969	\$4,075,000		\$1,386,225	\$5,461,225	\$4,685,000		\$582,406	\$5,267,406	\$18,458,600	

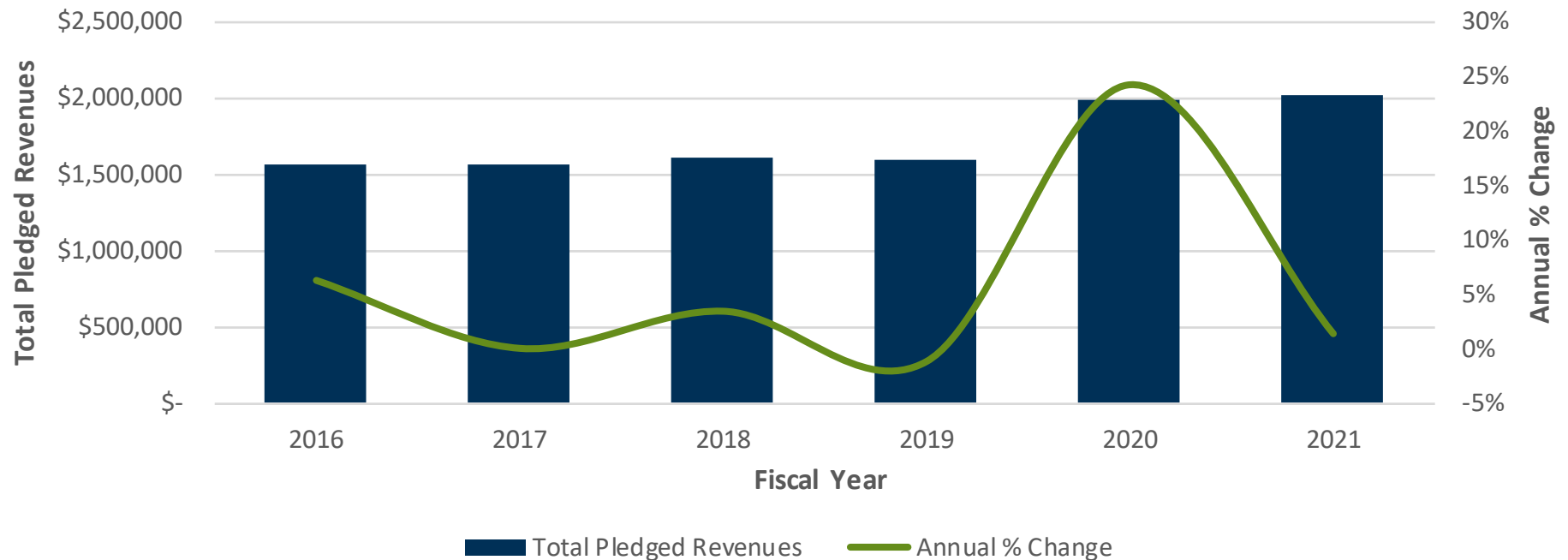
Debt Map – General Obligation Bonds



GRT Data & Debt Profile

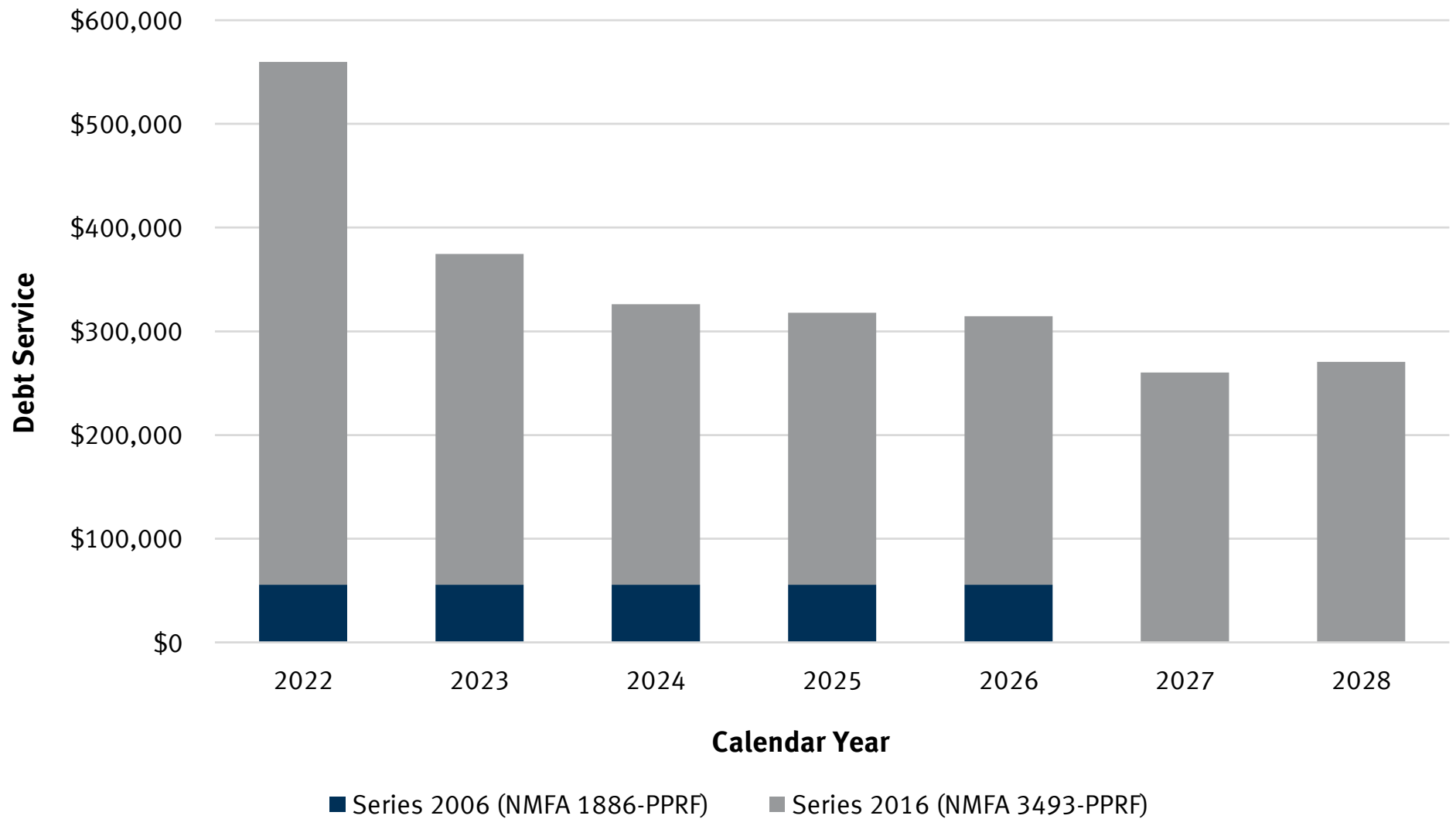
Historical Pledged Revenues – Municipal Gross Receipts Tax

City of Alamogordo, Historical Pledged Revenues					
Fiscal Year	Increment	Municipal Gross Receipts Tax Revenues	Increment Pledged	Total Pledged Revenues	Annual % Change
2016	1.500%	\$9,362,826	0.250%	\$1,560,471	6.28%
2017	1.500%	9,368,491	0.250%	1,561,415	0.06%
2018	1.500%	9,693,216	0.250%	1,615,536	3.47%
2019	1.500%	9,583,262	0.250%	1,597,210	-1.13%
2020	1.500%	11,901,659	0.250%	1,983,610	24.19%
2021	1.500%	12,069,744	0.250%	2,011,624	1.41%



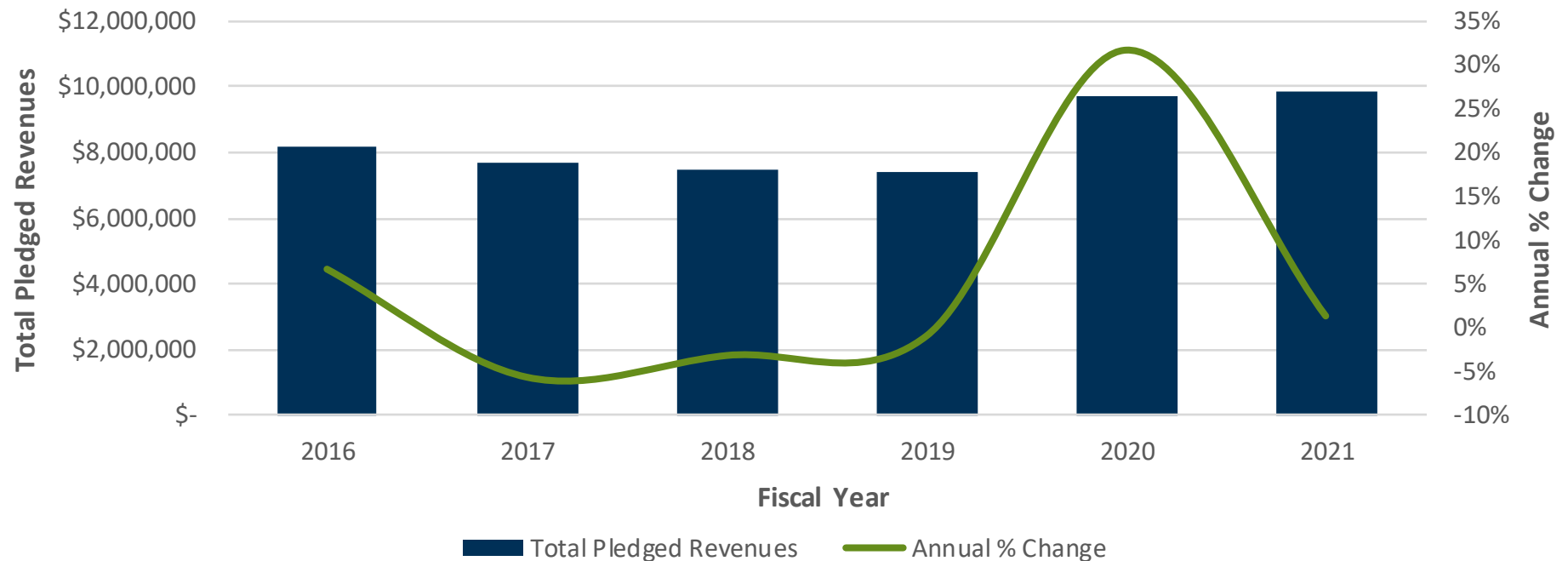
Existing Debt – Municipal Gross Receipts Tax Revenue Bonds

Issuer:	City of Alamogordo, New Mexico				City of Alamogordo, New Mexico					
Type:	GRT Revenue Bonds				GRT Revenue Advance Refunding Bonds					
Series:	Series 2006 (NMFA 1886-PPRF)				Series 2016 (NMFA 3493-PPRF)					
Dated Date	8/1/2006				8/19/2016					
Original Par:	\$730,453				\$2,770,000					
Current Par:	\$244,690				\$2,025,000					
Enhancement:	None				None					
Call Provisions:	8/1/2016				8/19/2026					
Due:	1-May				1-Jun					
Fiscal Year	Principal	Coupon	Interest	Annual DS	Principal	Coupon	Interest	Annual DS	Total DS	Coverage
2022	\$44,852	4.32%	\$10,713	\$55,565	\$475,000	1.10%	\$29,237	\$504,237	\$559,802	3.59x
2023	46,795	4.35%	8,776	55,571	295,000	1.19%	24,012	319,012	374,583	5.37x
2024	48,835	4.38%	6,740	55,575	250,000	1.27%	20,502	270,502	326,077	6.17x
2025	50,980	4.40%	4,601	55,581	245,000	1.35%	17,327	262,327	317,908	6.33x
2026	53,228	4.43%	2,358	55,586	245,000	1.51%	14,019	259,019	314,605	6.39x
2027					250,000	1.87%	10,320	260,320	260,320	7.73x
2028					265,000	2.13%	5,645	270,645	270,645	7.43x
Total:	\$244,690		\$33,188	\$277,878	\$2,025,000		\$121,062	\$2,146,062	\$2,423,940	



Historical Pledged Revenues – State Shared Gross Receipts Tax

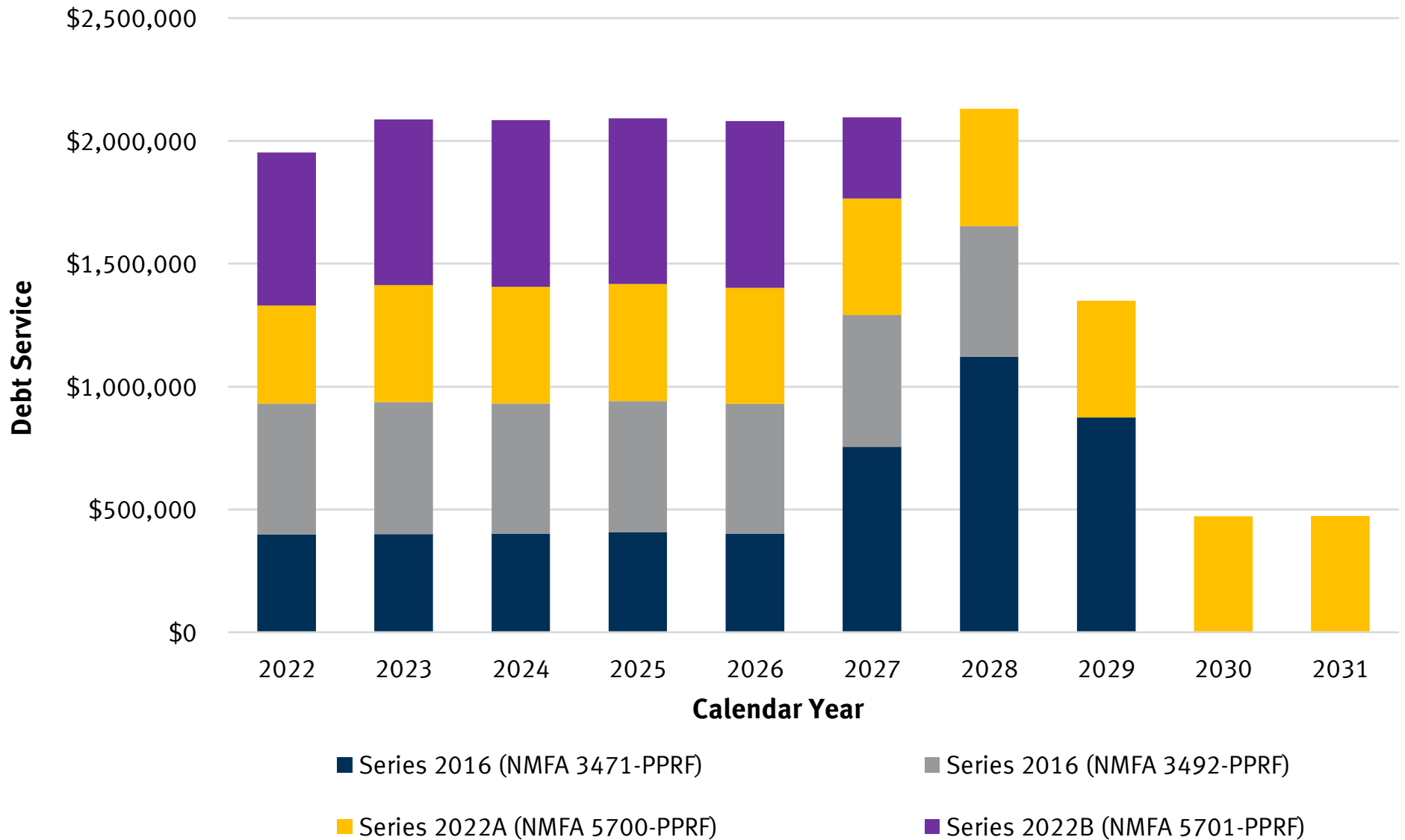
City of Alamogordo, Historical Pledged Revenues					
Fiscal Year	Increment	State Shared Gross Receipts Tax Revenues	Increment Pledged	Total Pledged Revenues	Annual % Change
2016	1.125%	\$8,138,104	1.125%	\$8,138,104	6.72%
2017	1.125%	7,688,646	1.125%	7,688,646	-5.52%
2018	1.125%	7,453,288	1.125%	7,453,288	-3.06%
2019	1.125%	7,387,839	1.125%	7,387,839	-0.88%
2020	1.125%	9,719,688	1.125%	9,719,688	31.56%
2021	1.125%	9,856,958	1.125%	9,856,958	1.41%



Existing Debt – State Shared Gross Receipts Tax Revenue Bonds

Issuer:	City of Alamogordo, New Mexico				City of Alamogordo, New Mexico				City of Alamogordo, New Mexico				City of Alamogordo, New Mexico					
Type:	GRT Revenue Refunding/Improvements Bonds				GRT Revenue Refunding Bonds				GRT Revenue Refunding Bonds				GRT Revenue Refunding Bonds					
Series:	Series 2016 (NMFA 3471-PPRF)				Series 2016 (NMFA 3492-PPRF)				Series 2022A (NMFA 5700-PPRF)				Series 2022B (NMFA 5701-PPRF)					
Dated Date	7/1/2016				8/19/2016				1/7/2022				1/7/2022					
Original Par:	\$6,870,000				\$5,150,000				\$4,456,000				\$3,603,000					
Current Par:	\$4,253,000				\$3,495,000				\$4,456,000				\$3,603,000					
Enhancement:	None				None				None				None					
Call Provisions:	7/1/2026				8/19/2026				None				None					
Due:	1-Jun				1-Jun				1-Jun				1-Jun					
Fiscal Year	Principal	Coupon	Interest	Annual DS	Principal	Coupon	Interest	Annual DS	Principal	Coupon	Interest	Annual DS	Principal	Coupon	Interest	Annual DS	Total DS	Coverage
2022	\$315,000	1.16%	\$83,393	\$398,393	\$480,000	1.10%	\$52,341	\$532,341	\$386,000	0.18%	\$13,417	\$399,417	\$616,000	0.18%	\$6,553	\$622,553	\$1,952,703	5.05x
2023	320,000	1.26%	79,739	399,739	490,000	1.19%	47,061	537,061	443,000	0.28%	32,848	475,848	660,000	0.28%	15,273	675,273	2,087,921	4.72x
2024	325,000	1.36%	75,707	400,707	490,000	1.27%	41,230	531,230	442,000	0.39%	31,608	473,608	665,000	0.39%	13,425	678,425	2,083,970	4.73x
2025	335,000	1.48%	71,287	406,287	500,000	1.35%	35,007	535,007	446,000	0.53%	29,884	475,884	663,000	0.53%	10,832	673,832	2,091,009	4.71x
2026	335,000	1.69%	66,329	401,329	500,000	1.51%	28,257	528,257	445,000	0.68%	27,520	472,520	671,000	0.68%	7,318	678,318	2,080,424	4.74x
2027	695,000	2.06%	60,667	755,667	515,000	1.87%	20,707	535,707	449,000	0.84%	24,494	473,494	328,000	0.84%	2,755	330,755	2,095,623	4.70x
2028	1,075,000	2.32%	46,350	1,121,350	520,000	2.13%	11,076	531,076	457,000	0.99%	20,723	477,723					2,130,149	4.63x
2029	853,000	2.51%	21,410	874,410					459,000	1.10%	16,198	475,198					1,349,609	7.30x
2030									461,000	1.18%	11,149	472,149					472,149	20.88x
2031									468,000	1.22%	5,710	473,710					473,710	20.81x
Total:	\$4,253,000		\$504,882	\$4,757,882	\$3,495,000		\$235,676	\$3,730,676	\$4,456,000		\$213,552	\$4,669,552	\$3,603,000		\$56,157	\$3,659,157	\$24,218,539	

Debt Map – State Shared Gross Receipts Tax Revenue Bonds



New Mexico Tax and Revenue Department

Enactment Rates Table for GRT – July 1, 2022

COUNTY / CITY		Municipal Local Tax		County Local Tax Options						
		Combined Municipal and County Local Tax Options						City Imposed Rates	County Imposed Rates	Total Tax Rate (1)
		601	602	401	403	404	380			
		Municipal GRT/Comp	Municipal GRT/Comp Ref	County Wide GRT/Comp	County Area GRT/Comp	County Area GRT/Comp Ref	County Health Care			
Otero (remainder)	15-015			0.7500	0.1250	0.2500	0.0625	0.0000	1.1875	6.1875
Alamogordo	15-116	1.8125	0.3750	0.7500			0.0625	2.1875	0.8125	8.0000
Alamogordo Land (78)	15-322			0.7500	0.1250	0.2500	0.0625	0.0000	1.1875	6.1875
Cloudcroft	15-213	1.6875	0.1250	0.7500			0.0625	1.8125	0.8125	7.6250
Tularosa	15-308	1.6875	0.1250	0.7500			0.0625	1.8125	0.8125	7.6250

(1) The total rate includes the 5.000% state gross receipts tax rate.

W Water & Sewer Revenue Data & Debt Profile

THE PLEDGED REVENUES

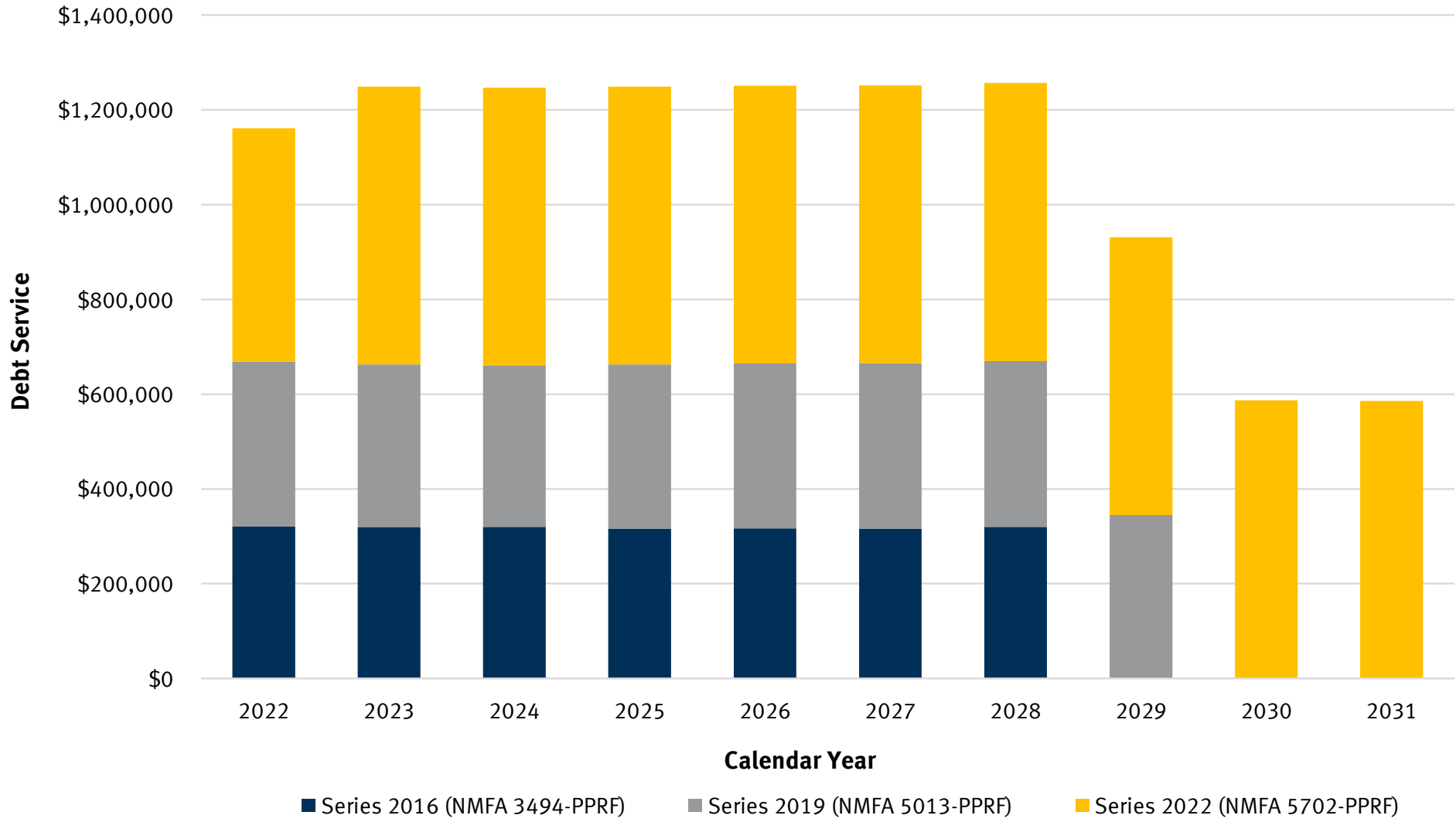
The Bonds are special obligations of the City, payable from the Net Revenues and moneys in the Bond Fund and Reserve Fund created under the Bond Ordinance. The Net Revenues consist of all revenues of the System (i.e., all income and revenues derived by the City from the operation of the System or any part thereof, whether resulting from extensions, enlargements or betterments to the System, or otherwise, and include all revenues received by the City from the System and from the sale and use of water, water service and facilities, sanitary sewer service and facilities, or any combination thereof to the inhabitants of the City all as further described in the Bond Ordinance) remaining after deducting operation and maintenance expenses (as defined in the Bond Ordinance) of the System.

City of Alamogordo, New Mexico Historical Pledged Revenues						
	Audited					
Water & Sewer Fund	2016	2017	2018	2019	2020	2021
Total operating revenues	\$ 9,621,293	\$ 10,345,626	\$ 10,154,264	\$ 9,714,579	\$ 9,956,036	\$ 11,033,901
Total operating expenses	(7,869,857)	(9,449,164)	(9,098,461)	(9,310,065)	(10,610,895)	(9,719,433)
Total operating income (loss)	\$ 1,751,436	\$ 896,462	\$ 1,055,803	\$ 404,514	\$ (654,859)	\$ 1,314,468
Plus: Depreciation	\$ 2,812,167	\$ 2,993,434	\$ 3,137,687	\$ 3,242,868	\$ 3,349,846	\$ 3,871,244
Total revenues for debt service	\$ 4,563,603	\$ 3,889,896	\$ 4,193,490	\$ 3,647,382	\$ 2,694,987	\$ 5,185,712

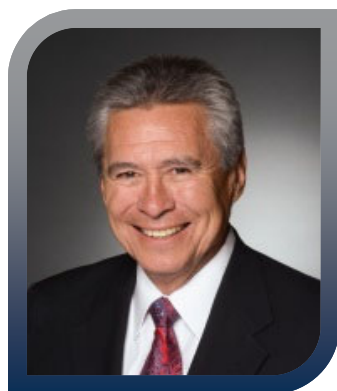
Existing Debt – Water & Sewer Net System Revenue Bonds

Issuer:	City of Alamogordo, New Mexico				City of Alamogordo, New Mexico				City of Alamogordo, New Mexico					
Type:	Water/Sewer Net System Revenue Refunding Bonds				Water/Sewer Net System Revenue Refunding Bonds				Water/Sewer Net System Revenue Refunding Bonds					
Series:	Series 2016 (NMFA 3494-PPRF)				Series 2019 (NMFA 5013-PPRF)				Series 2022 (NMFA 5702-PPRF)					
Dated Date	8/19/2016				11/1/2019				1/7/2022					
Original Par:	\$2,715,000				\$3,270,000				\$5,505,000					
Current Par:	\$2,128,000				\$2,615,000				\$5,505,000					
Enhancement:	None				None				None					
Call Provisions:	Non-Callable				None				None					
Due:	1-Jun				1-Jun				1-Jun					
Fiscal Year	Principal	Coupon	Interest	Annual DS	Principal	Coupon	Interest	Annual DS	Principal	Coupon	Interest	Annual DS	Total DS	Coverage
2022	\$298,000	0.79%	\$22,874	\$320,874	\$315,000	1.13%	\$32,937	\$347,937	\$476,000	0.18%	\$16,583	\$492,583	\$1,161,394	4.47x
2023	298,000	0.85%	20,520	318,520	315,000	1.15%	29,378	344,378	546,000	0.28%	40,601	586,601	1,249,499	4.15x
2024	302,000	0.95%	17,987	319,987	315,000	1.17%	25,755	340,755	547,000	0.39%	39,072	586,072	1,246,814	4.16x
2025	301,000	1.10%	15,118	316,118	325,000	1.21%	22,070	347,070	549,000	0.53%	36,939	585,939	1,249,126	4.15x
2026	305,000	1.19%	11,807	316,807	330,000	1.24%	18,137	348,137	552,000	0.68%	34,029	586,029	1,250,973	4.15x
2027	308,000	1.27%	8,178	316,178	335,000	1.30%	14,045	349,045	556,000	0.84%	30,276	586,276	1,251,498	4.14x
2028	316,000	1.35%	4,266	320,266	340,000	1.39%	9,690	349,690	561,000	0.99%	25,605	586,605	1,256,561	4.13x
2029					340,000	1.46%	4,964	344,964	566,000	1.10%	20,051	586,051	931,015	5.57x
2030									573,000	1.18%	13,825	586,825	586,825	8.84x
2031									579,000	1.22%	7,064	586,064	586,064	8.85x
Total:	\$2,128,000		\$100,750	\$2,228,750	\$2,615,000		\$156,975	\$2,771,975	\$5,505,000		\$264,045	\$5,769,045	\$24,218,539	

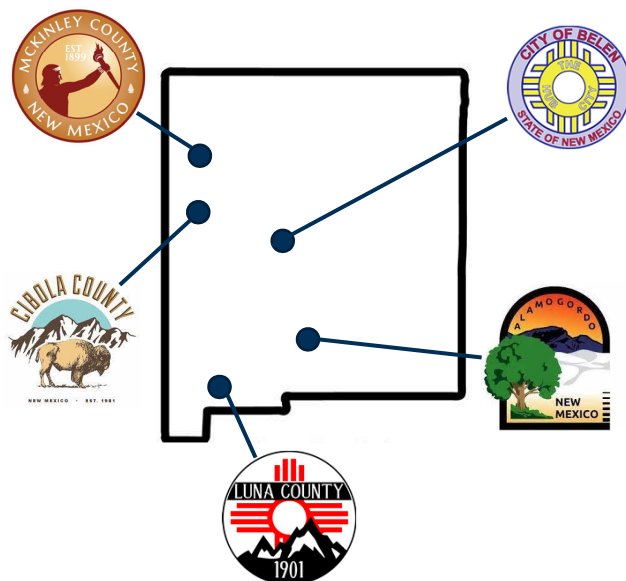
Debt Map – Water & Sewer Net System Revenue Bonds



Stifel Team



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Director
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(505) 336-2065



National Lead Managed Financings 2021 & 2022 YTD – Negotiated Issues (Ranked by # of Issues)

Rank	Firm	# of Issues	Mkt. Share	Par Amount (US\$ mil)
1	STIFEL	1,167	13.4%	\$27,580.1
2	Piper Sandler	844	9.7	18,422.9
3	RBC	646	7.4	31,030.4
4	D A Davidson	560	6.4	5,995.3
5	Raymond James	536	6.2	19,092.1
6	Robert W Baird	427	4.9	6,489.3
7	BofA Securities	383	4.4	47,591.4
8	Citi	246	2.8	38,837.3
9	J P Morgan	230	2.6	31,134.1
10	Wells Fargo	209	2.4	19,544.8

Source: SDC (Full to Book Equal if Joint) negotiated transactions ranked by number of issues.
As of April 20, 2022.

Stifel 2021 Ranking Highlights

K-12 Bonds 1 st Ranked by # of issues 1 st Ranked by par amount	Negotiated New Issues 1 st Ranked by # of issues 5 th Ranked by par amount	Development District Bonds 2 nd Ranked by # of issues 2 nd Ranked by par amount	Tax Increment Bonds 1 st Ranked by # of issues 3 rd Ranked by par amount
Multi-Family Housing 1 st Ranked by # of issues 1 st Ranked by par amount	Taxable Bonds 1 st Ranked by # of issues 1 st Ranked by par amount	Less than \$25M Par 1 st Ranked by # of issues 1 st Ranked by par amount	Pension Funding 1 st Ranked by # of issues 1 st Ranked by par amount

New Mexico Lead Managed Financings 2021 & 2022 YTD – Negotiated Issues (Ranked by # of Issues)

Rank	Firm	# of Issues	Mkt. Share	Par Amount (US\$ mil)
1	RBC	12	40.0%	\$839.5
2	STIFEL	8	26.7	220.6
3	J P Morgan	4	13.3	199.4
4	Wells Fargo	2	6.7	282.6
5*	BofA Securities	1	3.3	43.6
5*	Morgan Stanley	1	3.3	31.3
5*	Piper Sandler	1	3.3	30.5
5*	Estrada Hinojosa	1	3.3	10.9

Source: SDC (Full to Book Equal if Joint) negotiated transactions ranked by number of issues.
As of April 20, 2022.

Stifel, Nicolaus & Company, Incorporated (“Stifel”) has prepared the attached materials. Such material consists of factual or general information (as defined in the SEC’s Municipal Advisor Rule). Stifel is not hereby providing a municipal entity or obligated person with any advice or making any recommendation as to action concerning the structure, timing or terms of any issuance of municipal securities or municipal financial products. To the extent that Stifel provides any alternatives, options, calculations or examples in the attached information, such information is not intended to express any view that the municipal entity or obligated person could achieve particular results in any municipal securities transaction, and those alternatives, options, calculations or examples do not constitute a recommendation that any municipal issuer or obligated person should effect any municipal securities transaction. Stifel is acting in its own interests, is not acting as your municipal advisor and does not owe a fiduciary duty pursuant to Section 15B of the Securities Exchange Act of 1934, as amended, to the municipal entity or obligated party with respect to the information and materials contained in this communication.

Stifel is providing information and is declaring to the proposed municipal issuer and any obligated person that it has done so within the regulatory framework of MSRB Rule G-23 as an underwriter (by definition also including the role of placement agent) and not as a financial advisor, as defined therein, with respect to the referenced proposed issuance of municipal securities. The primary role of Stifel, as an underwriter, is to purchase securities for resale to investors in an arm’s-length commercial transaction. Serving in the role of underwriter, Stifel has financial and other interests that differ from those of the issuer. The issuer should consult with its own financial and/or municipal, legal, accounting, tax and other advisors, as applicable, to the extent it deems appropriate.

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STIFEL | Public Finance

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/10/2022

Report No: 4.

Submitted By: Rachel Hughs

Subject: Approve the minutes for the May 24, 2022, Regular meeting. *(Rachel Hughs, City Clerk)*

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: Approve the minutes.

Background: This is required by the Open Meetings Act.

**CITY OF ALAMOGORDO, NEW MEXICO
CITY COMMISSION REGULAR MEETING MINUTES
6:30 P.M., COMMISSION CHAMBERS
May 24, 2022**

**SUSAN PAYNE, MAYOR
SHARON McDONALD, COMMISSIONER
JOSH RARDIN, COMMISSIONER
STEPHEN BURNETT, COMMISSIONER
NICHOLAS PAUL, COMMISSIONER**

**DUSTY WRIGHT, MAYOR PRO-TEM
KARL MELTON, COMMISSIONER
BRIAN CESAR, CITY MANAGER
PETRIA BENGOCHEA, CITY ATTORNEY
RACHEL HUGHS, CITY CLERK**

CALL TO ORDER / ROLL CALL / INVOCATION / PLEDGE OF ALLEGIANCE

Mayor Payne called the meeting to order at 6:31 p.m. Roll Call was taken by the Deputy City Clerk. Deputy City Clerk Aleshire announced there was a quorum present. Invocation was given by Pastor Charles Bennett and the Pledge of Allegiance was led by Commissioner Paul.

APPROVAL OF AGENDA

**Commissioner McDonald moved to approve the agenda.
Commissioner Melton seconded the motion.
Motion carried with a vote of 7-0-0.**

PRESENTATIONS

1. Proclamation to the Alamogordo Girls Track and Field Team. (*Susan L. Payne, Mayor*)

Mayor Payne said if she could have her track girls come up here. This is our Alamogordo Girls Track and Field Team. She said she would like to invite Superintendent Dr. Moore and Coach Atkinson. These girls are amazing, they came out of COVID last year under the leadership of their coach. They took State last year. Then they turned around and guess what, they took State again. Out of all the teams in the State of New Mexico, we are number one, two years in a row. The important takeaway from that is they made history; this has never been before. This is the first time the Lady Tiger Track has made back-to-back State Champions. It is incredible.

Mayor Payne proclaimed Saturday, May 14, 2022, as "Alamogordo Girls Track and Field Team Day".

PUBLIC COMMENT

None.

CITY MANAGER'S REPORT

City Manager Cesar made the following remarks:

1. You all will be getting an invite, probably by the end of this week or the first part of next; the McKinley Channel Phase 8 is finally wrapping up. The contractor is doing the final cleanup in punch list items. On June 8th, at 1pm, at Washington Park, right by the Pavilion and the crossover of the channel, that is where the ribbon cutting will happen. The Area Commander for the Core of Engineers will be here, along with other various dignitaries that have been part of this project since 1964. The Southern Channel will finally be complete, and we can move on to the Northern Channel.

2. He said he wanted to give another thanks to all the staff that worked on the budget for this fiscal year. It was a lot of work.

REMARKS AND INQUIRIES BY THE CITY COMMISSION

Mayor Payne made the following comments:

We need to keep the State of Texas, and in particular, Uvalde School District, in our prayers. That is unthinkable. Pray for them and certainly all those parents, she said she couldn't even imagine what that is like.

On that same note, she said she wanted to take a minute to let our Police Chief know, and hopefully convey to our officers, that we are praying. She said she knew that you certainly have dealt with some really intense things lately. She said she was gone this weekend, and she came back to read about one of them, and she was just disgusted. She said she can't even imagine what it is like to have to investigate crimes like that, crimes against children. Just know that she is praying for them and thank them all for the job that they do.

Commissioner Paul made the following comments:

In light of the holiday weekend, he said he would like to just say that it is a great weekend to be an American. There are a lot of people who have given their lives for us to be able to sit here today. Just keep that in mind when you are out celebrating with your family this weekend. Just remember, those that have lost their lives serving our country, and their families as well, because they are directly impacted by that. He said he thought it was an extremely important holiday for our country as a whole.

He said he had a couple teachers that don't work here at the local school district, but work for our State school district, that had to test kids from out-of-state over the past couple of weeks or months here in Alamogordo. He said he just wanted to thank the City staff at the Library and Civic Center. He said he had multiple people comment that they went above and beyond to help those teachers, help those students, and he said it just shows what type of people we have working for the City, so thank you to all that staff that helped make that possible.

Commissioner McDonald made the following comments:

She said she wanted to thank Michelle and the City staff for putting the District 5 Cleanup in the water bill newsletter. She said she has been getting calls and setting them up, so she wanted to thank you guys for at least getting that out.

She said last meeting, she received a check for the renovation for the Dudley School. It is a donation from Corinth Baptist Church. She said she believed it was in the amount of \$500. She said she wanted to thank them for recognizing the renovation going on, so she appreciates that.

CONSENT AGENDA

2. Approve the minutes for the May 10, 2022, Regular meeting. (Rachel Hughs, City Clerk)

3. Consider, and act upon, the Investment Report for the quarter ending March 31, 2022, in accordance with the City of Alamogordo Investment Ordinance. (Sue Ashe, Accounting Manager)

4. Consider, and act upon, acceptance of a \$75,000 grant award agreement from the Carroll Petrie Foundation to Alamogordo Animal Control. (Debbie Osborne, Grant Coordinator)

5. Consider, and act upon, the award of RFP 2204-008 Custodial Services to Quality Janitorial. (Evelyn Huff, Finance Director)

Commissioner Wright moved to approve the Consent Agenda.

Commissioner Burnett seconded the motion.

Roll Call Vote was taken.

Motion carried with a vote of 7-0-0.

NEW BUSINESS

10. Consider, and act upon, Ordinance 1651 Case Z-2022-0001(A) for first publication of a map amendment to remove the condition that was placed on the property in 1998. Property located at 1001 Scenic Dr. was rezoned from R-1 Single Family Dwelling to C-1 Neighborhood Business Case 1998-0574(A), with the condition that property could only be used as an ATM machine location. (Stella Rael, City Planner) (Roll Call Vote Required)

Mayor Payne said we are going to be moving Item 10 above Item 6. City Planner Rael said the property owner is requesting that the City remove the condition that was placed on this property in 1998, when it was rezoned from R-1 Single Family Dwelling to C-1 Neighborhood Business. She said property owner John L. Harris is present in case any of you have questions for him. City Planner Rael said that while doing her research on this one, she came to find out that the condition that was placed on this property when it was rezoned was, the condition states that it could only be a C-1 Neighborhood Business zoning area, with the condition that it would only be used for the location of ATM machines. She said Mr. Harris recently purchased it; when he came to her speak to her about what he could put on there, she said she informed him about the condition. City Planner Rael said he did decide to go ahead and ask to remove that condition. She said that the process per ordinance is any time we are going to remove a condition, she would have to bring it in front of City Commission, and you all would have to approve that request. She said just to give you a little bit of findings of fact, the application was filed on April 5, 2022, the legal notice was published on May 19th, 2022. Twenty-eight letters were mailed by certified return receipt mail to all property owners of record within two-hundred feet from the property, excluding the public right-of-way of the property. City Planner Rael said this is the protest area of two hundred feet from the property in question, there are twenty-eight properties within that two hundred feet, they were all mailed certified returned received. As of today, she said she has received one letter undeliverable, and only one letter of protest, and that was from Attorney Cook. City Planner Rael said it is on the corner of Scenic and 10th Street. There has been an ATM machine there that hasn't been in operation for many years.

Commissioner Paul asked if there were any intended uses, why are they wanting to have the zoning changed. City Planner Rael said she would let Mr. Harris answer that question, but he has come to her with different ideas. She said that like she explained to Mr. Harris, she has provided him with a copy of the ordinance regarding C-1 Zoning Districts. There are multiple things that can go in there.

Mayor Payne said we will go ahead and hear from Mr. Boyda. Deputy City Clerk Aleshire swore in Eric Boyda and Aurora Roemmich before they testified.

Mr. Eric Boyda said they were residents of 1000 Hendricks Avenue, which is directly behind the ATM. He said that hopefully provided to you was a letter from our attorney, Zach Cook. We didn't receive this letter, the notice of the public hearing, until last Friday, so 5/20. Our objections were needed to be submitted to the Planner by noon on Monday. He said he worked together with Zach, he works for the Village of Ruidoso, and Zach Cook is the Village of Ruidoso's contracted attorney. Mr. Bodya said that they have a good relationship, so he called him to just talk to him about the process. Mr. Boyda said he wasn't able to talk to Zach until Sunday afternoon. So, after explaining the situation, Zach was troubled by the procedural due process of this case, noting that it was really strange that the notice was only issued five days ago. The official public notice for this meeting was posted on Thursday of last week, for this public hearing on Tuesday. Although this change may not seem substantial in the eyes of the Commission, it is substantial to our home. This is right behind our house; we live right next to it. Mr. Bodya said that Aurora and he moved here nine years ago, and when we acquired this house, we were aware that it was adjacent to C-1. The ATM was a reasonable thing for us, and with that zoning restriction, we felt comfortable with buying the property. He said that he did not want to belabor the issues that were addressed in Zach's letter that we sent, but we outlined some concerns that we would have with free and open C-1 district in this area, including noise, trash, nuisance lighting, and the traffic and safety issues of a commercial business so close to a four way stop. Is there actually the ability to have a safe driveway entrance in and out of that property. The ordinance for C-1 is very broad, as the Planner specified, there is a lot of different things that can go into this C-1 area. Particularly of concern is, there is no restrictions on hours of operations. Theoretically, there could be a business that is open 24/7 right behind his house. Some of these issues might have been brought up in the decision for why there was an ATM-only restriction, but he wouldn't know, because it wasn't included in the packet, of what the business case in 1998 when they passed this restriction. We really question the need for an additional C-1 in this area, that C-1 area in Scenic has had three vacant lots for the entire time that we have lived here, with no movement for development. There is numerous vacant lots and buildings that are laying vacant on the east side of 10th Street. Our understanding of the ordinances is with this conditional use zoning, with the condition not present anymore, that the zoning should be reverting back to the original zoning, which is R-1 use; which makes sense when you think about the housing shortage, especially for affordable housing, homes, and the need for single family residential homes in Alamogordo for entry-level homebuyers.

Commissioner Rardin said that the gentleman that owns this, he said he guesses this is more of a question for him, does he have any idea what. Deputy City Clerk Aleshire swore in John Harris. Commissioner Rardin said his question is, what are your intentions of putting on that lot, it is not a very large lot. Mr. Harris said that he has had several people approach him with ideas, nothing that is registered yet. Probably the most interesting would be a Tesla charging station for electric vehicles, there don't seem to be any in the town, but he said he did not want to commit to that, because the technology is moving so fast, it might be premature to introduce that, on that lot. He said he would like to do something creative with it; he said he really did not have a specific idea in mind at this time.

Commissioner Rardin said his next question is probably more for staff, why don't we have the meeting minutes from 1998 in our agenda book explaining what the Commission was thinking when they put the restrictions on that, when they rezoned it. City Planner Rael said she didn't include them because there wasn't a whole lot. She had to do a lot of research and it took a long time to find those minutes; there really wasn't an explanation, it was just rezoned with that condition. Commissioner Rardin said that he was guessing with the demographics of the area,

you have C-1 on all four corners. City Planner Rael said yes; from what she could tell from the minutes from 1998, it seemed like it was done at the time, that the property was being sold to maybe Bank 34. She said she apologized; she didn't feel that it was necessary to put them in there since she had done the research on it. Commissioner Rardin said he was just kind of wondering the reasoning behind it, and asked if they didn't have any discussion on it. City Planner Rael said no, they were very vague. Mayor Payne said she didn't think that ATM has been there since 1998. Commissioner Rardin said it has been there for a while City Planner Rael said she didn't know exactly when it went in, she said she just knows that in 1998, that is when they approved the condition and specified for use of ATM machines; she said she was thinking it went in shortly after. City Planner Rael said the property owners behind there are correct, there is quite a bit of C-1 in that surrounding area. The only business that has not been in operation that she said she is aware of is Fitzgerald, right across the street. Commissioner Rardin said he is still in operation. City Planner Rael said she thought he was using that lot more as a storage, he even has a sign that says out-of-business, and he hasn't had an active business registration since 2019.

Mayor Payne asked if there was an alley between that lot and their house. City Planner Rael said yes. Mayor Payne said the lot is not very big, she said she can't see being able to put an actual business on it. Obviously if it was an Allsup's or something, you can't really put that on there. She said to her, there was barely enough room for the ATM. Mr. Harrison said he was just trying to be creative with the figure, it has been dormant for probably four years now. It is not generating any tax revenue, particularly for the City that it would be, if it had some kind of an active business on it. He continued that as he said, it is going to take a lot of thought to do something that will work for everybody.

City Planner Rael said that if the condition is removed, and Mr. Harris approaches with proposed plans for anything, he is going to have to meet all the parking requirements and setback requirements. Mayor Payne said it is going to be limited anyway. City Planner Rael said he is going to pretty limited on what can go there, yes. Commissioner Rardin said the size of the building would be limited greatly.

City Manager Cesar said that what he would suggest is that you table this item, until such time as the applicant can come back and maybe have a plan of what they would like to place on the property, and during that time, he said he was sure he would fully work with the property owners to the rear. Mayor Payne said that is what she was thinking, maybe we could be more specific. City Manager Cesar said as you were talking about an electric charging station for vehicles as one of the possibilities, and Mr. Harrison said but that would really restrict, and City Manager Cesar said they are shaking their head, yeah. Mr. Harrison said that would really restrict his ability to sell the property to someone, because to have to jump through those hoops, at that time, it just wouldn't be practical, and they could be faced with the same thing, they will meet the same restrictions that he has to meet, those are already in place. City Manager Cesar said at this time, he did not know if the Commission has enough information to actually remove this condition that was placed in the late '90s. Mayor Payne said she thinks that is probably the biggest issue for us.

Commissioner Rardin said do we know the size of that lot, it is probably what, 60' by 100'. City Planner Rael said no, it is a little bigger than that, it is approximately about 9000 square feet, it is wider facing 10th than it is towards the rear. Commissioner Rardin so he can only maybe only do like a 2500 square foot building on there, if he were to build something out, because you have to have what, the three-to-one parking ratio. Mr. Harris said the demolition of what is there would

prohibit any kind of a building problem, he would think. The gentlemen had mentioned affordable housing, there won't be anything affordable put on that lot unless it generates some type of an income, he said he believed, you have to monetize it to make it work. Mr. Harris said the demolition to get rid of all that concrete and asphalt, would be prohibitively expensive; you would just have to work with what is there, and somehow monetize that. He said you are looking at probably \$75,000 at least, to return to it to dirt, it would more valuable as dirt than it is in its present configuration. He said again, who knows what direction it will take, but it would, he would hope, be complimentary to that location and to the City of Alamogordo and himself as well.

Mayor Payne said that is a tough one. Commissioner Rardin said if we knew exactly what is going in there, it would be a fairly easy decision. Mayor Payne said that is the hard part, you have got three other businesses, how do you say no to making this commercial when the rest of them are.

Commissioner Rardin said the water place and then the Allsups, are they C-1 or C-3. City Planner Rael said Allsups is C-1, and the water place, strangely, doesn't even have a zoning designation on our zoning map, so she could not answer that, but everything else around there is C-1 with the exception of Fitzgeralds, that is C-3. Commissioner Rardin said the vacant lots just down the street on Scenic, on the east are those commercial as well. City Planner Rael said she was not sure which ones are vacant. Commissioner Rardin said south of the dental clinic, he said he thinks there is a dental clinic up there. City Planner Rael said all that area is C-1. Mayor Payne said that one of them is Mr. Shine's property, right.

Mr. Harris said he did not think he was asking for anything unusual. Commissioner Rardin said it is not like we are spot-zoning in the middle of a residential area. Mr. Harris said he thinks it is very reasonable and would be win-win for everybody.

Commissioner Melton said just to clarify, are you planning on selling the lot for someone else to develop or are you going to do the development. Mr. Harris said he would do that if someone approached him and said, you know, that would make a great place to do x, y, and z, and if he thought yeah, that is not a bad idea, and there was a few dollars in it, he is profit-motivated. Commissioner Melton said so you would sell when someone comes to you with an idea, but you are saying you can't sell with this restriction. Mr. Harris said absolutely, nobody wants it. He said he has approached all of the banks in town, asking if they would have any interest, and they don't. Mayor Payne said you mean like for another ATM, Mr. Harris said yeah, so that is kind of out-of-the-question, so that means well, that property is going to be dormant forever until he gets a zoning change, and then maybe he can generate some interest and do something with it.

Commissioner Rardin said is this an ordinance, or is this a public hearing, because it shows on our item as an ordinance. City Attorney Bengoechea said it is a public hearing for the ordinance, this is a public hearing. It was published in the newspaper as a public hearing, it is a public hearing. Commissioner Rardin said for that, to pass this ordinance, to change the zoning of this, and City Attorney Bengoechea said correct. Commissioner Rardin said so we can actually take action tonight on this, okay. Mr. Harris said he implores you to do that.

Commissioner Melton said he will say that he didn't think residential would work for that plot when it is corner lot, right at 10th and Scenic, you know, two very busy intersections. That is just going to drive down the value, and with the demolition cost, they are not going to sell for the amount of money they need.

Commissioner Rardin moved to approve.

Commissioner Melton seconded the motion.

Roll Call Vote was taken.

Motion carried with a vote of 7-0-0.

6. Consider, and act upon, Resolution 2022-27, a Resolution regarding a new Center of Commerce in Alamogordo, New Mexico. (Nick Paul, Commissioner) (Roll Call Vote Required)

Commissioner Paul said that he wanted to recall our last meeting that we had a presentation by the committee on the Alamogordo Station. He said he thought it is a project that could be a huge benefit to our community, not just solely for business purposes, but also for members of the community. In conjunction with the committee and himself, we were forming a resolution that we could bring before you for consideration.

Commissioner Melton said does this make the new Center the top priority for capital outlay and grants next year. City Manager Cesar said no, this would not make it the number one priority, and when we say priority, we have different listings, which you will become much more familiar with as you go through your term. Normally in a fiscal year, we have our ICIP, Infrastructure Capital Improvement Plan, it has all the projects listed that the City has on the books, we have to have it on that listing so that we can apply not only for State funding, but also Federal funding. Most grants, loans, etcetera, require that it is on our ICIP. When we talk top five projects, once a year, that is a process that begins with staff. We have public input, obviously commission input, the top five projects from that listing are ultimately selected or voted upon by the Commission, but the State legislature has parameters that we have to follow. Normally a project can be no more than \$500,000, it has to be something that the municipality or county can accomplish within a three-year period. From a staff-level, what we are normally looking at are areas that we don't; Community Services is probably the best example, an area that there aren't a lot of Federal, EPA type grants, or State grants for that matter, that are out there. We tend to, at a Staff level, concentrate more on those type of projects. A project like this would not fit into that because obviously \$500,000 would not complete this project, and you can't take and stack those monies and carry them on from year-to-year-to-year until you have made up your full pot of money if that answers your question. Commissioner Melton said it does.

Commissioner McDonald said you said it has to be done in three years, is that what I heard. City Manager Cesar said not necessarily this project, he said he was talking about a project where we received State monies, the legislative monies, that you are familiar with, that we get every year. We have had it for ADA compliance, we've had shade structures, the bathroom at the balloon park was State-legislative appropriated monies that were granted to the City. Those are the type of projects that have to be done within that time frame. Something like this would not qualify to be on that listing, not that it couldn't be sent up, it would just never be approved. Commissioner McDonald said the reason why she asked that question was because she did see on the resolution that if the ground is not broken on this property by December 31st, 2027; so once you get it on the ICIP list. City Manager Cesar said once we have it, that would be the first step when this resolution is passed, or a form of this resolution is passed, the first step, from a staff level, would be getting this project on our ICIP listing. Time-frame-wise, this is perfect because we just notification from the State that they are accelerating that process for this fiscal year, cutting our time frame down this fiscal year. We would get this listed, and then our Grant Specialist, at a staff level, we would start looking at how can we fund a, well, once the design is done, we will have solid cost, but right now, this project is a little over \$11,000,000. We would look at, are there any State or Federal grants that are available. Is this something we can build into a loan, is this a potential bond issue using local monies, bonding, etcetera, we would look at all those various funding areas, and then bring back, it won't be within six months, it is going to take a little while, we would bring what we find to Commission with staff's recommendation, if we are able to find and secure

funding to make this project a reality. The three years is so that this project doesn't stay on the books forever in that time frame, you all can change, if you would like that to be longer, shorter, no time frame and it just stays on until the resolution is repealed at some later date, that is up to you as the governing body.

Commissioner McDonald asked if it would it compete with some of the other high-priority items that the City has. City Manager Cesar said every project competes with every other project. Commissioner McDonald said specifically water. City Manager Cesar said not necessarily water, because the water and wastewater, we have the EPA, there are certain areas that only apply to water and wastewater, whether it is State or Federal money. Where this project would compete; one of the items that staff is working on right now is looking at the replacement for the swimming pool at the REC Center with the new cover, so there is a possibility the same funding we would be looking at in the future, for that project, could compete with this, or if were looking to build a new fire station, or any time of building, this would compete. If it is an Airport project and the City is looking at a new terminal building for the Airport, they have the FAA and State aviation money, so, it wouldn't compete with something at the Airport.

Mayor Payne said she is reading here, and she noticed it was in here two or three times, and she just wanted to make this clear. The location of the project will be on City property, the City will own the building, and the City of Alamogordo will become the lead entity in managing this project to its completion once the plans are finalized, correct. City Manager Cesar said yes; he said he knew Michael was here and he could speak more on the Sheldon Trust and that portion of it, but the project up to now has been an effort with the Center of Commerce and the Sheldon Trust, with the Sheldon Trust paying for the architectural work that has gone in up to date. It wouldn't be appropriate for the City to step in at this point of the design, take over the design. We would definitely need to have input on the building and everything that goes into the building, but that contract with In Situ, that needs to be completed with the contract with the Sheldon Trust. Mayor Payne said what she is asking is, once that is done, if this comes to fruition, the City will take the lead on it. City Manager Cesar said yes, the way this reads, once the plans are complete and turned over to the City, at that point, they are the City of Alamogordo's plans and we continue; we don't necessarily have to have the plans one hundred percent complete, we have a fairly good idea of the project cost as it stands right now. We can use that to get the project on the ICIP and actually start looking at funding opportunities that are out there, but we wouldn't, unless there is this magic pot of money we can't pass up, we would really need to have the finalized set before we really start applying for grants, loans, etcetera. That is normally a condition. Times are a little bit different because of all the monies that are coming out of DC, to where some things have been funded without one hundred percent plans. If this resolution is passed, at a staff level, we will work with the Center and the Sheldon Trust, and look for funding opportunities and bring them before Commission. Mayor Payne said she understands all that that, she is just saying, in this perfect world, if we were to find the funding, and we were to move forward with building this project, the City would be the lead on that, am I reading that correctly. City Manager Cesar said yes, it would be a project that would be bid-out by the City, financed by the City with a portion to come from the Sheldon Trust, but a small portion of the overall project. Mayor Payne said right, because this is a pretty pricey project. City Manager Cesar said yes, it would be a City project, just like another other project that you have seen come before you. It would go through the normal bidding process, it would come before Commission for award, the City would manage the construction aspect of the project, and when it was all said and done, it would be a City-owned building on City property.

Commissioner Melton asked how does that work, with the City being the owner, and the Center being the tenant is there just a rent the City charges. City Manager Cesar said we have a lease agreement with the Center of Commerce, we have the same type of arrangement for the Family Fun Center, the

19th Hole, the Coke building, there is a number of other outside entities that lease either buildings or properties from the City.

Mayor Payne said ultimately, this is good for the entire City.

Mayor Pro-Tem Wright said so this resolution needs to be in place before the City can assist in reaching out for grant opportunities and funding, is that correct. City Manager Cesar said at a staff level, yes. We need to have something from the Commission that says yes, this is a project that the majority of us are interested in and want staff to pursue. Mayor Pro-Tem Wright asked what were the repercussions if we pass this resolution and we can't come up with the funding or complete the project, it will sunset and just expire. City Manager Cesar said it sunsets roughly five years from now, on the date that is on the resolution.

Commissioner Rardin said if we do approve this resolution, he said he thinks we are fixing to go through a code change, so, this architect designs it this year, he said he thinks we go through a code change towards the end of this year. We are on the twenty-fifteen, he said he thinks we are fixing to go on the twenty-eighteen, so basically, unless he designs this on that new code, the plans will. City Manager Cesar said if it is not designed on the new code, and code changes between the time that we, the City, receive the plans and we actually break ground, then there is the possibility for fours out, three years out, whatever the case may be, that the City now will have to go back to this architectural firm and say okay, we need you to update, whether it is electrical, mechanical, whatever the case may be, whatever changes in the code. Commissioner Rardin said are we going to shell out another quarter of a million dollars. City Manager Cesar said that is the same as any of our City projects. If we are going to design say, a fire station, normally, on a City project, we have the funding secured, or what we believe to be secured for the project, to actually go through design and construction. So this is a little bit different than some things we have done in the past.

Commissioner Rardin said that is just something these guys, if we do approve this, these guys could mention that to the architect; the eighteen codes already out, we just haven't adopted them at the State level yet. So it could be designed to that, and then typically they only do it every five years or so. City Manager Cesar said it may be already designed at that level, he said he wasn't at every one of the meetings for the building, maybe Michael can answer that.

Commissioner Rardin said he did have a little bit of an issue with it competing against the funding for like say, we do new auditorium and do the REC Center pool, like say we are limited on our funding. City Manager Cesar said it going to be dependent upon the funding source; at the State level, and he said he would expect at the Federal level, a larger pot of money. There are grants and whatnot at the State level that are strictly for economic development activities. Those monies wouldn't be able to be used for a swimming pool, there are other pots of money that are just for recreation. Where this would possibly compete is if there isn't any of these other funding opportunities, and now we are looking at, okay, what we have is a loan or a bond. We don't have unlimited bonding capacity, we don't have unlimited loan capacity.

Commissioner Rardin said if we agree to this resolution tonight, and say you were able to do a public-private partnership, where we could maybe have a set of plans, and it would actually keep the cost down a little bit, but where you could have a private individual that built the facility, and then the City would agree at the end to maybe purchase it. Basically, it gets built over here, and then we purchase it for a set price. City Manager Cesar said that is another possibility. Commissioner Rardin said that helps with cost tremendously. City Manager Cesar said that was something that was offered to the City at least two, possibly three times, with a combination Police, Fire, Substation, it may have had EMS in it also; to where private individuals were going to build the station, and then lease it back to

the City over a twenty or twenty-five year period. There isn't anything that is off the table. Ultimately, it would have to come before Commission for approval. Commissioner Rardin said if we went ahead and adopted it, or did some form of this resolution tonight, we are still able to do that. City Manager Cesar said yes. Mayor Payne said it wouldn't change our other options. City Manager Cesar said at the beginning of the day, this project will be placed on our ICIP listing, and the plan set will be completed by In Situ and Sheldon Trust and turned over to the City. For funding the project, for building the project, how we bid it out, whether it is the traditional way we bid out most of our projects, design and then build, or we open it up to someone from the outside to come in and build it, and we lease it back over a twenty year period, that will be stuff that staff will be looking at to possibly fund this project.

Mayor Payne said this is basically saying we are going to move for this one, one way or the other. City Manager Cesar said yes, this is Commission agreeing and telling staff we are moving forward, and then also giving the Sheldon Trust and the Center Commerce, this is a project that we support, and this is how we are moving forward. Mayor Payne said she didn't see anything in here that necessarily says how we plan to support it other than financially speaking. We could get a windfall, there could be some crazy grant out there that nobody knew about that could show up.

Commissioner Melton asked if this a project that we could LEDA funds on. City Manager Cesar and Mayor Payne said no.

Commissioner Paul moved to approve.

Commissioner Wright seconded the motion.

Roll Call Vote was taken.

Motion carried with a vote of 7-0-0.

7. Consider, and act upon, the placement of a new "Resident Parking Only" sign for a home located at 709 Hawaii Ave. (Dylan Aleshire, Deputy City Clerk)

Ms. Rasmussen said she lives across from that little Catholic School there on 7th and Hawaii. Mayor Payne said that was Cabrini. Ms. Rasmussen said the principle was working with her for a while in not having them park. She said she only has one place to park, and that is right in front of her house because there is an alley, and she can't park behind her house. She said he was working with her for a while and having them not park in front of her house. This year it changed to you can wait thirty minutes, or you can drive around and go do something, and then come back home. Ms. Rasmussen said her hours change, sometimes she gets out at three o'clock and she comes home and she can't park. People are not very nice about it, like why don't you park in front of the alley, well, if a cop goes by, she gets a ticket while you are parking in front of my house.

Commissioner Rardin moved to approve.

Commissioner Paul seconded the motion.

Motion carried with a vote of 7-0-0.

8. Consider, and act upon, Resolution No. 2022-23 removing uncollectible and unsecured Utility, Library, Public Housing Authority, returned checks and other miscellaneous accounts from the City's accounts receivable. (Sue Ashe, Accounting Manager) (Roll Call Vote Required)

Finance Director Huff said this is the annual resolution we bring to you every year to write off our uncollectible accounts from our several different areas throughout the City. This is something that we do, we remove these accounts from our active balance sheet, especially for the Housing Authority it helps their tenet and account receivable, but it also helps our accounts receivable on our balance sheet. Every department kind of handles their write-offs a little bit different, they have kind of different

policies on it, but one this is writing them off on the balance sheet does not mean we do not collect them if we get the opportunity. Speaking for both Utility Billing and the Public Housing Authority, if you have an amount, a balance, even it has been written off, and you come in to either apply for the Housing Authority or like Utility Billing to come up and sign for a new account, you have to pay the amount before you can apply to move in to the Housing Authority, and before you sign up for a new utility account.

Mayor Payne said those go to collections. Finance Director Huff said they do go to collections before they come here. Mayor Payne said okay, so these have already been to collections. Finance Director Huff said they have been to collections, and they haven't been successful collecting on them.

Commissioner Rardin asked if these ones that you already have liens on or are they just uncollectible. Finance Director Huff said some of them have had liens on them, but most of the liens that on are here have been released due to statute of limitations. Then there are other utility accounts that do not have liens, either because their balance was so low, or because they have had situations where the property has changed hands of the owners. Commissioner Rardin said he just noticed one of the addresses that was on here, there was an account, he actually owned that house, he has owned it for five years, but it was a tenant that was in it, prior to him purchasing it.

Commissioner Rardin said there are some very large ones in here, what do we do on those, there is a \$10,000 one in here. Finance Director Huff said those have been sent to collections, various different situations and have attempts have been made to collect it. Commissioner Rardin asked if you can't collect that \$10,000 one, and Finance Director Huff responded they won't pay it. Mayor Pro-Tem Wright said it is a contractor too. Mayor Payne said how did that happen. Finance Director Huff said it is a hydrant meter, so when the hydrant meter was turned back in, they were billed for the usage that was reported on that meter. Through various different staff members, they were sent to collection, and they told various different staff members they were not going to pay it. Mayor Payne said did they say why. Finance Director Huff said she wasn't one of the staff members they talked to, so she is not one hundred percent sure what their reasoning was, but it did go to the collection agency. Commissioner Rardin said the hydro meter is when they hook onto one, either our effluent or our regular system, and Finance Director Huff said correct. City Manager Cesar said it would only be the effluent system. Finance Director Huff said we have potable ones as well. City Manager Cesar said not this account. Finance Director Huff said we have three potable ones and five effluent ones out right now. Commissioner Rardin said since they owe that balance, they technically they are not allowed to sign up for effluent water. Finance Director Huff said right, they don't currently have a hydrant meter under their name. Commissioner Rardin said it is just a lot of money to stiff the City for. City Manager Cesar said he believed the argument on that account, they didn't come and speak to him personally, but he has been here a day or two, this hydrant meter wasn't just used by this company. They had a fill stand that they set up off of La Velle Road for various projects, and supposedly multiple contractors or individuals used it, and that is why they were disputing the charge. Commissioner Rardin asked who leased the meter. Mayor Payne said so somehow the City gets stuck with it. City Manager Cesar said he wasn't going one way or another with it, you asked for the history, that is the little bit he knows about that one. Commissioner Rardin said who signed up for the meter, whether somebody else used it or not.

Commissioner Melton said for these local businesses, is this impacting the status of their business license, if they have a debt. Finance Director Huff said the City has never put anything like that in place. Mayor Payne said what was that question again. Commissioner Melton said if it impacts their business license, or registration. Mayor Payne said apparently not.

Commissioner Melton said on the library tab, he saw there was one person with thirty-something lost books, is that common. Library Manager Kim Underwood said no, it is not common. Commissioner Melton said does that impact their ability to check out further books, he said he was just curious how it came; how can somebody have thirty-six books missing. Library Manager Underwood said there is a limit, but it is a fifty-book limit, but that is usually not our problem; usually the people that check out that many books are like homeschoolers, and they don't want to be blocked from using the library, so that is very unusual. Commissioner Melton said it is an outlier, and Library Manager Underwood said yes.

Commissioner Rardin said this one page, he thinks it is PHA, we have got about six different people on here, we have one lad with a sixty-seven-hundred-dollar debt, what is that. Finance Director Huff said that was retroactive rent, she had been lying about her income for a pretty substantial amount of time, and once the staff found out about it, they back charged her what she should have been paying, had she reported her rent in a timely manner. Commissioner Rardin said is that what pretty much all of these are. Ms. Huff said most of these are people not cleaning the apartments or damaging the apartments when they move out, and their deposit didn't cover it. She is the only retro-rent person on here. Now with them, there is a separate Federal system where they are entered into, and they can not apply for any other Federal housing in the nation as long as they owe a balance to a housing authority. Commissioner Rardin said until they clear that up, Finance Director Huff said yes. Commissioner Rardin said that even though we are writing this off, they will still stay in that system.

Commissioner Rardin moved to approve.

Commissioner Burnette. seconded the motion.

Roll Call Vote was taken.

Motion carried with a vote of 7-0-0.

9. Consider, and act upon, Resolution No. 2022-26 requesting interim approval from the Local Government Division of the Department of Finance & Administration, State of New Mexico, to adopt the Preliminary 2022-2023 Budget as of May 24, 2022. (Evelyn Huff, Finance Director) (Roll Call Vote Required)

Finance Director Huff said this is our Fiscal Year 2023 budget, this is the exact same budget you saw during the budget hearings about two weeks ago. We have not made any changes to it. All of this information is still what was in your summary books, what was in the detail books. So, this is requesting approval of it so that we can send it to DFA and then as usual, we will close out the end of the fiscal year, roll over our cash balances, and bring you the final budget with those cash balances to approve at the end of July. So, this is again, the same one that you have seen for a couple of weeks now.

Inventory Administrator Eugene Ruiz made a public comment. He said he worked over at 2600 N. Florida, some of you may know me, but tonight he is speaking as a representative of the union for the employees here for the City. As many of you know, the budget to be proved includes the results of the Compensation Survey that we all took part in last year. Those results have a direct impact on the lives of workers and their families, and with everything going on in the world from consumer prices soaring, inflation from everywhere from bread to the gas pump, he said he thinks there is no better time to help the livelihoods of workers than right now. Now we all know that is has been hard getting City jobs filled, but he said he thinks that has a lot to do with how pay scales are set up here, and how they are actually irregular. Now, where pay scales are not equal, there is no room to grow in the jobs that people already have. We all read the results of the survey, which said that our minimum pay is much lower compared to the other cities, whether that is for managers of blue-collar, both are included. Now if our pay is lower, and if our pays scales are narrower, where is the room to grow. Ultimately, we are doing more with less, Mr. David Evertson, who was the one who showed you the wages survey, said that even at

full capacity, we are like a baseball player batting with one hand. That is quite an image. It is obvious that classifications have not been competitive for years, if not decades. If we are going to have pride in our City, we need to account for the number one asset that we have as an organization, and that is our workers. The people we rely on to get us through everything we have seen as a City. Whether that was COVID shutdowns, supply shortages, or epic inflation, our people put their hard work in and get the job done. We know that it is time now for them to see the fruit of that labor. If we take care of our people, they will take care of us and our City. Brian and everybody that worked on the results of that study also deserve to see their hard work paid off too, they did a great job. We say let's follow their lead and put our best foot forward to give our people every opportunity to succeed by voting for the full implementation of the budget and the survey for better wages, better lives, and a better City overall for all of us.

Commissioner McDonald moved to approve.

Commissioner Rardin seconded the motion.

Roll Call Vote was taken.

Motion carried with a vote of 7-0-0.

11. Consider and act upon the final plat Case S-2021-00015(a) Granada Hills (*Stella Rael*)

City Planner Rael said that she was going to give you a little bit of history on this parcel. The original plat known as Granada Hills Subdivision Units Two and Three, Replat E, was approved in 1993. Since that time, it has sat undeveloped. In December of 2021, Mr. Dennis Crimmins with Crimmins Family Limited Partnership, and his engineer Martin Pillar from Pillar Engineering, met with her to begin the process of creating a subdivision within this parcel, which consists of 8.636 acres. The preliminary subdivision plat was submitted, and the process began to create a subdivision consisting of thirty-one lots. Throughout the past few months, the City of Alamogordo's Technical Review Committee began its review process. For those that are not familiar with the Technical Review Committee, rather known as the TRC, it is a committee that she put together a few years back, which consists of several departments, Engineering, P&Z, Police, Fire, Parks, Streets, Drainage, Utilities. We are a committee that we look at all commercial development. We haven't had a subdivision in many years, so this is the first subdivision that the TRC looks at. The process is, the committee reviews the submitted plans, and from that review, if necessary, comments are gathered, and she sends those to the developer and engineer. At this time, if revisions are necessary, the engineer will submit revisions for the TRC to review again. Sometimes this goes back and forth a few times until all City requirements are met. If you heard, we started this December of last year, so here we are in May. Tonight, she said she is here to inform you that the TRC has reviewed the proposed subdivision, and every item within this proposed subdivision has met all City requirements, and she is recommending approval of Granada Hill Subdivision Unit Two and Three, Replat F. Now this is also coming in front of you because per ordinance, any parcel that is being subdivided and is being increased by more than two has to be approved by Commission, she said she can not approve it administratively. Marty is here, if there are any questions. Unfortunately, Mr. Crimmins is still out-of-town and wasn't able to make tonight's meeting, so Marty is his representative.

Commissioner Rardin said on your map here, what is that Tract A, we've got lots, one through thirty, then we got that Tract A up there. Marty Pillar said that Tract A is a ponding tract to handle the increased runoff, ten-year-storm, as required.

Commissioner Rardin said basically, they are just finishing developing that area up there, as you go up 18th Street, correct. Mr. Pillar said yes, that is correct. Commissioner Rardin said it will just turn around up there and come back down, right, it will kind of dead-end up there. City Planner Rael said there is an alley there, and Serrano is on the opposite side. There are already homes built there.

Mayor Payne said there is a lot of problems up in Granada Hills with our infrastructure underneath the roads; she said she gets phone calls almost daily about it. This is not going to affect that, right. City Planner Rael said no ma'am, like she said, our TRC committee, they looked at all that, the engineering, the drainage, all of it. Mayor Payne said even working on this area, there is no potential that this is going to cause any problems. City Manager Cesar said this is a new subdivision, so all the utilities will be new going into the subdivision. It will be connecting into existing infrastructure. Mayor Payne said that is what she was asking. City Manager Cesar said the existing infrastructure as designed can support this subdivision. Now, does that mean we are not going to have any more breaks in the Granada Hills area, no, we will still have breaks until all of that infrastructure has been replaced. The new subdivision will not create any additional system failures in the existing infrastructure. Mayor Payne said she did not have problem with this, she is actually happy to see it, she said she is just trying to think of potential things that could come up. City Planner Rael said they have looked at all that, and if there was any question about any drainage issues, or anything like that, they were addressed with the engineer and they made provisions and revised everything to meet our City requirements and technical standards.

Commissioner Rardin said you have to look at it as if there are another thirty water accounts we can add to the system. Mayor Payne said no, she looks at it as there is another thirty homes.

Commissioner Rardin said is there plans to expand to the north or is that all they have for that area. Mr. Pillar said currently, the property that Mr. Crimmins owns was Replat E, it is just this parcel. We did put a stub out for a road in there, that was put in there for two purposes. One was a possible stub-out for future development, and also the length of the cul-de-sac exceeded the length for fire, so we put in another road, and that would make a t-intersection for Fire to be able to turn around. Commissioner Rardin said it just looked like there may be expansion in the future with that little road shooting off there.

Commissioner Rardin moved to approve.
Commissioner Melton seconded the motion.
Motion carried with a vote of 7-0-0.

EXECUTIVE SESSION

12. Adjourn into Executive Closed Session in compliance with 10-15-1(H)(7) and (8) NMSA (as amended) to discuss all pending litigation in which the City of Alamogordo is a party and the possible acquisition of property. (Roll Call Vote Required)

Commissioner Rardin moved to adjourn into Executive Closed Session at 8:08 p.m.
Mayor Pro-Tem Wright seconded the motion.
Roll Call Vote was taken.
Motion carried with a vote of 7-0-0.

ADJOURNMENT

Mayor Susan L. Payne

ATTEST:

City Clerk Rachel Hughs

(Prepared by Dylan Aleshire, Deputy City Clerk)
Approved at the Regular Meeting held on June 14, 2022.

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/10/2022

Report No: 5.

Submitted By: Rachel Hughs

Subject: Approve the statements related to the Executive Closed Session held on May 24, 2022. *(Rachel Hughs, City Clerk)*

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: The statement is required per the Open Meetings Act.

Background: Approve the following statements authorizing them to be included in the minutes of June 14, 2022: "The Governing Body of the City of Alamogordo, New Mexico, hereby states that on May 24, 2022, a Closed Executive Session was held and matters discussed in the closed meeting were limited only to: pending litigation in which the City of Alamogordo is a party and the possible acquisition of property."

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 05/25/2022

Report No: 6.

Submitted By: Rachel Hughs

Subject: Consider, and act upon, adoption and final publication of Ordinance 1650 amending sections of Chapter 17, Article 17-08 Peddlers and Solicitors of the Alamogordo Code of Ordinances to remove door-to-door licensing for commercial solicitors. *(Rachel Hughs, City Clerk)* **(Roll Call Vote Required)**

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: Approve adoption and final publication.

Background:

The City Commission approved ordinance 1650 for first publication on May 10, 2022 with a vote of 7-0.

Currently, the City cannot run a full background check of commercial solicitor applications.

Below are the issues the City is having with the applications.

The Alamogordo Police department can only run city local arrest checks.

The Legal Department can only check New Mexico driving records.

The City Clerk has no easy way of checking court information without researching 50 state court websites.

The City Clerk runs a check on the sex offender's website of the applicant.

ORDINANCE NO. 1650

AN ORDINANCE AMENDING CERTAIN SECTIONS OF CHAPTER 7 OF THE ALAMOGORDO CODE OF ORDINANCES CONCERNING PEDDLERS AND SOLICITORS

WHEREAS, it has been many years since the ordinance has been updated; and,

WHEREAS, the City cannot perform a full background check of commercial solicitors and an FBI background check is time intensive.

THEREFORE, BE IT ORDAINED by the City Commission of the City of Alamogordo, New Mexico that Chapter 7, Article 17-08 of the Code of Ordinances be amended to read as follows:

Article 17-08. - Peddlers and Solicitors

17-8-010. Definitions.

For the purposes of this article, the terms used herein are defined as follows:

Aggressive manner means and includes:

- (1) Intentionally or recklessly making any physical contact with or touching another person in the course of the solicitation without the person's consent;
- (2) Following the person being solicited, if that conduct is:
 - a. Intended to or is likely to cause a reasonable person to fear imminent bodily harm or the commission of a criminal act upon property in the person's possession; or
 - b. Is intended to or is reasonably likely to intimidate the person being solicited into responding affirmatively to the solicitation;
- (3) Continuing to solicit within five (5) feet of the person being solicited after the person has made a negative response, if continuing the solicitation is:
 - a. Intended to or is likely to cause a reasonable person to fear imminent bodily harm or the commission of a criminal act upon property in the person's possession; or
 - b. Is intended to or is reasonably likely to intimidate the person being solicited into responding affirmatively to the solicitation;

It is prima facie evidence of an intention to cause a reasonable person fear of imminent bodily harm, if the person continues to solicit from a person who has asked him/her to stop.

- (4) Intentionally or recklessly blocking the safe or free passage of the person being solicited or requiring the person, or the driver of a vehicle to take evasive action to avoid physical contact with the person making the solicitation. Acts authorized as an exercise of one's

constitutional right to picket or legally protest, and acts authorized by a business registration issued pursuant to chapter 17 of this Code, shall not constitute obstruction of pedestrian or vehicular traffic;

- (5) Intentionally using obscene or abusive language or gestures:
 - a. Intended to or likely to cause a reasonable person to fear imminent bodily harm or the commission of a criminal act upon property in the person's possession; or
 - b. Words intended to or reasonably likely to intimidate the person into responding affirmatively to the solicitation; or
- (6) Approaching the person being solicited in a manner that:
 - a. Is intended to or is likely to cause a reasonable person to fear imminent bodily harm or the commission of a criminal act upon property in the person's possession; or
 - b. Intended to or is reasonably likely to intimidate the person being solicited into responding affirmatively to the solicitation.

Automated teller machine means a device, linked to a financial institution's account records, which is able to carry out transactions, including, but not limited to: account transfers, deposits, cash withdrawals, balance inquiries, and mortgage and loan payments.

Automated teller machine facility means the area comprising one (1) or more automatic teller machines, and any adjacent space which is made available to banking customers after regular banking hours

Bank means any banking corporation as defined under the laws of the state.

Check cashing business means any business which represents itself to the public as engaged in the business of cashing checks, drafts, or money orders for consideration.

~~*Commercial solicitors* shall mean those persons engaged in the practices enumerated in (1) under the definition of "solicitor" as well as those acting as peddlers, and shall include all persons engaged in solicitation activities within the city who are required to obtain business licenses or registrations under other provisions of this chapter.~~

Peddler means any person who goes from house to house, place to place, or from street to street carrying, conveying, or transporting foods, wares, or merchandise, meats, fish, vegetables, fruits, garden truck, farm products, or provisions, offering or exposing such for sale or making sales and delivering articles to purchasers. The term "peddler" shall include the terms "hawker, huckster, transient merchant and itinerant vendor." Peddler shall not include any persons exempt from licensing under Section 7-23-1, NMSA 1978.

Public area means an area to which the public or a substantial group of persons has access, and includes, but is not limited to, alleys, bridges, buildings, driveways, parking lots, parks, playgrounds, plazas, sidewalks, and streets open to the general public, and the doorways and entrances to buildings and dwellings, and the grounds enclosing them.

Solicit means to request an immediate payment, donation of money or other thing of value, including an order or promise of future payment, from another person, regardless of the solicitor's purpose or intended use of the money or other thing of value. The solicitation may be, without limitation, by the spoken, written, or printed word, or by other means of communication.

Solicitation activities shall mean the practices of solicitors as listed in (1) and (2) under the definition of "solicitor" as well as the practice of peddling.

Solicitor shall mean any person, including an employee or agent of another, traveling either by foot, automobile, truck, or other type of conveyance, who engages in the practice of going door-to-door, house-to-house or along any streets within the city:

- (1) Selling or taking orders for or offering to sell or take orders for goods, merchandise, wares, or other items of value for future delivery or for services to be performed in the future for commercial purposes; or
- (2) Requesting contribution of funds, property, or anything of value or of the pledge of any type of future donation or selling or offering for sale any type of property, including but not limited to goods, tickets, books, and pamphlets, for political, charitable, religious, or other noncommercial purposes.

~~17-08-020. License required for commercial solicitors or peddlers.~~

~~It shall be unlawful for any commercial solicitor or peddler to engage in solicitation or sales activities in the city without first obtaining a commercial solicitation license from the city.~~

~~17-08-030. Exemptions.~~

- ~~(a) Minors under the age of eighteen (18) who participate in solicitation activities are exempt from the licensing requirements of this article except when they are acting as agents of adults covered by this article.~~
- ~~(b) Those persons representing charitable associations, organizations existing under the provisions of NMSA 1978, § 53-8-1 et seq., or NMSA 1978 § 53-10-1 et seq., pertaining to nonprofit corporations and unincorporated associations, or which are exempt from taxation under 26 USC § 501.~~
- ~~(c) All persons exempt from the peddler's license under Section 7-23-1 NMSA 1978.~~

~~17-08-040. Application.~~

~~The application for a commercial solicitor's license shall contain all information relevant and necessary to determine whether a particular license may be issued, including but not limited to:~~

- ~~(1) Proof of the identity and residence address of the applicant;~~
- ~~(2) A brief description of the nature, character and quality of the goods, merchandise or services to be sold if any;~~
- ~~(3) If a solicitor or a peddler is employed or acting on behalf of another, the name, business address and telephone number of such person, firm, association, organization, company or corporation; and~~
- ~~(4) Tax identification number.~~

~~17-08-050. Fees and duration.~~

- (a) ~~Each applicant for a commercial solicitation license under this article, who has a permanent business location in the city, shall pay an annual license fee of thirty-five dollars (\$35.00) per solicitor or peddler. A commercial solicitation license shall be valid from the date of issuance until the next December 31. No credit or refunds shall be given for partial years.~~
- (b) ~~Each applicant for a commercial solicitation license under this article, who does not have a permanent business location in the city, shall pay an initial license fee of fifty dollars (\$50.00) per solicitor or peddler. A commercial solicitation license shall be valid from the date of issuance for a period of thirty (30) days. The applicant shall pay a renewal fee of twenty-five dollars (\$25.00) per month for any additional thirty-day period in the same calendar year. No credit or refunds shall be given for partial months.~~

~~17-08-060. -- Licenses and identification.~~

- (a) ~~The license issued to a commercial solicitor shall be carried with the solicitor or peddler while he or she is engaged in the business of soliciting or peddling.~~
- (b) ~~While performing solicitations or peddling, each solicitor or peddler, whether or not commercial and whether or not exempt from the licensing requirements of this article, shall wear an identification badge which shall be worn in such a way that the badge may be easily read and which shall indicate the name and organization of the solicitor or peddler.~~
- (c) ~~Commercial licenses and identification badges shall be used only by the person to whom they were issued and may not be transferred to any other person.~~

~~17-08-070. -- Regulations.~~

~~The following regulations apply to solicitors engaged in solicitation activities and peddlers engaged in peddling, in the city:~~

- (1) ~~Solicitors and peddlers shall be allowed to conduct their activities only during daylight hours.~~
- (2) ~~No solicitor or peddler shall engage in solicitation or peddling activities regulated under this article on city-owned or controlled property without first procuring special authorization from the city manager.~~
- (3) ~~No person shall engage in solicitation or peddling activities in defiance of any notice exhibited by a resident or business indicating that solicitors and/or peddlers are not welcome or not invited.~~
- (4) ~~No person shall engage in solicitation or peddling activities in defiance of a clear indication by occupants of a residence or operators or owners of a business that solicitors are not welcome or are not invited. As used in this section, clear indication shall include but not be limited to posting of a notice on the property, verbal notice or, in the case of commercial solicitation activities, registration with the city on a roster kept by the city for the purpose of indicating those places where commercial solicitors are neither invited~~

~~nor welcome. It shall be the duty of each commercial solicitor to be currently informed of all persons and/or addresses on the no solicitors/no peddlers roster.~~

- ~~(5) Every solicitor and peddler, whether required to be licensed or not, shall immediately furnish his name, organization and address to any person who requests or demands that information while the solicitor or peddler is conducting his/her activities.~~

17-08-071. - Prohibited solicitations.

It shall be unlawful for any person to solicit money or other things of value, or to solicit the sale of goods or services in the manner described in subparagraphs (1)a. through d. of this section.

- (1) Solicitation is prohibited as follows:

- a. In an aggressive manner in a public area;
- b. Within fifteen (15) feet of any entrance or exit of any bank or check cashing businesses or within fifteen (15) feet of any automated teller machine during the hours of operation of such bank, automated teller machine or check cashing business without the consent of the owner or other person legally in possession of such facilities. Provided, however, that when an automated teller machine is located within an automated teller machine facility, such distance shall be measured from the entrance or exit of the automated teller machine facility;
- c. On private property if the owner tenant, or lawful occupant has asked the person not to solicit on the property, or has posted a sign clearly indicating that solicitations are not welcome on the property; or
- d. From any occupant of a motor vehicle that is in traffic on a public street, whether in exchange for cleaning the vehicle's windows, or for blocking, occupying, or reserving a public parking space, or directing the occupant to a public parking space; provided, however, that this paragraph shall not apply to services rendered in connection with emergency repairs requested by the occupants or passengers of such vehicle

- (2) It shall be unlawful for any driver or occupant of a vehicle upon a roadway, while not parked, to invite, request, offer or encourage a person, not in the vehicle to solicit money or other things of value, or to solicit the sale of goods or services in the manner described in subparagraphs (1)a. through d. above.

17-08-072. - Solicitation on or near street or highway.

- (a) The purpose of this section is to prevent dangers to persons and property, to prevent traffic delays, and to avoid interference with traffic flow. Roadways that have center medians often are designed to handle specific traffic flow problems. Any delay or distraction may interfere with traffic planning. Sometimes persons stand near intersections and near traffic lights to contact drivers or passengers in cars that are passing or that are stopped temporarily due to traffic lights.

- (b) It shall be unlawful for any person to solicit employment, business, contributions, or sales of any kind, or collect monies for the same, from the occupant of any vehicle traveling upon any street or highway when the solicitation or collection:
 - (1) Causes the person performing the activity to enter onto the traveled portion of a street or highway.
 - (2) Involves the person performing the activity to be located upon any median area which separates traffic lanes for vehicular travel in opposite directions.
 - (3) The person performing the activity is located such that vehicles cannot move into a legal parking area to safely conduct the transaction.
- (c) For purposes of this section, the traveled portion of the street or highway shall mean that portion of the road normally used by moving motor vehicle traffic.

~~17-08-080. -- Suspension or revocation of license.~~

- ~~(a) Any license issued under this article may be suspended or revoked for any of the following reasons:
 - (1) Fraud or misrepresentation in the application for license;
 - (2) Fraud or misrepresentation in the course of conducting solicitation activities;
 - (3) Conducting solicitation or peddling activities contrary to the conditions of the license; and
 - (4) Conducting solicitation or peddling activities in such a manner as to create a public nuisance or constitute a danger to the public health, safety or welfare.~~
- ~~(b) Upon suspension or revocation, the city shall deliver written notice to the licenseholder stating the action taken and the reasons supporting such action. The written notice shall be delivered to the licenseholder's place of business or mailed to the licenseholder's last known address.~~
- ~~(c) No person who is required to be licensed by this article and whose license has been suspended or revoked shall engage in commercial solicitation activities until the required license has been reinstated or reissued.~~

~~17-08-090. -- Appeals.~~

~~Persons who are denied licenses or whose licenses have been suspended or revoked may appeal by filing a written notice of appeal with the city within ten (10) days after receipt of the notice of denial, suspension or revocation. The city commission shall hear and determine the appeal, and its decision shall be final.~~

~~17-08-100. -- Renewals.~~

~~Licenses may be renewed provided that an application for renewal and the appropriate license fees are received by the city no later than the expiration date of the current license. Applications received after the date shall be processed as new applications. The city shall review each renewal application to determine that the applicant is in full compliance with the provisions of this article. If the city finds that the application meets such requirements, the city shall issue a new license.~~

17-08-110. - Penalties.

Any person who violates any provision of this article shall be subject to the penalty provisions contained in section 1-01-100 through 1-01-120, inclusive, of this code.

PASSED, APPROVED AND ADOPTED this _____ day of _____, 2022.

CITY OF ALAMOGORDO, NEW MEXICO
a New Mexico municipal corporation

By: _____
Susan L. Payne, Mayor

ATTEST:

Rachel Hughs, City Clerk

APPROVED AS TO FORM:

Petria Bengoechea, City Attorney

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/07/2022

Report No: 7.

Submitted By: Evelyn Huff

Subject: Consider, and act upon, Resolution 2022-29 requesting written approval from the Local Government Division of the Department of Finance and Administration, State of NM for the revised budget numbers computed as of June 14, 2022. *(Evelyn Huff, Finance Director)* **(Roll Call Vote Required)**

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact: Beginning Cash Balances \$69,595,645

Revenues \$ 492,002 Increase

Expenditures \$ 494,588 Increase

Transfers In \$ 559,649 Increase

Transfers Out \$ 559,649 Increase

Recommendation: Approve the Resolution

Background: The City Commission adopted the FY 2021-2022 budget on May 11, 2021. The Department of Finance & Administration granted approval of the City of Alamogordo's Fiscal Year 2021-2022 Final Budget on August 12, 2021. Resolution 2022-29 amends the budget to reflect a more true and accurate projection of the actual revenues and expenditures. A summary and explanation of the revisions are attached for your review.

RESOLUTION NO. 2022-29

A RESOLUTION REQUESTING THE DEPARTMENT OF FINANCE AND ADMINISTRATION, STATE OF NEW MEXICO, APPROVE REVISED BUDGET FIGURES FOR CERTAIN LINE ITEMS IN THE CITY'S BUDGET FOR FISCAL YEAR 2021-22.

WHEREAS, the City of Alamogordo, New Mexico wishes approval to change some of the budget line item figures of various funds; and

WHEREAS, the Department of Finance and Administration, State of New Mexico, gave its final approval to the City of Alamogordo, New Mexico's annual budget on August 12, 2021, for fiscal year 2021-2022; and

WHEREAS, the City of Alamogordo, New Mexico, has tabulated on the following pages the additional resources and expenditures for fiscal year 2021-2022.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF ALAMOGORDO, NEW MEXICO, that the City's annual budget for fiscal year 2022 be and hereby is revised as of June 14, 2022, to reflect a more true and accurate projection of the actual revenues and expenditures for fiscal year 2021-2022 as shown on the following pages.

NOW, BE IT FURTHER RESOLVED BY THE GOVERNING BODY OF THE CITY OF ALAMOGORDO, NEW MEXICO, that the Department of Finance and Administration, State of New Mexico, be requested to give its written approval to the revised budget figures computed on June 14, 2022, as a more true and accurate projection of the actual revenues and expenditures for fiscal year 2021-2022.

PASSED, APPROVED AND ADOPTED by the Governing Body of the City of Alamogordo, New Mexico, at a Regular Meeting held this 14th. day of June 2022.

CITY OF ALAMOGORDO, NEW MEXICO,
A NEW MEXICO MUNICIPAL CORPORATION

By: _____
Susan L. Payne, Mayor

ATTEST:

Rachel Hughs, City Clerk

APPROVED AS TO FORM:

Petria Bengoechea, City Attorney

**ALL FUNDS SUMMARY
BUDGET 2021-2022**

1/12TH REQ RSRV
1,602,034
1/12TH REQ RSRV
0
Fund Reserve Policy
560,074
Bal. Remaining
5,239,807

FY22 BUDGET - RESOLUTION 2022-29 (#12) June 14, 2022

FUND NO.	FY 2021-2022 FUND DESCRIPTION	UNAUDITED BEGINNING CASH BALANCE	ESTIMATED REVENUES	TRANSFERS IN	TRANSFERS OUT	NET CASH TRANSFERS	BUDGETED EXPENDITURES	ESTIMATED ENDING CASH BALANCE	LOCAL RESERVE REQUIREMENTS UNAVAILABLE FOR BUDGETING	ADJUSTED ENDING CASH BALANCE
11	GENERAL OPERATING FUND	14,022,061	21,909,543	1,132,180	10,437,462	(9,305,282)	19,224,407	7,401,915	2,162,108	5,239,807
12	INTERNAL SERVICE FUND	80,006	454,829	4,756,105	0	4,756,105	5,266,444	24,496		\$24,496
15	CORRECTIONS-JAIL	45,984	65,550	0	248	(248)	36,000	75,286		\$75,286
16	LODGER'S TAX-PROMOTIONAL FUND	314,183	367,476	6,744	1,405	5,339	518,652	168,346		\$168,346
17	POLICE COURT BOND	7,938	0	0	0	0	0	7,938		\$7,938
19	COURT AUTOMATION FUND	8,582	50,000	0	10,571	(10,571)	40,895	7,116		\$7,116
20	LODGER'S TAX-CITY	169,504	633,627	0	70,150	(70,150)	377,080	355,901		\$355,901
21	D.A.R.E. DONATIONS FUND	22,409	2,165	0	0	0	10,109	14,465		\$14,465
24	GRANT CAPITAL IMPROVEMENT	0	3,271,111	15,414	0	15,414	2,766,055	520,470		\$520,470
27	MUNICIPAL COURT OPERATIONS	26,309	13,000	450,000	16,009	433,991	471,596	1,704		\$1,704
28	POLICE CONTINGENCY	69,213	2,549	0	0	0	10,000	61,762		\$61,762
31	CEMETERY-PERPETUAL CARE	816,480	20,140	0	0	0	0	836,620		\$836,620
32	COMMUNITY SERVICES	438,488	629,208	5,429,888	617,373	4,812,515	5,876,160	4,051		\$4,051
33	FIRE PROTECTION	689,963	662,583	0	0	0	1,262,643	89,903		\$89,903
35	HIDTA GRANT FUND	0	17,400	0	0	0	17,400	0		\$0
36	LAW ENFORCEMENT FUND	4,818	55,200	0	0	0	60,018	(0)		(\$0)
37	STATE HIGHWAY FUND	147,869	70,751	0	0	0	128,828	89,792		\$89,792
38	TRAFFIC SAFETY FUND	54,656	10,491	0	0	0	10,000	55,147		\$55,147
39	STATE JUDICIAL	2,749	75,500	0	0	0	75,500	2,749		\$2,749
42	1984 GROSS RECEIPTS TAX	2,385,672	2,067,893	400,000	2,607,079	(2,207,079)	33,703	2,212,783	252,119	\$1,960,664
44	TRANSPORTATION FUND	165,480	1,161,870	2,582,842	140,914	2,441,928	3,763,456	5,822		\$5,822
48	NEW MEXICO C.D.B.G.	0	500,000	1,406,305	0	1,406,305	1,906,305	0		\$0
49	1986 GROSS RECEIPTS TAX	3,911,631	2,118,285	0	3,658,553	(3,658,553)	1,611,685	759,678	268,391	\$491,287
50	PROPERTY ACQUISITION	85,010	0	0	0	0	0	85,010		\$85,010
53	GENERAL OBLIGATION	908,523	1,062,849	0	0	0	1,114,058	857,314	557,029	\$300,285
54	REVERSE OSMOSIS PROJECT RSV	21,967	0	16,239	0	16,239	16,239	21,967		\$21,967
56	99 GRT FLOOD CONTROL BOND PROJ	7	29,091	1,830,905	19,476	1,811,429	1,608,382	232,145		\$232,145
59	REVENUE BOND P & I FUND	150,101	8,066,363	2,679,243	0	2,679,243	9,707,011	1,188,696		\$1,188,696
61	MUNICIPAL INFRASTRUCTURE .0625%	890,520	521,982	0	468,000	(468,000)	8,426	936,076		\$936,076
63	COMMUNITY DEVELOPMENT	6,519	0	505,090	37,143	467,947	472,434	2,032		\$2,032
69	1994 GROSS RECEIPTS	2,560,463	2,092,052	0	2,238,282	(2,238,282)	33,703	2,380,530	553,051	\$1,827,479
71	ALAMO SENIOR CENTER	2,079	908,069	890,000	0	890,000	1,797,705	2,443		\$2,443
74	ALAMO SENIOR CENTER GIFT	138,081	21,238	0	0	0	71,996	87,323		\$87,323
75	RETIRED & SENIOR VOL. PROGRAM	14,328	171,715	46,000	16,102	29,898	208,628	7,313		\$7,313
81	WATER/SEWER OPERATING	5,996,510	18,891,529	3,703,413	1,855,098	1,848,315	21,481,016	5,255,338	1,463,850	\$3,791,488
82	98 JT WATER/SEWER BOND P&I	1,583,799	5,537,886	2,409,855	0	2,409,855	6,974,569	2,556,971		\$2,556,971
86	SOLID WASTE COLLECTION SYS.	584,696	2,487,648	0	135,438	(135,438)	2,248,510	688,396	178,583	\$509,813
88	BONITO CAMPGROUND	394,450	3,498	0	0	0	4,000	393,948		\$393,948
89	ESGRT .0625%	2,538,217	542,930	0	1,406,625	(1,406,625)	1,348,339	326,183		\$326,183
90	GOLF COURSE	72,040	1,547,255	660,000	91,334	568,666	2,124,428	63,533		\$63,533

91	AIRPORT	17,373	744,425	65,000	53,178	11,822	755,777	17,843		\$17,843
94	OTERO GREENTREE REG LANDFILL	4,909,828	1,379,465	0	725	(725)	4,677,866	1,610,702		\$1,610,702
96	SELF-INSURED FUND	561,415	64,595	0	150,000	(150,000)	75,628	400,382		\$400,382
98	PAYROLL CLEARING	291,874	0	0	0	0	0	291,874		\$291,874
104	UTILITY DEPOSITS	653,070	0	0	0	0	0	653,070		\$653,070
105	ECONOMIC DEVELOPMENT	4,508,656	1,094,027	0	0	0	428,771	5,173,912		\$5,173,912
107	SELF INSURED/LIABILITY	1,176,628	6,805	0	0	0	635,000	548,433		\$548,433
109	2004 GRT CAPITAL OUTLAY	15,469,629	4,267,484	0	4,954,058	(4,954,058)	9,724,861	5,058,194	534,452	\$4,523,742
114	SIDEWALKS REVOLVING LOANS	143,001	1,454	0	0	0	0	144,455		\$144,455
115	CORP ESCROW ACCOUNT RESERVE	1,000	0	0	0	0	0	1,000		\$1,000
119	2012 GRT REF/IMP REVBD	407,932	29,960	0	0	0	437,892	0		\$0
121	2015 GO BONDS-FUN CENTER	90,064	914	0	0	0	0	90,978		\$90,978
122	2015 GO BONDS-STREETS	174,516	1,771	0	0	0	0	176,287		\$176,287
124	AMERICAN RESCUE PLAN ACT	0	3,952,892	0	0	0	3,952,892	0		\$0
901	HOUSING LOW RENT OPERATING	1,146,135	1,014,724	0	0	0	1,331,669	829,190	354,627	\$474,563
903	HOUSING HOMEOWNERSHIP OPER	713,222	1,525	0	0	0	17,969	696,778		\$696,778
904	HOUSING CAPITAL FUND PROJECTS	0	1,333,878	0	0	0	1,333,878	0		\$0
TOTALS FY2022		69,595,645	89,937,195	28,985,223	28,985,223	0	116,058,583	43,474,257	6,324,210	37,150,046

ALL FUNDS SUMMARY

BUDGET 2021-2022

1/12TH REQ RSRV

1,602,034

1/12TH REQ RSRV

0

Fund Reserve Policy

560,074

Bal. Remaining

5,239,807

FY22 BUDGET - RESOLUTION 2022-29 (#12) June 14, 2022

FUND NO.	FY 2021-2022 FUND DESCRIPTION	UNAUDITED BEGINNING CASH BALANCE	ESTIMATED REVENUES	TRANSFERS IN	TRANSFERS OUT	NET CASH TRANSFERS	BUDGETED EXPENDITURES	ESTIMATED ENDING CASH BALANCE	LOCAL RESERVE REQUIREMENTS UNAVAILABLE FOR BUDGETING	ADJUSTED ENDING CASH BALANCE
11	GENERAL OPERATING FUND	14,022,061	21,904,603	1,132,180	10,394,063	(9,261,883)	19,219,485	7,445,296	2,162,108	5,283,188
	Revision #9-Sale of Scrap		18			0		18		18
	Revision #9-Sale of Scrap		4,922			0	4,922	0		0
	Revision #10-FY22 Salary & Benefits				43,399	(43,399)		(43,399)		(43,399)
	Total Revised Fund 11	14,022,061	21,909,543	1,132,180	10,437,462	(9,305,282)	19,224,407	7,401,915	2,162,108	5,239,807
12	INTERNAL SERVICE FUND	80,006	451,694	4,712,706	0	4,712,706	5,219,910	24,496		\$24,496
	Revision #9-Sale of Scrap		3,135			0	3,135	0		\$0
	Revision #10-FY22 Salary & Benefits			43,399		43,399	43,399	0		\$0
	Total Revised Fund 12	80,006	454,829	4,756,105	0	4,756,105	5,266,444	24,496		24,496
15	CORRECTIONS-JAIL	45,984	65,550	0	248	(248)	31,000	80,286		\$80,286
	Revision #4-Prisoner Support for FY22					0	5,000	(5,000)		(\$5,000)
	Total Revised Fund 15	45,984	65,550	0	248	(248)	36,000	75,286		75,286
16	LODGER'S TAX-PROMOTIONAL FUND	314,183	367,476	6,744	1,405	5,339	517,852	169,146		\$169,146
	Revision #7-Memberships & Dues FY22					0	800	(800)		(\$800)
	Total Revised Fund 16	314,183	367,476	6,744	1,405	5,339	518,652	168,346		168,346
17	POLICE COURT BOND	7,938	0	0	0	0	0	7,938		\$7,938
	Total Revised Fund 17	7,938	0	0	0	0	0	7,938		7,938
19	COURT AUTOMATION FUND	8,582	50,000	0	10,571	(10,571)	40,895	7,116		\$7,116
	Total Revised Fund 19	8,582	50,000	0	10,571	(10,571)	40,895	7,116		7,116
20	LODGER'S TAX-CITY	169,504	623,930	0	70,150	(70,150)	367,383	355,901		\$355,901
	Revision #3-Civic Center Revenues		9,697			0	9,697	0		\$0
	Total Revised Fund 20	169,504	633,627	0	70,150	(70,150)	377,080	355,901		355,901
21	D.A.R.E. DONATIONS FUND	22,409	2,165			0	10,109	14,465		\$14,465
	Total Revised Fund 21	22,409	2,165	0	0	0	10,109	14,465		14,465
24	GRANT CAPITAL IMPROVEMENT	0	3,196,111	15,414	0	15,414	2,691,055	520,470		\$520,470
	Revision #6-Animal Control C. Petrie Grant		75,000			0	75,000	0		\$0
	Total Revised Fund 24	0	3,271,111	15,414	0	15,414	2,766,055	520,470		520,470
27	MUNICIPAL COURT OPERATIONS	26,309	13,000	450,000	16,009	433,991	471,596	1,704		\$1,704
	Total Revised Fund 27	26,309	13,000	450,000	16,009	433,991	471,596	1,704		1,704
28	POLICE CONTINGENCY	69,213	2,549			0	10,000	61,762		\$61,762
	Total Revised Fund 28	69,213	2,549	0	0	0	10,000	61,762		61,762
31	CEMETERY-PERPETUAL CARE	816,480	20,140			0		836,620		\$836,620
	Total Revised Fund 31	816,480	20,140	0	0	0	0	836,620		836,620
32	COMMUNITY SERVICES	438,488	619,208	5,429,888	617,373	4,812,515	5,866,160	4,051		\$4,051
	Revision #2-Friends of the Library Donation		10,000			0	10,000	0		\$0
	Total Revised Fund 32	438,488	629,208	5,429,888	617,373	4,812,515	5,876,160	4,051		4,051
33	FIRE PROTECTION	689,963	662,583	0	0	0	1,262,643	89,903		\$89,903
	Total Revised Fund 33	689,963	662,583	0	0	0	1,262,643	89,903		89,903
35	HIDTA GRANT FUND	0	17,400			0	17,400	0		\$0
	Total Revised Fund 35	0	17,400	0	0	0	17,400	0		0
36	LAW ENFORCEMENT FUND	4,818	55,200	0	0	0	60,018	(0)		(\$0)
	Total Revised Fund 36	4,818	55,200	0	0	0	60,018	(0)		(0)
37	STATE HIGHWAY FUND	147,869	70,751	0	0	0	128,828	89,792		\$89,792
	Total Revised Fund 37	147,869	70,751	0	0	0	128,828	89,792		89,792

38	TRAFFIC SAFETY FUND	54,656	10,491	0	0	0	10,000	55,147		\$55,147
	Total Revised Fund 38	54,656	10,491	0	0	0	10,000	55,147		55,147
39	STATE JUDICIAL	2,749	75,500			0	75,500	2,749		\$2,749
	Total Revised Fund 39	2,749	75,500	0	0	0	75,500	2,749		2,749
42	1984 GROSS RECEIPTS TAX	2,385,672	2,067,893	400,000	2,607,079	(2,207,079)	33,703	2,212,783	252,119	\$1,960,664
	Total Revised Fund 42	2,385,672	2,067,893	400,000	2,607,079	(2,207,079)	33,703	2,212,783	252,119	1,960,664
44	TRANSPORTATION FUND	165,480	1,156,170	2,582,842	140,914	2,441,928	3,757,756	5,822		\$5,822
	Revision #9-Sale of Scrap		5,700			0	5,700	0		\$0
	Total Revised Fund 44	165,480	1,161,870	2,582,842	140,914	2,441,928	3,763,456	5,822		5,822
48	NEW MEXICO C.D.B.G.	0	500,000	1,406,305	0	1,406,305	1,906,305	0		\$0
	Total Revised Fund 48	0	500,000	1,406,305	0	1,406,305	1,906,305	0		0
49	1986 GROSS RECEIPTS TAX	3,911,631	2,118,285	0	3,142,303	(3,142,303)	1,611,685	1,275,928	268,391	\$1,007,537
	Revision #8-Debt Service Adjustment				516,250	(516,250)		(516,250)		(\$516,250)
	Total Revised Fund 49	3,911,631	2,118,285	0	3,658,553	(3,658,553)	1,611,685	759,678	268,391	491,287
50	PROPERTY ACQUISITION	85,010	0	0	0	0	0	85,010		\$85,010
	Total Revised Fund 50	85,010	0	0	0	0	0	85,010		85,010
53	GENERAL OBLIGATION	908,523	1,062,849			0	1,114,058	857,314	557,029	\$300,285
	Total Revised Fund 53	908,523	1,062,849	0	0	0	1,114,058	857,314	557,029	300,285
54	REVERSE OSMOSIS PROJECT RSV	21,967	0	16,239	0	16,239	16,239	21,967		\$21,967
	Total Revised Fund 54	21,967	0	16,239	0	16,239	16,239	21,967		21,967
56	99 GRT FLOOD CONTROL BOND PROJ	7	29,091	1,830,905	19,476	1,811,429	1,608,382	232,145		\$232,145
	Total Revised Fund 56	7	29,091	1,830,905	19,476	1,811,429	1,608,382	232,145		232,145
59	REVENUE BOND P & I FUND	150,101	8,066,363	2,679,243		2,679,243	9,707,011	1,188,696		\$1,188,696
	Total Revised Fund 59	150,101	8,066,363	2,679,243	0	2,679,243	9,707,011	1,188,696		1,188,696
61	MUNICIPAL INFRASTRUCTURE .0625%	890,520	521,982	0	468,000	(468,000)	8,426	936,076		\$936,076
	Total Revised Fund 61	890,520	521,982	0	468,000	(468,000)	8,426	936,076		936,076
63	COMMUNITY DEVELOPMENT	6,519	0	505,090	37,143	467,947	472,434	2,032		\$2,032
	Total Revised Fund 63	6,519	0	505,090	37,143	467,947	472,434	2,032		\$2,032
69	1994 GROSS RECEIPTS	2,560,463	2,092,052	0	2,238,282	(2,238,282)	33,703	2,380,530	553,051	\$1,827,479
	Total Revised Fund 69	2,560,463	2,092,052	0	2,238,282	(2,238,282)	33,703	2,380,530	553,051	1,827,479
71	ALAMO SENIOR CENTER	2,079	908,926	890,000	0	890,000	1,798,562	2,443		\$2,443
	Revision #1-NSIP Grant Correction		(857)			0	(857)	0		\$0
	Total Revised Fund 71	2,079	908,069	890,000	0	890,000	1,797,705	2,443		2,443
74	ALAMO SENIOR CENTER GIFT	138,081	21,238	0	0	0	71,996	87,323		\$87,323
	Total Revised Fund 74	138,081	21,238	0	0	0	71,996	87,323		87,323
75	RETIRED & SENIOR VOL. PROGRAM	14,328	171,715	46,000	16,102	29,898	208,628	7,313		\$7,313
	Total Revised Fund 75	14,328	171,715	46,000	16,102	29,898	208,628	7,313		7,313
81	WATER/SEWER OPERATING	5,996,510	18,888,629	3,703,413	1,855,098	1,848,315	21,478,116	5,255,338	1,463,850	\$3,791,488
	Revision #9-Sale of Scrap		2,900			0	2,900	0		\$0
	Total Revised Fund 81	5,996,510	18,891,529	3,703,413	1,855,098	1,848,315	21,481,016	5,255,338	1,463,850	3,791,488
82	98 JT WATER/SEWER BOND P&I	1,583,799	5,537,886	1,893,605		1,893,605	6,973,769	2,041,521		\$2,041,521
	Revision #8-Debt Service Adjustment			516,250		516,250	800	515,450		\$515,450
	Total Revised Fund 82	1,583,799	5,537,886	2,409,855	0	2,409,855	6,974,569	2,556,971		2,556,971
86	SOLID WASTE COLLECTION SYS.	584,696	2,107,151	0	135,438	(135,438)	2,198,733	357,676	178,583	\$179,093
	Revision #5-Year End Projections		380,497			0	49,777	330,720		\$330,720
	Total Revised Fund 86	584,696	2,487,648	0	135,438	(135,438)	2,248,510	688,396	178,583	509,813
88	BONITO CAMPGROUND	394,450	3,498			0	4,000	393,948		\$393,948
	Total Revised Fund 88	394,450	3,498	0	0	0	4,000	393,948		393,948
89	ESGRT .0625%	2,538,217	542,930	0	1,406,625	(1,406,625)	1,348,339	326,183		\$326,183
	Total Revised Fund 89	2,538,217	542,930	0	1,406,625	(1,406,625)	1,348,339	326,183		326,183
90	GOLF COURSE	72,040	1,546,448	660,000	91,334	568,666	2,123,621	63,533		\$63,533
	Revision #9-Sale of Scrap		807			0	807	0		\$0
	Total Revised Fund 90	72,040	1,547,255	660,000	91,334	568,666	2,124,428	63,533		63,533
91	AIRPORT	17,373	744,425	65,000	53,178	11,822	755,777	17,843		\$17,843
	Total Revised Fund 91	17,373	744,425	65,000	53,178	11,822	755,777	17,843		17,843
94	OTERO GREENTREE REG LANDFILL	4,909,828	1,379,465	0	725	(725)	4,677,866	1,610,702		\$1,610,702
	Total Revised Fund 94	4,909,828	1,379,465	0	725	(725)	4,677,866	1,610,702		1,610,702

96	SELF-INSURED FUND	561,415	64,595	0	150,000	(150,000)	75,628	400,382		\$400,382
	Total Revised Fund 96	561,415	64,595	0	150,000	(150,000)	75,628	400,382		\$400,382
98	PAYROLL CLEARING	291,874	0	0	0	0	0	291,874		\$291,874
	Total Revised Fund 98	291,874	0	0	0	0	0	291,874		\$291,874
104	UTILITY DEPOSITS	653,070	0	0	0	0	0	653,070		\$653,070
	Total Revised Fund 104	653,070	0	0	0	0	0	653,070		\$653,070
105	ECONOMIC DEVELOPMENT	4,508,656	1,094,027	0	0	0	428,771	5,173,912		\$5,173,912
	Total Revised Fund 105	4,508,656	1,094,027	0	0	0	428,771	5,173,912		\$5,173,912
107	SELF INSURED/LIABILITY	1,176,628	6,805	0	0	0	635,000	548,433		\$548,433
	Total Revised Fund 107	1,176,628	6,805	0	0	0	635,000	548,433		\$548,433
109	2004 GRT CAPITAL OUTLAY	15,469,629	4,267,484	0	4,954,058	(4,954,058)	9,724,861	5,058,194	534,452	\$4,523,742
	Total Revised Fund 109	15,469,629	4,267,484	0	4,954,058	(4,954,058)	9,724,861	5,058,194	534,452	\$4,523,742
114	SIDEWALKS REVOLVING LOANS	143,001	1,454	0	0	0	0	144,455		\$144,455
	Total Revised Fund 114	143,001	1,454	0	0	0	0	144,455		\$144,455
115	CORP ESCROW ACCOUNT RESERVE	1,000	0	0	0	0	0	1,000		\$1,000
	Total Revised Fund 115	1,000	0	0	0	0	0	1,000		\$1,000
119	2012 GRT REF/IMP REVBD	407,932	29,960	0	0	0	154,384	283,508		\$283,508
	Revision #9-Quality of Life Projects					0	283,508	(283,508)		(\$283,508)
	Total Revised Fund 119	407,932	29,960	0	0	0	437,892	0		0
121	2015 GO BONDS-FUN CENTER	90,064	914	0	0	0	0	90,978		\$90,978
	Total Revised Fund 121	90,064	914	0	0	0	0	90,978		\$90,978
122	2015 GO BONDS-STREETS	174,516	1,771	0	0	0	0	176,287		\$176,287
	Total Revised Fund 122	174,516	1,771	0	0	0	0	176,287		\$176,287
124	AMERICAN RESCUE PLAN ACT	0	3,952,892	0	0	0	3,952,892	0		\$0
	Total Revised Fund 124	0	3,952,892	0	0	0	3,952,892	0		0
901	HOUSING LOW RENT OPERATING	1,146,135	1,014,541	0	0	0	1,331,669	829,007	354,627	\$474,380
	Revision #9-Sale of Scrap		183			0		183		\$183
	Total Revised Fund 901	1,146,135	1,014,724	0	0	0	1,331,669	829,190	354,627	\$474,563
903	HOUSING HOMEOWNERSHIP OPER	713,222	1,525	0	0	0	17,969	696,778		\$696,778
	Total Revised Fund 903	713,222	1,525	0	0	0	17,969	696,778		\$696,778
904	HOUSING CAPITAL FUND PROJECTS	0	1,333,878	0	0	0	1,333,878	0		\$0
	Total Revised Fund 904	0	1,333,878	0	0	0	1,333,878	0		0
TOTALS FY2022		69,595,645	89,937,195	28,985,223	28,985,223	0	116,058,583	43,474,257	6,324,210	37,150,046

RECURRING/ NON- RECURRING	FUND NO.	LINE ITEM NO.	LINE ITEM DESCRIPTION	ORIGINAL BUDGET AMOUNT	INCREASE (DECREASE)	REVISED BUDGET AMOUNT
REVISION #1						
This budget revision is to recognize the NSIP Corrected Grant for Congregate & Home Delivered Meals Programs at the Senior Center.						
	71	SENIOR CENTER				
		Revenues				
SCCL22	071-0000-317.16-34		Cash in Lieu/NSIP	58,023	(857)	57,166
			Total Revenue	58,023	(857)	57,166
		Expenditures				
SCCL22	071-8023-445.32-65		Commodities/NSIP	29,011	(428)	28,583
SCCL22	071-8024-445.32-65		Commodities/NSIP	29,012	(429)	28,583
			Total Expenditures	58,023	(857)	57,166
REVISION #2						
This budget revision is to provide funding for a donation from the Friends of the Library for new furniture.						
	32	COMMUNITY SERVICES				
		Revenues				
L11703	032-7101-314.13-36		User Fees - Donations	10,000	10,000	20,000
			Total Revenue	10,000	10,000	20,000
		Expenditures				
L11703	032-7101-455.50-50		Equipment - Non Capital	0	10,000	10,000
			Total Expenditures	0	10,000	10,000
REVISION #3						
This budget revision is to increase Facility Rentals and Concessions to actual levels and budget the corresponding expenditures in the Civic Center budget.						
	20	LODGER'S TAX-CITY'S SHARE				
		Revenues				
	020-0000-314.13-09		Facility Rental	16,000	2,664	18,664
	020-0000-314.13-15		Concessions	26,932	7,033	33,965
			Total Revenue	42,932	9,697	52,629
		Expenditures				
	020-0006-454.31-66		Event Supplies	10,350	3,000	13,350
	020-0006-454.57-93		Special Events	41,469	6,697	48,166
			Total Expenditures	51,819	9,697	61,516
REVISION #4						
This budget revision is to adjust the budget for charges in the Prisoners at the Otero County Jail line-item for the remainder of FY22.						
	15	CORRECTIONS				
		Expenditures				
	015-0000-427.57-49		Prisoner Support	30,000	5,000	35,000
			Total Expenditures	30,000	5,000	35,000
REVISION #5						
This budget revision is to adjust Year End Projected amounts in the Solid Waste Fund.						
	86	SOLID WASTE				
		Revenues				
	086-0000-314.13-64		Refuse Removal Charges	2,071,824	359,897	2,431,721
	086-0000-314.13-69		Non-Residential Convenience Center	18,747	20,600	39,347
			Total Revenue	2,090,571	380,497	2,471,068
		Expenditures				
	086-0003-433.57-34		Contract Services	1,800,000	22,500	1,822,500
	086-1003-434.57-25		Landfill Tipping Fees	52,723	27,277	80,000
			Total Expenditures	1,852,723	49,777	1,902,500
REVISION #6						
This budget revision is to account for the Grant award to the Alamogordo Animal Control for \$ 75,000 from the Carrol Petrie Foundation.						
	24	GRANT CAPITAL IMPROVEMENT				
		Revenues				
AC2301	024-0000-317.16-59		Other Grants	151,731	75,000	226,731
			Total Revenue	151,731	75,000	226,731
		Expenditures				
AC2301	024-3804-429.63-91		Building Improvements	65,000	75,000	140,000
			Total Expenditures	65,000	75,000	140,000
REVISION #7						
This budget revision is to increase funds for committed Memberships & Dues expenditures in FY22.						
	16	LODGER'S TAX-CITY'S SHARE				
		Expenditures				
	016-0001-419.56-45		Memberships & Dues	1,000	800	1,800
			Total Expenditures	1,000	800	1,800
REVISION #8						
This budget revision is to adjust the debt service budget to actual for remainder of FY22.						
	82	JT. WATER/SEWER P & I				
		Transfers in				
	082-0000-391.19-49		Trans fr (49)'86 GRT	536,781	516,250	1,053,031
			Total Transfers In	536,781	516,250	1,053,031
		Expenditures				
	082-0000-472.72-55		Interest Bonito Lake Improvement	0	300	300
	082-0000-472-73-55		Fees Bonito Lake Improvement	0	500	500
			Total Expenditures	0	800	800
	49	86 GROSS RECEIPTS TAX				
		Transfers Out				
	049-0000-491.18-82		Tran to (82) Jt. W/S P & I	536,781	516,250	1,053,031
			Total Transfers Out	536,781	516,250	1,053,031

REVISION #9

This budget adjustment records Sale of Scrap revenue with a corresponding increase in expenditures as indicated for January, February, March 2022.

11 GENERAL OPERATING					
<i>Revenues</i>					
	011-3705-316.15-05	Sale of Scrap	0	18	18
		Total Revenue	0	18	18
<i>Revenues</i>					
	011-4104-316.15-05	Sale of Scrap	7,216	4,922	12,138
		Total Revenue	7,216	4,922	12,138
<i>Expenditures</i>					
CERDPS	011-4104-420.61-85	Equipment Replacement	7,629	4,922	12,551
		Total Expenditures	7,629	4,922	12,551
12 INTERNAL SERVICE FUND					
<i>Revenues</i>					
	012-3503-316.15-05	Sale of Scrap	1,305	3,135	4,440
		Total Revenue	1,305	3,135	4,440
<i>Expenditures</i>					
	012-3503-419.65-70	Facility Improvements	0	3,135	3,135
		Total Expenditures	0	3,135	3,135
44 TRANSPORTATION					
<i>Revenues</i>					
	044-0000-316.15-05	Sale of Scrap	0	5,700	5,700
		Total Revenue	0	5,700	5,700
<i>Expenditures</i>					
CERSTR	044-5299-990.61-85	CER Equipment Replacement	1,867	5,700	7,567
		Total Expenditures	1,867	5,700	7,567
81 WATER/SEWER OP. FUND					
<i>Revenues</i>					
	081-5703-316.15-05	Sale of Scrap	962	2,900	3,862
		Total Revenue	962	2,900	3,862
<i>Expenditures</i>					
CERWFP	081-5703-461.61-85	CER Equipment Replacement	169,124	2,900	172,024
		Total Expenditures	169,124	2,900	172,024
90 GOLF COURSE					
<i>Revenues</i>					
	090-0000-316.15-05	Sale of Scrap	898	807	1,705
		Total Revenue	898	807	1,705
<i>Expenditures</i>					
CERGLC	090-0199-990.65-69	Golf Course Equipment	650	807	1,457
		Total Expenditures	650	807	1,457
901 HOUSING LOW RENT OPER					
<i>Revenues</i>					
	901-0000-316.15-05	Sale of Scrap	280	183	463
		Total Revenue	280	183	463

REVISION #10

This budget revision is to adjust Salary & Benefit Fiscal Year End 2022 totals in the Procurement and Human Resource divisions, respectively.

11 GENERAL					
<i>Transfers Out</i>					
	011-0000-491.18-12	Tran to (12) Internal Service	3,223,056	43,399	3,266,455
		Total Transfers Out	3,223,056	43,399	3,266,455
12 INTERNAL SERVICE FUND					
<i>Transfers in</i>					
	012-0000-391.19-11	Trans fr (11) General	3,223,056	43,399	3,266,455
		Total Transfers In	3,223,056	43,399	3,266,455
<i>Expenditures</i>					
<i>Procurement</i>					
	012-1602-415.20-01	Supervisory	49,896	1,865	51,761
	012-1602-415.20-02	Operational	40,161	33	40,194
	012-1602-415.20-04	Overtime	500	440	940
	012-1602-415.20-07	Standby Compensation	800	200	1,000
	012-1602-415.20-10	Retirement	12,968	257	13,225
	012-1602-415.20-12	Retiree Health	1,801	36	1,837
	012-1602-415.20-15	Social Security	7,375	1,056	8,431
	012-1602-415.20-20	PTO Conversion	909	5,146	6,055
	012-1602-415.20-25	Group Health Insurance	1,079	48	1,127
	012-1602-415.20-30	Worker's Compensation	674	10	684
		Total Expenditures	116,163	9,091	125,254
<i>Human Resources</i>					
	012-1701-415.20-01	Supervisory	77,600	9,793	87,393
	012-1701-415.20-02	Operational	188,334	7,472	195,806
	012-1701-415.20-10	Retirement	38,294	2,487	40,781
	012-1701-415.20-12	Retiree Health	5,319	346	5,665
	012-1701-415.20-15	Social Security	21,433	1,822	23,255
	012-1701-415.20-20	PTO Conversion	2,000	4,816	6,816
	012-1701-415.20-25	*Group Health Insurance	18,754	7,464	26,218
	012-1701-415.20-30	Worker's Compensation	1,068	108	1,176
		Total Expenditures	352,802	34,308	387,110
		Total Internal Service Expenditures	468,965	43,399	512,364

REVISION #11

This budget revision is to attach funds for Quality of Life projects in Parks & Recreation divisions.

119 2012 GRT Ref/Imp Revenue Bond					
<i>Expenditures</i>					
CS2023	119-6199-990.66-01	P&R QOL Upgrades	37,226	283,508	320,734
		Total Expenditures	37,226	283,508	320,734

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/06/2022

Report No: 8.

Submitted By: Barbara Pyeatt

Subject: Consider, an act upon, approving the award of RFQ 2022-04 Professional Services to Update Various Code Ordinance for the City of Alamogordo to NM Local Government Law, LLC. (*Nancy Beshaler, Public Works Director*)

Fiscal Impact:

Amount Budgeted: \$75,000

Fund:

Additional Fiscal Impact:

Recommendation: Approve the award and authorize staff to proceed with the Services Agreement.

Background: RFQ 2022-04 Scope of work is to update and re-write several Code of Ordinances. Chapter 3: Advertising; Chapter 11: Criminal Code 11-06-156 Elimination of Graffiti; Chapter 14 Garbage, Trash and Refuse; Chapter 17 Licenses and Misc Business Regulations; Chapter 26: Vegetation; Chapter 28: Water, Sewer, and Sewage Disposal. RFQ was advertised on April 24, 2022. Proposals were due on June 2, 2022. One proposal was received and determined to be in compliance.

A copy of the Proposal can be viewed at the Clerks Office.

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/06/2022

Report No: 9.

Submitted By: Evelyn Huff

Subject: Consider, and act upon, approving the award of RFP 2022-010 Auditing Services to Carr, Riggs and Ingram. (*Evelyn Huff, Finance Director*)

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: Approve award of RFP

Background: RFP 2022-010 was advertised May 13, 2022 and proposals were due May 31, 2022. The completed evaluation form is attached.

New Mexico State Auditor's Office												
Audit Contract Proposal Evaluation Form Detail												
			Carr Riggs & Ingram					Pattillo, Brown & Hill				
	Evaluation Criteria	Max Pts	1	2	3	4	5	1	2	3	4	5
	Section I: Capability of IPA Firm											
	Resources of IPA to preform audit	100	90	100	99	75	85	80	90	98	80	80
	Results of most recent external quality review	50	50	50	50	50	50	50	50	50	50	50
	Organization and completeness of proposal or bid.	150	140	140	150	100	140	130	125	125	125	130
	Section II: Work Requirements & Audit Approach											
	IPA's knowledge of agency's need and product	125	125	125	125	120	115	120	100	125	120	100
	Soundness of technical plan and estimates for completion	125	120	125	125	100	115	110	125	120	100	115
	plans for using agency staff	50	45	50	50	40	45	40	40	50	45	40
	Plans for subsequent years approach and word effort	50	45	50	50	45	45	40	40	50	45	40
	Section III: Technical Expertise											
	Governmental audit experience and specilization	150	140	150	150	150	135	130	150	150	150	125
	Continuing professional education	50	50	50	50	45	45	50	50	50	45	40
	References	50	50	50	50	45	35	50	50	48	45	35
	Cost Evaluation Score	100	100	100	100	100	100	82	82	82	82	82
	Totals	1000	955	990	999	870	910	882	902	948	887	837
			4724					4456				
	Total with Preferences Applied		5196.4					4678.8				
			Local Preference					State Resident Preference				

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/07/2022

Report No: 10.

Submitted By: Deborah Osborne

Subject: Consider, and act upon, acceptance of a \$50,000 appropriation agreement from NM Department of Finance and Administration to Alamogordo Police Department to purchase and equip vehicles. *(Richard Denton, Police Chief)*

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact: No additional fiscal impact.

Recommendation: Accept appropriation agreement 22-ZG9095 in the amount of \$50,000.

Background: In January 2022, the Legislators requested proposed projects to be considered for House Bill Junior 2 funding during the 2022 Legislative Session. In response, the Alamogordo Police Department submitted a request for funding to purchase and equip law enforcement vehicles for the Alamogordo Police Department. The request was approved and appropriation agreement 22-ZG9095 in the amount of \$50,000 was awarded to purchase and vehicles.

APPROPRIATION RECIPIENT:

City of Alamogordo

APPROPRIATION NUMBER:

22-ZG9095

APPROPRIATION AMOUNT:

\$50,000

REVERSION DATE:

June 30, 2023

APPROPRIATION LANGUAGE

Fifty thousand dollars (\$50,000) to purchase and equip law enforcement vehicles for Alamogordo. Funds unexpended by June 30th, 2023, will be reverted to the State of New Mexico's general fund.

APPROPRIATION REIMBURSEMENT

The appropriation funds will be disbursed through a reimbursement process. The Appropriation Recipient will submit to the Reimbursing Agency the Exhibit A: Request for Payment form along with supporting document(s) that evidence the expenses to be reimbursed. The Reimbursing Agency will review these documents to ensure all expenses to be reimbursed reflect the intent and purpose of the appropriation language. All expenditures for which the Appropriation Recipient requests reimbursement must occur prior to the reversion date. The latest date the Appropriation Recipient may submit a Request for Payment is July 14th, 2023. With the submission of the final Exhibit A: Request for Payment, the Appropriation Recipient must include a completed Exhibit B: Final Report form in order to receive the final reimbursement.

CERTIFICATION

I hereby certify that **City of Alamogordo**

1. Will only use the appropriation funds to carry out and/or perform activities described in appropriation language.
2. Will comply with State Procurement Code and execution of binding written obligations or purchase orders with third party contractors or vendors for the provision of services, including professional services, or the purchase of tangible personal property and real property for the project.
3. Ensures that the appropriation funds only benefit entities in accordance with applicable law, including, but not limited to Article IX, Section 14 of the Constitution of the State of New Mexico, "Anti-Donation Clause."
4. Will follow the procedure described in "Appropriation Reimbursement" for reimbursement of appropriated funds.

Appropriation Recipient Representative - Richard Denton

Date

Appropriation Recipient CFO - Brian Cesar

Date

APPROVAL

In in accordance with the authority conferred on the Department of Finance & Administration by the statute appropriating these funds, I hereby approve this certification for appropriation number 22-ZG9095 in the amount of \$50,000.

Donnie Quintana
Director, Local Government Division

Date

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/07/2022

Report No: 11.

Submitted By: Deborah Osborne

Subject: Consider, and act upon, acceptance of a \$65,000 appropriation agreement from NM Department of Finance and Administration to Alamogordo Police Department to purchase and equip vehicles and department equipment. *(Richard Denton, Police Chief)*

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact: No additional fiscal impact.

Recommendation: Accept appropriation agreement 22-ZG9096 in the amount of \$65,000.

Background: In January 2022, the Legislators requested proposed projects to be considered for House Bill Junior 2 funding during the 2022 Legislative Session. In response, the Alamogordo Police Department submitted a request for funding to purchase and equip law enforcement vehicles and equipment for the Alamogordo Police Department. The request was approved and appropriation agreement 22-ZG9096 in the amount of \$65,000 was awarded to purchase and equip vehicles and department equipment.

APPROPRIATION RECIPIENT:

City of Alamogordo

APPROPRIATION NUMBER: APPROPRIATION AMOUNT: REVERSION DATE:

22-ZG9096

\$65,000

June 30, 2023

APPROPRIATION LANGUAGE

Sixty-five thousand dollars (\$65,000) to purchase and equip law enforcement vehicles and equipment for the Alamogordo police department. Funds unexpended by June 30th, 2023, will be reverted to the State of New Mexico's general fund.

APPROPRIATION REIMBURSEMENT

The appropriation funds will be disbursed through a reimbursement process. The Appropriation Recipient will submit to the Reimbursing Agency the Exhibit A: Request for Payment form along with supporting document(s) that evidence the expenses to be reimbursed. The Reimbursing Agency will review these documents to ensure all expenses to be reimbursed reflect the intent and purpose of the appropriation language. All expenditures for which the Appropriation Recipient requests reimbursement must occur prior to the reversion date. The latest date the Appropriation Recipient may submit a Request for Payment is July 14th, 2023. With the submission of the final Exhibit A: Request for Payment, the Appropriation Recipient must include a completed Exhibit B: Final Report form in order to receive the final reimbursement.

CERTIFICATION

I hereby certify that City of Alamogordo

1. Will only use the appropriation funds to carry out and/or perform activities described in appropriation language.
2. Will comply with State Procurement Code and execution of binding written obligations or purchase orders with third party contractors or vendors for the provision of services, including professional services, or the purchase of tangible personal property and real property for the project.
3. Ensures that the appropriation funds only benefit entities in accordance with applicable law, including, but not limited to Article IX, Section 14 of the Constitution of the State of New Mexico, "Anti-Donation Clause."
4. Will follow the procedure described in "Appropriation Reimbursement" for reimbursement of appropriated funds.

Appropriation Recipient Representative - Richard Denton

Date

Appropriation Recipient CFO - Brian Cesar

Date

APPROVAL

In accordance with the authority conferred on the Department of Finance & Administration by the statute appropriating these funds, I hereby approve this certification for appropriation number 22-ZG9096 in the amount of \$65,000.

Donnie Quintana
Director, Local Government Division

Date

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/07/2022

Report No: 12.

Submitted By:

Subject: Consider, and act upon, acceptance of a \$100,000 appropriation agreement from NM Department of Finance and Administration to Community Services for park surveillance equipment. (*Veronica Ortega, Community Services Director*)

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact: No additional fiscal impact.

Recommendation: Accept agreement 22-ZG9093 in the amount of \$100,000 from NM Department of Finance and Administration.

Background: In January 2022, the Legislators requested proposed projects to be considered for House Bill Junior 2 funding during the 2022 Legislative Session. In response, the Community Services Parks Department submitted a request for funding to purchase and install security and surveillance equipment throughout Alamogordo City parks. The request was approved and appropriation agreement 22-ZG9093 in the amount of \$100,000 was awarded to purchase and install the security and surveillance equipment.

APPROPRIATION RECIPIENT:

City of Alamogordo

APPROPRIATION NUMBER:

22-ZG9093

APPROPRIATION AMOUNT:

\$100,000

REVERSION DATE:

June 30, 2023

APPROPRIATION LANGUAGE

One hundred thousand dollars (\$100,000) to purchase and install security and surveillance equipment for Alamogordo city parks. Funds unexpended by June 30th, 2023, will be reverted to the State of New Mexico's general fund.

APPROPRIATION REIMBURSEMENT

The appropriation funds will be disbursed through a reimbursement process. The Appropriation Recipient will submit to the Reimbursing Agency the Exhibit A: Request for Payment form along with supporting document(s) that evidence the expenses to be reimbursed. The Reimbursing Agency will review these documents to ensure all expenses to be reimbursed reflect the intent and purpose of the appropriation language. All expenditures for which the Appropriation Recipient requests reimbursement must occur prior to the reversion date. The latest date the Appropriation Recipient may submit a Request for Payment is July 14th, 2023. With the submission of the final Exhibit A: Request for Payment, the Appropriation Recipient must include a completed Exhibit B: Final Report form in order to receive the final reimbursement.

CERTIFICATION

I hereby certify that **City of Alamogordo**

1. Will only use the appropriation funds to carry out and/or perform activities described in appropriation language.
2. Will comply with State Procurement Code and execution of binding written obligations or purchase orders with third party contractors or vendors for the provision of services, including professional services, or the purchase of tangible personal property and real property for the project.
3. Ensures that the appropriation funds only benefit entities in accordance with applicable law, including, but not limited to Article IX, Section 14 of the Constitution of the State of New Mexico, "Anti-Donation Clause."
4. Will follow the procedure described in "Appropriation Reimbursement" for reimbursement of appropriated funds.

Appropriation Recipient Representative - Veronica Ortega

Date

Appropriation Recipient CFO - Brian Cesar

Date

APPROVAL

In accordance with the authority conferred on the Department of Finance & Administration by the statute appropriating these funds, I hereby approve this certification for appropriation number 22-ZG9093 in the amount of \$100,000.

Donnie Quintana
Director, Local Government Division

Date

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/07/2022

Report No: 13.

Submitted By: Deborah Osborne

Subject: Consider, and act upon, acceptance of a \$50,000 appropriation agreement from NM Department of Finance and Administration to Community Services for playground ground cover and borders. (*Veronica Ortega, Community Services Director*)

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact: No additional fiscal impact.

Recommendation: Accept agreement 22-ZG9092 in the amount of \$50,000 from NM Department of Finance and Administration.

Background: In January 2022, the Legislators requested proposed projects to be considered for House Bill Junior 2 funding during the 2022 Legislative Session. In response, the Community Services Parks Department submitted a request for funding to purchase and install woodchips and playground borders for Alamogordo's City playgrounds. The request was approved and appropriation agreement 22-ZG9092 in the amount of \$50,000 was awarded to purchase and install ground cover and playground borders for Alamogordo City playgrounds.

APPROPRIATION RECIPIENT:

City of Alamogordo

APPROPRIATION NUMBER:

22-ZG9092

APPROPRIATION AMOUNT:

\$50,000

REVERSION DATE:

June 30, 2023

APPROPRIATION LANGUAGE

Fifty thousand dollars (\$50,000) to purchase and install ground cover and playground borders for Alamogordo city playgrounds. Funds unexpended by June 30th, 2023, will be reverted to the State of New Mexico's general fund.

APPROPRIATION REIMBURSEMENT

The appropriation funds will be disbursed through a reimbursement process. The Appropriation Recipient will submit to the Reimbursing Agency the Exhibit A: Request for Payment form along with supporting document(s) that evidence the expenses to be reimbursed. The Reimbursing Agency will review these documents to ensure all expenses to be reimbursed reflect the intent and purpose of the appropriation language. All expenditures for which the Appropriation Recipient requests reimbursement must occur prior to the reversion date. The latest date the Appropriation Recipient may submit a Request for Payment is July 14th, 2023. With the submission of the final Exhibit A: Request for Payment, the Appropriation Recipient must include a completed Exhibit B: Final Report form in order to receive the final reimbursement.

CERTIFICATION

I hereby certify that **City of Alamogordo**

1. Will only use the appropriation funds to carry out and/or perform activities described in appropriation language.
2. Will comply with State Procurement Code and execution of binding written obligations or purchase orders with third party contractors or vendors for the provision of services, including professional services, or the purchase of tangible personal property and real property for the project.
3. Ensures that the appropriation funds only benefit entities in accordance with applicable law, including, but not limited to Article IX, Section 14 of the Constitution of the State of New Mexico, "Anti-Donation Clause."
4. Will follow the procedure described in "Appropriation Reimbursement" for reimbursement of appropriated funds.

Appropriation Recipient Representative - Veronica Ortega

Date

Appropriation Recipient CFO - Brian Cesar

Date

APPROVAL

In accordance with the authority conferred on the Department of Finance & Administration by the statute appropriating these funds, I hereby approve this certification for appropriation number 22-ZG9092 in the amount of \$50,000.

Donnie Quintana
Director, Local Government Division

Date

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/10/2022

Report No: 14.

Submitted By: Stella Rael

Subject: Consider, and act upon, first publication of Ordinance 1651 Case Z-2022-0001(A), a map amendment to remove the condition that was placed on the property in 1998. Property located at 1001 Scenic Dr. was rezoned from R-1 Single Family Dwelling to C-1 Neighborhood Business Case 1998-0574(A), with the condition that property could only be used as an ATM machine location. *(Stella Rael, City Planner)* **(Roll Call Vote Required)**

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: Approve for first publication.

Background: Current owner John L. Harris is requesting that the condition placed on this property be removed in order to use the location for other purposes allowed within a C-1 zoning district.

ORDINANCE No. 1651

AN ORDINANCE AMENDING THE OFFICIAL ZONING MAP OF THE CITY OF ALAMOGORDO, REMOVING THE CONDITION PLACED ON A CERTAIN PROPERTY COMMONLY KNOWN AS DALE BELLAMAH ADDITION #4-A LOT 14 WITHIN THE CORPORATE BOUNDARIES OF THE CITY OF ALAMOGORDO, OTERO COUNTY, NEW MEXICO.

WHEREAS, John L. Harris (hereinafter referred to as "the Owner") is the owner of certain real property legally described below (herein after referred to as "the Property") located within the corporate boundaries of the City of Alamogordo, New Mexico, (hereinafter referred to as "the City"); and

1001 SCENIC DR.

WHEREAS, an application has been filed in the Owner's name under Case No. **Z-2022-0001(A)** to remove the conditional zoning of the Property, and

WHEREAS, the City Commission, after notice and hearing, finds and determines that the application for the removal of the condition of the Property is in the public interest and is consistent with proper development of the City.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION, THAT the zoning of the Property, will remain within a C-1 Neighborhood Zoning District which is more fully described below:

1001 SCENIC DR.

Is hereby changed from C-1 Neighborhood Zoning District without conditions; and the official zoning map and comprehensive plan of the City are hereby amended to reflect this change.

PASSED, APPROVED, AND ADOPTED this _____ day of _____, 2022.

**CITY OF ALAMOGORDO, NEW MEXICO a
New Mexico municipal corporation**

By: _____
Susan Payne Mayor

ATTEST:

Rachel Hughs, City Clerk

APPROVED AS TO FORM:

Petria Bengoechea, City Attorney



City of Alamogordo

City Commission



Z-2022-0001(A)

Stella Rael, City Planner
May 24, 2022

Zoning Request Case: Z-2022-0001(A)

Request:

The property owner is requesting that the city remove the condition that was placed on this property in 1998 when the property was rezoned from R-1 to C-1 with the condition that the property could only be used for placement of ATM machines.

Applicant/Owner:

John L. Harris

2513 Tres Lagos

Alamogordo, NM 88310

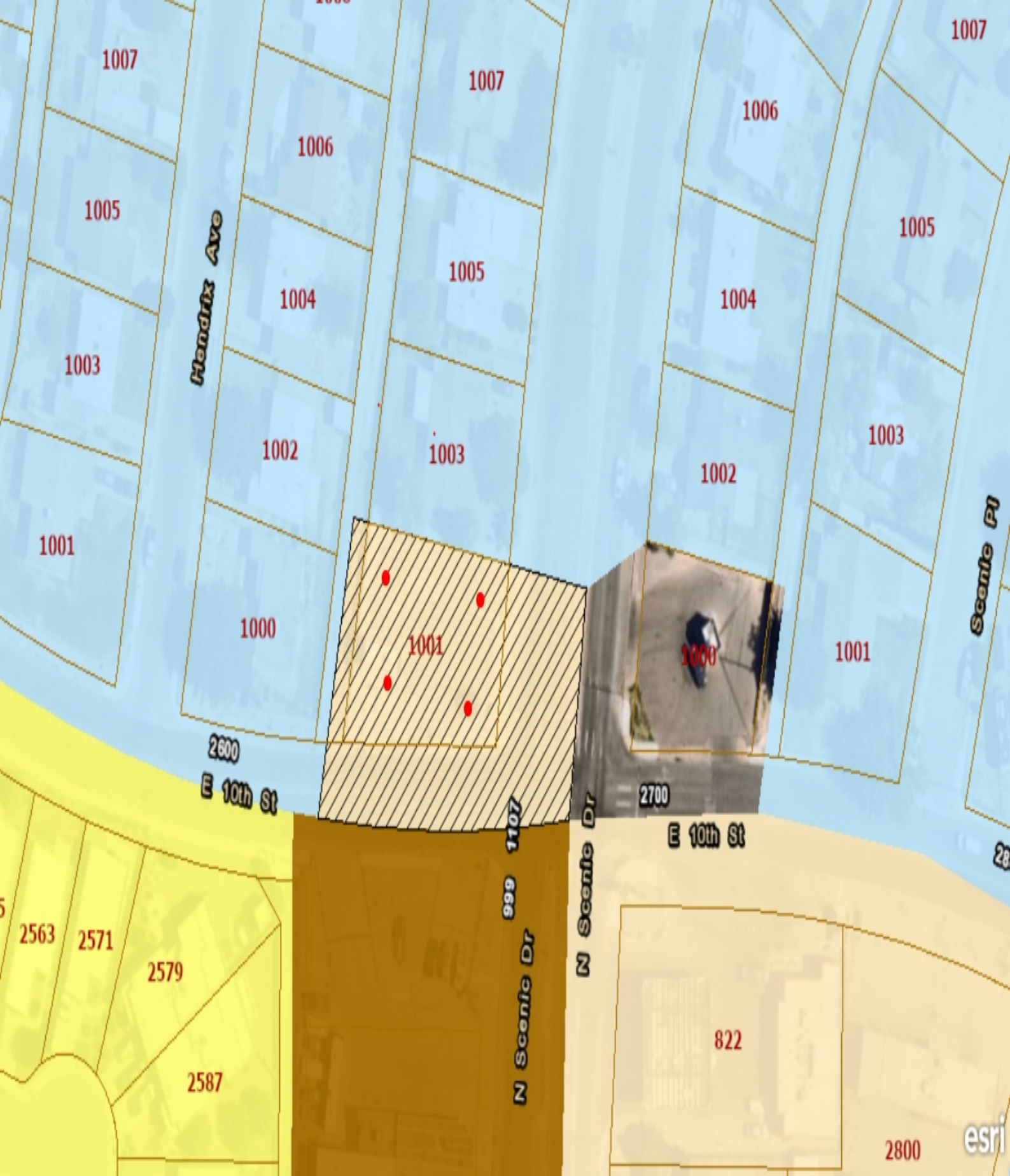
Findings of Fact

- ▶1. The application was filed on April 5, 2022
- ▶2. The legal notice was published on May 19, 2022
- ▶3. Twenty-Eight (28) letters were mailed by certified/returned receipt mail to all property owners of record within two hundred (200) feet from the property excluding public right-of-way, of the property.
- ▶4. As of May 18, 2022, there have been no letters returned undeliverable and I have not received any letters or phone calls of opposition.

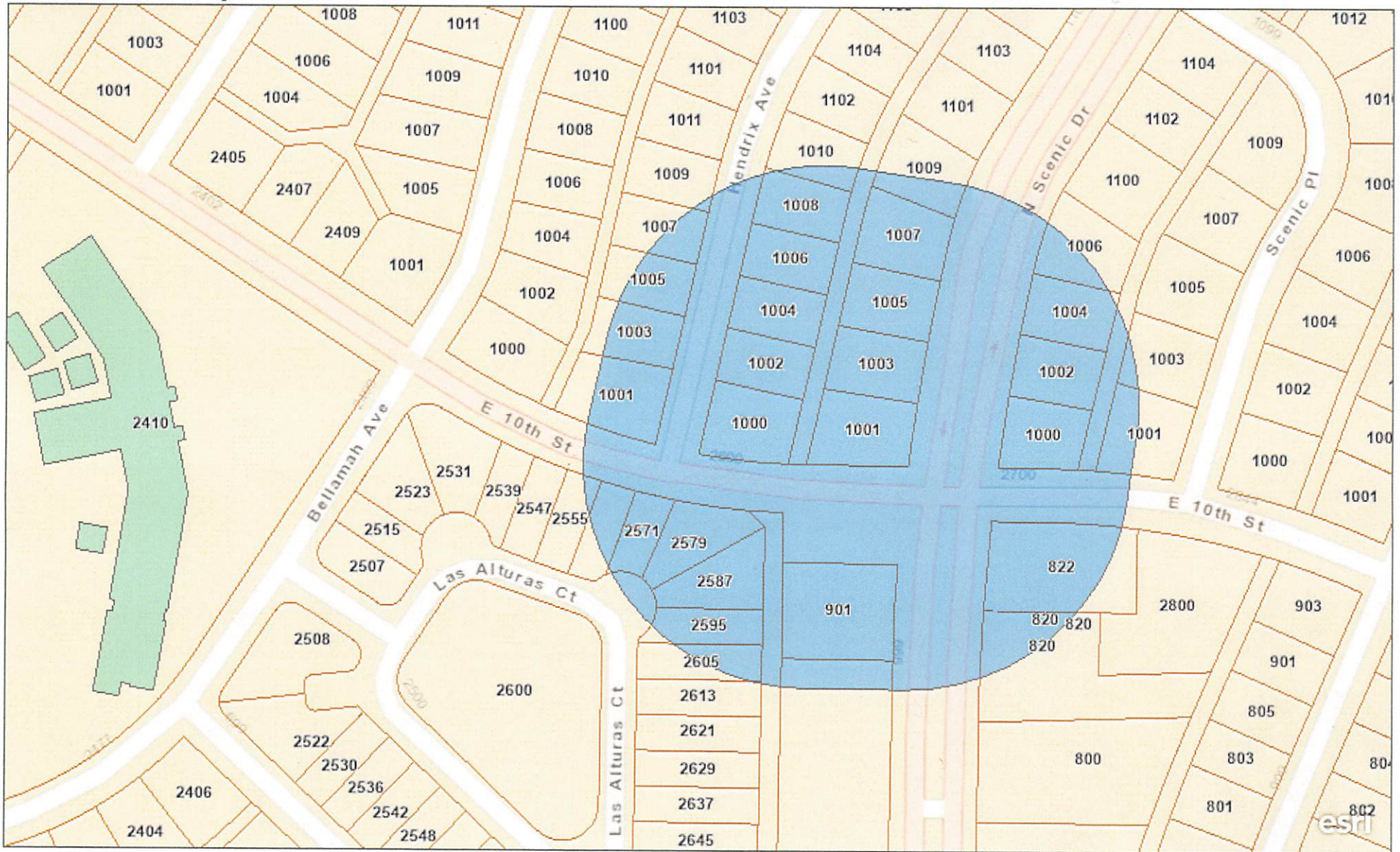
Z-2022-0001(A)

4

- ▶ 7. Staff recommends approval.



Protest Area Map



Map used to create Protest Area Map for Planning & Zoning Department

200ft

Bureau of Land Management, Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS | Esri, HERE | City of Alamogordo GIS

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/08/2022

Report No: 15.

Submitted By: Stella Rael

Subject: Consider, and act upon, the final plat for Case S-2022-0008(A) Somerset Subdivision. (*Stella Rael, City Planner*)

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact: N/A

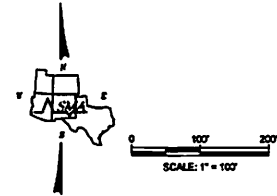
Recommendation: Approve Final Plat

Background: Somerset LLC is requesting the approval of the final plat of Somerset Subdivision. Plat consists of one hundred forty-two (142) lots. The total area is 87.91 acres located off of Hamilton Rd.



Tierra De Suenos Park

SOMERSET SUBDIVISION FINAL PLAT
 LOCATED IN WEST 1/2 SECTION 31, TOWNSHIP 16 SOUTH,
 RANGE 10 EAST, NMPM, ALAMOGORDO,
 OTERO COUNTY, NEW MEXICO
 87.91 ACRES +/-



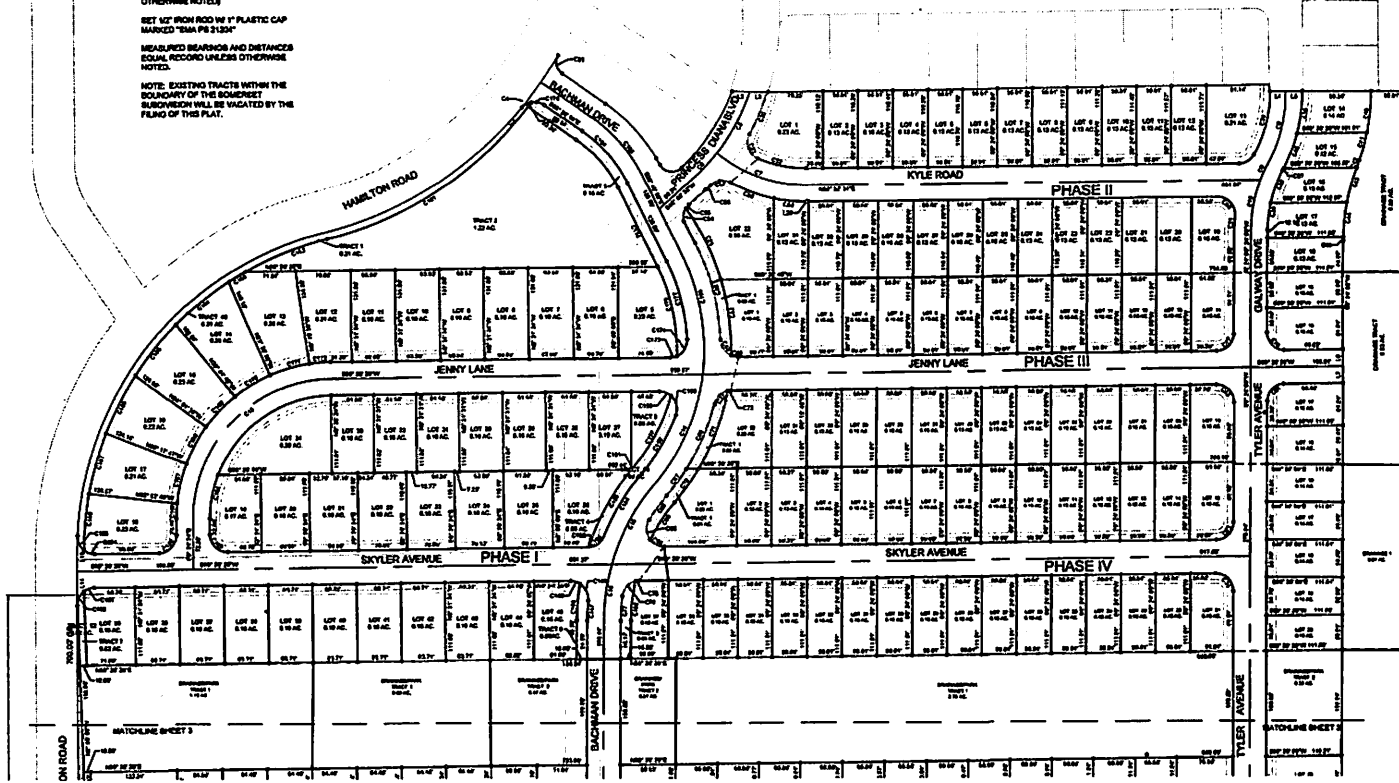
LEGEND

- FOUND 1/2 INCH IRON ROD WITH PLASTIC CAP STAMPED 2134 (A LESS OTHERS NOTED)
- SET 1/2 INCH IRON ROD IN 1" PLASTIC CAP STAMPED "SMA 1742 11/07"
- MEASURED BEARINGS AND DISTANCES EQUAL RECORD UNLESS OTHERWISE NOTED.
- NOTE: EXISTING TRACTS WITHIN THE BOUNDARY OF THIS SUBDIVISION WILL BE VACATED BY THE FILING OF THIS PLAT.

RATH TARA ESTATES PHASE 5
 INSTRUMENT No 1742
 FEBRUARY 17, 2004

ALAMOGORDO
 SCHOOL DISTRICT

COUNTRY CLUB ESTATES
 INSTRUMENT No 26008376
 FILED AUGUST 24, 2006



 Architectural Structural Mechanical Electrical	SOUDER, MILLER & ASSOCIATES	3900 Sedona Hills Parkway Las Cruces, NM 88011 Phone (575) 647-0799 Toll Free (800) 647-0799	SOMERSET SUBDIVISION	SUBMITTED BY: SOMERSET, LLC ALAMOGORDO, NEW MEXICO	PROJECT NUMBER	DATE
					9330393	MAY 2022
					DRAWN BY	TS
					CHECKED BY	DOC
					DATE	05-16-2022

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/08/2022

Report No: 16.

Submitted By: Kim Torres

Subject: Consider, and act upon, first publication of Ordinance 1652 amending Section 3-1 of the Alamogordo Code of Ordinances concerning Compensation in the Employee Manual. *(Kim Torres, HR Director)* **(Roll Call Vote Required)**

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: Approve first publication of Ordinance 1652.

Background: The proposed changes to the City of Alamogordo Employee Manual are directly related to the completion of the Classification and Compensation study. Implementation of a new Salary Plan requires revisions to Section 3 – Compensation of the City of Alamogordo Employee Manual.

A *Cost-of-Living* Section has been included in the Manual. This allows for employees to move upward in pay steps each fiscal year as determined through approved government appropriations.

The Section on *Maintenance of the Salary Plan* now includes language that requires the City to review the salary plan at least every five years to determine the need for an updated plan. This commitment will ensure that the plan is reviewed and updated as necessary and will prevent years upon years from going by without a full study being performed.

The City is implementing a twenty-five step Salary Plan for every position. As such the sections on promotions, transfers, demotions, etc. had to be re-written to accommodate the Pay Plan and the specific amounts in each step of the plan. This plan is designed to treat all employees the same when promoting, transferring, etc. Likewise with external candidates, the rate of pay will be determined based on a specific criterion.

ORDINANCE NUMBER: 1652**AN ORDINANCE AMENDING SECTION 3-1 OF THE
ALAMOGORDO CODE OF ORDINANCES
CONCERNING COMPENSATION IN THE EMPLOYEE MANUAL**

WHEREAS The City of Alamogordo recognizes the importance of periodic review of the employee manual to assure it is updated;

BE IT THEREFORE ORDAINED by the City Commission of the City of Alamogordo, New Mexico that Section 3-1 of the Code of Ordinances be amended to read as follows:

Section 3 - Compensation**3-1 Compensation**

The term "Compensation" refers to base salary and other forms of compensation to include, but not limited to, fringe benefits such as paid leaves, insurance, retirement pensions, incentive plans, and paid holidays. The Compensation Plan shall strive for fair market compensation in terms of service provided to the community for resources expended.

Purpose and Policy

It is the policy of the City to establish a compensation system that will allow the City, within budgetary constraints, to effectively compete for qualified personnel and to ensure that salaries are equitable and commensurate with the duties performed by each employee.

Salary Plan

A salary plan shall be prepared and reviewed by the City Manager, and approved in the budget by the City Commission, and shall apply to all employees not covered by a labor contract unless the labor contract specifies otherwise. Employees covered by a labor contract shall be compensated as referenced in their respective agreements. A copy of the current salary plan shall be on file in the Human Resources Office.

Cost of Living

Cost-of-living adjustments/salary modifications may be granted by the City Manager as determined through approved government appropriations. If granted, employees will move upward to the next step in their currently assigned pay grade. This movement will be effective the first day of the pay period of the new fiscal year as approved.

All increases are subject to budgetary constraints.

Maintenance of the Salary Plan

The City will review the salary plan at least every five (5) years to determine the current need for an updated salary plan. If it is determined that an updated salary plan is necessary, the City will contract with an outside vendor to complete a full compensation and classification study.

The City will review the Consumer Price Index (CPI) at least every five (5) years and determine the previous five (5) full year average. The salary plan steps may be adjusted in an amount equal to the CPI's previous five (5) full year average upon approved government appropriations. During any fiscal year that the salary plan steps are adjusted per the CPI five (5) full year average, employees will remain in their current step and will receive an increase in pay equal to the amount of the current step adjustment.

Movement through the pay plan steps and CPI adjustments will be as approved through government appropriations.

The Human Resources Department shall be responsible for the maintenance and administration of the City's Salary Plan. Any recommended changes shall be presented to the Department Director and the City Manager for approval.

Standards for Development of the Salary and Compensation Plan

The Compensation Pay Plan is directly tied to the Classification Plan and is determined on the basis of:

1. Uniformity of pay for each class.
2. Relative difficulty and responsibility of positions.
3. Prevailing wages within the identified relevant public ~~and private~~ sector markets.
4. ~~Cost of living~~ Consumer Price Index.
5. Financial policies of the municipality.
6. Difficulty in recruiting suitable employees.
7. Other economic considerations.

Classification Plan

Positions that require similar qualifications and similar duties and responsibilities are assigned to the same salary level. The City may conduct periodic studies to determine if an employee is working above or below the responsibility level for that position. Where unusual conditions exist that affect the market value of a position, the salary may be adjusted accordingly by the City Manager.

Classification and Re-Classification of Positions.

An internal and external analysis will be conducted by Human Resources for any new position or existing position that has experienced significant changes in duties or qualification requirements. Human Resources will provide a recommendation to the Department Director and City Manager for approval.

Compensation System

Entry Level Pay Rates

The entry level rate is the ~~minimum rate~~ 1st step in the assigned pay grade range for the position.

Successful external candidates meeting the minimum requirements or otherwise qualifying for a position shall start at Step 1 of the pay range.

Successful external candidates exceeding the minimum requirements of the position will be calculated and placed in the appropriate step (up to step 10) per the following:

1. An additional step in the assigned pay grade for each two (2) full years of experience exceeding the minimum requirements of the position and/or;
2. An additional step in the assigned pay grade based on each level of degree awarded exceeding the minimum requirements of the position. To be considered for step credit the degree awarded must be in the degree field of study as designated in the current position description or is determined to be closely related.

A Department Director, subject to approval by the City Manager, may recommend for appointment, a candidate above the entry level rate, Step 1, up to Step 10, to the midpoint of the pay grade range for extenuating circumstances if:

- ~~1. There are a limited number of qualified applicants available at the entry level, or~~
- ~~2. The applicant has exceptional qualifications.~~

~~Above the mid-point if:~~

1. Multiple recruitments have failed to yield a qualified candidate, and/or
2. The applicant has qualifications which are unique or critical, and/or
3. A survey of the market reveals that the City is not competitive.

Employee Pay Rate Adjustments

Pay rate adjustments shall be administered as follows:

Seasonal employees promoting from seasonal to regular status shall start at ~~the entry rate~~ **step 1** of the new position.

~~Internal salary equity shall be considered when setting pay;~~

~~Entry level pay rate section may be applied when deemed appropriate by the City Manager.~~

1. Transfers. When an employee is transferred (reassigned) from one position to another within the same pay grade he or she shall continue to receive the same ~~base~~ **step assignment and** rate of pay. ~~Employees moving from a non-exempt position to an exempt position will receive:~~

~~A. Five (5) percent increase if moving from a non-exempt to an exempt position.~~

2. Promotions. A promotion is defined as an assignment from one grade to another, which has a higher **minimum and** maximum rate of pay and greater responsibility. **Upon promotion** ~~The~~ employee will receive the higher of:

A. **Step 1 or placement in the step that provides at least a ten** (10) percent **increase** when the new position is at least one (1) salary grade higher, or

B. **Step 1 or placement in the step that provides at least a fifteen** (15) percent **increase** when the new position is at least two (2) or more salary grades higher, or

C. **Fifteen (15) percent if moving from a non-exempt to a higher exempt position, or**

~~D-C.~~ **Placement in the new salary grade at step three (3)** ~~Five (5) percent above the minimum of the new pay grade range, provided the employee has successfully completed their initial probationary period; or~~

1. **An additional step in the assigned pay grade for each two (2) full years of experience exceeding the minimum requirements of the position and/or;**

2. **An additional step in the assigned pay grade for each degree level awarded exceeding the minimum requirements of the position. To be considered for step credit the degree awarded must be in the degree field of study as designated in the current position description or is determined to be closely related.**

Higher salary grade is determined by the percentage difference between the step 1 rate of the employee's current position vs. the step 1 rate of the new position. When going from the non-management table to the management table each 1.039 percent difference is equal to one step difference.

The new pay rate, upon promotion, shall not exceed the maximum of the new pay range.

3. Reclassification. ~~Upon an upward R-~~ **reclassification is the reassignment of a position from one class to a different class to recognize a significant change in the duties and responsibilities of the a position the affected employee will receive.** ~~For an upward reclassification the percentage increase will be the higher of:~~

A. Step 1 or placement in the step that provides at least a ~~T~~ ten (10) percent increase when the new position is at least one (1) salary grade higher, or

B. ~~Fifteen~~ Step 1 or placement in the step that provides at least a fifteen (15) percent increase when the new position is at least two (2) or more salary grades higher, or

C. ~~Fifteen (15) percent if moving from a non-exempt to a higher exempt position, or~~

D. Placement in the new pay grade at step three (3) ~~Five (5) percent above the minimum of the new pay grade range, provided the employee has successfully completed their initial probationary period.~~

E. For a downward reclassification the affected employee shall remain at their current base step in the current pay range but will move to the step in the new pay range that provides an increase effective on the same date as the next step movement is approved through government appropriations. ~~salary rate. However, the employee will not be eligible for any salary increase, other than an across the board increase, until their current base salary is within the range of the new pay grade.~~

4. **Demotion.** The placement of an employee from one class to another which has a lower pay rate or grade, resulting in a decrease in pay. In the case of a demotion, the employee's base salary shall be adjusted at the lower of:

A. Placement in the step that provides at least a ~~T~~ ten (10) percent decrease in pay when the new position is at least one (1) salary grade lower, or

B. Placement in the step that provides at least a ~~F~~ fifteen (15) percent decrease in pay when the new position is two (2) or more salary grades lower, ~~or~~

C. ~~Fifteen (15) percent if moving from an exempt to a lower non-exempt position, or~~

~~D.~~ C. The maximum base salary of the new pay grade.

~~E.~~ D. An employees pay when an involuntary movement to a lower pay grade occurs will be evaluated based on the extenuating circumstances surrounding the reason for the pay grade change.

~~F.~~ E. An employee transferring or demoting back to their previous position will ~~receive~~ be placed at their final salary previously assigned step in the pay range in that for the previous position, plus any across the board or step increases applied since the employee moved from that position.

Lower salary grade is determined by the percentage difference between the step 1 rate of the employee's current position vs. the step 1 rate of the new position. When going from the management table to a non-management table each 1.039 percent difference is equal to one step difference.

Additional Compensation

The City Manager may recommend additional forms of compensation in addition to the Salary Plan in the best interest of the City and within the amounts approved in the budget by the City Commission. The manner in which the award of additional compensation is to be determined will be outlined in writing by the City Manager and maintained in the Human Resources Department.

Cost of Living

-

~~Cost of living adjustments/salary modifications may be granted by the City Manager when authorized by the City Commission. If granted, they are effective the first day of the first pay period that is subsequently paid in the new fiscal year.~~

Employees who have reached step 25 of their assigned pay range will remain at step 25.

Pay Increases

-

~~Pay increase requests for non-represented employees shall generally be required during the budget process for the following budget year. Merit based and other increases are limited to the approved departmental budget and are subject to the availability of funds. Other pay increases occurring during the fiscal year will be effective the first full pay period following approval. Employees covered by a labor contract shall be compensated as referenced in their respective agreements.~~

Overtime/Compensatory Time

Overtime and Compensatory time will be paid in accordance with the Fair Labor Standards Act. A maximum limit of compensatory time may be set by the City Manager, not to exceed the rate set by local, state, or federal law. Exempt employees are not eligible for overtime pay and will be paid in accordance with the Fair Labor Standards Act.

Responsibilities and Authority to Approve Overtime/Compensatory Time

Employees may not work beyond their scheduled hours without prior approval from their Department Director or their designee. This written approval will be on an exception report form or other standard City forms within the work week. Department Directors are responsible for the accurate recording of all overtime and compensatory time on the employee's exception report. Accrued compensation time shall be utilized prior to accrued PTO, unless otherwise approved by the Department Director. Overtime and compensatory time will be administered in accordance with local, state, and federal laws.

When allowed by law, Department Directors may utilize compensatory time off in order to conserve their budgeted overtime for emergencies. Compensatory time accrued must be taken by the last day of the next to the last pay period of the fiscal year, unless otherwise approved by the City Manager, or the employee will be paid out for the compensatory time he/she has accrued. Employees will be paid for all compensatory time they have earned and not used at the time of termination or fiscal year end.

Premium Pay

Time worked on specific projects, emergencies, or grant funded projects may be paid at a premium rate of time and a half the regular rate at the discretion of the City Manager prior to overtime pay being required by law.

Compensation for Temporary Acting or Overlay Assignment

When an employee is assigned to fulfill the duties and responsibilities of a vacant position in a higher classification on a temporary basis, he or she may be paid additional compensation at the discretion of the City Manager or designee.

Acting pay for fulfilling the duties and responsibilities of a vacant position in a higher classification will be either at a rate equal to ~~the starting salary~~ **step 1** of the higher classification or the employee fulfilling said duties will be given a ten percent (10%) increase, whichever is greater.

The preceding provision shall not apply to those circumstances where a person is temporarily assigned to fulfill the duties and responsibilities of a Department Director. Instead, the employee shall be paid additional compensation either at a rate equal to ~~the starting salary~~ **step 1** of applicable director positions **appropriate pay range** or placed at the step that provides at least a ~~given~~ fifteen percent (15%) increase, whichever is greater.

The compensation paid to any individual serving in the capacity of acting, temporary, or interim City Manager, shall be fixed by the City Commission.

When an employee is temporarily assigned a project or task outside of the scope of their current position and is not fulfilling the capacity of a vacant position, at the City Manager or designee's discretion the employee may receive overlay pay at a rate to be determined by the City Manager or designee. This provision does not apply to assigned tasks that qualify as "other duties as assigned".

For the purpose of this section, temporary is defined as a period of time in excess of thirty (30) calendar days.

Pay for any assignment under this provision will begin on the first day of the assignment.

When the temporary acting or overlay assignment is complete, the employee's salary shall revert to the previous level.

Internal equity may be considered when setting temporary acting or overlay pay.

If an employee separates from employment, either voluntarily or involuntarily, or as the result of a retirement, while temporarily assigned to a higher classification ~~or as a Department Director,~~ **Assistant City Manager, or as the City Manager,** any accrual payouts made in conjunction with the separation, retirement, or PTO Conversion shall be calculated and paid without the additional rate of the temporary or acting pay or salary.

Holiday Pay

When a non-exempt employee works on the actual holiday, the employee shall be compensated at a holiday pay rate for all hours worked on the actual holiday. All time worked on actual holidays will be paid at one and one half (1 ½) times the normal hourly rate, in addition to the holiday leave pay if applicable. For example, if Christmas Day is Sunday and the City observes the holiday on Monday, the employee who is scheduled to work on Sunday, the ACTUAL holiday, will receive the holiday pay rate of one and half (1 ½) times the normal hourly rate. The employee who works on Monday, the observed holiday, will receive the eight (8) hours of holiday leave pay and regular pay for the time they work on the observed holiday.

In cases where an employee works both the actual holiday and the City observed holiday, only the actual holiday will be considered a holiday for the purposes of using the holiday pay rate.

The starting date of employees' shifts will be used to determine whether the employee worked the holiday. For example, if an employee's shift begins at 7:00 p.m. on Christmas Eve and continues through 7:00 a.m. on Christmas morning, they will not be considered to have worked the holiday. If the employee works from 7:00 p.m. on Christmas Day to 7:00 a.m. on December 26th, they will be considered to have worked the holiday for the entire shift.

Bi-Lingual Pay

Regular non-exempt employees may be compensated at a rate of \$.50 per hour for their bilingual abilities based on the following conditions:

- A. The language is recognized by the City Manager as adding to the increased productivity and efficiency of the City.
 - B. A written request from the employee and written authorization from the direct supervisor and the department director outlining the benefit to City services is submitted to Human Resources;
 - C. Employee must prove proficiency by meeting the standards established and administered by the Human Resources Department.
 - D. Employee will be available during scheduled work hours to translate when requested by City personnel.
 - E. If the need for the ability exists and the Departmental budget allows for the additional costs, as determined by the Department Director.
 - F. Bilingual pay may be removed at any time when determined to be in the best interest of the City as determined by the City Manager or designee.
- Exempt employees are not eligible for this benefit.

Certification Pay

Regular non-probationary employees, in the position currently held, may be compensated at a rate of \$.60 per hour for obtaining authorized certification(s) under the following conditions:

- A. The certification is not a requirement of the employee's current job description;
- B. The certification is generally issued by a Federal, State, or professional association;
- C. The certification is justified by the employee's Director, and approved by the City Manager, as being a benefit to the position and the City for the employee to hold the certification and the department budget allows for the additional cost;
- D. Pay for an authorized certification will begin the first day of the pay-period following submission of the original certification document to Human Resources and justification by the appropriate Director;
- E. Certification pay may be removed at any time when determined to be in the best interest of the City as determined by the department director; and
- F. Pay for certifications with an expiration date will end on the last day of the pay period in which the certification expires.

Wage Garnishments and Assignments

It is the policy of the City to comply with all lawful claims against the wages of our employees, such as garnishments, assignments, and child support orders.

In accordance with applicable federal and state laws, corrective action may not be taken against any individual whose wages have been garnished or assigned. When the City receives a garnishment or assignment, the Finance Department will be responsible for informing the employee of the notice received and will maintain such records.

Pay Days

Paychecks shall be issued bi-weekly, on Thursday, or as designated by the City Manager. A payroll period consists of two calendar weeks from Sunday midnight to Sunday midnight, or the end of the shift in progress at that time.

Work Week

Except as otherwise provided by a labor agreement, the Department Director shall assign the work day. The workweek shall be a seven (7) day period beginning on Monday at 12:01 a.m. and continuing through Sunday at midnight. This regulation does not apply to employees who are FLSA "exempt".

The City Manager has the authority to establish work periods that are within the Fair Labor Standards Act. These periods will be in writing by the City Manager and maintained in the Human Resources Department.

Time Clock

A. Non-exempt employees will clock in and out at their scheduled time.

B. Falsification of time records including, but not limited to clocking in/out for a coworker is a breach of this policy. Any errors or accidental omissions must be documented on an exception report and signed by the employee, the supervisor, and the Department Director.

C. Department Directors have overall responsibility for the timely and accurate submission of employee time through the City's timekeeping system. Actual time entry may be delegated to a department employee.

PASSED, APPROVED AND ADOPTED this _____ day of _____, 2022.

CITY OF ALAMOGORDO, NEW MEXICO
a New Mexico municipal corporation

By: _____
Susan L. Payne, Mayor

ATTEST:

Rachel Hughs, City Clerk

APPROVED AS TO FORM:

Petria Bengoechea, City Attorney

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/07/2022

Report No: 17.

Submitted By: Nancy Beshaler

Subject: Consider, and act upon, approval of Resolution No. 2022-28 adopting the revised Technical Standards as minimum requirements for the design and construction of subdivisions, City utilities, streets, and improvements inside the public right-of-way. (*Nancy Beshaler, Public Works Director and Rusty Payne PE, Smith Engineering Company*) **(Roll Call Vote Required)**

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: Approval of Resolution No. 2022-28 adopting the Technical Standards

Background: The current Technical Standards were originally written in 1994 and the City's standard drawings were last updated in 2004. Smith Engineering Company was contracted to assist City staff with updating these standards and drawings. This document reflects current industry standards, promotes safety, and provides consistency for infrastructure development within the City.

This effort has been extensive, taking over a year, with several drafts being reviewed by multiple City departments. The draft Technical Standards were made available for public review from April 8, 2022 to May 8, 2022. A Public Meeting was also held April 28, 2022. Comments submitted in writing are attached, with a response for each comment.

In order to keep the Technical Standards current and applicable, staff will review them annually. Modifications for day-to-day operational changes will be determined at the staff level. More significant changes will be reported to the City Manager, via addendum, for approval.

RESOLUTION NO. 2022-28

A RESOLUTION ADOPTING THE TECHNICAL STANDARDS AS MINIMUM REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF SUBDIVISIONS, CITY UTILITIES, STREETS AND IMPROVEMENTS INSIDE THE PUBLIC RIGHT-OF-WAY, AND AUTHORIZING THE CITY MANAGER TO APPROVE UPDATES TO THE TECHNICAL STANDARDS AT HIS DISCRETION

WHEREAS, the Technical Standards for infrastructure improvements are outdated and ambiguous; and

WHEREAS, the Technical Standards have been updated to reflect current industry standards and to provide consistency for infrastructure development within the City; and

WHEREAS, the Technical Standards are a living document that will be reviewed by staff annually for revisions and a report provided to the City Manager, as needed.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF ALAMOGORDO, NEW MEXICO, that the Technical Standards be adopted, and authorization is given to the City Manager to approve future revisions via addendum.

PASSED, APPROVED AND ADOPTED by the Governing Body of the City of Alamogordo, New Mexico, at a Regular Meeting held this 14th day of June, 2022.

**CITY OF ALAMOGORDO, NEW MEXICO
A NEW MEXICO MUNICIPAL CORPORATION**

By: _____
Susan L. Payne, Mayor

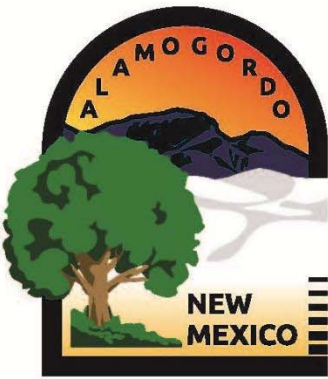
ATTEST:

Rachel Hughs, City Clerk

APPROVED AS TO FORM:

Petria Bengoechea, City Attorney

TECHNICAL STANDARDS



**City of
ALAMOGORDO**

Adopted: June 14, 2022

Resolution No. 2022-28

WRITTEN NOTICE PROCEDURES

Throughout this document there are numerous references to written notification; below is pertinent information on the meaning of written notification, means for submitting the notification, and the typical materials required to be provided through the notification(s).

Written Notification Format:

All written notifications shall be submitted through electronic mail (email) to the following address:

contractor@ci.alamogordo.nm.us

Dissemination of Written Notification:

City personnel will field the written notifications, daily during working hours, and will forward on to the appropriate City department for response and resolution.

Written Notification Response:

Each notification will receive an email response addressed to the original enquiry.

Who Submits a Written Notification:

Contractors, Builders, Developers, Service Providers, or any other provider who intends to work within public right-of-way.

Items Requiring Written Notification:

- Requests for Information (RFI)
- Variance Requests
- Submittals and Shop Drawings
- Substitution Requests
- Deviation Requests
- Inspection Requests
- Testing Reports
- Testing Requests
- Decision Appeal Requests
- Design Clarifications
- Change Order Requests
- Etc.

While the above listing is not exhaustive of all potential items, it should be utilized for construction correspondence to streamline the process and minimize the potential for disruption of construction related activities.

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CHAPTER 1 – GENERAL STANDARDS

ARTICLE 01-01 - GENERAL

Article 01-01-010 Acronyms and Definitions

Acronyms:

AASHTO	American Association of State Highway and Transportation Officials
AC	Asbestos-Cement
ACI	American Concrete Institute
ACNM	Associated Contractors of New Mexico
AGC	Associated General Contractors of America, Inc.
ANSI	American National Standards Institute
APWA	American Public Works Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATSSA	American Traffic Safety Services Association
AWG	American Wire Gage
AWWA	American Water Works Association
BM	Benchmark
EPA	Environmental Protection Agency
FH	Fire Hydrant
FHWA	Federal Highway Association
FCCCHR	University of Southern California Foundation for Cross-Connection Control & Hydraulic Research
G	Gas Line
GIS	Geographic Information System
ID	Inside Diameter
Inv	Invert
MH	Manhole
mg/l	Milligrams per Liter
MUTCD	Manual on Uniform Traffic Control Devices
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NM811	New Mexico One-Call (https://www.nm811.org/)
NMAC	New Mexico Administrative Code

NMDOT	New Mexico Department of Transportation
NMPRC	New Mexico Public Regulation Commission
NMSA	New Mexico Statutes Annotated--1978 Compilation as Amended
NSF	National Sanitation Foundation
OD	Outside Diameter
OHP	Overhead Power
OHP&T	Overhead Power & Telephone
OHT	Overhead Telephone
OSHA	Occupational Safety and Health Association
PC	Point of Curvature
PDI	Plumbing and Drainage Institute
PMBP	Plant Mix Bituminous Pavement
Ppm	Parts per Million
POWTS	Publicly owned Wastewater Treatment System
PRC	Point of Reverse Curvature
Psf	Pounds per Square Foot
Psi	Pounds per Square Inch
PT	Point of Tangency
PVC	Polyvinyl Chloride Pipe
Pvmt	Pavement
Q	Rate of Flow
RCP	Reinforced Concrete Pipe
RFI	Request for Information
SCCP	Steel Cylinder Concrete Pipe
Sec	Section
Sta	Station
Std	Standard
TCP	Traffic Control Plan
TCS	Traffic Control Supervisor
TCT	Traffic Control Technician
UGT	Underground Telephone
UL	Underwriters' Laboratories, Inc.
UPC	Universal Plumbing Code
V	Velocity

Definitions:

Alley – A public way, other than a street, intended for secondary access and service to the rear or side of the property.

Arterial Street – Is a roadway classification defined by higher traffic volumes, used for trips of moderate lengths, and offers connectivity to higher arterial systems (i.e., interstates). This roadway classification is characterized by a high degree of mobility with limited abutting direct access points.

Asphalt Treated Base Course – Is a dense-graded hot mix asphalt with a wide gradation band and lower asphalt content intended for use as a stabilizing base course.

Backfill – Is suitable material used to refill an excavation.

Building Setback – Is the required separation between a lot line and a building or structure.

Change Order – Written documentation of agreement to add or subtract work, modify the design, revise the schedule, modify the price, or deviate from the original Contract Documents in some other way.

City - The City of Alamogordo and all assigned representatives.

City Engineer – The City of Alamogordo's Engineer.

Collector Street – Is a roadway classification which typically connects larger traffic generators to the Arterial network. Typically characterized by more connecting driveways, fewer travel lanes, lower speed limits, and are prevalent between Arterial routes.

Complex Traffic Control Plan – A traffic control plan is a compilation of diagrams (plans) and/or written procedures on the management of vehicular, bicycle, and pedestrian traffic within a proposed construction zone throughout the construction duration. Complex traffic control plans shall include multiple construction phases, shifting of traffic patterns, removing/relocating of traffic control devices for subsequent construction phases, and as required on jurisdiction facilities (NMDOT Roads and City administered minor/major arterial roadways). A complex traffic control plan will require a State of New Mexico licensed engineer's seal and signature for review and implementation.

Construction and Demolition Activities – Activities directly related to a public or private improvement project.

Contract Documents - The written agreement between the Contractor and the Owner setting forth the obligations of the parties thereunder, including but not limited to the performance of the work and the basis of payment. The Contract Documents are defined in the Agreement and may include:

the Advertisement for Bids, Addenda (whether issued prior to the opening of bids or the execution of the agreement), Instructions to bidders, Contractor's Bid, the Performance Bonds and Labor and Payment Bond (for both Contractor and subcontractor, if applicable to subcontractor), the Certificate of Insurance, the Statement of Bidder's Qualifications, the Campaign Contribution Disclosure Form, the Notice of Award, the Notice to Proceed, the General Conditions, the Contract Specifications, any Special Conditions, any referenced Specifications or Standards, Drawings and Plans, and all modifications to the above, including Change Orders and extensions of Contract Time, all of which constitute one instrument.

Contractor - The person, firm, or corporation with whom an owner has executed the agreement.

Crown – Is the side-to-side or cross-sectional shape of a roadway surface. Roadways may have center-crown, in-sloped crowns, or out-sloped crowns.

Cul-De-Sac – A local street with only one (1) outlet having an appropriate terminus for the safe and convenient reversal of traffic movement.

Curb Cut – Is an opening in an existing curb to allow for a driveway, right-of-way entry from the street, or a temporary cut for the installation of subsurface utility.

Curb Return – Is a curved section of a curb located at a corner of intersecting roadways, connection point of curbs on the main road to an intersecting road.

Deformed Reinforcing Steel Bars – Is a steel bar, with surface ribs, with high tensile strength typically used in reinforced concrete structures.

Detour – An alternate route necessary to avoid something (i.e., vehicle crash, construction activities, etc.) within the existing travel route.

Drawings or Plans - The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by an engineer.

Driveway, Private – A vehicular way not serving more than one (1) lot or parcel of land.

Driveway, Common – A vehicular way serving more than one (1) lot or parcel of land.

Engineer - The person or firm designated by an Owner, who is responsible for providing engineering services.

Easement, Private – A right-of-use granted for the limited use of private landowners and where general use and maintenance of such area is governed by an agreement which runs with the land. This easement is serviceable only by mutual consent of all of the parties that benefit from the Easement.

Easement, Public – An easement dedicated for use by the public, which is included within the dimensions or areas of lots or parcels of land.

Embankment – Excavation, borrow, or imported material suitable for use in fill sections above prepared existing grades.

Federal Highway Administration (FHWA) – Is a division of the United States Department of Transportation that specializes in highway transportation.

Field Order - A written order issued by an engineer or Inspector which clarifies or interprets the Plans and Specifications, which does not affect the cost or time to complete the work stipulated by the Contract Documents.

Frontage Road – Used to relieve Major Arterial streets of side traffic.

Grade – The slope of any surface specified in percentage terms or in terms of elevation.

Grading – Any disturbance of the surface of the land with earth moving equipment.

Hot Mix Asphaltic Concrete – Is a combination of stone, sand, or gravel bound together by asphalt cement. After it is mixed at a high temperature, laid and compacted, the result is an improved driving surface.

Inspector - Inspector representing the City of Alamogordo responsible for inspection of all Work done and all materials furnished. Inspector is authorized to call to the attention of the Contractor any failure of the Work or materials to conform to the City's Standards, Plans, and Specifications. Inspector shall have the authority to reject materials or suspend Work until any questions at issue can be resolved.

Intersection – the location where two (2) or more streets cross at grade.

Local Street – Is a roadway classification which typically carry no through traffic movement and are used to provide access to adjacent lands and developments.

Lot – is defined as an individual parcel of land for a development. Secondly, it is a particular batch or collection of materials (i.e., pipe or other material).

Mandrel Deflection Test – is a deflection test conducted on gravity sewer pipe where a nine (9) ribbed mandrel (typically constructed from aluminum or steel) is hand pulled from manhole to manhole to confirm ovality of the pipe. This test confirms that the pipe in place was properly bedded and backfilled. The test is typically a “Go – No-Go” (pass/fail) where deflection in excess of five percent (5%) of the internal diameter is considered failing and the mandrel will not pass.

Median – A strip of land that separates the opposing flows of traffic on a street.

New Mexico One-Call (NM811) – Acts as a communication link between utility companies and individuals planning any digging activity.

Owner – The City of Alamogordo’s representatives.

Parkway – Is defined as a buffer between a roadway and roadside improvements (sidewalks, walking paths, developments, etc.). Typically consisting of beautification or landscaping.

Pedestrian Way – A specifically designated place, means, or way by which pedestrians shall be provided safe, adequate and usable circulation; normally provides access through the interior of a property or development. Does not include street, vehicular easement, right-of-way, or required sidewalk along a street or vehicular way.

Plans – Documents governing construction of improvements.

Plat – Is a map, drawn to scale, depicting how a parcel of land is divided. A plat includes a description of the different boundaries, land features, and adjacent amenities.

Property Line – The line(s) of record bounding a lot or other parcel of land.

Project - The entire construction to be performed as provided in the Contract Documents.

Project Manager – The owner’s representative who is delegated the responsibility for administration of the Project and who is the primary point of contact for the Contractor.

Public Rights of Way – A general term denoting land, property, or interest therein which is acquired, dedicated, or reserved for use by state, county, or municipal transportation purposes.

Public Works – The American Public Works Association defines public works as the combination of physical assets, management practices, policies, and personnel necessary for government to provide and sustain structures and services essential to the welfare and acceptable quality of life for its citizens. City Public Works oversees: Planning & Zoning, Streets, Weeds & Drainage, Facility Maintenance, and Fleet Maintenance.

Reference Specifications, Test Methods, and Applicable Codes - All Standard Specifications and test methods of any society, association, or organization, referred to herein, are hereby made a part of these Technical Standards the same as if written in full (any reference to a paragraph or subparagraph within an article shall include all general provisions of the article to which reference is made). References to such Standards refer to the latest published issues as of the date of the development or Project is approved, unless otherwise specified. Reference to local or state codes

and laws shall mean the latest adopted and published codes as of the date of the development or Project is approved, unless otherwise specified.

Request for Information – is a formal written process in which parties, such as the Contractor and designer, seek and receive clarification of plans, drawings, specifications, and agreements.

Roadway – A thoroughfare, including shoulders, for vehicular use.

Service Connections - Service Connections shall be construed to mean all or any portion of the pipe, conduit, cable, or duct which connects a utility main or distribution line to a building, home, residence, or property.

Shop Drawings - All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by Contractor, a subcontractor, manufacturer, supplier, or distributor which have been approved by owner and/or the City Engineer and which illustrate the equipment, material, or some portion of the Work.

Shoulder – The portion of the roadway contiguous with the traveled way, outside of the edge of pavement (designated driving surface), for accommodation of stopped vehicles, emergency use, and lateral support of base and surface courses.

Sidewalk – A paved path (typically concrete pavement) paralleling roadways or parking lots.

Slope – The gradient or incline of the land. Typically expressed in percent (i.e., 2% slope) or in horizontal distance per vertical distance (i.e., 6:1 slope).

Special Conditions - Conditions which modify any article or paragraph of these Technical Standards.

Specifications (also Technical Specifications) - A written technical description of materials, equipment, construction systems, standards and workmanship as applied to the Work.

Street – A right-of-way dedicated to the use of the public by which vehicles and pedestrians shall have lawful and usable ingress and egress, which has been accepted for maintenance and control by the City, County, or State. See Streets and Roads Detail Drawings for street classifications and typical cross sections.

Street, Stub – A street that has been designed to allow for the future extension of the street through subsequent developments.

Subcontractor - An individual, firm or corporation having a direct contract with Contractor or with any other subcontractor for the performance of a part of the Work at the site, and who has a current City of Alamogordo Business Registration.

Subgrade – The prepared earth surface on which an asphalt road section, concrete section, or other proposed surface treatment or foundation is to be placed.

Technical Standards – A written set of guidance covering City-wide public works and utility related improvements. This set of standards is complementary to City General Conditions, City Codes, and City Ordinances as well as other jurisdictional standards and guidelines as applicable. Discrepancies between various governances shall be resolved towards the more stringent directive.

Traffic Control Plan – Compilation of diagrams (plans) and/or written procedures on the management of vehicular, bicycle, and pedestrian traffic within a proposed construction zone throughout the construction duration. A TCP is required for all construction activities within Public Right-of-Ways.

Traffic Control Supervisor – An individual trained on the concepts and techniques of temporary traffic control as well as the design of setups, their implementation, and recognizing, analyzing, and correcting deficiencies. Typically certified by the American Traffic Safety Services Association (ATSSA) or Associated Contractors of New Mexico (ACNM).

Traffic Control Technician – An individual trained in a basic knowledge of temporary traffic control with experience in installing traffic control devices, monitoring their performance, and recognizing their deficiencies. Typically certified by the American Traffic Safety Services Association (ATSSA) or Associated Contractors of New Mexico (ACNM).

Utility - Overhead or underground wires, pipes, conduits, ducts, or structures, operated and maintained in or across a public right-of-way or easement or private easement operated and maintained to supply such commodities as water, gas, power, telephone, cable television, or sewer.

- (a) Public Utility - Owned and operated by a municipality or another political subdivision of the state.
- (b) Private Utility - Owned and operated by a private company or corporation.

Utility Department – Provides the City’s residents and businesses with safe drinking water, wastewater treatment, and trash disposal services. Services are provided in an efficient manner, while complying with all federal, state, and local regulations, such as the Safe Drinking Water Act (SDWA) and the Clean Water Act (CWA).

Work - Any and all obligations, duties, and responsibilities necessary to the successful completion of the Project assigned to or undertaken by Contractor, including all labor, materials, equipment, incidentals, and the furnishing and installation thereof.

Workmanlike Manner – Means installation or repair which meets the minimum recommended installation and maintenance requirements of the product manufacturer and meets all applicable code requirements.

Written Notification – As referenced throughout these Technical Standards, a written notification shall mean an electronic mail (email) regarding construction related documents: RFIs, deviation requests, variances, substitution requests, inspection requests, submittals, test reports, etc. This email shall be sent to the following address: contractor@ci.alamogordo.nm.us City personnel monitoring this address will distribute the notification to the appropriate City Department for review and response.

Article 01-01-020 Purpose

The following general standards and their requirements have been prepared and adopted by the City of Alamogordo, New Mexico, to guide and assist developers, sub-dividers, owners of subdivisions, engineers and Contractors, in the preparation of plans, specifications, and for the construction of City utilities, streets, and improvements inside the public right-of-way in accordance with the Alamogordo Municipal Code. These Technical Standards shall be the minimum requirements for the design and construction of these improvements.

All the Technical Standards and requirements in the Subdivision Regulations of the Alamogordo Municipal Code are hereby made part of these requirements, even though they may not be specifically mentioned and described herein.

In the case of discrepancy or conflict between these Technical Standards and the current Code of Ordinances the more stringent requirement shall apply unless expressly written by the City.

Article 01-01-030 General

- (a) The Contractor is required to locate all existing utilities prior to commencing work on the Project. It shall be the Contractor's sole financial and legal responsibility to field verify locations and depths of all existing utilities and coordinate any relocation Work required. NMAC 18.60.5 provides guidance on the One-Call Notification System and utility locate requirements.
- (b) The Contractor shall be required to maintain adequate temporary access for the private residences and the businesses and facilities within the construction area, to the satisfaction of the City.
- (c) At the end of each workday, as required during each day, or as required due to weather conditions, the Contractor shall perform grading, shaping, and cleanup, to maintain an acceptable site condition, as determined by the engineer.
- (d) Notices and/or requests made by Contractors or Owners to the City shall be made in writing. Each written request will receive a written response with further direction or detail.

Article 01-01-040 Workmanship and Materials

- (a) These standards are prepared with the intention that only first-class workmanship and materials of the best quality will be provided. Materials and workmanship of less than best quality will not be acceptable. In the event that these Standards may

not completely describe each and every part, item, and detail, it will not relieve the Contractor of the full responsibility for providing the necessary part, item or work necessary to complete the Project satisfactorily for proper operation, as intended.

- (b) The materials and equipment specified are considered the minimum standard of quality necessary to produce a satisfactory Project. Substitutions for the materials and equipment that have been specified will not be permitted except on written approval of the City.
- (c) Any materials that are found to be damaged either before or after installation shall be removed promptly and replaced with new materials. The City inspection of the materials before they are installed shall not relieve the Contractor from any responsibility to furnish and install good quality materials, totally undamaged.

Article 01-01-050 Water for Construction

- (a) The Contractor will be responsible for purchasing all construction water (reclaimed water or potable water) needed for construction from the City. The cost will be determined in accordance with the current reclaimed or potable water rates. It shall be the Contractor's responsibility to transport and apply the construction water as specified or as ordered by the engineer.

Reclaimed Hydrant Locations

Purple Hydrants

- (1) RS_HYD_01 – 3500 Airport Road (Airport use Only)
 - (2) RS_HYD_02 – 3500 Airport Road
 - (3) RS_HYD_03 – 2143 S. Walker Avenue
 - (4) RS_HYD_04 – 500 LaVelle Road
 - (5) RS_HYD_05 – 220 LaVelle Road
 - (6) RS_HYD_06 – 2150 US Highway 54 South
 - (7) RS_HYD_07 – 2518 Puerto Rico Avenue
 - (8) RS_FIL_01 – 800 E. First Street
- (b) The Contractor shall meter the reclaimed water used at the fire hydrant from which the reclaimed water is taken. Construction water is the sole responsibility and expense of the Contractor that requires water. Water for construction purposes is available for a fee from the City reclaimed water system. An application may be made to the Customer Service Division for which the Contractor will place a deposit, to be refunded when the meter is returned in good working condition. In cases where potable water is to be used for construction purposes and the Contractor does not have an air-gap method of utilizing water, a reduced pressure backflow preventor must be installed and certified by the City prior to being used.

- (c) Construction water is generally made available by means of a City furnished meter attached to a reclaimed, purple fire hydrant, potable fire hydrant, or through the used of the automated reclaimed fill stand. The charges for City furnished construction water consist of a monthly rental fee plus a cost based on the actual water usage recorded at the meter. Since fees vary, the Contractor is encouraged to determine the current cost of the service prior to utilizing the service.
- (d) The Contractor shall furnish and maintain the piping and/or equipment necessary to connect to the reclaimed water source and to convey the reclaimed water into the Contractor's reclaimed water tank. Contractor shall not allow reclaimed water to go to waste during the tank filling operations and shall not allow their piping and equipment to leak water.
- (e) The water truck tank filling equipment shall be placed and maintained in such a way as to provide prevention against accidents of any nature to Contractor personnel or the public in general.
- (f) The Contractor is required to connect the fill stand or fill equipment to the fire hydrant and leave the fire hydrant valve open. Contractor shall install a valve in the fill stand piping to control the water flow without leaks. The Contractor shall repair leaks from their respective plumbing immediately. The Contractor shall repair all asphalt/gravel driveways and turnouts that are damaged, during the utilization of locations to acquire water for construction, to pre-existing condition.
- (g) The hydrant valve shall not be closed except when water will not be needed over a weekend or a period of two (2) or more days. Hydrant valve must be fully opened when in use. The hydrant valve shall be closed during periods of freezing temperatures or inclement weather.
- (h) If it is observed that water for construction is being used from a potable water source or a reclaimed water source that is not metered, the work will be shut down by the City and will not be allowed to resume until a source for metered construction water is provided.

Article 01-01-060 Quality Assurance Materials Testing

- (a) An independent material testing laboratory shall be retained by the City for quality assurance testing. The frequency of the quality assurance testing shall be as determined by the City. The Contractor shall notify the City 24-hours prior to being ready for each quality assurance test and cooperate fully in making way for the laboratory technician to make the required tests. The Contractor shall notify the City if any of the work fails to meet the standards specified, the Contractor shall correct such failures in a manner acceptable to the City. The Contractor shall pay

for the cost of all quality assurance re-testing necessary due to failure to meet Specification requirements on previous quality assurance testing. If the Contractor requests the testing laboratory to obtain density tests and the area to be tested is not ready when the technician arrives at the job site, the Contractor shall pay for all trip charges or stand-by time assessed. All costs for failed test and stand-by time will be deducted from the amount due on the Contract.

- (b) Contractor shall notify the Geotechnical Testing Lab a minimum of twenty-four (24) hours in advance of readiness of the work for quality assurance tests.
- (c) Contractor shall be responsible for providing to the City the Proctor, Gradation, and Liquid Limits of subgrade material and base course material.
- (d) Material testing as referenced in this Article is for the City's quality assurance. The Contractor is responsible for quality control of material, process, and method. Neither observations by the City nor inspections, tests, or approvals by persons other than Contractor shall relieve the obligations to perform the work in accordance with the requirements of the standards.
- (e) Minimum quality assurance testing intervals are provided at the end of this chapter.

Article 01-01-070 Surveying and Staking

The Contractor shall be responsible for all horizontal and vertical control required to build the Project; the latest City benchmarks are provided at the end of Chapter 01. City benchmarks shall be used inasmuch as possible unless unnecessarily constrained by distance from the project. Any field adjustments made will be accepted as if incorporated herein and shall not make any claims for additional surveying or surveying expenses resulting therefrom. All Public Works Surveying shall be completed by a State of New Mexico Licensed Surveyor.

Article 01-01-080 Sanitary Facilities

- (a) The Contractor shall provide the necessary number of sanitary facilities for all the workers on the work site. The sanitation facilities shall be moved along the Project routes so that they will be convenient for the workers.
- (b) Adequate potable drinking water shall be provided on the work site as well as drinking cups, for the benefit of all employees.

Article 01-01-090 Truck Bed Covers

All trucks or other conveyances hauling any loose materials, including hot-mix bituminous materials, on public streets, highways, and detours shall be covered in such a manner as to prevent such materials from dropping, sifting, leaking, or otherwise escaping therefrom. Coverings for trucks or other conveyances hauling loose materials shall be securely fastened so as to prevent said covering or load from becoming loose, detached, or in any manner a hazard to public traffic. The Contractor shall observe legal load restrictions when hauling materials or equipment within or outside the Project. Any vehicles in violation of this provision will not be permitted to operate.

Article 01-01-100 Method of Bidding

The Bid Schedule has been prepared for a Unit Price Contract procedure. All the quantities shown in the Bid Schedule are estimated and are not purported to be exactly correct. Contractor shall be required to furnish more or less of each estimated quantity that may be required to satisfactorily complete all the Work. The Contractor will be paid on the unit basis for all the material that is actually furnished and installed in the construction of the Project to plan dimensions. In no case shall the Contractor claim extra compensation for building any portion of the Project beyond plan dimensions.

Article 01-01-110 Underground and Overhead Utilities

- (a) Any interference with, or damage to, either underground or overhead utilities of any nature shall be the Contractor's legal and financial responsibility, saving the Owner harmless from any or all claims resulting from damage to these utilities by reasons of their operations.
- (b) The Contractor shall contact New Mexico One-Call at 1-800-321-2537 or by cell phone at 811 to request field utility locates forty-eight (48) hours prior to digging. New Mexico One-Call Website: <https://www.nm811.org/>.
- (c) Contractors shall reference NMAC – Public Regulation Commission Rules and Regulations, specifically Title 18 Chapter 60 found at <http://164.64.110.134/nmac/T18C060>.

Article 01-01-120 Contractor Communications

The Contractor shall contact the City to provide information related to traffic control impacts, as well as to obtain any new requirements or restrictions for traffic control procedures.

Article 01-01-130 Sequence of Work

- (a) The Work shall be carried out with the intent of causing as little disruption as possible to the public. The Contractor shall perform cleanup operations on a continuous basis. Any area requested to be cleaned up by the City shall be cleaned immediately.
- (b) Contractor shall be responsible for advising the businesses, residents, and occupants along each street as to when work will be done in that particular area. Contractor will notify the businesses, residents, and occupants not less than two (2) days in advance of doing the Work.
- (c) The Contractor shall notify, in writing, the City of anticipated disruptions for issuance of PSA by the City if necessary. Additionally, the Contractor shall provide door hangers to alert businesses, residents, and occupants of upcoming work.
- (d) Contractor will request businesses, residents, and occupants to move their vehicles out of the way of construction if required. If occupant is unresponsive within 48-hours or uncooperative, the City will assist having the vehicles removed.

Article 01-01-140 Authority and Duties of Inspector(s)

- (a) Inspectors representing the City of Alamogordo shall be authorized to inspect all work done and all materials furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. The inspector is not authorized to revoke, alter, or waive any requirements of the Project. The inspector is authorized to call to the attention of the Contractor any failure of the work or materials to conform to the Project. The inspector shall have the authority to suspend the work when an imminent hazard condition is known to exist, or when the Contractor either delays in correcting or permits repeated occurrences of a hazardous condition. This authority to suspend work does not relieve the Contractor of the legal responsibility for safety at the jobsite.
- (b) The inspector shall have the authority to suspend work due to rejected materials or rejected work at the direction of the City or due to safety concern. Any questions at issue as to quality of materials and/or work installed may be referred to the City. If the Contractor refuses to suspend operations on verbal order, the inspector shall issue a written order giving the reason for suspending the work. After placing the order in the hands of the Contractor's person-in-charge, the inspector shall immediately leave the project. Work done during the absence of the inspector will not be accepted.

- (c) The inspector shall in no case act as foreman or perform other duties for the Contractor, nor shall they interfere with the management of the work by the Contractor. Any advice which the inspector may give the Contractor shall not be construed as binding the City in any way or releasing the Contractor from fulfilling all required Contract terms.
- (d) Contractor supplied photographic evidence will not replace physical observation and/or inspection by the City.

Article 01-01-150 Sanitary Landfill

All waste and recyclable materials shall be disposed of or stockpiled in approved locations per EPA regulations.

Article 01-01-160 Sign Removal and Replacement

The Contractor shall be responsible for removing and replacing all existing signs that are in the way of the Project construction. The existing sign location and height shall be indexed before removal. Removed signs shall be properly and adequately stored. When replaced, signs shall be in existing or better condition, in all respects, than before removal. The Contractor shall replace any signs that are damaged due to negligence, mishandling, or inadequate storage at their own expense.

Article 01-01-170 Protecting the Work

The Contractor shall be responsible for protecting all portions of the work against any and all damage including but not limited to vandalism, accidents, and weather conditions, until accepted. No additional payment will be allowed for rebuilding any portion of the Project caused by such damage.

Article 01-01-180 Fencing

- (a) The Contractor shall be responsible for removing and rebuilding any and all existing fencing that is damaged or is in the way of the Project construction. This work shall be considered incidental to the Project and no payment will be allowed for this work.
- (b) Facility Security Chain Link Fence
 - (1) Fabric: the chain link fabric shall be galvanized steel. The fabric shall be 9-gauge core wire, woven in a two-inch (2") bottom selvage mesh and be hot dipper galvanized all conforming to ASTM A641. The height of the fabric shall be 96-inches. Fabric shall be fastened to intermediate posts with

No. 6 aluminum fabric wire spaced approximately 15-inches apart and to top rail with 9-gauge wires spaced at 24-inches apart. The fabric shall be secured to all terminal and gate posts with 1/4-inch by 3/4-inch stretcher bars with No. 11 gauge pressed steel bands spaced approximately 12-inches apart.

(2) Posts, Rails, and Braces

A. Posts, rails, and braces shall be fabricated of Class I (round steel sections), Grade A (hot dipped galvanized), seamless steel pipe in accordance with ASTM F1083 (Schedule 40) and be of the following sizes:

1. Corner and Terminal Posts: 2.875-inch O.D.
2. Bracing: Terminal posts braced and trussed to nearest line post with 1.625-inch O.D. SS-40 pipe and 0.375-inch truss rod and truss rod tightener.
3. Line Posts: 2.375-inch O.D.
4. Gate Posts: 4.00-inch O.D.
5. Rails and Braces: 1.625-inch O.D.
6. Spacing of posts shall not exceed ten feet (10').

(3) Accessories

A. Accessories shall be hot-dipped galvanized in accordance with ASTM A123 or A153. In addition to wire ties and clips, brace bands, tension bands and bars, tension wire and truss rods, accessories shall include the following:

1. Caps for all exposed ends of posts.
2. Top rail and brace ends.
3. Top rail sleeves to allow for expansion and contraction of the top rail.
4. Bottom tension wire shall be a 7-gauge galvanized steel wire. Fabric shall be attached to tension wire with 9-gauge galvanized steel hog rings spaced no more than 24-inches on center.
5. Barbed wire shall be three strands of 12.5-gauge with 14-gauge 4 point round barbs.
6. Barbed wire support arms shall be single arm, for three (3) strands of barbed wire, and be at an angle of 45 degrees.

- (4) Execution: Set all line posts 24-inches deep in eight-inch (8") diameter footing and end posts to 36-inches deep in 12-inch diameter footing. After setting and plumbing posts, fill holes with 3,000 PSI truck-poured concrete. Crown top surface of concrete to shed water away from all posts. Brace all terminal posts horizontally with sections used for top rail. The top rail shall extend through all line posts to form a continuous brace from end to end of each stretch of fence, be securely fastened at the end of each run, and have joints made with expansion sleeve couplings not less than six inches (6") long. Refer to Standard Detail W-32.

Article 01-01-190 Existing Water Valve Boxes

- (a) The Contractor shall reference the location of all existing water valve boxes within the construction areas. Any valve boxes that are damaged during construction shall be replaced in accordance with the Standard Details with no additional payment. After the new paving has been installed and approved, the Contractor shall neatly saw-cut an opening in the new pavement, centered on the valve, and the Contractor shall install a new reinforced concrete collar, as provided in the Standard Details. Valve box grade adjustments shall be completed in accordance with Standard Detail W-6 and W-7.
- (b) Existing valves scheduled for removal shall have the entire valve box and valve operating nut removed. Final valve position (open or closed) shall be provided by the City. Backfill requirements shall adhere to Chapter 09.

Article 01-01-200 Existing Manholes

- (a) The Contractor shall reference the location and carefully remove and store manhole rings and lids within the construction areas. Any manhole rings and lids damaged shall be replaced by the Contractor at their own expense. Any manhole lids and covers that do not conform to the requirements of the Standard Details shall be replaced by the Contractor. The top portion of the manhole shall be removed to a depth below the limits of work, and a steel plate covering over the manhole shall be provided. After the new surface treatment has been installed and approved, the Contractor shall neatly saw cut an opening in the new pavement, centered on the manhole, in conformance with Standard Details S-4 and S-5.
- (b) The Contractor shall provide concrete grade adjustment rings as required to reconstruct the top of the manhole to the proper elevation so that the manhole frame and lid are flush with the new surface treatment. A maximum of one foot of adjustment may be made utilizing grade adjustment rings. Each manhole shall receive a new reinforced concrete collar, as provided in the Standard Details.

Article 01-01-210 Water Shut-Offs

- (a) All water shut offs shall be done by the City. The Contractor shall notify the City forty-eight (48) hours prior to the time of the required shut-off. The Contractor shall also notify, at least twenty-four (24) hours in advance, each household, office, business, and/or other affected water user that a shut-off will be made.
- (b) The Contractor shall notify, in writing, the City of anticipated disruptions for issuance of PSA by the City if necessary. Additionally, the Contractor shall provide approved door hangers to alert businesses, residents, and occupants of upcoming work.

Article 01-01-220 Concrete Washout

Contractors shall designate, maintain, and remove concrete washout wastes in accordance with the EPA Best Management Practices. This shall include collection, retention, and recycling/disposal of washout water and solids to prevent caustic material exposure to soils and ground water. Measures shall include washout containment facilities, directional signage, and daily inspections for leak monitoring and capacity of containment facility. See Detail R-16 for temporary concrete washout area.

Article 01-01-230 Construction Communication Documents

- (a) Notice to Proceed (NTP) – the written notice provided by the City/Owner to the Contractor that establishes the construction start date and completion time frame associated there with.
- (b) Request for Information (RFI) – the Contractor shall initiate a written request seeking clarification of construction/contract documents on an as-needed basis. The City and/or designer will provide a written response providing the required information. Work associated with the RFI shall not progress until written response has been received.
- (c) Field Change/Field Order – a written directive, provided by the City and/or designer, to the Contractor to change or deviate from the as-bid or issued for construction plans and associated documents. The work directed in the Field Order shall be contractually binding once signed by the City and the Contractor.
- (d) Change Order – typically resulting from the issuance of a Field Order, this written document updates the agreement/contract with the financial or performance period modifications required to complete the alterations within the Field Order directive.

- (e) Baseline Construction Schedule – A fixed project timeline that establishes the overall project progression. Typically delivered prior to the issuance of the Notice to Proceed or at the preconstruction conference.
- (f) Monthly Update Schedule – typically required commensurate with interim pay applications. This schedule update shows work completed to date with work to be completed in the remaining Contract time.
- (g) Shop Drawing – is the Contractor’s or manufacturer’s drawing, diagram, calculation, or relevant data for the fabrication of work/system components within the Construction Documents. Shop drawings shall be submitted to the City for review and written approval prior to fabrication.
- (h) Submittal – is written information provided by the Contractor submitted to the City for review for compliance with the Construction Documents. Submittals shall be submitted to the City for review and written approval prior to ordering and/or furnishing the product.
- (i) Pay Request – is a detailed construction invoice with a number of supporting documents. A pay request provides accounting on work completed and materials stored through a certain time period. They track change orders which modify the original Contract terms and provide insight on completion progression. Pay requests shall be in written format acceptable to the City and shall be signed by all relevant parties prior to review and acceptance.
- (j) As-Built Drawings – are the Contractor’s “red line” or working set of construction documents annotating changes, differing field conditions, or modifications made during the construction duration. The drawings shall be kept current and provided to the City as the completion of construction.
- (k) Punch List – is written documentation compiling incorrect installation or work not completed which must be addressed prior to the issuance of the Notice of Substantial Completion.
- (l) Substantial Completion – is written documentation provided by the City to the Contractor stating the Work or Project has been completed in accordance with the Construction Documents and can be placed into service for its intended use.

Table 1: Quality Control Testing & Minimum Frequency

Material/Product	Test	Feature	Frequency	Minimum	Chapter
Import/Borrow	Proctor & Soils Classification ASTM D-1557	Determines the maximum density or compaction a soil sample can reach	At beginning of project, Contractor responsible to provide to City	1 Location per Soil Type	Chapter 5
Import/Borrow	Compaction ASTM D-1557 Moisture Content	Density and Moisture Content in-place	Every 500 SY for Each lift	3 Minimum	Chapter 5
Subgrade	Proctor & Soils Classification ASTM D-1557	Determines the maximum density or compaction a soil sample can reach	---	1 Location per Soil Type	Chapter 5
Subgrade	Compaction ASTM D-1557 Moisture Content	Density and Moisture Content in-place	Every 500 SY	3 Minimum	Chapter 5
Base Course	Proctor ASTM D-1557	Determines the maximum density, optimum moisture, & gradation of material	At beginning of project, Contractor responsible to provide to Cit	1 Per Material	Chapter 5
Base Course	Moisture Content	Moisture Content AASHTO T-99 AASHTO T-180	Every 500 SY for Each Lift	3 Minimum	Chapter 5
Base Course	Compaction ASTM D-1557	Density	Every 500 SY for Each Lift	3 Minimum	Chapter 5
Base Course	3/8" Maximum Deviation	Surface Tolerance	---	---	Chapter 5
Bed Course or Base Course for Curbs, Fillets, and Valley Gutters	Compaction ASTM D-1557 Moisture Content	Density and Moisture Content in-place	Every 400 LF	3 Minimum	Chapter 5
Plant Mix Bituminous Pavement (PMBP)	Compaction & Moisture Content	AASHTO T310 & ASTM D-6938	3 per 500 SY for Each Lift	3 Minimum	Chapter 5
Plant Mix Bituminous Pavement (PMBP)	Strap Test	Asphalt Content	1 Per Day's Run	1 Per Day's Run	Chapter 5
Plant Mix Bituminous Pavement (PMBP)	3/16" Maximum Deviation	Surface Tolerance	---	---	Chapter 5
Concrete	Compressive Strength Test Cylinders	Concrete Compressive Strength	7 and 28 Days	1 Set Total from first 3 loads (random)	Chapter 5
Concrete – Slip Form	Individual Strength Test	Concrete Compressive Strength ASTM C-39	7 Days, 14 Days for slip-form concrete, and 28 Days	4 Cylinders per Sample	Chapter 5

Table 1 Continued: Quality Control Testing & Minimum Frequency					
Material/Product	Test	Feature	Frequency	Minimum	Chapter
Concrete Curbs, Gutters, Walks, Driveways, Aprons, Curb Returns, Fillets, Valley Gutter & Slope Paving	Compressive Strength Test Cylinders	Concrete Compressive Strength	3 Cylinders for initial 10 yards placed, 3 cylinders for every 100 CY placed thereafter	1 Set of Three (3) Cylinders	Chapter 5
Concrete	Slump, Unit Weight, Air Content ASTM C-143 ASTM C-172 ASTM C-231	Materials, Consistency, Content, and Properties	1 Sample from each of the first 3 Concrete loads delivered, then 1 randomly selected load from each sub-lot of 6 trucks	---	Chapter 5
Pipe Mains Backfill	Compaction ASTM D-1557 Moisture Content	Density & Moisture Content In-Place	1 Per 200 LF per two feet (2') of Depth	2 Minimum	Chapter 6 Chapter 8 Chapter 9 Chapter 10
Pipe Service Line Backfill	Compaction ASTM D-1557 Moisture Content	Density & Moisture Content In-Place	One Per Three (3) Service Lines	1 Minimum	Chapter 6 Chapter 9 Chapter 10
Sanitary Sewer - Manholes	Vacuum Testing ASTM C-1244	Leakage	All Manholes	---	Chapter 6
Sanitary Sewer - Manholes	Water Test	Leakage	All Manholes	---	Chapter 6
Sanitary Sewer	Low Pressure Air or Water Test	Tightness Uni-Bell PVC Pipe Assn UNI-B-6-98	All Pipe	---	Chapter 6
Sanitary Sewer	Ex-Filtration Test	Pressure & Leakage	All Pipe	---	Chapter 6
Sanitary Sewer	Deflection Test	Pipe Strength	All Pipe	---	Chapter 6
Force Main	Hydrostatic Pressure Test AWWA C-600	Tests for Leaking	All Force Main Piping	---	Chapter 8
Water Supply Pipes	Hydrostatic Pressure Test AWWA C-600	Tests for Leaking	All Water Lines	---	Chapter 9 Chapter 10
Water Supply Pipes – Air Valves & Access Points	Disinfection AWWA C-651	Tests for Chlorine Residual	All Water Lines	---	Chapter 9
Water Supply Pipes – Air Relief Valves & Vacuum Relief Valves	Pressure Test	Test for Strength and Leakage	All Valves	---	Chapter 9 Chapter 10 Chapter 11

END OF CHAPTER 01

CHAPTER 02 - TRAFFIC CONTROL & MANAGEMENT

ARTICLE 02-01 - GENERAL

Article 02-01-010 Work Description

- (a) The work shall consist of providing Traffic Control and Traffic Control Management in accordance with the Contract and the MUTCD, current edition, including supervision of personnel and the installation, inspection, and maintenance of all traffic control devices on the Project.
- (b) Complex traffic control plans, as determined by the City, shall be developed and sealed by a State of New Mexico registered professional engineer prior to submittal to the City.

ARTICLE 02-02 – REQUIREMENTS

Article 02-02-010 Contractor Requirements

- (a) The Contractor may assign more than one (1) traffic control supervisor (TCS) to provide traffic control management for the Project provided that a schedule is submitted to the City.
- (b) If assigning more than one (1) TCS to provide traffic control management, submit to the City a weekly schedule identifying who shall be in charge of providing traffic control management each day.
- (c) The TCS shall possess, at all times, a set of approved traffic control plans and a current copy of the MUTCD.
- (d) Traffic control shall be required when any public street or alley requires work. Traffic control shall also be required to prevent through-traffic, where new development meets existing streets, until all utilities, new streets, and infrastructure have been completed.
- (e) Where more than one Contractor is working in an area requiring traffic control, the Contractor shall coordinate all traffic control operations.
- (f) If the Contractor is using a subcontractor to provide traffic control management, the Contractor shall ensure that the TCS is in accordance with the Contract.
- (g) The Contractor may assign one (1) or more traffic control technicians (TCT) to assist the TCS in inspection and maintenance of traffic control devices.

Article 02-02-020 Certification

- (a) Before commencing work that requires traffic control management, submit to the City a copy of the “Work Zone Safety Supervisor” certificate for the TCS (wallet size card) issued by the American Traffic Safety Services Association (ATSSA), the Associated Contractors of New Mexico (ACNM), or an agency or firm approved by the City.
- (b) The City will accept the TCS certification by ATSSA, ACNM, or any agency or firm only if the following requirements are met:
 - (1) Successful completion of an approved work-zone traffic control course;
 - (2) Passing a written examination on a work-zone traffic control course;
 - (3) At least one (1) year of full-time field experience, verified by the agency or firm, in work zone traffic control; the City may verify the experience at its discretion.

The TCT must only satisfy requirements 1 and 2, above.

- (c) Before commencing work that requires flagger traffic control, submit a copy of the “Flagger Training” certificate (wallet sized card) issued by ATSSA, ACNM, FHWA, or an agency or firm approved by the City.

Article 02-02-030 Re-Certification

- (a) Renew the TCS’s certification every four (4) years through the ATSSA, ACNM, or a City-approved agency or firm.
- (b) Re-certify in the fourth year, before the expiration date of the current certification.
- (c) Flaggers must obtain refresher training which meets the requirements of ATSSA, ACNM, FHWA, or agency or firm approved by the City prior to the fourth anniversary date shown on the current certificate.

Article 02-02-040 Duties

- (a) The TCS’s only responsibility is traffic control management. The City may allow exceptions to this rule if the Project is small and requires limited traffic control. The City will determine approval of the exception at the preconstruction conference.

- (b) The TCS's primary duties include the following:
- (1) Providing management and supervision services at the Project site.
 - (2) Preparing revisions requested by the Contractor to the traffic control plan in the Contract and submitting the new traffic control plan, in hard copy format, to the City.
 - (3) Coordinating the flagging and signing personnel training.
 - (4) Supervising the flagging and signing personnel.
 - (5) Coordinating traffic control operations for the duration of the Contract, including those of subcontractors, utility companies, and suppliers, to ensure that traffic control is in place and fully operational before the commencement of work. When dealing with utility companies, the TCS shall coordinate concurrent utility traffic control with other construction traffic control to avoid conflicts.
 - (6) Coordinating, in writing, Project activities with the appropriate individual traffic control, law enforcement, emergency services, and fire control agencies.
 - (7) Preparing and submitting statements concerning road closures, delays, and other project activities to the City for distribution, as necessary.
 - (8) Notifying the City of accidents related to the project traffic control.
 - (9) Recording time and date of accident notification in accordance with Article 02-02-040, "Traffic Control Diary".
 - (10) Attending the preconstruction conference.
 - (11) Maintaining, cleaning, and replacing traffic control devices in use per the current traffic control plan during working and non-working hours.

Article 02-02-050 Traffic Control Diary

- (a) The TCS shall maintain a project traffic control diary in a bound book. Obtain the diary from the ACNM.
- (b) The TCS shall keep the traffic control diary current each day and sign each daily entry.

- (c) The TCS shall make entries in ink, in a format approved by the City, without erasures or white-outs. The TCS shall strike out unacceptable entries and replace with acceptable ones. The TCS may use photographs to supplement the written text.
- (d) Ensure that the traffic control diary is always available for inspection by the City and submit a copy of the diary to the City at the end of each week. The traffic control diary shall be kept on site during construction activities.
- (e) The traffic control diary will become the property of the City at the completion of the Project. If the Contractor fails to submit the diary, the City may withhold final payment until it is submitted.

Article 02-02-060 Inspection of Traffic Control

- (a) The TCS shall inspect traffic control devices every day that traffic control devices are in use at least once a week during nighttime periods and at an interval not to exceed 12 hours not during standard working hours. The TCS shall provide for the immediate cleaning, repair, or replacement of traffic control devices that are not functioning as required to ensure the safety of the motorists, pedestrians, and construction personnel.
- (b) The TCS shall conduct inspections of the traffic control devices at the beginning and end of each day that traffic control devices are in use, and as scheduled or directed by the City during working hours.
- (c) The TCS shall inspect the traffic control devices during non-working hours on a schedule approved in writing by the City.
- (d) The TCS shall inspect traffic control devices and shall provide for the immediate repair, cleaning, or replacement of traffic control devices not functioning as required or not meeting MUTCD Standards to ensure the safety of the public and construction personnel.

Article 02-02-070 Availability of TCS

- (a) Provide traffic control management under the supervision and direction of the TCS on a 24-hour-per-day basis throughout the duration of the Project.
- (b) The TCS shall be on the Project whenever work is in progress, and available by telephone to be on the Project within 1 hour at all other times.

- (c) The provisions for availability of the TCS will also apply during times of partial or full project suspension.
- (d) Contact information for the TCS shall be provided prior to construction, including a cell phone number for contact during non-working hours.
- (e) An alternate contract who is a manager of TCS shall also be provided.

ARTICLE 02-03 - COMPLIANCE

Article 02-03-010 Failure to Comply

- (a) If the Contractor fails to comply with the approved traffic control plan or fails to immediately correct unsafe traffic conditions after written notification of the problem, the City may suspend all or part of the Contractor's operations.
- (b) In the event that the Contractor does not take appropriate action to bring the deficient traffic control into compliance with the approved Traffic Control Plan – or to correct the unsafe traffic conditions – the City may proceed with the corrective action and charge the Contractor for the additional cost incurred.
- (c) If the City suspends the Contractor's operations, the City will include the period necessary to correct these unsafe conditions and traffic control deficiencies in the normal assessment of contract time.
- (d) The City will not relieve the Contractor of the responsibility to provide traffic control safety to the traveling public if the City fully or partially suspends the Project.
- (e) If the City suspends the Project due to the Contractor's failure to comply with this Article, or the contract is in liquidated damages, the Contractor shall continue to provide traffic control management, at no additional cost to the City.
- (f) If the Contractor requests full or partial suspensions of the work, the Contractor shall perform the additional traffic control management to accommodate the suspension duration at no additional cost to the City.

Article 02-03-020 City Modification

The provisions included in the Contract Documents and Specifications for handling and controlling traffic during construction may be changed by the City due to actual field conditions encountered. Contract should only be changed by Field Order or Change Order.

END OF CHAPTER 02

CHAPTER 03 - CLEANUP

ARTICLE 03-01 – GENERAL

The work shall consist of cleanup, in accordance with this Article, the Contract Documents, and all applicable specification items in these documents. Contractor shall furnish all the labor, equipment, and materials necessary to perform all work required.

ARTICLE 03-02 – PROJECT CLEANUP

- (a) Cleanup of debris, trash, and waste materials shall be performed on a continuous basis by the Contractor in such a way that will always keep the work site(s) clean and neat.
- (b) The Contractor shall be responsible for cleaning up the Project. All areas disturbed shall be left in excellent condition, free of any debris, trash, and the like. All trees that were limbed during construction shall be neatly and properly coated so as to protect the cut face, in accordance with good tree surgery practices.
- (c) All areas disturbed shall be graded smooth and shall be free of ruts and uneven places.
- (d) All excess materials, trash, dirt, and rocks shall be disposed of at an approved site or at a place approved by the New Mexico Environment Department.

ARTICLE 03-03 – FINAL INSPECTION CLEANUP

Immediately before the final inspection tour is to be conducted, the Contractor shall cleanup the Project site in its entirety, removing all debris, waste, trash, excess materials, and equipment. Contractor shall review the entire Project before the final inspection and shall have it neat and clean in appearance.

END OF CHAPTER 03

CHAPTER 04 - PRODUCT OPTIONS

ARTICLE 04-01 - GENERAL

This section includes requirements for product options and substitution procedures.

ARTICLE 04-02 - PRODUCT OPTIONS

- (a) For products specified by reference standards or by description only, provide products meeting those standards or description as approved by the City.
- (b) For products specified by naming one or more manufacturers with the designation that no substitutions are allowed, provide only named products.
- (c) For products specified by naming one or more manufacturers, provide named products or approved substitute products.
- (d) Requests to use unspecified products shall be made in accordance with the “Substitution Request Procedures” as specified herein.

ARTICLE 04-03 – SUBSTITUTION REQUESTS

- (a) Where products are specified by naming specific products of one or more manufacturers, these products shall establish a minimum acceptable level of quality and performance.
- (b) Prior Approval: The City will consider requests made during bidding to use unspecified products only when indicated in individual standard sections.
 - (1) When substitution requests are allowed during bidding by individual standard sections, requests shall be made in accordance with the “Substitution Request Procedures” as specified herein.
 - (2) If product is acceptable, City will provide approval by addendum issued to known recipients of Bidding Documents.
- (c) After signing of Agreement between City and Contractor, City will consider written requests for substitutions.
 - (1) Requests shall be made in accordance with “Substitution Request Procedures” as specified herein.

- (2) City will determine acceptability of proposed substitutions and notify Contractor of decision in writing.
 - (3) Substitutions will not be considered when indicated or implied on shop drawings and product data submittals.
- (d) Request for substitution and use of approved substitution shall constitute representation that Contractor:
 - (1) Has investigated product and determined it meets or exceeds quality level of specified product.
 - (2) Will provide same warranty for substitution as for specified product.
 - (3) Will coordinate installation and make changes to other work required to accommodate accepted substitution and complete work.
 - (4) Waives claims for additional costs or time extensions related to substitutions which later become apparent.

ARTICLE 04-04 – SUBSTITUTION REQUEST PROCEDURES

- (a) Submit separate request for each substitution with “Substitution Request Form”.

Copy of form follows this Section.

- (b) Submit 3 copies of request for substitution and include the following:
 - (1) Complete data substantiating compliance of proposed substitution with Contract Documents.
 - (2) For products:
 - A. Product identification, including manufacturer's name and address.
 - B. Manufacturer's literature containing product description, performance and test data, and reference standards.
 - C. Samples as required.
 - D. For construction methods:
 - 1. Detailed description of proposed method.

2. Drawings illustrating methods.

- E. Itemized comparison of proposed substitution with product specified.
- F. Data relating to changes in construction schedule.
- G. Give cost data comparing proposed substitution with specified product.
- H. For substitution requests made after signing Agreement, include proposed changes to Contract Amount and Time if substitution is accepted.

END OF CHAPTER 04

Read [CHAPTER 04 - PRODUCT OPTIONS](#) prior to submission of this form.

The undersigned requests that the following product be accepted for use in the Project.

Product: _____

Model No: _____

Manufacturer: _____

Address: _____

The above product would be used in lieu of:

Product: _____

Specified in: _____ Section: _____ Paragraph: _____

Reason for substitution request: _____

Attached are the following items:

Product description including specifications, performance and test data, and applicable reference standards.

- ☐ Drawings
- ☐ Photographs
- ☐ Samples
- ☐ Tabulated comparison with specified product
- ☐ For items requiring color selections, full range of manufacturer's color samples
- ☐ Documentation of reason for request.
- ☐ Cost data for comparing proposed substitution with specified product
- ☐ Other: _____

The undersigned certifies that the following statements are correct. Explanations for all items which are **not** true are attached.

1. Proposed substitution has been thoroughly investigated and function, appearance, and quality meet or exceed that of specified product. True ☐ False ☐
2. Same warranty will be provided for substitution as for specified product. True ☐ False ☐

3. No aspect of Project will require re-design. True ☐ False ☐
4. Use of substitution will **not** adversely affect:
- a. Dimensions shown on Drawings. True ☐ False ☐
 - b. Construction schedule and date of completion. True ☐ False ☐
 - c. Work of other trades. True ☐ False ☐
5. Maintenance service and replacement parts for proposed substitution will be readily available in the New Mexico area. True ☐ False ☐
6. Proposed substitution does **not** contain asbestos in any form. True ☐ False ☐
7. All changes to Contract Sum related to use of proposed substitution are included in price listed below. Contractor waives claims for additional costs related to acceptance of substitution which may subsequently become apparent. True ☐ False ☐
8. Costs of modifying project design caused by use of proposed substitution which subsequently become apparent will be paid for by Contractor. True ☐ False ☐

If substitution requested after signing of Agreement between Owner and Contractor is accepted:

Contract Sum will be [decreased] [increased] by \$ _____

Contract Time will be [decreased] [increased] by _____ calendar days.

Submitted By: _____

Company: _____

Address: _____

Telephone Number: _____

Name: _____ Date: _____

Signature: _____

CHAPTER 05 – STREETS AND ALLEYS

ARTICLE 05-01 – General

Article 05-01-010 Street Standards

- (a) These standards will be used in conjunction with the most current edition of the NMDOT Standard Specifications for Highway and Bridge Construction.
- (b) Street Classification and Geometric Design Standards
 - (1) Existing streets are identified and classified in the City of Alamogordo Comprehensive Plan. Street classifications for new construction within public rights-of-way shall be determined by the City. Minimum street rights-of-way shall meet the requirements established herein as noted in Table 2.
 - (2) Cul-de-sac Geometric Standards
 - A. Maximum length of cul-de-sac shall not exceed 600-feet without approval from the City. Length of the cul-de-sac shall be measured from the back of curb of the perpendicular street to the radius point in the middle of the cul-de-sac.
 - B. Minimum diameter:
 - 1. Right-of-way – 100 feet
 - 2. Pavement (in bulb back-to-back of curb) – 96 feet
 - 3. Geometry must be approved by the City
- (c) Pavement Design Standards
 - (1) Typical sections for construction in the City shall be designed in accordance with the latest edition of the AASHTO “Guide for the Design of Pavement Structures.”, or as modified in this section.
 - (2) Laboratory analysis of the subgrade soils underneath the street is required for pavement design.

Table 2: Street Geometric Design Standards

Parameter	Minimum Right-of-Way Width (feet)				Minimum Street Width (Feet) (Back-to-Back of Curb)				Minimum Fillet Radius (Feet) (Back of Curb)				Minimum Curve Radii (Feet) (Back of Curb)				Minimum Tangent Length Between Curves				Minimum Sight Distance (Feet)			
Roadway Type	Local Street	Collector Street	Minor Arterial	Major Arterial	Local Street	Collector Street	Minor Arterial	Major Arterial	Local Street	Collector Street	Minor Arterial	Major Arterial	Local Street	Collector Street	Minor Arterial	Major Arterial	Local Street	Collector Street	Minor Arterial	Major Arterial	Local Street	Collector Street	Minor Arterial	Major Arterial
Without Bike Lanes/Parking	48	72	80	112	28	52	60	92	30	35	40	45	100	100	300	500	150	150	250	350	200	240	275	300
With Bike Lanes/Parking	62	82	90	122	42	62	70	102	30	35	40	45	100	100	300	500	150	150	250	350	200	240	275	300

Minimum Fillet Radii may vary depending on existing right-of-way widths.

Parameters in the table above are minimums. Developer may exceed the minimums, or the City may require greater parameters based on the proposed development.

Refer to Detail R-6 for Local Collector Street Detail.

Refer to Detail R-7 for Collector Street Detail.

Refer to Detail R-8 for Minor Arterial Street Detail.

Refer to Detail R-9 for Major Arterial Street Detail.

(d) Engineering Data

- (1) Grades – The grades of all streets shall be a minimum of 0.30% except where topographical conditions unquestionably justify a departure from the minimum. Typical crown slopes shall be a minimum of two percent (2%). Street cross slopes shall not exceed five percent (5%) without prior authorization from the City.

Street construction drawings shall be submitted and shall contain a complete plan and profile exhibiting all existing grades, proposed grades, and elevations and grades of proposed connections to existing streets.

- (2) Temporary Street Terminations – Where new roadways are terminated in advance of future extension, the termination shall have a flush header curb installed to prevent premature pavement end damage.
- (3) Maximum Side Slopes – cut and fill slopes for roadway prism shall be two (horizontal) to one (vertical) maximum. Street construction drawings shall show side slope catch points to ensure slopes fit with the existing right-of-way.
- (4) Street Intersections – shall be designed to intersect at right angles insomuch as possible. Angles of intersection of 75 degrees or less shall be preapproved by the City.
- (5) AASHTO roadway design guidance shall be consulted for horizontal and vertical design elements based on intended roadway classification, design speeds, and traffic volumes.
- (6) Traffic Report – The City, at its discretion, may require traffic impact analysis for subdivisions and commercial developments. For commercial developments requiring more than 49 parking spaces or 9,000 square feet of parking, whichever is less, and for all properties fronting on New Mexico State Highways, the analysis must be performed by a registered engineer. Properties fronting on State Highways require additional separate permits from the NMDOT.

Article 05-01-020 Alley Standards

(a) Engineering Data

- (1) Use of Inverted Crown – Inverted crowns will not be allowed in alleys without prior approval by the City.

- (2) Paving of Alleys – In all cases, an alley to be paved shall be paved for its entire block length. In no case will a part or section of an alley be paved where other sections are left unpaved.
 - (3) All alleys in commercial and industrial zoned areas, locations where sole access is by an alley(s), or any alley used for drainage ways shall be paved.
- (b) Alley Entrances – A drive entrance (drivepad) will be required at the entrance and exit of all alleys and shall conform with Standard Drawing R-12. If difficult or unusual site conditions warrant, the designer may submit an alternate detail for approval by the City. If an alley requires a radius, the length must be approved by the City. All alley pads and access across alleys shall meet American Disabilities Act (ADA) accessibility requirements.
- (c) Alley Within New Developments – New developments shall be platted and designed without alleys. Any new development(s) requiring alleys shall be pre-approved by the City

Article 05-01-030 Concrete Flatwork Standards

- (a) General - This section shall deal with the placement, replacement, and/or removal of sidewalks, valley gutters, fillets, and drivepads within the public rights-of-way within the City of Alamogordo. Construction shall meet the American Disabilities Act (ADA) requirements. Sidewalk and driveway installation and replacement shall be the responsibility of the property owner or developer.
- (b) Engineering Requirements – Sidewalk, valley gutter, fillet, and drivepad construction shall conform to the standard details contained herein, unless otherwise submitted by plan and approved by the City. The City may require that the plan illustrate existing and proposed grades of the curb and gutters and streets. No permits for construction will be issued until such information have been provided and approved by the City.
- (c) Sidewalk Placement
 - (1) Sidewalks shall be placed adjacent to the back of curb on both sides of the street/road regardless of the road type designation.
 - (2) Width and Section – All sidewalks will be constructed with a minimum width of five-feet (5'). Sidewalks shall be four-inches (4") thick in all areas except when used as a driveway or drivepad.

- (3) Grades for Sidewalks – Sidewalks shall have a running slope concurrent with the adjacent street and a typical cross slope of 1.5 percent (2.0 percent maximum). The sidewalk shall slope toward the street. This stipulation may be waived by the City in areas where topographical features will not allow for such slopes.
 - (4) If an obstruction is located in the sidewalk (i.e. utility pole, mailbox, etc.) a minimum four-feet (4') clear space must be maintained at the obstacle along the sidewalk.
 - (5) All concrete sidewalks, valley gutters, drivepads, fillets, etc. must be protected from freezing for a minimum of four (4) days.
 - (6) Development on corner lots shall be required to construct or reconstruct existing fillets and sidewalks to comply with ADA requirements at the time the lot is developed or redeveloped.
- (d) Drivepad Placement
- (1) Drivepads on interior lots (lots not on a corner) shall be located to allow the maximum slope of 15:1 where the drivepad ties to new or existing sidewalk. Drivepads on corner lots requiring a new building, remodel of existing building, curb cut, or driveway permit shall be located as follows:

Table 3: Drivepad Location

Street Type	Drivepad Location
Local Street	Minimum 20-feet from the curb return
Collector Street	Minimum 40-feet from the curb return
Minor Arterial Street	Minimum 50-feet from the curb return
Major Arterial Street	Minimum 50-feet from the curb return

- (2) Width and Section – All drivepads will be constructed to the back of sidewalk or to the property line, whichever is less. Drivepads shall be six-inches (6") thick in all areas. Drivepads shall not be wider than forty-feet (40') and may not be placed closer than twenty-feet (20') from any curb return. Developer may submit alternate drivepad details for approval by the City. All drivepads shall meet ADA accessibility requirements. All drivepads shall have a typical cross slope of 1.5% across its width to accommodate the pedestrian travel path.
- (e) Fillets shall be a minimum of six-inches (6") in thickness and shall meet all ADA requirements. Developments on corner lots may elect to construct or reconstruct fillets in lieu of radial pavement surfacing.

Article 05-01-040 Curb Cuts

- (a) General: This section deals with the removal and replacement of curb and gutter sections as defined below.
- (b) Engineering Data: The plan for the proposed curb cuts shall illustrate information regarding all the existing elevations of the existing curb. Additionally, proposed elevations shall be displayed. The grade of the replacement shall be such that it is continuous with the existing section to which it is being tied. Any existing utilities in the area shall be noted.
- (c) Curb cuts shall only be completed by City staff.
- (d) City of Alamogordo Code of Ordinances 2-01-030 (o) – Moratorium on Curb Cuts:

At time of filing a request to cut a curb adjacent to a public right-of-way, applicant shall pay a non-refundable fee to cover costs of verification the curb cut meets building code and city ordinance requirements, administration, and other expenses. Additional cost for City personnel to cut the curb and to perform an inspection of the final concrete placement will be billed to the property owner separately. A curb cut permit will not be issued within sixty (60) months of initial pavement, or repaving, of a road except due to emergency circumstances.

- (e) When curb/street cuts are required for installation, repair, or replacement of subsurface utilities the finished patch shall extend five-feet (5') from the top surface edge on both sides of the necessary trench (minimum overall patch width of 10-feet). Cuts within pavement shall extend curb-to-curb insomuch as possible.

Article 05-02 – Materials Requirements

All streets shall be constructed in accordance with the current edition of the NMDOT Standard Specifications, as modified herein. Reference to NMDOT shall be replaced with the City of Alamogordo.

Article 05-02-010 Borrow

- (a) Borrow materials used in the embankment and fill shall not be uniformly fine-grained materials. The fill materials shall be classified as SC, SM-SC, GC, GM, or GM-GC according to the Unified Soil Classification System. No soils in the embankment shall have a median grain size (D50) finer than #200 USA Standard Sieve. Proper mixing and blending of materials will be required.

- (b) Areas of natural ground to receive embankment or fill not already at optimum moisture shall be scarified to a depth of eight (8) inches, wetted or dried to bring the moisture content to within plus two percent (+2%) to minus one percent (-1%) of optimum and re-compacted to the specified percent of the maximum density, tested and approved before the first layer of suitable embankment material is placed.
- (c) Only suitable material for embankment and fill will be allowed in the permanent work at locations shown on the Contract Documents.
- (d) After areas to receive embankment or fill have been properly prepared, suitable material shall be placed and spread in loose eight-inch (8") lifts across the entire fill or backfill section. The City may authorize roadway fill materials to be placed in layers in excess of eight-inches (8") thickness if the Contractor can demonstrate that the required compaction can be achieved for the full depth of the lift. Lesser thickness shall be used if necessary, to achieve specified compacted density. Suitable material shall then be windrowed, disked, or manipulated by other suitable means to achieve a homogeneous mixture of proper moisture content, free of hard lumps of soil or frozen material, and compacted to the required density.
- (e) Rocks larger than two and one-half (2-1/2) inches shall not be placed within twelve inches (12") of the subgrade for paving.
- (f) Compacting shall begin only after the suitable material has been properly placed and the material to be compacted is at optimum moisture, not to exceed plus two percent (+2%) or minus one percent (-1%) of optimum. All materials used for embankments shall be compacted to a minimum of ninety five (95) percent of maximum dry density, modified proctor, (ASTM D 1557).
- (g) If the suitable material to be compacted contains excessive moisture, such material shall be processed to reduce the moisture to the specified content. If the suitable material has less than the specified moisture content or is likely to lose enough moisture to bring the moisture content below requirements before completion of compaction, water shall be added and the lift thoroughly mixed before compacting.
- (h) Subsequent layers of suitable material for embankment shall be placed, as described above, in generally horizontal layers of loose thickness not to exceed eight-inches (8"), unless otherwise approved, and shall extend across the full width of the embankment area.
- (i) After compacting of the material, in place density tests shall be made. If the compacted material fails to meet the density specified, the course shall be reworked as necessary to obtain the specified density.

- (j) Embankment, or fill, adjacent to structures such as concrete walls, culverts, boxes or similar structures shall not be compacted with heavy equipment but shall be compacted with hand operated equipment to a distance of four (4) feet or greater, beyond the sides of the structure.

Article 05-02-020 Subgrade Preparation

- (a) Subgrade Preparation shall adhere to the current edition of the NMDOT Standard Specifications.
- (b) If subgrade preparation is left over 48-hours without procession of the next phase of construction, subgrade preparation may be rechecked for compaction, moisture, and surface tolerance at the discretion of the City. No separate measurement or payment will be made for rehandling or reworking of material resulting in need of this recheck and associated work.

Article 05-02-030 Base Course and Subbase

- (a) Base course and subbase shall adhere to the current edition of the NMDOT Standard Specifications.
- (b) If constructed base course or subbase course is left over 48-hours without procession of the next phase of construction, base course or subbase course may be rechecked for compaction, moisture, and surface tolerance at the discretion of the City. No separate measurement or payment will be made for rehandling or reworking of material resulting in need of this recheck and associated work.

If constructed base course or subbase course has been treated with a bituminous material, (prime coat) or other approved treatment, the City reserves the right to have base course or subbase course rechecked for surface tolerance and compaction.

At a minimum, Contractor will spray a light application of water and “tight roll” base course prior to asphalt pavement operations or the next phase of operations as per Project requirements.

Article 05-02-040 Tack Coat

- (a) Tack coat shall adhere to the current edition of the NMDOT Standard Specifications.
- (b) Tack coat application is required for all pavement patching.

Article 05-02-050 Prime Coat

- (a) Prime coat shall adhere to the current edition of the NMDOT Standard Specifications.

Article 05-02-060 Plant Mix Bituminous Pavement

- (a) Superpave hot mix asphalt shall be used unless otherwise approved by the City. Hot mix asphalt shall adhere to the current edition of the NMDOT Standard Specifications.

Article 05-02-070 Concrete Flatwork

- (a) Concrete flatwork shall consist of sidewalks, curb and gutter, valley gutters, fillets, ramps, median pavement, and drive or alley pads.
- (b) Concrete flatwork shall be constructed with Class A Concrete Classification as presented in the current edition of the NMDOT Standard Specifications.

Article 05-02-080 Flowable Fill

- (a) Flowable fill shall adhere to the current edition of the NMDOT Standard Specifications.

Article 05-02-090 Steel Reinforcement

- (a) Bar Reinforcement
 - (1) Bar reinforcement shall be deformed bars of Grade 60 and shall conform to the requirements of ASTM A 615. Field bending of Grade 60 bars will not be permitted.
 - (2) Bar mat reinforcement shall conform to the requirements of ASTM A 184, billet steel, Grade 60.
 - (3) Shop Bending: Bent bar reinforcement shall be cold shop bent around a pin to the shapes shown in the Contract Documents. Unless otherwise provided, bends shall have a radius measured on the inside of the bar of not less than two and one-half (2 ½) bar diameters.
 - (4) Bundling and Tagging: Bar reinforcement shall be shipped in standard bundles, tagged, and marked in accordance with the Code of Standard Practice of the Concrete Reinforcement Steel Institute. The Contractor shall

furnish, from the fabricator, a certificate of compliance. Two (2) copies shall accompany all shipments of reinforcing steel to the Project. The certificates of compliance shall show the name of the manufacturer, pounds shipped, heat numbers, laboratory test report numbers, and grade of steel.

- (b) Welded wire fabric shall conform to the requirements of AASHTO M 55.
- (c) Metal chairs or other metal supports for reinforcement which contact the exposed surfaces of the concrete shall be galvanized and bond breaker provided between metal chairs and reinforcement.
- (d) Wire for reinforcement shall conform to the requirements of AASHTO M 32.
- (e) Dowel bars for load transfer in concrete shall be plain, straight, with ends square, and free from burrs, and shall conform to the requirements of ASTM A 306, Grade 80. Expansion caps for one (1) end of the dowel bars shall be close fitting and shall be a minimum length of three inches (3"). The enclosed end of the expansion cap shall contain a suitable stop to hold the end of the dowel bar one inch (1") from the end of the cap.

Article 05-02-100 Potholes and Exploratory Excavations

- (a) Potholes or exploratory excavations utilized to determine the exact horizontal and vertical location of existing utilities shall be limited to 24-inches in diameter. Potholes shall be placed no closer than three-feet (3') from the resulting asphalt patch as shown in Standard Detail R-14.
- (b) Any utility damage shall be brought to the utility provider's attention immediately. Remedial measures to correct the damage shall be at the contractor's expense.
- (c) Under no circumstance shall a pothole, within a public travel way, remain unpatched for longer than 14 calendar days. The Contractor shall provide traffic control plan(s) and temporary measures (trench plates, etc.), for City review and approval, necessary to restore vehicular and/or pedestrian traffic in a timely manner. Should the local batch plant not be in production at the time of construction a written notice from the batch plant shall be provided to the City in writing. The statement shall also state the anticipated production date to schedule the patching activity.
- (d) Potholes and excavations outside of public travel ways may be subject to alternate backfill means and methods at the City's sole discretion. These pothole activities shall be coordinated with the City prior to commencement.

ARTICLE 05-03 – CONSTRUCTION STANDARDS

Article 05-03-010 Concrete Flatwork Forms

- (a) Form material shall be free from warps, with smooth and straight upper edges and, if used for the face of curb, shall be surfaced on the side against which the concrete is to be placed. Timber forms may be used for forming curved sections but shall not be used for straight work unless authorized in writing by the City. Metal forms for such work being of a gauge that will provide proper rigidity and strength for the purpose for which they are intended. Wood forms used on curb returns shall be not less than three-quarter (3/4) of an inch in thickness, cut in the length and radius shown on the Contract Documents and held rigidly in place using metal stakes and clamps. The curb face shall be cut to conform exactly with the curb face batter, as well as being cut to the required length and radius. In every case, however, the forms shall be of sufficient rigidity and strength and shall be so supported as to adequately resist springing or deflection because of the placing or tamping of the concrete.
- (b) All curb and combined curb and gutter shall be divided into blocks or stones in lengths of five (5) or ten (10) feet long using metal templates not less than one-sixteenth (1/16th) inch nor more than one-fourth (1/4th) inch thick cut to the same cross section as the curb or curb and gutter being constructed. Templates shall be securely attached to forms to prevent movement during concrete placement.
- (c) Form material shall be thoroughly clean at the time it is used and shall be given a coating of light oil or other suitable material immediately prior to the placing of the concrete.
- (d) Forms, except curb block planks, shall be set with the upper edges thereof flush with the specified grade of the finished surface of the adjacent portion of the work and shall be not less than a depth equivalent to the full specified depth of thickness of the concrete to be supported thereby.
- (e) Back forms shall be held securely in place by means of stakes driven in pairs, one at the front form and one at the back, at intervals not to exceed four feet (4'); clamps, spreaders, and braces being used in connection therewith to such extent as may be necessary to insure proper rigidity of the forms. Forms for walks, gutters, and similar work shall be firmly secured by means of stakes driven flush with the upper edge of the forms at intervals not to exceed five feet (5'). The stakes shall be of sufficient size and shall be so driven as to support the forms properly and adequately.
- (f) Form clamps, specifically designed, and manufactured for the curb and gutter to be constructed, may be used if approved by the City.

Article 05-03-020 Reinforcing Bars

- (a) Before concrete is placed, the reinforcement bars shall be clean of dirt, mortar, oil, loose rust, loose mill scall, and any other analogous material that would reduce or destroy the bond.
- (b) Reinforcing bars shall be placed as shown on the Contract Documents and shall be securely tied in position with 0.080-inch or 0.0624-inch diameter wire at all intersections, except where spacing is less than one foot (1') in either direction. Where the spacing is less than one foot (1') in either direction, alternate intersections shall be tied. Metal spacers, chairs, hangers, and other approved devices of adequate strength to prevent crushing under full load shall be used to hold the reinforcing in position. The use of concrete blocks to support reinforcement will not be permitted, except that dense, rectangular concrete blocks may be used to support the bottom mat of reinforcement in slabs which are cast on earth. Such concrete blocks shall meet the following requirements:
 - (1) Have compressive strength and density equal to, or greater than, the concrete to be placed.
 - (2) Occupy a small area, as approved by the City.
 - (3) Be free from subjection to deterioration.
 - (4) Contain embedded tie wires to provide for the attachment of reinforcement to the block.
 - (5) Reinforcement other than lower mats in slabs cast on earth shall be supported with metal spacers, chairs, or hangers
 - (6) Wooden spacers or supports shall not be used to hold reinforcing in place.
- (c) Bars shall be placed with a variation in spacing between adjacent bars of not to exceed one-half inch (1/2") or one-twenty-fourth (1/24th) of the spacing dimension shown in the Contract Documents, whichever is greater. With the exception of slabs cast on earth, the clear coverage of the reinforcement shall not vary more than one-fourth inch (1/4") or one-eighth (1/8th) of the dimension shown on the Contract Documents, whichever is greater. The clear cover of reinforcing cast on earth shall not vary more than minus one-fourth inch (1/4") to plus one-half inch (1/2") from the position shown on the Contract Documents.
- (d) Reinforcement shall be furnished in the full length indicated on the Contract Documents, unless otherwise approved by the City. Splicing of bars will not be

permitted, except when shown on the Contract Documents as allowable. Bars in lapped splices shall be placed and securely tied in a manner to maintain not less than the minimum distance to the surface of the concrete shown on the Contract Documents.

- (e) Welded wire fabric and bar mat reinforcement shall be lapped as shown on the Contract Documents but not less than two (2) mesh in width, and securely tied at the ends and edges.
- (f) Reinforcing steel shall be welded only when shown on the Contract Documents or authorized in writing by the City. Welding shall conform to the requirements of AWS Specification D12.1 – Reinforcing Steel Welding Code.
- (g) The minimum cover from the surface of the concrete to the face of any reinforcement bar shall not be less than shown below, unless otherwise shown on the Contract Documents.
 - (1) Minimum cover shall be as follows:
 - A. Concrete cast against and permanently exposed to earth – two inches (2”).
 - B. Concrete exposed to earth or weather:

Principal reinforcement – two inches (2”).
Stirrups, ties, and spirals – one inch (1”).
 - C. Concrete not exposed to weather or in contact with the ground:

Principal reinforcement – one and one-half inch (1 ½”).
Stirrups, ties, and spirals – one inch (1”).
 - (2) For bar bundles, minimum concrete cover shall be equal to the lesser of the diameter of a single bar of equivalent area or two inches (2”), but not less than the minimum cover given in (1) above.
 - (3) Exposed reinforcing bars, inserts, and plates intended for bonding with future extensions shall be protected from corrosion.
- (h) Inspection: No concrete shall be placed until the City has inspected the reinforcing steel in place and has authorized the Contractor to place the concrete. Acceptance of reinforcing steel will not relieve the Contractor of responsibility for coverage and position control of the steel.

Article 05-03-030 Concrete Placement

- (a) The concrete shall be placed on a thoroughly dampened subgrade sufficiently moist to ensure that no moisture will be absorbed from the fresh concrete.
- (b) Surfaces of structures in sidewalks, curbs, and gutters shall be adjusted as necessary prior to placing of concrete to meet the contiguous sidewalk surfaces.
- (c) Concrete shall be placed in horizontal layers not to exceed six (6) inches each in thickness, each layer being spaded along the forms and thoroughly tamped. However, if the section is more than six (6) inches in depth, the concrete may be placed to provide the thickness shown or specified if mechanical internal vibrators are used.
- (d) After the concrete for walk has been placed between the side forms, a strike-off shall be used to bring the surface to the proper section to be compacted. It shall then be spaded along the form faces and tamped with appropriate tampers not less than two (2) times, in order to assure a dense and compact mass, forcing the larger aggregate into the body thereof and bringing to the surface sufficient free mortar for finishing.
- (e) After the concrete has been placed and tamped, the upper surface shall be struck off uniformly smooth and true to the specified grade.
- (f) Weather and Temperature Limitations: Concrete shall have a temperature of at least 50° F and not more than 90° F at time of placement.
 - (1) Hot Weather Concrete: When concrete is placed during high ambient temperatures, low humidity, and/or windy conditions precautions shall be taken to reduce the rate of evaporation and control the temperature of the concrete per ACI 305, latest revision.
 - (2) Cold Weather Concrete: When concrete is placed at or below an atmospheric temperature of 35° F, the water or aggregates, or both, shall be heated, and suitable enclosures and heating devices shall be provided. The mixed concrete shall have a temperature of at least 50° F and not more than 90° F at the time of placing. The heating equipment or methods shall be capable of heating the water and aggregates uniformly, and these materials shall not be heated to a temperature exceeding 150° F. Concrete shall not be placed on frozen ground.

- (3) Protection of Concrete: After any concrete is placed, the Contractor shall provide suitable measures to maintain a concrete surface temperature of 40° F or above for a period of not less than twenty-four (24) hours.

Article 05-03-040 Expansion Joints

- (a) Expansion joints shall be constructed in curbs, walks, and gutters as hereinafter specified, being filled with pre-molded joint filler strips. No such joints shall, however, be constructed in cross gutters, alley intersection, or driveway aprons.
- (b) Unless otherwise shown on the plans, one-half (1/2) inch joints shall be constructed in curbs and gutters at the end of all returns except where cross gutters are being constructed. They shall be at the ends of the cross-gutter transitions and also along the line of the work at regular intervals not to exceed fifty (50) feet, joints in gutter being continuous with those in adjacent curb. No joints shall be constructed in returns. Where continuous curb and gutter is constructed adjacent to cement concrete pavement, weakened plane joints shall be installed continuous with alternate joints installed in the adjacent pavement, in which case expansion joints for sidewalks shall be placed at intervals not to exceed twenty (25) feet with joint filler strips.
- (c) Expansion joint filler strips shall be placed in walks at the PT and PC of all walk returns, between walk and a building or structure, in walk returns between the walk and the back of the curb returns, and around all utility poles encountered along the line of the work. Joint filler strips shall extend the full depth of the concrete being placed. Joint filler strips between walk and curb shall be the full depth of the walk with the top of the filler strip set flush with the top of the concrete. Expansion joint filler strips including those around utility poles shall not be less than one-half (1/2) inch in thickness.
- (d) Expansion joint filler strips shall be vertical and shall extend to the full depth and width of the work in which they are installed, being constructed at right angles or radial to the line of the curb or gutter. The filler strips shall completely fill these joints at least to within one-fourth (1/4th) of an inch of any surface of the concrete that will be exposed upon completion of the work and must fully extend at least to those surfaces that will not be exposed. However, before the work will be accepted, any joint filler that protrudes beyond a surface that will not be exposed or beyond one-fourth (1/4th) of an inch below a surface that is exposed shall be trimmed off to the specified dimension in a neat and workmanlike manner. During the placing and tamping of the concrete, the filler strip shall be held rigidly and securely in proper position.

Article 05-03-050 Concrete Finishing

Surfaces of the various items of work shall be finished as specified. Edges of concrete at expansion joints shall be rounded to one-fourth inch (1/4") radius. Upon completion, the finished surface shall be true to line and grade and free from irregularities.

(a) Curbs – Standard Detail R-2

- (1) The front forms may be stripped as soon as the concrete has set sufficiently but must be removed before the expiration of six (6) hours after pouring. Immediately following the stripping of the forms, mortar, as thinned to consistency of grout, shall be applied to the curb face. If monolithic curb and gutter is being constructed, this mortar shall be applied to the full-exposed face; otherwise, it shall extend for an additional two inches (2") below the gutter.
- (2) The face and top of the curb shall then be carefully troweled to a smooth and even finish, the top being finished to a transverse slope of one-fourth (1/4th) of an inch toward the front, with both edges rounded to a radius of three-fourth (3/4th) of an inch. The troweled surface shall be finished with a fine hair broom parallel with the line of the work.
- (3) Contraction joints or control joints shall not exceed intervals of five (5) feet. Joints shall be made at regular intervals along the line of the work. On straight work, the joints shall be parallel with and at right angles to the line of the work; at curves the joints shall, in general, be long lines concentric with and radial to the proportion of the work in which they are placed. The markings shall be made with jointed tools that will round the edges of the scoring lines to a radius of one-eighth (1/8th) of an inch, with a depth of not less than one inch (1"). The finished joint opening, excluding of radii, shall not be wider than one-eighth (1/8th) inch. The Contractor will be required to have a sufficient number of jointed tools on the job to accomplish the above specified requirements.
- (4) At railroad approaches and departures, concrete curbs and gutters shall be terminated flush, with adjacent pavement, ten feet (10') from the centerline of the nearest track.

(b) Walks – Standard Detail R-1

- (1) Following the placing of concrete, the surface shall be worked to a true and even grade, free from waves and irregularities. After the preliminary troweling, the initial scoring for the block marking shall be made to a depth

of one inch (1") to ensure the scoring depth required. The work shall then be carefully troweled to a smooth and even finish, with the edges rounded to a radius of one-half inch (1/2"), the scoring markings made to the required depth following which it shall be given a fine hair broom finish, applied transversely and remarked when required to insure a new uniform joint. Troweling may be done with a long-handled trowel or "Fresno."

- (2) Contraction joints or block joints shall not exceed intervals of five feet (5'). Joints shall be made at regular intervals along the line of the work. On straight work, the joints shall be parallel with and at right angles to the line of the work; at curves the joints shall, in general, be long lines concentric with and radial to the proportion of the work in which they are placed. The markings shall be made with jointed tools that will round the edges of the scoring lines to a radius of one-eighth (1/8th) of an inch, with a depth of not less than one inch (1"). The finished joint opening, excluding of radii, shall not be wider than one-eighth (1/8th) inch. The Contractor will be required to have enough jointed tools on the job to accomplish the above specified requirements.
- (3) The side forms shall remain in place after completion of the walk until the concrete is sufficiently set but must be removed before the work will be accepted.
- (4) At railroad approaches and departures, concrete sidewalks shall be terminated a minimum of two feet (2') from the railroad crossing. The remaining segment(s) shall be completed with flexible pavement (asphalt) against the railroad crossing.

(c) Gutters

- (1) After the concrete has been thoroughly tamped in such manner and to such extent as to force the larger aggregates into the body thereof and bringing to the top sufficient free mortar for finishing, the surface shall be worked to a true and even grade by means of a float, troweled with a long handled trowel or "Fresno" and then longitudinally broom finished, following which the flow line of the gutter shall be troweled smooth for a width of approximately three (3) inches and the outer edge rounded to a radius of one-half inch (1/2").
- (2) Side forms shall remain in place until the concrete is sufficiently set, after completion of the gutter, but must be removed before the work will be accepted.

- (3) Reinforcement shall be included as shown on the Contract Documents.
- (4) Construction joints and one-half inch (1/2") pre-molded expansion joints and other details of construction shall be as specified in the Contract Documents. The finished surface shall conform to the required roadway section as to both line and grade. The gutter sections will not be opened to traffic until specimen beams have attained a flexural strength of not less than five hundred (500) pounds per square inch (AASHTO T 97). When such tests are not conducted, the gutter shall not be opened to traffic until determined by the City.

(d) Slope Paving

- (1) All subgrade preparation required for this item shall be done in accordance with these Standards, with the exception that minimum density requirements will be ninety (90) percent of maximum density as determined by ASTM D 1557 in all cases, instead of ninety-five (95) percent of maximum in the top six (6) inches or twelve (12) inches of compacted fill.
- (2) Reinforcement shall be included as shown on the Contract Documents.
- (3) Thickness of concrete shall be as specified in the Contract Documents. Concrete shall be screeded and finished with wood float or equivalent to a plane surface having no variation when measured with a ten-foot (10') straight-edge more than one-fourth (1/4th) inch unless a curvilinear surface is designated for a particular job.

(e) Curing

- (1) After the completion of the finishing operations, all curbing shall be sprayed with concrete curing compound. The surface of the concrete shall be kept thoroughly damp between the completion of the finishing operations and the application of the curing compound.
- (2) The curing compound shall be applied under pressure, by means of a spray nozzle, in such manner and quantity as to entirely cover all exposed surfaces of the concrete with a uniform film. The preparation so used shall be Type 2 as specified in ASTM C 309.

(f) Driveway and Alley Pad at Entrances

- (1) Driveway entrances shall be provided in new curbs at all existing driveways along the line of the work and at locations shown on the plans or as directed by the City.
 - (2) The location and construction details for driveways shall conform to the Contract Documents.
 - (3) Reinforcement shall be included as shown on the Contract Documents.
 - (4) Where walk is to be constructed across driveway, the thickness of the walk shall be not less than six (6) inches, unless otherwise specified or shown on the Contract Documents.
- (g) Miscellaneous Types of Curbs, Gutters, and Walks – extruded type concrete curb and gutter, precast curb and gutter sections, cut stone curbs, brick sidewalks, flagstone sidewalks, etc. will be permitted where approved by the City and in accordance with the Contract Documents.
- (h) Repairs and Replacement – New work that is found to be defective or damaged prior to the acceptance or existing work damaged by the Contractor’s operations shall be repaired or replaced by the Contractor with no additional compensation. Sidewalk that is to be replaced shall be neatly sawcut to the next control joint on either side of the defective or damaged portion. The minimum size slab that is removed and replaced shall be five feet (5’) long and for the full width of the walk. Curb and gutter shall be sawcut on a neat line at right angles to the face of the curb to the next control joint and/or gutter on either side of defective or damaged portion.
- (i) Backfilling and Cleanup
- (1) Backfilling to the finished surface of the newly constructed improvements must be completed prior to acceptance of the work by the City.
 - (2) Upon completion of the work, all earth or burlap covering shall be removed, the surface of the concrete thoroughly cleaned, and the site left in a neat and orderly condition, including disposal of excess materials and earth.

Article 05-03-060 Detectable Warnings

- (a) Detectable warning mats (consisting of standardized truncated domes) shall be placed where pedestrians encounter hazards in the path of travel. Detectable warnings shall be placed at the following:

- (1) At ramp landings immediately adjacent to the back of the curb at a street crossing.
 - (2) At on-grade railroad crossings where sidewalks are present. Placement shall be six to fifteen feet (6' – 15') from the individual rails on either side.
 - (3) Within median islands if the cut through section exceeds six feet (6') in width.
- (b) Detectable warning mats shall be two feet (2') in depth and five feet (5') in width.

Article 05-03-070 Concrete Sampling and Testing

- (a) Slump, unit weight, air content tests and compressive strength test cylinders shall be prepared with concrete obtained from the point at which the concrete is placed by certified personnel (ACI or TTCP certified as Concrete Field-Testing Technicians). All results for the tests performed in accordance with this unit will be provided to the Contractor and the concrete supplier immediately upon completion of the final compressive strength test. If a super-plasticizer is used, the slump shall be measured before and immediately after the addition of the super-plasticizer. The slump specifications defined on the approved mix design shall not be exceeded before introduction of the super-plasticizer. The slump shall not exceed eight (8) inches after the super-plasticizer has been added. Super-plasticized concrete shall be checked for segregation before being placed and during the course of the placement. Segregated concrete shall not be placed. Concrete cylinders for compressive strength tests by the Contractor's certified personnel are to be molded and cured in accordance with AASHTO T 23 "Making and Curing Concrete Test Specimens in the Field" using four-inch (4") by eight inch (8") single use plastic cylinder molds with plastic lids or six inch (6") by twelve inch (12") cylinder molds and air content tests cast from slip-form concrete shall be accomplished with a vibrator. The Contractor is responsible for providing all vibratory equipment and all equipment required to operate the vibratory equipment. Rodding of slip-form concrete will not be permitted. Responsibility for transporting the test specimens to a certified testing lab shall belong to the party who originally prepared the test specimens.
- (b) Concrete Testing: At least one (1) sample shall be taken from each of the first three (3) concrete loads delivered to the Project site. Each of these loads shall be tested for slump, air content, and unit weight. Additionally, a set of compressive strength test cylinders will be cast from one of these three loads, determined on a random basis. Beginning with the fourth (4th) load of concrete delivered to the Project, one (1) randomly selected load from each sub-lot of six (6) trucks. All tests and cylinders shall be tested and handled in accordance with proper procedures.

- (c) Concrete Strength: Concrete compressive strength shall be determined from the average of two (2) or more concrete cylinders made from the same sample of concrete and tested at the specified age. The cylinders will be made, handled, and stored in accordance with AASHTO T 23 "Making and Curing Concrete Test Specimens in the Field" and tested in accordance with AASHTO T 22 "Compressive Strength of Cylindrical Concrete Specimens".
- (d) Individual Strength Test: Unless otherwise specified, an "individual strength test" will be determined by testing two (2) or more cylinders at twenty-eight (28) days (or at fourteen (14) days for slip-formed concrete). At least four (4) cylinders shall be made for each set. The first cylinder shall be tested at seven (7) days for use as an indicator of the early concrete compressive strength. The second and third cylinders shall be tested to determine the "Individual Strength Test" result. The fourth cylinder shall remain available for testing if the Within-Test-Coefficient-of-Variation (WTCV) exceeds five (5) percent, as determined by ACI 214.3.4.1. If the fourth cylinder is tested, the "Individual Strength Test" result will be the average of all of the cylinders tested at that age, unless one (1) or more of the following conditions exist:
 - (1) There is a visible defect in the cylinder or the capping, and/or orientation of the cylinder with respect to its perpendicularity or the parallelism of the ends.
 - (2) A significant irregularity occurred while loading the test specimen to failure, such as a sudden load burst, cyclic or pulsating loads, or a loading rate not in accordance with AASHTO T 22.
- (e) Unless less stringent requirements are specified in the Contract Documents, forms may be stripped, or traffic permitted on the structure or pavement when the correlated in-place compressive strength is at least equal to the strength required for the intended application.
- (f) Acceptance of Concrete Based on Cylinders: The concrete will be accepted with respect to compressive strength indicated by cylinder tests, when both of the following requirements are met:
 - (1) The running average of three (3) consecutive individual strength tests meets or exceeds the specified strength.
 - (2) No individual strength test falls below the specified strength by more than five hundred (500) psi; and,

3. When the cylinder-based acceptance requirements are not met, the City will review the strength tests and notify the Contractor in writing whether the concrete will be accepted or shall be removed and replaced by the Contractor. Only that area of concrete represented by the individual strength test failing to meet any one (1) of the cylinder based acceptance requirements, shall be subject to investigation or removal. When the cylinder-based acceptance requirements are not met, steps shall be taken by the Contractor to resolve the problem. The proposed resolution will be submitted in writing to the City. The mere addition of extra cement will normally not be considered a sufficient resolution.

ARTICLE 05-04 – SIGNAGE & STRIPING

Article 05-04-010 Permanent Signage

- (a) Permanent signage shall adhere to the guidance, dimensions, and layouts presented in the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways, Latest Edition.
- (b) Street name signs shall follow the guidance provided in Standard Drawing R-13.

Article 05-04-020 Striping

- (a) Permanent roadway striping shall follow the guidance provided in Standard Drawing R-4.
- (b) Roadway striping not covered by the Standard Drawings shall adhere to the guidance, dimensions, and layouts presented in the Manual on Uniform Traffic Control Devices (MUTCD), Latest Edition.

ARTICLE 05-05 – DRAINAGE CONSIDERATIONS

Article 05-05-010 General

- (a) The designer shall be responsible for compliance with all governing agencies potentially having jurisdiction over portions of the Project, including but not limited to the following:
 - (1) New Mexico Environment Department
 - (2) New Mexico Department of Transportation
 - (3) Union Pacific Railroad and their lessees
 - (4) Otero County
 - (5) United States Army Corps of Engineers
 - (6) New Mexico Office of the State Engineer
 - (7) NPDES/EPA Region 6

- (8) Federal Emergency Management Agency
- (b) Grading, drainage facilities, channels, and other improvements to control storm water shall be designed to:
 - (1) Limit post-development peak discharges from a project and in impacted conveyance systems at a pre-development peak discharge rate.
 - (2) Minimize erosion by providing erosion and sedimentation control systems as required to prevent erosion, scour, and sedimentation.
 - (3) Be compatible with existing improvements and drainage patterns.
- (c) Detention Design
 - (1) Retention ponds shall be avoided and will be authorized by the City on a case-by-case basis.
 - (2) The design storm for detention ponds shall be the 100-year return period rainfall event with 24-hour duration.
 - (3) Detention ponds shall have maximum side slopes of four to one (4:1) unless authorized by the City.
 - (4) Detention ponds shall have one foot of freeboard or 10% additional basin capacity.
 - (5) Maximum basin depth shall not exceed four feet, and minimum depth shall be eighteen inches unless otherwise approved by the City.
 - (6) Offsite runoff entering the development may occur in the drainage basin. If this is the case, the analysis of the detention facility must take these flows into account. Offsite flows may be routed around the detention facilities, but the entrance and exit points of the storm runoff shall not be altered nor shall the post development peak flow exceed the historic peak flow.
 - (7) An acceptable method of transporting water from the streets into the basin shall be provided to preserve the facility's integrity.
 - (8) Each facility shall be designed so that the stormwater will not stand for more than 24 hours after termination of the storm. Drainage shall be accomplished by infiltration or by controlled flow into an existing facility suitable to receive, transport, and convey the water.

- (9) If infiltration is the mean method of drainage, a soils report shall be included in the construction documents. Sufficient and representative soil borings and tests shall be required to illustrate suitability for the intended purposes and percolation characteristics.
 - (10) Fencing/railing will be required when hazards exist to those using the property.
- (d) Erosion and Sedimentation Control
- (1) All projects shall be designed so that erosion is minimized during construction as well as after the construction is complete. The volume, rate, and quality of stormwater runoff originating from the development must be controlled to prevent soil erosion. Specific efforts shall be made to keep sediment out of streets and watercourses.
 - (2) All projects requiring grading, disturbance or clearing of more than one (1) acre must comply with the requirements of the National Pollutant Discharge Elimination System (General Permit for Discharges from Construction Activities) and submit an Erosion and Sedimentation Control Plan to the City.

ARTICLE 05-06 – DRAINAGE STUDIES & FACILITY DESIGN

Article 05-06-010 Drainage Reports & Studies

Drainage reports and/or studies shall adhere to the requirements set forth in the New Mexico Department of Transportation's Drainage Design Manual or as modified by the City.

Article 05-06-020 Facility Design

Drainage facilities, including but not limited to enclosed storm sewer systems, culverts, weirs, channels, etc., shall adhere to the requirements set forth in the New Mexico Department of Transportation's Drainage Design Manual or as modified by the City.

ARTICLE 05-07 – STREET LIGHTING

Article 05-07-010 General

- (a) General – The City will preapprove and assume monthly electrical service costs of new streetlights once installed and energized as described in the Article. The installation of streetlights and service connection fees will be paid entirely by the developer or Owner. The City will agree to pay for the monthly service charge for

each light. The developer or Owner shall be responsible for coordinating and supplying any easements or right-of-way on a recorded plat or deed to the local power company or the City.

- (b) Underground Feed Lighting – The developer or Owner shall provide the trench, conduit, and wiring from the location designated by the power company to the street light location approved by the City. The developer or Owner will also provide the pole foundation, pole, and luminaire. The power company will complete the connection once installation is complete. No overhead feeds will be allowed.
- (c) Lighting Spacing – The developer or Owner shall be responsible for light design based on a photometric lighting analysis. The Illumination Engineering Society of North America has established acceptable illumination levels and uniformity ratios for various public street types.

Article 05-07-020 Materials

- (a) Light Pole – The City’s preferred street light pole shall be Hapco Pole Products - Single Davit Pole Model Number: RTA35D8B4D1A-01. Alternative street light poles require prior authorization from the City.
- (b) Luminaire – The City’s preferred luminaire shall be American Electric Lighting Autobahn Series ATB2 Model Number: ATB240BLEDE10MVOLTR4SH. Alternative luminaries require prior authorization from the City.
- (c) Foundation – Luminaire foundations shall adhere to NMDOT Standard Specification Section 707 – Signal and Lighting Standards.

ARTICLE 05-08 – COORDINATION

Article 05-08-010 Construction Coordination, Survey, & Acceptance

- (a) The Contractor shall coordinate the Work with the City before commencing work. The City shall inspect and approve all work prior to backfilling. Photos will not be accepted in lieu of a physical inspection.
- (b) The Contractor shall notify the City in writing when each utility installation is complete in place per plan and ready for inspection. No utility backfill shall be placed until inspection has been satisfied by the City.
- (c) Acceptance Submittal – All test reports (utility, bacteriological, concrete, compaction, etc.), signed inspection forms, field marked construction drawings reflecting as-built conditions, and delivery of post construction survey as defined below.

- (d) Post Construction Survey – to be completed by a professional surveyor licensed in the State of New Mexico. The survey shall include key system components for incorporation into the City’s geographic information system (GIS). All data shall be created in real world coordinate system based on the following projection: horizontal control in NAD83, vertical control in NAVD88, and based on New Mexico State Plan Coordinates System (Grid), Central Zone, US Foot. The survey shall be tied to at least two (2) City control points as included at the end of Chapter 05. The Post Construction Survey shall be completed in a City approved AutoCAD version (.dwg format) provided to the City on a mass storage drive (compact disc or usb storage device) or via secure downloadable link.

The Post Construction Survey provider shall include a table identifying the layering convention used to depict system components (i.e. Layer C-UTIL-WATR-12in represents a twelve (12”) diameter C-900 PVC Water Line, etc.). This will allow the City personnel to isolate and import portions of the drawing and translate the information directly into usable data in their GIS. The user at their option can base their layering convention on the National Cad Standard (NCS) for ease of use. The City will not accept CAD files containing information drawn in paperspace.

The post construction survey shall be in conjunction with the Record Drawings noting work per plan or identifying different field installation conditions.

- (1) Drainage Systems Components: drainage channel control features and flowline elevations, drainage channel structure information (culvert upstream/downstream flowline elevations), manholes, inlets, pipe outfall(s), pond top elevation, and pond bottom elevation.
- (2) Sanitary Sewer System Components: standard manholes, control manholes, drop manholes, cleanouts at right-of-way or property lines, casing installations, and sewer service taps.
- (3) Lift Station Components: wet wells, dry wells, vaults, cleanouts, air valves, plug valves, flow meter, bends, and manholes.
- (4) Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, fire hydrants, water meters, service line taps, sampling stations, and pressure reducing stations.
- (5) Reclaimed Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, hydrants, meters, service line taps, or pressure reducing stations.

- (e) Substantial Completion – the Acceptance Submittal and Post Construction Survey shall be provided to the City, reviewed, and accepted by the City prior to issuance of Substantial Completion and subsequent commencement of the warranty period.

END OF CHAPTER 05

Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 1

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 10/18/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum Cap in Concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Landscape

Vertical Method: OPUS & RTK

Stamping: COA2020 1

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99970345)
Latitude Northing Y:	32°53'53.1385"N	690590.44	690795.30
Longitude Easting X:	105°56'39.0832"W	1734277.87	1734792.32
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4319.32	4391.01

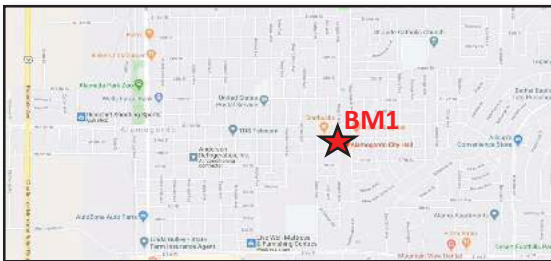
Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 20, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking SOUTHWEST):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: **COA2020 2**

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 8/5/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: **COA2020 2**

Coordinate Data

Horizontal Datum:

**Geodetic
(NAD83)**

**Grid
(NM C ZONE 3002)**

****Ground**
(Scale Factor:
0.99970364)**

Latitude | Northing|Y:

32°54'55.2263"N

696851.40

697057.98

Longitude | Easting|X:

105°57'35.7667"W

1729427.90

1729940.59

Vertical Datum:

**NAVD88
(GEOID18)**

**Ellipsoid
(GRS80)**

Orthometric

Elevation:

4294.08

4366.06

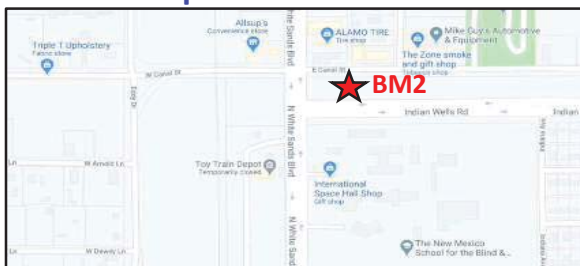
Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 18, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking SOUTH):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 3

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 8/8/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 3

Coordinate Data

Horizontal Datum:

**Geodetic
(NAD83)**

**Grid
(NM C ZONE 3002)**

****Ground**
(Scale Factor:
0.99970047)**

Latitude | Northing|Y:

32°55'45.5010"N

701939.57

702149.88

Longitude | Easting|X:

105°57'04.9658"W

1732039.02

1732557.97

Vertical Datum:

**NAVD88
(GEOID18)**

**Ellipsoid
(GRS80)**

Orthometric

Elevation:

4371.64

4443.23

Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 8, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking WEST):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 4

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 8/23/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 4

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99970117)
Latitude Northing Y:	32°55'55.6306"N	702942.86	703152.98
Longitude Easting X:	105°58'33.1403"W	1724521.53	1725037.02
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4325.36	4397.87

Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 13, T16S, R9E

Note(s):

Location Map:



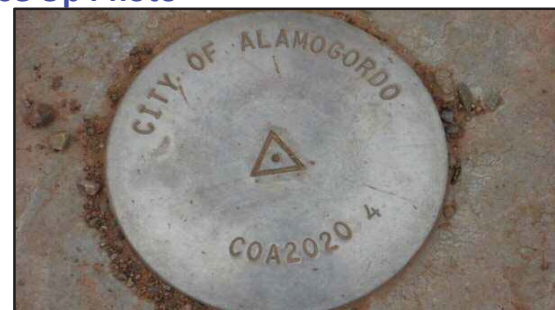
Vicinity Photo (Looking NORTH):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 5

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 8/5/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 5

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99970828)
Latitude Northing Y:	32°51'58.5433"N	678980.68	679178.81
Longitude Easting X:	105°58'42.0549"W	1723823.37	1724326.39
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4174.10	4247.11

Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 1, T17S, R9E

Note(s):

Location Map:



Vicinity Photo (Looking WEST):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 6

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 10/18/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 6

Coordinate Data

	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99970407)
Horizontal Datum:			
Latitude Northing Y:	32°52'30.9599"N	682278.07	682480.04
Longitude Easting X:	105°57'09.3941"W	1731717.04	1732229.66
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4295.14	4367.28

Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 31, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking SOUTH):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 7

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 8/4/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 7

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99970264)
Latitude Northing Y:	32°54'51.2939"N	696467.34	696674.50
Longitude Easting X:	105°56'39.9483"W	1734187.03	1734702.86
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4335.92	4407.62

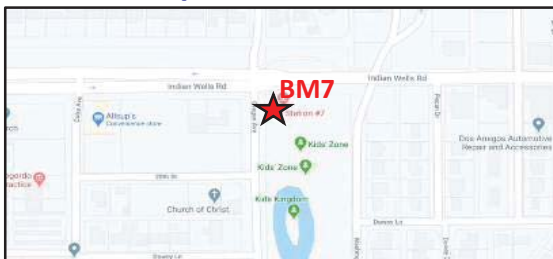
Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 17, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking NORTH):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 7A

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 8/4/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 7A

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99970264)
Latitude Northing Y:	32°54'54.1731"N	696758.57	696965.82
Longitude Easting X:	105°56'39.6812"W	1734209.01	1734724.85
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4336.27	4407.97

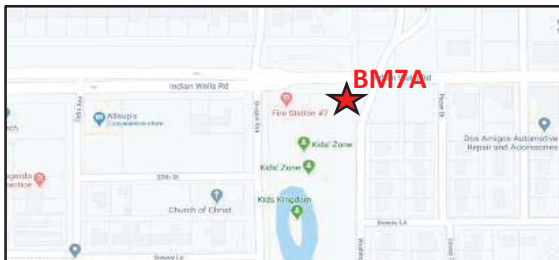
Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 17, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking EAST):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 8

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 7/22/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 8

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM) C ZONE 3002)	**Ground** (Scale Factor: 0.99970395)
Latitude Northing Y:	32°54'28.5668"N	694163.70	694369.27
Longitude Easting X:	105°57'07.9511"W	1731806.52	1732319.37
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4297.79	4369.69

Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 17, T16S, R10E

Note(s):

Location Map:



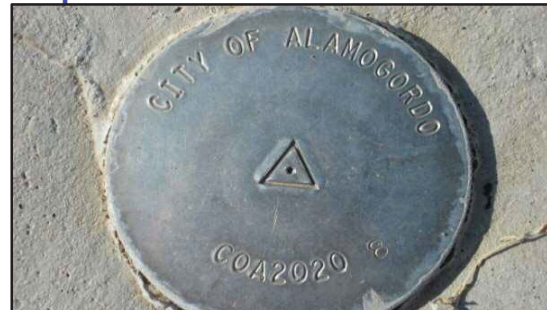
Vicinity Photo (Looking SOUTHWEST):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 9

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 11/25/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Landscape

Vertical Method: OPUS & RTK

Stamping: COA2020 9

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99970479)
Latitude Northing Y:	32°53'48.1821"N	690080.50	690284.28
Longitude Easting X:	105°57'16.2073"W	1731114.16	1731625.35
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4277.34	4349.40

Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 19, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking SOUTHWEST):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 10

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 11/25/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 10

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99970588)
Latitude Northing Y:	32°53'23.6927"N	687599.15	687801.45
Longitude Easting X:	105°57'43.4359"W	1728799.42	1729308.04
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4244.79	4317.08

Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 30, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking SOUTHEAST):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 11

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 7/10/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 11

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99970350)
Latitude Northing Y:	32°53'29.0904"N	688161.02	688365.12
Longitude Easting X:	105°56'35.3804"W	1734600.64	1735115.10
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4319.84	4391.56

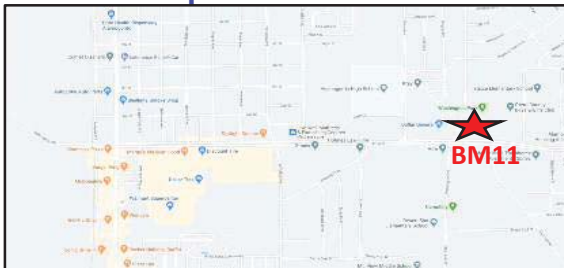
Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 20, T16S, R10E

Note(s):

Location Map:



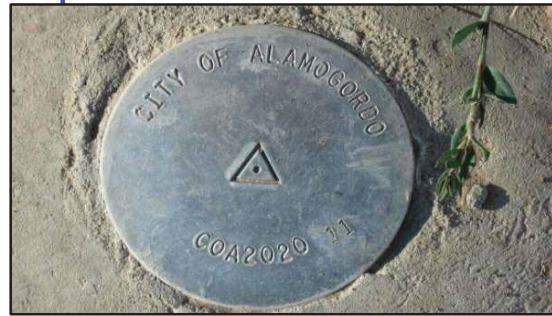
Vicinity Photo (Looking NORTH):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 12

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 8/7/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: A Few Inches Below Ground Level

Vertical Method: OPUS & RTK

Stamping: COA2020 12

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99969835)
Latitude Northing Y:	32°53'26.0008"N	687864.41	688071.97
Longitude Easting X:	105°55'33.4150"W	1739885.11	1740410.10
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4451.85	4523.67

Location

City, County & State: Alamogordo, Otero County, New Mexico

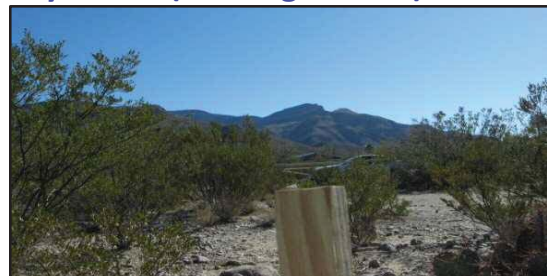
Section: Section 21, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking SOUTH):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 13

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 8/6/2020

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 13

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99969451)
Latitude Northing Y:	32°53'49.9604"N	690293.00	690503.94
Longitude Easting X:	105°55'06.8766"W	1742140.17	1742672.54
Vertical Datum:	NAVD88 (GEOID18)	Ellipsoid (GRS80)	Orthometric
Elevation:		4543.00	4613.73

Location

City, County & State: Alamogordo, Otero County, New Mexico

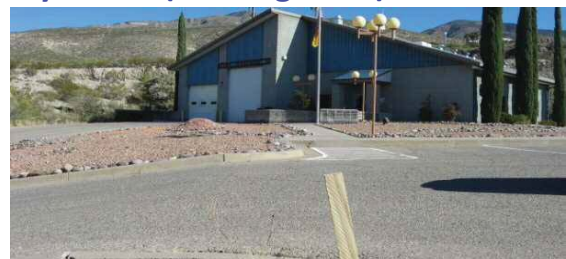
Section: Section 21, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking EAST):



Vicinity Map:



Close Up Photo



Control Station Data



Construction Surveying Services
PO Box 2295, Alamogordo, NM 88311

Name of Station: COA2020 14

Units are in US Survey Feet

Establishing Group: Construction Surveying Services

CSS Project #: 20-975

Observation Date: 2/2/2021

Project Name: City Benchmarks 2020

Station Data

Type/Composition: Aluminum cap in concrete

Horizontal Method: OPUS & RTK

Station Height: Flush with Ground

Vertical Method: OPUS & RTK

Stamping: COA2020 14

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (NM C ZONE 3002)	**Ground** (Scale Factor: 0.99969702)
Latitude Northing Y:	32°54'31.8060"N	694514.87	694304.4459
Longitude Northing X:	105°55'33.2504"W	1739878.58	1739351.432
Vertical Datum:	Ellipsoid (GRS80)	Ellipsoid (GRS80)	Orthometric
Elevation:		4479.62	4550.69

Location

City, County & State: Alamogordo, Otero County, New Mexico

Section: Section 16, T16S, R10E

Note(s):

Location Map:



Vicinity Photo (Looking NORTH):

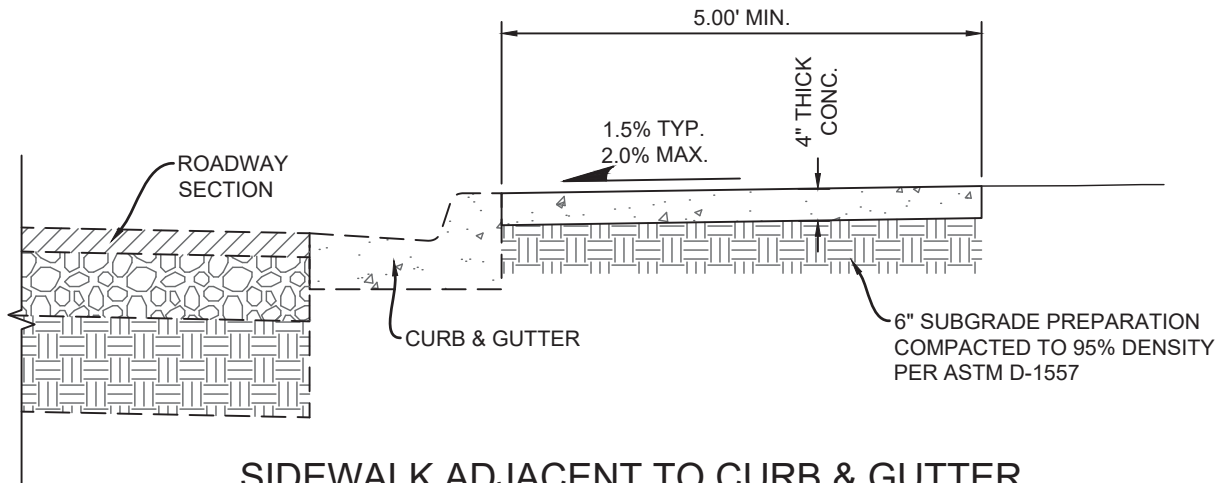


Vicinity Map:



Close Up Photo





SIDEWALK ADJACENT TO CURB & GUTTER

SIDEWALK NOTES:

1. PROVIDE $\frac{1}{2}$ " EXPANSION JOINT MATERIAL WHERE SIDEWALK ABUTS AN IMMOVABLE OBJECT (I.E. UTILITY POLE, WALL, CURB AND GUTTER, SIDEWALK, DRIVE APRON, STRUCTURES, ETC.).
2. PROVIDE CONTROL JOINTS EVERY 5'-0" FOR SIDEWALKS AND EVERY 10'-0" FOR CURBS; PROVIDE EXPANSION JOINTS EVERY 25'-0" MAX. FOR SIDEWALKS AND EVERY 50'-0" FOR CURBS.
3. SUBGRADE PREPARATION SHALL BE INCIDENTAL TO SIDEWALK CONSTRUCTION.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

SIDEWALK DETAILS

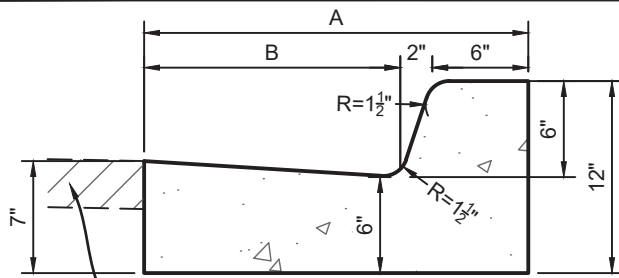
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

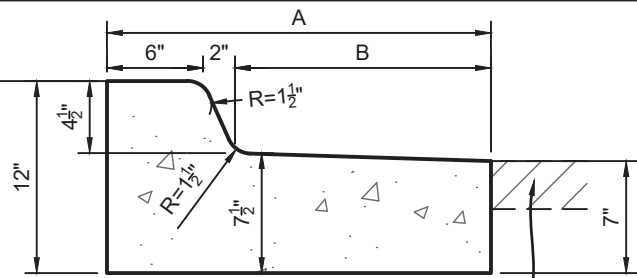
REVISION DATE:

SHEET NO:

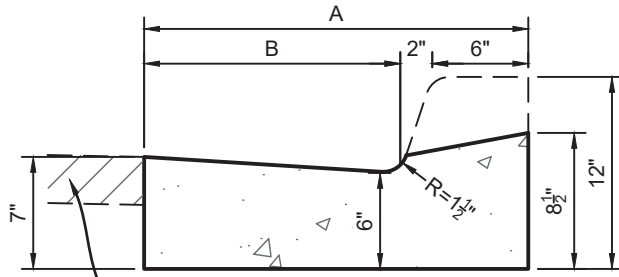
R-1



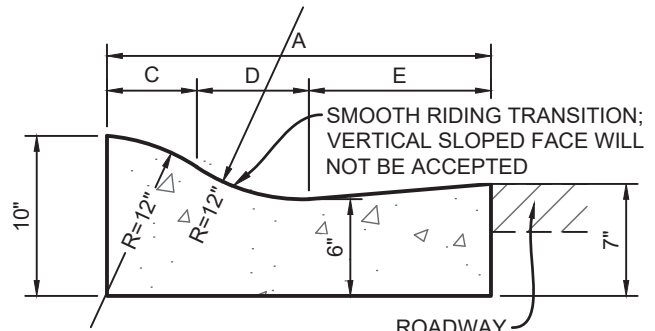
STANDARD CURB & GUTTER



REVERSE SLOPE CURB & GUTTER



LAYDOWN CURB & GUTTER



MOUNTABLE CURB & GUTTER

CURB AND GUTTER LEGEND			
TYPE	I	II	III
A	1'-6"	2'-0"	2'-6"
B	0'-10"	1'-4"	1'-10"
C	0'-5 5/8"	0'-5 5/8"	0'-5 5/8"
D	0'-5"	0'-7"	0'-7"
E	0'-7 3/8"	0'-11 3/8"	1'-5 3/8"

CURB & GUTTER NOTES:

1. NEW CURB & GUTTER PROFILE SHALL MATCH EXISTING ADJACENT CURB & GUTTER AND/OR STREET PROFILE.
2. NEW CURB & GUTTER SHALL INCLUDE EIGHT-INCH (8") SUBGRADE PREPARATION; INCIDENTAL TO CURB AND GUTTER CONSTRUCTION.
3. NEW CURB & GUTTER SHALL INCLUDE SIX-INCH (6") BASE COURSE; INCIDENTAL TO CURB AND GUTTER CONSTRUCTION.
4. EDGES OF CURB & GUTTER NOT SPECIFICALLY DIMENSIONS SHALL BE EDGED WITH A $\frac{3}{8}$ " EDGING TOOL.
5. DIMENSIONS AT ROUNDED CORNERS MEASURED TO INTERSECTION OF STRAIGHT LINES.
6. PROVIDE CONTROL JOINTS EVERY 5'-0". CONTROL JOINTS SHALL BE TOOL JOINTED WITH TOP ROUND EDGE OF $\frac{1}{8}$ " RADIUS, DEPTH OF ONE-INCH (1"). THE FINISHED JOINT OPENING EXCLUDING RADII SHALL NOT BE WIDER THAN $\frac{1}{8}$ ".
7. PROVIDE $\frac{1}{2}$ " EXPANSION JOINTS EVERY 50'-0" ALONG CURB & GUTTER.
8. TACK COAT EDGE OF GUTTER PRIOR TO PLACEMENT OF NEW PAVEMENT OR PAVEMENT PATCH.
9. THE CONSTRUCTION OF CURB & GUTTER AND/OR PAVEMENT SHALL BE CONSTRUCTED SO THAT THE GUTTER FLOW WILL BE CONSTANT (NO PONDING AREAS WILL BE ACCEPTED).

SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

CURB AND GUTTER DETAILS

ISSUE DATE:
JUNE 14, 2022

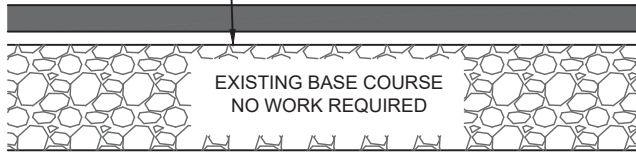
RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:

R-2

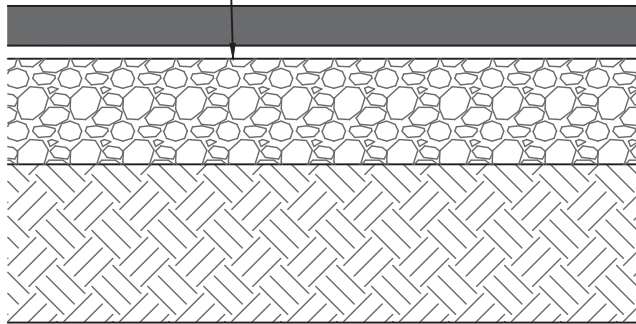
PRIME COAT 0.15
GALLONS/SQ. YD.



2" MILL EXISTING SURFACE
2" HMA SP-IV, COMPACTED TO 95%
DENSITY, ASTM D-1557

2-INCH PAVEMENT MILL/OVERLAY SECTION

PRIME COAT 0.15
GALLONS/SQ. YD.



3" HMA SP-IV, COMPACTED TO 95%
DENSITY, ASTM D-1557

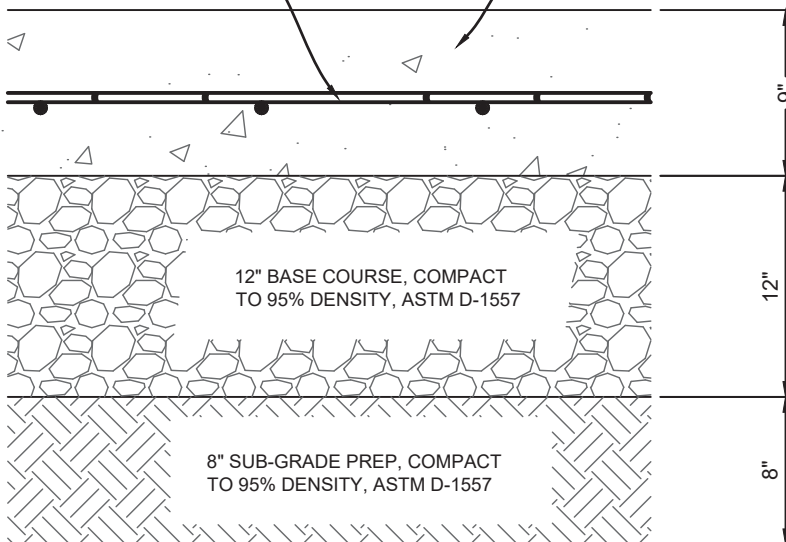
8" BASE COURSE, COMPACTED TO
95% DENSITY, ASTM D-1557

12" SUB-GRADE PREPARATION,
COMPACTED TO 95% DENSITY, ASTM D-1557

TYPICAL PAVEMENT SECTION

#4 @ 12" O.C.
EACH WAY, CTR'D

9" THICK CONCRETE
4,000 P.S.I. CLASS AA



12" BASE COURSE, COMPACT
TO 95% DENSITY, ASTM D-1557

8" SUB-GRADE PREP, COMPACT
TO 95% DENSITY, ASTM D-1557

9" CONCRETE PAVEMENT SECTION

GENERAL NOTES:

1. PROPOSED PAVEMENT SECTIONS FOR MINOR AND MAJOR ARTERIALS SHALL BE DETERMINED BASED ON SITE SPECIFIC GEOTECHNICAL INVESTIGATIONS.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

PAVEMENT SECTION DETAILS

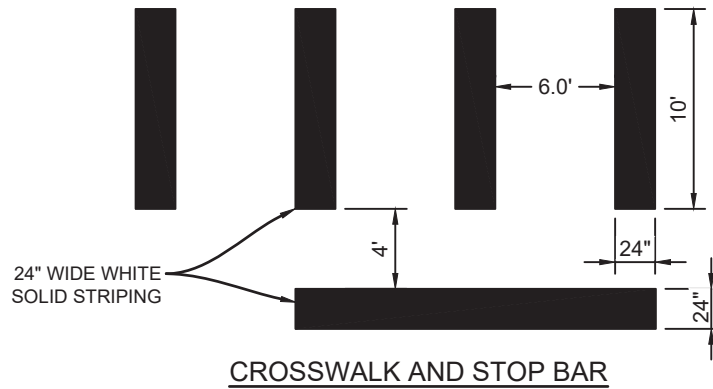
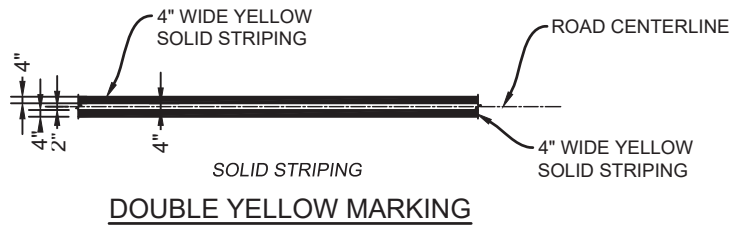
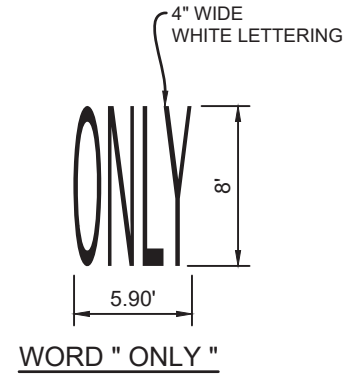
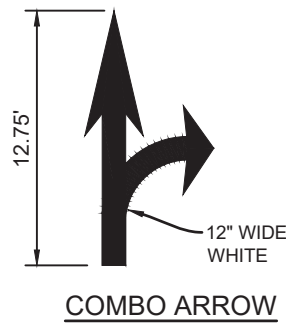
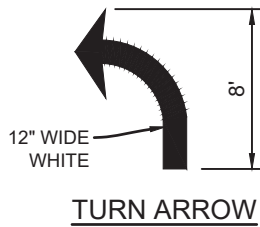
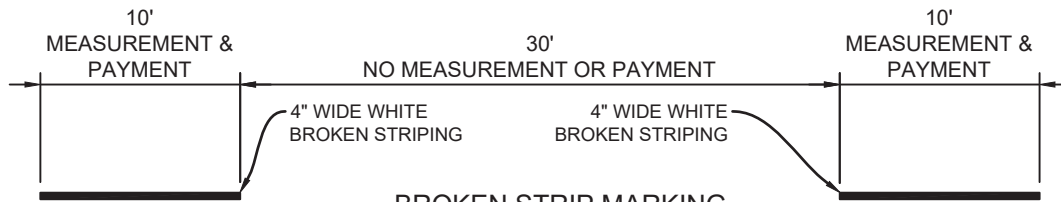
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:

R-3



CONTRACTOR NOTE:

1. CROSSWALK AND STOP BARS SHALL BE 3M-N380 PREFORMED PATTERNED MARKING OR APPROVED EQUAL (O.A.E.).
2. ALIGN CROSSWALK WITH CENTERLINE OF WHEEL PATH, COORDINATE WITH OWNER PRIOR TO INSTALLATION.
3. SYMBOLS AND LEGENDS SHALL BE 3M-380IES PREFORMED PATTERNED MARKING O.A.E.
4. BROKEN STRIPING, DOUBLE STRIPING AND SINGLE STRIPING SHALL BE 90 MIL HOT THERMOPLASTIC PAVEMENT STRIPING.
5. MEASUREMENT AND PAYMENT FOR BROKEN STRIPING (10 LF) SHALL BE CALCULATED BY MATERIAL USED.

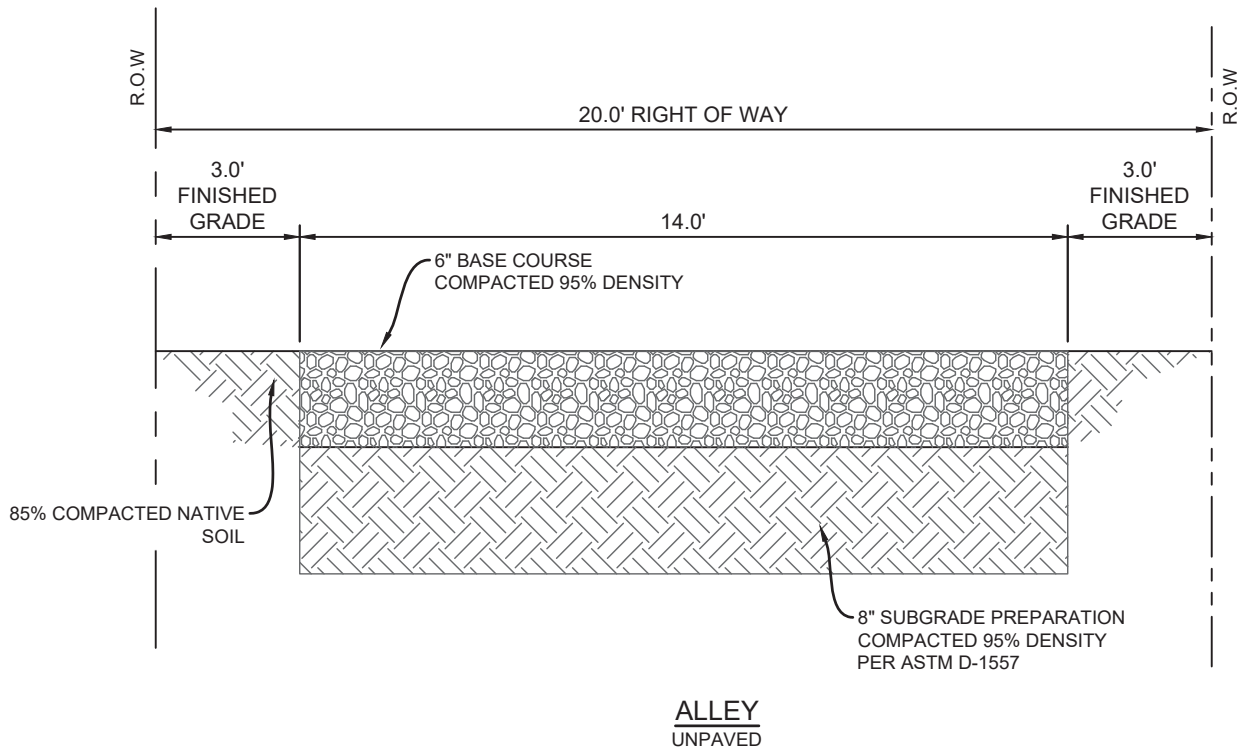
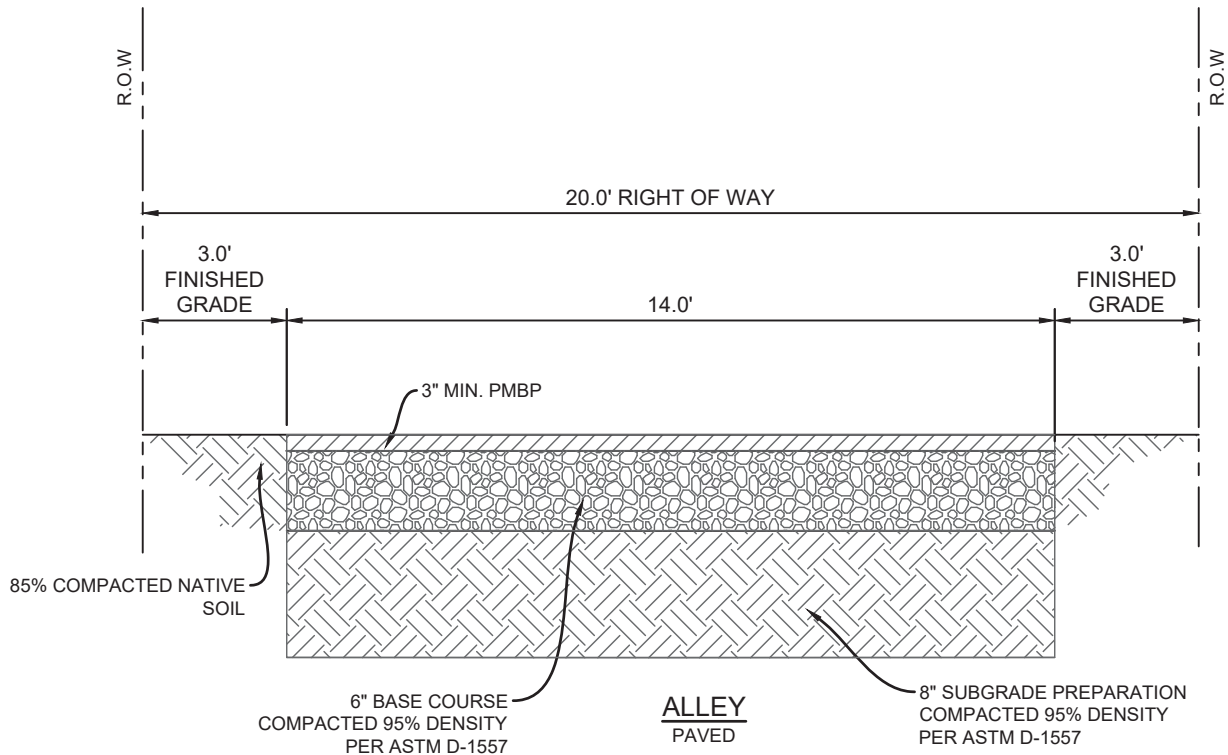
SCALE: NOT TO SCALE



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

STRIPING DETAILS

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	R-4



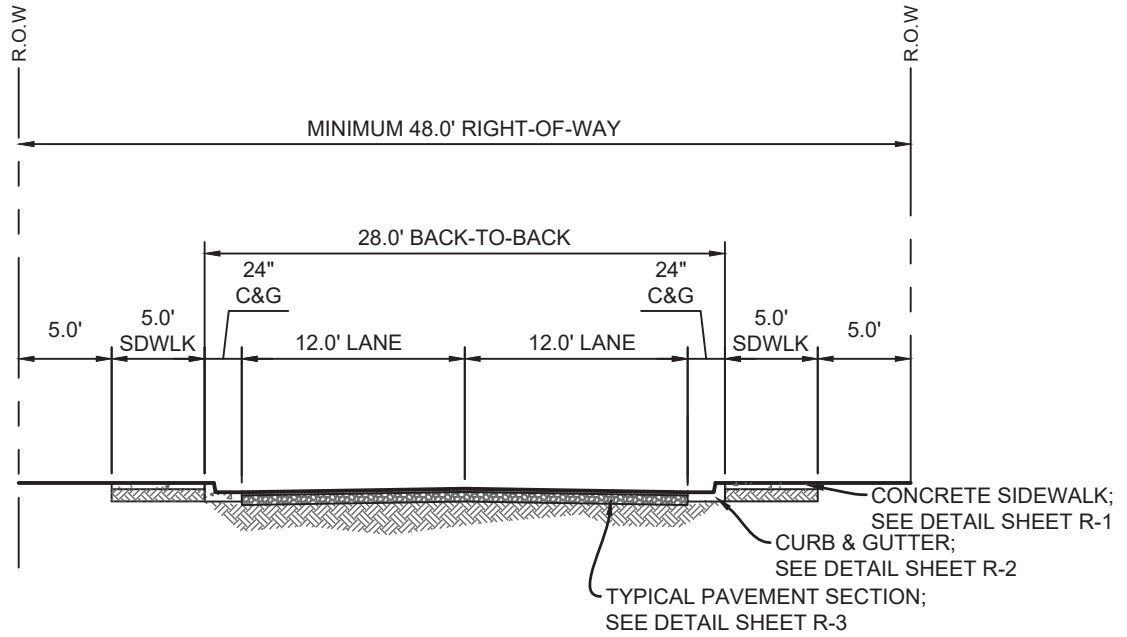
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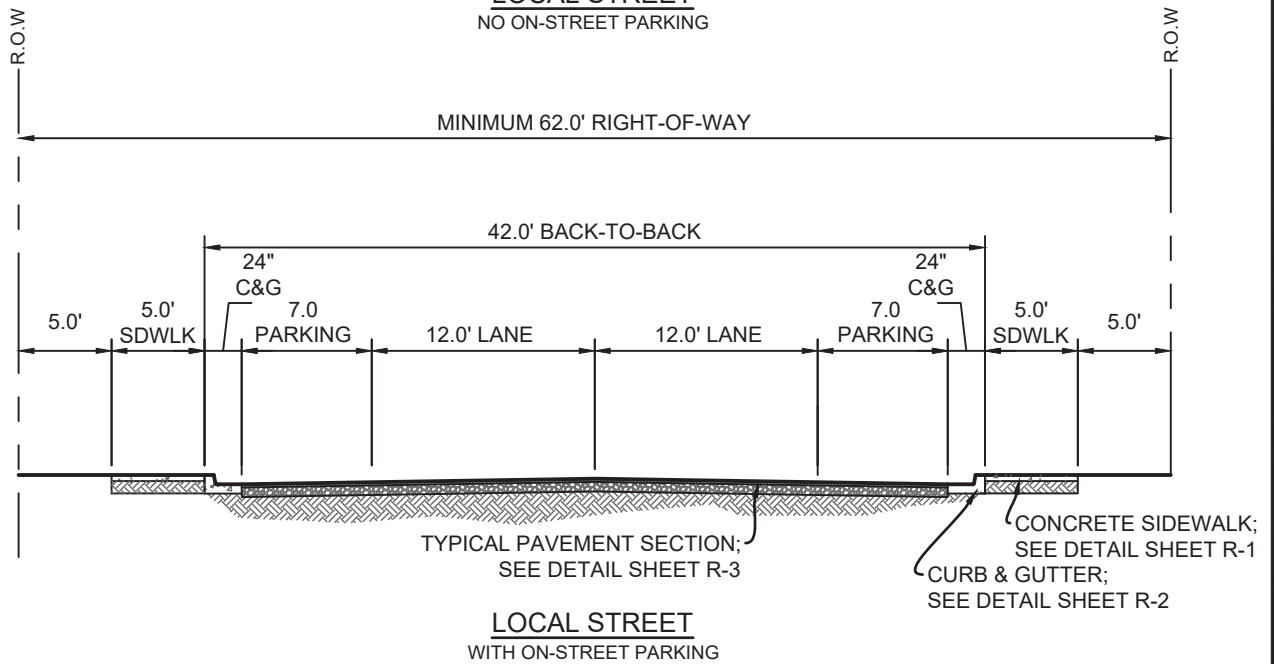
CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

ALLEY DETAILS

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	R-5



LOCAL STREET
NO ON-STREET PARKING



LOCAL STREET
WITH ON-STREET PARKING

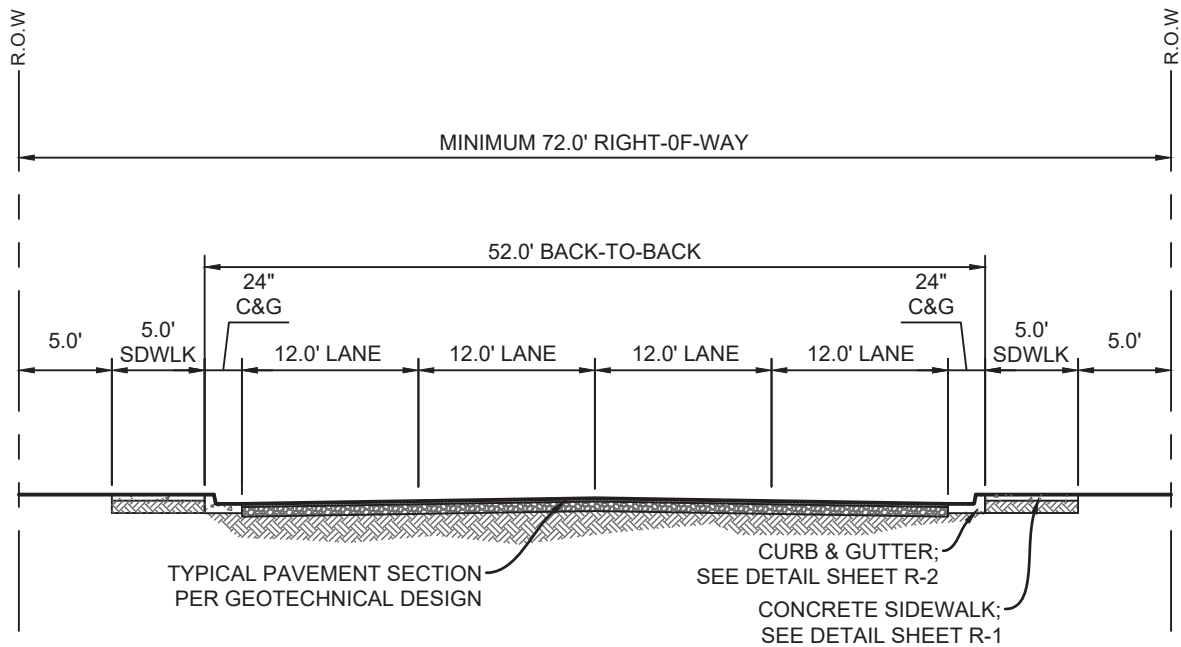
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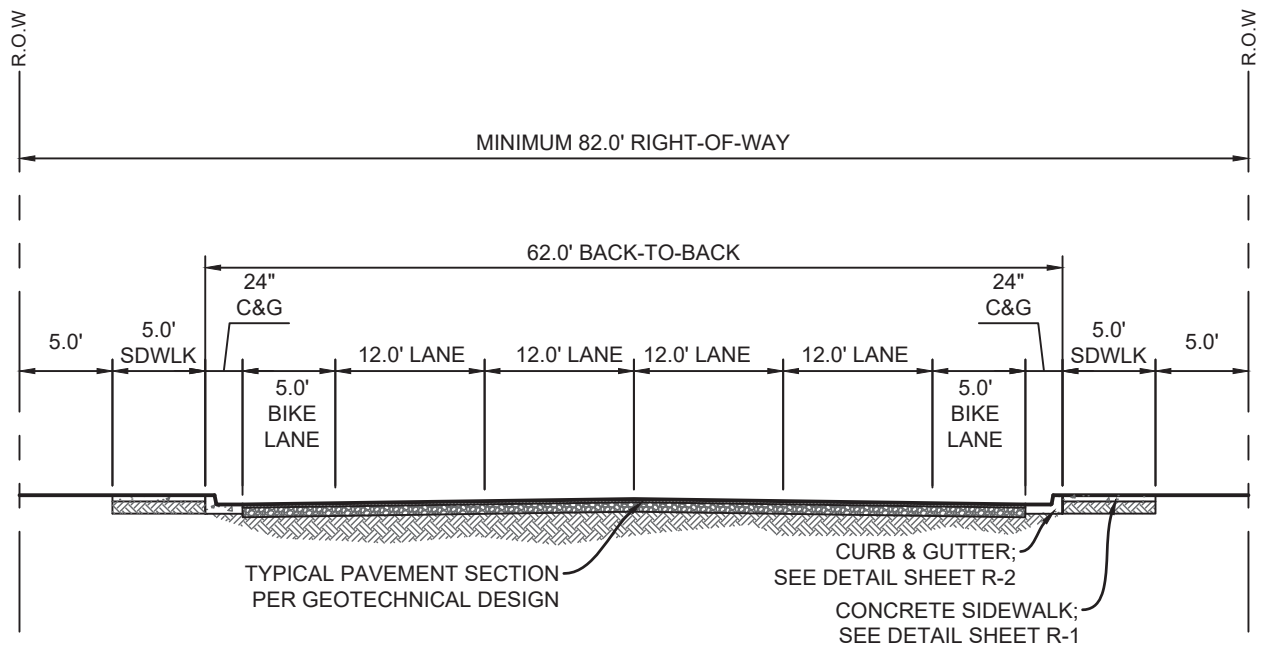
CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

LOCAL STREET DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	R-6



COLLECTOR STREET



COLLECTOR STREET w/BIKE LANES

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

COLLECTOR STREET DETAIL

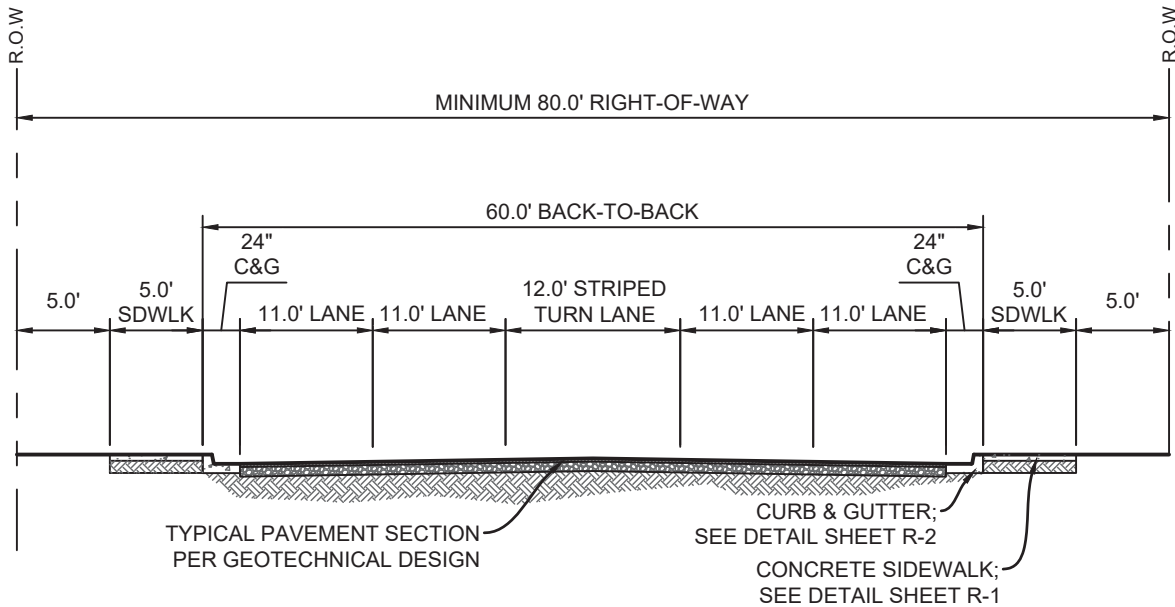
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

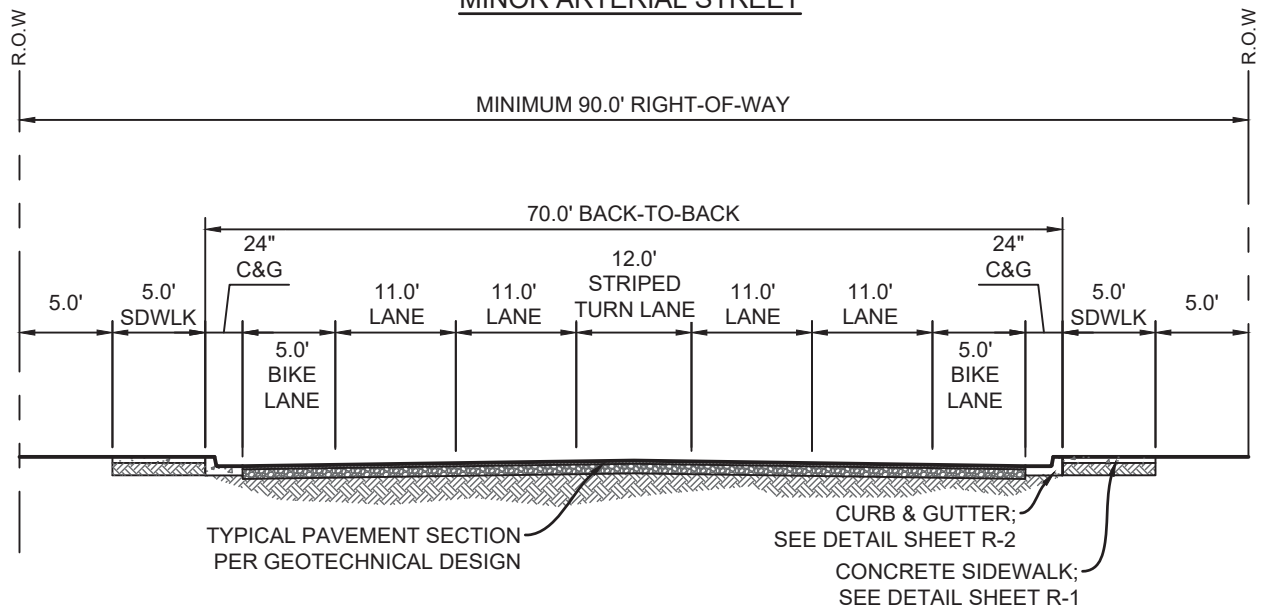
REVISION DATE:

SHEET NO:

R-7



MINOR ARTERIAL STREET



MINOR ARTERIAL STREET w/ BIKE LANES

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

MINOR ARTERIAL STREET DETAIL

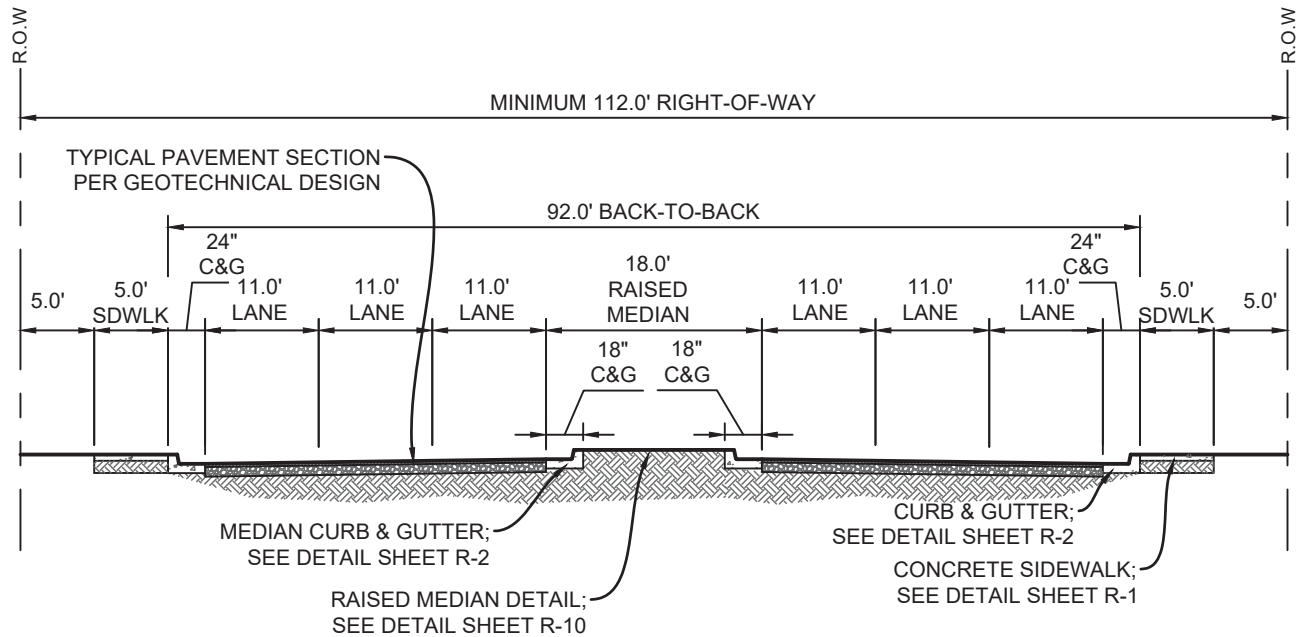
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

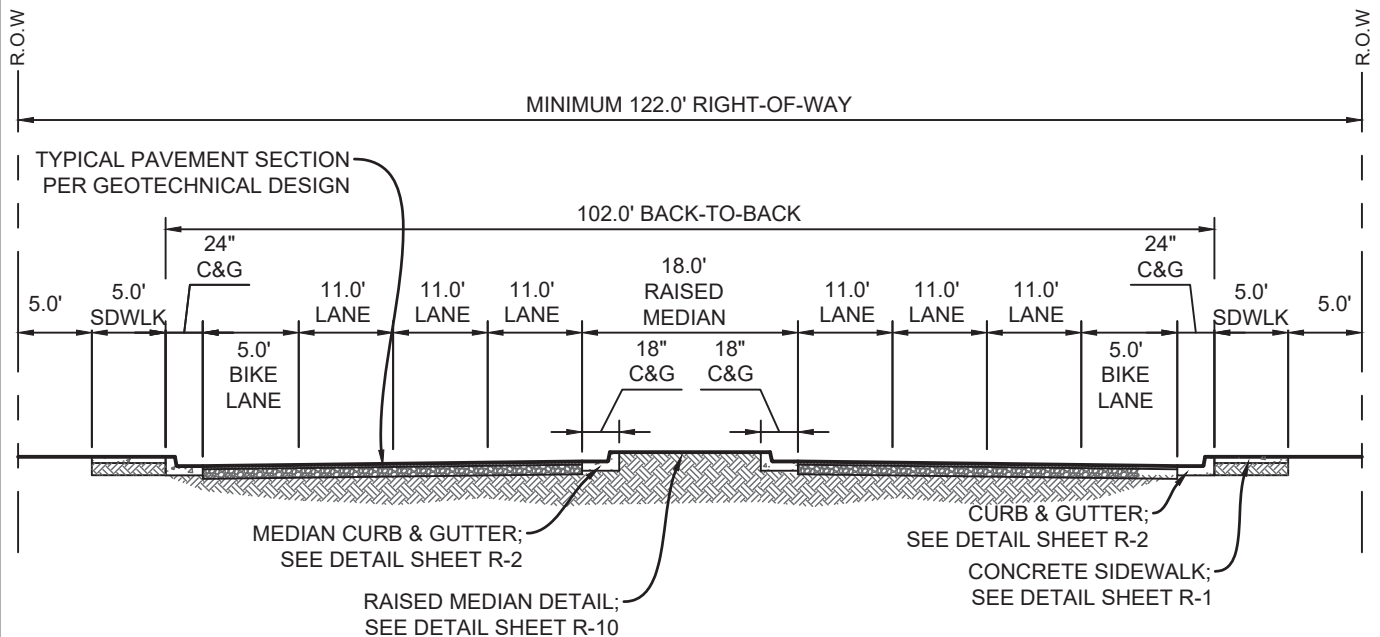
REVISION DATE:

SHEET NO:

R-8



MAJOR ARTERIAL STREET



MAJOR ARTERIAL STREET w/BIKE LANES

NOTES:

1. THE MEDIAN MAY BE DESIGNED TO PERMIT A SWALE FOR DRAINAGE CONVEYANCE.
2. RAISED MEDIAN MAY CONTAIN A 12-FOOT DEDICATED LEFT TURN LANE.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

MAJOR ARTERIAL STREET DETAIL

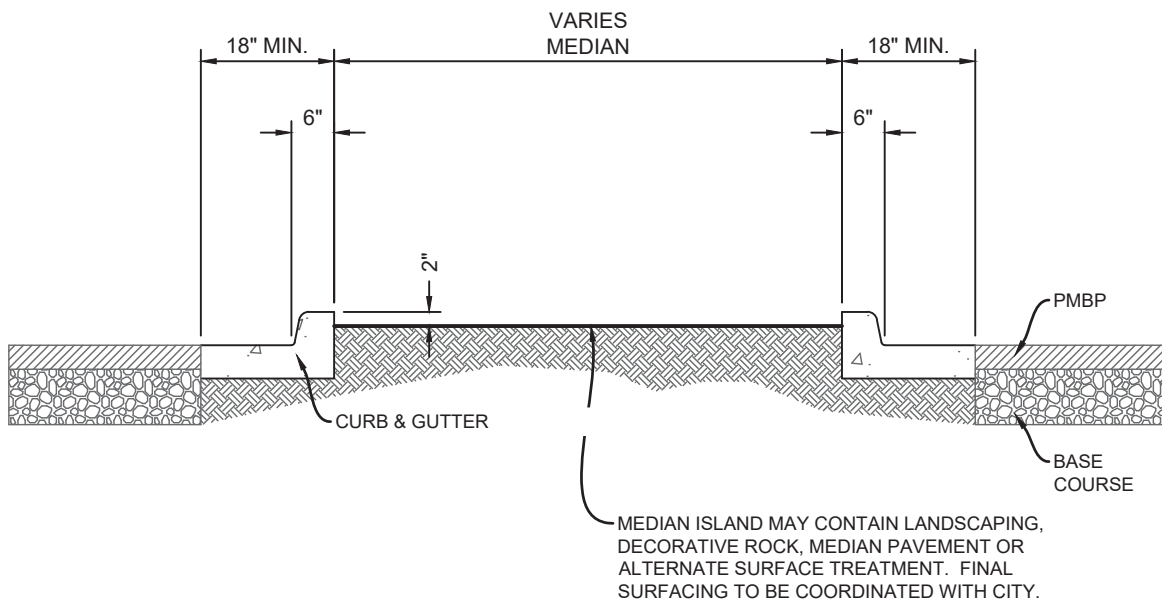
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:

R-9



RAISED MEDIAN DETAIL

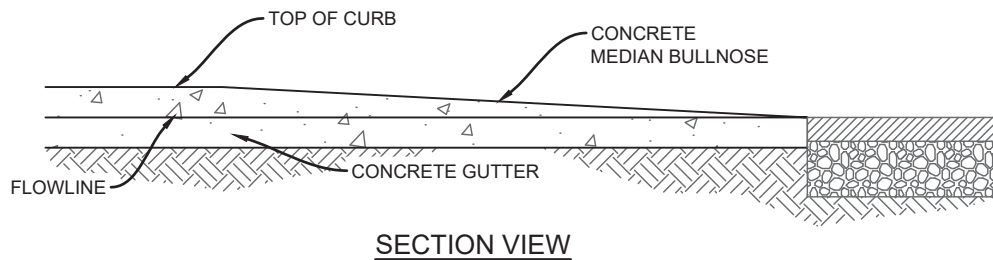
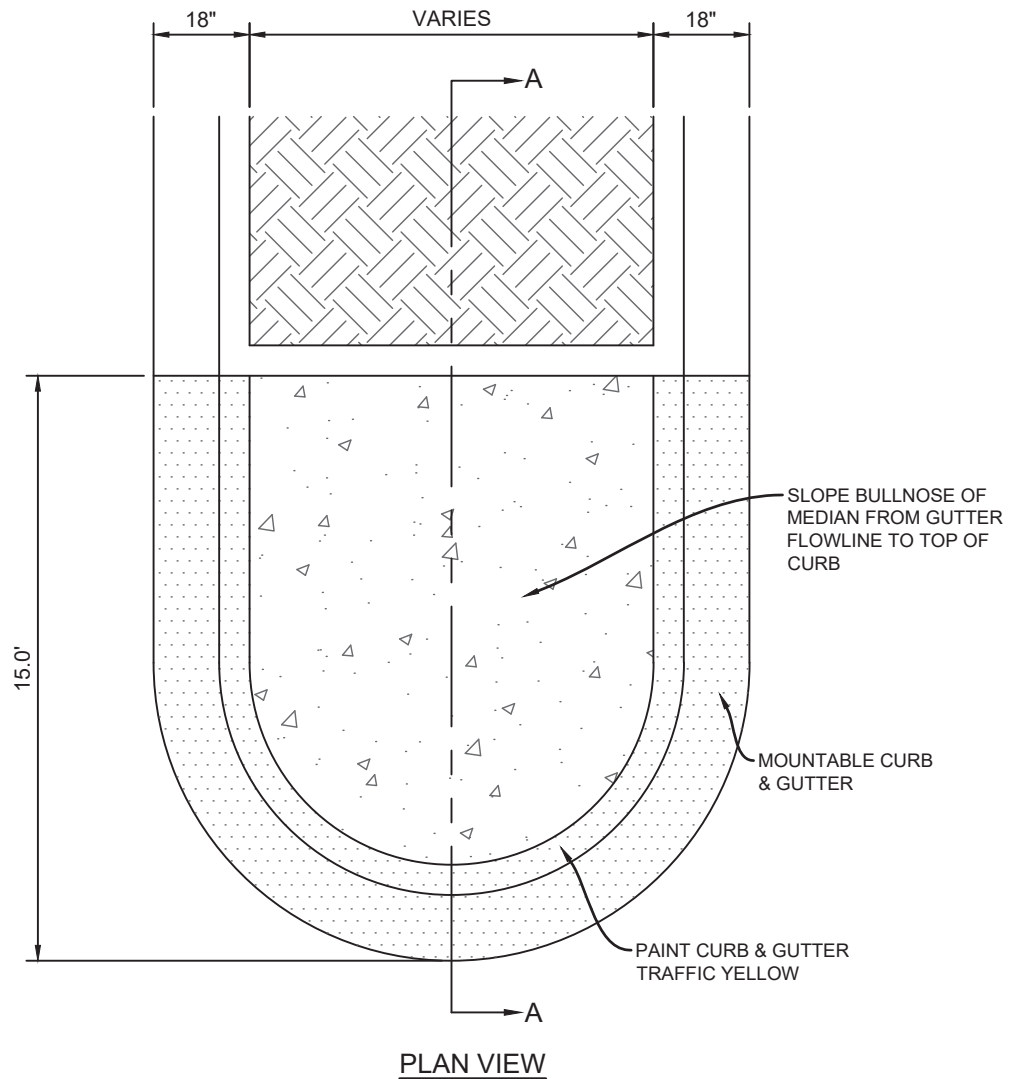
SCALE: NOT TO SCALE



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

RAISED MEDIAN DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	R-10



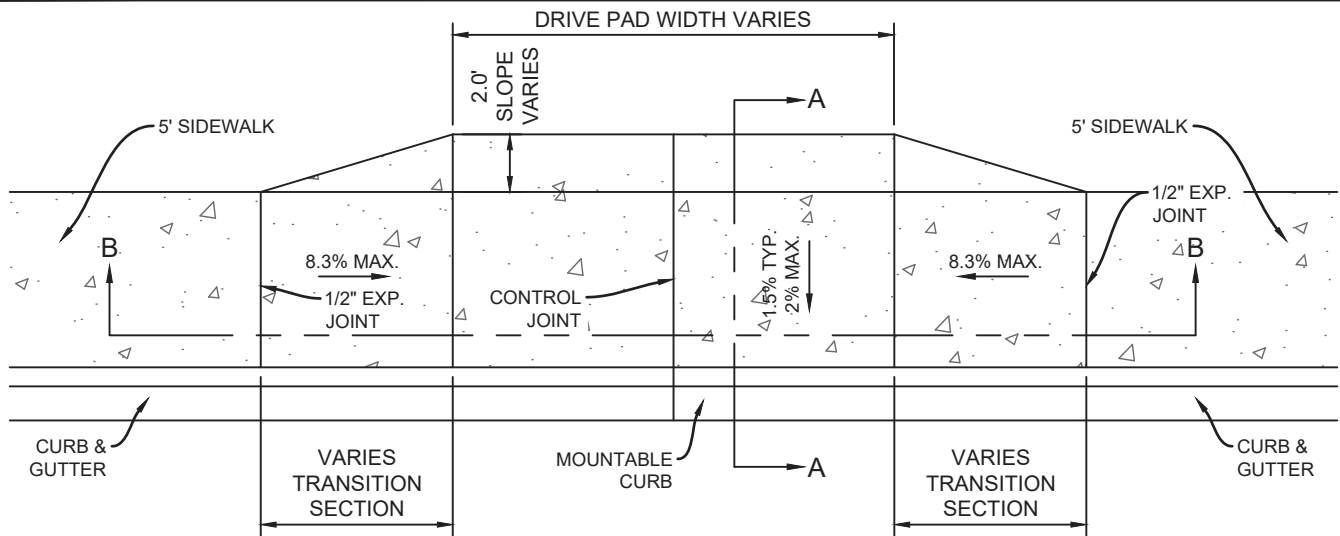
SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

MEDIAN TERMINATION DETAIL

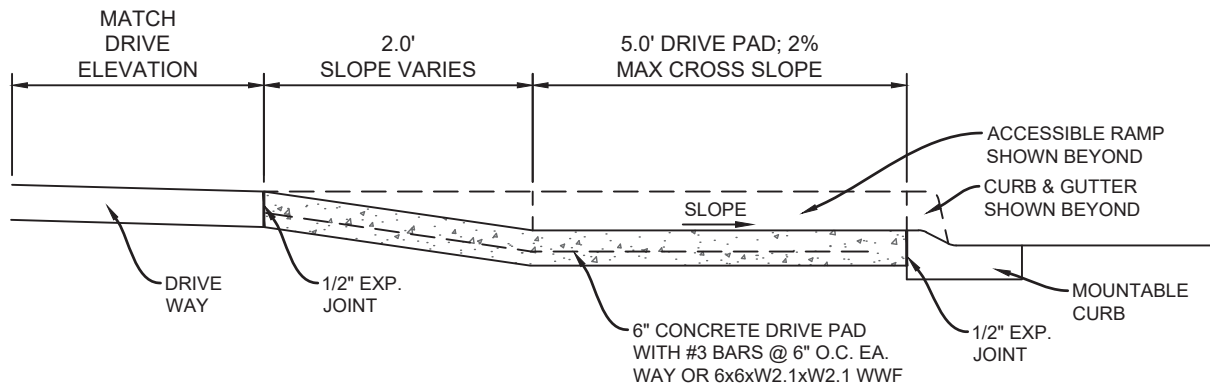
ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	R-11



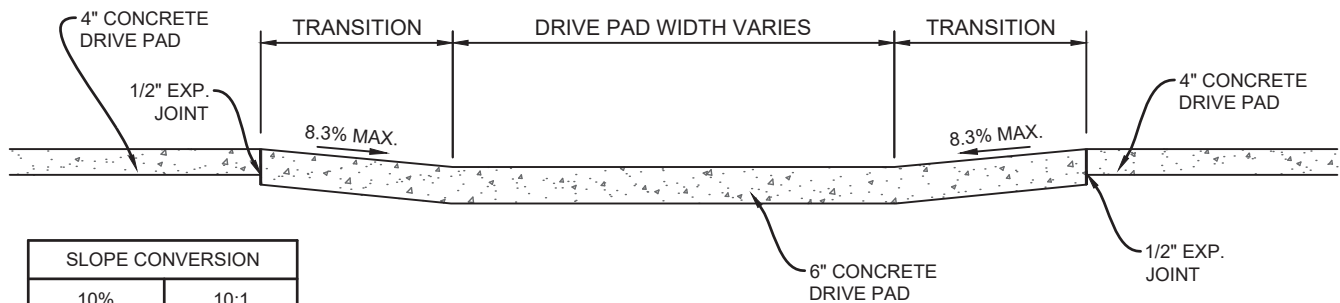
PLAN VIEW

NOTES:

PROVIDE 1/2" BITUMINOUS EXPANSION BOARD WHERE DRIVE PAD APRON ABUTS SIDEWALK, CURB AND GUTTER (TYP.)



SECTION A-A



SECTION B-B

SLOPE CONVERSION	
10%	10:1
8.3%	12:1
2%	50:1

NOTES: SUBGRADE PREPARATION AND 6" BED COURSE SHALL BE INCIDENTAL TO DRIVEPAD CONSTRUCTION.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

DRIVE PAD DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	R-12



D3-1 (DOUBLE SIDED)

DIMENSIONS VARY
GREEN

TYPE OF MOUNTING	TYPE OF STREET	SPEED LIMIT	INITIAL UPPER-CASE	LOWER-CASE
POST-MOUNTED	MULTI-LANE	MORE THAN 40 MPH	8 INCHES	6 INCHES
POST-MOUNTED	MULTI-LANE	40 MPH OR LESS	6 INCHES	4.5 INCHES
POST-MOUNTED	2-LANE	ALL SPEED LIMITS	6 INCHES	4.5 INCHES

ON LOCAL TWO-LANE STREETS WITH SPEED LIMITS OF 25 MPH OR LESS, 4-INCH INITIAL UPPER-CASE LETTERS MAY BE USED.

1. ALL REGULATORY, WARNING, SPECIAL, AND GUIDE SIGNS SHALL COMPLY WITH COLOR, LETTER SPACING, LETTER SHEETING AND BACKGROUND SHEETING REQUIREMENTS INDICATED ON THIS SHEET AND THE MOST CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE STANDARD HIGHWAY SIGNS AND MARKINGS BOOK.
2. ALL NEW WARNING AND REGULATORY SIGNS SHALL BE 0.080 GAUGE ALUMINUM PANEL.
3. ANTI-GRAFFITI COATING SHALL BE APPLIED ON ALL REGULATORY, WARNING, GUIDE, AND OTHER SPECIAL SIGNS.
4. EACH SIGN FACE SHOWN ON THE PLANS SHALL MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD-LATEST EDITION) FOR PROPER ARRANGEMENT, SPACING OF LETTERS, LETTER HEIGHT, SYMBOLS AND BORDERS FOR THE SPECIFIED SIZE AND MESSAGE AS SHOWN PER PLANS.
5. ALL SIGNING HARDWARE, INCLUDING BRACKETS (FOR MOUNTING ALL STREET NAME SIGNS, W1-8-18 BACK-TO-BACK MOUNTING, ETC.) ARE CONSIDERED INCIDENTAL TO SIGN INSTALLATION. NO ADDITIONAL PAYMENT SHALL BE MADE THEREFORE.
6. CONTRACTOR SHALL FIELD VERIFY ALL SIGNING INFORMATION, TEXT AND LOCATIONS PRIOR TO FABRICATION AND INSTALLATION. NEW SIGN LOCATIONS SHALL BE APPROVED BY THE PROJECT MANAGER.
7. WIDTH DIMENSION ON D3-1 (STREET NAME SIGNS) VARIES BASED ON NUMBER OF LETTERS AND FONT REQUIREMENTS AS PROVIDED IN THE MUTCD-LATEST EDITION.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

STREET NAME SIGN DETAIL

ISSUE DATE:

JUNE 14, 2022

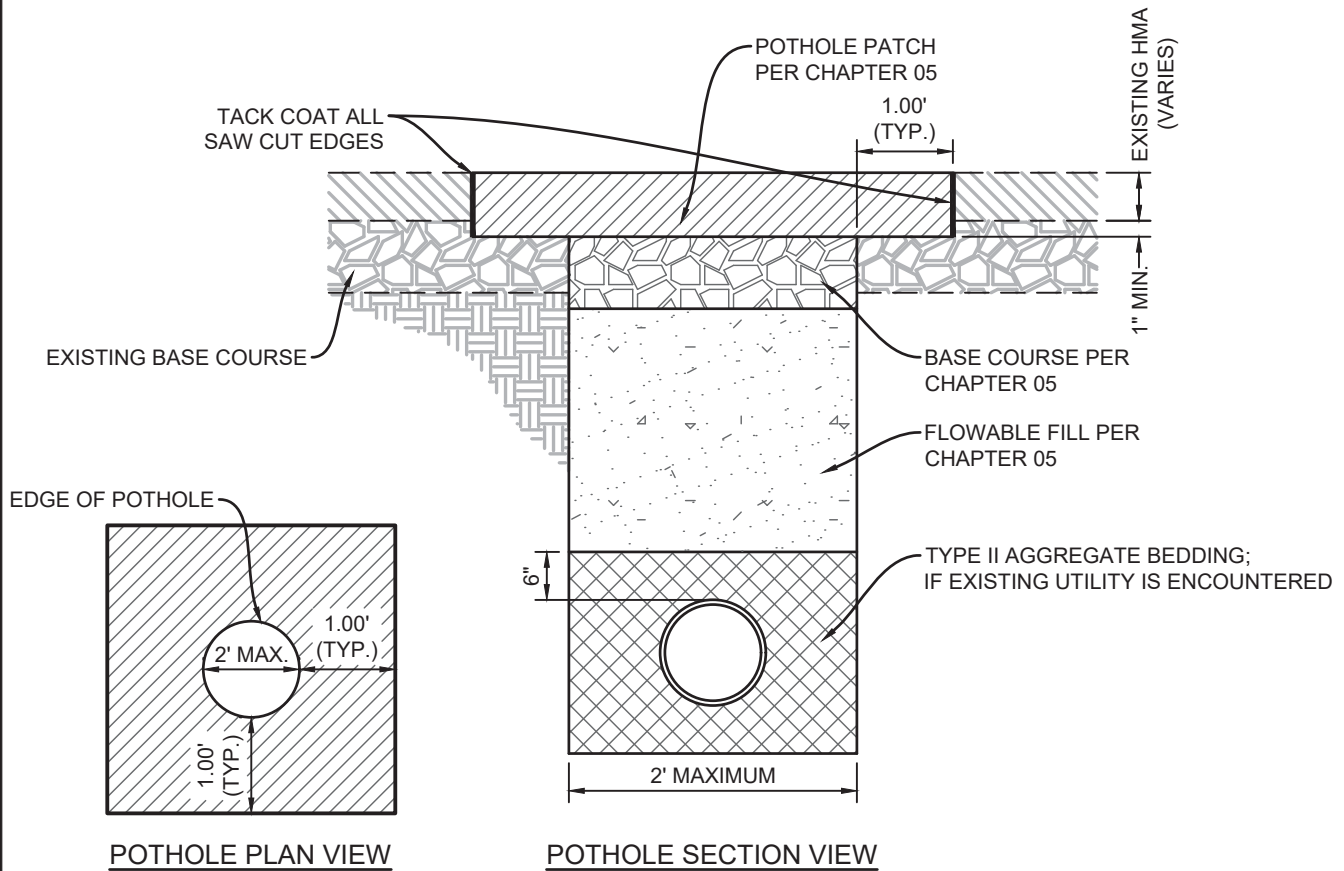
RESOLUTION NO:

2022-28

REVISION DATE:

SHEET NO:

R-13



GENERAL NOTES:

1. HOT MIX ASPHALT PATCH SHALL EXTEND A MINIMUM OF ONE-FOOT OUTSIDE THE POTHOLE ON ALL SIDES. HOT MIX ASPHALT PATCH SHALL EQUAL THE EXISTING HMA THICKNESS PLUS ONE-INCH (MINIMUM OF 4" THICKNESS).
2. NEW BASE COURSE SHALL BE A MINIMUM OF EIGHT-INCHES (8") IN THICKNESS.
3. FLOWABLE FILL SHALL BE PLACED FROM THE BOTTOM OF POTHOLE (IF EXISTING UTILITY IS NOT ENCOUNTERED) OR FROM SIX-INCHES (6") ABOVE THE UTILITY TO THE BOTTOM OF FLEXIBLE PAVEMENT SECTION (BOTTOM OF BASE COURSE).
4. THE WALLS OF THE POTHOLE SHALL BE COMPLETED AS VERTICAL AS POSSIBLE; SLUFFING OR CAVING OF THE WALLS SHOULD BE OVERCOME THROUGH THE USE OF THE FLOWABLE FILL AS BACKFILL.
5. TOP OF HOT MIX ASPHALT PATCH SHALL MEET AND MATCH EXISTING ADJACENT SURFACE COURSE AND PROVIDE A SMOOTH RIDING SURFACE.
6. POTHOLE(S) SHALL BE COMPLETED WITH NEAT LINE SAW CUTTING OF EXISTING ASPHALT; ALL EXPOSED EDGES SHALL RECEIVE TACK COAT PRIOR TO PATCH PLACEMENT.
7. POTHOLE(S) SHALL BE NO LARGER THAN TWO-FEET (2') IN DIAMETER AND SPACED NO CLOSER THAN THREE-FEET (3') FROM THE RESULTING ASPHALT PATCH.
8. IF A POTHOLE HOT MIX ASPHALT PATCH IS LESS THAN TWO-FEET (2') FROM AN EXISTING CONCRETE IMPROVEMENT (VALLEY GUTTER, CURB & GUTTER, ETC.) THEN THE ASPHALT REMOVAL AND RESULTING PATCH SHALL BE COMPLETED TO THE EXISTING CONCRETE IMPROVEMENT.

SCALE: NOT TO SCALE

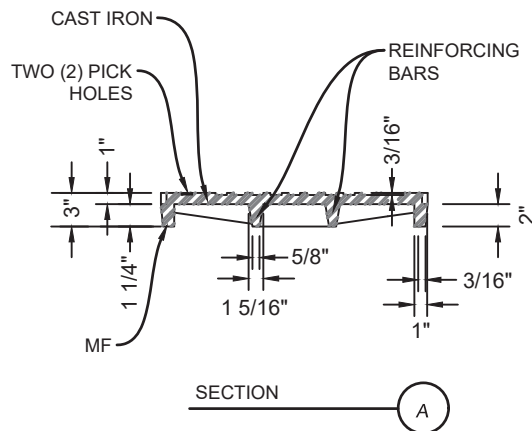
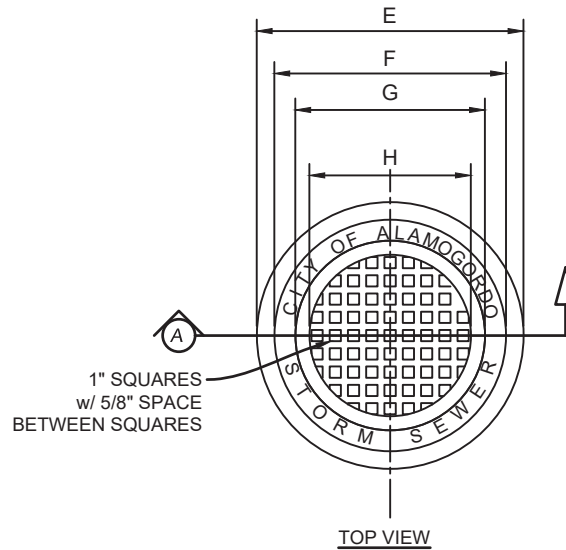


CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

TYPICAL POTHOLE PATCH DETAIL

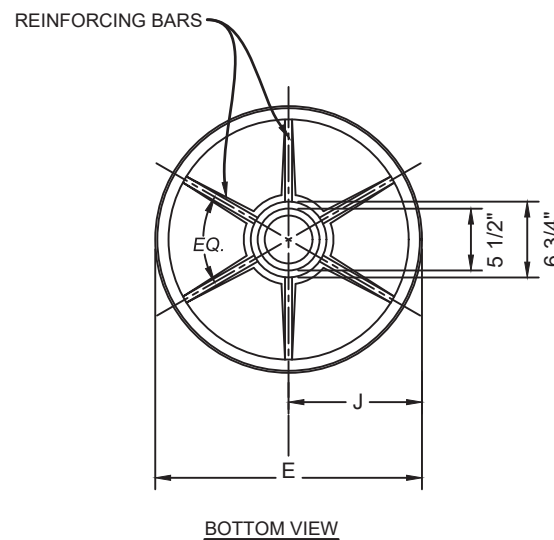
ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	R-14

MANHOLE RING	48" MANHOLE	72" MANHOLE
WEIGHT	175 LBS.	310 LBS.
E	23 3/4"	31 1/4"
F	20 5/8"	28 1/8"
G	16 7/8"	24 3/8"
H	14 3/8"	21 7/8"
J	11 7/8"	15 5/8"



NOTE:

1. MATCHING SURFACES MARKED "MF" TO BE MACHINE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND FREE OF AIR VOIDS.



TYPICAL MANHOLE LID DETAIL

GENERAL NOTES:

1. MATCHING SURFACES MARKED "MF" TO BE MACHINE FINISHED AND BE FREE OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND FREE OF AIR VOIDS.
3. MANHOLE RING AND LID SHALL BE DESIGNED FOR H-20 WHEEL LOADING.
4. MINIMUM TOTAL WEIGHT (RING AND LID) SHALL BE 300 LBS.
5. TOP OF LID MAY VARY FROM DETAIL SHOWN. LID SHALL BE MARKED FOR APPROPRIATE UTILITY.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

STORM SEWER MANHOLE COVER DETAIL

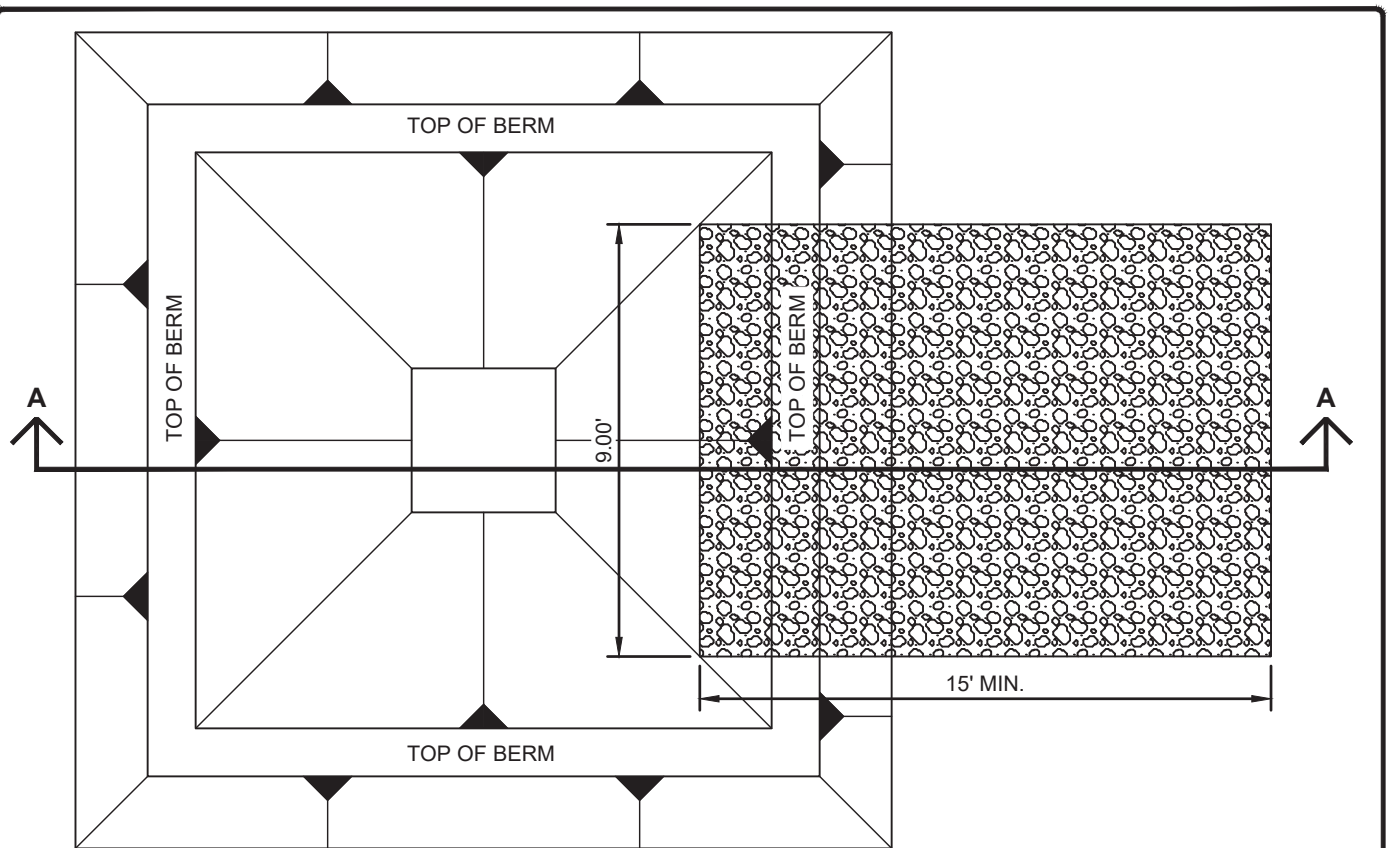
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

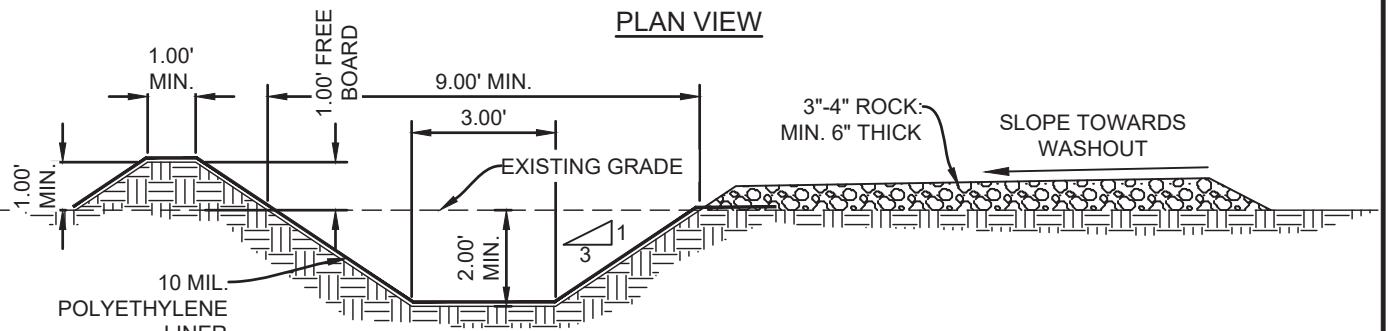
REVISION DATE:

SHEET NO:

R-15



PLAN VIEW

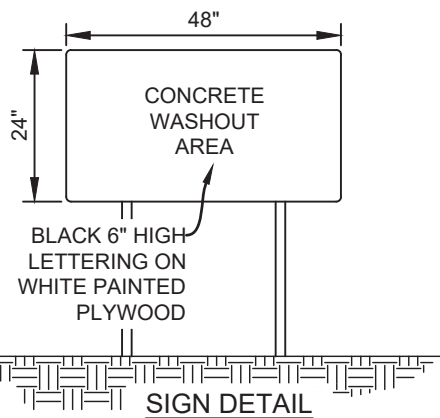


SECTION A-A

NOTES

1. TEMPORARY CONCRETE WASHOUT AREA(S) SHALL BE LOCATED A MINIMUM OF 50-FEET FROM SENSITIVE AREAS INCLUDING OPEN DRAINAGE FACILITIES OR WATER SOURCES.
2. INSTALL IDENTIFICATION SIGN WITHIN 30-FEET OF TEMPORARY CONCRETE WASHOUT AREA.
3. DIMENSIONS SHOWN ARE MINIMUM REQUIRED. SHOULD THE NATURE OF THE CONSTRUCTION REQUIRE A LARGER WASHOUT OR ADDITIONAL TEMPORARY CONCRETE WASHOUT AREAS THEY SHALL BE CONSTRUCTED TO THESE STANDARDS.
4. CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY & AFTER HEAVY RAIN EVENTS TO CHECK FOR DAMAGE OR CAPACITY LIMITATIONS.
5. WHEN THE TEMPORARY CONCRETE WASHOUT AREA REACHES 75% CAPACITY, THE WASH WATER SHALL BE VACUUMED OFF OR ALLOWED TO EVAPORATE. THEN WHEN THE REMAINING CEMENTITIOUS SOLIDS AREA HARDENED, THEY SHOULD BE REMOVED, RECYCLED, AND/OR DISPOSED OF AN ENVIRONMENTALLY ACCEPTABLE MANNER.
6. BEFORE ANTICIPATED RAIN EVENTS, THE WASH WATER LEVEL SHALL BE LOWERED OR THE AREA COVERED TO PREVENT OVERFLOWS/SPILLS DURING THE STORM EVENT.
7. AT THE CONTRACTOR'S OPTION; TEMPORARY WASH FACILITIES CAN BE REUSABLE PREFABRICATED FACILITIES THAT ARE MAINTAINED AS DESCRIBED HERE.
8. AT THE COMPLETION OF ALL CONCRETE CONSTRUCTION, THE CONTRACTOR SHALL REMOVE & DISPOSE OF THE REMAINING MATERIALS & WASH WATER WITHIN THE TEMPORARY CONCRETE WASHOUT AREA. THE LINER SHALL BE REMOVED & DISPOSED OR REUSED AT THE CONTRACTOR'S DISCRETION. SHOULD THE UNDERLYING SOIL BE FREE FROM WASH WATER LEACHING, THE PERIMETER BERMS SHALL BE USED TO BACKFILL THE TEMPORARY FACILITY AND RETURN THE AREA TO ITS PRECONSTRUCTION CONDITION.

SCALE: NOT TO SCALE



SIGN DETAIL



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

TEMPORARY CONCRETE WASHOUT AREA DETAIL

ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:

R-16

CHAPTER 06 - SANITARY SEWER SYSTEM

ARTICLE 06-01 – GENERAL

Article 06-01-010 Sanitary Sewer Materials

Item Description	Size or Drawing	Reference Standard	Manufacturer
Schedule 40 PVC Pipe (Sanitary Service Line)	4" & 6"	ASTM D1785 – PVC Standard for Schedule 40, 80, and 120 ASTM D2564 – Solvent Weld PVC ASTM D2235 – Solvent Weld for Acrylonitrile-Butadiene- Styrene (ABS) Plastic Pipe	--
SDR 35 PVC Pipe (PS 46 PSI)	8" – 15"	ASTM D3034 – Pipe Standard ASTM D1784 – Pipe Compound ASTM F477 – Gasket Standard ASTM D2321 - Installation	--
SDR 26 PVC Pipe (PS 115 PSI)	8"-15"	ASTM D3034 – Pipe Standard ASTM D1784 – Pipe Compound ASTM F477 – Gasket Standard ASTM D2321 - Installation	--
PS46 PVC Pipe	18"-36"	ASTM F679 – Pipe Standard ASTM D1784 – Pipe Compound ASTM F477 – Gasket Standard ASTM D2321 - Installation	--
PS115 PVC Pipe	18"-36"	ASTM F679 – Pipe Standard ASTM D1784 – Pipe Compound ASTM F477 – Gasket Standard ASTM D2321 - Installation	--
Manhole Frames and Covers (H-20 Load Rated)	S-2 S-3	AASHTO Designation M306 ASTM A48 – Cl 30 or Stronger	--
Precast Manholes	S-6 S-11	ASTM C478 AASHTO M199 NMDOT Section 517 and 662	Western Precast Concrete, Inc. or Approved Equal
Mastic Gasket for Precast Sections	S-6 S-11	AASHTO M198 ASTM C990	Ram-Nek Hamilton Kent or Approved Equal
Concrete Coating	S-6 S-11	ASTM D7234	Raven 175 Raven 405 or Approved Equal
Glass Fiber Reinforced Polyester (FRP) Manholes	S-17	ASTM D3753	LFM Fiberglass Structures or Approved Equal

Detectable Warning Tape	S-1	ASTM D2103	--
Trace Wire Open Trench Installation	#12 AWG	ASTM B1010 ASTM D1248	Copperhead Industries or Approved Equal
Trace Wire Directional Drilling	#12 AWG	ASTM B1010 ASTM D1248	Copperhead Industries or Approved Equal
Trace Wire Slip Lining/Bursting	7x7 Strand	ASTM B1010 ASTM D1248	Copperhead Industries or Approved Equal
Trace Wire Termination/Access Boxes	S-4 S-6 S-18	Per Manufacturer Instructions	Copperhead Industries or Approved Equal
Trace Wire Connectors	S-18	Per Manufacturer Instructions	Copperhead Industries or Approved Equal
Trace Wire Grounding	S-4 S-6	Per Manufacturer Instructions	Copperhead Industries or Approved Equal
Inserta Tee	S-14 S-15	--	Inserta Tee or Approved Equal
Repair Couplings	--	--	Fernco or Approved Equal
Inflow Protectors	S-13	--	LFM Fiberglass Structures or Approved Equal
Casing Pipe	S-16	ASTM A139 Grade B Cooper E-80	--
Casing End Seals	S-16	--	T.D. Williamson, Inc Z-Seals or Approved Equal
Casing Spacers	S-16	--	Advance Products & Systems or Approved Equal

Article 06-01-020 Work Description

- (a) The Work covered by this specification consists of furnishing and installing all of the sanitary sewer pipe, fittings, and appurtenances required to tie into the existing sanitary sewer system.
- (b) The Contractor shall have the responsibility for furnishing the exact lengths of pipe, fittings, adapters, and couplings for proper "make-up" and connections of the pipes.

Article 06-01-030 Location

Sanitary sewer main lines may be placed either in the streets or alleys. In either case the sanitary sewer line shall be located on the south side of East-West streets or alleys, and on the east side of North-South streets or alleys, at approximately five-feet (5') from the centerline of the street or alley.

Article 06-01-040 Depth of Sanitary Sewer Main Lines

Sanitary sewer main lines shall be a minimum of three-feet (3') below the finish surface of the street or alley. The depth shall be measured from the top of the pipe to the finish surface of the street or alley.

Article 06-01-050 Sanitary Sewer Line Sizes

- (a) Gravity sanitary sewer mains shall be eight inches (8") in diameter minimum. The City should be consulted for area flow conditions and volumes for final determination of required main sizes.
- (b) Sanitary sewer service lines shall be four inches (4") in diameter minimum. Actual sewer line size shall be based on actual flow conditions.

Article 06-01-060 Manholes

- (a) Manholes shall be required as follows:
 - (1) At a maximum horizontal spacing of five-hundred feet (500').
 - (2) Where two or more sanitary sewer mains converge.
 - (3) Where the sanitary sewer alignment changes bearing direction.
 - (4) Minimum inner diameter of four feet (4').
- (b) Grade differentials of more than twenty-four inches (24") between the highest incoming and outgoing sanitary sewer main lines require construction of a drop manhole; Standard Detail S-11.
- (c) Where a sanitary sewer main line passes through a manhole in a straight line, a drop between incoming and outgoing inverts will not be required. If a horizontal deflection in the sanitary sewer alignment is proposed at the manhole, a minimum of one-tenth of a foot (0.10') between inverts will be required when the angle is between 0 and 45-degree (0° - 45°). If the angle of deflection is greater than 45-

degree (45°) a minimum of two-tenths of a foot (0.20') shall be held between incoming and outgoing inverts, such as a 90-degree (90°) bend. Where more than two pipes enter a common manhole, all incoming lines shall be a minimum of two-tenths of a foot (0.20') above the outgoing lines.

- (d) All manholes, regardless of type, shall have inflow protectors, LFM Fiberglass Structures or City approved equivalent complete with lift strap and gas relief valve.

Article 06-01-070 Water and Sanitary Sewer

Sanitary sewer main lines and potable water transmission/distribution main lines shall be laid parallel to each other and parallel to the street centerline when both are installed in the same street. Sanitary sewer main lines shall be placed within permitted streets only. If both are laid in the street, a minimum distance between the lines shall be ten-feet (10') horizontally, and the water transmission/distribution main line shall be at least two-feet (2') higher than the sanitary sewer main line. Where the water and sanitary sewer main lines cross each other, the water main line shall be a minimum of two-feet (2') higher than the sanitary sewer main line or the sanitary sewer line shall be concrete encased a minimum of ten-feet (10') on each side of the water line, per the detail W-11. If the water transmission/distribution main line crossing occurs below the sanitary/storm drain sewer the sewer main line shall be encased per detail W-11.

ARTICLE 06-02 – SANITARY SEWER PIPE

Article 06-02-010 Materials

- (a) PVC sewer pipe and fittings shall be gravity sewer pipe, ASTM D 3034, SDR 35. All elastomeric gaskets for PVC pipe shall comply with ASTM F 477. PVC sewer pipe and fittings shall meet the requirements of ASTM 3034, ASTM D 3212, and Uni-Bell UNI-B-4.
- (b) A certification from the manufacturer shall be furnished to the City attesting compliance with appropriate ASTM Standards.
- (c) All PVC pipes shall be coded to eliminate future confusion and prevent accidental damage to or interruption of the water and sanitary sewer facilities. Detectable marking tape shall be installed as prescribed in these standards.
- (d) All pipes shall have a home mark on the spigot end to indicate proper penetration when joint is completed. The sockets and/or spigot configurations for the fittings and couplings shall be compatible to the pipe.
- (e) Pipe with gasketed joints shall be manufactured with a socket configuration that will prevent improper installation of the gasket and will ensure that the gasket

remains in place during joining operations. The gasket shall be manufactured from a synthetic elastomer material and shall conform to the requirements of ASTM F 477.

- (f) Solvent cement joints shall be limited to four (4) inch diameter or six (6) inch diameter plastic pipe, which will be used exclusively for sanitary sewer service lines. The solvent cement shall be compatible to the pipe manufacturer's product and shall conform to the requirements of ASTM D 2564 for PVC pipe and ASTM D 2235 for ABS pipe.
- (g) When PVC pipe is stored outside and exposed to prolonged periods of sunlight, an obvious discoloration of the pipe can occur. This is an indication of reduced pipe impact strength, and any particular length of pipe that is discolored will be rejected. All pipe rejected by the City will be removed from the job site by the Contractor.
- (h) The materials in plastic pipe shall comply with ASTM D 1784.
- (i) All plastic pipes shall be push-on, flexible elastomeric gasketed, except plastic pipe used for sanitary sewer service lines, which will be joined per manufacturer's recommendations.
- (j) Polyvinyl chloride (PVC) pipe shall meet the requirements of ASTM D 3034 for pipe sizes eight (8) inch in diameter through fifteen (15) inches in diameter. Minimum wall classification shall be SDR 35 or SDR 26, as required. Only solid wall pipe will be acceptable.
- (k) PVC pipe used for sanitary sewer service lines shall conform to ASTM D 2665 for Schedule 40 pipe, or ASTM 3034 for SDR 35 or SDR 26.
- (l) Pipe for this purpose shall be solvent welded joined, per manufacturer's recommendations, or gasketed joints conforming to ASTM F 477.

ARTICLE 06-03 – SANITARY SEWER APPURTENANCES

Article 06-03-010 Manhole Bases

Manhole Bases: Manhole bases poured-in-place shall be Class A concrete, 3,000 psi, and reinforced per the Standard Detail S-6.

Article 06-03-020 Precast Manholes

- (a) Manhole Sections: Manhole riser sections shall be precast concrete sections, precast concentric cone sections and precast concrete grade rings, in conformance

with ASTM Designation C 478, latest revision. All joints of the manhole sections shall be sealed with Ram-Nek or approved equal. See Standard Detail: S-6.

- (b) The entirety of manholes exposed surfaces shall be coated, prior to placement into service, to aide in corrosion and impact resistance. Manholes shall be coated with Raven 175 (prime coat) and Raven 405 (2nd coat) to 100 mil total dry thickness; alternate coating systems shall be pre-approved by the City.
- (c) Manhole Covers: Manhole covers shall be cast iron frame and solid lid, ASTM Designation A 48, Class 30 or stronger. The frames and lids shall be machined to provide a non-rocking bearing surface and uniform clearance around the edge of the lid. The lids shall have the word “SANITARY SEWER” embossed on them, and each lid shall have two (2) lifting lugs or pick holes. See Standard Details: S-2 and S-3.
- (d) Manhole Collars: Manhole collars shall be poured-in-place with Class A concrete, 3,000 psi, and reinforced per the detail S-4. Trace wire test stations shall be placed integral with manhole collars. See Standard Detail S-4.

Article 06-03-030 Glass Fiber Reinforced Polyester (FRP) Manholes

- (a) Fiberglass reinforced manholes used for sanitary sewer systems shall consist of commercial grade polyester resin and meet or exceed the requirements of ASTM D3753. Manholes shall be manufactured by LFM Fiberglass Structures or City approved equivalent. The inner surface shall consist of a resin layer capable of resisting corrosive conditions, such as exposure to hydrogen sulfides. Each manhole shall be designed for an H-2) load rating, being water-tight and including a solid FRP anti-flotation bottom and fully enclosed fiberglass bench and invert area.
- (b) Concrete bench and invert shall be coated, prior to placement into service, to aide in corrosion and impact resistance. The coating shall consist of Raven 175 (prime coat) and Raven 405 (2nd coat) to 100 mil total dry thickness; alternate coating systems shall be pre-approved by the City.
- (c) Manhole Covers: Manhole covers shall be cast iron frame and solid lid, ASTM Designation A 48, Class 30 or stronger. The frames and lids shall be machined to provide a non-rocking bearing surface and uniform clearance around the edge of the lid. The lids shall have the word “SEWER” embossed on them, and each lid shall have two (2) lifting lugs or pick holes. See Standard Details: S-2 and S-3.
- (d) Manhole Collars: Manhole collars shall be poured-in-place with Class A concrete, 3,000 psi, and reinforced per the detail S-4. Trace wire test stations shall be placed integral with manhole collars. See Standard Detail S-4.

Article 06-03-040 Cleanouts

- (a) Cleanouts shall consist of a cast-iron frame and cover and boot. After installation of the boot, a square concrete block twenty-four by twenty-four inches (24"x24") by six-inches (6") thick shall be placed level with the top of the boot, reinforced with #3 bars on ten-inches (10") center each way and 3,000 PSI concrete. Cleanouts shall be located so that two hundred fifty (250) feet of sanitary sewer rod can reach any point in the line. Dead end main lines shall be terminated with a manhole.
- (b) A cleanout should be placed on all sanitary sewer service lines where they leave public right-of-way or easement on all new developments. The trace wire on sanitary sewer service lines shall be terminated above ground at this cleanout.

Article 06-03-050 Flexible Markers

Where sanitary sewer main lines travel across open country and not under pavement, marking posts shall be placed at two hundred- and fifty-foot (250') intervals, including every change in alignment direction. Marking posts shall be a minimum of four inches (4") wide by sixty inches (60") high, APWA green in color. Each marking post shall read "Warning Sewer Pipeline".

Article 06-03-060 Fats, Oils, Grease (FOG) Prevention Program

In accordance with City Ordinance Number 1619: The purpose of this article is to protect the health, safety, and welfare of the Citizens of Alamogordo through setting forth uniform requirements of the Publicly Owned Wastewater Treatment System to capture and dispose of (FOG) and enables the City to comply with all applicable State and Federal Laws, including the Clean Water Act, 33 U.S.C. & 1251, et seq.; and General Pretreatment Regulations, Title 40 C.F.R. Part 403.

- (a) Applicability: All Commercial Businesses in the City of Alamogordo, whose business involves preparation and sale of any product that has the potential to introduce FOG into the City's Publicly Owned Wastewater Treatment System (POWTS).
 - (1) Shall apply to all non-domestic users of the POWTS.
 - (2) Grease interceptors shall not be required for residential users.
 - (3) Shall apply to both new and existing facilities generating fats, oils, and grease as a result of food manufacturing, processing, preparation, or food service shall install, use, and maintain appropriate grease interceptors as

required. These facilities include, but are not limited to, restaurants, food manufacturers, food processors, hospitals, hotels and motels, nursing homes, and any other facility preparing, serving, or otherwise making any food available for consumption.

- (4) No user may intentionally or unintentionally allow the direct or indirect discharge of fats, oils, or greases of animal or vegetable origin into the POWTS in such amounts as to cause interference with the collection and treatment system, or as to cause pollutants to pass through the treatment works into the environment.
 - (5) All Commercial Businesses shall be registered on the City Registry for tracking FOG areas and pumping companies.
- (b) Sizing, Installation, and Maintenance Requirements
- (1) All grease interceptors shall be properly sized. Hydromechanical grease interceptors shall be sized in accordance with Standard PDI-G 101 *Testing and Rating Procedure for Hydromechanical Grease Interceptors with Appendix of Installation and Maintenance* (Latest Edition) as developed by the Plumbing and Drainage Institute (PDI). Gravity interceptors shall be sized by a professional engineer licensed in the State of New Mexico to allow the minimum retention time of 30 minutes. In new businesses that will have a minimum impact on the City's sewer infrastructure a minimum of a 50-gallon grease interceptor shall be required.
 - (2) Installation, maintenance, monitoring, and recording shall meet the requirements outlined in City Ordinance Number 1619.

Article 06-03-070 Control Manholes

- (a) The Owner of any private property serviced by a building sewer carrying industrial liquid wastes shall install a suitable control manhole together with such necessary meters and other appurtenances in the building sewer to facilitate observation, sampling, and measurement of wastes.
- (b) Such manhole, when required, shall be accessibly and safely located, constructed in such a manner as to prevent infiltration of ground and surface waters, and should be constructed in accordance with plans approved by the City. The manhole shall be installed by the Owner at their expense, and shall be maintained, by Owner, so as to be safe and accessible at all times.

ARTICLE 06-04 – CONSTRUCTION REQUIREMENTS

Article 06-04-010 Trench Excavation

- (a) Pipe trenches shall be excavated along straight lines to the dimensions as required in the Contract Documents.
- (b) All trenching work shall be done in a safe manner, trenches shall be rendered safe for the workmen by complying with the applicable safety standards, and by practicing safety measures consistent with current OSHA Trenching and Excavation Safety Standards and good construction methods.
- (c) All excavations shall be adequately barricaded and secured in accordance with the current New Mexico Department of Transportation Standard Specifications. Flashing lights and barricades shall be employed along open excavations and trenches to protect the public from potential hazards; barricades and advance warning devices shall comply with MUTCD Standards as well as any special direction required by the City.
- (d) Unless trench banks are cut back on a stable slope, the trenches shall be braced as necessary to prevent caving or sliding, to provide protection for the workmen and the pipe. All trenching shall comply with OSHA Trenching and Excavation Safety Standards.
- (e) When over-excavation occurs beyond the limits indicated by the trench details, the over-excavated area shall be refilled with suitable material at optimum moisture and compacted to ninety-five (95) percent density per ASTM D 1557.
- (f) The maximum amount of open trench permitted in any one location shall be 100-feet, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater, unless otherwise approved by the City. A trench shall be considered open until backfilled to the top of subgrade.
- (g) Excavation of pipe trenches for flexible and rigid pipe is as required in the table below. In all cases, the trench shall be wide enough to allow for the compaction equipment.

Table 4: Minimum Trench Widths

Flexible Pipe	Minimum shall be not less than 1.5 times the pipe outer diameter plus twelve inches (12")
Rigid Pipe	Minimum shall be not less than the outside pipe diameter times 0.33

- (h) When trench is to be backfilled with flowable fill, the minimum trench width may be reduced to the pipe diameter plus twelve inches (12") and enough room needed to allow for the proper placement of the flowable fill using tools to "spade" the material under the pipe haunches.
- (i) Maximum Trench Width: the maximum width of the trench shall be determined by the Contractor based on the method and means for the installation. However, trench width shall not exceed the width of a ride-along compactor plus two feet (2') when working alongside the pipe or culvert.
- (j) Street Crossings
 - (1) Trenches crossing streets shall be completely backfilled immediately after pipe, wire, or conduit installation and a temporary or permanent asphalt patch or flowable fill cap shall be installed as directed by the City to protect the integrity of the trenches within the roadway limits from excessive moisture. Under no circumstance shall a trench remain un-backfilled for longer than 30 calendar days.
 - (2) Substantial bridging, properly anchored, capable of carrying the vehicle loading, in addition to adequate trench bracing, shall be used to bridge across trenches at street crossings where trench backfill, and temporary patches have not been completed during regular working hours as directed and approved by the City. Safe and convenient passage for pedestrians and access to all properties shall be provided.
- (k) Disposal of Unsuitable Excavated Materials
 - (1) Excess material and excavated material unsuitable for backfill shall be removed from the Project by the end of each working day unless otherwise approved by the City and disposed of by the Contractor in an environmentally responsible manner at no cost to the Project.
 - (2) When unsuitable material is encountered that is not shown in the Contract Documents, the City shall order the removal of the material by the Contractor and issue a field order to change the contract price due to the Contractor for removal of the materials.
- (l) Portable trench shields or boxes that provide a movable safe working area for installing pipe may be used for the installation of the pipe. After placing the pipe in the trench, backfill material shall be placed in lifts and the shield shall be lifted to allow for the backfill material to be placed for each lift, trench wall to trench wall.

- (m) Transition Installations: When differential conditions of pipe support might occur, such as transitions from manholes to trench, a transition support region shall be provided to ensure uniform pipe support and preclude the development of shear, or other concentrated loading on the pipe.

Article 06-04-020 Bedding

- (a) The bottom of the trenches shall be smooth, and hand graded uniformly throughout. If rock or other unyielding material is encountered or if the trench is over-excavated, pipe bedding material shall be added, compacted, and graded to a smooth uniform surface. The compacted bedding shall support the pipe throughout its entire length, except at bells or couplings which shall not rest on the bedding.
- (b) After the bell or coupling holes are excavated and after the pipe pieces are connected and properly aligned and graded, successive layers of select material shall be placed and compacted, until the pipe is covered, as required in the Contract Documents. The Contractor shall maintain proper alignment and grade during the bedding process. Any bent, cracked, chipped, or damaged pieces of pipe shall be removed and replaced at Contractor's expense.

Article 06-04-030 Pipe Laying

- (a) The pipe shall be laid true to the line(s) and grade(s) indicated in the Contract Documents or as established by the City. Pipe shall be laid such that pipe size markings are facing up within the trench.
- (b) The pipe shall be protected during handling against impact shocks and free fall. Do not permit hooks, chains, cables, or handling equipment to come in contact with the pre-molded or pre-formed end surfaces.
- (c) Handle the pipe having pre-molded end surfaces or pre-formed end surfaces so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material or surfaces. Do not drag the end of the pipe on the ground or allow pipes to be damaged by contact with gravel, crushed stone, or any other hard objects. No damaged or deformed pipe will be incorporated into the Project.
- (d) The interior of the pipelines shall be kept free from dirt and other foreign material as the work progresses and shall be clean upon completion of the pipe installation. Tight stoppers or bulkheads shall be securely placed in the ends of all pipelines when the work is stopped temporarily, or at the end of a workday.

- (e) Immediately prior to jointing, both pipe ends shall be thoroughly cleaned, and a lubricant shall be applied according to the manufacturer's recommendations. For push-on type joints, sufficient pressure shall be applied in making up joints to insure proper seating of the joints.
- (f) All pipe shall be laid straight between ends, fittings or bends, and on uniform grade. Excavate bell holes for each pipe joint. After the pipe is jointed in the trench, the pipeline shall form a true line and consistent grade.
- (g) The City may select to check the pipe for line and grade by any method after the pipe is laid and before backfilling begins. The City shall also have the right of checking each pipe joint with a gauge or by any means necessary in order to be assured that the gaskets are in place and properly seated. Any run of pipe that is found to be appreciably offline or grade shall be removed from the trench, the trench bedding shall be re-graded and compacted, and the pipe shall then be laid accurately online and grade. Any joint that is found to be improperly gasketed and/or seated shall be un-jointed and correctly reassembled. If any gasket is found to be damaged, the entire pipe section containing the damaged gasket shall be replaced with a new section of pipe.
- (h) Contractor shall furnish any tools, gauges, and all items required for the checking of the gaskets and joints and shall check every joint to be sure that the gaskets are seated and located in the correct place to avoid leakage at the joints.
- (i) Pipe and appurtenances shall be new and unused. The type of pipe to be installed shall be as approved by these Technical Standards. Pipe and appurtenances shall be handled to insure delivery to the trench in sound, undamaged condition. Particular care shall be taken to prevent damage to any pipe coating.
- (j) The interior of pipe shall be thoroughly cleaned of foreign material before being lowered into the trench and shall be kept clean during construction operations. When work is not in progress, the open ends of pipe shall be securely closed so that no foreign materials will enter the pipe. Any section of pipe found to be defective before or after laying shall be replaced with sound pipe or repaired in a manner satisfactory to the City without additional expense.
- (k) The Contractor shall install a plug in the new sewer at any point of connection to an existing system. The plug shall remain in place until the Project has been completed and all work approved. The Contractor shall not flush or otherwise discharge any flow into an existing system unless approved in writing by the City.
- (l) Pipe shall be laid to line and grade as shown on the plans and as staked in the field. The bedding of the trench shall be graded and prepared to provide a firm and

uniform bearing throughout the entire length of the pipe barrel. Suitable excavation shall be made to receive the bell of the pipe and the joint shall not bear upon the bottom of the trench. All adjustments to the line and grade shall be made by scraping away or filling in with pipe zone material under the body of the pipe, and not by wedging or blocking. When connections are to be made to any existing manhole, pipe, or other improvement, the actual elevation or position of which cannot be determined without excavation, the Contractor shall excavate for and expose the existing improvement before laying the connecting pipe or conduit. When existing underground improvements may reasonably be expected to conflict with the line or grade established for the new sewer line, the Contractor shall excavate as necessary to expose and locate such potentially conflicting underground improvements prior to laying the new pipe. Any adjustment in line or grade which may be necessary to accomplish the intent of the plans will be made.

- (m) Trenches shall be kept free from water during pipe installation until suitable backfill has been placed and compacted to prevent pipe flotation. Any standing water within the trench shall be evacuated and the trench bottom or bedding be restored per the standards contained herein.
- (n) Field cuts shall be completed with a hacksaw, handsaw, or a power saw with a steel blade or an abrasive disc. Field cuts shall be square to the pipe's flow area. The newly cut pipe end shall be beveled to the factory pipe chamfer. Completed field cuts shall be smooth and blunt free from shavings and rough edges.
- (o) Connections to existing manholes shall be made by core drilling through the manhole wall using concrete saw or other cutting device approved by the City. Sledgehammers are not acceptable. The Contractor shall take care to avoid unnecessary damage to the existing manhole. Manholes broken by the Contractor shall be replaced by the Contractor without additional expense to the City.
- (p) Pipe shall be laid up-grade in a continuous operation from structure to structure, with the socket or collar ends of the pipe up-grade, unless otherwise permitted by the City.
- (q) Sanitary sewer mains shall not be constructed under walkways, sidewalks, curbs and gutters, drivepads, or similar concrete structures by tunneling underneath. The Contractor will cut these concrete structures by using a concrete saw. At the Contractor's option, he may remove the section of the concrete structure to the nearest full expansion joint or edge without addition expense to City.
- (r) Plastic sewer pipe shall be connected and placed in the trench in accordance with the manufacturer's recommendations.

- (s) The reference mark (a distinct circumferential line) is placed on the pipe's spigot end by the manufacturer to indicate the correct depth of spigot penetration into the pipe gasket joint. If the pipe is seated too deep or too shallow the pipe may buckle or separate due to thermal expansion/contraction. Spigot penetration shall be within one quarter (1/4) inch of the manufacturer's recommended mark.
- (t) For plastic pipe connection to manholes, the Contractor shall install an appropriately sized press seal gasket, such as PS-10 by Press Seal Gasket Corporation, Large Diameter Waterstops for Concrete Manhole Adapters by Fernco, or approved equal. The gasket shall be installed per manufacturer's directions. See Standard Detail: S-7.

Article 06-04-040 Sewer Service Taps

- (a) Sewer service line taps shall be completed by qualified and appropriately licensed Utility Contractors. Sewer service line(s) shall be installed perpendicular to the collection main, for that portion of the service line that is located within the public right-of-way or easement. Where this is not possible, the sewer service alignment shall be subject to determination by the City.
- (b) All single family private residential, small single office, or small single store service lines (four-inches in diameter) must be connected by a tap into the sewer main; no private service connection will be allowed to connect directly into a manhole. Maximum angle for sewer service tap into main shall be 45 degrees. See detail S-9 and S-10 for Sewer Service Detail or S-15 for Service Line Insert Tee Connection.
- (c) All public service buildings, hotels, schools, public schools, laundry, or other kind of public/commercial service establishment with a service line of six-inches or larger shall connect with the public sewer system at a manhole. If no standard manhole is available, the applicant shall be responsible for design, construction, and costs associated there with for a manhole at a location designated by the City.
- (d) The City will evaluate the condition of the existing sanitary sewer main line to be connected to; if the pipe is determined to be in good condition the pipe may be tapped. If the existing pipe is not in ample condition to facilitate tapping, the Contractor shall remove a minimum five-foot (5') pipe segment and install SDR-35 PVC pipe of appropriate diameter coupled to existing sanitary sewer line, on either side, with leak-proof couplings (Fernco or approved equal). The sewer service line tap can be completed upon the PVC main line segment. The completed segment and tap shall be inspected by the City.

Article 06-04-050 Existing Manholes

- (a) Where the Contractor is required to connect to the existing manholes, the manholes shall be handled to avoid damage. Any damage to the existing manholes resulting from the Contractor's activities shall be corrected to the satisfaction of the City, at the Contractor's expense.
- (b) Each manhole penetration shall be sawcut along pre-marked lines to form a uniform opening. The existing manhole invert shall be removed as required to build the new sewer line through the manhole at the alignment and grade called for in the Contract Documents.
- (c) Prior to grouting the openings and manhole invert, the walls and floor of the manhole shall be clean and free of all foreign matter or other condition that would affect the bonding of the new grout. Additionally, a rubber manhole gasket shall be installed around the new sewer line where it will be in contact with the new grout. All voids shall be filled, and the invert shall be grouted to form a smooth sloping surface toward the opening in the new pipe.
- (d) Existing sanitary sewer manholes designated for removal shall be demolished and disposed of at an appropriate site. The resulting excavation shall be properly refilled with compacted backfill.

Article 06-04-060 Temporary Bypasses

- (a) The Contractor will be required to control the sewage in the existing sewer lines and service lines.
- (b) The sewage shall be pumped, diverted, or otherwise accommodated to facilitate construction of the new sewer line.
- (c) The Contractor shall conduct sewer line construction so that fittings, couplings, and all required materials are on hand to quickly complete each section of sewer line, minimizing the timeframe that the bypass is in place. The Contractor shall present to the City a bypass proposal that accurately details operations, for approval by the City prior to beginning work on the sewer line.
- (d) Refer to Chapter 07 Temporary Bypass Pumping System for additional detail.

Article 06-04-070 Backfilling Trenches

(a) Definitions

- (1) **Foundation:** Over-excavation and backfill of the foundation only when the native trench bottom does not provide a firm-working platform for placement of the pipe bedding material.
- (2) **Bedding:** In addition to bringing the trench bottom to required grade, the bedding levels out any irregularities and ensures uniform support along the length of the pipe.
- (3) **Haunch Zone:** The backfill under the lower half of the pipe (haunches) distributes superimposed loadings.
- (4) **Initial Zone:** The backfill from the pipe midline to the top of the pipe zone provides the primary support against lateral pipe deformation for flexible pipe.
- (5) **Final Zone:** Backfill above the pipe zone to the top of the subgrade.

- (b) Materials for trench backfill may include flowable fill, Type I aggregate base course, Type II aggregate base course, and native materials. Individual pipe zone backfill requirements are presented below. The Contractor shall submit the material types to the City for approval prior to construction.

Native backfill shall only be utilized within the Final backfill zone. Native materials shall be free from sod, frozen earth, organic materials, rubbish, and debris. The material should be free of large stones (maximum clod size shall be < 3”) that may cause damage to the pipe, such as concentrated pipe loading.

Table 5: Type I Aggregate Base Course Gradation and Requirements

Sieve Size	Percentage of Dry Weight Passing Sieve
2-Inch	100
1-1/2-Inch	90-100
1-Inch	70-90
No. 4	30-65
No. 10	30-10
No. 16	15-20
No. 200	10-20
Plastic Index	12 Maximum
Liquid Limit	35 Maximum
Fractured Faces	70% Minimum
Total Available Water-Soluble Sulfates	Less than 0.3% by dry weight of soil

Table 6: Type II Aggregate Base Course Gradation and Requirements

Sieve Size	Percentage of Dry Weight Passing Sieve
1-Inch	100
¾-Inch	85-95
No. 4	40-70
No. 10	35-45
No. 16	25-35
No. 200	6-18
Plastic Index	12 Maximum
Liquid Limit	35 Maximum
Fractured Faces	70% Minimum
Total Available Water-Soluble Sulfates	Less than 0.3% by dry weight of soil

Table 7: Native Backfill Requirements

Percentage by Weight Passing No. 200 Sieve	Plasticity Index Maximum
0-20.0	12
20.1 – 50.0	10
50.1 – 80.0	8
80.1 – 100	6
Liquid Limit	50 Maximum

- (1) Foundation: Trench foundations shall be stable prior to placing bedding material. If the City determines that unsuitable materials exist at the trench foundations, the Contractor shall remove and replace the material as directed by the City.
- (2) Pipe Bedding: The trench shall be excavated to a depth of four- to six-inches (4"-6") below the bottom of the pipe barrel and to a depth that will be sufficient to provide two- to four-inches (2"-4") of clearance under the pipe bell (where applicable).

Uniform and stable bedding shall be provided for the pipe and any protruding features of its joints and/or fittings. The middle of the bedding equal to one-third (1/3) the pipe outside diameter may be loosely placed to allow for the pipe bell and other protruding features. Alternatively, the compacted bedding material may be excavated slightly to allow for continuous lines and grades of the pipe structure.

Pipe bedding shall consist of Type II aggregate base course or flowable fill. Bedding shall be backfilled to the required grade of the bottom of the pipe. The compaction shall provide a density, at minimum, equal to 95 percent of

the maximum dry density in accordance with ASTM D 1557 with the exception of the middle-uncompacted area.

- (3) Haunch Zone Backfill: After the pipe or conduit is laid, the haunch areas shall be backfilled with Type II aggregate base course or flowable fill.

Compaction of the haunching material can be best accomplished by hand with tampers or suitable power compactors for maximum compacted lift thickness of six inches (6"). The Contractor shall take care to not disturb the pipe from its line and grade while compacting the backfill. Material suitably distant from the pipe shall be compacted to 95 percent of the maximum dry density in accordance with ASTM D 1557.

While compacting the embedment near the pipe with impact-type tampers, caution shall be taken to not allow direct contact of the equipment with the pipe.

- (4) Initial Backfill Zone: After the pipe or conduit is laid, the initial backfill area shall be backfilled with Type II aggregate base course or flowable fill. Avoid usage of impact tampers directly above the pipe until the full loose layer backfill depth above the pipe is obtained.

Table 8: Initial Backfill Zone Material Depths

Pipe or Conduit	Initial Zone
2-Inch or less diameter	6-Inches above the top of pipe
Greater than 2-Inch diameter	12-Inches above the top of pipe

- (5) Final Backfill Zone: The remaining backfill, to the top of subgrade, shall consist of Type I or Type II aggregate basecourse, native material, or flowable fill. The material shall be compacted to a minimum of 95 percent of the maximum dry density in accordance with ASTM D 1557.

- A. If flowable fill is used, flowable fill shall be placed from the top of the initial backfill zone to the bottom of the flexible pavement (replaces aggregate road base in the pavement section over the trench).
- B. Flowable fill cap may be required in the upper portion of the Final Backfill Zone for all non-residential roadways with a minimum thickness of twelve inches (12") for minor collectors and eighteen inches (18") for all major collectors and arterials.

(c) Compaction

- (1) Compaction shall be performed by mechanical means except in the haunch zone where compaction may be required by hand tamping. Mechanically compacted backfill shall be placed in layers of thickness compatible with the characteristics of the backfill and the type of equipment being used and shall have a maximum lift thickness as shown in the table below. The lifts shall be placed on both sides of the pipe at the same time to reduce pipe movement.

Table 9: Backfill Lift Thickness

Location	Maximum Compacted Lift Thickness (inches)	Maximum Loose Lift Thickness (inches)
Bedding, Haunch, and Initial Zones	6	8
Final Zone	8	12

- (2) Each layer shall be evenly spread, moistened, and tamped or rolled until the specified relative compaction has been attained.
 - (3) Compaction minimum shall be 95 percent of the maximum dry density in accordance with ASTM D 1557 for trenches within the roadway prism. Compaction requirements for the final zone of trenches outside the roadway may be reduced to 90 percent of maximum dry density in accordance with ASTM D 1557.
 - (4) Density testing shall be completed every 200-feet on mains or any part thereof per day, one per every three services or any part thereof per day.
 - (5) Density testing per depth: Less than or equal to four feet (4') shall require one at depth and one at subgrade per horizontal length above. Greater than four feet (4') depths shall require one per six-inch (6") or larger pipe, then one every three (3) vertical feet, and one at subgrade per horizontal length above.
 - (6) Where test results reveal non-compliance with the requirements of the Contract, the Contractor shall bear the costs of subsequent rework and retesting until the required specification compliance is obtained to the satisfaction of the City.
- (d) Minimum Pipe Spacing: If the pipe space between parallel pipes in a single trench is not conducive to mechanical backfill, then flowable fill shall be used.

Article 06-04-080 Manhole Construction

- (a) Manholes shall be pre-cast reinforced concrete units or glass fiber reinforced polyester (FRP) in accordance with the detail drawings and as shown on the Contract Documents.
- (b) Soil foundations for manhole base shall be compacted to a density of ninety-five (95%) percent of the maximum density per ASTM D 1557.
- (c) Invert elevation of the pipes entering or exiting the manhole and interior inverts shall not vary more than 0.05 foot from the elevations indicated in the Contract Documents.
- (d) All cement used for poured foundations, mortar, fillets, grout, and concrete shelf construction shall be Type II or approved equal.
- (e) All concrete for formed-in-place foundations or bases shall be 3,000 psi compressive strength concrete.
- (f) Concrete, used for precast bases, vertical sections, and eccentric cones, shall be 4,000 psi compressive strength concrete.
- (g) Manhole risers should be constructed using the tallest barrels possible from the pre-cast manufacturer. The base barrel shall be a minimum of four (4) feet, but not less than two (2) times the size of the sewer pipe penetrating the manhole.
- (h) All precast sections of the manholes shall conform to the requirements of ASTM C 478, latest revision.
- (i) Circular pre-cast manhole sections shall be provided with mastic gasket to seal joints between sections, such as Ram-Nek, Kent Seal, or approved equal.
- (j) Precast concrete manhole bases may be used; however, the Contractor shall be responsible for placing the bases at the specified elevation, location, and alignment.
- (k) All lifting holes and gaps at joints shall be filled with a non-shrink grout.
- (l) Removable inflow protectors shall be required in all new sanitary sewer manholes.

Article 06-04-090 Pavement Patching

After all trenching and backfilling is complete, the pavement shall be marked and sawcut to form a smooth, uniform edge. The resulting cut face shall be coated with tack coat and

new plant mix bituminous pavement shall be placed and densified as specified. The resulting pavement patch shall have a smooth riding surface in any direction. The patch section shall at minimum match the existing section.

Article 06-04-100 Cased Sewer Lines

- (a) Where encasements or carrier pipe is required to be installed under railroad embankments or under highways, streets, or other facilities by jacking or boring methods, construction shall be made in a manner that will not interfere with the operation of the railroad, highway, or other facility, and will not weaken or damage any embankment or structure. During construction operations, barricades and lights to safeguard traffic and pedestrians shall be furnished and maintained, as directed by the City.
- (b) Entry and exit pits shall be excavated for the purpose of conducting the boring/jacking operations and for placing end joints of the pipe. This excavation shall not be carried to a greater depth than is required for placing of the guide and boring/jacking machine. All open trenches and pits shall be braced and shored in such a manner as will adequately prevent caving or sliding of the walls into the open trench or pit.
- (c) Minimum casing specifications can be found on Standard Drawing S-16. Facility operator beneath which the casing is being installed to determine if more stringent requirements shall govern the installation.
- (d) Lateral or vertical variation in the final position of the pipe from the line and grade established by the Contract Documents will be permitted only to the extent of one-sixteenth inch (1/16") per ten feet (10'), however, final approval will be required by the City.
- (e) Entry and exit pits shall be backfilled, in compliance with the Contract Documents, immediately upon installation of the carrier pipe and approval by the City.
- (f) Casing installation shall include vents. Vents shall be placed on each end of the casing to facilitate inspection, sampling, exhaustion, or evacuation of fluids or gases accumulated between the carrier and casing pipes. Vent pipes shall be of sufficient diameter, but not less than two inches (2"). The vent pipe shall extend a minimum of three feet (3') above the existing ground surface and fall at the right-of-way line or outside the clear zone.
- (g) Cathodic protection shall be designed and installed should soil conditions warrant.

Article 06-04-110 Testing

- (a) Testing for Tightness: After the pipe has been laid and backfilled, the line shall be tested between manholes by low-pressure air testing and shall be conducted in accordance with the Uni-Bell PVC Pipe Association recommended practices.
- (b) Exfiltration Test: The maximum water exfiltration for a given pipe shall be at a rate of fifty (50) gallons per inch of internal pipe diameter per mile per day. During the ex-filtration testing, the maximum internal pressure at the lowest end may not exceed twenty-five (25) feet or 10.8 psi. The internal water head must be a minimum of two (2) feet higher than the top of the pipe.
- (c) Mandrel Deflection Testing: Long term pipe deflection shall not exceed seven and a half (7½) percent. When required, the Contractor shall perform mandrel deflection test(s) between successive manholes using appropriate instruments. The City will designate when the test is to be performed. If it is determined that the pipe has exceeded deflection requirements, the pipe shall be removed and replaced at the Contractor's expense.
- (d) Manhole Testing: Manholes shall be filled with water to a minimum of one (1) section above the highest pipe penetration. Water level shall remain for a minimum of six (6) hours.

At the Contractor's option, negative air pressure (vacuum) testing may be utilized on precast manholes prior to backfilling in accordance with ASTM C1244.

- (e) All sanitary sewer pipeline and manhole testing equipment shall be furnished, maintained, and implemented by the Contractor. The Contractor shall provide written notification twenty-four (24) hours in advance of testing so that the City may have a representative onsite for observation.

Article 06-04-120 Flushing Sewer lines

All completed sewer lines shall be flushed with water to remove any dirt or foreign matter from the line. The flushing shall be done in the presence of the City.

Article 06-04-130 Detectable (Underground) Warning Tape

- (a) Detectable warning tape shall be 6" wide, 5 mil overall thickness, with a .35 mil solid foil coil. APWA color coded with imprint of underground utility installed.
- (b) Detectable warning tape shall be laid in continuous manner and be placed above all sewer mains, sewer force mains, sewer service lines, and other sewer

appurtenances. The detectable warning tape shall be placed eighteen inches (18") below the final surface elevation.

Article 06-04-140 Trace Wire

- (a) All trace wire shall have HDPE insulation intended for direct bury service. HDPE insulation shall be color coated per APWA Standard for respective utility being installed.
- (b) Trace wire shall be taped to the top of all sewer mains, sewer force mains, and sewer service lines at maximum 10-foot interval. Trace wire along sanitary sewer service lines entering private property shall be terminated above ground at the cleanout adjacent to the developed structure.
- (c) Trace wire shall be as following based on installation method:
 - (1) Open Trench Installation: #12 AWG copper clad steel, high strength with minimum 450-pound break load and minimum 30 mil HDPE insulation thickness. Copperhead Industries High Strength – 1230 CCS Trace Wire or City approved equal.
 - (2) Directional Drilling/Boring: #12 AWG copper clad steel, high strength with minimum 1,150-pound break load and minimum 30 mil HDPE insulation thickness. Copperhead Industries Extra-High Strength – 1245 CCS Trace Wire or City approved equal.
 - (3) Pipe Bursting/Slip Lining: 7 x 7 stranded copper clad steel, extreme strength with minimum 4,700-pound break load and minimum 50 mil HDPE insulation thickness. Copperhead Industries SoloShot Xtreme – PBX-50 CCS Trace Wire or Engineer Approved Equal.
 - (4) When a new trace wire is to be tied to an existing trace wire the connection shall be made with an approved splice connector and shall be properly grounded at the splice connection.
- (d) Connectors
 - (1) All main line trace wires shall be interconnected at intersections (tees and crosses). Connectors shall be lockable and manufactured specifically for use in underground trace wire installation. Connectors shall be dielectric silicon filled to seal out moisture and corrosion and shall be installed in a manner as to prevent any uninsulated wire exposure.

- (2) Tee Connectors (service lines, main line tees, and fire hydrants) shall include a 3-way lockable connector main line to lateral lug connector. Copperhead Industries Mainline-to-Service Connector Part Number 3WB-01 or City approved equal.
 - (3) Cross Connectors (main line crosses) shall include two (2) 3-way lockable main line to lateral lug connectors. Copperhead Industries Mainline-to-Service Connector Part Number 3WB-01 or City approved equal.
 - (4) Main line trace wire splices shall be completed utilizing twist-lock connectors. Copperhead Industries Locking Connector Part Number LSC1230C or City approved equal.
 - (5) Do not cut and splice main line trace wire.
 - (6) Non-locking friction fit, twist on, or taped connectors shall not be used.
- (e) Termination/Access Boxes
- (1) All trace wire termination points must utilize an approved trace wire access box, specifically manufactured for this purpose. Except as noted previously for termination on the upstream end of sewer service lines.
 - (2) All access boxes shall be identified with “sewer” or “water” cast into the cap and be APWA color coded according to the utility.
 - (3) A minimum of two-feet (2’) of slack is required in all trace wire boxes upon installation at final grade.
 - (4) All trace wire access boxes must include a manually interruptible conductive/connective link between the terminals for the trace wire connection and the terminal for the ground anode wire connection.
 - (5) Ground anode wire shall be connected to the identified terminal on all access boxes.
 - (6) Manholes must terminate at an in-ground trace wire access box positioned within the manhole concrete collar. Copperhead Industries SnakePit Roadway with Two-Terminal Switchable Lid Access Point Part Number RB14*2T-SW or City approved equal.
- (f) Grounding
- (1) Trace wire must be properly grounded at all dead ends and stubouts.

- (2) Grounding of trace wire shall be accomplished through the use of a drive-in magnesium grounding anode rod with a minimum of 20-feet of #12 AWG red HDPE insulated copper clad steel wire connected to the anode (minimum of 1.5-pound) specifically manufactured for the intended purposed. The ground anode shall be landed at the same elevation as the utility. Ground anode shall be Copperhead Industries Ground Rod with Twist-On Connector Part Number ANO-12 or City approved equal.
 - (3) When grounding the trace wire at dead ends or stubouts, the grounding anode shall be installed perpendicular to the trace wire at a maximum possible distance.
 - (4) When grounding the trace wire in long continuous runs, the grounding anode shall be installed directly beneath and in-line with trace wire. The grounding anode wire shall be trimmed to an appropriate length before connecting to trace wire with a mainline to lateral lug connector.
- (g) Testing
- (1) All new trace wire installations shall be located using typical low frequency line trace equipment. The City shall conduct a test trace witnessed by the Contractor prior to final acceptance. The test trace shall be conducted using City equipment prior to final surface (asphalt/concrete) placement.
 - (2) Continuity testing in lieu of actual line trace will not be accepted.

ARTICLE 06-05 - COORDINATION

Article 06-05-010 Construction Coordination, Survey, & Acceptance

- (a) The Contractor shall coordinate the Work with the City before commencing work. The City shall inspect and approve all work prior to backfilling. Photos will not be accepted in lieu of a physical inspection.
- (b) The Contractor shall notify the City in writing when each utility installation is complete in place per plan and ready for inspection. No utility backfill shall be placed until inspection has been satisfied by the City.
- (c) Acceptance Submittal – All test reports (utility, bacteriological, concrete, compaction, etc.), signed inspection forms, field marked construction drawings reflecting as-built conditions, and delivery of post construction survey as defined below.

- (d) Post Construction Survey – to be completed by a professional surveyor licensed in the State of New Mexico. The survey shall include key system components for incorporation into the City’s geographic information system (GIS). All data shall be created in real world coordinate system based on the following projection: horizontal control in NAD83, vertical control in NAVD88, and based on New Mexico State Plan Coordinates System (Grid), Central Zone, US Foot. The survey shall be tied to at least two (2) City control points as included at the end of Chapter 05. The Post Construction Survey shall be completed in a City approved AutoCAD version (.dwg format) provided to the City on a mass storage drive (compact disc or usb storage device) or via secure downloadable link.

The Post Construction Survey provider shall include a table identifying the layering convention used to depict system components (i.e. Layer C-UTIL-WATR-12in represents a twelve (12”) diameter C-900 PVC Water Line, etc.). This will allow the City personnel to isolate and import portions of the drawing and translate the information directly into usable data in their GIS. The user at their option can base their layering convention on the National Cad Standard (NCS) for ease of use. The City will not accept CAD files containing information drawn in paperspace.

The post construction survey shall be in conjunction with the Record Drawings noting work per plan or identifying different field installation conditions.

- (1) Drainage Systems Components: drainage channel control features and flowline elevations, drainage channel structure information (culvert upstream/downstream flowline elevations), manholes, inlets, pipe outfall(s), pond top elevation, and pond bottom elevation.
- (2) Sanitary Sewer System Components: standard manholes, control manholes, drop manholes, cleanouts at right-of-way or property lines, casing installations, and sewer service taps.
- (3) Lift Station Components: wet wells, dry wells, vaults, cleanouts, air valves, plug valves, flow meter, bends, and manholes.
- (4) Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, fire hydrants, water meters, service line taps, sampling stations, and pressure reducing stations.
- (5) Reclaimed Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, hydrants, meters, service line taps, or pressure reducing stations.

- (e) Substantial Completion – the Acceptance Submittal and Post Construction Survey shall be provided to the City, reviewed, and accepted by the City prior to issuance of Substantial Completion and subsequent commencement of the warranty period.

END OF CHAPTER 06

CHAPTER 07 – TEMPORARY BYPASS PUMPING SYSTEM

ARTICLE 07-01 - GENERAL

Article 07-01-010 Description

This section includes requirements for implementing a temporary pumping system for the purpose of diverting existing sewage flow around work area for the duration of the Project.

Article 07-01-020 Quality Assurance

- (a) Follow national standards and as specified herein.
- (b) Perform leakage and pressure tests on discharge piping using clean water, before operation. Notify City 24 hours prior to testing.
- (c) Maintain and inspect temporary pumping system every two hours. Maintain a log of flows every two hours for each system. Responsible operator on site at all times when pumps are operating.
- (d) Keep and maintain spare parts for pumps and piping on site, as required.
- (e) Maintain adequate hoisting equipment and accessories on site for each pump, as necessary.
- (f) Bypassing Contractor (subcontractor) shall have no less than 2 years' experience in bypassing a system of similar characteristics. City may request a list of similar projects with references to be delivered to the City at the preconstruction conference.

Article 07-01-030 Submittals

Submit the following at Pre-Construction Conference:

- (a) Detailed plan and description of proposed pumping system at each location. Indicate the number, size, material, location, and method of installation of suction and discharge piping, size of pipeline or conveyance system to be bypassed, staging area for pumps, site access point, and expected flow. The plan shall, at a minimum, indicate the following information:
 - (1) Size and location of manhole or access points for suction and discharge hose or piping.

- (2) Sections showing suction and discharge pipe depth, embedment, select fill, and special backfill for existing vehicular accesses or roadways.
- (3) Temporary pipe supports, and anchoring required.
- (4) Thrust restraint block sizes and locations.
- (5) Sewer plugging methods and types or plugs.
- (6) Bypass pump sizes, capacity, number of each size to be on site, and power requirements.
- (7) Back up pump, power and piping equipment for each setup as indicated on plans.
- (8) Calculations on static lift, friction losses, and flow velocity. Pump curves showing pump operating range.
- (9) Design plans and computation for access to bypass pumping locations indicated on plans.
- (10) Calculations for selection of bypass pumping pipe size.
- (11) Method of noise control for each pump and /or generator.
- (12) Method for protecting discharge manholes or structures from erosion or damage.
- (13) Schedule for installation and maintenance of bypass pumping lines.
- (14) Procedures to monitor upstream mains for backup impacts.
- (15) Procedures for setup and breakdown of pumping operations.
- (16) Emergency plan detailing procedures to be followed in event of pump failures, power failures, generator failures, sewer overflows, rain events, service backups, and sewage spillage. A copy of this plan must be kept on site for the duration of the project.
- (17) Odor Control abatement measures at suction and discharge locations.

Article 07-01-040 Contractor's Responsibility for Overflows and Spills

- (a) Schedule and perform work in a manner that does not cause or contribute to incidence of overflows, release of spills of sewage from sanitary sewer system or bypass operation.
- (b) The Contractor shall be responsible for any damage to property, private or public, caused from bypass operations.
- (c) The Contractor shall be responsible for cleaning and disinfecting any spills caused by the bypass operations.
- (d) The Contractor shall be responsible for any fines from regulatory agencies for spills caused by the bypass operations.
- (e) The Contractor shall not surcharge any existing sewer mains. The water surface elevation shall not exceed the top of pipe at any suction location.

Article 07-01-050 Delivery and Storage

- (a) Transport, deliver, handle, and store pipe, fittings, pumps, ancillary equipment, and materials to prevent damage and following manufacturer's recommendations. Inspect all material and equipment for proper operation before initiating work.
- (b) Material found to be defective or damaged due to manufacturer or shipment.
 - (1) When City deems repairable: Repair as recommended by manufacturer.
 - (2) When City deems not repairable: Replace as directed before initiating work.
 - (3) Repair or replacement of defective or damaged material and equipment shall be at no additional cost to the City.

ARTICLE 07-02 - PRODUCTS

Article 07-02-010 Materials

- (a) Discharge and Suction Pipes: Approved by the City
 - (1) Discharge piping: Determined according to flow calculations and system operating calculations.

- (2) Suction piping: Determined according to pump size, flow calculations, and manhole depth following manufacturer's specifications and recommendations.
- (b) Polyethylene Plastic Pipe:
 - (1) High density solid wall and following ASTM F714 Polyethylene (PE) Plastic Pipe (SDR DR) based on outside diameter, ASTM D1248 and ASTM D3550.
 - (2) Homogeneous throughout, free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults.
- (c) High-Density Polyethylene (HDPE)
 - (1) Homogeneous throughout, free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults.
 - (2) Assembled and joined at site using couplings, flanges, or butt-fusion method to provide leak proof joint. Follow manufacturer's instructions and ASTM D 2657. Threaded or solvent joints and connections are not permitted.
 - (3) Fusing: By personnel certified as fusion technicians by manufacturer of HDPE pipe and/or fusing equipment.
 - (4) Butt fused joint: True alignment and uniform roll-back beads resulting from use of proper temperature and pressure.
 - A. Allow adequate cooling time before removal of pressure.
 - B. Watertight and have tensile strength equal to that of pipe.
 - C. Acceptance by City before insertion.
- (d) Grooved End Industrial Aluminum Pipe
 - (1) Each joint pressure tested to 300 psi.
 - (2) Compatible with Victaulic style fittings.
 - (3) Pipe constructed with 3004-H26 Alloy.
 - (4) Aluminum A-356 welded couplers.

- (e) Flexible Hoses and Associated Couplings and Connectors
 - (1) Abrasion resistant.
 - (2) Suitable for intended service.
 - (3) Rated for external and internal loads anticipated, including test pressure.
 - (4) External Loading Design: Incorporate anticipated traffic loadings, including traffic impact loading.
 - (5) When subject to traffic loading, compose system, such as traffic ramps or covers.
 - (6) Install system and maintain H-20 loading requirements while in use or as directed by the City.
- (f) Valves and fittings: Determined according to flow calculations, pump sizes previously determined, and system operating pressures.
- (g) Plugs: Selected and installed according to size of line plugged, pipe and manhole configurations, and based on specific site.
 - (1) Additional plugs: One available for each phase in the event a plug fails. Plugs will be inspected before use for defects which may lead to failure.
- (h) Glued PVC piping will not be permitted.
- (i) Discharge hose will only be allowed in short sections when approved by the City.

Article 07-02-020 Equipment

- (a) Pumps
 - (1) Fully automatic self-priming units that do not require the use of foot valves or vacuum pumps in priming system.
 - (2) Electric or diesel powered. Contractor shall provide necessary power.
 - (3) Constructed to allow dry running for long periods of time to accommodate cyclical nature of effluent flows.

- (b) Provide
 - (1) Necessary stop/start controls for each pump.
 - (2) Two pumps for each bypass location (primary and backup) for all bypass locations with average flow greater than 500 gpm.
 - (3) Each pump to be capable of estimated peak flow.
 - (4) Primary and backup pumps shall be capable of running simultaneously for wet flow conditions.

Article 07-02-030 Design Requirements

- (a) Bypass pumping systems:
 - (1) Wet flow conditions are estimated at twice the average flow. The online back pump may be used during wet flow conditions.
 - (2) No surcharging of existing incoming lines at bypass locations.
 - (3) In the event of a pump failure, the Contractor shall immediately replace primary or backup pump to avoid surcharging of manholes, overflowing of manholes, spills, and damage to property.
 - (4) Operate 24 hours per day for the duration of each phase.
 - (5) Bypass pumping systems shall have sufficient capacity to pump peak flows included with the plans.
 - (6) All pumping equipment shall be provided with spill containment provisions for fuels, oils, and sewage.

ARTICLE 07-03 – EQUIPMENT

Article 07-03-010 Preparation

- (a) Determining location of bypass pipelines.
 - (1) Minimal disturbance to existing utilities. Field locate existing utilities in proposed bypass area.
 - (2) Obtain approvals for placement within public or private property.

- (3) Obtain City's approval of location.
- (4) Costs associated with relocation of utilities and obtaining approvals at no additional cost to the City.

Article 07-03-020 Installation and Removal

- (a) Provisions and requirements must be reviewed by the City before starting construction.
- (b) Remove manhole sections or make connections to existing sewer and construct temporary bypass pumping structures at access locations indicated on Contract Documents and as required to provide adequate suction conduit.
- (c) Plugging or blocking of sewage flows shall incorporate a primary and secondary plugging device for each bypass location. When plugging or blocking is no longer needed for performance and acceptance of work, remove in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.
- (d) When working inside manhole or junction box, exercise caution. Follow OSHA, Local, State and Federal requirements. Take required measures to protect workforce against sewer gases and/or combustible or oxygen-deficient atmosphere.
- (e) Installation of Bypass Pipelines:
 - (1) Pipeline may be placed along gutter of streets. Do not place in sidewalks.
 - (2) When bypass pipeline crosses streets and private driveways, place in roadway ramps. When roadway ramps cannot be used, place bypass in trenches and cover with temporary pavement as approved by the City.
 - (3) Include provisions for Traffic Control including signs and barricades as applicable. The Contractor shall submit a traffic control plan for review prior to commencing this work.
- (f) During bypass operation, protect sewer lines from damage inflicted by equipment.
- (g) Upon completion of bypass pumping operations, and after the receipt of written permission from the City, remove piping, restore property to preconstruction condition, and restore pavement.

END OF CHAPTER 07

CHAPTER 08 – LIFT STATION SYSTEM

ARTICLE 08-01 - GENERAL

Article 08-01-010 Lift Station System Materials

Item Description	Size or Reference	Specification	Manufacturer
Submersible Grinder Pumps	--	--	Xylem/Flygt or Approved Equal
Flow Meter	≤ 12"	--	Greyline Flow Meter (Pulsar) or Approved Equal
Access Hatch	--	AASHTO H-20	Bilco Access Hatch or Approved Equal
Odor Control System	Case-by-Case Determination		
Wet Well, Valve Vault, Manhole Coating System	N/A	--	Raven or Approved Equal
Force Mains	≤ 12"	AWWA C900 ANSI C151	Various
D.I. Force Main Lining	≤ 12"	--	Induron Coatings – Protecto 401 Permite Corp. – Permax CTF Tnemec Company – Perma-Shield PL Series 431 or Approved Equal
Force Main Air Release Valves	--	AWWA C-512	Val-Matic or Approved Equal
Swing Check Valves	≤ 12"	AWWA C-508	Flomatic or Approved Equal
Plug Valves	≤ 12"	AWWA C-517	Val-Matic or Approved Equal

Article 08-01-020 General

Lift stations will only be allowed for developments greater than or equal to 150 units, which cannot be served by a gravity sanitary sewer system. Developers shall consult with the City to confirm the applicability of gravity sewer system and/or the need for a sanitary sewer lift station and associated force main piping. All lift station design shall include a completed Design Analysis Report.

Article 08-01-030 Wastewater Characteristics

Lift station(s) shall be designed to handle and convey raw unscreened sewage containing solid material. All specified pumps shall be capable of passing solids a minimum of three inches (3") in diameter regardless of the means utilized in solids reduction. Pumps shall be non-clogging, continuous duty rated, and manufactured to process the aforementioned materials.

Article 08-01-040 Lift Station Pump Types

Only electric motor driven duplex submersible grinder pumps stations within precast concrete wet well or fabricated fiberglass wet well are acceptable. A separate below grade valve vault shall accompany new duplex installations. All lift stations shall be provided with 480V three-phase (3Ø) power. Overhead power poles/lines will not be permitted within the fenced enclosed lift station yard. The main power feed shall be equipped with an above-grade, fused disconnect switch.

Article 08-01-050 Site Development Criteria

The Developer is responsible for all site plans, permits, inspections, and their associated fees from the City and/or County as applicable. Lifts stations shall not create nuisance conditions to adjacent properties. The lift station shall be planned and constructed to allow for all-weather access and/or maintenance and by equipped with security fencing and lockout capabilities.

(a) Floodplain

All lift stations and their appurtenances shall be located outside of the 100-year floodplain. All above ground equipment shall be located two-feet (2') above the 100-year base flood elevation.

(b) Access Requirements

All lift stations shall be constructed with a suitable all-weather access roadway capable of accommodating large utility trucks, boom/crane trucks, vector truck, and water trucks. The access road shall connect to a public hard surface roadway and shall serve the sole purpose of lift station access.

(c) Stormwater Management

Stormwater detention shall adhere to the requirements of these City Technical Standards as presented. At a minimum, the lift station and associated site improvements shall maintain positive drainage away from wet well(s), valve vaults, electrical, and mechanical equipment.

(d) Potable Water Service

The developer shall be responsible for a metered potable water service to serve the lift station facilities. The water service will be utilized for area washdown, equipment maintenance, other functions as necessary. A frost proof yard hydrant shall be provided within the fenced yard.

(e) Site Lighting and Security

- (1) Perimeter Fencing – shall be provided at all lift stations; fencing shall consist of concrete masonry unit (CMU) construction to a final height of nine feet (9’).
- (2) Vehicular/Pedestrian Access – the fence enclosed lift station yard shall be equipped with a minimum 12-foot vehicular access gate. A four-foot (4’) pedestrian access gate shall also be provided. All access points shall be secured with a lock and chain.
- (3) Lighting – the lift station shall be provided with adequate lighting (outdoor and/or indoor) to accommodate normal and emergency operations during daylight and nighttime operations.
- (4) Other Considerations – all lift station appurtenances (wet well, vaults, panels, etc.) shall be lockable. Safety placards for all lift station structures and equipment shall be provided and readily visible to operation and maintenance personnel.

Article 08-01-060 Wet Wells

Wet wells shall be circular precast concrete structures or premanufactured fiberglass structures within conical bottoms that surround the pump volutes or suction piping closely. This configuration will aide the lift station in settling of solids and debris evacuation with each complete pump cycle. All precast concrete structures shall be in compliance with ASTM C-478 and be subject to the same vacuum testing for leakage as standard sanitary sewer manholes. Inner diameters for wet wells shall be six- to twelve-feet (6’-12’) and be sized to provide appropriate pump spacing and maintenance access. Wet wells shall be completed with a gooseneck type vent with a stainless steel bug/insect screen.

Article 08-01-070 Precast Concrete Wet Well Coating System

The entirety of the precast wet well’s exposed surfaces shall be coated, prior to placement into service, to aide in corrosion and impact resistance. Precast structures shall be coated with Raven 175 (prime coat) and Raven 405 (2nd coat) to 100 mil total dry thickness: in accordance with the manufacturer's recommendations. Alternate coating systems shall be pre-approved by the City.

The epoxy coating system shall be solvent free, and 100% solids specifically manufactured for use in severe wastewater environments with the following minimum characteristics:

- (a) Hardness, Shore D (ASTM D-2240) of 70
- (b) Tensile Strength (ASTM D-638) > 7,000 PSI
- (c) Flexural Strength (ASTM D-790) > 10,000 PSI

Article 08-01-080 Valve Vault

The valve vault shall be precast or cast in place concrete vault with double traffic rated access doors (minimum four-feet [4'] square double leaf). The access hatch shall have recessed lifting handle, security locking pin, factory installed safety opening bars, and be of the anti-slam design. The concrete valve vault shall be epoxy coated to the same requirements as the wet well. The valve vault shall house the check valves and full closing plug valves details below as well as transition manifold pipe to the exiting force main; refer to Detail S-22. The minimum allowable interior size for valve vaults shall be six-feet by six-feet (6' x 6') for force mains six-inches (6") and smaller. This minimum dimension shall allow for a minimum of 12-inches of clear space between valves and the interior vault walls. The vault floor shall be tapered to a sump drain returning any discharge during maintenance activities back to the wet well; this return line shall enter the wet well above the "Alarm" level sensor and be equipped with a duckbill valve to prevent backflow and/or gases from entering the vault. All pipe penetrations through the vault wall shall be completed with watertight flexible boots.

Article 08-01-090 Valve Requirements

- (a) Check Valves – an outside level, swing check valve shall be provided on the discharge piping of each pump on the upstream side of the shutoff valve. The check valves shall be located within the valve vault and shall be installed in the horizontal position to prevent accumulation of debris on the backside of the flap.
- (b) Shutoff Valves – a full-closing eccentric plug valve shall be installed on each pump's discharge pipe. The shutoff valves shall be installed downstream of the check valve.
- (c) Valve Support – each valve shall be individually supported from below within the valve vault.

Article 08-01-100 Submersible Pumps and Grinders Requirements

The wet well shall be completed with a system to allow for removal and installation of pumps and grinders without requiring into the wet well. At a minimum the following shall be provided as part of this system:

- (a) Stainless steel guide bars and lifting/guide chains.
- (b) The guide bars and lifting devices shall be capable of disengagement and lifting of each piece of equipment.

Article 08-01-110 Odor Control

The type of odor control facilities at a lift station will be determined on a case-by-case basis. The criteria for such determination will include, but not be limited to, service area characteristics, current nuisance odor conditions, and other factors deemed necessary. Odor control facilities may include chemical dosing stations or nuisance odor treatment systems. The odor control approach is chemical feed of Bioxide. Accordingly, at a minimum, the applicant's basis of design shall include a chemical dosing station. The location of the chemical dosing station and associated appurtenances shall be shown on the applicant's plan submittal for the lift station. Provide the following:

- (a) 1,000-gallon odor control storage tank, minimum.
- (b) Pumping/dosing system.
- (c) Automated Dosing Controller.

Article 08-01-120 Flow Metering

Permanent flow metering shall be required at all lift stations. Flow monitoring and run time reporting software and hardware will be required at all proposed lift stations. All stations shall be provided with flow meters in accordance with the following requirements:

- (a) Flow meters shall be electromagnetic type with 316 stainless steel metering tube sized to maintain velocities within the recommended range provided by the manufacturer over the full range of anticipated station flows.
- (b) Flow meters shall be installed in an accessible location in the lift station dry well or outside, within the fenced area, within an epoxy coated vault or manhole with adequate clearance for removal of flow meter.
- (c) The piping installation shall provide five (5) diameters of straight pipe runs upstream and two (2) diameters downstream from the meter, or additional lengths if required by the meter manufacturer.
- (d) Bypass piping shall be provided of equal or greater size than the flow meter piping with sufficient valving to allow the flow meter to be removed for maintenance without taking the station out of service.

- (e) Flow meter shall be equipped with a microprocessor based “smart” transmitter that is capable of converting and transmitting a signal from the flow tube with a 4-20 mA DC signal.
- (f) The flow meter shall have an integrated LCD readout capable of displaying flow rate and totalized flow.

ARTICLE 08-02 – FORCE MAINS

Article 08-02-010 General

Force main pipes shall remain constant diameter from the lift station to their final discharge point into the gravity sanitary sewer system. The diameter shall be designed to maintain a velocity greater than two-feet-per-second (2 ft/sec) but not to exceed eight-feet-per-second (8 ft/sec). Minimum cover for all force main pipe shall be four feet (4’), and maximum cover should not exceed ten feet (10’). Additional criteria as stated below:

- (a) Manifold force mains shall not be permitted.
- (b) No tee connections are permitted.
- (c) Force main bends shall be forty-five degrees or less ($\leq 45^\circ$).
- (d) Force main alignment shall consider the rising and falling of grade in efforts to minimize the number of air/vacuum relief valves.
- (e) Force main line valves shall be full port plug valves.
- (f) Force main valves boxes shall have valve box covers marked “Sewer”.

Article 08-02-020 Force Main Pipe Materials & Appurtenances

- (a) Ductile iron pipe and fittings for use in force mains shall be self-restrained in accordance with AWWA C151.
 - (1) Internal lining: all ductile iron force main piping shall be installed with a corrosion resistant internal lining. Acceptable manufacturers can be found at the beginning of this Article.
 - (2) External coating: all ductile iron force main pipe shall be asphaltic coated in accordance with AWWA C151.
 - (A) Should corrosive soils be encountered along the proposed force main alignment; the pipe shall be externally wrapped with

polyethylene encasement as detailed in the *Ductile Iron Pipe Research Association (DIPRA) Installation Guide for Ductile Iron Pipe*.

- (b) Polyvinyl chloride pipe (PVC) force mains shall adhere to AWWA C900 and shall be a minimum dimension ratio of DR-14 for line sizes four- to twelve inches (4" – 12"). Pipe shall be standard plain end and elastomeric-gasket bell end pipe. Outside pipe diameter shall conform to ductile iron pipe. Fittings shall adhere to Article 08-02-020(a) and shall be restrained through the use of mechanical joints.
- (c) Combination air release valves (CAV), designed for wastewater use, shall be quick opening/slow closing valves and shall be installed at all force main high points and other locations where air admittance/exhaustion to prevent vacuum or surge conditions are necessary based on the transient analysis of the force main pipe. CAV installations may require an offset to locate the valve outside of a paved roadway to accommodate easy access and maintenance of the valve in place. All CAV valves shall be manufactured with a test port and equipped with a ball valve for testing purposes. Reference Detail S-19 for CAV installation.
- (d) Force main termination into gravity sewer system shall be completed at a manhole. The discharge shall be designed to minimize turbulence.

ARTICLE 08-03 – ELECTRICAL, INSTRUMENTATION, AND CONTROL

Electrical and instrumentation design shall be accomplished in compliance with the National Electrical Code (NEC), National Fire Protection Association (NFPA), and National Electrical Equipment Manufacturers (NEMA) standards. Additionally, the specified pump and appurtenance manufacturers requirements shall be met for power requirements, wiring, grounding, etc.

All lift stations shall be controlled on-site through a hard-wired control interface. Remote monitoring of the station shall be provided through the City's supervisory control and data acquisition (SCADA) system. SCADA control and monitoring will be required and supplied by the developer of the station with integration into the existing system.

ARTICLE 08-04 – CONSTRUCTION REQUIREMENTS

Article 08-04-010 Trench Excavation

- (a) Pipe trenches shall be excavated along straight lines to the dimensions as required in the Contract Documents.
- (b) All trenching work shall be done in a safe manner, trenches shall be rendered safe for the workmen by complying with the applicable safety standards, and by

practicing safety measures consistent with current OSHA Trenching and Excavation Safety Standards and good construction methods.

- (c) All excavations shall be adequately barricaded and secured in accordance with the current New Mexico Department of Transportation Standard Specifications. Flashing lights and barricades shall be employed along open excavations and trenches to protect the public from potential hazards; barricades and advance warning devices shall comply with MUTCD Standards as well as any special direction required by the City.
- (d) Unless trench banks are cut back on a stable slope, the trenches shall be braced as necessary to prevent caving or sliding, to provide protection for the workmen and the pipe. All trenching shall comply with OSHA Trenching and Excavation Safety Standards.
- (e) When over-excavation occurs beyond the limits indicated by the trench details, the over-excavated area shall be refilled with suitable material at optimum moisture and compacted to ninety-five (95) percent density per ASTM D 1557.
- (f) The maximum amount of open trench permitted in any one location shall be 100-feet, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater, unless otherwise approved by the City. A trench shall be considered open until backfilled to the top of subgrade.
- (g) Excavation of pipe trenches for flexible and rigid pipe is as required in the table below. In all cases, the trench shall be wide enough to allow for the compaction equipment.

Table 10: Minimum Trench Widths

Flexible Pipe	Minimum shall be not less than 1.5 times the pipe outer diameter plus twelve inches (12")
Rigid Pipe	Minimum shall be not less than the outside pipe diameter times 0.33

- (h) When trench is to be backfilled with flowable fill, the minimum trench width may be reduced to the pipe diameter plus twelve inches (12") and enough room needed to allow for the proper placement of the flowable fill using tools to "spade" the material under the pipe haunches.
- (i) Maximum Trench Width: the maximum width of the trench shall be determined by the Contractor based on the method and means for the installation. However, trench width shall not exceed the width of a ride-along compactor plus two feet (2') when working alongside the pipe or culvert.

(j) Street Crossings

- (1) Trenches crossing streets shall be completely backfilled immediately after pipe, wire, or conduit installation and a temporary or permanent asphalt patch or flowable fill cap shall be installed as directed by the City to protect the integrity of the trenches within the roadway limits from excessive moisture. Under no circumstance shall a trench remain un-backfilled for longer than 30 calendar days.
- (2) Substantial bridging, properly anchored, capable of carrying the vehicle loading, in addition to adequate trench bracing, shall be used to bridge across trenches at street crossings where trench backfill, and temporary patches have not been completed during regular working hours as directed and approved by the City. Safe and convenient passage for pedestrians and access to all properties shall be provided.

(k) Disposal of Unsuitable Excavated Materials

- (1) Excess material and excavated material unsuitable for backfill shall be removed from the Project by the end of each working day unless otherwise approved by the City and disposed of by the Contractor in an environmentally responsible manner at no cost to the Project.
 - (2) When unsuitable material is encountered that is not shown in the Contract Documents, the City shall order the removal of the material by the Contractor and issue a field order to change the contract price due to the Contractor for removal of the materials.
- (l) Portable trench shields or boxes that provide a movable safe working area for installing pipe may be used for the installation of the pipe. After placing the pipe in the trench, backfill material shall be placed in lifts and the shield shall be lifted to allow for the backfill material to be placed for each lift, trench wall to trench wall.
- (m) Transition Installations: When differential conditions of pipe support might occur, such as transitions from manholes to trench, a transition support region shall be provided to ensure uniform pipe support and preclude the development of shear, or other concentrated loading on the pipe.

Article 08-04-020 Bedding

- (a) The bottom of the trenches shall be smooth, and hand graded uniformly throughout. If rock or other unyielding material is encountered or if the trench is over-excavated, pipe bedding material shall be added, compacted, and graded to a smooth uniform surface. The compacted bedding shall support the pipe throughout its entire length, except at bells or couplings which shall not rest on the bedding.
- (b) After the bell or coupling holes are excavated and after the pipe pieces are connected and properly aligned and graded, successive layers of select material shall be placed and compacted, until the pipe is covered, as required in the Contract Documents. The Contractor shall maintain proper alignment and grade during the bedding process. Any bent, cracked, chipped, or damaged pieces of pipe shall be removed and replaced at Contractor's expense.

Article 08-04-030 Pipe Laying

- (a) The pipe shall be laid true to the line(s) and grade(s) indicated in the Contract Documents or as established by the City. Pipe shall be laid such that pipe size markings are facing up within the trench.
- (b) The pipe shall be protected during handling against impact shocks and free fall. Do not permit hooks, chains, cables, or handling equipment to come in contact with the pre-molded or pre-formed end surfaces.
- (c) Handle the pipe having pre-molded end surfaces or pre-formed end surfaces so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material or surfaces. Do not drag the end of the pipe on the ground or allow pipes to be damaged by contact with gravel, crushed stone, or any other hard objects. No damaged or deformed pipe will be incorporated into the Project.
- (d) The interior of the pipelines shall be kept free from dirt and other foreign material as the work progresses and shall be clean upon completion of the pipe installation. Tight stoppers or bulkheads shall be securely placed in the ends of all pipelines when the work is stopped temporarily, or at the end of a workday.
- (e) Immediately prior to jointing, both pipe ends shall be thoroughly cleaned, and a lubricant shall be applied according to the manufacturer's recommendations. For push-on type joints, sufficient pressure shall be applied in making up joints to insure proper seating of the joints.

- (f) All pipe shall be laid straight between ends, fittings or bends, and on uniform grade. Excavate bell holes for each pipe joint. After the pipe is jointed in the trench, the pipeline shall form a true line and consistent grade.
- (g) The City may select to check the pipe for line and grade by any method after the pipe is laid and before backfilling begins. The City shall also have the right of checking each pipe joint with a gauge or by any means necessary in order to be assured that the gaskets are in place and properly seated. Any run of pipe that is found to be appreciably offline or grade shall be removed from the trench, the trench bedding shall be re-graded and compacted, and the pipe shall then be laid accurately online and grade. Any joint that is found to be improperly gasketed and/or seated shall be un-jointed and correctly reassembled. If any gasket is found to be damaged, the entire pipe section containing the damaged gasket shall be replaced with a new section of pipe.
- (h) Contractor shall furnish any tools, gauges, and all items required for the checking of the gaskets and joints and shall check every joint to be sure that the gaskets are seated and located in the correct place to avoid leakage at the joints.
- (i) Pipe and appurtenances shall be new and unused. The type of pipe to be installed shall be as approved by these Technical Standards. Pipe and appurtenances shall be handled to insure delivery to the trench in sound, undamaged condition. Particular care shall be taken to prevent damage to any pipe coating.
- (j) The interior of pipe shall be thoroughly cleaned of foreign material before being lowered into the trench and shall be kept clean during construction operations. When work is not in progress, the open ends of pipe shall be securely closed so that no foreign materials will enter the pipe. Any section of pipe found to be defective before or after laying shall be replaced with sound pipe or repaired in a manner satisfactory to the City without additional expense.
- (k) The Contractor shall install a plug in the new sewer at any point of connection to an existing system. The plug shall remain in place until the Project has been completed and all work approved. The Contractor shall not flush or otherwise discharge any flow into an existing system unless approved in writing by the City.
- (l) Pipe shall be laid to line and grade as shown on the plans and as staked in the field. The bedding of the trench shall be graded and prepared to provide a firm and uniform bearing throughout the entire length of the pipe barrel. Suitable excavation shall be made to receive the bell of the pipe and the joint shall not bear upon the bottom of the trench. All adjustments to the line and grade shall be made by scraping away or filling in with pipe zone material under the body of the pipe, and not by wedging or blocking. When connections are to be made to any existing

manhole, pipe, or other improvement, the actual elevation or position of which cannot be determined without excavation, the Contractor shall excavate for and expose the existing improvement before laying the connecting pipe or conduit. When existing underground improvements may reasonably be expected to conflict with the line or grade established for the new sewer line, the Contractor shall excavate as necessary to expose and locate such potentially conflicting underground improvements prior to laying the new pipe. Any adjustment in line or grade which may be necessary to accomplish the intent of the plans will be made.

- (m) Trenches shall be kept free from water during pipe installation until suitable backfill has been placed and compacted to prevent pipe flotation. Any standing water within the trench shall be evacuated and the trench bottom or bedding be restored per the standards contained herein.
- (n) Field cuts shall be completed with a hacksaw, handsaw, or a power saw with a steel blade or an abrasive disc. Field cuts shall be square to the pipe's flow area. The newly cut pipe end shall be beveled to the factory pipe chamfer. Completed field cuts shall be smooth and blunt free from shavings and rough edges.
- (o) Connections to existing manholes shall be made by core drilling through the manhole wall using concrete saw or other cutting device approved by the City. Sledgehammers are not acceptable. The Contractor shall take care to avoid unnecessary damage to the existing manhole. Manholes broken by the Contractor shall be replaced by the Contractor without additional expense to the City.
- (p) Sanitary sewer mains shall not be constructed under walkways, sidewalks, curbs and gutters, driveways, or similar concrete structures by tunneling underneath. The Contractor will cut these concrete structures by using a concrete saw. At the Contractor's option, he may remove the section of the concrete structure to the nearest full expansion joint or edge without addition expense to City.
- (q) Plastic sewer pipe shall be connected and placed in the trench in accordance with the manufacturer's recommendations.
- (r) The reference mark (a distinct circumferential line) is placed on the pipe's spigot end by the manufacturer to indicate the correct depth of spigot penetration into the pipe gasket joint. If the pipe is seated too deep or too shallow the pipe may buckle or separate due to thermal expansion/contraction. Spigot penetration shall be within one quarter (1/4) inch of the manufacturer's recommended mark.
- (s) The full length of each section of pipe shall rest solidly upon the bed, with recesses excavated to accommodate bells and joints. Any pipe that has the grade or joint disturbed after laying shall be taken up and re-laid. Pipe shall not be laid in water

or when trench or weather conditions are unsuitable for the Work except by permission of the City. Minimum depth of cover over top of pipe shall be three feet, unless otherwise approved by the City.

- (t) All nuts, and bolts utilized in underground pipe connections shall be stainless steel, high strength cast iron or high strength wrought iron. Carbon steel nuts and bolts may be used except that they shall be protected by “cocoon” type protective coating of coal-tar and felt in accordance with AWWA Standard C 203.
- (u) Where connections are made between new work and existing lines, the connections shall be made using all required fittings as recommended by pipe manufacturer and approved by the City. Couplings may be either cast iron or steel with bolts as stated above. If steel couplings are used, they will be cocoon wrapped as specified herein.
- (v) Encasement shall be performed as shown in the Contract Documents at shallow crossings or other instances in which piping may be exposed or susceptible to excessive surface loading. DIP shall be used for these crossings with push-on or M.J. type connections, blocked with curved / conforming cinder blocks underneath, installed in prepared trench of adequate width to house pipe diameter and encasement. Trench excavation shall have ninety-five (95) percent relative compaction or shall be in freshly excavated native material, and as approved by the City may suffice with adequate dimensions to omit use of formwork for encasement concrete placement. Encasement concrete shall be aggregate and Type II cement meeting or exceeding 3,000 psi compressive strength. Rebar shall be placed as shown in the Contract Documents, shall be new and unused, and tied with minimum six-inch (6”) lap distances, with minimum two inches (2”) of concrete cover on outside dimensions.
- (w) All valves shall be set true, level, vertical and plumb. All valves shall have and be supported by a concrete thrust block, have retainer rods, and shall comply with the details shown in the Contract Documents. Backfill shall be compacted to ninety-five (95) percent density under pavement, ninety (90) percent in unpaved areas, ASTM D 1557.
- (x) Cast iron valve boxes shall be set vertical and plumb centered over the operating nut. All valve boxes shall be adjusted to proper elevation, providing the minimum overlap of six inches (6”) of the two (2) pieces, and a concrete collar shall be built around the top of each valve box. The concrete collar shall be of the size, shape, and dimensions shown in the Detail Drawings. The concrete shall be 3,000 psi at twenty-eight (28) days with one (1) inch aggregate and finished with a light broom finish. All concrete shall be removed from the top of the valve box and lid while it is still wet, and they shall be left clean. Backfill shall be compacted to ninety-five (95) percent density under pavement, ninety (90) percent in unpaved areas, ASTM

D 1557. Valve stem extensions shall be required and installed on all valves for which the valve operator is more than four feet (4') below the finished surface.

- (y) Adapters and couplings shall be installed in strict compliance with the manufacturer's recommendations. Contractor shall provide, in place, all additional straps, rods, and harness required to make a secure water-tight connection.

Article 08-04-040 Utility Restraint Systems

- (a) Utility system piping thrust is to be restrained through the use of restrained joint fittings. Refer to Standard Details W-15 through W-18.
- (b) Bell joint restraints shall be utilized.
- (c) Where site conditions preclude the use of pipe restraints concrete thrust blocks may be utilized as follows. Thrust blocks shall be poured at all bends, valves, tees, reducers, and fittings, where changes in pipe diameter, alignment or grade occur, and as indicated in the Contract Documents or as required by City. Thrust blocks are only necessary where mechanical restraint joints are not being utilized. The minimum size of concrete thrust blocks shall be as shown in the Contract Documents or as directed by the City. The material of thrust blocks shall be concrete composed of concrete aggregates and shall have a compressive strength of no less than two thousand five hundred (2,500) psi in twenty-eight (28) days for standard cement Type II and shall be placed between solid, undisturbed ground and the fitting to be anchored. The area of bearing on the fitting and on the ground shall in each instance be that required by the City. Unless otherwise directed by the City the thrust blocks shall be placed so that the pipe and fitting joints will be accessible for repair. Metal harness or tie rods, of the size and type shown in the Contract Documents, shall be used. Refer to Standard Details: W-3 and W-4.

Article 08-04-050 Backfilling Trenches

- (a) Definitions
 - (1) Foundation: Over-excavation and backfill of the foundation only when the native trench bottom does not provide a firm-working platform for placement of the pipe bedding material.
 - (2) Bedding: In addition to bringing the trench bottom to required grade, the bedding levels out any irregularities and ensures uniform support along the length of the pipe.
 - (3) Haunch Zone: The backfill under the lower half of the pipe (haunches) distributes superimposed loadings.

- (4) Initial Zone: The backfill from the pipe midline to the top of the pipe zone provides the primary support against lateral pipe deformation for flexible pipe.
- (5) Final Zone: Backfill above the pipe zone to the top of the subgrade.
- (b) Materials for trench backfill may include flowable fill, Type I aggregate base course, Type II aggregate base course, and native materials. Individual pipe zone backfill requirements are presented below. The Contractor shall submit the material types to the City for approval prior to construction.

Native backfill shall only be utilized within the Final backfill zone. Native materials shall be free from sod, frozen earth, organic materials, rubbish, and debris. The material should be free of large stones (maximum clod size shall be < 3”) that may cause damage to the pipe, such as concentrated pipe loading.

Table 11: Type I Aggregate Base Course Gradation and Requirements

Sieve Size	Percentage of Dry Weight Passing Sieve
2-Inch	100
1-1/2-Inch	90-100
1-Inch	70-90
No. 4	30-65
No. 10	30-10
No. 16	15-20
No. 200	10-20
Plastic Index	12 Maximum
Liquid Limit	35 Maximum
Fractured Faces	70% Minimum
Total Available Water-Soluble Sulfates	Less than 0.3% by dry weight of soil

Table 12: Type II Aggregate Base Course Gradation and Requirements

Sieve Size	Percentage of Dry Weight Passing Sieve
1-Inch	100
3/4-Inch	85-95
No. 4	40-70
No. 10	35-45
No. 16	25-35
No. 200	6-18
Plastic Index	12 Maximum
Liquid Limit	35 Maximum
Fractured Faces	70% Minimum
Total Available Water-Soluble Sulfates	Less than 0.3% by dry weight of soil

Table 13: Native Backfill Requirements

Percentage by Weight Passing No. 200 Sieve	Plasticity Index Maximum
0-20.0	12
20.1 – 50.0	10
50.1 – 80.0	8
80.1 – 100	6
Liquid Limit	50 Maximum

- (1) Foundation: Trench foundations shall be stable prior to placing bedding material. If the City determines that unsuitable materials exist at the trench foundations, the Contractor shall remove and replace the material as directed by the City.
- (2) Pipe Bedding: The trench shall be excavated to a depth of four- to six-inches (4"-6") below the bottom of the pipe barrel and to a depth that will be sufficient to provide two- to four-inches (2"-4") of clearance under the pipe bell (where applicable).

Uniform and stable bedding shall be provided for the pipe and any protruding features of its joints and/or fittings. The middle of the bedding equal to one-third ($1/3$) the pipe outside diameter may be loosely placed to allow for the pipe bell and other protruding features. Alternatively, the compacted bedding material may be excavated slightly to allow for continuous lines and grades of the pipe structure.

Pipe bedding shall consist of Type II aggregate base course or flowable fill. Bedding shall be backfilled to the required grade of the bottom of the pipe. The compaction shall provide a density, at minimum, equal to 95 percent of the maximum dry density in accordance with ASTM D 1557 with the exception of the middle-uncompacted area.

- (3) Haunch Zone Backfill: After the pipe or conduit is laid, the haunch areas shall be backfilled with Type II aggregate base course or flowable fill.

Compaction of the haunching material can be best accomplished by hand with tampers or suitable power compactors for maximum compacted lift thickness of six inches (6"). The Contractor shall take care to not disturb the pipe from its line and grade while compacting the backfill. Material suitably distant from the pipe shall be compacted to 95 percent of the maximum dry density in accordance with ASTM D 1557.

While compacting the embedment near the pipe with impact-type tampers, caution shall be taken to not allow direct contact of the equipment with the pipe.

- (4) **Initial Backfill Zone:** After the pipe or conduit is laid, the initial backfill area shall be backfilled with Type II aggregate base course or flowable fill. Avoid usage of impact tampers directly above the pipe until the full loose layer backfill depth above the pipe is obtained.

Table 14: Initial Backfill Zone Material Depths

Pipe or Conduit	Initial Zone
2-Inch or less diameter	6-Inches above the top of pipe
Greater than 2-Inch diameter	12-Inches above the top of pipe

- (5) **Final Backfill Zone:** The remaining backfill, to the top of subgrade, shall consist of Type I or Type II aggregate basecourse, native material, or flowable fill. The material shall be compacted to a minimum of 95 percent of the maximum dry density in accordance with ASTM D 1557.
- A. If flowable fill is used, flowable fill shall be placed from the top of the initial backfill zone to the bottom of the flexible pavement (replaces aggregate road base in the pavement section over the trench).
- B. Flowable fill cap may be required in the upper portion of the Final Backfill Zone for all non-residential roadways with a minimum thickness of twelve inches (12”) for minor collectors and eighteen inches (18”) for all major collectors and arterials.

(c) **Compaction**

- (1) Compaction shall be performed by mechanical means except in the haunch zone where compaction may be required by hand tamping. Mechanically compacted backfill shall be placed in layers of thickness compatible with the characteristics of the backfill and the type of equipment being used and shall have a maximum lift thickness as shown in the table below. The lifts shall be placed on both sides of the pipe at the same time to reduce pipe movement.

Table 15: Backfill Lift Thickness

Location	Maximum Compacted Lift Thickness (inches)	Maximum Loose Lift Thickness (inches)
Bedding, Haunch, and Initial Zones	6	8
Final Zone	8	12

- (2) Each layer shall be evenly spread, moistened, and tamped or rolled until the specified relative compaction has been attained.
 - (3) Compaction minimum shall be 95 percent of the maximum dry density in accordance with ASTM D 1557 for trenches within the roadway prism. Compaction requirements for the final zone of trenches outside the roadway may be reduced to 90 percent of maximum dry density in accordance with ASTM D 1557.
 - (4) Density testing shall be completed every 200-feet on mains or any part thereof per day.
 - (5) Density testing per depth: Less than or equal to four-feet (4') shall require one at depth and one at subgrade per horizontal length above. Greater than four-feet (4') depths shall require one per six-inch (6") or larger pipe, then one every three (3) vertical feet, and one at subgrade per horizontal length above.
 - (6) Where test results reveal non-compliance with the requirements of the Contract, the Contractor shall bear the costs of subsequent rework and retesting until the required specification compliance is obtained to the satisfaction of the City.
- (d) Minimum Pipe Spacing: If the pipe space between parallel pipes in a single trench is not conducive to mechanical backfill, then flowable fill shall be used.

Article 08-04-060 Pavement Patching

After all trenching and backfilling is complete, the pavement shall be marked and sawcut to form a smooth, uniform edge. The resulting cut face shall be coated with tack coat and new plant mix bituminous pavement shall be placed and densified as specified. The resulting pavement patch shall have a smooth riding surface in any direction. The patch section shall at minimum match the existing section.

Article 08-04-070 Cased Sewer Lines

- (a) Where encasements or carrier pipe is required to be installed under railroad embankments or under highways, streets, or other facilities by jacking or boring methods, construction shall be made in a manner that will not interfere with the operation of the railroad, highway, or other facility, and will not weaken or damage any embankment or structure. During construction operations, barricades and lights to safeguard traffic and pedestrians shall be furnished and maintained, as directed by the City.
- (b) Entry and exit pits shall be excavated for the purpose of conducting the boring/jacking operations and for placing end joints of the pipe. This excavation shall not be carried to a greater depth than is required for placing of the guide and boring/jacking machine. All open trenches and pits shall be braced and shored in such a manner as will adequately prevent caving or sliding of the walls into the open trench or pit.
- (c) Minimum casing specifications can be found on Standard Drawing S-16. Facility operator beneath which the casing is being installed to determine if more stringent requirements shall govern the installation.
- (d) Lateral or vertical variation in the final position of the pipe from the line and grade established by the Contract Documents will be permitted only to the extent of one-sixteenth inch (1/16") per ten feet (10'), however, final approval will be required by the City.
- (e) Entry and exit pits shall be backfilled, in compliance with the Contract Documents, immediately upon installation of the carrier pipe and approval by the City.

Article 08-04-080 Testing

- (a) The Contractor shall be required to test all piping and other lines and appurtenances in the presence of the City. Test reports shall be required for each test and submitted to the City. Testing of lines shall be done without being connected to existing lines. If such connections are allowed it is with the understanding that the Contractor assumes any and all responsibility in case of damage, failure and/or contamination to the existing system. The new water pipe will be tested before the backfilling is done. After the pipe is laid, earth cover shall be placed over the middle of the pipe joints, leaving the corp. stops, valves, service taps and laterals uncovered. The pipe will be filled with water, and the pressure in the pipeline shall be raised by means of a motor-driven water pump to a hydrostatic pressure of one hundred fifty (150) psi or one and one-half (1.5) times the normal working pressure, whichever is greater, at the lower end of the pipe section. Applicable AWWA C-600 standards

and procedures shall be adhered to for determination of losses on pipes up to thirty-inches (30”) in diameter. If any leaks appear in the pipe, they shall be repaired to the satisfaction of the City, and the test shall be performed until the pipe holds the prescribed pressure. As an alternative, the Contract may opt to test the pipeline in sections between mainline valves or as approved by the City.

- (b) All testing shall be conducted in accordance with AWWA Standard C600 for ductile iron mains and AWWA Standard C605 for PVC mains and those portions of the above standard related to hydrostatic tests shall apply to any type of water main construction. Test pressure shall be one hundred fifty (150) psi or one and one-half (1.5) times the normal working pressure, whichever is greater. Waterline shall be placed in its final position for hydrostatic testing. If the waterline is moved, all testing shall be performed again.
- (c) All taps, gauges and necessary equipment shall be provided by the Contractor; however, the City may utilize gauges provided by the City at their discretion.
- (d) Leakage Defined: Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within five (5) psi of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water. If the pressure drops more than five (5) pounds in thirty (30) minutes, the pipe has failed to pass the test. If the pressure drop is less than five (5) pounds in thirty (30) minutes, water shall be added to the pipe section to maintain the one hundred fifty (150) psi test pressure and the volume of water added shall be duly recorded. This procedure shall be repeated at each thirty (30) minute intervals for the test period. The total volume of water added to the pipe section to maintain the one hundred fifty (150) psi test pressure shall represent the total leakage during the test.
- (e) Allowable leakage: No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{\overline{DIP}}{133,200} \quad \text{or} \quad L = \frac{\overline{PVC}}{7,400}$$

where L is the allowable leakage, in gallons per hour, S is the length of pipe tested, in feet; N is the number of joints in the length of pipeline tested, D is the nominal diameter of the pipe, in inches, and P is the average test pressure during the leakage test, in pounds per square inch gauge.

The tables below present the allowable leakage per various pipe diameters per 1,000 feet of pipeline.

Table 16: Allowable Leakage (GPH) per 1,000 Feet of Pipeline (DIP)

Avg. Test Pressure	6	8	10	12	14	16	18	24	30
PSI	In.	In.	In.	In.	In.	In.	In.	In.	In.
350	0.84	1.12	1.40	1.69	1.97	2.25	2.53	3.37	4.21
300	0.78	1.04	1.30	1.56	1.82	2.08	2.34	3.12	3.90
275	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.99	3.73
250	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.85	3.56
225	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.70	3.38
200	0.64	0.85	1.06	1.27	1.49	1.70	1.91	2.55	3.19
175	0.60	0.79	0.99	1.19	1.39	1.59	1.79	2.38	2.98
150	0.55	0.74	0.92	1.10	1.29	1.47	1.66	2.21	2.76

Table 17: Allowable Leakage (GPH) per 1,000 Feet of Pipeline (PVC)

Avg. Test Pressure	6	8	10	12	14	16	18	24	30
PSI	In.	In.	In.	In.	In.	In.	In.	In.	In.
300	0.70	0.94	1.17	1.40	1.64	1.87	2.11	2.81	3.51
275	0.67	0.90	1.12	1.34	1.57	1.79	2.02	2.69	3.36
250	0.64	0.85	1.07	1.28	1.50	1.71	1.92	2.56	3.21
225	0.61	0.81	1.01	1.22	1.42	1.62	1.82	2.43	3.04
200	0.57	0.76	0.96	1.15	1.34	1.53	1.72	2.29	2.87
175	0.54	0.72	0.89	1.07	1.25	1.43	1.61	2.15	2.68
150	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.99	2.48

- (f) When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gal/h/in. (0.0012 L/h/mm) of nominal valve size shall be allowed.
- (g) Acceptance of Installations: Acceptance shall be determined on the basis of allowable leakage. If any test of pipe laid disclosed leakage greater than specified the Contractor shall, at the Contractor's expense, locate and make repairs as necessary until the leakage is within the specified allowance.
- (h) All visible leaks are to be repaired regardless of the amount of leakage.
- (i) The Contractor shall be notified of any leaks that may occur during the one (1) year warranty period and shall make immediate arrangements after he is notified to return to the job site and repair any leaks that may develop in the pipeline.

Article 08-04-090 Detectable (Underground) Warning Tape

- (a) Detectable warning tape shall be 6" wide, 5 mil overall thickness, with a .35 mil solid foil coil. APWA color coded with imprint of underground utility installed.
- (b) Detectable warning tape shall be laid in continuous manner and be placed above all sewer mains, sewer force mains, sewer service lines, and other sewer appurtenances. The detectable warning tape shall be placed eighteen inches (18") below the final surface elevation.

Article 08-04-100 Trace Wire

- (a) All trace wire shall have HDPE insulation intended for direct bury service. HDPE insulation shall be color coated per APWA Standard for respective utility being installed.
- (b) Trace wire shall be taped to the top of all sewer mains, sewer force mains, and sewer service lines at maximum 10-foot interval. Trace wire along sanitary sewer service lines entering private property shall be terminated above ground at the cleanout adjacent to the developed structure.
- (c) Trace wire shall be as following based on installation method:
 - (1) Open Trench Installation: #12 AWG copper clad steel, high strength with minimum 450-pound break load and minimum 30 mil HDPE insulation thickness. Copperhead Industries High Strength – 1230 CCS Trace Wire or City approved equal.
 - (2) Directional Drilling/Boring: #12 AWG copper clad steel, high strength with minimum 1,150-pound break load and minimum 30 mil HDPE insulation thickness. Copperhead Industries Extra-High Strength – 1245 CCS Trace Wire or City approved equal.
 - (3) Pipe Bursting/Slip Lining: 7 x 7 stranded copper clad steel, extreme strength with minimum 4,700-pound break load and minimum 50 mil HDPE insulation thickness. Copperhead Industries SoloShot Xtreme – PBX-50 CCS Trace Wire or Engineer Approved Equal.
 - (4) When a new trace wire is to be tied to an existing trace wire the connection shall be made with an approved splice connector and shall be properly grounded at the splice connection.
- (d) Connectors

- (1) All main line trace wires shall be interconnected at intersections (tees and crosses). Connectors shall be lockable and manufactured specifically for use in underground trace wire installation. Connectors shall be dielectric silicon filled to seal out moisture and corrosion and shall be installed in a manner as to prevent any uninsulated wire exposure.
 - (2) Tee Connectors (service lines, main line tees, and fire hydrants) shall include a 3-way lockable connector main line to lateral lug connector. Copperhead Industries Mainline-to-Service Connector Part Number 3WB-01 or City approved equal.
 - (3) Cross Connectors (main line crosses) shall include two (2) 3-way lockable main line to lateral lug connectors. Copperhead Industries Mainline-to-Service Connector Part Number 3WB-01 or City approved equal.
 - (4) Main line trace wire splices shall be completed utilizing twist-lock connectors. Copperhead Industries Locking Connector Part Number LSC1230C or City approved equal.
 - (5) Do not cut and splice main line trace wire.
 - (6) Non-locking friction fit, twist on, or taped connectors shall not be used.
- (e) Termination/Access Boxes
- (1) All trace wire termination points must utilize an approved trace wire access box, specifically manufactured for this purpose. Except as noted previously for termination on the upstream end of sewer service lines.
 - (2) All access boxes shall be identified with “sewer” or “water” cast into the cap and be APWA color coded according to the utility.
 - (3) A minimum of two-feet (2’) of slack is required in all trace wire boxes upon installation at final grade.
 - (4) All trace wire access boxes must include a manually interruptible conductive/connective link between the terminals for the trace wire connection and the terminal for the ground anode wire connection.
 - (5) Ground anode wire shall be connected to the identified terminal on all access boxes.

- (6) Manholes must terminate at an in-ground trace wire access box positioned within the manhole concrete collar. Copperhead Industries SnakePit Roadway with Two-Terminal Switchable Lid Access Point Part Number RB14*2T-SW or City approved equal.
- (f) Grounding
 - (1) Trace wire must be properly grounded at all dead ends and stubouts.
 - (2) Grounding of trace wire shall be accomplished through the use of a drive-in magnesium grounding anode rod with a minimum of 20-feet of #12 AWG red HDPE insulated copper clad steel wire connected to the anode (minimum of 1.5-pound) specifically manufactured for the intended purposed. The ground anode shall be landed at the same elevation as the utility. Ground anode shall be Copperhead Industries Ground Rod with Twist-On Connector Part Number ANO-12 or City approved equal.
 - (3) When grounding the trace wire at dead ends or stubouts, the grounding anode shall be installed perpendicular to the trace wire at a maximum possible distance.
 - (4) When grounding the trace wire in long continuous runs, the grounding anode shall be installed directly beneath and in-line with trace wire. The grounding anode wire shall be trimmed to an appropriate length before connecting to trace wire with a mainline to lateral lug connector.
- (g) Testing
 - (1) All new trace wire installations shall be located using typical low frequency line trace equipment. The City shall conduct a test trace witnessed by the Contractor prior to final acceptance. The test trace shall be conducted using City equipment prior to final surface (asphalt/concrete) placement.
 - (2) Continuity testing in lieu of actual line trace will not be accepted.

ARTICLE 08-05 – COORDINATION

Article 08-05-010 Construction Coordination, Survey, & Acceptance

- (a) The Contractor shall coordinate the Work with the City before commencing work. The City shall inspect and approve all work prior to backfilling. Photos will not be accepted in lieu of a physical inspection.

- (b) The Contractor shall notify the City in writing when each utility installation is complete in place per plan and ready for inspection. No utility backfill shall be placed until inspection has been satisfied by the City.
- (c) Acceptance Submittal – All test reports (utility, bacteriological, concrete, compaction, etc.), signed inspection forms, field marked construction drawings reflecting as-built conditions, and delivery of post construction survey as defined below.
- (d) Post Construction Survey – to be completed by a professional surveyor licensed in the State of New Mexico. The survey shall include key system components for incorporation into the City’s geographic information system (GIS). All data shall be created in real world coordinate system based on the following projection: horizontal control in NAD83, vertical control in NAVD88, and based on New Mexico State Plan Coordinates System (Grid), Central Zone, US Foot. The survey shall be tied to at least two (2) City control points as included at the end of Chapter 05. The Post Construction Survey shall be completed in a City approved AutoCAD version (.dwg format) provided to the City on a mass storage drive (compact disc or usb storage device) or via secure downloadable link.

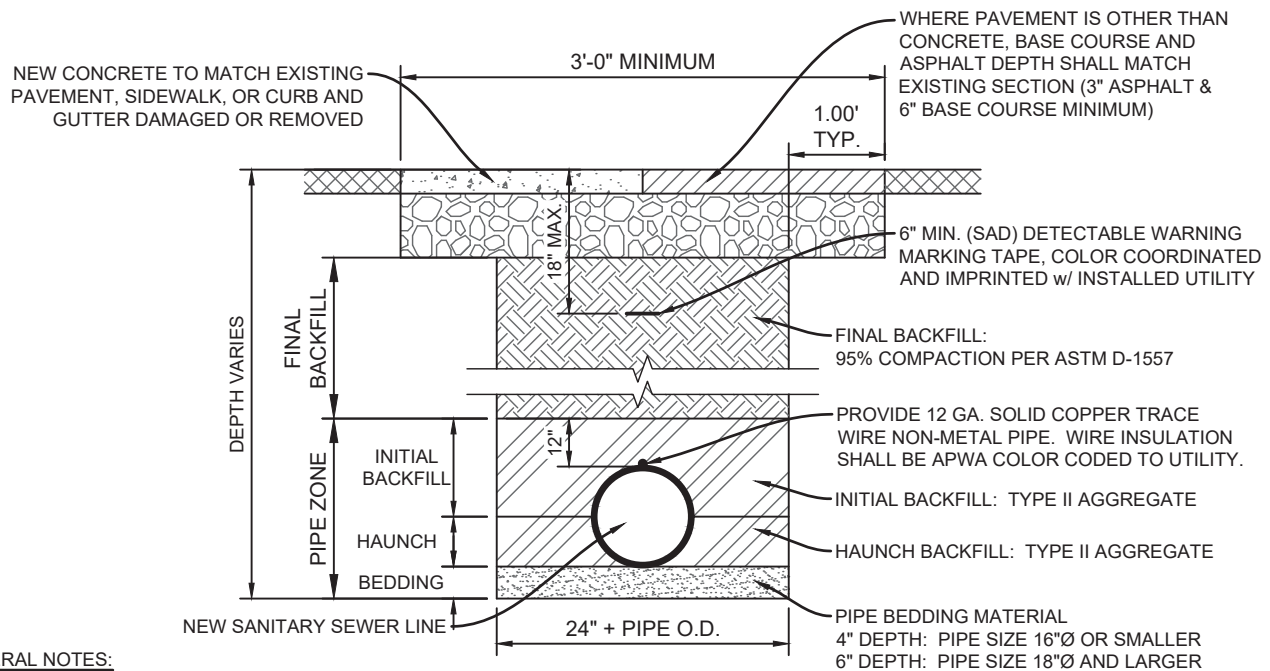
The Post Construction Survey provider shall include a table identifying the layering convention used to depict system components (i.e. Layer C-UTIL-WATR-12in represents a twelve (12”) diameter C-900 PVC Water Line, etc.). This will allow the City personnel to isolate and import portions of the drawing and translate the information directly into usable data in their GIS. The user at their option can base their layering convention on the National Cad Standard (NCS) for ease of use. The City will not accept CAD files containing information drawn in paperspace.

The post construction survey shall be in conjunction with the Record Drawings noting work per plan or identifying different field installation conditions.

- (1) Drainage Systems Components: drainage channel control features and flowline elevations, drainage channel structure information (culvert upstream/downstream flowline elevations), manholes, inlets, pipe outfall(s), pond top elevation, and pond bottom elevation.
- (2) Sanitary Sewer System Components: standard manholes, control manholes, drop manholes, cleanouts at right-of-way or property lines, casing installations, and sewer service taps.
- (3) Lift Station Components: wet wells, dry wells, vaults, cleanouts, air valves, plug valves, flow meter, bends, and manholes.

- (4) Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, fire hydrants, water meters, service line taps, sampling stations, and pressure reducing stations.
- (5) Reclaimed Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, hydrants, meters, service line taps, or pressure reducing stations.
- (e) Substantial Completion – the Acceptance Submittal and Post Construction Survey shall be provided to the City, reviewed, and accepted by the City prior to issuance of Substantial Completion and subsequent commencement of the warranty period.

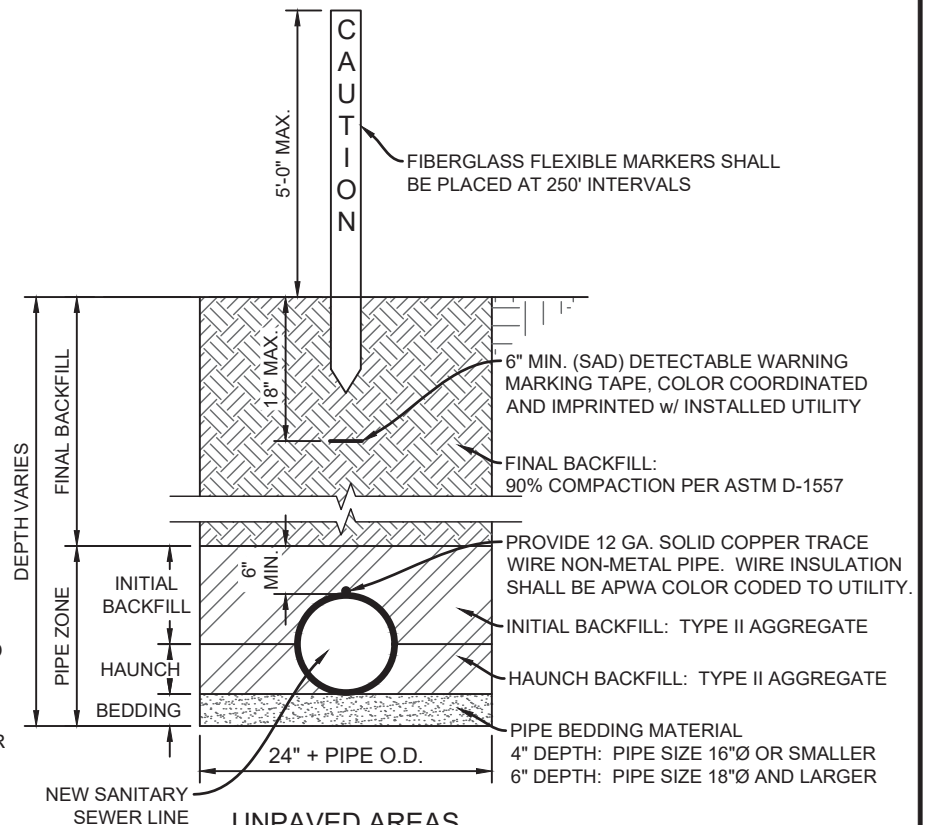
END OF ARTICLE CHAPTER 08



PAVED AREAS

GENERAL NOTES:

1. TRENCH WIDTHS AND CROSS SECTIONS SHALL BE IN COMPLIANCE WITH APPLICABLE SAFETY STANDARDS AND REGULATIONS.
2. TESTING REQUIREMENTS INCLUDE VISUAL TESTING OF ALL MAIN LINES LAID AT OR FLATTER THAN MINIMUM SLOPES.
3. MECHANICAL TAMPERS SHALL NOT BE USED IN THE INITIAL BACKFILL SECTION FOR FLEXIBLE PIPE.
4. HAND PREPARED PIPE BED, PROVIDE A SMOOTH UNIFORM SURFACE, EXCAVATE FOR PIPE BELL.
5. TRACE WIRE REQUIRED TO BE PLACED ABOVE ALL FORCE MAINS.
6. TRACE WIRE SHALL BE TAPED TO MAIN AT 10-FEET ON CENTER.
7. TRACE WIRE TO BE ACCESSIBLE, WITHIN VALVE BOX, SERVICE POINT, OR WITHIN AN INSTALLED TWO POINT TEST BOX, AT 500-FEET ON CENTER MAXIMUM.
8. NATIVE SOIL MAY BE USED AS FINAL BACKFILL IF FREE OF ORGANIC MATTER/DEBRIS, MAXIMUM PARTICLE SIZE OF TWO-INCH (2"), LIQUID LIMIT OF <35, AND PLASTICITY INDEX OF <15. COMPACTION REQUIREMENTS FOR NATIVE MATERIAL SHALL REMAIN THE SAME AS IMPORT MATERIALS AND PLACEMENT SHALL OCCUR WITHIN $\pm 2\%$ OF OPTIMUM MOISTURE CONTEXT.



UNPAVED AREAS

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

SANITARY SEWER TRENCH DETAIL

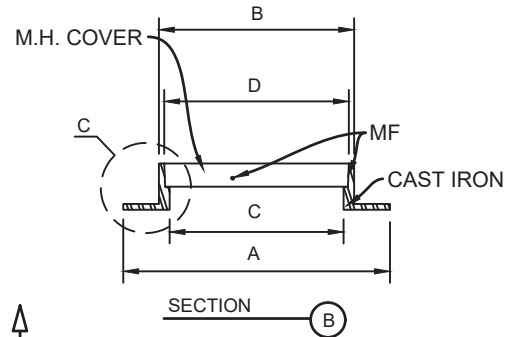
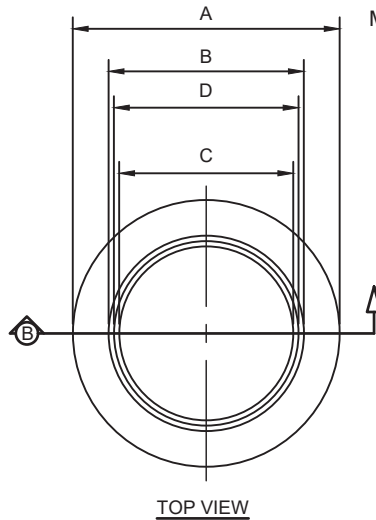
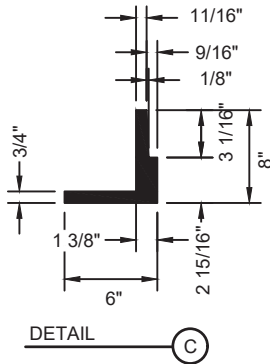
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:

S-1



NOTE:

1. MATCHING SURFACES MARKED "MF" TO BE MACHINE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND FREE OF AIR VOIDS.

MANHOLE RING	48" MANHOLE	72" MANHOLE
WEIGHT	155 LBS.	225 LBS.
A	2'-10 1/2"	3'-6"
B	2'-1 1/4"	2'-8 3/4"
C	1'-10 1/2"	2'-6"
D	1'-11 7/8"	2'-7 3/8"

TYPICAL MANHOLE RING DETAIL

GENERAL NOTES:

1. MATCHING SURFACES MARKED "MF" TO BE MACHINE FINISHED AND BE FREE OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND FREE OF AIR VOIDS.
3. MANHOLE RING AND LID SHALL BE DESIGNED FOR H-20 WHEEL LOADING.
4. MINIMUM TOTAL WEIGHT (RING AND LID) SHALL BE 300 LBS.
5. TOP OF LID MAY VARY FROM DETAIL SHOWN. LID SHALL BE MARKED FOR APPROPRIATE UTILITY.

SCALE: NOT TO SCALE

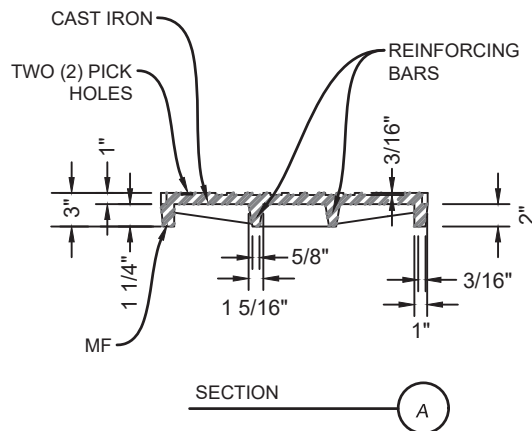
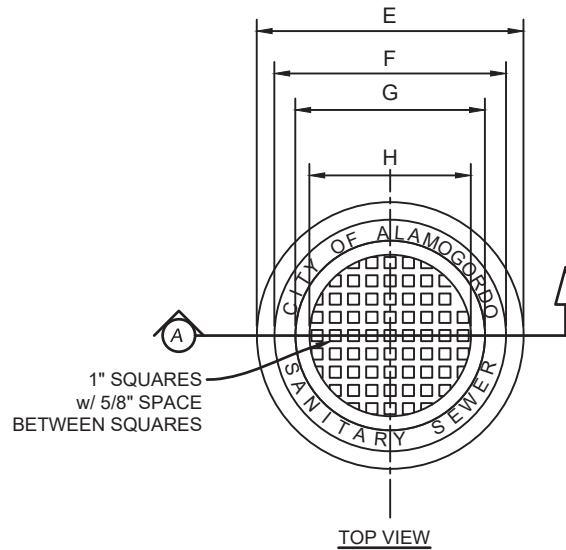


**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

MANHOLE RING DETAIL

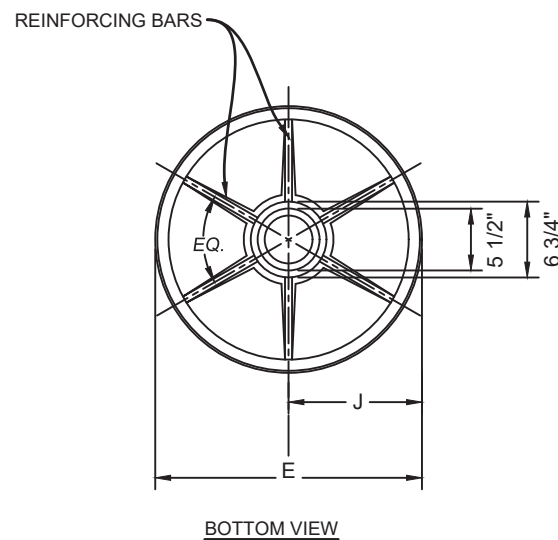
ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	S-2

MANHOLE RING	48" MANHOLE	72" MANHOLE
WEIGHT	175 LBS.	310 LBS.
E	23 3/4"	31 1/4"
F	20 5/8"	28 1/8"
G	16 7/8"	24 3/8"
H	14 3/8"	21 7/8"
J	11 7/8"	15 5/8"



NOTE:

1. MATCHING SURFACES MARKED "MF" TO BE MACHINE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND FREE OF AIR VOIDS.



TYPICAL MANHOLE LID DETAIL

GENERAL NOTES:

1. MATCHING SURFACES MARKED "MF" TO BE MACHINE FINISHED AND BE FREE OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND FREE OF AIR VOIDS.
3. MANHOLE RING AND LID SHALL BE DESIGNED FOR H-20 WHEEL LOADING.
4. MINIMUM TOTAL WEIGHT (RING AND LID) SHALL BE 300 LBS.
5. TOP OF LID MAY VARY FROM DETAIL SHOWN. LID SHALL BE MARKED FOR APPROPRIATE UTILITY.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

MANHOLE COVER DETAIL

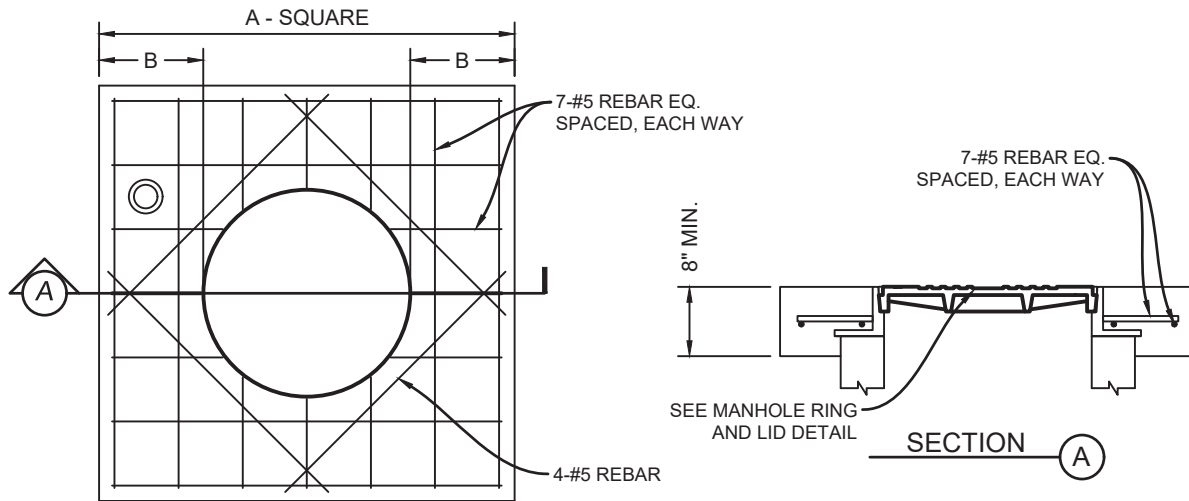
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RESOLUTION NO:
2022-28

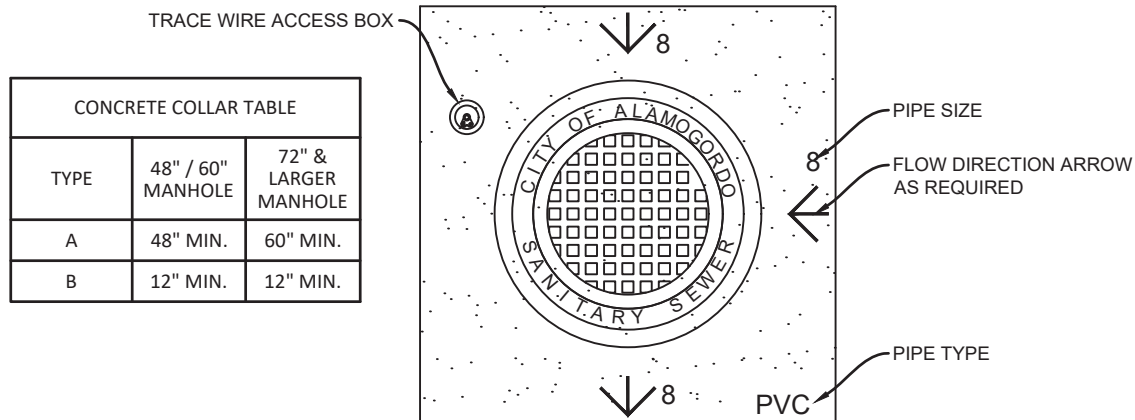
REVISION DATE:

SHEET NO:

S-3



MANHOLE CONCRETE COLLAR DETAIL



MANHOLE COLLAR MARKING DETAIL

GENERAL NOTES:

1. SIDES OF CONCRETE COLLAR TOP SHALL BE PARALLEL AND PERPENDICULAR TO THE NORMAL STREET TRAFFIC FLOW.
2. USE 3,000 P.S.I. CONCRETE FOR CONCRETE COLLAR.
3. SCRIBE CONCRETE WITH LINE DIRECTIONAL ARROWS, PIPE SIZE AND PIPE TYPE.
4. TEXT SIZE SHALL BE 4-INCHES TALL AND SCORED 3/8" DEEP IN A NEAT AND CONSISTENT MANNER, TYPICAL.

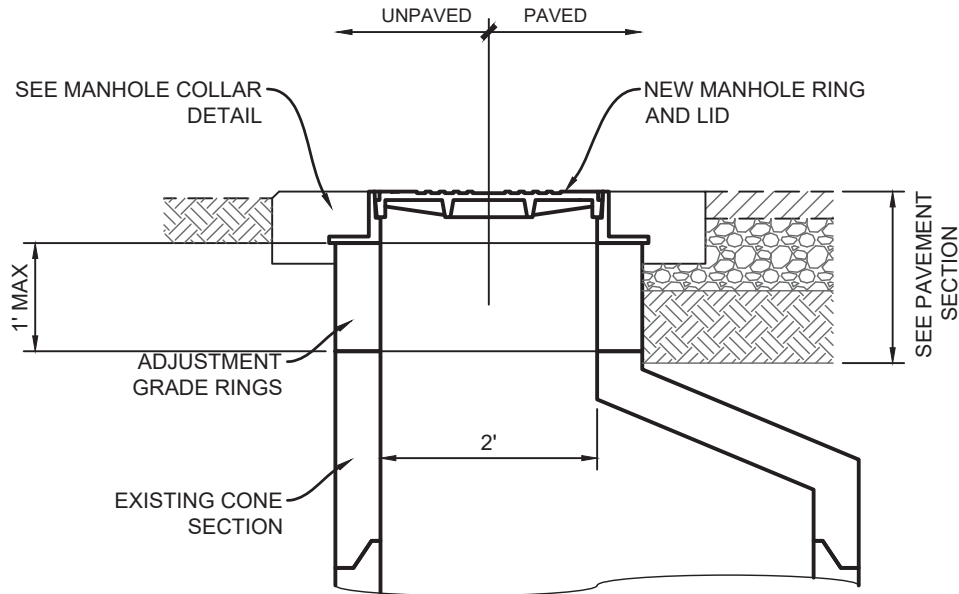
SCALE: NOT TO SCALE



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

MANHOLE COLLAR DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	S-4



MANHOLE RING AND LID ADJUSTMENT DETAIL

GENERAL NOTES:

1. SIDES OF CONCRETE COLLAR TOP SHALL BE PARALLEL AND PERPENDICULAR TO THE NORMAL STREET TRAFFIC FLOW.
2. USE 3,000 P.S.I. CONCRETE FOR CONCRETE COLLARS.
3. SCRIBE CONCRETE WITH LINE DIRECTIONAL ARROWS, PIPE SIZE AND PIPE TYPE.
4. TEXT SIZE SHALL BE 4-INCHES TALL AND SCORED 3/8" DEEP IN A NEAT AND CONSISTENT MANNER, TYPICAL.

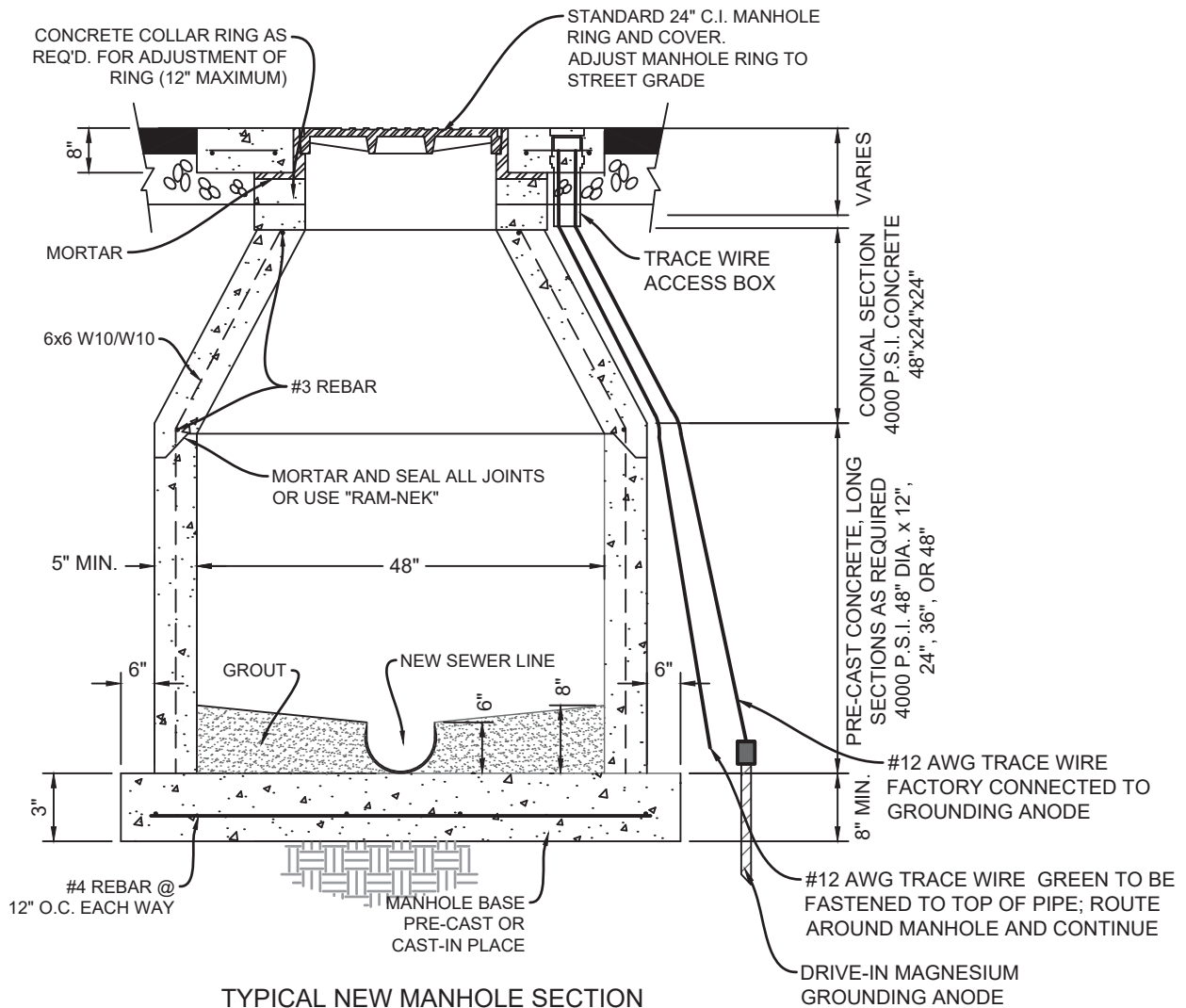
SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

MANHOLE RING AND LID ADJUSTMENT DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
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SHEET NO:	S-5



GENERAL NOTES:

1. KNOCK OUT AND PRESS-BOOT CONNECTOR AS REQUIRED. PRECAST AS PART OF MANHOLE SECTION.
2. SEE PLAN AND PROFILE FOR INVERT ELEVATIONS.
3. THE ENTIRETY OF MANHOLES EXPOSED SURFACE SHALL BE COATED, PRIOR TO PLACEMENT INTO SERVICE, TO AIDE IN CORROSION AND IMPACT RESISTANCE. MANHOLE SHALL BE COATED WITH RAVEN 175 (PRIME COAT) AND RAVEN 405 (2ND COAT) TO 100 MIL TOTAL DRY THICKNESS; ALTERNATE COATING SYSTEMS SHALL BE PRE-APPROVED BY THE CITY.

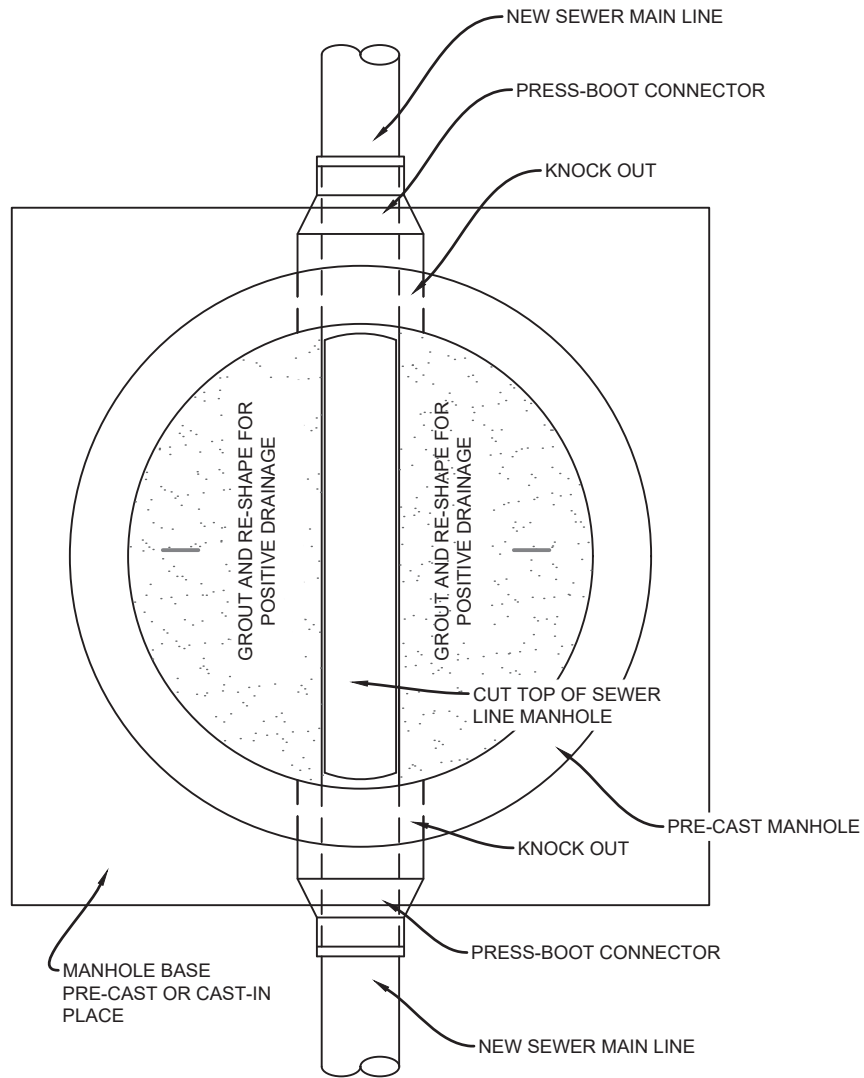
SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

PRECAST CONCRETE MANHOLE DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	S-6



NEW MANHOLE SEWER MAIN CONNECTION

GENERAL NOTES:

1. AFTER MANHOLE HAS BEEN SET AND THE CONNECTIONS MADE CONTRACTOR SHALL CUT TOP OF SEWER LINE IN MANHOLE.

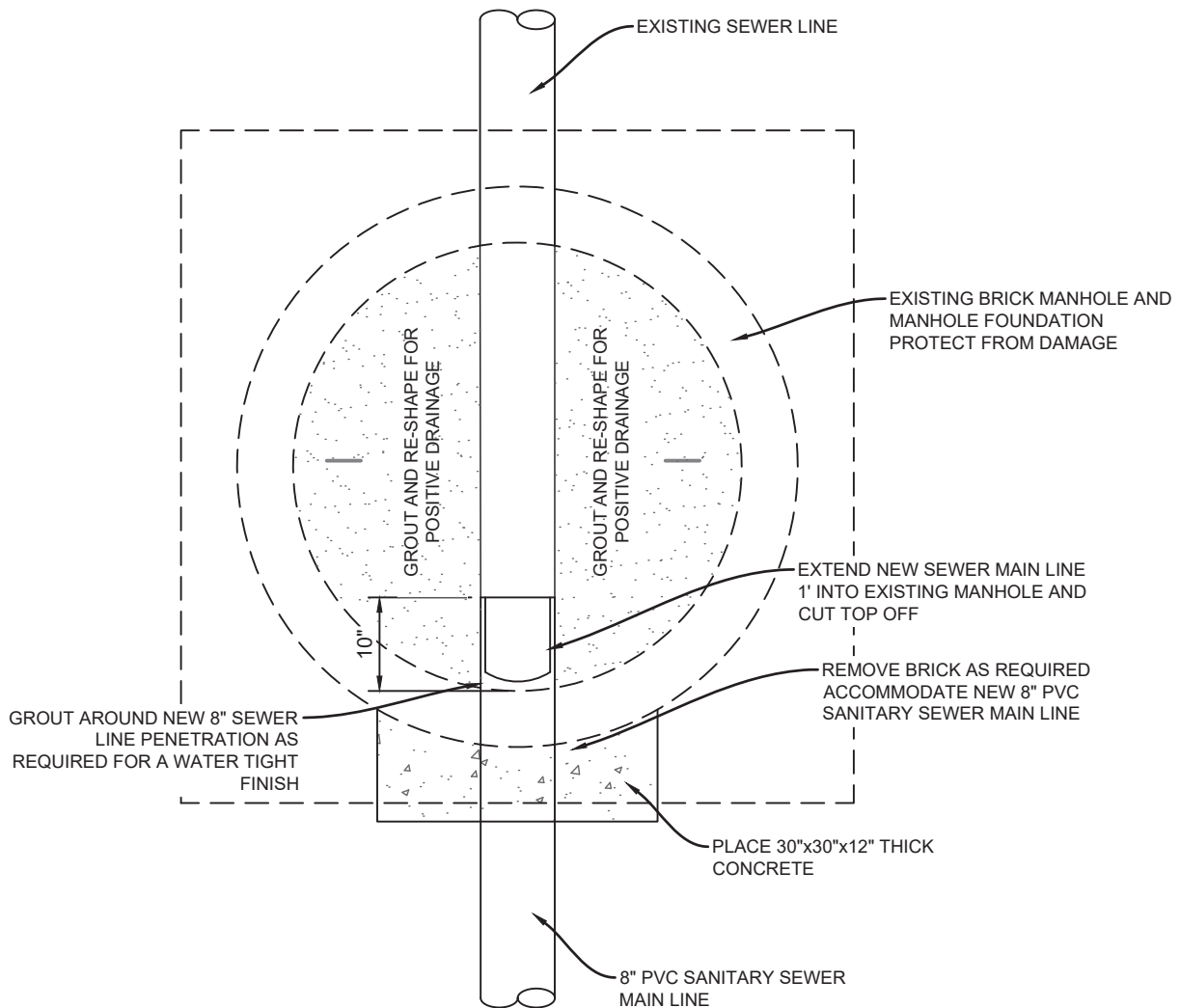
SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

NEW MANHOLE SEWER CONNECTION DETAIL

ISSUE DATE:	JUNE 14, 2022
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SHEET NO:	S-7



EXISTING MANHOLE SEWER MAIN CONNECTION

GENERAL NOTES:

1. AFTER MANHOLE HAS BEEN SET AND THE CONNECTIONS MADE CONTRACTOR SHALL CUT TOP OF SEWER LINE IN MANHOLE.
2. PER CITY ORDINANCE 28-02-080.(a) PUBLIC BUILDINGS-CONNECTIONS: NO PUBLIC SERVICE BUILDING, HOTEL, SCHOOL, PUBLIC SCHOOL, LAUNDRY OR OTHER KIND OF PUBLIC SERVICE ESTABLISHMENT SHALL BE PERMITTED TO CONNECT WITH THE PUBLIC SEWERS EXCEPT AT A MANHOLE.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

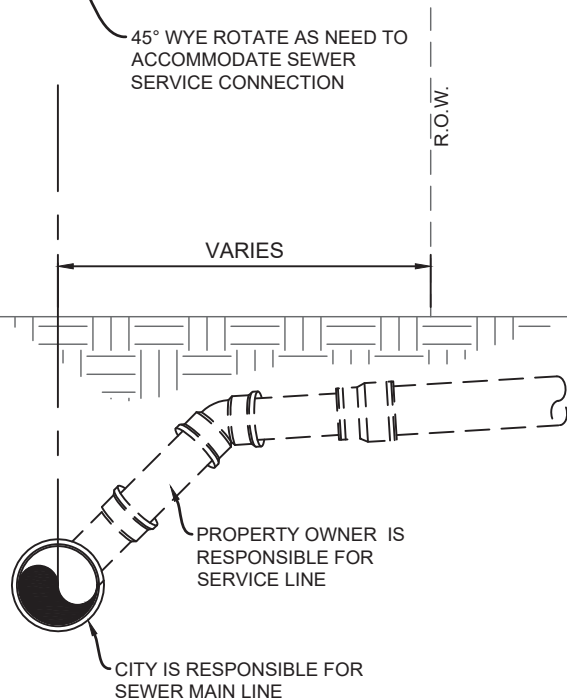
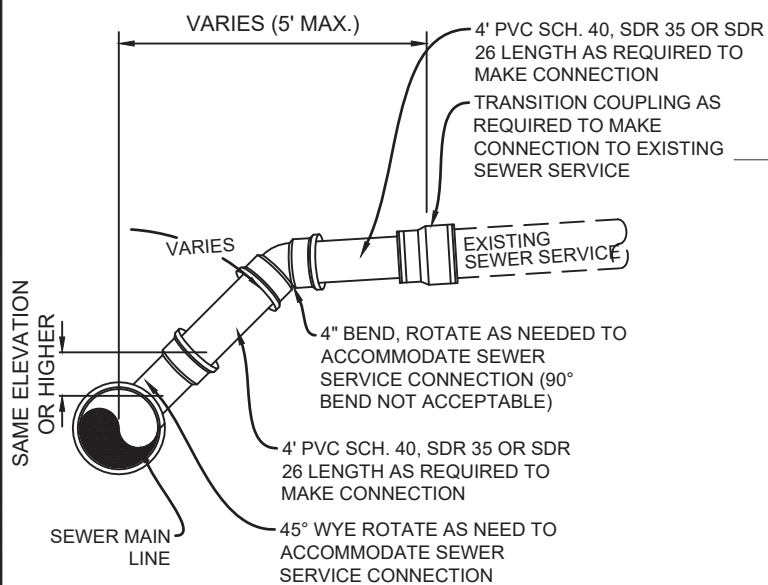
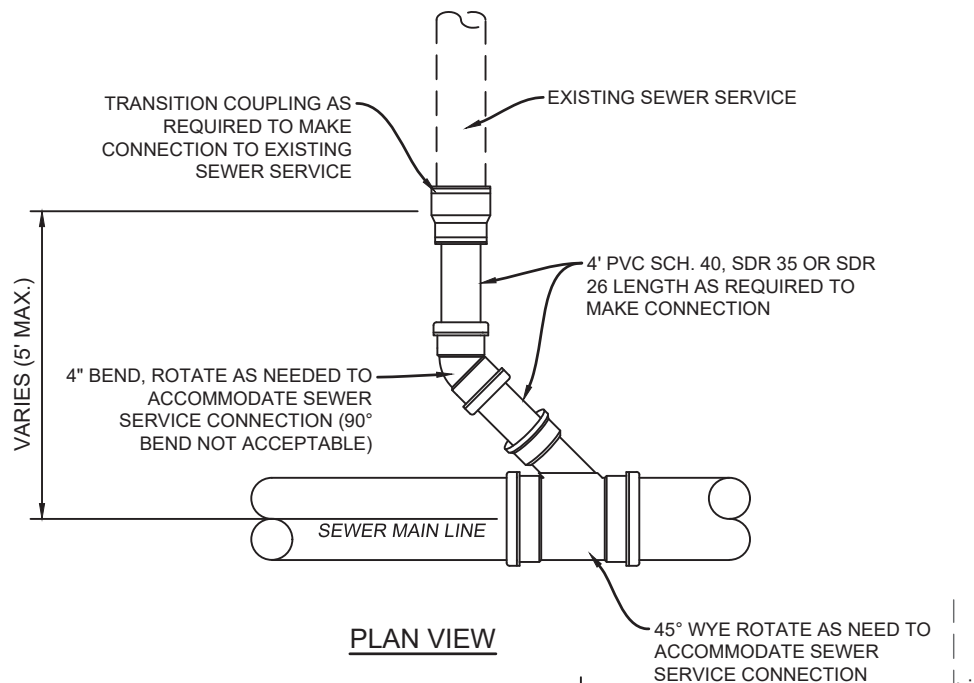
EXISTING MANHOLE SEWER CONNECTION DETAIL

ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:
S-8



CROSS SECTION

SERVICE RESPONSIBILITY

GENERAL NOTES:

1. ALL SEWER SERVICE LINE CONNECTIONS SHALL BE DRIP TIGHT.
2. WHERE SEWER SERVICE LINE(S) CROSSES CURB & GUTTER (PROPOSED OR EXISTING), A 2" HIGH STAMPED "S" SHALL BE STAMPED OR INSCRIBED INTO THE TOP OF CURB.

SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

SEWER SERVICE LINE DETAIL

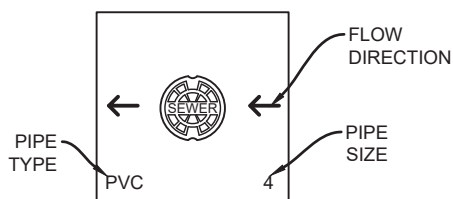
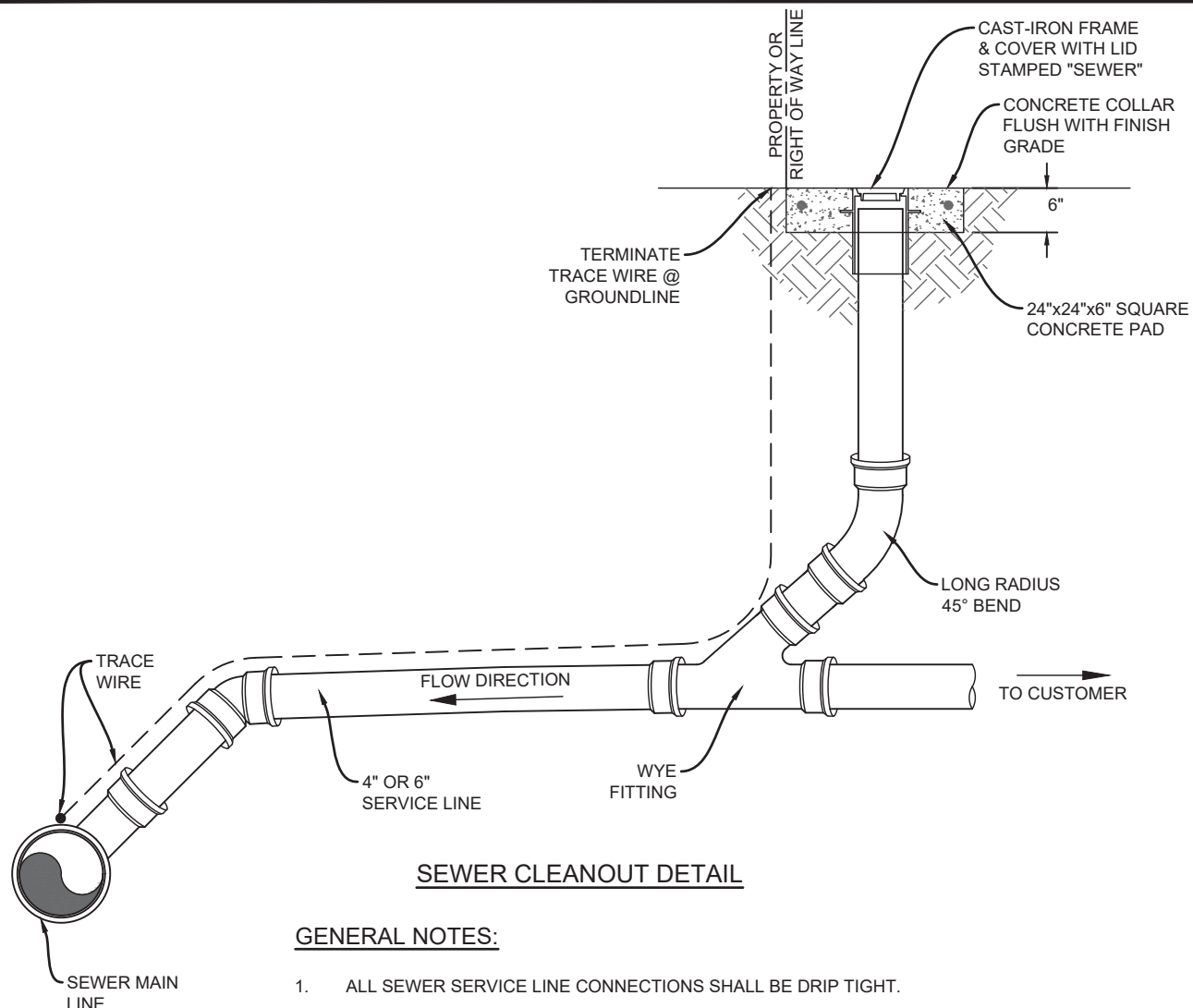
ISSUE DATE:
JUNE 14, 2022

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2022-28

REVISION DATE:

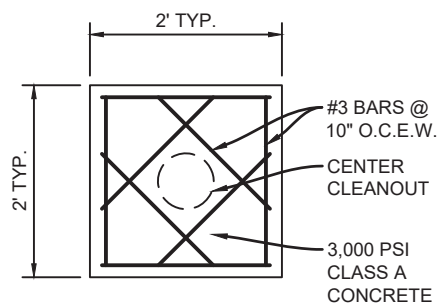
SHEET NO:

S-9



GENERAL NOTES:

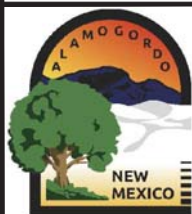
1. SCRIBE CONCRETE WITH LINE DIRECTIONAL ARROWS, PIPE SIZE AND PIPE TYPE.
2. TEXT SIZE SHALL BE 4-INCHES TALL AND SCORED 3/8" DEEP IN A NEAT AND CONSISTENT MANNER, TYPICAL.



GENERAL NOTES:

1. SEWER CLEANOUT SHALL BE CENTERED IN CONCRETE COLLAR.
2. REBAR SHALL BE 1-1/2" CLEAR FROM CONCRETE EDGE TYPICAL.

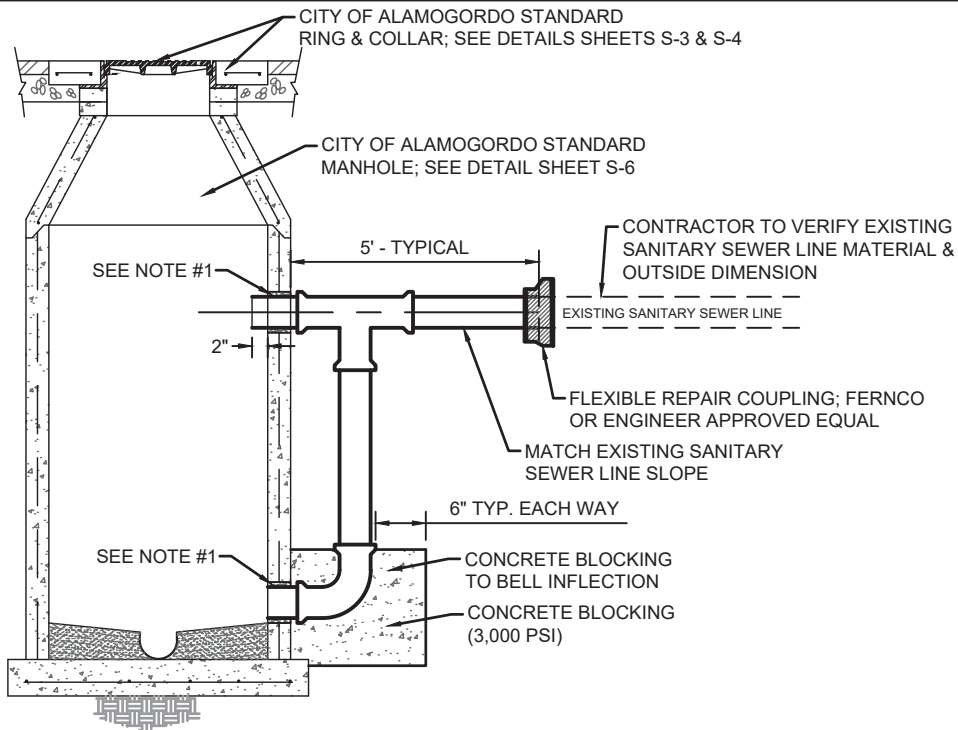
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**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

SEWER CLEANOUT DETAIL

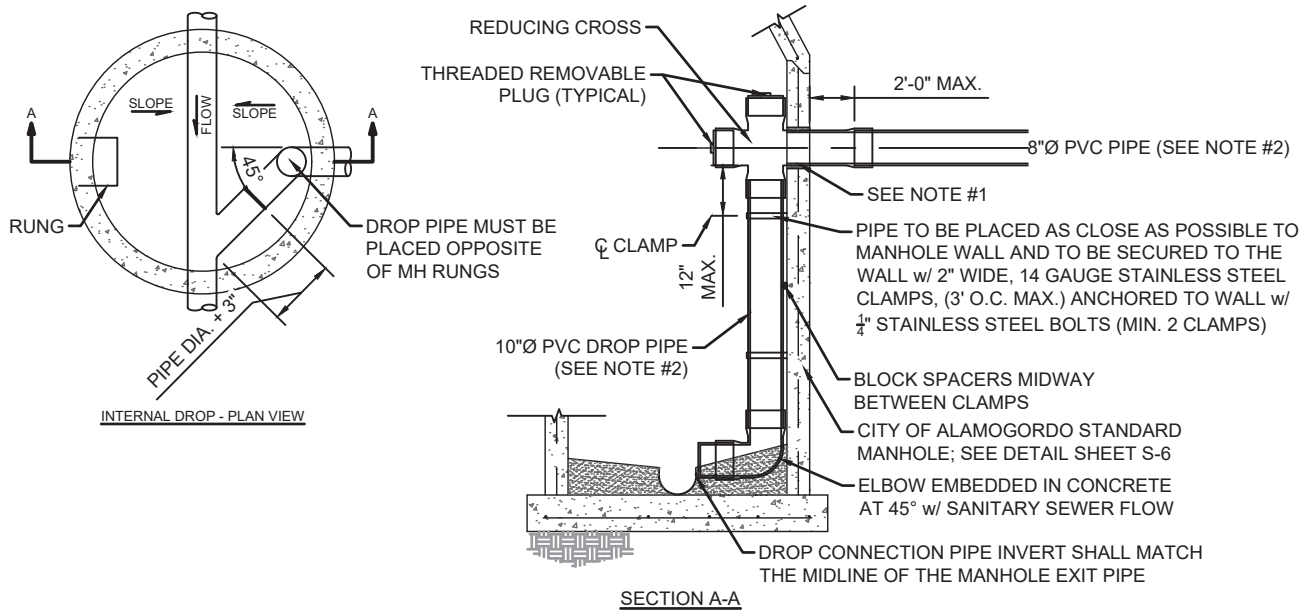
ISSUE DATE:	JUNE 14, 2022
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REVISION DATE:	----
SHEET NO:	S-10



EXTERNAL DROP MANHOLE

NOTES:

1. MANHOLE STOP RING GASKETED AROUND NEW SEWER LINE AND SEAL COMPLETELY w/ NON-SHRINK GROUT.



INTERNAL DROP MANHOLE

NOTES:

1. MANHOLE STOP RING GASKETED AROUND NEW SEWER LINE AND SEAL COMPLETELY w/ NON-SHRINK GROUT.
2. FOR 8"Ø PVC PIPE PROVIDE 10"Ø PVC INTERNAL DROP PIPING. FOR 10"Ø PVC PIPE PROVIDE 12"Ø PVC INTERNAL DROP PIPING.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

DROP MANHOLE DETAILS

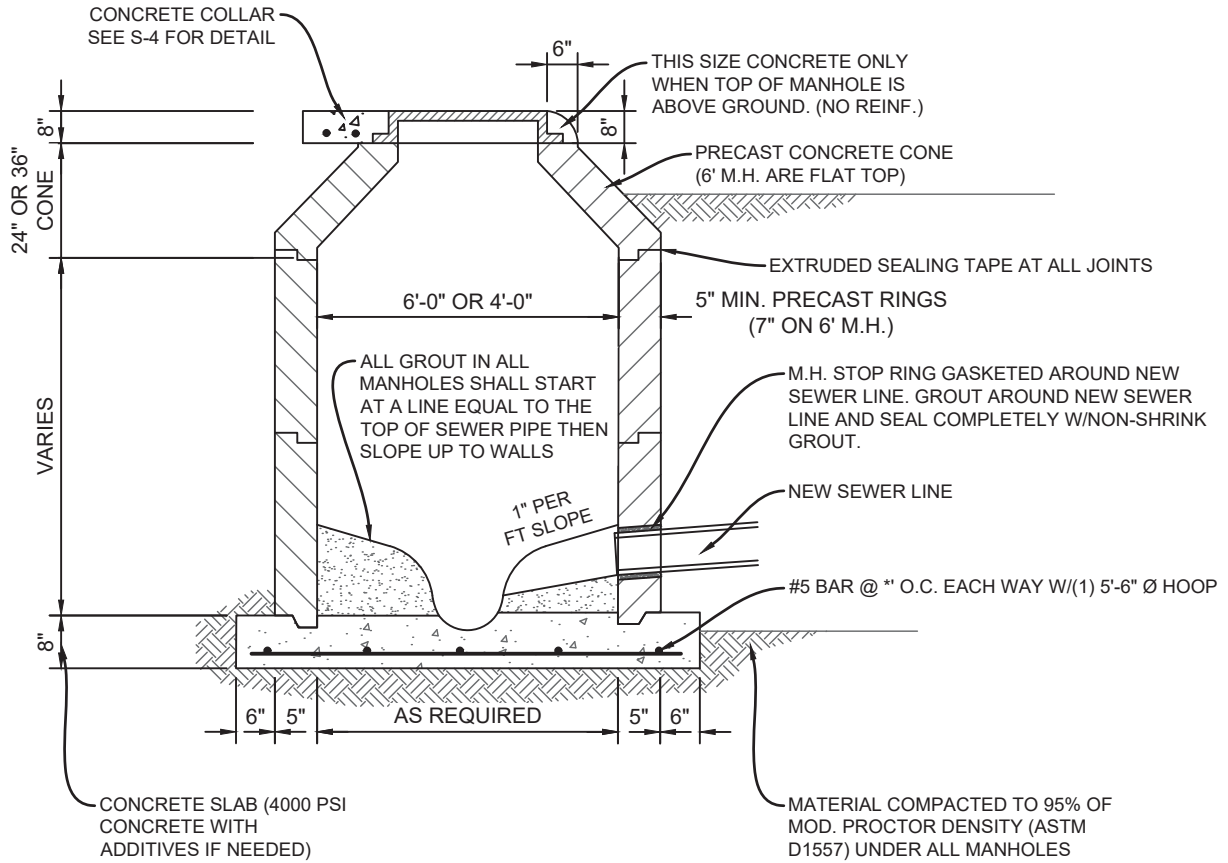
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:

S-11



CONTRACTOR NOTES:

1. IF NEW PIPE INVERT IS BELOW EXISTING GROUTED SHELF, SHELF IS TO BE CUT OUT AS NEEDED AND RE-GROUTED.
2. PRECAST PORTION OF MANHOLES, EXCLUDING CAST IN PLACE BOTTOM, SHALL CONFORM TO ASTM C478 LATEST REVISIONS.

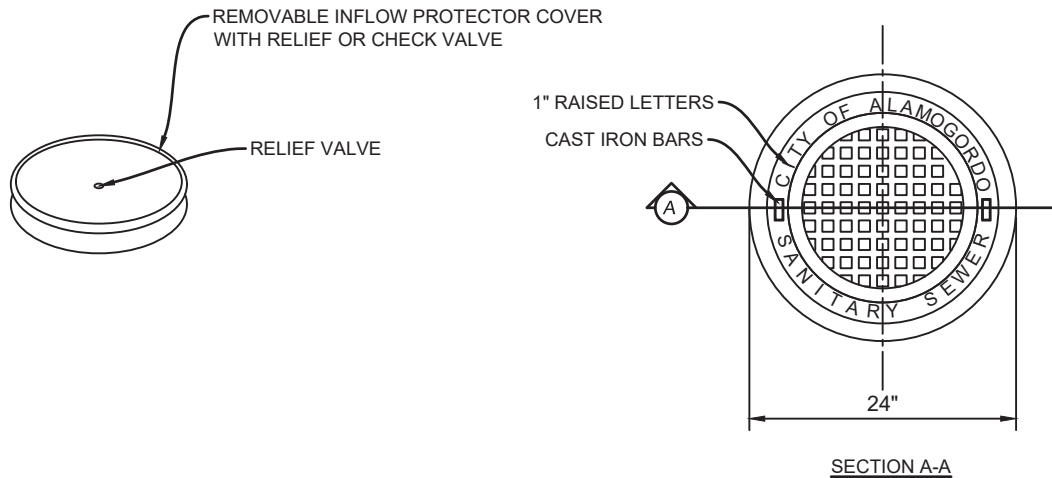
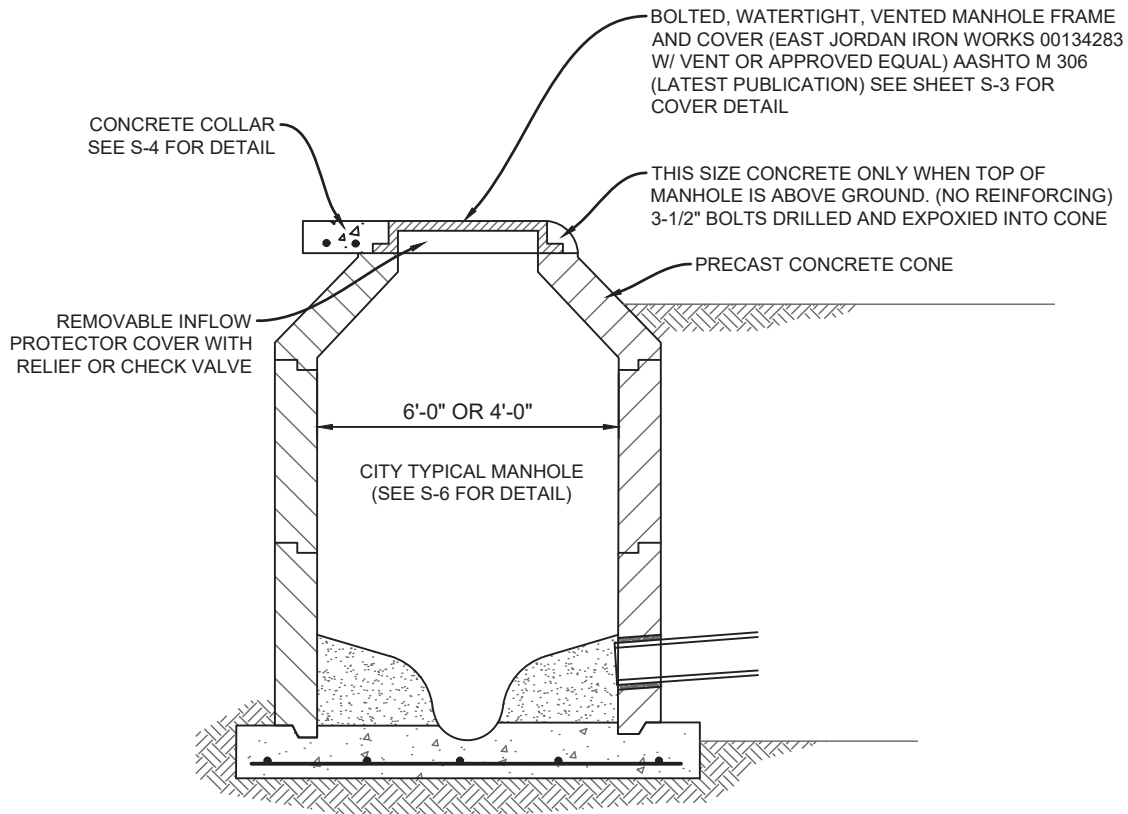
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CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

TAPPING INTO EXISTING STANDARD MANHOLE DETAIL

ISSUE DATE:	JUNE 14, 2022
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SHEET NO:	S-12



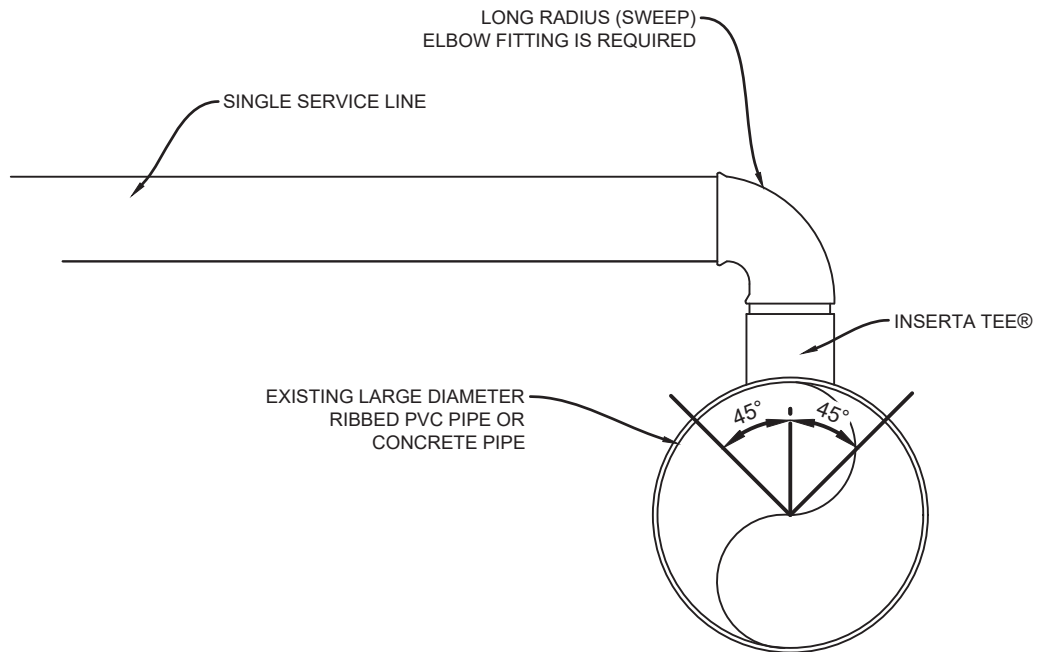
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CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

WATERTIGHT VENTED MANHOLE DETAIL

ISSUE DATE:	JUNE 14, 2022
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SHEET NO:	S-13



NOTES:

1. INSERTA TEE® (OR APPROVED EQUAL) TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
2. TEE CONNECTION SHALL BE IN THE TOP OR WITHIN 45° OF THE TOP.

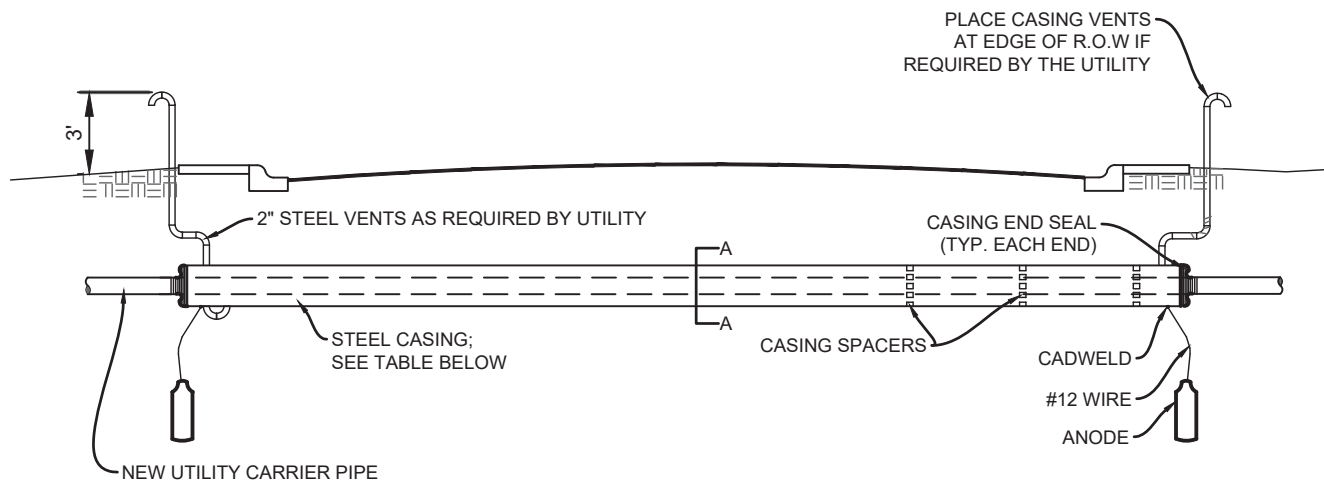
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CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

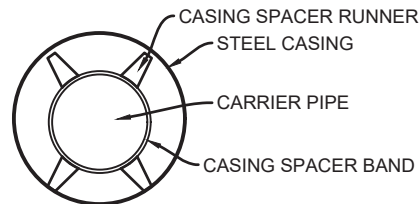
SERVICE LINE INSERTA TEE CONNECTION DETAIL

ISSUE DATE:	JUNE 14, 2022
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REVISION DATE:	----
SHEET NO:	S-15



GENERAL NOTES:

1. CASING END SEALS SHALL BE T.D. WILLIAMSON, INC Z-SEALS OR ENGINEER APPROVED EQUAL.
2. CASING SPACERS SHALL BE ADVANCE PRODUCTS & SYSTEMS, LLC MODEL SSIM OR ENGINEER APPROVED EQUAL.
3. STEEL CASING PIPE SHALL BE SIZED TO ADEQUATELY ACCOMMODATE CARRIER PIPE AND ADHERE TO THE REQUIREMENTS PROVIDED IN THE TABLE BELOW.
4. PIPE JOINT(S) INSIDE CASING SHALL BE JOINT RESTRAINED.
5. CASING VENTS TO BE PAINTED WITH AN OIL BASE ALKYD PRIMER AND AN OIL BASE ALKYD ENAMEL TOP COAT. COLOR SHALL BE PER APWA UNIFORM COLOR CODE FOR RESPECTIVE UTILITY.



SECTION A-A

STEEL CASING MINIMUM WALL THICKNESS		
NOMINAL DIAMETER (INCHES)	MIN. WALL THICKNESS FOR COATED (INCHES)	MIN. WALL THICKNESS NON-COATED (INCHES)
14 AND UNDER	0.1880	0.1880
16	0.2190	0.2810
18	0.2500	0.3120
20 AND 22	0.2810	0.3440
24	0.3120	0.3750
26	0.3440	0.4060
28	0.3750	0.4380
30	0.4060	0.4690
32	0.4380	0.5000
34 AND 36	0.4690	0.5310
42	0.5000	0.5630
48	0.5630	0.6250

1. WALL THICKNESS DESIGNATIONS FOR STEEL CASING PIPE FOR E-80.
2. STEEL PIPE SHALL HAVE A MINIMUM YIELD STRENGTH OF 35,000 PSI.
3. CORROSION CONTROL MEASURES MUST INCLUDE CATHODIC PROTECTION.

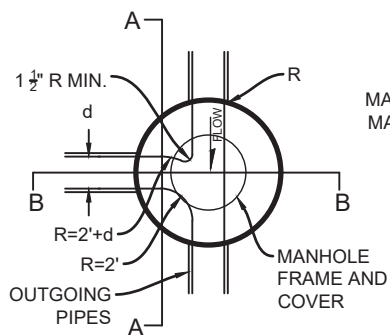
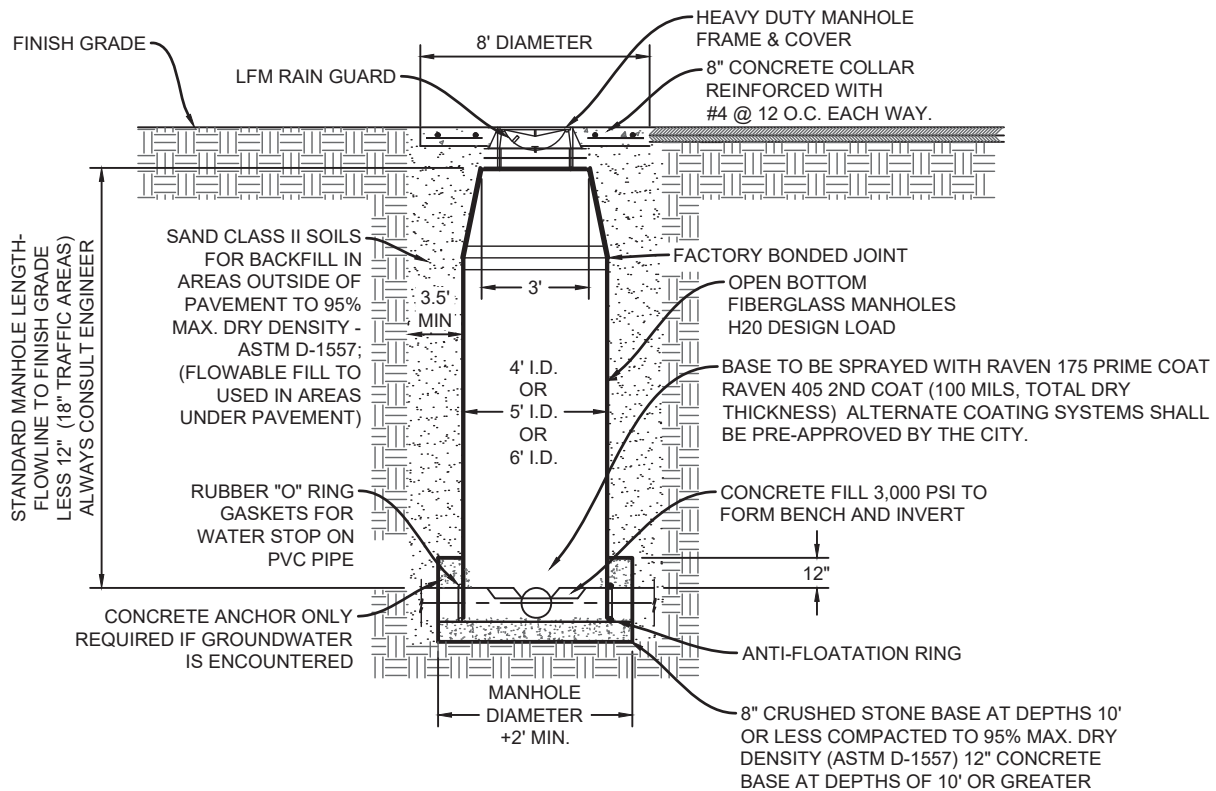
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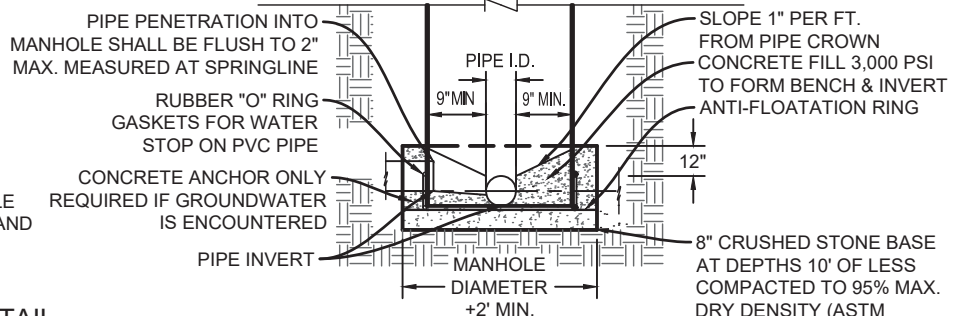
**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

SEWER LINE BORE AND CASE DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	S-16



FIBERGLASS MANHOLE DETAIL
PLAN VIEW



SECTION B-B
BENCH AND INVERT DETAIL
FOR MULTIPLE PIPES

GENERAL NOTES:

1. CONCRETE ANCHOR WILL ONLY BE REQUIRED IF GROUNDWATER IS ENCOUNTERED.
2. WHERE A SANITARY SEWER LINE ENTERS AND EXITS A MANHOLE IN A STRAIGHT LINE, A DROP BETWEEN THE INCOMING AND OUTGOING INVERTS WILL NOT BE REQUIRED. IF A DEFLECTION IN THE SANITARY SEWER ALIGNMENT IS PROPOSED AT THE MANHOLE, A MINIMUM OF ONE-TENTH (0.10) OF A FOOT BETWEEN INVERTS WILL BE REQUIRED WHEN THE ANGLE IF BETWEEN 0 AND 45, A MINIMUM OF TWO-TENTHS (0.20) OF A FOOT SHALL BE HELD BETWEEN INCOMING AND OUTGOING INVERTS, SUCH AS 90° BENDS. TEE INTERSECTIONS WILL REQUIRE ALL INCOMING LINES TO BE A MINIMUM OF TWO-TENTHS (0.20) OF A FOOT ABOVE OUTGOING LINES.
3. WATER TIGHT FIBERGLASS (CLOSED BOTTOM) MANHOLES ARE MANUFACTURED WITH A PRE-BUILT FIBERGLASS BENCH AND INVERT. THE DESIGN ENGINEER WILL NEED TO CONFIRM PROJECT REQUIREMENTS PRIOR TO MANUFACTURING OF MANHOLES.

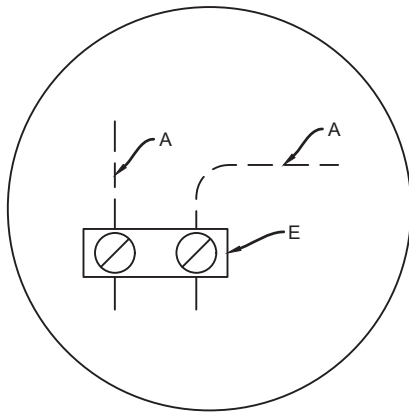
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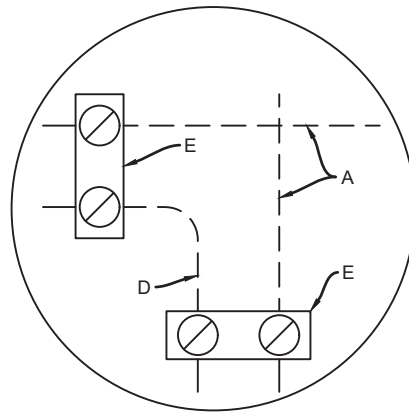
CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

FIBERGLASS MANHOLE DETAIL

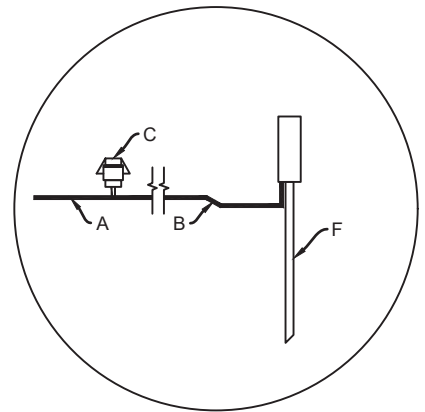
ISSUE DATE:	JUNE 14, 2022
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REVISION DATE:	----
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Tee Connection Detail



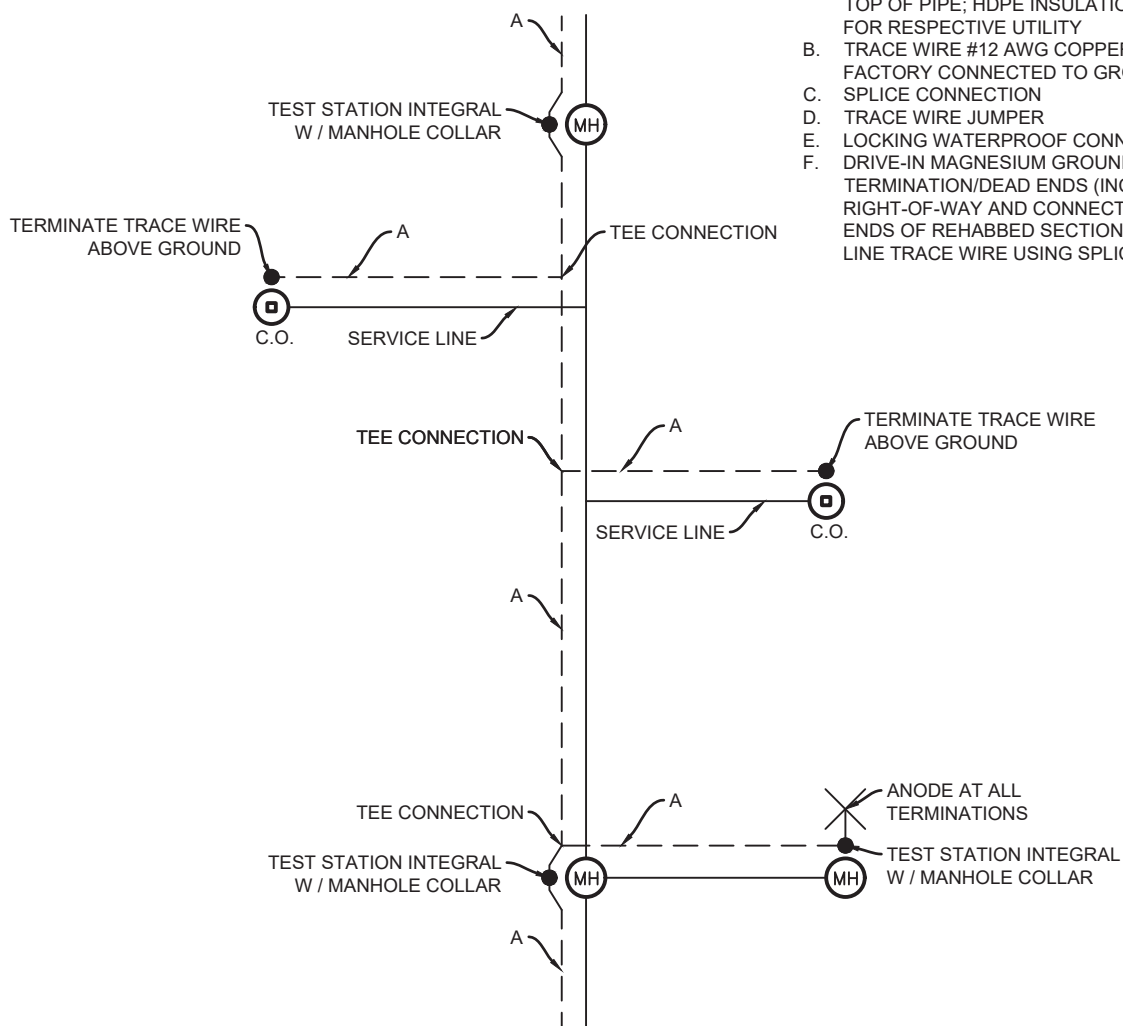
Cross Connection Detail



Anode Detail

CONSTRUCTION NOTES:

- A. TRACE WIRE #12 AWG COPPER CLAD STEEL, TAPED TO TOP OF PIPE; HDPE INSULATION APWA COLOR CODED FOR RESPECTIVE UTILITY
- B. TRACE WIRE #12 AWG COPPER CLAD STEEL - RED FACTORY CONNECTED TO GROUND ANODE
- C. SPLICE CONNECTION
- D. TRACE WIRE JUMPER
- E. LOCKING WATERPROOF CONNECTOR
- F. DRIVE-IN MAGNESIUM GROUNDING ANODE AT ALL TERMINATION/DEAD ENDS (INCLUDING EDGE OF RIGHT-OF-WAY AND CONNECTION POINTS/TERMINAL ENDS OF REHABBED SECTIONS). CONNECT TO MAIN LINE TRACE WIRE USING SPLICE CONNECTIONS.



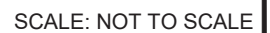
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**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

SANITARY SEWER TRACE WIRE DETAILS

ISSUE DATE:	JUNE 14, 2022
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SHEET NO:	S-18



WASTEWATER COMBINATION AIR VALVE DETAIL

ISSUE DATE:

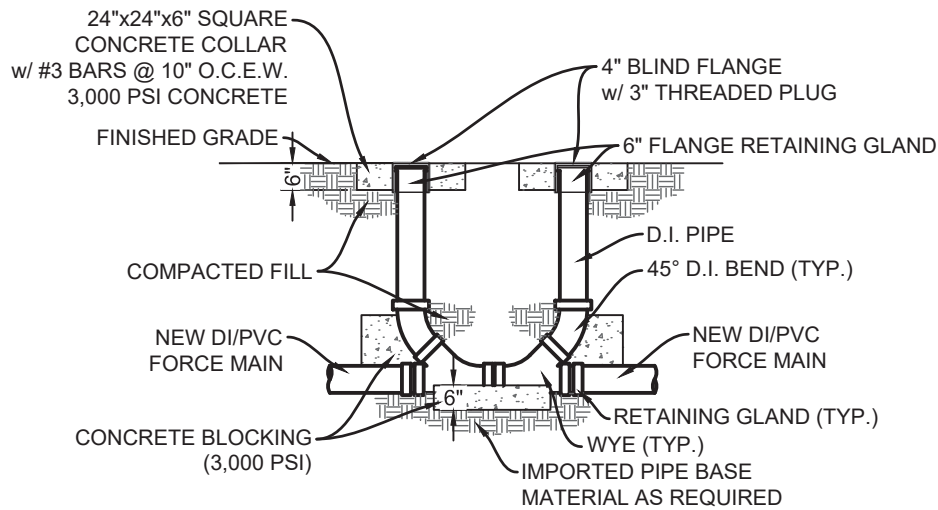
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REVISION DATE:

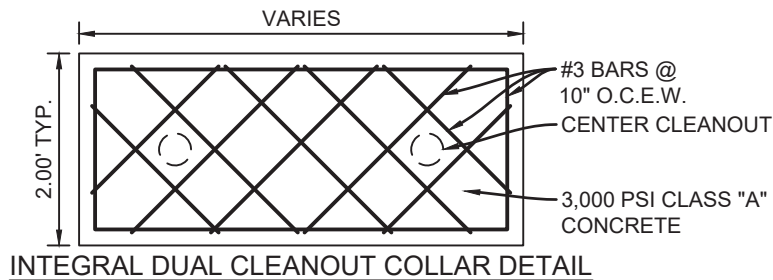
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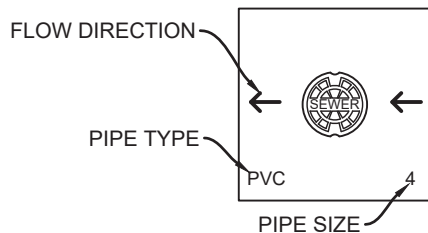
S-19



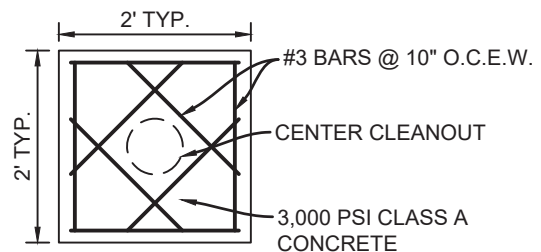
PLAN VIEW



INTEGRAL DUAL CLEANOUT COLLAR DETAIL



COLLAR CALLOUTS



COLLAR DETAIL

GENERAL NOTES:

1. SCRIBE CONCRETE WITH LINE DIRECTIONAL ARROWS, PIPE SIZE AND PIPE TYPE.
2. TEXT SIZE SHALL BE 4-INCHES TALL AND SCORED 3/8" DEEP IN A NEAT AND CONSISTENT MANNER, TYPICAL.
3. SEWER CLEANOUT SHALL BE CENTERED IN CONCRETE COLLAR.
4. REBAR SHALL BE 1-1/2" CLEAR FROM CONCRETE EDGE, TYPICAL.

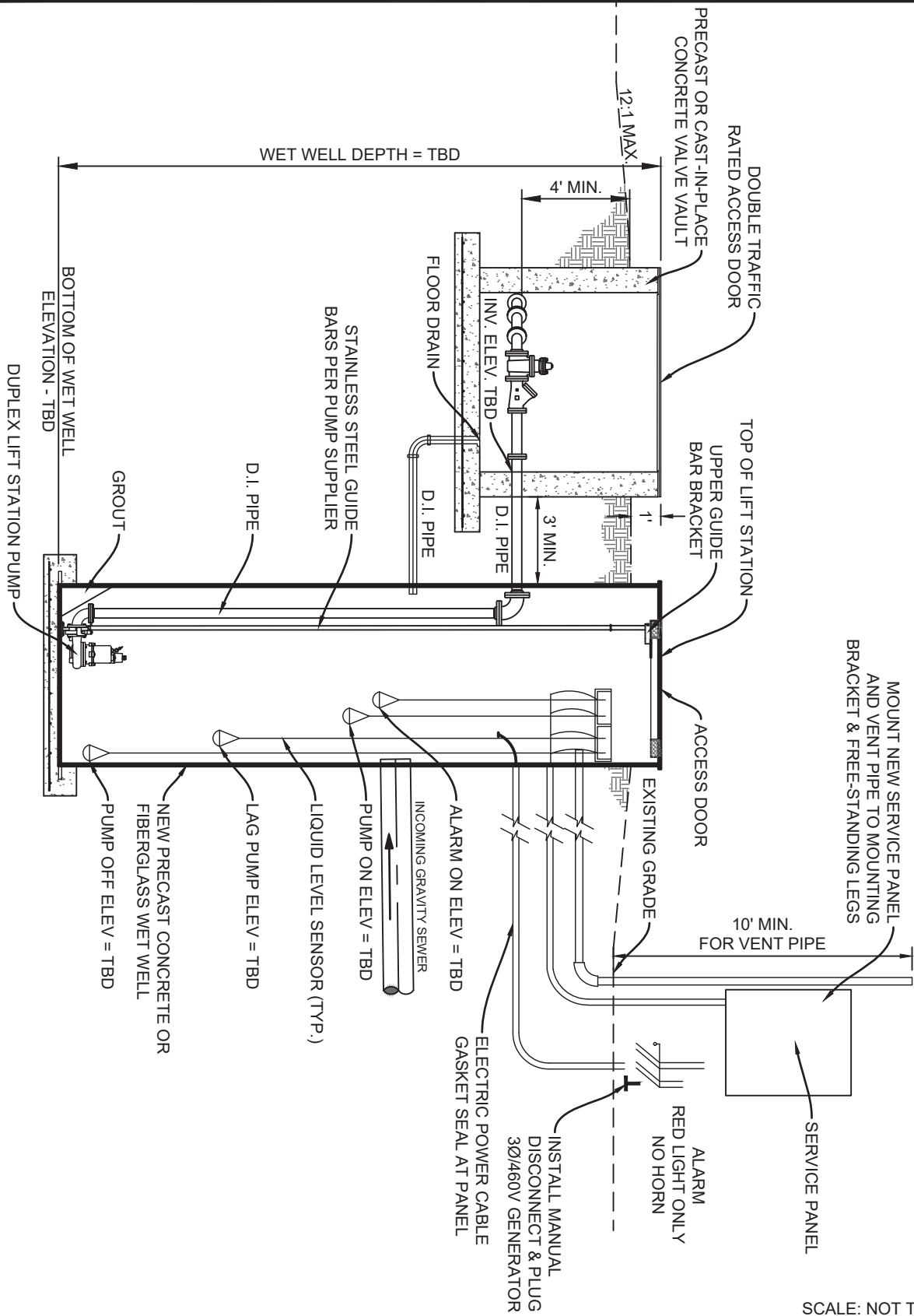
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**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

DOUBLE PRESSURE CLEANOUT DETAIL

ISSUE DATE:	JUNE 14, 2022
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REVISION DATE:	----
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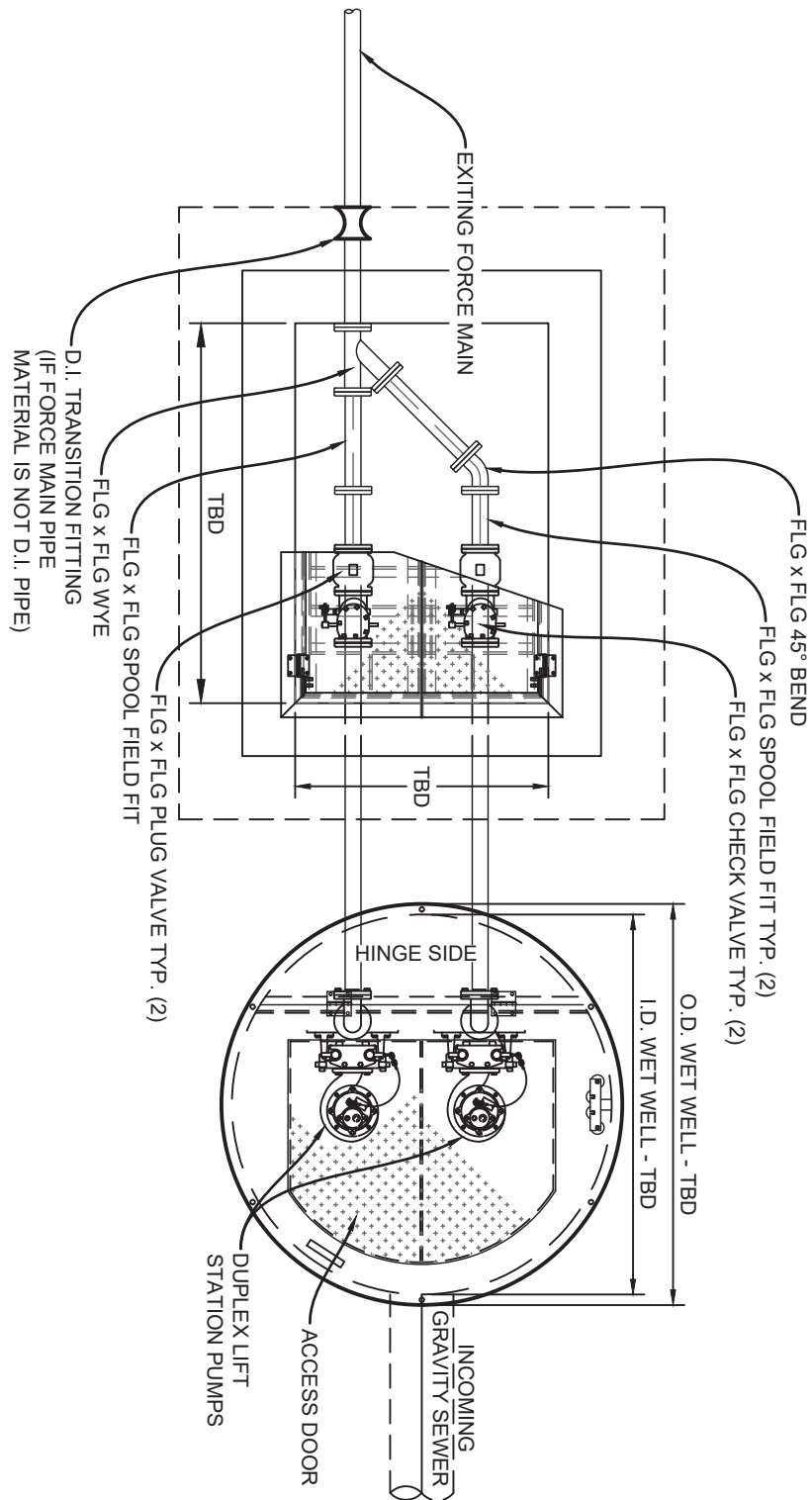
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CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

LIFT STATION ELEVATION DETAIL

ISSUE DATE:	JUNE 14, 2022
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REVISION DATE:	----
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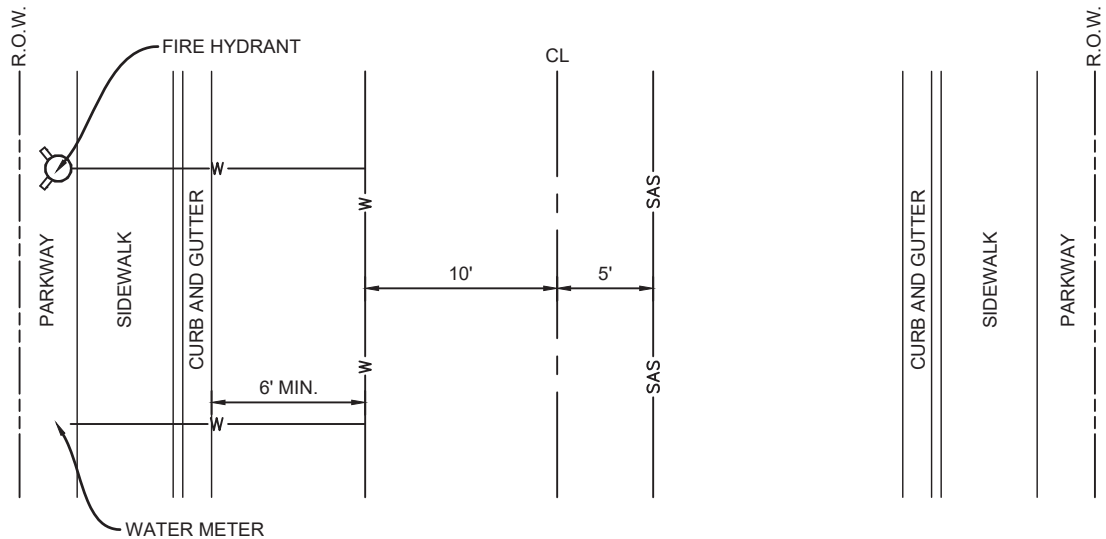
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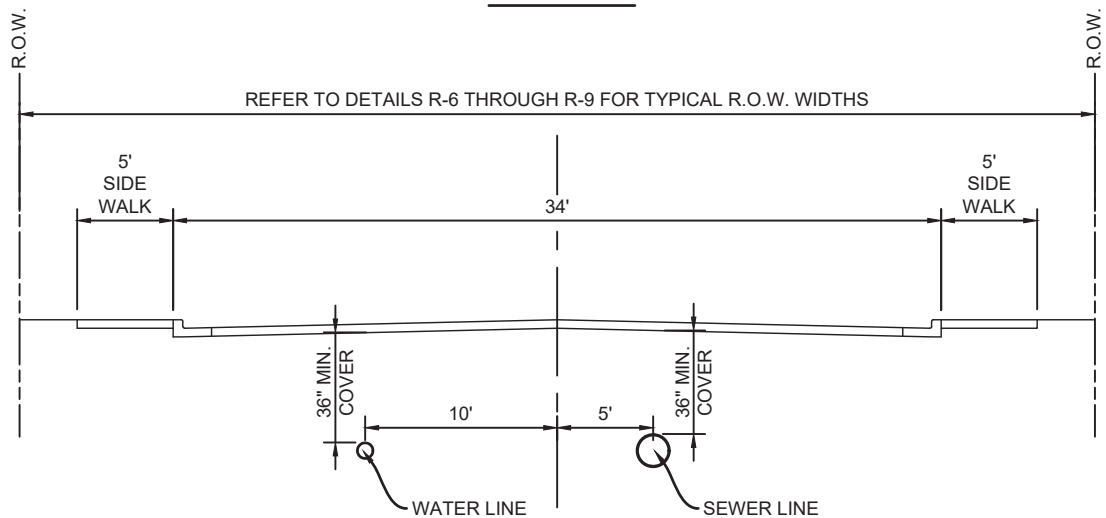
CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

LIFT STATION PLAN VIEW DETAIL

ISSUE DATE:	JUNE 14, 2022
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PLAN VIEW



SECTION VIEW

CONTRACTOR NOTES:

1. WATER LINE WILL BE LOCATED 10' NORTH OF STREET CENTERLINE ON EAST TO WEST STREETS AND 10' WEST OF STREET CENTERLINE ON NORTH AND SOUTH STREETS.
2. WATER LINE MINIMUM COVER SHALL BE 36".
3. SANITARY SEWER MINIMUM COVER SHALL BE 36".
4. SANITARY SEWER WILL BE LOCATED 5' SOUTH OF STREET CENTERLINE ON EAST AND WEST STREETS AND 5' EAST OF STREET CENTERLINE ON NORTH AND SOUTH STREETS.
5. NONSTANDARD LOCATIONS REQUIRE WRITTEN APPROVAL OF THE CITY OF ALAMOGORDO .
6. UTILITY EASEMENT WILL BE AT THE DISCRETION OF THE CITY OF ALAMOGORDO.

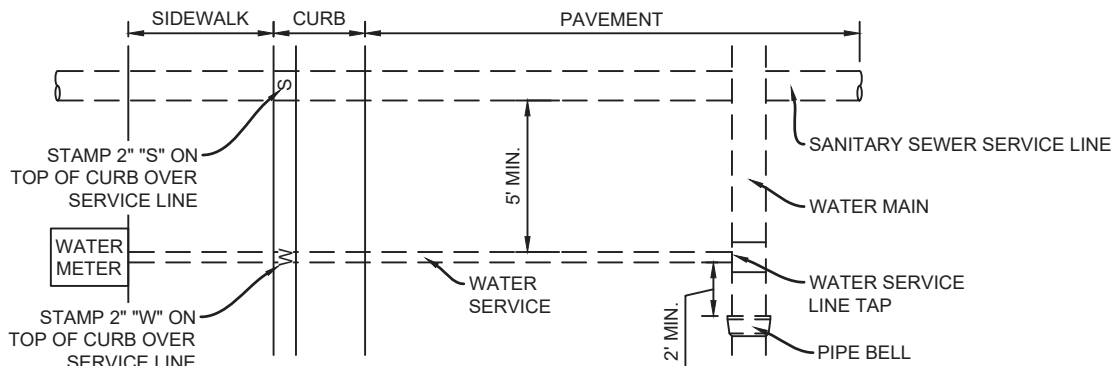
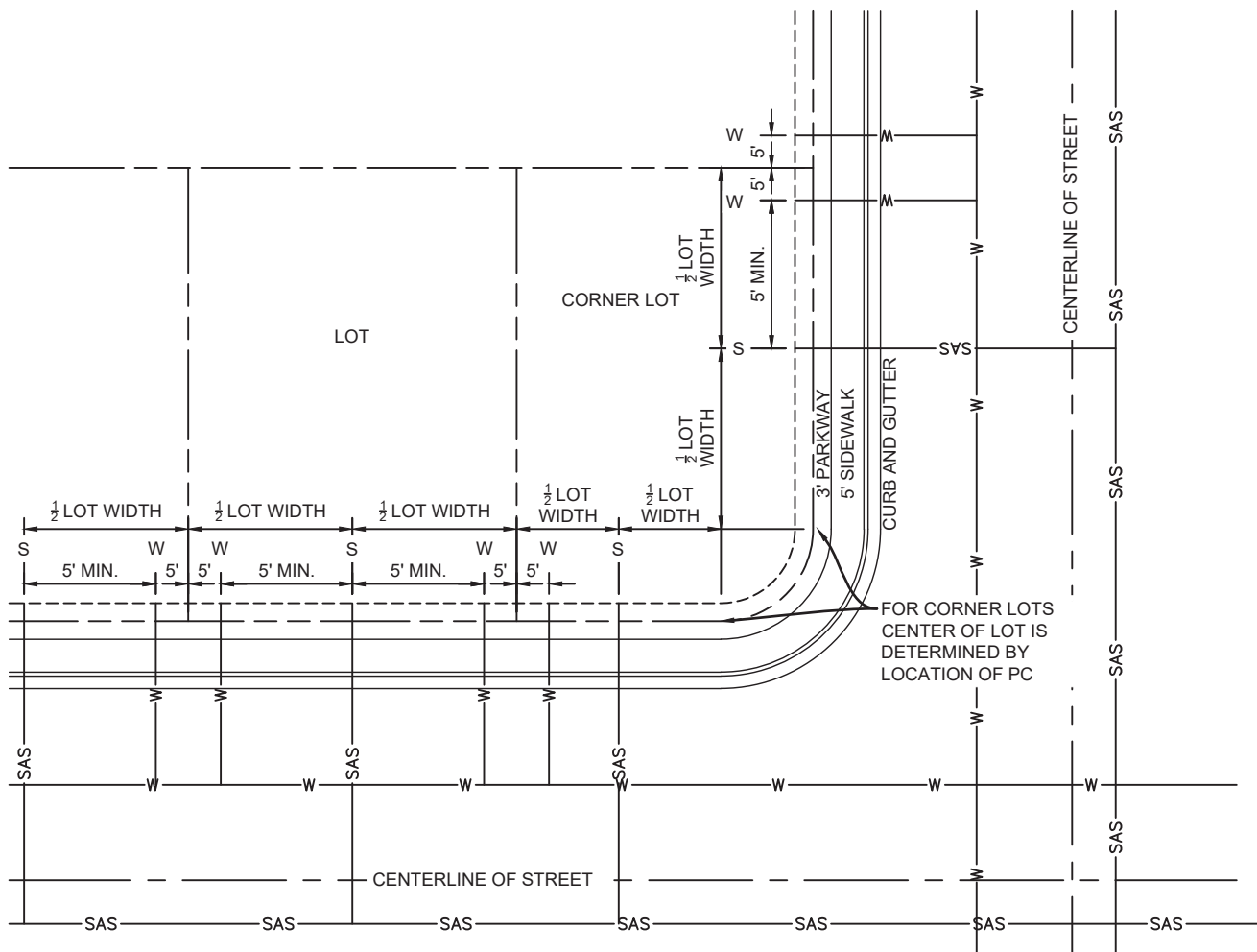
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**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

TYPICAL UTILITY LOCATIONS

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
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SHEET NO:	S-23



CONTRACTOR NOTES:

1. THE WATER SERVICE WILL ENTER 5' FROM THE PROPERTY LINE AS SHOWN. THE SEWER SERVICE WILL ENTER AT THE CENTER OF THE LOT; A MINIMUM WATER SERVICE TO SANITARY SEWER SERVICE SEPARATION OF 5' SHALL BE MAINTAINED.
2. FOR CORNER LOTS UTILITY STANDARD LOCATIONS AS SHOWN.
3. UTILITY EASEMENTS WILL BE AT THE DISCRETION OF THE CITY OF ALAMOGORDO.
4. STAMPED/INSCRIBED SERVICE LINE MARKS AT TOP OF CURB SHALL BE PLACED ON PROPOSED OR EXISTING CURB & GUTTER AT THE TIME OF SERVICE LINE INSTALLATION.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

TYPICAL LOT UTILITY LOCATIONS

ISSUE DATE:	JUNE 14, 2022
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CHAPTER 09 – WATER SUPPLY SYSTEM

ARTICLE 09-01 - GENERAL

Article 09-01-010 Water System Materials

Item Description	Size or Reference	Specification	Manufacturer
Water Meter	$\frac{3}{4}$ " to 4" (W-1, W-2, W-25 & W-26)	AWWA C700 ANSI/NSF 61 AWWA C707	Zenner Stealth Reader System
PVC Pipe DR18	4" to 12"	AWWA C900-16 ASTM D1784 - Pipe Compound ASTM F477 - Gasket	--
PVC Pipe DR25	14" to 36"	AWWA C900-16 ASTM D1784 – Pipe Compound ASTM F477 - Gasket	--
PVC Fittings	6" to 12"	AWWA C153	--
Ductile Iron Pipe	12" to 36"	ANSI/AWWA C151/A21.51	--
High Density Polyethylene Pipe DR11 min.	--	AWWA C901 or AWWA C906	--
Fittings for HDPE	--	AWWA C906	--
Fiberglass Flexible Markers	W-29	APWA Color Code	--
Couplings Mechanical and/or Flexible	W-15 thru W-18	AWWA C111	Romac or Approved Equal
Casing Pipe End Seals	W-21	See Manufacturer's Specifications	T.D. Williamson Z-Seal Casing Seals or Approved Equal
Casing Spacer Band	W-21	See Manufacturer's Specifications	Advance Products & Systems, LLC Model SSIM or Approved Equal
Gate Valves	4" to 12"	AWWA C515 NSF/ANSI 61 & 372	Waterous Company or Approved Equal
Butterfly Valves	14" and larger	AWWA C504	M&H Valve Co. or Approved Equal
Valve Boxes	Series 6850 W-5, W-6 & W-7	ASTM A-48	Tyler Pipe, Tyler Corporation or Approved Equal

Valve Box Lockable Debris Cap	W-5	See Manufacturer's Specifications	SW Services LLC or Approved Equal
Fire Hydrant	W-9	AWWA C502	Clow "Medallion" American Darling Model B-84, Mueller Super Centurion Model A-423
Post Type Flush Hydrant	W-28	ANSI/AWWA C502	Mueller Model A-411 or Approved Equal
Sampling Station	W-13	NSF/ANSI 372	Eclipse #88WC or Approved Equal
Reduced Pressure Backflow Prevention Devices	2 -1/2" to 10"	AWWA C511	Watts Series LF909 or Approved Equal
Reduced Pressure Backflow Prevention Enclosure	W-30 and W-31	--	USC Approved
Polyethylene Service Lines	W-1 & W-2	ASTM D 2737	--
Service Tapping Saddles	W-1 & W-2	ASTM A-536 – Body ASTM A-240 – Straps ASTM D-2000 - Gasket	--
Corporation Stops	W-1 & W-2	AWWA C800 NSF 61	Mueller Insta-Tite or Approved Equal
Curb Stop	W-1 & W-2	AWWA C800 NSF 61	Mueller 300 ball curb valve or Approved Equal
Copper Meter Resetters	W-1 & W-2	NSF/ANSI/CAN 61 NSF/ANSI/CAN 372	A.Y. McDonald Mfg. Co. Model 76102 or Approved Equal
Water Meter Can	W-1 & W-2, & W-12	ASTM C857-16	DFW Plastics Inc or Approved Equal
Stainless Steel Tapping Sleeve	W-1 & W-2	AWWA C207 ASTM D2000	--
Detectable Warning Tape	APWA Standard	ASTM D2103	--
Trace Wire	#12 AWG Copper Clad Steel W-19 & W-33	ASTM B1010 – Wire ASTM B910/B910M – Wire ASTM D1248 -Insulation	Copperhead Industries or Approved Equal

Trace Wire Connectors	W-33	See Manufacturer's Specifications	Copperhead Industries Connector Part Number 3WB-01 or Approved Equal
Trace Wire Access Boxes	W-19 & W-33	ASTM D1788, Type 1 – Base Material APWA Standard	Copperhead Industries CD14*2T-SW or Approved Equal
Trace Wire Access Box Lid	W-19 & W-33	ASTM D1788, Type 1 – Base Material APWA Standard	Copperhead Industries RB14*2T-SW or LD14*2T-SW or Approved Equal
Trace Wire Grounding (Ground Anode)	W-33	See Manufacturer's Specifications	Copperhead Industries Ground Rod with ANO-12 or Approved Equal
Mechanical Joint Restraint	W-15 thru W-18	AWWA C600, C605 or ASTM D2774 ASTM A536 - Material	EBBA Iron Inc. or Approved Equal
Repair coupling	2" to 12"	ANSI/AWWA C230 ASTM D2000 - Gasket	Romac or Approved Equal
Air-Release and Vacuum-Relief Valves	W-14	AWWA C512 ASTM A 48 ANSI B1.20.1	Val-Matic Model 201C.2 or Approved Equal
Air-Release and Vacuum-Relief Enclosure	Precast Manhole W-14	ASTM C478 AASHTO M199 NMDOT Section 517 and 662	Western Precast Concrete Inc. or Approved Equal
Non-Traffic Bearing Manhole ring and Cover	W-27	--	East Jordan or Approved Equal
Manhole gap filler	W-25 & W-26	ASTM C990-09	RAM-NEK Joint sealant or Approved Equal
Air-Release and Vacuum-Relief Enclosure Lid	W-14	H20 traffic rated ASTM C478-93	--

Article 09-01-020 Work Description

- (a) This Work consists of furnishing all of equipment, materials, and labor to perform all operations in connection with the installation of potable water lines and

appurtenances. This section defines required characteristics and properties of Polyvinyl Chloride (PVC), High Density Polyethylene (HDPE), and Ductile Iron Pipe (DIP), valves, valve boxes, adapters, couplings, fire hydrants, materials, fittings, appurtenances, and construction practices.

- (b) Contractor shall provide, in place, all valves, adapters, couplings, and appurtenances necessary to meet the requirements of this Project, whether shown in the Contract Documents or not.
- (c) At all times, 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 in accordance with AWWA Standard C651. Water needed to fill the new main for testing and flushing purposes shall only be potable City water supplied through a temporary connection protected by a backflow device.
- (d) The backflow device must be tested and certified after installation on-site. A copy of the Certification shall be given to the City and a copy shall be kept on-site with the device. Testing must be completed by a certified testing facility on the City's approved listing.
- (e) Residential and commercial developments shall provide water service/meter sizing calculations in accordance with AWWA Manual 22.

Article 09-01-030 Location

Waterline transmission/distribution main lines shall be located in the streets and shall be approximately ten-feet (10') north of the street centerline on East-West bound streets, and ten-feet (10') west of the street centerline on the North-South bound streets. All water transmission/distribution main lines shall be laid with a minimum cover of three-feet (3'). The minimum pipe coverage shall apply to new construction only.

Water meters shall be located at the back of sidewalk or in landscape area between the curb and sidewalk (where parkways of ample width are present) within the right-of-way. Water meters cans shall not be located in driveways or vehicular traffic flows unless location(s) and meter can type(s) have been pre-approved by the City.

Article 09-01-040 Minimum Waterline Size

The minimum size of water transmission/distribution main lines shall be six-inches (6") in diameter.

ARTICLE 09-02 – MATERIALS

Article 09-02-010 General

- (a) Pipe and accessories shall be new and unused. Pipe shall be color-coded (blue for potable water, green for sanitary sewer, purple for reclaimed water). Detectable Marking Tape shall be installed as provided in the Contract Documents.
- (b) When PVC pipe is stored outside and exposed to prolonged periods of sunlight, an obvious discoloration of the pipe can occur. This is an indication of reduced pipe impact strength, and any length of pipe that is discolored will be rejected. The City will make the determination for rejection of pipe; all pipe rejected will be removed from the job site by the Contractor.

Article 09-02-020 PVC Pipe

- (a) PVC pipe four inches (4"-for existing tie-in locations only) through twelve inches (12") shall be not less than DR18, Class 235 and in conformance with AWWA C900, latest revision. Pressure class of PVC pipe shall be as required by Appendix A of AWWA C900. PVC pipe over twelve inches (12") shall be no less than DR25, Class 165 and in conformance with AWWA C900, latest revision.
- (b) All PVC pipes shall be approved for use in potable water systems by an agency such as NSF Testing Laboratory.
- (c) Joints: For pipe six inches (6") through twelve inches (12"), elastomeric gasket bell push-on type ends shall be used in accordance with ASTM F 477.
- (d) Fittings: For pipe six inches (6") through twelve inches (12"), fittings for PVC pipe shall conform to the requirements of AWWA C153 and shall be cement mortar lined in accordance with AWWA C104. Fitting types shall include restrained mechanical joints and concrete thrust block where required. Restraining, standard mechanical joints, and fittings shall be submitted for City approval.

Article 09-02-030 Ductile Iron Pipe

- (a) Ductile iron pipe shall be in accordance with ANSI/AWWA C151/A21.51 and Federal Specification WW-P-421d, latest revision. All ductile iron pipe shall be minimum class 150, unless otherwise indicated in the Contract Documents. Ductile iron pipe fittings shall be pressure rated at three hundred fifty (350) psi and be in accordance with ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11.

- (b) All ductile iron pipe and fittings shall be internally mortar lined in accordance with ANSI A21.4, latest revision, and shall have an exterior coating in accordance with ANSI A21.6, A21.8, or A21.51.
- (c) All ductile iron pipe and ductile iron fittings shall have a polyethylene encasement in accordance with ANSI/AWWA C105/A21.5, latest revision.
- (d) The ductile iron pipe shall be push-on type joints, unless indicated otherwise on the plans, and the fittings shall conform to the requirements of AWWA C153 and shall be cement mortar lined in accordance with AWWA C104. Fitting types shall include standard flange fittings and mechanical joints.

Article 09-02-040 High Density Polyethylene Pipe (HDPE)

- (a) HDPE pipe shall not be less than DR11.0, Class 160 and in conformance with AWWA C901 or AWWA C906.
- (b) Joints: Pipe shall be joined by heat fusion method and shall be performed as per manufacturer's safety instructions.
- (c) Fittings: Fittings for HDPE shall conform to the requirements of AWWA C906 and used in accordance with ASTM D 3350, and F 714. Fitting types shall include restrained mechanical joints where required. Transition gaskets for HDPE pipe shall be used when mechanical joints are used. Restraining, standard mechanical joints, and fittings shall be submitted for City approval.

Article 09-02-050 Adapters and Couplings

- (a) All adapters, pipe couplings, tap and sleeves, or mechanical type couplings required for any of the piping systems shall be of the type manufactured for the specific purpose of the use intended, and shall be installed in strict compliance with the manufacturer's specifications, and to the satisfaction of the City. Factory-made adapters shall be furnished for connecting transition material to the mechanical joint fittings and valves, where required, including plastic to steel and plastic to DIP.
- (b) Mechanical and/or flexible couplings shall be manufactured by Romac, or approved equal, and shall be sized and styled in accordance with the requirement for the particular coupling and used in accordance with the manufacturer's recommendations for the diameter, thickness and type of pipe to be connected. The mechanical and/or flexible couplings shall be provided with an acceptable joint harness to prevent separation of the joint where required due to pressure or change in direction of fittings. Couplings shall be polyethylene wrapped.

Article 09-02-060 Valves

- (a) Gate Valves: All gate valves four-inch to twelve-inch (4"-12") shall be resilient seated gate valves conforming to AWWA C515 rated for two hundred fifty (250) psi working pressure. Valves shall have a standard two (2) inch operating nut that opens counterclockwise. The wedge shall be constructed of ductile iron and shall be fully encapsulated in synthetic rubber except for the guide and wedge nut areas. The wedge shall seat against seating surfaces that are inclined to the vertical at a minimum angle of thirty-two (32) degrees when stem is in vertical position to eliminate abrasive wear. The non-rising stem shall be sealed by at least two (2) O-rings. The waterway shall be smooth and shall have no depressions or cavities. The valve body and bonnet shall be epoxy coated, inside and out, and wrapped with polyethylene sheet encasement. Joints shall be restrained mechanical joint ends. Valve shall be as manufactured by Waterous Company or approved equal.
- (b) Butterfly Valves: All butterfly valves fourteen-inch (14") and larger shall be rubber seated, tight-closing type conforming to AWWA C504 rated for two hundred fifty (250) psi working pressure. Valves shall have a standard two-inch (2") operating nut that opens counterclockwise. The offset vane shall be constructed of ductile iron and shall form an uninterrupted 360-degree seal. Joints shall be restrained mechanical joint ends. Valve shall be as manufactured by M&H Valve Company or approved equal.

Article 09-02-070 Valve Boxes

- (a) Valve boxes shall be deep skirted, adjustable cast iron two (2) piece screw type, Series 6850 as manufactured by Tyler Pipe, Tyler Corporation, or approved equal. The valve boxes shall be five and one-quarter (5-1/4) inch diameter and the two (2) pieces shall overlap at least six (6) inches. The drop lid shall have a depth of two (2) inches, shall weigh thirteen (13) pounds, and shall have the word "WATER" embossed on top. Refer to Standard Details: W-5, W-6, and W-7.
- (b) Valve boxes shall have debris caps installed to aid in the prevention of dirt and debris accumulation within the valve box. Lockable debris caps shall be as manufactured by SW Services, LLC or City approved equal.

Article 09-02-080 Fire Hydrants

- (a) Fire hydrants and extensions shall be in accordance with AWWA C502, traffic type, fire hydrants shall have two (2) two and one-half (2-1/2) inch hose nozzle connections, and one (1) four and one-half (4-1/2) inch steamer nozzle. All nozzle connections shall be National Standard Fire Hose Coupling screw threads. Fire hydrants shall have a bronze or cast-iron pentagon operating nut. The main inlet

shall be six (6) inch restrained mechanical joint type. All fire hydrants shall be rated for two hundred fifty (250) psi working pressure. Hydrants shall be dry barrel, post type with compression main valve closing with pressure. Hydrants shall have a bronze ring threaded into a bronze drain ring or bronze bushing. Any marks or scratches on new fire hydrants shall be corrected to the satisfaction of the City. Extensions will be used, when required, to bring the bottom of the break-off flange three (3) to six (6) inches above the top of the surrounding finished grade. All fire hydrants shall be Clow Medallion (preferred), Mueller Super Centurion A-423 (second choice), or American Darling B-84. All fire hydrants shall be fire engine red. Refer to Standard Details: W-9 and W-10.

- (b) The pipe, fittings, and fire hydrants starting at the main and ending at the fire hydrant must be laid in a line perpendicular to the water main unless otherwise approved in writing by the City.
- (c) A fire hydrant shall be placed within 30-feet of the end of all dead-end water mains greater than 100-feet in length to facilitate flushing and maintenance of the water main (including all cul-de-sacs).
- (d) Fire hydrant spacing shall adhere to the requirements of the National Fire Protection Association (NFPA) and shall be subject to review and modification by the City's fire marshal or their designee.
- (e) Removal of an existing fire hydrant and appurtenances shall include removal and salvage to the City. The hydrant pipe to the main shall be removed and capped at the tee main line connection.
- (f) Post type flush hydrants shall be installed on dead end lines. The feed line for the flushing shall be four inches (4") in diameter. Post hydrant shall be Mueller Model A-411 or Engineer Approved Equal. Refer to Standard Detail: W-28.

Article 09-02-090 Cross Connection, Prevention, and Control

- (a) The need, responsibilities, requirements, inspections, and maintenance of backflow prevention devices shall adhere to Article 8.08 of the City's General Ordinances.
- (b) All water lines supplying water-based fire protection systems outside of public utility easements and public rights-of-way shall require a Reduced Pressure Backflow Preventer, which must be sized accordingly by a New Mexico licensed engineer. The fire line, water-based fire protection system, and reduced pressure backflow preventer shall meet the requirements of the adopted City fire code and be approved by the fire code official.

- (c) Reduced pressure backflow prevention devices shall be Watts Series LF909 or City Approved Equal. All backflow prevention devices utilized within the City shall be USC Approved.
- (d) All approved containment and isolation backflow prevention assemblies which are classified as testable devices shall be tested at least one per year. Testing shall be completed by a certified tester (or technician) who is registered with the City. For complete testing and maintenance requirements refer to Article 8.08 of the City's General Ordinances.

Article 09-02-100 Water Services

- (a) All service lines to individual customers shall be three-quarter inch (3/4") minimum diameter. Larger diameters may be required based on available pressures and demands.
- (b) Polyethylene Service Lines: Polyethylene water service line tubing shall be fabricated from new polyethylene, PE 3406, SDR-9, 200 psi, manufactured in accordance with ASTM D 2737, latest revision, and be the size called for in the Contract Documents. The service line shall contain embedded trace wire with connections to the water main.
- (c) All single-family residences shall be served by an individual service line and water meter. No service line splitting is allowed. Multiple dwelling units (duplexes, apartments, etc.) shall have a single service and master water meter; submetering units shall be installed downstream of the master meter.
- (d) Identification of Water Services at Top Back of Curbs: The location of each water service shall be stamped or scribed (marked as "W") into the top of the curb. The marking shall be located directly above each respective service.
- (e) Location of Water Services: Water service lines shall be tapped into the water main at 90-degrees and shall continue as a straight run (perpendicular to the main) to the water meter.
- (f) Domestic meters two inches and smaller ($\leq 2"$) are to be sized as per the International Plumbing Code (IPC). All other meters shall be sized in accordance with the American Water Works Association standards. Intermittent use shall not exceed three (3) hours per day. All water meters are supplied by the City.
- (g) Water Meter: Water meter shall be positive displacement (compound), reading in cubic feet (cf) and acceptable for use with Zenner Stealth Reader System (no substitutions).

- (1) Prior approval is a part of these specifications and any bidder or manufacturer wishing to obtain approval to use unspecified products shall submit a written request. The request shall be received, by the City, not later than seven (7) days prior to the bid opening date.
- (2) Request shall clearly describe the product for which approval is asked, including all data necessary to demonstrate acceptability. If the product is acceptable, the Engineer will approve it in an Addendum issued to all plan holders. Otherwise, the specified product or item shall be used. The burden of proof is the sole responsibility of the Contractor.
- (3) Meters shall comply with AWWA C700 Standard for Cold-Water Meters, Displacement Type, Bronze Main Case, of the latest revision. Meters shall also comply with the Safe Drinking Water Act and ANSI/NSF 61 requirements.
- (4) Meter Register housing and lid shall be plastic and the main case, bottom, shall be non-breakable plastic.
- (5) The size, model, and direction of flow through the meter shall be cast permanently into the outer case of the meter. The manufacturer's meter serial number shall be imprinted on the outer case and lid.
- (6) The meter connections shall be: 5/8" x 3/4" or the size called for in the Project Plans or Contract Documents and shall have standard male meter thread. Meter connections 1-1/2" and larger shall have flanged ends. Developments requiring a three-inch (3") service and meter shall be upsized to four inches (4").
- (7) Registers shall be an Encoder-Type register for use in AMR, drive-by or fixed network systems. They shall meet the requirements of the AWWA C707 Standard, for Encoder-Type remote registers, of the latest revision. The encoded register shall be preassembled to the meter and supplied with a wire assembly, at least 16-inches in length. The wire assembly connections to the register will be sealed to prevent any water/moisture damage. The pigtail supplied must have enough leads to interface with ZENNER STEALTH READER SYSTEM unit. Each encoded register must have its own unique identification number, either external or internal.
- (8) All encoded registers will have a 6-wheel odometer.

- (9) A letter of certification from the meter manufacturer, certifying that the product supplied will work properly with the ZENNER STEALTH READER SYSTEM units.
- (10) Existing water meters will be salvaged to City.
- (h) Service (Tapping) Saddles: Service (tapping) saddles shall be pre-approved by City. Acceptable saddles shall have two (2) double straps, or one (1) large, wide, single strap secured by four (4) bolts and shall be the size called for in the Contract Documents.
- (i) Corporation Stops: Corporation stops shall be ball valve type, rated for 150 psi. (minimum) working pressure. Corporation stops shall be per the size called for in the Project Plans or Contract Documents, CC or IP threaded inlet with compression fitting or Mueller Insta-Tite connection, or pre-approved equal.
- (j) Curb stop: Curb stop shall be ball valve type, rated for 250 psi (minimum) working pressure. Curb stops shall be per the size called for in the Project Plans or Contract Documents. If the Contractor crimps the service line in order to install a curb stop, a moody shall be installed over the crimp. The crimped service shall be inspected by the City prior to acceptance.
- (k) Copper meter resetters (meter yoke): Copper meter resetters (meter yoke) shall be pre-approved by City. Acceptable coppersetters shall be 5/8" x 3/4" copper or the size called for in the Project Plans or Contract Documents, with a lock wing and angle dual check backflow preventers/device. Existing copper meter resetters (meter yoke) will be salvaged to City. The face of the water meter shall be within 6"-8" below the bottom of the meter can lid.
- (l) Water Meter Cans: All water meter cans for this Project shall be the size called for in the Project Plans or Contract Documents. The diameter and height for each installation shall be as shown in the Project Plans. Cutouts for the water service lines shall be neatly cut and trimmed to allow one (1) inch clearance on all sides of the water service line.
- (1) Specification is based on use of "DFW PLASTICS, INC." by DFW Plastics, Inc., 901 E Industrial Avenue, Saginaw TX 76131, with attributes as described below. Equal products of other water meter can manufacturers may be acceptable when pre-approved by City.
- (2) This product is designed to withstand loading in non-deliberate and incidental traffic. Not to be installed in roadway. Meter pit lid shall be black and constructed out of modified polyethylene material for maximum

durability and corrosion resistance. The black material is for maximum UV protection. The black material shall be uniform throughout the meter pit lid for maximum longevity and not have a foaming agent that creates air pockets within the polymer lid. New installations shall be completed with lockable meter can lids and customer-maintained ball shutoff valve outside the meter can.

A. Vertical and Lateral Load Rating:

- Compliant with AASHTO, Design Load of H-10; ASTM C857-16, Design Load of A-8, 8,000 lbs. transferred through a 10" x 10" steel plate centered in the cover and body.
- Compliant with AASHTO, Design Load of H-20; ASTM C857-16, Design Load of A-16, 16,000 lbs. transferred through a 10" x 20" steel plate centered on the cover and body.
- This product is designed to withstand H-10 and H-20 loading in non-deliberate or incidental traffic areas.

NOT INTENDED TO BE INSTALLED IN ROADWAYS.

B. Polymer Lid

- The polymer lid shall have a molded keyhole and Plastic Lock underneath lid - *as illustrated*.
- The polymer lid shall have one (1) molded slide mount for placement of AMR/AMI device - *as illustrated*.
- The polymer lid shall seat securely and evenly inside the meter pit and shall not overlap the top edge of the meter pit.
- The polymer lid shall have molded tread-pattern for skid resistance - tread dimensions shall be 0.188" x 0.938" x 0.150" deep.
- The polymer lid shall have "WATER METER" molded into the lid - Font shall be Std Fadal CNC Font with 1" characters x 0.150" deep.
- The polymer lid shall be black and have a molded recycled emblem with a minimum of 50% Post-Consumer Recycled and 50% Post Industrial/ Pre-Consumer Recycled Content- Verified with a Leed Product Documentation.

C. Polymer Body

- The polymer body shall be BLACK and have a minimum of 3/8" wall

thickness - *as illustrated*.

- The polymer body shall have minimum inside working room of (23-1/4") - *as illustrated*.
- The polymer body shall have crush resistant ribbing along the outside of the box with 1-5/8" base footing located at the bottom of the meter pit to help eliminate sinking or floating once installed.
- The polymer body shall have a straight wall design and not be flared as to allow for adjustment to grade after installation.
- The polymer body shall have one pipe slot molded on each end of the body that measures (3" x 5-3/4").
- The polymer body shall have a molded recycled emblem with a minimum of 35% Post Industrial/ Pre-Consumer Recycled Content - Verified with a Leed Product Documentation.

Whenever in the specifications, any particular materials, process and/or equipment is indicated or specified by patent, proprietary, or brand name, or by name of manufacturer, such wording shall be deemed to be used for the purpose of facilitating description of the material, process, and/or equipment desired, and shall be deemed to be followed by the words "or equal". The lists of acceptable material are not intended to be comprehensive lists, or in any order of preference. The bidder may offer any material, process, and/or equipment which comply with the governing specifications which the bidder considers to be equivalent to that which is indicated or specified.

- (m) Temporary Service: Contractor shall maintain service to all connections during construction to minimize time water will be unavailable. Contractor shall complete work on new services and testing and disinfecting of new waterlines prior to removing service from existing waterline. Contractor shall submit a plan for temporary service for City approval prior to construction of new waterline. Refer to Standard Details: W-1 and W-2.
- (n) A customer shut-off ball valve shall be installed, on all new meter installations, on the customer side of the meter outside of the meter box. The valve shall be completed to the finished ground surface with a capped pipe sleeve. The customer shut-off valve will allow service shutdown by the resident and minimize the potential damage to the water meter. The City is responsible for water service maintenance up to and including the water meter, and the individual customer is

responsible for the water service from outside the meter can toward their property or dwelling.

- (o) Special circumstances where the City is responsible for the meter only means the City is responsible for the meter only; the customer is responsible for the can, riser, and curb stop.
- (p) The pipe, fittings, and meter starting at the main and ending at the customer shut-off valve must be laid in a line perpendicular to the water main unless otherwise approved in writing by the City.

Article 09-02-110 Stainless Steel Tapping Sleeve

- (a) Body: 18-8 Type 304 Stainless Steel. All welds shall be fully passivated to restore stainless characteristics.
- (b) Bolts: 18-8 Type 304 Stainless Steel. Heavy hex nuts and washer are coated to prevent galling.
- (c) Flange: 18-8 Type 304 Stainless Steel Flange with recess per MSS-SP60 to accept standard tapping valve. Flange conforms to AWWA C207 Class D ANSI 150 lb. drilling.
- (d) Outlet: 18-8 Type 304 Stainless Steel. Scheduled 10 for 3" and 4" outlets. Scheduled 5 for all outlets larger than 4".
- (e) Test Plug: 18-8 Type 304 Stainless Steel in test outlet.
- (f) Gasket: Sleeve shall have a full wide gasket of Nitrile Butadiene Rubber (NBR, Buna-N) per ASTM D2000 with hydromechanical activated lip, captured in a recessed groove around the outlet. Gasket shall be suitable for water, salt solutions, mild acids, bases, and sewage.
- (g) Service Rating: 2"-12" outlets: 175 psi.
- (h) Only qualified and appropriately licensed Utility Contractors shall complete potable water taps on new installations not connected to the City's potable water system at the time of the tap. The City shall observe all tapping activities. Taps on the City's active potable water system shall be completed by the City only.

Article 09-02-120 Detectable (Underground) Warning Tape

Detectable warning tape shall be 6" wide, 5 mil overall thickness, with a .35 mil solid foil coil. APWA Color coded with imprint of underground utility installed.

Article 09-02-130 Trace Wire

- (a) All trace wire shall have HDPE insulation intended for direct bury service. HDPE insulation shall be color coated per APWA Standard for respective utility being installed.
- (b) Trace wire shall be taped to the top of all water mains and fire hydrant/lines at a maximum 10-foot (10') interval. Trace wire integral to water services shall be connected to the water main trace wire.
- (c) Trace wire shall be as following based on installation method:
 - (1) Open Trench Installation: #12 AWG copper clad steel, high strength with minimum 450-pound break load and minimum 30 mil HDPE insulation thickness. Copperhead Industries High Strength – 1230 CCS Trace Wire or City approved equal.
 - (2) Directional Drilling/Boring: #12 AWG copper clad steel, high strength with minimum 1,150-pound break load and minimum 30 mil HDPE insulation thickness. Copperhead Industries Extra-High Strength – 1245 CCS Trace Wire or City approved equal.
 - (3) Pipe Bursting/Slip Lining: 7 x 7 stranded copper clad steel, extreme strength with minimum 4,700-pound break load and minimum 50 mil HDPE insulation thickness. Copperhead Industries SoloShot Xtreme – PBX-50 CCS Trace Wire or City approved equal.
 - (4) When a new trace wire is to be tied to an existing trace wire the connection shall be made with an approved splice connector and shall be properly grounded at the splice connection.
- (d) Connectors
 - (1) All main line trace wires shall be interconnected at intersections (tees and crosses). Connectors shall be lockable and manufactured specifically for use in underground trace wire installation. Connectors shall be dielectric silicon filled to seal out moisture and corrosion and shall be installed in a manner as to prevent any uninsulated wire exposure.

- (2) Tee Connectors (service lines, main line tees, and fire hydrants) shall include a 3-way lockable connector main line to lateral lug connector. Copperhead Industries Mainline-to-Service Connector Part Number 3WB-01 or City approved equal.
 - (3) Cross Connectors (main line crosses) shall include two (2) 3-way lockable main line to lateral lug connectors. Copperhead Industries Mainline-to-Service Connector Part Number 3WB-01 or City approved equal.
 - (4) Main line trace wire splices shall be completed utilizing twist-lock connectors. Copperhead Industries Locking Connector Part Number LSC1230C or City approved equal.
 - (5) Do not cut and splice main line trace wire.
 - (6) Non-locking friction fit, twist on, or taped connectors shall not be used.
- (e) Termination/Access Boxes
- (1) All trace wire termination points must utilize an approved trace wire access box, specifically manufactured for this purpose.
 - (2) All access boxes shall be identified with “sewer” or “water” cast into the cap and be APWA color coded according to the utility.
 - (3) A minimum of two-feet (2’) of slack is required in all trace wire boxes upon installation at final grade.
 - (4) All trace wire access boxes must include a manually interruptible conductive/connective link between the terminals for the trace wire connection and the terminal for the ground anode wire connection.
 - (5) Ground anode wire shall be connected to the identified terminal on all access boxes.
 - (6) Fire hydrants must terminate at an in-ground trace wire access box positioned within the fire hydrant concrete collar. Copperhead Industries SnakePit Concrete/Driveway with Two-Terminal Switchable Lid Access Point Part Number CD14*2T-SW or City approved equal.
 - (7) Main Line access boxes shall be placed at intervals not exceeding 500-feet in locations where fire hydrants are not present. Trace wire access boxes

may be placed outside the roadway driving surface or may be placed integral with valve box collars if pre-approved by the City.

- A. Trace wire access box placed integrally in concrete valve box shall be Copperhead Industries SnakePit Roadway with Two-Terminal Switchable Lid Access Point Part Number RB14*2T-SW or City approved equal.
- B. Trace wire access box outside the roadway prism shall be Copperhead Industries SnakePit Lite Duty with Two-Terminal Switchable Lid Access Point Part Number LD14*2T-SW or Engineer Approved Equal. Access boxes placed outside of the roadway shall be identified with flexible marker per Standard Detail W-19.

(f) Grounding

- (1) Trace wire must be properly grounded at all dead ends and stubouts.
- (2) Grounding of trace wire shall be accomplished using a drive-in magnesium grounding anode rod with a minimum of 20-feet of #12 AWG red HDPE insulated copper clad steel wire connected to the anode (minimum of 1.5-pound) specifically manufactured for the intended purposed. The ground anode shall be landed at the same elevation as the utility. Ground anode shall be Copperhead Industries Ground Rod with Twist-On Connector Part Number ANO-12 or City approved equal.
- (3) When grounding the trace wire at dead ends or stubouts, the grounding anode shall be installed perpendicular to the trace wire at a maximum possible distance.
- (4) When grounding the trace wire in long continuous runs, the grounding anode shall be installed directly beneath and in-line with trace wire. The grounding anode wire shall be trimmed to an appropriate length before connecting to trace wire with a mainline to lateral lug connector.

(g) Testing

- (1) All new trace wire installations shall be located using typical low frequency line trace equipment. The City shall conduct a test trace witnessed by the Contractor prior to final acceptance. The test trace shall be conducted using City equipment prior to final surface (asphalt/concrete) placement.

- (2) Continuity testing in lieu of actual line trace will not be accepted.

Article 08-02-140 Sampling Stations

- (a) All new developments proposing to tie to the City's Public Water System shall be completed with a minimum of one (1) sampling station. Based on the number of full buildout connections being served, the City will provide the developer with the total number of required sampling stations to be installed.
- (b) Sampling stations shall be designed specifically for collecting bacteriological and other water samples at a designated point directly from the water main. The sampling station shall be NSF/ANSI 372 certified and shall be manufactured by Kupferle Foundry Eclipse #88 Sampling Station or City approved equal.

Article 09-02-150 Cathodic Protection

Cathodic protection, if required, shall be designed by a licensed engineer in the State of New Mexico.

Article 09-02-160 Pressure Reducing Stations

Pressure reducing or regulating valves (PRV) are utilized to control pressures between distribution zones within the distribution system. When water main extension plans are submitted for review and water availability analysis, the need for a PRV installation will be determined and located based on existing pressure zones and the existing distribution system layout by the City on a case-by-case basis. In certain situations, the City shall require monitoring of the valve(s) via SCADA equipment.

ARTICLE 09-03 – CONSTRUCTION REQUIREMENTS

Article 09-03-010 Trench Excavation

- (a) Pipe trenches shall be excavated along straight lines to the dimensions as required in the Contract Documents.
- (b) All trenching work shall be done in a safe manner, trenches shall be rendered safe for the workmen by complying with the applicable safety standards, and by practicing safety measures consistent with current OSHA Trenching and Excavation Safety Standards and good construction methods.
- (c) All excavations shall be adequately barricaded and secured in accordance with the current New Mexico Department of Transportation Standard Specifications. Flashing lights and barricades shall be employed along open excavations and trenches to protect the public from potential hazards; barricades and advance

warning devices shall comply with MUTCD Standards as well as any special direction required by the City.

- (d) Unless trench banks are cut back on a stable slope, the trenches shall be braced as necessary to prevent caving or sliding, to provide protection for the workmen and the pipe. All trenching shall comply with OSHA Trenching and Excavation Safety Standards.
- (e) When over-excavation occurs beyond the limits indicated by the trench details, the over-excavated area shall be refilled with suitable material at optimum moisture and compacted to ninety-five (95) percent density per ASTM D 1557.
- (f) The maximum amount of open trench permitted in any one location shall be 100-feet, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater, unless otherwise approved by the City. A trench shall be considered open until backfilled to the top of subgrade.
- (g) Excavation of pipe trenches for flexible and rigid pipe is as required in the table below. In all cases, the trench shall be wide enough to allow for the compaction equipment.

Table 18: Minimum Trench Widths

Flexible Pipe	Minimum shall be not less than 1.5 times the pipe outer diameter plus twelve inches (12")
Rigid Pipe	Minimum shall be not less than the outside pipe diameter times 0.33

- (h) When trench is to be backfilled with flowable fill, the minimum trench width may be reduced to the pipe diameter plus twelve inches (12") and enough room needed to allow for the proper placement of the flowable fill using tools to "spade" the material under the pipe haunches.
- (i) Maximum Trench Width: the maximum width of the trench shall be determined by the Contractor based on the method and means for the installation. However, trench width shall not exceed the width of a ride-along compactor plus two feet (2') when working alongside the pipe or culvert.
- (j) Street Crossings
 - (1) Trenches crossing streets shall be completely backfilled immediately after pipe, wire, or conduit installation and a temporary or permanent asphalt patch or flowable fill cap shall be installed as directed by the City to protect the integrity of the trenches within the roadway limits from excessive

moisture. Under no circumstance shall a trench remain un-backfilled for longer than 30 calendar days. Trenches shall be considered backfilled when brought to final grade (in unpaved areas) or once surface patch (asphalt or concrete) has been placed.

- (2) Substantial bridging, properly anchored, capable of carrying the vehicle loading, in addition to adequate trench bracing, shall be used to bridge across trenches at street crossings where trench backfill, and temporary patches have not been completed during regular working hours as directed and approved by the City. Safe and convenient passage for pedestrians and access to all properties shall be provided.

(k) Disposal of Unsuitable Excavated Materials

- (1) Excess material and excavated material unsuitable for backfill shall be removed from the Project by the end of each working day unless otherwise approved by the City and disposed of by the Contractor in an environmentally responsible manner at no cost to the Project.
 - (2) When unsuitable material is encountered that is not shown in the Contract Documents, the City shall order the removal of the material by the Contractor and issue a field order to change the contract price due to the Contractor for removal of the materials.
- (l) Portable trench shields or boxes that provide a movable safe working area for installing pipe may be used for the installation of the pipe. After placing the pipe in the trench, backfill material shall be placed in lifts and the shield shall be lifted to allow for the backfill material to be placed for each lift, trench wall to trench wall.
 - (m) Transition Installations: When differential conditions of pipe support might occur, such as transitions from manholes to trench, a transition support region shall be provided to ensure uniform pipe support and preclude the development of shear, or other concentrated loading on the pipe.

Article 09-03-020 Bedding

- (a) The bottom of the trenches shall be smooth, and hand graded uniformly throughout. If rock or other unyielding material is encountered or if the trench is over-excavated, pipe bedding material shall be added, compacted, and graded to a smooth uniform surface. The compacted bedding shall support the pipe throughout its entire length, except at bells or couplings which shall not rest on the bedding.

- (b) After the bell or coupling holes are excavated and after the pipe pieces are connected and properly aligned and graded, successive layers of select material shall be placed and compacted, until the pipe is covered, as required in the Contract Documents. The Contractor shall maintain proper alignment and grade during the bedding process. Any bent, cracked, chipped, or damaged pieces of pipe shall be removed and replaced at Contractor's expense.

Article 09-03-030 Pipe Laying

- (a) Pipe shall be laid true to the line and grade indicated in the Contract Documents or as established by the City.
- (b) The pipe shall be protected during handling against impact shocks and free fall. Do not permit hooks, chains, cables, or handling equipment to come in contact with the pre-molded or pre-formed end surfaces.
- (c) Handle the pipe having pre-molded end surfaces or pre-formed end surfaces so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material or surfaces. Do not drag the end of the pipe on the ground or allow them to be damaged by contact with gravel, crushed stone, or any other hard objects.
- (d) No damaged or deformed pipe will be incorporated in the work.
- (e) The interior of the pipelines shall be kept free from dirt and other foreign material as the work progresses and shall be clean upon its completion. Tight stoppers or bulkheads shall be securely placed in the ends of all pipelines when the work is stopped temporarily, or at the end of the workday.
- (f) Immediately prior to joining, both pipe ends shall be thoroughly cleaned, and a lubricant shall be applied according to the manufacturer's recommendations. For push-on type joints, sufficient pressure shall be applied in making up joints to insure proper seating of the joints.
- (g) The full length of each section of pipe shall rest solidly upon the bed, with recesses excavated to accommodate bells and joints. Any pipe that has the grade or joint disturbed after laying shall be taken up and re-laid. Pipe shall not be laid in water or when trench or weather conditions are unsuitable for the Work except by permission of the City. Minimum depth of cover over top of pipe shall be three feet, unless otherwise approved by the City.
- (h) All nuts, and bolts utilized in underground pipe connections shall be stainless steel, high strength cast iron or high strength wrought iron. Carbon steel nuts and bolts

may be used except that they shall be protected by “cocoon” type protective coating of coal-tar and felt in accordance with AWWA Standard C 203.

- (i) Where connections are made between new work and existing lines, the connections shall be made using all required fittings as recommended by pipe manufacturer and approved by the City. Couplings may be either cast iron or steel with bolts as stated above. If steel couplings are used, they will be cocoon wrapped as specified herein.
- (j) Sanitary sewer main lines and potable water transmission/distribution main lines shall be laid parallel to each other and parallel to the street centerline when both are installed in the same street. Sanitary sewer main lines shall be placed within permitted streets only. If both are laid in the street, a minimum distance between the lines shall be ten-feet (10') horizontally, and the water transmission/distribution main line shall be at least two-feet (2') higher than the sanitary sewer main line. Where the water and sanitary sewer main lines cross each other, the water main line shall be a minimum of two-feet (2') higher than the sanitary sewer main line or the sanitary sewer line shall be concrete encased a minimum of ten-feet (10') on each side of the water line, per the detail W-11. If the water transmission/distribution main line crossing occurs below the sanitary/storm drain sewer the sewer main line shall be encased per detail W-11.
- (k) Water main lines shall not be constructed under walkways, sidewalks, curbs and gutters, drive pads, or similar concrete structures by tunneling underneath. The Contractor will cut these concrete structures by using a concrete saw to the closest control joint or, at their option, may remove the section of the concrete structure to the nearest full expansion joint or edge.
- (l) Encasement shall be performed as shown in the Contract Documents at shallow crossings or other instances in which piping may be exposed or susceptible to excessive surface loading. DIP shall be used for these crossings with push-on or M.J. type connections, blocked with curved / conforming cinder blocks underneath, installed in prepared trench of adequate width to house pipe diameter and encasement. Trench excavation shall have ninety-five (95) percent relative compaction or shall be in freshly excavated native material, and as approved by the City may suffice with adequate dimensions to omit use of formwork for encasement concrete placement. Encasement concrete shall be aggregate and Type II cement meeting or exceeding 3,000 psi compressive strength. Rebar shall be placed as shown in the Contract Documents, shall be new and unused, and tied with minimum six-inch (6") lap distances, with minimum two inches (2") of concrete cover on outside dimensions.

- (m) All valves shall be set true, level, vertical and plumb. Backfill shall be compacted to ninety-five (95) percent density under pavement, ninety (90) percent in unpaved areas, ASTM D 1557.
- (n) The Contractor shall remove the valve box and operating nut from all existing valves that are to be abandoned. The resulting excavation shall be backfilled and compacted to ninety-five (95) percent density, ASTM D 1557. The top six inches (6") of the excavation shall receive new base course placed to the above stated density. The pavement shall be sawcut to form a square opening. The cut faces of the existing asphalt shall be thoroughly coated with tack coat and new asphalt pavement shall be placed and densified to ninety-five (95) percent density, ASTM D 1557.
- (o) Cast iron valve boxes shall be set vertical and plumb centered over the operating nut. All valve boxes shall be adjusted to proper elevation, providing the minimum overlap of six inches (6") of the two (2) pieces, and a concrete collar shall be built around the top of each valve box. The concrete collar shall be of the size, shape, and dimensions shown in the Detail Drawings. The concrete shall be 3,000 psi at twenty-eight (28) days with one (1) inch aggregate and finished with a light broom finish. All concrete shall be removed from the top of the valve box and lid while it is still wet, and they shall be left clean. Backfill shall be compacted to ninety-five (95) percent density under pavement, ninety (90) percent in unpaved areas, ASTM D 1557. Valve stem extensions shall be required and installed on all valves for which the valve operator is more than four feet (4') below the finished surface.
- (p) Adapters and couplings shall be installed in strict compliance with the manufacturer's recommendations. Contractor shall provide, in place, all additional straps, rods, and harness required to make a secure water-tight connection.
- (q) The City shall have the right to check the pipe for line and grade by any method desired after the pipe is laid, and before backfilling begins. The City shall also have the right to check each pipe joint with a gauge or by any means necessary in order to be assured that the gaskets are in place and properly seated. Any run of pipe that is found to be appreciably off of line or grade shall be removed from the trench, the trench bedding shall be re-graded and compacted, and the pipe shall then be laid accurately online and grade. Any joint that is found to be improperly gasketed and/or seated shall be un-jointed and correctly reassembled. If any gasket is found to be damaged, the entire pipe section containing the damaged gasket shall be replaced with a new one.
- (r) Contractor shall furnish any tools, gauges, and all items required for the checking of the gaskets and joints, and he shall check every joint to be sure that the gaskets are seated and located in the correct place to avoid leakage at the joints.

- (s) Trenches shall be kept free from water during pipe installation until suitable backfill has been placed and compacted to prevent pipe flotation. Any standing water within the trench shall be evacuated and the trench bottom or bedding be restored per the standards contained herein.
- (t) Field cuts shall be completed with a hacksaw, handsaw, or a power saw with a steel blade or an abrasive disc. Field cuts shall be square to the pipe's flow area. The newly cut pipe end shall be beveled to the factory pipe chamfer. Completed field cuts shall be smooth and blunt free from shavings and rough edges.
- (u) Plastic water pipe shall be connected and placed in the trench in accordance with the manufacturer's recommendations.
- (v) The reference mark (a distinct circumferential line) is placed on the pipe's spigot end by the manufacturer to indicate the correct depth of spigot penetration into the pipe gasket joint. If the pipe is seated too deep or too shallow the pipe may buckle or separate due to thermal expansion/contraction. Spigot penetration shall be within one quarter (1/4) inch of the manufacturer's recommended mark.

Article 09-03-040 Utility Restraint Systems

- (a) Utility system piping thrust is to be restrained through the use of restrained joint fittings. Refer to Standard Details W-15 through W-18.
- (b) Bell joint restraints shall be utilized.
- (c) Where site conditions preclude the use of pipe restraints concrete thrust blocks may be utilized as follows. Thrust blocks shall be poured at all bends, valves, tees, reducers, and fittings, where changes in pipe diameter, alignment or grade occur, and as indicated in the Contract Documents or as required by City. Thrust blocks are only necessary where mechanical restraint joints are not being utilized. The minimum size of concrete thrust blocks shall be as shown in the Contract Documents or as directed by the City. The material of thrust blocks shall be concrete composed of concrete aggregates and shall have a compressive strength of no less than two thousand five hundred (2,500) psi in twenty-eight (28) days for standard cement Type II and shall be placed between solid, undisturbed ground and the fitting to be anchored. The area of bearing on the fitting and on the ground shall in each instance be that required by the City. Unless otherwise directed by the City the thrust blocks shall be placed so that the pipe and fitting joints will be accessible for repair. Metal harness or tie rods, of the size and type shown in the Contract Documents, shall be used. Refer to Standard Details: W-3 and W-4.

Article 09-03-050 Backfilling Trenches

(a) Definitions

- (1) **Foundation:** Over-excavation and backfill of the foundation only when the native trench bottom does not provide a firm-working platform for placement of the pipe bedding material.
- (2) **Bedding:** In addition to bringing the trench bottom to required grade, the bedding levels out any irregularities and ensures uniform support along the length of the pipe.
- (3) **Haunch Zone:** The backfill under the lower half of the pipe (haunches) distributes superimposed loadings.
- (4) **Initial Zone:** The backfill from the pipe midline to the top of the pipe zone provides the primary support against lateral pipe deformation for flexible pipe.
- (5) **Final Zone:** Backfill above the pipe zone to the top of the subgrade.

- (b) Materials for trench backfill may include flowable fill, Type I aggregate base course, Type II aggregate base course, and native materials. Individual pipe zone backfill requirements are presented below. The Contractor shall submit the material types to the City for approval prior to construction.

Native backfill shall only be utilized within the Final backfill zone. Native materials shall be free from sod, frozen earth, organic materials, rubbish, and debris. The material should be free of large stones (maximum clod size shall be < 3”) that may cause damage to the pipe, such as concentrated pipe loading.

Table 19: Type I Aggregate Base Course Gradation and Requirements

Sieve Size	Percentage of Dry Weight Passing Sieve
2-Inch	100
1-1/2-Inch	90-100
1-Inch	70-90
No. 4	30-65
No. 10	30-10
No. 16	15-20
No. 200	10-20
Plastic Index	12 Maximum
Liquid Limit	35 Maximum
Fractured Faces	70% Minimum
Total Available Water-Soluble Sulfates	Less than 0.3% by dry weight of soil

Table 20: Type II Aggregate Base Course Gradation and Requirements

Sieve Size	Percentage of Dry Weight Passing Sieve
1-Inch	100
¾-Inch	85-95
No. 4	40-70
No. 10	35-45
No. 16	25-35
No. 200	6-18
Plastic Index	12 Maximum
Liquid Limit	35 Maximum
Fractured Faces	70% Minimum
Total Available Water-Soluble Sulfates	Less than 0.3% by dry weight of soil

Table 21: Native Backfill Requirements

Percentage by Weight Passing No. 200 Sieve	Plasticity Index Maximum
0-20.0	12
20.1 – 50.0	10
50.1 – 80.0	8
80.1 – 100	6
Liquid Limit	50 Maximum

- (1) Foundation: Trench foundations shall be stable prior to placing bedding material. If the City determines that unsuitable materials exist at the trench foundations, the Contractor shall remove and replace the material as directed by the City.
- (2) Pipe Bedding: The trench shall be excavated to a depth of four- to six-inches (4"-6") below the bottom of the pipe barrel and to a depth that will

be sufficient to provide two- to four-inches (2"-4") of clearance under the pipe bell (where applicable).

Uniform and stable bedding shall be provided for the pipe and any protruding features of its joints and/or fittings. The middle of the bedding equal to one-third ($1/3$) the pipe outside diameter may be loosely placed to allow for the pipe bell and other protruding features. Alternatively, the compacted bedding material may be excavated slightly to allow for continuous lines and grades of the pipe structure.

Pipe bedding shall consist of Type II aggregate base course or flowable fill. Bedding shall be backfilled to the required grade of the bottom of the pipe. The compaction shall provide a density, at minimum, equal to 95 percent of the maximum dry density in accordance with ASTM D 1557 with the exception of the middle-uncompacted area.

- (3) Haunch Zone Backfill: After the pipe or conduit is laid, the haunch areas shall be backfilled with Type II aggregate base course or flowable fill.

Compaction of the haunching material can be best accomplished by hand with tampers or suitable power compactors for maximum compacted lift thickness of six inches (6"). The Contractor shall take care to not disturb the pipe from its line and grade while compacting the backfill. Material suitably distant from the pipe shall be compacted to 95 percent of the maximum dry density in accordance with ASTM D 1557.

While compacting the embedment near the pipe with impact-type tampers, caution shall be taken to not allow direct contact of the equipment with the pipe.

- (4) Initial Backfill Zone: After the pipe or conduit is laid, the initial backfill area shall be backfilled with Type II aggregate base course or flowable fill. Avoid usage of impact tampers directly above the pipe until the full loose layer backfill depth above the pipe is obtained.

Table 22: Initial Backfill Zone Material Depths

Pipe or Conduit	Initial Zone
2-Inch or less diameter	6-Inches above the top of pipe
Greater than 2-Inch diameter	12-Inches above the top of pipe

- (5) Final Backfill Zone: The remaining backfill, to the top of subgrade, shall consist of Type I or Type II aggregate basecourse, native material, or

flowable fill. The material shall be compacted to a minimum of 95 percent of the maximum dry density in accordance with ASTM D 1557.

- A. If flowable fill is used, flowable fill shall be placed from the top of the initial backfill zone to the bottom of the flexible pavement (replaces aggregate road base in the pavement section over the trench).
- B. Flowable fill cap may be required in the upper portion of the Final Backfill Zone for all non-residential roadways with a minimum thickness of twelve inches (12”) for minor collectors and eighteen inches (18”) for all major collectors and arterials.

(c) **Compaction**

- (1) Compaction shall be performed by mechanical means except in the haunch zone where compaction may be required by hand tamping. Mechanically compacted backfill shall be placed in layers of thickness compatible with the characteristics of the backfill and the type of equipment being used and shall have a maximum lift thickness as shown in the table below. The lifts shall be placed on both sides of the pipe at the same time to reduce pipe movement.

Table 23: Backfill Lift Thickness

Location	Maximum Compacted Lift Thickness (inches)	Maximum Loose Lift Thickness (inches)
Bedding, Haunch, and Initial Zones	6	8
Final Zone	8	12

- (2) Each layer shall be evenly spread, moistened, and tamped or rolled until the specified relative compaction has been attained.
- (3) Compaction minimum shall be 95 percent of the maximum dry density in accordance with ASTM D 1557 for trenches within the roadway prism. Compaction requirements for the final zone of trenches outside the roadway may be reduced to 90 percent of maximum dry density in accordance with ASTM D 1557.
- (4) Density testing shall be completed every 200-feet on mains or any part thereof per day, one per every three services or any part thereof per day.

- (5) Density testing per depth: Less than or equal to four-feet (4') shall require one at depth and one at subgrade per horizontal length above. Greater than four-feet (4') depths shall require one per six-inch (6") or larger pipe, then one every three (3) vertical feet, and one at subgrade per horizontal length above.
- (6) Where test results reveal non-compliance with the requirements of the Contract, the Contractor shall bear the costs of subsequent rework and retesting until the required specification compliance is obtained to the satisfaction of the City.
- (d) Minimum Pipe Spacing: If the pipe space between parallel pipes in a single trench is not conducive to mechanical backfill, then flowable fill shall be used.

ARTICLE 09-04 – FLUSHING AND DISINFECTION

Article 09-04-010 Work Description

- (a) This work includes materials and procedures for flushing and disinfection of water mains by the continuous feed method and by the slug method. The tablet method to disinfect pipelines shall not be used. Disinfect piping in accordance with AWWA C651 as modified below.
- (b) At all times, 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 in accordance with AWWA Standard C651. Water needed to fill the new main for testing and flushing purposes shall only be potable City water supplied through a temporary connection protected by a backflow device.
- (c) The backflow device must be tested and certified after installation on-site. A copy of the certification shall be given to the City and a copy shall be kept on-site with the device. Testing must be completed by a certified testing facility and be on the City's approved tester list.

Article 09-04-020 Job Conditions

- (a) Disposal of the chlorinated disinfection water and the flushing water is the Contractor's responsibility. The chlorinated disinfection water shall be properly disposed of by either pumping the water into a tank truck or through de-chlorination using a neutralizing chemical applied to the wasted water in accordance with AWWA C655 "Field Dechlorination" prior to directing the dechlorinated water into the environment or the sewer system.

- (b) An air gap of two (2) times the hose diameter must be provided to prevent cross contamination. The Contractor shall notify City (24) hours prior to disposal into the sewer system. Schedule the rate of flow and locations of discharges in advance to permit review and coordination with the City. Use potable water for chlorination. Submit request for use of water from waterline of the City forty-eight (48) hours in advance. All notifications to the City shall be completed in writing and acknowledged in writing prior to commencement of activities by the Contractor.

Article 09-04-030 Materials

- (a) Liquid Chlorine: Inject with a solution feed chlorinator and a water booster pump. Use an experienced operator and follow the instructions of the chlorinator manufacturer.
- (b) Calcium Hypochlorite (Dry): Dissolve in water to a known concentration in a drum and pump into the pipeline at a metered rate.
- (c) Sodium Hypochlorite (Solution): Further dilute in water to desired concentration and pump into the pipeline at a metered rate.
- (d) Chlorine Residual Test Kit: For measuring chlorine concentration, supply and use a medium range, drop count, titration kit or an orthotolidine indicator comparator with wide range color discs. Products: Hach Chemical or Hellige. Maintain kits in good working order available for immediate test of residuals at point of sampling. The use of expired DPD compound is prohibited.

Article 09-04-040 Execution

- (a) Continuous Feed Method for Pipelines: The continuous-feed method consists of completely filling the main with potable water, removing air pockets, then flushing the completed main to remove particulates, and refilling the main with potable water that has been chlorinated to a minimum of 50 mg/L. After a 24-hour holding period in the main there shall be a free chlorine residual of not less than 25 mg/L. Table 16 below provides the amount of chlorine required for each 100-feet of pipe across various diameters. A complete step-by-step procedure can be found in AWWA C651.

Table 24: Chlorine required to produce an initial 50-mg/L concentration in 100ft of pipe by diameter.

Pipe Diameter (inches)	100% Chlorine (lb)	1% Chlorine Solution (gal)
4	0.027	0.33
6	0.061	0.73
8	0.108	1.30
10	0.170	2.04
12	0.240	2.88

- (b) **Slug Method for Pipelines:** Introduce the water in the pipeline at a constant measured rate. At the start of the test section, feed the chlorine solution into the pipeline at a measured rate so that the chlorine concentration created in the pipeline is three hundred (300) mg/L. Feed the chlorine for a sufficient period to develop a solid column or "slug" of chlorinated water that will, as it passes along the line, expose all interior surfaces to a concentration of at least three hundred (300) mg/l for at least three (3) hours.
- (c) **Disinfection of Valves and Appurtenances:** During the period that the chlorine solution or slug is in the section of pipeline, open and close valves to obtain a chlorine residual at hydrants and other pipeline appurtenances.
- (d) **Disinfection of Connections to Existing Pipelines:** Disinfect per AWWA C651. Flush with potable water until discolored water, mud, and debris are eliminated. Swab interior of pipe and fittings with a one (1) percent sodium hypochlorite solution. After disinfection, flush with potable water again until water is free of chlorine odor.
- (e) After the chlorine solution applied by the continuous feed method has been retained in the pipeline for twenty-four (24) hours. Confirm that a chlorine residual of fifty (50) mg/l minimum exists along the pipeline by sampling at air valves and other points of access.
- (f) With the slug method, confirm by sampling as the slug passes each access point and as it leaves the pipeline. After confirming the chlorine residual, flush the excess chlorine solution from the pipeline until the chlorine concentration in the water leaving the pipe is within 0.5 mg/l of the existing potable water system.
- (g) **Pipeline Flushing:** After confirming the chlorine residual, dechlorinate the excess chlorine solution from the pipeline until the chlorine concentration in the water leaving the pipe is within 0.5 mg/l of the replacement water. Replacement water sample shall be verified by the City.

- (h) Bacteriologic Tests: Collect two (2) samples, deliver to a certified laboratory within six (6) hours of obtaining the samples, and obtain a bacteriologic quality test to demonstrate the absence of coliform organisms in each separate section of the pipeline after chlorination and refilling. The City shall observe while samples are taken; written notification shall be received 24-hours prior to desired sampling. Water testing bottles for transportation to the lab must be sealed in the presence of the City. Sampling shall only occur between 8:30 AM and 3:00 Monday through Thursday, excluding holidays, unless preapproved by the City. Hydrants shall not be utilized as sampling points; smooth, unthreaded hose bib shall be utilized for sampling in accordance with AWWA C651.
- (1) New Mains: An initial set of samples shall be completed and then resampled 24-hours later, in accordance with AWWA C651. In order to place the line into service both sets of samples must show the absence of coliform bacteria and acceptable aesthetic quality (e.g. chlorine residual, pH, alkalinity, specific conductance, turbidity). At the option of the City a heterotrophic plate count (HPC) may be required.
 - A. For new mains, sets of samples shall be collected every 1,200 feet of the new water main, plus one set from the end of the line and at least one from each branch greater than one pipe length.
 - B. If trench water has entered the new main during construction or if, in the opinion of the City, excessive quantities of dirt or debris have entered the new main, bacteriologic samples shall be taken at intervals of approximately 200 feet. Samples shall be taken of water that has stood in the new main for at least 16 hours after final flushing is completed.
- (2) Repaired Mains: For repaired mains that were depressurized and/or wholly or partially dewatered, one set of samples will be required. Samples shall be collected downstream of the repair site and at intervals of approximately 200 feet within the length of pipe that was shut down. If the direction of flow is not known, or known to flow both directions, samples shall be collected on either side of the repair site. Refer to AWWA C651 for additional guidance.
- (i) Repetition of Procedure: If the initial chlorination fails to produce required residuals and bacteriologic tests, repeat the chlorination and retesting until satisfactory results are obtained.

- (j) Test Facility Removal: After satisfactory disinfection, replace air valves, restore the pipe coating, and complete the pipeline where temporary disinfection or test facilities were installed.

Article 09-04-050 Hydrostatic Tests

- (a) The Contractor shall be required to test all piping and other lines and appurtenances in the presence of the City. Test reports shall be required for each test and submitted to the City. Testing of lines shall be done without being connected to existing lines. If such connections are allowed it is with the understanding that the Contractor assumes any and all responsibility in case of damage, failure and/or contamination to the existing system. The new water pipe will be tested before the backfilling is done. After the pipe is laid, earth cover shall be placed over the middle of the pipe joints, leaving the corp. stops, valves, service taps and laterals uncovered. The pipe will be filled with water, and the pressure in the pipeline shall be raised by means of a motor-driven water pump to a hydrostatic pressure of one hundred fifty (150) psi or one and one-half (1.5) times the normal working pressure, whichever is greater, at the lower end of the pipe section. Applicable AWWA C-600 standards and procedures shall be adhered to for determination of losses on pipes up to thirty-inches (30") in diameter. If any leaks appear in the pipe, they shall be repaired to the satisfaction of the City, and the test shall be performed until the pipe holds the prescribed pressure. As an alternative, the Contractor may opt to test the pipeline in sections between mainline valves or as approved by the City.
- (b) All testing shall be conducted in accordance with AWWA Standard C600 for ductile iron mains and AWWA Standard C605 for PVC mains and those portions of the above standard related to hydrostatic tests shall apply to any type of water main construction. Test pressure shall be one hundred fifty (150) psi or one and one-half (1.5) times the normal working pressure, whichever is greater. Waterline shall be placed in its final position for hydrostatic testing. If the waterline is moved, all testing shall be performed again.
- (c) All taps, gauges and necessary equipment shall be provided by the Contractor; however, the City may utilize gauges provided by the City at their discretion.
- (d) Leakage Defined: Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within five (5) psi of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water. If the pressure drops more than five (5) pounds in thirty (30) minutes, the pipe has failed to pass the test. If the pressure drop is less than five (5) pounds in thirty (30) minutes, water shall be added to the pipe section to maintain the one hundred fifty (150) psi test pressure and the volume of water added shall be duly recorded. This procedure shall be repeated at

each thirty (30) minute intervals for the test period. The total volume of water added to the pipe section to maintain the one hundred fifty (150) psi test pressure shall represent the total leakage during the test.

- (e) Allowable leakage: No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{\frac{DIP}{SD\sqrt{P}}}{133,200} \quad \text{or} \quad L = \frac{\frac{PVC}{ND\sqrt{P}}}{7,400}$$

where L is the allowable leakage, in gallons per hour, S is the length of pipe tested, in feet; N is the number of joints in the length of pipeline tested, D is the nominal diameter of the pipe, in inches, and P is the average test pressure during the leakage test, in pounds per square inch gauge.

The tables below present the allowable leakage per various pipe diameters per 1,000 feet of pipeline.

Table 25: Allowable Leakage (GPH) per 1,000 Feet of Pipeline (DIP)

Avg. Test Pressure	6	8	10	12	14	16	18	24	30
PSI	In.	In.	In.	In.	In.	In.	In.	In.	In.
350	0.84	1.12	1.40	1.69	1.97	2.25	2.53	3.37	4.21
300	0.78	1.04	1.30	1.56	1.82	2.08	2.34	3.12	3.90
275	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.99	3.73
250	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.85	3.56
225	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.70	3.38
200	0.64	0.85	1.06	1.27	1.49	1.70	1.91	2.55	3.19
175	0.60	0.79	0.99	1.19	1.39	1.59	1.79	2.38	2.98
150	0.55	0.74	0.92	1.10	1.29	1.47	1.66	2.21	2.76

Table 26: Allowable Leakage (GPH) per 1,000 Feet of Pipeline (PVC)

Avg. Test Pressure	6	8	10	12	14	16	18	24	30
PSI	In.	In.	In.	In.	In.	In.	In.	In.	In.
300	0.70	0.94	1.17	1.40	1.64	1.87	2.11	2.81	3.51
275	0.67	0.90	1.12	1.34	1.57	1.79	2.02	2.69	3.36
250	0.64	0.85	1.07	1.28	1.50	1.71	1.92	2.56	3.21
225	0.61	0.81	1.01	1.22	1.42	1.62	1.82	2.43	3.04
200	0.57	0.76	0.96	1.15	1.34	1.53	1.72	2.29	2.87
175	0.54	0.72	0.89	1.07	1.25	1.43	1.61	2.15	2.68
150	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.99	2.48

- (f) When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gal/h/in. (0.0012 L/h/mm) of nominal valve size shall be allowed.
- (g) When hydrants are in the test section, the test shall be made against the closed hydrant.
- (h) Acceptance of Installations: Acceptance shall be determined on the basis of allowable leakage. If any test of pipe laid disclosed leakage greater than specified the Contractor shall, at the Contractor's expense, locate and make repairs as necessary until the leakage is within the specified allowance.
- (i) All visible leaks are to be repaired regardless of the amount of leakage.
- (j) The Contractor shall be notified of any leaks that may occur during the one (1) year warranty period and shall make immediate arrangements after he is notified to return to the job site and repair any leaks that may develop in the pipeline.

Article 09-04-060 Asbestos Containing Materials

It is the Contractor's responsibility to follow all EPA, OSHA, New Mexico Solid Waste Management Regulations, and all other regulations when working with asbestos-cement (AC) pipe. At a minimum, the work shall be completed with all personal protective equipment and a respirator. Cutting of AC pipe will not be permitted. At the point of tie-in connection to an existing AC line, the Contractor shall excavate to the nearest joint and remove the section of pipe in a single piece (full joint). The AC pipe must remain wet and encapsulated with 6 mil or thicker plastic bag per NM Solid Waste Management Regulations until the pipe is delivered to the Special Waste Facility. Existing AC pipe shall remain abandoned in place whenever possible.

ARTICLE 09-05 – COORDINATION

Article 09-05-010 Construction Coordination, Survey, & Acceptance

- (a) The Contractor shall coordinate the Work with the City before commencing work. The City shall inspect and approve all work prior to backfilling. Photos will not be accepted in lieu of a physical inspection.
- (b) The Contractor shall notify the City in writing when each utility installation is complete in place per plan and ready for inspection. No utility backfill shall be placed until inspection has been satisfied by the City.
- (c) Acceptance Submittal – All test reports (utility, bacteriological, concrete, compaction, etc.), signed inspection forms, field marked construction drawings reflecting as-built conditions, and delivery of post construction survey as defined below.
- (d) Post Construction Survey – to be completed by a professional surveyor licensed in the State of New Mexico. The survey shall include key system components for incorporation into the City’s geographic information system (GIS). All data shall be created in real world coordinate system based on the following projection: horizontal control in NAD83, vertical control in NAVD88, and based on New Mexico State Plan Coordinates System (Grid), Central Zone, US Foot. The survey shall be tied to at least two (2) City control points as included at the end of Chapter 05. The Post Construction Survey shall be completed in a City approved AutoCAD version (.dwg format) provided to the City on a mass storage drive (compact disc or usb storage device) or via secure downloadable link.

The Post Construction Survey provider shall include a table identifying the layering convention used to depict system components (i.e. Layer C-UTIL-WATR-12in represents a twelve (12”) diameter C-900 PVC Water Line, etc.). This will allow the City personnel to isolate and import portions of the drawing and translate the information directly into usable data in their GIS. The user at their option can base their layering convention on the National Cad Standard (NCS) for ease of use. The City will not accept CAD files containing information drawn in paperspace.

The post construction survey shall be in conjunction with the Record Drawings noting work per plan or identifying different field installation conditions.

- (1) Drainage Systems Components: drainage channel control features and flowline elevations, drainage channel structure information (culvert upstream/downstream flowline elevations), manholes, inlets, pipe outfall(s), pond top elevation, and pond bottom elevation.

- (2) Sanitary Sewer System Components: standard manholes, control manholes, drop manholes, cleanouts at right-of-way or property lines, casing installations, and sewer service taps.
 - (3) Lift Station Components: wet wells, dry wells, vaults, cleanouts, air valves, plug valves, flow meter, bends, and manholes.
 - (4) Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, fire hydrants, water meters, service line taps, sampling stations, and pressure reducing stations.
 - (5) Reclaimed Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, hydrants, meters, service line taps, or pressure reducing stations.
- (e) Substantial Completion – the Acceptance Submittal and Post Construction Survey shall be provided to the City, reviewed, and accepted by the City prior to issuance of Substantial Completion and subsequent commencement of the warranty period.

END OF ARTICLE CHAPTER 09

CHAPTER 10 – RECLAIMED WATER SUPPLY SYSTEM

ARTICLE 10-01 - GENERAL

Article 10-01-010 Reclaimed Water System Materials

Item Description	Size or Reference	Specification	Manufacturer
PVC Pipe DR18	4" to 30"	AWWA C900-16 ASTM D1784 - Pipe Compound ASTM F477 - Gasket	--
PVC Pipe DR25	4" to 36"	AWWA C900-16 ASTM D1784 – Pipe Compound ASTM F477 - Gasket	--
PVC Fittings	6" to 12"	AWWA C153	--
Ductile Iron Pipe	12" to 36"	ANSI/AWWA C151/A21.51	--
Fiberglass Flexible Markers	W-29	APWA Color Code	--
Couplings Mechanical and/or Flexible	--	AWWA C111	Romac or Approved Equal
Casing Pipe End Seals	W-21	See Manufacturer's Specifications	T.D. Williamson Z-Seal Casing Seals or Approved Equal
Casing Spacer Band	W-21	See Manufacturer's Specifications	Advance Products & Systems, LLC Model SSIM or Approved Equal
Gate Valves	4" to 12"	AWWA C515 NSF/ANSI 61 & 372	Waterous Company or Approved Equal
Butterfly Valves	≥ 12"	AWWA C504	MH Valve Co. or Approved Equal
Valve Boxes	Series 6850 W-5, W-6, & W-7	ASTM A-48	Tyler Pipe, Tyler Corporation or Approved Equal
Valve Box Lockable Debris Cap	W-5	See Manufacturer's Specifications	SW Services LLC or Approved Equal

Fire Hydrant	W-9	AWWA C502	Clow “Medallion” American Darling Model B-62 or B-84, Mueller Super Centurion Model A- 423
Reduced Pressure Backflow Prevention Devices	2 -1/2” to 10”	AWWA C511-92	Watts Series LF909 or Approved Equal
Stainless Steel Tapping Sleeve	--	AWWA C207 ASTM D2000	--
Detectable Warning Tape	APWA Standard	ASTM D2103	--
Trace Wire	#12 AWG Copper Clad Steel W-19 & W-33	ASTM B1010 – Wire ASTM B910/B910M – Wire ASTM D1248 -Insulation	Copperhead Industries or Approved Equal
Trace Wire Connectors	W-19 & W-33	See Manufacturer’s Specifications	Copperhead Industries Connector Part Number 3WB-01 or Approved Equal
Trace Wire Access Boxes	W-19	ASTM D1788, Type 1 – Base Material APWA Standard	Copperhead Industries CD14*2T- SW or Approved Equal
Trace Wire Access Box Lid	W-19	ASTM D1788, Type 1 – Base Material APWA Standard	Copperhead Industries RB14*2T- SW or LD14*2T-SW or Approved Equal
Trace Wire Grounding (Ground Anode)	W-33	See Manufacturer’s Specifications	Copperhead Industries Ground Rod with ANO-12 or Approved Equal
Mechanical Joint Restraint	W-15 thru W-18	AWWA C600, C605 or ASTM D2774 ASTM A536 - Material	EBBA Iron Inc. or Approved Equal
Air-Release and Vacuum-Relief Valves	W-14	AWWA C512 ASTM A 48 ANSI B1.20.1	Val-Matic Model 201C.2 or Approved Equal
Air-Release and Vacuum-Relief Enclosure	Precast Manhole W-14 & W-25	ASTM C478 AASHTO M199 NMDOT Section 517 and 662	Western Precast Concrete Inc. or Approved Equal

Traffic Bearing Manhole ring and Cover	W-25	AASHTO H-20	East Jordan or Approved Equal
Manhole gap filler	W-25 & W-26	ASTM C990-09	RAM-NEK Joint sealant or Approved Equal
Air-Release and Vacuum-Relief Enclosure Lid	W-14	H20 traffic rated ASTM C478-93	--

Article 10-01-020 Work Description

- (a) This Work consists of furnishing all of equipment, materials, and labor to perform all operations in connection with the installation of reclaimed water lines and appurtenances. This section defines required characteristics and properties of Polyvinyl Chloride (PVC) and Ductile Iron Pipe (DIP), valves, valve boxes, adapters, couplings, fire hydrants, materials, fittings, appurtenances, and construction practices.
- (b) Contractor shall provide, in place, all valves, adapters, couplings, and appurtenances necessary to meet the requirements of this Project, whether shown in the Contract Documents or not.
- (c) Water needed to fill the new main for testing and flushing purposes shall only be potable City water supplied through a temporary connection protected by a backflow device.
- (d) The backflow device must be tested and certified after installation on-site. A copy of the Certification shall be given to the City and a copy shall be kept on-site with the device. Testing must be completed by a certified testing facility on the City's approved listing.

Article 10-01-030 Location

Reclaimed waterline shall be located as directed by the City. All reclaimed water mains shall be laid with a minimum cover of three-feet (3'). The minimum pipe coverage shall apply to new construction only.

Article 10-01-040 Minimum Reclaimed Waterline Size

The minimum size of reclaimed water mains shall be six-inches (6") in diameter.

ARTICLE 10-02 – MATERIALS

Article 10-02-010 General

- (a) Pipe and accessories shall be new and unused. Pipe shall be color-coded (purple for reclaimed water). Detectable Marking Tape shall be installed as provided in the Contract Documents.
- (b) When PVC pipe is stored outside and exposed to prolonged periods of sunlight, an obvious discoloration of the pipe can occur. This is an indication of reduced pipe impact strength, and any length of pipe that is discolored will be rejected by the City. All pipe rejected will be removed from the job site by the Contractor.

Article 10-02-020 PVC Pipe

- (a) PVC pipe four inches (4"-for existing tie-in locations only) through twelve inches (12") shall be not less than DR18, Class 235 and in conformance with AWWA C900, latest revision. Pressure class of PVC pipe shall be as required by Appendix A of AWWA C900. PVC pipe over twelve inches (12") shall be no less than DR25, Class 165 and in conformance with AWWA C900, latest revision.
- (b) All PVC pipes shall be approved for use in potable water systems by an agency such as NSF Testing Laboratory.
- (c) Joints: For pipe six inches (6") through twelve inches (12"), elastomeric gasket bell push-on type ends shall be used in accordance with ASTM F 477.
- (d) Fittings: For pipe six inches (6") through twelve inches (12"), fittings for PVC pipe shall conform to the requirements of AWWA C153 and shall be cement mortar lined in accordance with AWWA C104. Fitting types shall include restrained mechanical joints and concrete thrust block where required. Restraining, standard mechanical joints, and fittings shall be submitted for City approval.

Article 10-02-030 Ductile Iron Pipe

- (a) Ductile iron pipe shall be in accordance with ANSI/AWWA C151/A21.51 and Federal Specification WW-P-421d, latest revision. All ductile iron pipe shall be minimum class 150, unless otherwise indicated in the Contract Documents. Ductile iron pipe fittings shall be pressure rated at three hundred fifty (350) psi and be in accordance with ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11.
- (b) All ductile iron pipe and fittings shall be internally mortar lined in accordance with ANSI A21.4, latest revision, and shall have an exterior coating in accordance with ANSI A21.6, A21.8, or A21.51.

- (c) All ductile iron pipe and ductile iron fittings shall have a polyethylene encasement in accordance with ANSI/AWWA C105/A21.5, latest revision.
- (d) The ductile iron pipe shall be push-on type joints, unless indicated otherwise on the plans, and the fittings shall conform to the requirements of AWWA C153 and shall be cement mortar lined in accordance with AWWA C104. Fitting types shall include standard flange fittings and mechanical joints.

Article 10-02-040 Adapters and Couplings

- (a) All adapters, pipe couplings, tap and sleeves, or mechanical type couplings required for any of the piping systems shall be of the type manufactured for the specific purpose of the use intended, and shall be installed in strict compliance with the manufacturer's specifications, and to the satisfaction of the City. Factory-made adapters shall be furnished for connecting transition material to the mechanical joint fittings and valves, where required, including plastic to steel and plastic to DIP.
- (b) Mechanical and/or flexible couplings shall be manufactured by Romac, or approved equal, and shall be sized and styled in accordance with the requirement for the particular coupling and used in accordance with the manufacturer's recommendations for the diameter, thickness and type of pipe to be connected. The mechanical and/or flexible couplings shall be provided with an acceptable joint harness to prevent separation of the joint where required due to pressure or change in direction of fittings. Couplings shall be polyethylene wrapped.

Article 10-02-050 Valves

- (a) Gate Valves: All gate valves four-inch to twelve-inch (4"-12") shall be resilient seated gate valves conforming to AWWA C515 rated for two hundred fifty (250) psi working pressure. Valves shall have a standard two (2) inch operating nut that opens counterclockwise. The wedge shall be constructed of ductile iron and shall be fully encapsulated in synthetic rubber except for the guide and wedge nut areas. The wedge shall seat against seating surfaces that are inclined to the vertical at a minimum angle of thirty-two (32) degrees when stem is in vertical position to eliminate abrasive wear. The non-rising stem shall be sealed by at least two (2) O-rings. The waterway shall be smooth and shall have no depressions or cavities. The valve body and bonnet shall be epoxy coated, inside and out, and wrapped with polyethylene sheet encasement. Joints shall be restrained mechanical joint ends. Valve shall be as manufactured by Waterous Company or approved equal.
- (b) Butterfly Valves: All butterfly valves fourteen-inch (14") and larger shall be rubber seated, tight-closing type conforming to AWWA C504 rated for two hundred fifty

(250) psi working pressure. Valves shall have a standard two-inch (2") operating nut that opens counterclockwise. The offset vane shall be constructed of ductile iron and shall form an uninterrupted 360-degree seal. Joints shall be restrained mechanical joint ends. Valve shall be as manufactured by M&H Valve Company or approved equal.

Article 10-02-060 Valve Boxes

- (a) Valve boxes shall be deep skirted, adjustable cast iron two (2) piece screw type, Series 6850 as manufactured by Tyler Pipe, Tyler Corporation, or approved equal. The valve boxes shall be five and one-quarter (5-1/4) inch diameter and the two (2) pieces shall overlap at least six (6) inches. The drop lid shall have a depth of two (2) inches, shall weigh thirteen (13) pounds, and shall have the word "WATER" embossed on top. Refer to Standard Details: W-5, W-6, and W-7.
- (b) Valve boxes shall have debris caps installed to aid in the prevention of dirt and debris accumulation within the valve box. Lockable debris caps shall be as manufactured by SW Services, LLC or City approved equal.

Article 10-02-070 Fire Hydrants

- (a) Fire hydrants and extensions shall be in accordance with AWWA C502, traffic type, fire hydrants shall have two (2) two and one-half (2-1/2) inch hose nozzle connections, and one (1) four and one-half (4-1/2) inch steamer nozzle. All nozzle connections shall be National Standard Fire Hose Coupling screw threads. Fire hydrants shall have a bronze or cast-iron pentagon operating nut. The main inlet shall be six (6) inch restrained mechanical joint type. All fire hydrants shall be rated for two hundred fifty (250) psi working pressure. Any marks or scratches on new fire hydrants shall be corrected to the satisfaction of the City. Extensions will be used, when required, to bring the bottom of the break-off flange three (3) to six (6) inches above the top of the surrounding finished grade. All fire hydrants shall be Clow Medallion (preferred), Mueller Super Centurion A-423 (second choice), or American Darling B-84. All fire hydrants shall be painted purple. Refer to Standard Details: W-9 and W-10.
- (b) The pipe, fittings, and fire hydrants starting at the main and ending at the fire hydrant must be laid in a line perpendicular to the water main unless otherwise approved in writing by the City.

Article 10-02-080 Cross Connection, Prevention, and Control

- (a) The need, responsibilities, requirements, inspections, and maintenance of backflow prevention devices shall adhere to Article 8.08 of the City's General Ordinances.

- (b) Reduced pressure backflow prevention devices shall be Watts Series LF909 or Engineer Approved Equal.
- (c) All approved containment and isolation backflow prevention assemblies which are classified as testable devices shall be tested at least one per year. For complete testing and maintenance requirements refer to Article 8.08 of the City's General Ordinances. Refer to Standard Details: W-30 and W-31.

Article 10-02-090 Reclaimed Water Services

- (a) All new reclaimed water services shall be accompanied by an approved New Mexico Environment Department (NMED) Ground Water Discharge Permit.
- (b) Approved connections to the City's Reclaimed Water System shall be metered. The meter location and manufacture shall be coordinated with the City.

Article 10-02-100 Stainless Steel Tapping Sleeve

- (a) Body: 18-8 Type 304 Stainless Steel. All welds shall be fully passivated to restore stainless characteristics.
- (b) Bolts: 18-8 Type 304 Stainless Steel. Heavy hex nuts and washer are coated to prevent galling.
- (c) Flange: 18-8 Type 304 Stainless Steel Flange with recess per MSS-SP60 to accept standard tapping valve. Flange conforms to AWWA C207 Class D ANSI 150 lb. drilling.
- (d) Outlet: 18-8 Type 304 Stainless Steel. Scheduled 10 for 3" and 4" outlets. Scheduled 5 for all outlets larger than 4".
- (e) Test Plug: 18-8 Type 304 Stainless Steel in test outlet.
- (f) Gasket: Sleeve shall have a full wide gasket of Nitrile Butadiene Rubber (NBR, Buna-N) per ASTM D2000 with hydromechanical activated lip, captured in a recessed groove around the outlet. Gasket shall be suitable for water, salt solutions, mild acids, bases, and sewage.
- (g) Service Rating: 2"-12" outlets: 175 psi.
- (h) Only qualified and appropriately licensed Utility Contractors shall complete reclaimed water taps on new installations not connected to the City's reclaimed

water system at the time of the tap. The City shall observe all tapping activities. Taps on the City's active reclaimed water system shall be completed by the City only.

Article 10-02-110 Detectable (Underground) Warning Tape

Detectable warning tape shall be 6" wide, 5 mil overall thickness, with a .35 mil solid foil coil. APWA Color coded with imprint of underground utility installed.

Article 10-02-120 Trace Wire

- (a) All trace wire shall have HDPE insulation intended for direct bury service. HDPE insulation shall be color coated per APWA Standard for respective utility being installed.
- (b) Trace wire shall be taped to the top of all water mains and fire hydrant/lines at a maximum 10-foot (10') interval. Trace wire integral to water services shall be connected to the water main trace wire.
- (c) Trace wire shall be as following based on installation method:
 - (1) Open Trench Installation: #12 AWG copper clad steel, high strength with minimum 450-pound break load and minimum 30 mil HDPE insulation thickness. Copperhead Industries High Strength – 1230 CCS Trace Wire or City approved equal.
 - (2) Directional Drilling/Boring: #12 AWG copper clad steel, high strength with minimum 1,150-pound break load and minimum 30 mil HDPE insulation thickness. Copperhead Industries Extra-High Strength – 1245 CCS Trace Wire or City approved equal.
 - (3) Pipe Bursting/Slip Lining: 7 x 7 stranded copper clad steel, extreme strength with minimum 4,700-pound break load and minimum 50 mil HDPE insulation thickness. Copperhead Industries SoloShot Xtreme – PBX-50 CCS Trace Wire or City approved equal.
 - (4) When a new trace wire is to be tied to an existing trace wire the connection shall be made with an approved splice connector and shall be properly grounded at the splice connection.
- (d) Connectors

- (1) All main line trace wires shall be interconnected at intersections (tees and crosses). Connectors shall be lockable and manufactured specifically for use in underground trace wire installation. Connectors shall be dielectric silicon filled to seal out moisture and corrosion and shall be installed in a manner as to prevent any uninsulated wire exposure.
 - (2) Tee Connectors (service lines, main line tees, and fire hydrants) shall include a 3-way lockable connector main line to lateral lug connector. Copperhead Industries Mainline-to-Service Connector Part Number 3WB-01 or City approved equal.
 - (3) Cross Connectors (main line crosses) shall include two (2) 3-way lockable main line to lateral lug connectors. Copperhead Industries Mainline-to-Service Connector Part Number 3WB-01 or City approved equal.
 - (4) Main line trace wire splices shall be completed utilizing twist-lock connectors. Copperhead Industries Locking Connector Part Number LSC1230C or City approved equal.
 - (5) Do not cut and splice main line trace wire.
 - (6) Non-locking friction fit, twist on, or taped connectors shall not be used.
- (e) Termination/Access Boxes
- (1) All trace wire termination points must utilize an approved trace wire access box, specifically manufactured for this purpose.
 - (2) All access boxes shall be identified with “sewer” or “water” cast into the cap and be APWA color coded according to the utility.
 - (3) A minimum of two feet (2’) of slack is required in all trace wire boxes upon installation at final grade.
 - (4) All trace wire access boxes must include a manually interruptible conductive/connective link between the terminals for the trace wire connection and the terminal for the ground anode wire connection.
 - (5) Ground anode wire shall be connected to the identified terminal on all access boxes.
 - (6) Fire hydrants must terminate at an in-ground trace wire access box positioned within the fire hydrant concrete collar. Copperhead Industries

SnakePit Concrete/Driveway with Two-Terminal Switchable Lid Access Point Part Number CD14*2T-SW or City approved equal.

- (7) Main Line access boxes shall be placed at intervals not exceeding 500-feet in locations where fire hydrants are not present. Trace wire access boxes may be placed outside the roadway driving surface or may be placed integral with valve box collars if pre-approved by the City.
 - A. Trace wire access box placed integrally in concrete valve box shall be Copperhead Industries SnakePit Roadway with Two-Terminal Switchable Lid Access Point Part Number RB14*2T-SW or City approved equal.
 - B. Trace wire access box outside the roadway prism shall be Copperhead Industries SnakePit Lite Duty with Two-Terminal Switchable Lid Access Point Part Number LD14*2T-SW or Engineer Approved Equal. Access boxes placed outside of the roadway shall be identified with flexible marker per Standard Detail W-19.

(f) Grounding

- (1) Trace wire must be properly grounded at all dead ends and stubouts.
- (2) Grounding of trace wire shall be accomplished using a drive-in magnesium grounding anode rod with a minimum of 20-feet of #12 AWG red HDPE insulated copper clad steel wire connected to the anode (minimum of 1.5-pound) specifically manufactured for the intended purposed. The ground anode shall be landed at the same elevation as the utility. Ground anode shall be Copperhead Industries Ground Rod with Twist-On Connector Part Number ANO-12 or City approved equal.
- (3) When grounding the trace wire at dead ends or stubouts, the grounding anode shall be installed perpendicular to the trace wire at a maximum possible distance.
- (4) When grounding the trace wire in long continuous runs, the grounding anode shall be installed directly beneath and in-line with trace wire. The grounding anode wire shall be trimmed to an appropriate length before connecting to trace wire with a mainline to lateral lug connector.

(g) Testing

- (1) All new trace wire installations shall be located using typical low frequency line trace equipment. The City shall conduct a test trace witnessed by the Contractor prior to final acceptance. The test trace shall be conducted using City equipment prior to final surface (asphalt/concrete) placement.
- (2) Continuity testing in lieu of actual line trace will not be accepted.

Article 10-02-130 Cathodic Protection

Cathodic protection, if required, shall be designed by a licensed engineer in the State of New Mexico.

ARTICLE 10-03 – CONSTRUCTION REQUIREMENTS

Article 10-03-010 Trench Excavation

- (a) Pipe trenches shall be excavated along straight lines to the dimensions as required in the Contract Documents.
- (b) All trenching work shall be done in a safe manner, trenches shall be rendered safe for the workmen by complying with the applicable safety standards, and by practicing safety measures consistent with current OSHA Trenching and Excavation Safety Standards and good construction methods.
- (c) All excavations shall be adequately barricaded and secured in accordance with the current New Mexico Department of Transportation Standard Specifications. Flashing lights and barricades shall be employed along open excavations and trenches to protect the public from potential hazards; barricades and advance warning devices shall comply with MUTCD Standards as well as any special direction required by the City.
- (d) Unless trench banks are cut back on a stable slope, the trenches shall be braced as necessary to prevent caving or sliding, to provide protection for the workmen and the pipe. All trenching shall comply with OSHA Trenching and Excavation Safety Standards.
- (e) When over-excavation occurs beyond the limits indicated by the trench details, the over-excavated area shall be refilled with suitable material at optimum moisture and compacted to ninety-five (95) percent density per ASTM D 1557.

- (f) The maximum amount of open trench permitted in any one location shall be 100-feet, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater, unless otherwise approved by the City. A trench shall be considered open until backfilled to the top of subgrade.
- (g) Excavation of pipe trenches for flexible and rigid pipe is as required in the table below. In all cases, the trench shall be wide enough to allow for the compaction equipment.

Table 27: Minimum Trench Widths

Flexible Pipe	Minimum shall be not less than 1.5 times the pipe outer diameter plus twelve inches (12")
Rigid Pipe	Minimum shall be not less than the outside pipe diameter times 0.33

- (h) When trench is to be backfilled with flowable fill, the minimum trench width may be reduced to the pipe diameter plus twelve inches (12") and enough room needed to allow for the proper placement of the flowable fill using tools to "spade" the material under the pipe haunches.
- (i) Maximum Trench Width: the maximum width of the trench shall be determined by the Contractor based on the method and means for the installation. However, trench width shall not exceed the width of a ride-along compactor plus two feet (2') when working alongside the pipe or culvert.
- (j) Street Crossings
 - (1) Trenches crossing streets shall be completely backfilled immediately after pipe, wire, or conduit installation and a temporary or permanent asphalt patch or flowable fill cap shall be installed as directed by the City to protect the integrity of the trenches within the roadway limits from excessive moisture. Under no circumstance shall a trench remain un-backfilled for longer than 30 calendar days. Trenches shall be considered backfilled when brought to final grade (in unpaved areas) or once surface patch (asphalt or concrete) has been placed.
 - (2) Substantial bridging, properly anchored, capable of carrying the vehicle loading, in addition to adequate trench bracing, shall be used to bridge across trenches at street crossings where trench backfill, and temporary patches have not been completed during regular working hours as directed and approved by the City. Safe and convenient passage for pedestrians and access to all properties shall be provided.

(k) Disposal of Unsuitable Excavated Materials

- (1) Excess material and excavated material unsuitable for backfill shall be removed from the Project by the end of each working day unless otherwise approved by the City and disposed of by the Contractor in an environmentally responsible manner at no cost to the Project.
 - (2) When unsuitable material is encountered that is not shown in the Contract Documents, the City shall order the removal of the material by the Contractor and issue a field order to change the contract price due to the Contractor for removal of the materials.
- (l) Portable trench shields or boxes that provide a movable safe working area for installing pipe may be used for the installation of the pipe. After placing the pipe in the trench, backfill material shall be placed in lifts and the shield shall be lifted to allow for the backfill material to be placed for each lift, trench wall to trench wall.
- (m) Transition Installations: When differential conditions of pipe support might occur, such as transitions from manholes to trench, a transition support region shall be provided to ensure uniform pipe support and preclude the development of shear, or other concentrated loading on the pipe.

Article 10-03-020 Bedding

- (a) The bottom of the trenches shall be smooth, and hand graded uniformly throughout. If rock or other unyielding material is encountered or if the trench is over-excavated, pipe bedding material shall be added, compacted, and graded to a smooth uniform surface. The compacted bedding shall support the pipe throughout its entire length, except at bells or couplings which shall not rest on the bedding.
- (b) After the bell or coupling holes are excavated and after the pipe pieces are connected and properly aligned and graded, successive layers of select material shall be placed and compacted, until the pipe is covered, as required in the Contract Documents. The Contractor shall maintain proper alignment and grade during the bedding process. Any bent, cracked, chipped, or damaged pieces of pipe shall be removed and replaced at Contractor's expense.

Article 10-03-030 Pipe Laying

- (a) Pipe shall be laid true to the line and grade indicated in the Contract Documents or as established by the City.

- (b) The pipe shall be protected during handling against impact shocks and free fall. Do not permit hooks, chains, cables, or handling equipment to come in contact with the pre-molded or pre-formed end surfaces.
- (c) Handle the pipe having pre-molded end surfaces or pre-formed end surfaces so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material or surfaces. Do not drag the end of the pipe on the ground or allow them to be damaged by contact with gravel, crushed stone, or any other hard objects.
- (d) No damaged or deformed pipe will be incorporated in the work.
- (e) The interior of the pipelines shall be kept free from dirt and other foreign material as the work progresses and shall be clean upon its completion. Tight stoppers or bulkheads shall be securely placed in the ends of all pipelines when the work is stopped temporarily, or at the end of the workday.
- (f) Immediately prior to joining, both pipe ends shall be thoroughly cleaned, and a lubricant shall be applied according to the manufacturer's recommendations. For push-on type joints, sufficient pressure shall be applied in making up joints to insure proper seating of the joints.
- (g) The full length of each section of pipe shall rest solidly upon the bed, with recesses excavated to accommodate bells and joints. Any pipe that has the grade or joint disturbed after laying shall be taken up and re-laid. Pipe shall not be laid in water or when trench or weather conditions are unsuitable for the Work except by permission of the City. Minimum depth of cover over top of pipe shall be three feet, unless otherwise approved by the City.
- (h) All nuts, and bolts utilized in underground pipe connections shall be stainless steel, high strength cast iron or high strength wrought iron. Carbon steel nuts and bolts may be used except that they shall be protected by "cocoon" type protective coating of coal-tar and felt in accordance with AWWA Standard C 203.
- (i) Where connections are made between new work and existing lines, the connections shall be made using all required fittings as recommended by pipe manufacturer and approved by the City. Couplings may be either cast iron or steel with bolts as stated above. If steel couplings are used, they will be cocoon wrapped as specified herein.
- (j) Sanitary sewer main lines and potable water transmission/distribution main lines shall be laid parallel to each other and parallel to the street centerline when both are installed in the same street. Sanitary sewer main lines shall be placed within permitted streets only. If both are laid in the street, a minimum distance between

the lines shall be ten-feet (10') horizontally, and the water transmission/distribution main line shall be at least two-feet (2') higher than the sanitary sewer main line. Where the water and sanitary sewer main lines cross each other, the water main line shall be a minimum of two-feet (2') higher than the sanitary sewer main line or the sanitary sewer line shall be concrete encased a minimum of ten-feet (10') on each side of the water line, per the detail W-11. If the water transmission/distribution main line crossing occurs below the sanitary/storm drain sewer the sewer main line shall be encased per detail W-11.

- (k) Water main lines shall not be constructed under walkways, sidewalks, curbs and gutters, drive pads, or similar concrete structures by tunneling underneath. The Contractor will cut these concrete structures by using a concrete saw to the closest control joint or, at their option, may remove the section of the concrete structure to the nearest full expansion joint or edge.
- (l) Encasement shall be performed as shown in the Contract Documents at shallow crossings or other instances in which piping may be exposed or susceptible to excessive surface loading. DIP shall be used for these crossings with push-on or M.J. type connections, blocked with curved / conforming cinder blocks underneath, installed in prepared trench of adequate width to house pipe diameter and encasement. Trench excavation shall have ninety-five (95) percent relative compaction or shall be in freshly excavated native material, and as approved by the City may suffice with adequate dimensions to omit use of formwork for encasement concrete placement. Encasement concrete shall be aggregate and Type II cement meeting or exceeding 3,000 psi compressive strength. Rebar shall be placed as shown in the Contract Documents, shall be new and unused, and tied with minimum six-inch (6") lap distances, with minimum two inches (2") of concrete cover on outside dimensions.
- (m) All valves shall be set true, level, vertical and plumb. Backfill shall be compacted to ninety-five (95) percent density under pavement, ninety (90) percent in unpaved areas, ASTM D 1557.
- (n) The Contractor shall remove the valve box and operating nut from all existing valves that are to be abandoned. The resulting excavation shall be backfilled and compacted to ninety-five (95) percent density, ASTM D 1557. The top six inches (6") of the excavation shall receive new base course placed to the above stated density. The pavement shall be sawcut to form a square opening. The cut faces of the existing asphalt shall be thoroughly coated with tack coat and new asphalt pavement shall be placed and densified to ninety-five (95) percent density, ASTM D 1557.

- (o) Cast iron valve boxes shall be set vertical and plumb centered over the operating nut. All valve boxes shall be adjusted to proper elevation, providing the minimum overlap of six inches (6") of the two (2) pieces, and a concrete collar shall be built around the top of each valve box. The concrete collar shall be of the size, shape, and dimensions shown in the Detail Drawings. The concrete shall be 3,000 psi at twenty-eight (28) days with one (1) inch aggregate and finished with a light broom finish. All concrete shall be removed from the top of the valve box and lid while it is still wet, and they shall be left clean. Backfill shall be compacted to ninety-five (95) percent density under pavement, ninety (90) percent in unpaved areas, ASTM D 1557. Valve stem extensions shall be required and installed on all valves for which the valve operator is more than four feet (4') below the finished surface.
- (p) Adapters and couplings shall be installed in strict compliance with the manufacturer's recommendations. Contractor shall provide, in place, all additional straps, rods, and harness required to make a secure water-tight connection.
- (q) The City shall have the right to check the pipe for line and grade by any method necessary after the pipe is laid, and before backfilling begins. The City shall also have the right to check each pipe joint with a gauge or by any means necessary in order to be assured that the gaskets are in place and properly seated. Any run of pipe that is found to be appreciably off of line or grade shall be removed from the trench, the trench bedding shall be re-graded and compacted, and the pipe shall then be laid accurately online and grade. Any joint that is found to be improperly gasketed and/or seated shall be un-jointed and correctly reassembled. If any gasket is found to be damaged, the entire pipe section containing the damaged gasket shall be replaced with a new one.
- (r) Contractor shall furnish any tools, gauges, and all items required for the checking of the gaskets and joints, and he shall check every joint to be sure that the gaskets are seated and located in the correct place to avoid leakage at the joints.
- (s) Trenches shall be kept free from water during pipe installation until suitable backfill has been placed and compacted to prevent pipe flotation. Any standing water within the trench shall be evacuated and the trench bottom or bedding be restored per the standards contained herein.
- (t) Field cuts shall be completed with a hacksaw, handsaw, or a power saw with a steel blade or an abrasive disc. Field cuts shall be square to the pipe's flow area. The newly cut pipe end shall be beveled to the factory pipe chamfer. Completed field cuts shall be smooth and blunt free from shavings and rough edges.
- (u) Plastic sewer pipe shall be connected and placed in the trench in accordance with the manufacturer's recommendations.

- (v) The reference mark (a distinct circumferential line) is placed on the pipe's spigot end by the manufacturer to indicate the correct depth of spigot penetration into the pipe gasket joint. If the pipe is seated too deep or too shallow the pipe may buckle or separate due to thermal expansion/contraction. Spigot penetration shall be within one quarter (1/4) inch of the manufacturer's recommended mark.

Article 10-03-040 Utility Restraint Systems

- (a) Utility system piping thrust is to be restrained through the use of restrained joint fittings. Refer to Standard Details W-15 through W-18.
- (b) Bell joint restraints shall be utilized.
- (c) Where site conditions preclude the use of pipe restraints concrete thrust blocks may be utilized as follows. Thrust blocks shall be poured at all bends, valves, tees, reducers, and fittings, where changes in pipe diameter, alignment or grade occur, and as indicated in the Contract Documents or as required by City. Thrust blocks are only necessary where mechanical restraint joints are not being utilized. The minimum size of concrete thrust blocks shall be as shown in the Contract Documents or as directed by the City. The material of thrust blocks shall be concrete composed of concrete aggregates and shall have a compressive strength of no less than two thousand five hundred (2,500) psi in twenty-eight (28) days for standard cement Type II and shall be placed between solid, undisturbed ground and the fitting to be anchored. The area of bearing on the fitting and on the ground shall in each instance be that required by the City. Unless otherwise directed by the City the thrust blocks shall be placed so that the pipe and fitting joints will be accessible for repair. Metal harness or tie rods, of the size and type shown in the Contract Documents, shall be used. Refer to Standard Details: W-3 and W-4.

Article 10-03-050 Backfilling Trenches

- (a) Definitions
 - (1) Foundation: Over-excavation and backfill of the foundation only when the native trench bottom does not provide a firm-working platform for placement of the pipe bedding material.
 - (2) Bedding: In addition to bringing the trench bottom to required grade, the bedding levels out any irregularities and ensures uniform support along the length of the pipe.
 - (3) Haunch Zone: The backfill under the lower half of the pipe (haunches) distributes superimposed loadings.

- (4) Initial Zone: The backfill from the pipe midline to the top of the pipe zone provides the primary support against lateral pipe deformation for flexible pipe.
 - (5) Final Zone: Backfill above the pipe zone to the top of the subgrade.
- (b) Materials for trench backfill may include flowable fill, Type I aggregate base course, Type II aggregate base course, and native materials. Individual pipe zone backfill requirements are presented below. The Contractor shall submit the material types to the City for approval prior to construction.

Native backfill shall only be utilized within the Final backfill zone. Native materials shall be free from sod, frozen earth, organic materials, rubbish, and debris. The material should be free of large stones (maximum clod size shall be < 3”) that may cause damage to the pipe, such as concentrated pipe loading.

Table 28: Type I Aggregate Base Course Gradation and Requirements

Sieve Size	Percentage of Dry Weight Passing Sieve
2-Inch	100
1-1/2-Inch	90-100
1-Inch	70-90
No. 4	30-65
No. 10	30-10
No. 16	15-20
No. 200	10-20
Plastic Index	12 Maximum
Liquid Limit	35 Maximum
Fractured Faces	70% Minimum
Total Available Water-Soluble Sulfates	Less than 0.3% by dry weight of soil

Table 29: Type II Aggregate Base Course Gradation and Requirements

Sieve Size	Percentage of Dry Weight Passing Sieve
1-Inch	100
¾-Inch	85-95
No. 4	40-70
No. 10	35-45
No. 16	25-35
No. 200	6-18
Plastic Index	12 Maximum
Liquid Limit	35 Maximum
Fractured Faces	70% Minimum
Total Available Water-Soluble Sulfates	Less than 0.3% by dry weight of soil

Table 30: Native Backfill Requirements

Percentage by Weight Passing No. 200 Sieve	Plasticity Index Maximum
0-20.0	12
20.1 – 50.0	10
50.1 – 80.0	8
80.1 – 100	6
Liquid Limit	50 Maximum

- (1) Foundation: Trench foundations shall be stable prior to placing bedding material. If the City determines that unsuitable materials exist at the trench foundations, the Contractor shall remove and replace the material as directed by the City.
- (2) Pipe Bedding: The trench shall be excavated to a depth of four- to six-inches (4"-6") below the bottom of the pipe barrel and to a depth that will be sufficient to provide two- to four-inches (2"-4") of clearance under the pipe bell (where applicable).

Uniform and stable bedding shall be provided for the pipe and any protruding features of its joints and/or fittings. The middle of the bedding equal to one-third (1/3) the pipe outside diameter may be loosely placed to allow for the pipe bell and other protruding features. Alternatively, the compacted bedding material may be excavated slightly to allow for continuous lines and grades of the pipe structure.

Pipe bedding shall consist of Type II aggregate base course or flowable fill. Bedding shall be backfilled to the required grade of the bottom of the pipe. The compaction shall provide a density, at minimum, equal to 95 percent of

the maximum dry density in accordance with ASTM D 1557 with the exception of the middle-uncompacted area.

- (3) Haunch Zone Backfill: After the pipe or conduit is laid, the haunch areas shall be backfilled with Type II aggregate base course or flowable fill.

Compaction of the haunching material can be best accomplished by hand with tampers or suitable power compactors for maximum compacted lift thickness of six inches (6"). The Contractor shall take care to not disturb the pipe from its line and grade while compacting the backfill. Material suitably distant from the pipe shall be compacted to 95 percent of the maximum dry density in accordance with ASTM D 1557.

While compacting the embedment near the pipe with impact-type tampers, caution shall be taken to not allow direct contact of the equipment with the pipe.

- (4) Initial Backfill Zone: After the pipe or conduit is laid, the initial backfill area shall be backfilled with Type II aggregate base course or flowable fill. Avoid usage of impact tampers directly above the pipe until the full loose layer backfill depth above the pipe is obtained.

Table 31: Initial Backfill Zone Material Depths

Pipe or Conduit	Initial Zone
2-Inch or less diameter	6-Inches above the top of pipe
Greater than 2-Inch diameter	12-Inches above the top of pipe

- (5) Final Backfill Zone: The remaining backfill, to the top of subgrade, shall consist of Type I or Type II aggregate basecourse, native material, or flowable fill. The material shall be compacted to a minimum of 95 percent of the maximum dry density in accordance with ASTM D 1557.

- A. If flowable fill is used, flowable fill shall be placed from the top of the initial backfill zone to the bottom of the flexible pavement (replaces aggregate road base in the pavement section over the trench).
- B. Flowable fill cap may be required in the upper portion of the Final Backfill Zone for all non-residential roadways with a minimum thickness of twelve inches (12") for minor collectors and eighteen inches (18") for all major collectors and arterials.

(c) Compaction

- (1) Compaction shall be performed by mechanical means except in the haunch zone where compaction may be required by hand tamping. Mechanically compacted backfill shall be placed in layers of thickness compatible with the characteristics of the backfill and the type of equipment being used and shall have a maximum lift thickness as shown in the table below. The lifts shall be placed on both sides of the pipe at the same time to reduce pipe movement.

Table 32: Backfill Lift Thickness

Location	Maximum Compacted Lift Thickness (inches)	Maximum Loose Lift Thickness (inches)
Bedding, Haunch, and Initial Zones	6	8
Final Zone	8	12

- (2) Each layer shall be evenly spread, moistened, and tamped or rolled until the specified relative compaction has been attained.
 - (3) Compaction minimum shall be 95 percent of the maximum dry density in accordance with ASTM D 1557 for trenches within the roadway prism. Compaction requirements for the final zone of trenches outside the roadway may be reduced to 90 percent of maximum dry density in accordance with ASTM D 1557.
 - (4) Density testing shall be completed every 200-feet on mains or any part thereof per day, one per every three services or any part thereof per day.
 - (5) Density testing per depth: Less than or equal to four feet (4') shall require one at depth and one at subgrade per horizontal length above. Greater than four feet (4') depths shall require one per six-inch (6") or larger pipe, then one every three (3) vertical feet, and one at subgrade per horizontal length above.
 - (6) Where test results reveal non-compliance with the requirements of the Contract, the Contractor shall bear the costs of subsequent rework and retesting until the required specification compliance is obtained to the satisfaction of the City.
- (d) Minimum Pipe Spacing: If the pipe space between parallel pipes in a single trench is not conducive to mechanical backfill, then flowable fill shall be used.

ARTICLE 10-04 – FLUSHING & TESTING

Article 10-04-010 Work Description

- (a) Water needed to fill the new main for testing and flushing purposes shall only be potable City water supplied through a temporary connection protected by a backflow device.
- (c) The backflow device must be tested and certified after installation on-site. A copy of the certification shall be given to the City and a copy shall be kept on-site with the device. Testing must be completed by a certified testing facility and be on the City's approved tester list.

Article 10-04-020 Hydrostatic Tests

- (a) The Contractor shall be required to test all piping and other lines and appurtenances in the presence of the City. Test reports shall be required for each test and submitted to the City. Testing of lines shall be done without being connected to existing lines. If such connections are allowed it is with the understanding that the Contractor assumes any and all responsibility in case of damage, failure and/or contamination to the existing system. The new water pipe will be tested before the backfilling is done. After the pipe is laid, earth cover shall be placed over the middle of the pipe joints, leaving the corp. stops, valves, service taps and laterals uncovered. The pipe will be filled with water, and the pressure in the pipeline shall be raised by means of a motor-driven water pump to a hydrostatic pressure of one hundred fifty (150) psi or one and one-half (1.5) times the normal working pressure, whichever is greater, at the lower end of the pipe section. Applicable AWWA C-600 standards and procedures shall be adhered to for determination of losses on pipes up to thirty-inches (30") in diameter. If any leaks appear in the pipe, they shall be repaired to the satisfaction of the City, and the test shall be performed until the pipe holds the prescribed pressure. As an alternative, the Contract may opt to test the pipeline in sections between mainline valves or as approved by the City.
- (b) All testing shall be conducted in accordance with AWWA Standard C600 for ductile iron mains and AWWA Standard C605 for PVC mains and those portions of the above standard related to hydrostatic tests shall apply to any type of water main construction. Test pressure shall be one hundred fifty (150) psi or one and one-half (1.5) times the normal working pressure, whichever is greater.
- (c) All taps, gauges and necessary equipment shall be provided by the Contractor; however, the City may utilize gauges provided by the City at their discretion.
- (d) Leakage Defined: Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure

within five (5) psi of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water. If the pressure drops more than five (5) pounds in thirty (30) minutes, the pipe has failed to pass the test. If the pressure drop is less than five (5) pounds in thirty (30) minutes, water shall be added to the pipe section to maintain the one hundred fifty (150) psi test pressure and the volume of water added shall be duly recorded. This procedure shall be repeated at each thirty (30) minute intervals for the test period. The total volume of water added to the pipe section to maintain the one hundred fifty (150) psi test pressure shall represent the total leakage during the test.

- (e) Allowable leakage: No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{\text{DIP}}{133,200} \quad \text{or} \quad L = \frac{\text{PVC}}{7,400}$$

where L is the allowable leakage, in gallons per hour, S is the length of pipe tested, in feet; N is the number of joints in the length of pipeline tested, D is the nominal diameter of the pipe, in inches, and P is the average test pressure during the leakage test, in pounds per square inch gauge.

The tables below present the allowable leakage per various pipe diameters per 1,000 feet of pipeline.

Table 33: Allowable Leakage (GPH) per 1,000 Feet of Pipeline (DIP)

Avg. Test Pressure	6	8	10	12	14	16	18	24	30
PSI	In.	In.	In.	In.	In.	In.	In.	In.	In.
350	0.84	1.12	1.40	1.69	1.97	2.25	2.53	3.37	4.21
300	0.78	1.04	1.30	1.56	1.82	2.08	2.34	3.12	3.90
275	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.99	3.73
250	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.85	3.56
225	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.70	3.38
200	0.64	0.85	1.06	1.27	1.49	1.70	1.91	2.55	3.19
175	0.60	0.79	0.99	1.19	1.39	1.59	1.79	2.38	2.98
150	0.55	0.74	0.92	1.10	1.29	1.47	1.66	2.21	2.76

Table 34: Allowable Leakage (GPH) per 1,000 Feet of Pipeline (PVC)

Avg. Test Pressure	6	8	10	12	14	16	18	24	30
PSI	In.	In.	In.	In.	In.	In.	In.	In.	In.
300	0.70	0.94	1.17	1.40	1.64	1.87	2.11	2.81	3.51
275	0.67	0.90	1.12	1.34	1.57	1.79	2.02	2.69	3.36
250	0.64	0.85	1.07	1.28	1.50	1.71	1.92	2.56	3.21
225	0.61	0.81	1.01	1.22	1.42	1.62	1.82	2.43	3.04
200	0.57	0.76	0.96	1.15	1.34	1.53	1.72	2.29	2.87
175	0.54	0.72	0.89	1.07	1.25	1.43	1.61	2.15	2.68
150	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.99	2.48

- (f) When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gal/h/in. (0.0012 L/h/mm) of nominal valve size shall be allowed.
- (g) When hydrants are in the test section, the test shall be made against the closed hydrant.
- (h) Acceptance of Installations: Acceptance shall be determined on the basis of allowable leakage. If any test of pipe laid disclosed leakage greater than specified the Contractor shall, at the Contractor's expense, locate and make repairs as necessary until the leakage is within the specified allowance.
- (i) All visible leaks are to be repaired regardless of the amount of leakage.
- (j) The Contractor shall be notified of any leaks that may occur during the one (1) year warranty period and shall make immediate arrangements after he is notified to return to the job site and repair any leaks that may develop in the pipeline.

ARTICLE 10-05 – COORDINATION

Article 10-05-010 Construction Coordination, Survey, & Acceptance

- (a) The Contractor shall coordinate the Work with the City before commencing work. The City shall inspect and approve all work prior to backfilling. Photos will not be accepted in lieu of a physical inspection.
- (b) The Contractor shall notify the City in writing when each utility installation is complete in place per plan and ready for inspection. No utility backfill shall be placed until inspection has been satisfied by the City.
- (c) Acceptance Submittal – All test reports (utility, bacteriological, concrete, compaction, etc.), signed inspection forms, field marked construction drawings

reflecting as-built conditions, and delivery of post construction survey as defined below.

- (d) Post Construction Survey – to be completed by a professional surveyor licensed in the State of New Mexico. The survey shall include key system components for incorporation into the City’s geographic information system (GIS). All data shall be created in real world coordinate system based on the following projection: horizontal control in NAD83, vertical control in NAVD88, and based on New Mexico State Plan Coordinates System (Grid), Central Zone, US Foot. The survey shall be tied to at least two (2) City control points as included at the end of Chapter 05. The Post Construction Survey shall be completed in a City approved AutoCAD version (.dwg format) provided to the City on a mass storage drive (compact disc or usb storage device) or via secure downloadable link.

The Post Construction Survey provider shall include a table identifying the layering convention used to depict system components (i.e., Layer C-UTIL-WATR-12in represents a twelve (12”) diameter C-900 PVC Water Line, etc.). This will allow the City personnel to isolate and import portions of the drawing and translate the information directly into usable data in their GIS. The user at their option can base their layering convention on the National Cad Standard (NCS) for ease of use. The City will not accept CAD files containing information drawn in paperspace.

The post construction survey shall be in conjunction with the Record Drawings noting work per plan or identifying different field installation conditions.

- (1) Drainage Systems Components: drainage channel control features and flowline elevations, drainage channel structure information (culvert upstream/downstream flowline elevations), manholes, inlets, pipe outfall(s), pond top elevation, and pond bottom elevation.
- (2) Sanitary Sewer System Components: standard manholes, control manholes, drop manholes, cleanouts at right-of-way or property lines, casing installations, and sewer service taps.
- (3) Lift Station Components: wet wells, dry wells, vaults, cleanouts, air valves, plug valves, flow meter, bends, and manholes.
- (4) Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, fire hydrants, water meters, service line taps, sampling stations, and pressure reducing stations.

- (5) Reclaimed Water System Components: bends, tees, crosses, air valves, vaults or manholes, control valves, casing installations, hydrants, meters, service line taps, or pressure reducing stations.
- (e) Substantial Completion – the Acceptance Submittal and Post Construction Survey shall be provided to the City, reviewed, and accepted by the City prior to issuance of Substantial Completion and subsequent commencement of the warranty period.

END OF CHAPTER 10

CHAPTER 11 – AIR-RELEASE AND VACUUM-RELIEF VALVES

ARTICLE 10-01 - GENERAL

Article 11-01-010 Work Description

This work includes materials and installation of combination air-release and vacuum-relief valves.

ARTICLE 11-02 – VALVE COMPONENTS

Article 11-02-010 Materials

Materials of construction for air and vacuum valves for water service shall be as follows:

Item	Material	Specification
Body and cover	Cast iron or brass	ASTM A 48, Class 30; or ASTM A 126, Class B
Float, guide rod, guide bushings	Stainless steel	AISI Type 316, ASTM A 240 or A 276
Seat	Buna-N	--

Article 11-02-020 Seating

Valves shall be seated drip-tight at a pressure of one (1) psi.

Article 11-02-030 Valves End Connections

Valves shall have threaded ends and comply with ANSI B1.20.1.

Article 11-02-040 Combination Air-Release and Vacuum Valves

Valves shall have a float with lever arm to actuate a poppet valve. A needle shall be attached to the float arm. The poppet valve shall serve to admit large quantities of air when the pipeline drains. The needle shall serve to release small quantities of air as the pipeline fills or as air accumulates in the pipeline. Valves shall have an operating pressure of three hundred (300) psi. Body and cover shall be cast iron (ASTM A 48, Class 30). Float, lever, and poppet shall be Type 316 stainless steel (ASTM A 240 or A 276). Seat shall be Buna-N. Valves shall be Val-Matic Model 202C, as scheduled on plans or equivalent.

Article 11-02-050 Service Saddles

Service saddles shall be sized as called out for in the Project Plans and shall be pre-approved.

Article 11-02-060 Gate Valves

Gate valves shall be sized as called out for in the Contract Documents; shall be non-rising stem, solid wedge, threaded ends; and shall be pre-approved.

Article 11-02-070 Enclosures

- (a) Precast Manhole
 - (1) Risers and adjustment rings shall be standard precast manhole sections of 4,000 psi reinforced concrete.
 - (2) Manhole frame and lid shall be ductile iron; H20 traffic rated, marked “Water” and shall have three (3) half-inch (1/2”) diameter vent holes.
- (b) Galvanized meter box shall be sized as called out for in the Contract Documents.
- (c) Steel frame and lid shall be sized as called out for in the Contract Documents and shall be vehicle traffic rated.

Article 11-02-080 Piping

Piping shall be brass, standard strength, highest quality, seamless, threaded, reamed and chamfered.

Article 11-02-090 Drainage Media

Drainage media shall be clean crushed rock, three-quarter inch (3/4”) size.

ARTICLE 11-03 – EXECUTION

Article 11-03-010 Installation

Locate combination, air-release and vacuum-relief valves at high points (“peaks”) of the pipeline. Holes in the pipe shall be the same size as the service saddle outlet. Position enclosure and manhole frame and lid to allow personnel entry. Valve and enclosure shall be set vertical. Clean threaded joints by wire-brushing or swabbing. Apply Teflon joint compound or Teflon tape to pipe threads prior to installation of threaded valves. All joints shall be watertight. Refer to Standard Detail W-14.

Article 11-03-020 Valve Pressure Testing

Test valves at the same time that the connecting pipelines are pressure tested. See Chapter 8 Water Supply System, for pressure testing requirements. Protect or isolate any parts of

valves, operators, or control and instrumentation systems whose pressure rating is less than the test pressure.

END OF CHAPTER 11

CONTRACTOR NOTE:

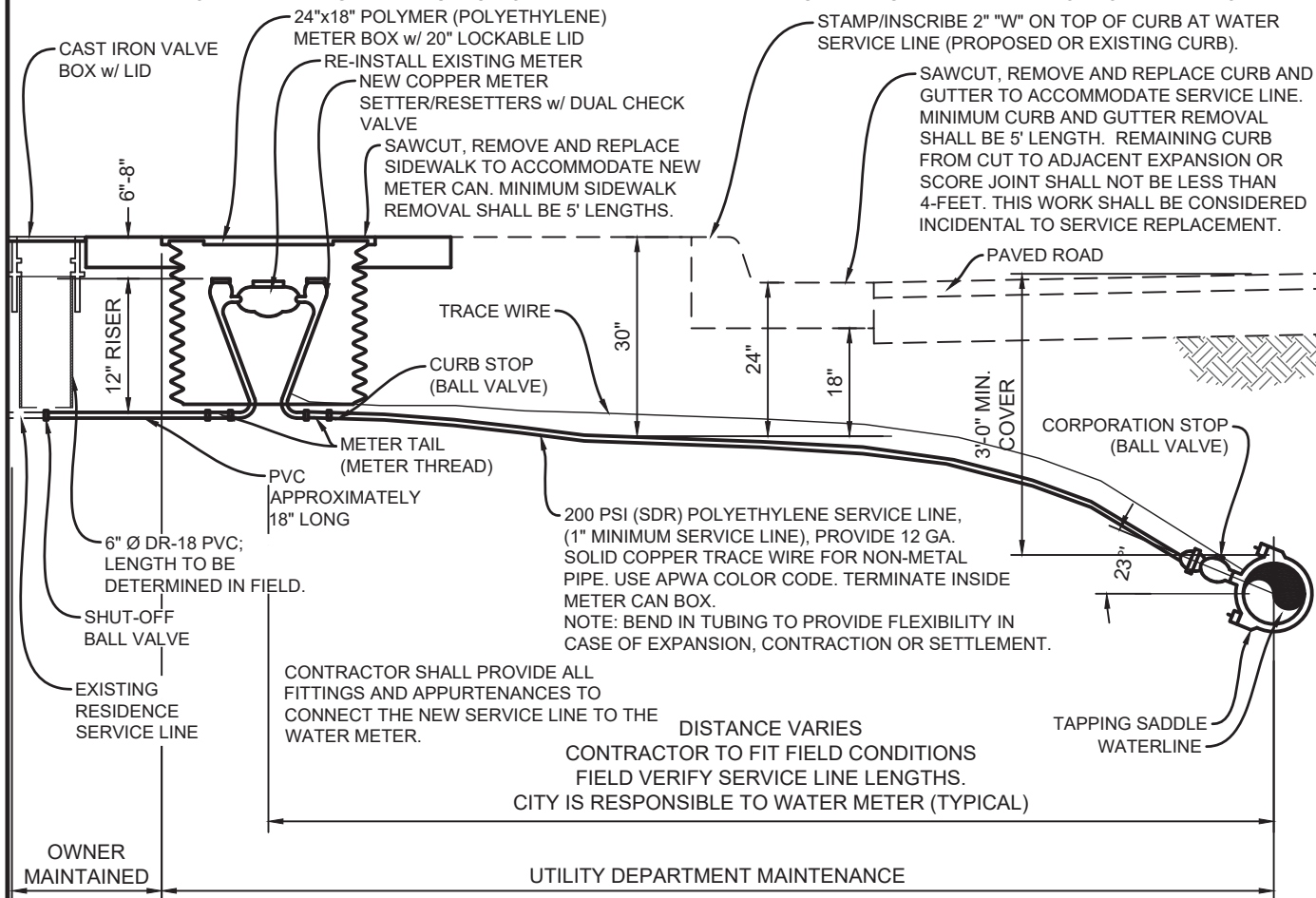
METER CAN SHALL NOT BE INSTALLED IN ACCESSIBLE (ADA) RAMP PAN, SLOPE OR LANDINGS.

IN SOME CASES THE EXISTING WATER METER IS SURROUNDED BY CONCRETE, ANY DAMAGE BY THE CONTRACTOR TO THE ADJACENT CONCRETE SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

CONTRACTOR SHALL INSCRIBE A "W" ON TOP OF CONCRETE CURB (IN-LINE W/ NEW WATER SERVICE) TO INDICATE THE LOCATION OF THE NEW WATER SERVICE LINE. CONTRACTOR TO RE-INSCRIBE "W" INTO NEW CONCRETE IF EXISTING CONCRETE IS REMOVED AND REPLACED.

THE WATER SERVICE LINE MAY BE PUNCHED UNDERNEATH THE EXISTING CURB AND GUTTER AS LONG AS THE RESULTING HOLE IS LESS THAN 6-INCHES IN THE HORIZONTAL DIRECTION.

METER CAN SHALL BE INSTALLED IN SIDEWALKS OR LANDSCAPE AREA (BETWEEN SIDEWALK AND BACK OF CURB) WITHIN RIGHT OF WAY. METER CANS SHALL NOT BE INSTALLED IN DRIVEWAYS OR VEHICULAR TRAFFIC FLOWS UNLESS LOCATION(S) AND METER CAN TYPE(S) HAVE BEEN PRE-APPROVED IN WRITING BY THE PUBLIC WORKS DEPARTMENT AND THE ENGINEERING DEPARTMENT PRIOR TO INSTALLATION.



MAINTENANCE RESPONSIBILITY NOTE:

THE CITY OF ALAMOGORDO WATER DEPARTMENT WILL BE RESPONSIBLE FOR MAINTENANCE OF THE WATER LINE FROM THE WATER MAIN TO THE WATER METER. THE OWNER WILL BE RESPONSIBLE FOR MAINTENANCE OF THE WATER LINE FROM THE WATER METER TO THE BUILDING.

NOTE:

1. THE CITY OF ALAMOGORDO RESERVES THE RIGHT TO CHANGE AND/OR MODIFY ANY ITEM(S) EITHER DETAILED OR SPECIFIED ON THIS DRAWING.
2. WATER SERVICE DETAIL AND WATER SERVICE INSTALLATION MATERIAL LISTING ARE TYPICAL FOR 3/4" WATER SERVICE. ADJUSTMENTS SHALL BE MADE TO FITTINGS, CONNECTIONS, SERVICE LINE, ECT. SIZE AS REQUIRED FOR WATER SERVICES LARGER THAN 3/4".
3. ALL FITTING, CONNECTIONS, SERVICE LINE, ETC. SHALL BE RATED FOR 200 P.S.I. (MINIMUM) WORKING PRESSURE.
4. METER RISERS SHALL BE SET PLUMB AND VERTICAL WITHIN THE METER CAN.

SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

WATER SERVICE DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	W-1

TYPICAL WATER SERVICE INSTALLATION MATERIAL LISTING:

COLD WATER METER: WATER METERS SHALL BE MULTIJET, READING IN CUBIC FEET AND ACCEPTABLE FOR USE WITH ZENNER STEALTH READER MIU SYSTEM. NO SUBSTITUTIONS. REFER TO ARTICLE 02-026.1 WATER SUPPLY SYSTEM FOR THE LIST OF COMPATIBLE WATER METERS. WATER METERS LARGER THAN 2-INCHES SHALL BE POSITIVE DISPLACEMENT (COMPOUND) METERS AND ACCEPTABLE FOR USE WITH ZENNER STEALTH READER MIU SYSTEM.

SERVICE (TAPPING) SADDLE: TAPPING SADDLES REQUIRE THE PRE-APPROVAL IN WRITING BY PUBLIC WORKS DEPARTMENT AND ENGINEERING DEPARTMENT PRIOR TO INSTALLATION. ACCEPTABLE SADDLES SHALL HAVE DOUBLE STRAPS SECURED BY FOUR BOLTS. SADDLES SHALL ALSO HAVE 1" IP THREADED OUTLET AND BE MADE OF THE FOLLOWING ACCEPTED MATERIALS:

BODY - DUCTILE IRON BODY, CONFORMING TO ASTM A-536, WITH 10-12 MIL FUSION EPOXY COATING OR NYLON COATED.

STRAPS - TYPE 304 (18-8) HEAVY GRADE STAINLESS STEEL, CONFORMING TO ASTM A-240.

NUTS & WASHERS - UNC ROLL THREAD TYPE 304 (18-8) STAINLESS STEEL BOLTS WITH HEAVY HEX NUTS. ROD FOR BOLTS, CONFORMING TO ASTM A-240, AND NUTS, CONFORMING TO ASTM A-194. ALL WELDS FULLY PASSIVATED FOR ENHANCED CORROSION RESISTANCE. NUTS COATED TO PREVENT GALLING. INSTALLATION SHALL CONFORM TO MANUFACTURER'S TORQUE SPECIFICATIONS.

GASKET - NITRILE BUTADIENE RUBBER (NBR), ASTM D-2000 MBC-610 OR HD EDPM O-RING.

NOTE: SADDLE WITH SLENDER SINGLE STRAPS SECURED BY TWO BOLTS, CAST IRON BODY AND STEEL STRAPS ARE NOT ACCEPTABLE.

CORPORATION STOP: CORPORATION STOP SHALL BE BALL VALVE TYPE AND RATED FOR 150 P.S.I. (MINIMUM) WORKING PRESSURE. CORPORATION STOP SHALL HAVE A 1" IP THREADED INLET WITH A PACK JOINT CONNECTION FITTING OR MUELLER INSTA-TITE CONNECTION FOR 1" PVC SERVICE LINE.

SERVICE LINE: SERVICE LINE SHALL BE 1" BLUE SDR POLYETHYLENE, 200 PSI, CONFORMING TO ASTM D2737 AND SPECIFIED FOR POTABLE WATER.

CURB STOP: CURB STOP SHALL BE BALL VALVE TYPE AND RATED FOR 250 P.S.I. (MINIMUM) WORKING PRESSURE.

COPPER METER RESETTER: COPPER METER RESETTER (METER YOKE) SHALL BE HORIZONTAL STYLE, 5/8"x3/4" (METER YOKE) BRASS/COPPER WITH LOCK WING STYLE ANGLE METER VALVE ON INLET AND TOP ENTRY ANGLE DUAL CHECK VALVE ON OUTLET WITH BRASS SUPPORT BAR. THE CONNECTIONS FOR METER SHALL BE BRASS SWIVEL NUT WITH WIRE SEAL HOLE AND METER SUPPORT LIP. INLET AND OUTLET THREADS SHALL BE METER THREAD. THE CONNECTION TO THE 1" SERVICE LINE SHALL BE MADE WITH AN AY McDONALD 76102 O.A.E. CTS MAC-PAC JOINTxFNPT CURB STOP AND A 3/4"x1" BRASS METER BUSHING. IF A THERMAL-COIL BOX IS UTILIZED THE FOLLOWING MATERIALS SHALL BE USED VERSUS THE METER YOKE:

- POLYBUTYLENE TUBING
- A LOCK WING METER STOP (INLET 3/4")
- A DUAL CHECK VALVE (OUTLET 3/4")
- A 3/4" OUTSIDE METER THREADED INLET
- A 3/4" OUTSIDE METER THREADED OUTLET

METER BOXES: SPECIFICATION IS BASED ON USE OF "DFW PLASTICS, INC." BY DFW PLASTICS, INC., 901 E INDUSTRIAL AVENUE, SAGINAW TX 76131, WITH ATTRIBUTES AS DESCRIBED BELOW. EQUAL PRODUCTS OF OTHER WATER METER CAN MANUFACTURES MAY BE ACCEPTABLE WHEN PRE-APPROVED BY PUBLIC WORK DEPARTMENT AND ENGINEERING DEPARTMENT. PRE-APPROVED EQUAL, SUBSTITUTIONS UNDER ARTICLE 01-002.4. SHALL ONLY BE USED FOR CITY WATER METER INSTALLATIONS.

THIS PRODUCT IS DESIGNED TO WITHSTAND LOADING IN NON-DELIBERATE AND INCIDENTAL TRAFFIC. NOT TO BE INSTALLED IN ROADWAYS, DRIVEWAYS, PARKING LOTS, OR ALLEYS. METER PIT LID SHALL BE BLACK AND CONSTRUCTED OUT OF MODIFIED POLYETHYLENE MATERIAL FOR MAXIMUM DURABILITY AND CORROSION RESISTANCE. THE BLACK MATERIAL IS FOR MAXIMUM UV PROTECTION. THE BLACK MATERIAL SHALL BE UNIFORM THROUGHOUT THE METER PIT LID FOR MAXIMUM LONGEVITY AND NOT HAVE A FOAMING AGENT THAT CREATES AIR POCKETS WITHIN THE POLYMER LID.

VERTICAL AND LATERAL LOAD RATING:

- COMPLIANT WITH AASHTO, DESIGN LOAD OF H-10; ASTM C857-16, DESIGN LOAD OF A-8, 8,000 LBS. TRANSFERRED THROUGH A 10" X 10" STEEL PLATE CENTERED IN THE COVER AND BODY.
- COMPLIANT WITH AASHTO, DESIGN LOAD OF H-20; ASTM C857-16, DESIGN LOAD OF A-16, 16,000 LBS. TRANSFERRED THROUGH A 10" X 20" STEEL PLATE CENTERED ON THE COVER AND BODY.
- THIS PRODUCT IS DESIGNED TO WITHSTAND H-10 AND H-20 LOADING IN NON-DELIBERATE OR INCIDENTAL TRAFFIC AREAS.

NOT INTENDED TO BE INSTALLED IN ROADWAYS.

POLYMER LID

- THE POLYMER LID SHALL HAVE A MOLDED KEY HOLE AND PLASTIC LOCK UNDERNEATH LID - AS ILLUSTRATED.
- THE POLYMER LID SHALL HAVE ONE (1) MOLDED SLIDE MOUNT FOR PLACEMENT OF AMR/AMI DEVICE - AS ILLUSTRATED.
- THE POLYMER LID SHALL SEAT SECURELY AND EVENLY INSIDE THE METER PIT AND SHALL NOT OVERLAP THE TOP EDGE OF THE METER PIT.
- THE POLYMER LID SHALL HAVE MOLDED TREAD-PATTERN FOR SKID RESISTANCE - TREAD DIMENSIONS SHALL BE 0.188" X 0.938" X 0.150" DEEP.
- THE POLYMER LID SHALL HAVE "WATER METER" MOLDED INTO THE LID - FONT SHALL BE STD FADAL CNC FONT WITH 1" CHARACTERS X 0.150" DEEP.
- THE POLYMER LID SHALL BE BLACK AND HAVE A MOLDED RECYCLED EMBLEM WITH A MINIMUM OF 50% POST CONSUMER RECYCLED AND 50% POST INDUSTRIAL/ PRE CONSUMER RECYCLED CONTENT- VERIFIED WITH A LEED PRODUCT DOCUMENTATION.

POLYMER BODY

- THE POLYMER BODY SHALL BE BLACK AND HAVE A MINIMUM OF 3/8" WALL THICKNESS - AS ILLUSTRATED.
- THE POLYMER BODY SHALL HAVE MINIMUM INSIDE WORKING ROOM OF (23-1/4") - AS ILLUSTRATED.
- THE POLYMER BODY SHALL HAVE CRUSH RESISTANT RIBBING ALONG THE OUTSIDE OF THE BOX WITH 1-5/8" BASE FOOTING LOCATED AT THE BOTTOM OF THE METER PIT TO HELP ELIMINATE SINKING OR FLOATING ONCE INSTALLED.
- THE POLYMER BODY SHALL HAVE A STRAIGHT WALL DESIGN AND NOT BE FLARED AS TO ALLOW FOR ADJUSTMENT TO GRADE AFTER INSTALLATION.
- THE POLYMER BODY SHALL HAVE ONE PIPE SLOT MOLDED ON EACH END OF THE BODY THAT MEASURES (3" X 5-3/4").
- THE POLYMER BODY SHALL HAVE A MOLDED RECYCLED EMBLEM WITH A MINIMUM OF 35% POST INDUSTRIAL/ PRE CONSUMER RECYCLED CONTENT - VERIFIED WITH A LEED PRODUCT DOCUMENTATION.

WHENEVER IN THE SPECIFICATIONS, ANY PARTICULAR MATERIALS, PROCESS AND/OR EQUIPMENT IS INDICATED OR SPECIFIED BY PATENT, PROPRIETARY, OR BRAND NAME, OR BY NAME OF MANUFACTURER, SUCH WORDING SHALL BE DEEMED TO BE USED FOR THE PURPOSE OF FACILITATING DESCRIPTION OF THE MATERIAL, PROCESS, AND/OR EQUIPMENT DESIRED, AND SHALL BE DEEMED TO BE FOLLOWED BY THE WORDS "OR EQUAL". THE LISTS OF ACCEPTABLE MATERIAL ARE NOT INTENDED TO BE COMPREHENSIVE LISTS, OR IN ANY ORDER OF PREFERENCE. THE BIDDER MAY OFFER ANY MATERIAL, PROCESS, AND/OR EQUIPMENT WHICH COMPLY WITH THE GOVERNING SPECIFICATIONS WHICH THE BIDDER CONSIDERS TO BE EQUIVALENT TO THAT WHICH IS INDICATED OR SPECIFIED.

THE NOTED METER BOX SIZE IS FOR A TYPICAL FOR 3/4" AND 1" WATER SERVICES. METER BOXES FOR WATER SERVICES LARGER THAN 1 1/2" SHALL BE PRE-APPROVED IN WRITING BY THE PUBLIC WORKS DEPARTMENT AND ENGINEERING DEPARTMENT.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

TYPICAL WATER SERVICE INSTALLATION MATERIAL LISTING

ISSUE DATE:

JUNE 14, 2022

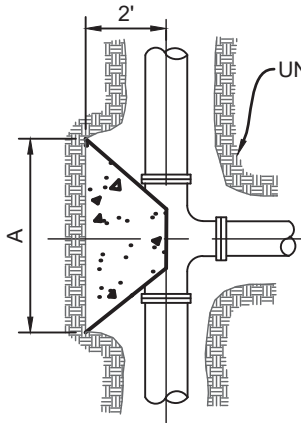
RESOLUTION NO:

2022-28

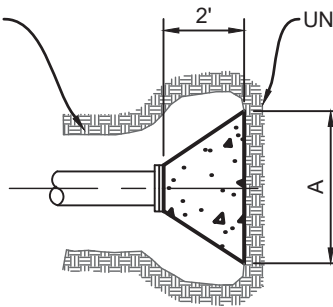
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SHEET NO:

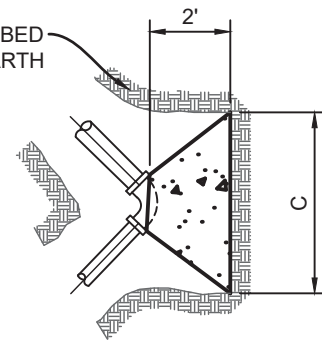
W-2



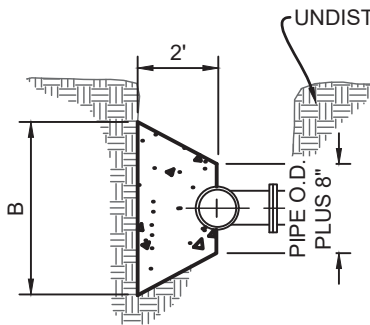
Plan View



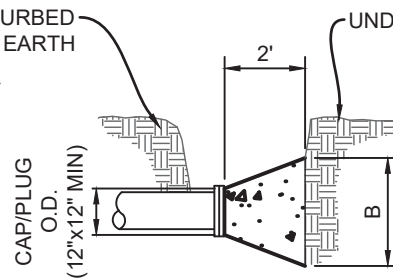
Plan View



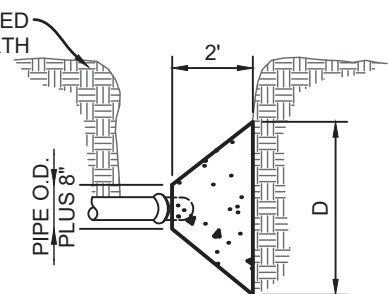
Plan View



ELEVATION
BLOCKING FOR TEE



ELEVATION
BLOCKING FOR PLUG/CAP



ELEVATION
BLOCKING FOR ELBOW

PIPE SIZE	TEE, CAP, PLUG, ELBOW ANGLE	A	B	C	D
4"	TEE OR CAP/PLUG	2'-0"	1'-0"	-	-
4"	90° 45°	-	-	2'-0"	2'-0"
4"	22 1/2° 11 1/4"	-	-	2'-0"	2'-0"
6"	TEE OR CAP/PLUG	2'-0"	2'-0"	-	-
6"	90° 45°	-	-	2'-0"	2'-0"
6"	22 1/2° 11 1/4"	-	-	2'-0"	2'-0"
8"	TEE OR CAP/PLUG	3'-0"	3'-0"	-	-
8"	90°	-	-	3'-0"	3'-0"
8"	45°	-	-	2'-0"	2'-0"
8"	22 1/2° 11 1/4"	-	-	2'-0"	2'-0"

PIPE SIZE	TEE, CAP, PLUG, ELBOW ANGLE	A	B	C	D
10"	TEE OR CAP/PLUG	3'-0"	3'-0"	-	-
10"	90°	-	-	3'-6"	3'-6"
10"	45°	-	-	3'-0"	3'-0"
10"	22 1/2° 11 1/4"	-	-	2'-0"	2'-0"
12"	TEE OR CAP/PLUG	3'-6"	3'-6"	-	-
12"	90°	-	-	4'-0"	4'-0"
12"	45°	-	-	3'-6"	3'-6"
12"	22 1/2° 11 1/4"	-	-	2'-0"	2'-0"
14"	TEE OR CAP/PLUG	4'-0"	4'-0"	-	-
14"	90°	-	-	5'-0"	5'-0"
14"	45°	-	-	3'-6"	3'-6"
14"	22 1/2° 11 1/4"	-	-	3'-0"	3'-0"

GENERAL NOTES:

1. ALL FITTINGS AND BURIED DUCTILE IRON PIPE SHALL BE ENCASED IN POLYETHYLENE.
2. ALL VERTICAL BENDS SHALL BE RESTRAINED JOINTS.
3. PIPE SIZES GREATER THAN 14-INCHES REQUIRES DESIGN AND CERTIFICATION BY ENGINEER.

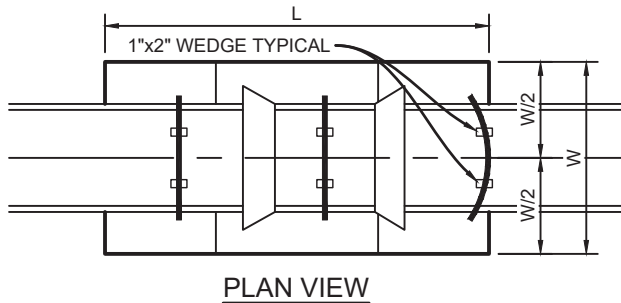
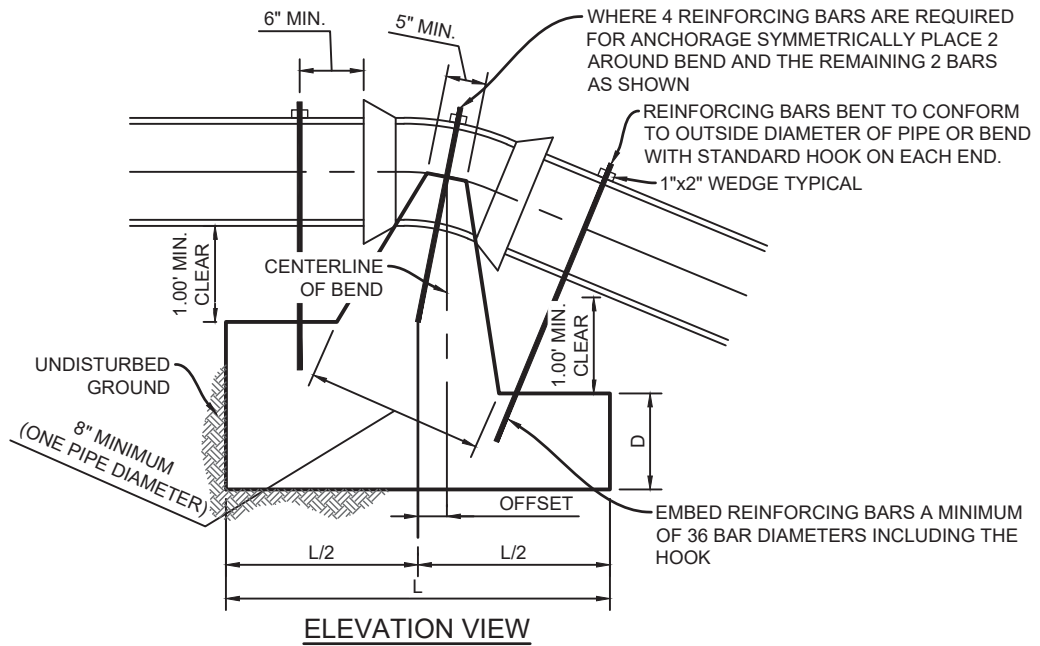
SCALE: NOT TO SCALE



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

THRUST BLOCK DETAILS

ISSUE DATE: JUNE 14, 2022
RESOLUTION NO: 2022-28
REVISION DATE: ----
SHEET NO: W-3



GENERAL NOTES:

1. DESIGN TEST PRESSURE IS 150 PSI.
2. ALL REINFORCING BARS AND WEDGES SHALL BE FACTORY ZINC COATED. REPAIR DAMAGED COATING PER MANUFACTURER'S RECOMMENDATIONS.
3. PIPE SIZES GREATER THAN 14-INCHES REQUIRES DESIGN AND CERTIFICATION BY ENGINEER.

ANCHORAGE BLOCK DIMENSIONS							
BEND		SIZE					
		4"	6"	8"	10"	12"	14"
11.25° BEND	D	2'-0"	2'-6"	3'-0"	3'-6"	3'-9"	4'-0"
	L	2'-0"	2'-6"	3'-0"	3'-6"	3'-9"	4'-0"
	W	1'-9"	2'-3"	2'-6"	3'-0"	3'-6"	4'-0"
	OFFSET	0'-6"	0'-6"	0'-6"	0'-6"	0'-6"	0'-6"
	REBAR	3 - #3	3 - #3	3 - #3	3 - #3	3 - #3	3 - #3
22.5° BEND	D	2'-6"	3'-0"	3'-9"	4'-3"	4'-9"	5'-0"
	L	2'-6"	3'-0"	3'-9"	4'-3"	4'-9"	5'-0"
	W	2'-0"	2'-9"	3'-3"	4'-0"	4'-6"	5'-0"
	OFFSET	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
	REBAR	3 - #3	3 - #3	3 - #3	3 - #3	3 - #3	3 - #4
45° BEND	D	3'-0"	3'-9"	4'-6"	5'-3"	5'-9"	6'-6"
	L	3'-0"	3'-9"	4'-6"	5'-3"	5'-9"	6'-6"
	W	2'-9"	3'-6"	4'-3"	5'-0"	5'-6"	6'-0"
	OFFSET	1'-0"	1'-3"	1'-6"	1'-9"	2'-0"	2'-3"
	REBAR	3 - #3	3 - #3	3 - #3	3 - #4	3 - #4	3 - #5

SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

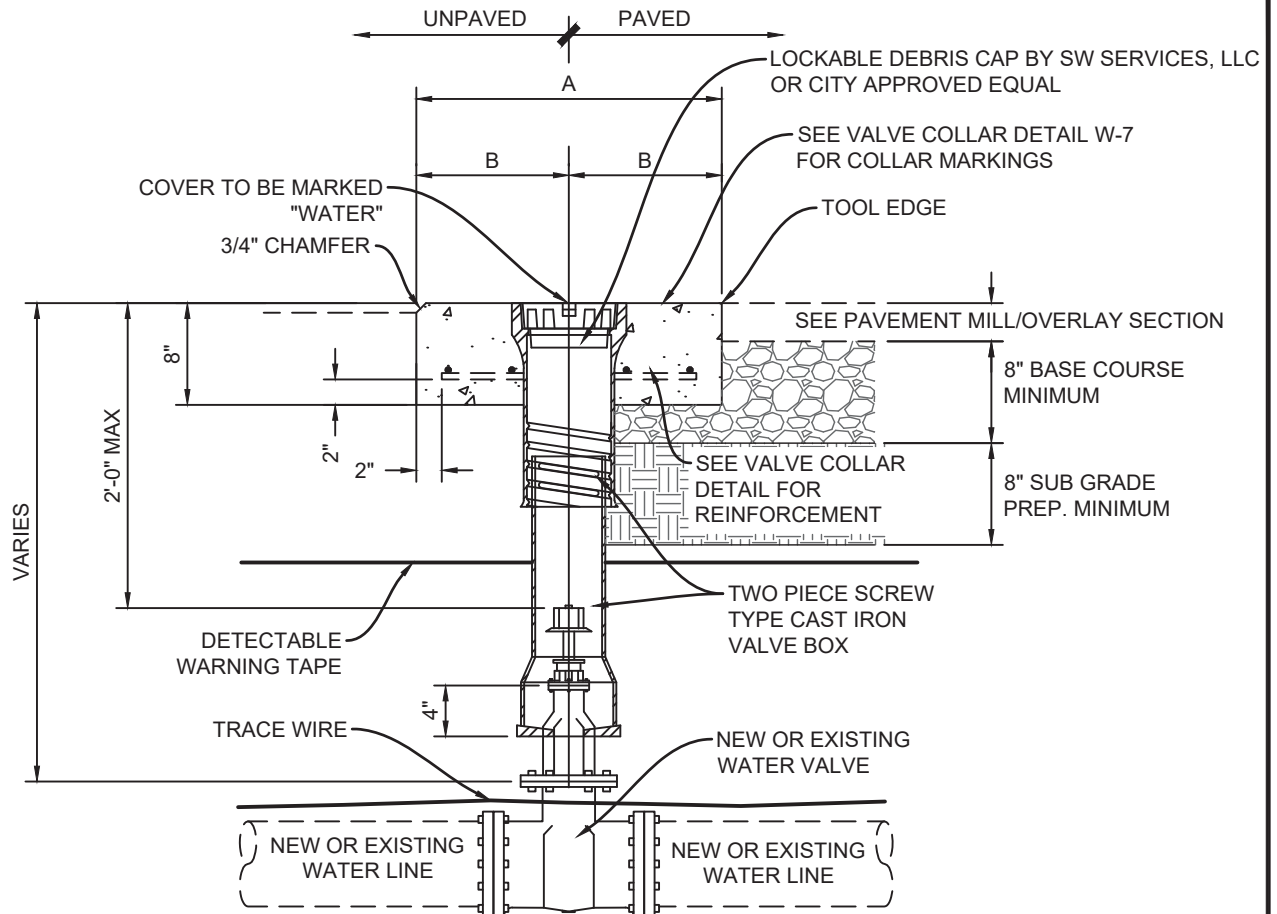
ANCHORAGE VERTICAL BEND DETAIL

ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:
W-4



CONCRETE COLLAR TABLE		
DIMENSION	PAVED	UNPAVED
A	2'-0"	4'-0"
B	1'-0"	2'-0"

WATER VALVE NOTES:

1. VALVE EXTENSIONS ARE REQUIRED ON ANY VALVE NUT OVER 36-INCHES IN DEPTH. THE EXTENSION SHALL BE WITHIN 18-INCHES OF THE SURFACE.
2. INTERSECTING WATER MAINS SHALL BE EQUIPPED WITH 3 OR 4 ISOLATION CONTROL VALVES.
3. VALVE BOX SHALL BE CENTERED ABOUT OPERATING NUT AND BE PLACED TRUE AND VERTICAL.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

VALVE BOX DETAIL

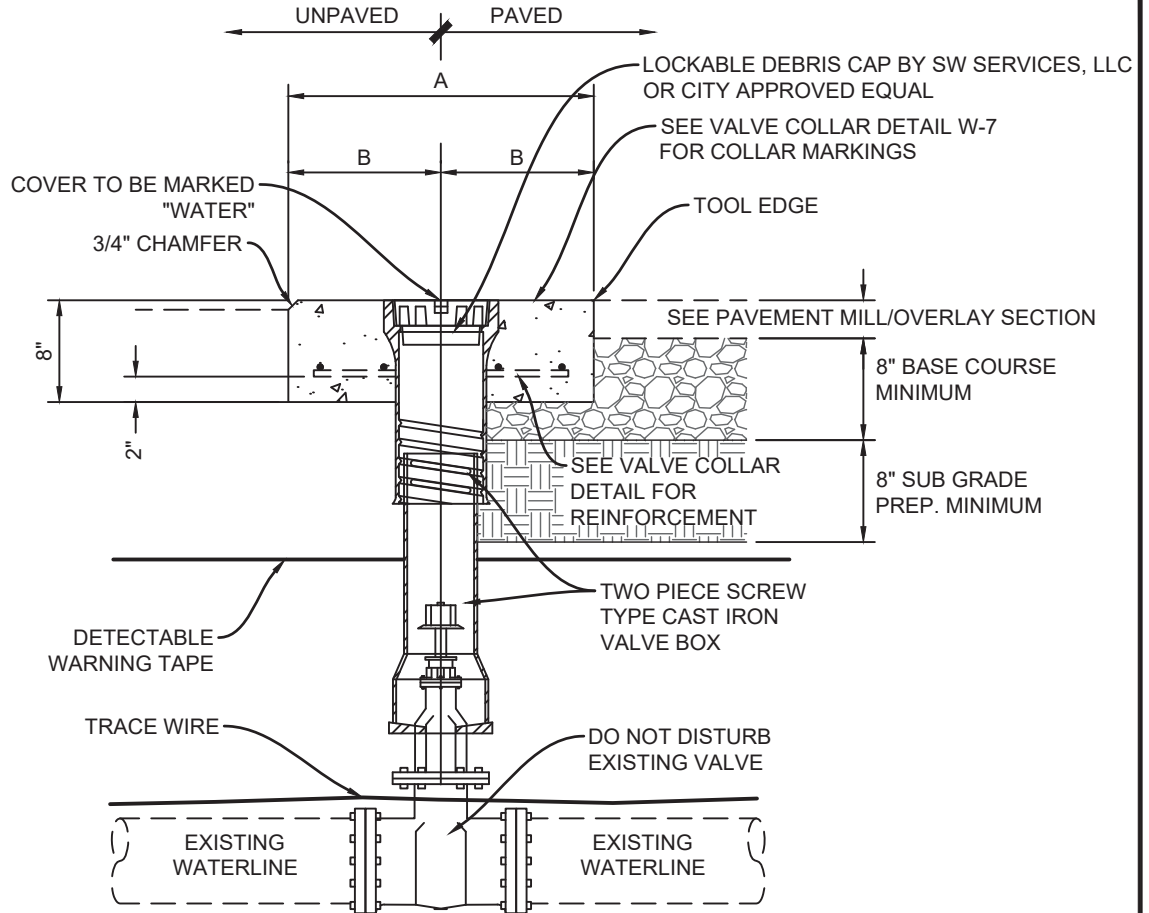
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:

W-5



CONCRETE COLLAR TABLE		
DIMENSION	PAVED	UNPAVED
A	2'-0"	4'-0"
B	1'-0"	2'-0"

GENERAL NOTES:

1. SEE TECHNICAL SPECIFICATION FOR BACKFILL MATERIAL SPECIFICATIONS AND COMPACTION REQUIREMENTS.
2. SEE CHAPTER 5, STREET STANDARDS FOR PAVEMENT, BASE COURSE COURSE AND SUB-GRADE PREP. REQUIREMENTS.
3. SIDES OF CONCRETE COLLAR TOP SHALL BE PARALLEL AND PERPENDICULAR TO THE NORMAL STREET TRAFFIC FLOW.
4. VALVE BOX SHALL BE CENTERED ABOUT OPERATING NUT AND BE PLACED TRUE AND VERTICAL.

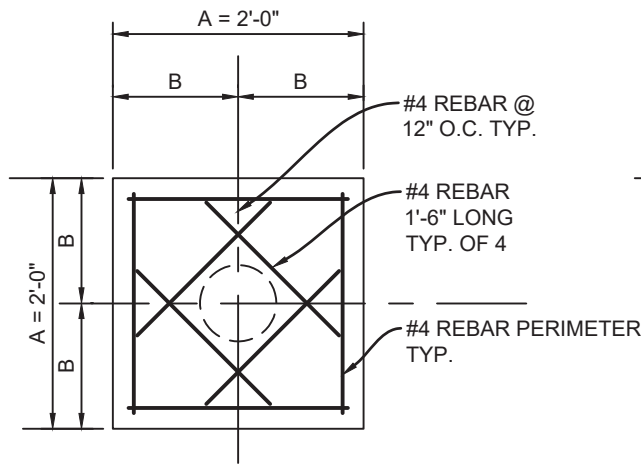
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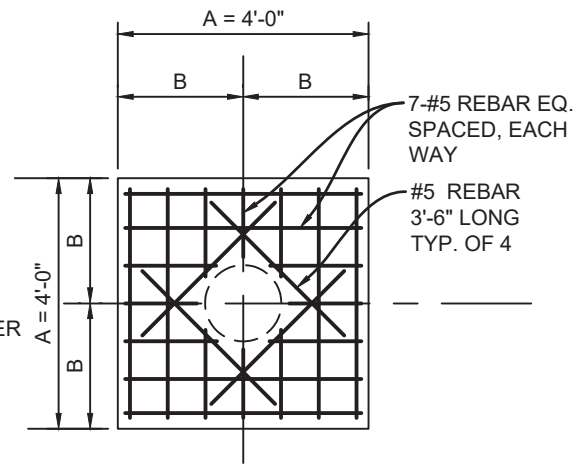
CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

ADJUST VALVE BOX DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	W-6

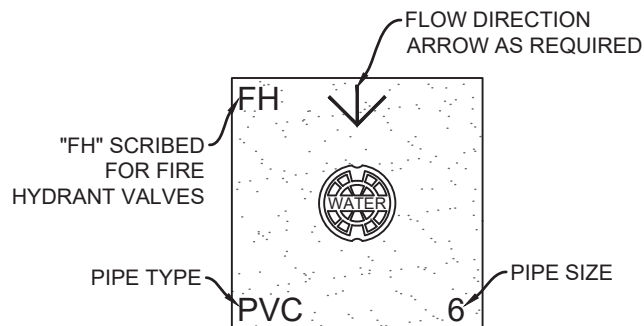


Valve Box Concrete Collar Detail

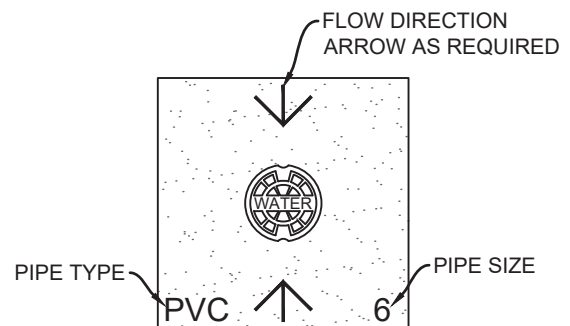


Valve Box Concrete Collar Detail

CONCRETE COLLAR TABLE		
DIMENSION	PAVED	UNPAVED
A	2'-0"	4'-0"
B	1'-0"	2'-0"



Valve Box Collar Marking
Fire Hydrant Valve Detail



Valve Box Collar
Marking Detail

GENERAL NOTES:

1. SIDES OF CONCRETE COLLAR TOP SHALL BE PARALLEL AND PERPENDICULAR TO THE NORMAL STREET TRAFFIC FLOW.
2. SCRIBE CONCRETE WITH LINE DIRECTIONAL ARROWS, PIPE SIZE AND PIPE TYPE. FIRE HYDRANT VALVES SHALL BE SCRIBED WITH "FH" FOR FIELD IDENTIFICATION.
3. TEXT SIZE SHALL BE 4-INCHES TALL AND SCORED 3/8" DEEP IN A NEAT AND CONSISTENT MANNER, TYPICAL.

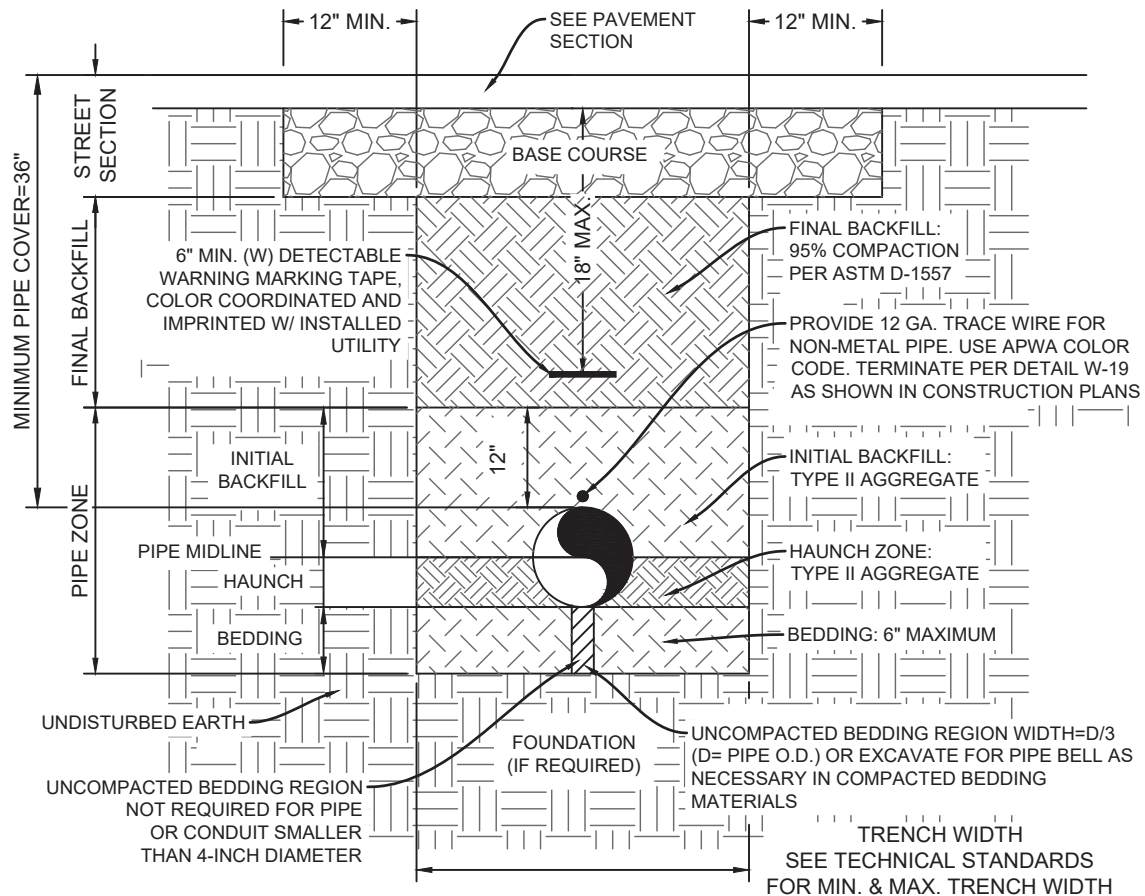
SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

VALVE BOX CONCRETE COLLAR DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	W-7



TYPE II AGGREGATE BASE BACKFILL GRADATION AND REQUIREMENTS	
SIEVE SIZE	PERCENT OF DRY WEIGHT PASSING SIEVE
1-INCH	100
3/4 - INCH	85 - 95
NO. 4	40 - 70
NO. 10	35 - 45
NO. 16	25 - 35
NO. 200	06 - 18
PLASTIC INDEX	12 MAXIMUM
LIQUID LIMITS	35 MAXIMUM
FRACTURED FACES	70% MINIMUM
TOTAL AVAILABLE WATER SOLUBLE SULFATES	35 MAXIMUM

GENERAL NOTES:

- SEE TECHNICAL STANDARDS FOR BACKFILL MATERIAL SPECIFICATIONS AND COMPACTION REQUIREMENTS.
- NATIVE SOIL MAY BE USED AS FINAL BACKFILL IF FREE OF ORGANIC MATTER/DEBRIS, MAXIMUM PARTICLE SIZE OF TWO-INCH (2"), LIQUID LIMIT OF <35, AND PLASTICITY INDEX OF <15. COMPACTION REQUIREMENTS FOR NATIVE MATERIAL SHALL REMAIN THE SAME AS IMPORTED MATERIALS AND PLACEMENT SHALL OCCUR WITHIN $\pm 2\%$ OF OPTIMUM MOISTURE CONTENT.
- COMPACTION OF THE PIPE BEDDING MAY BE ACCOMPLISHED USING MECHANICAL TAMPING DEVICES PRIOR TO PLACEMENT OF THE PIPE OR CONDUIT. MINIMUM EXCAVATION FOR PIPE BELLS MAY BE ACCOMPLISHED AS NECESSARY TO ALLOW PROPER ALIGNMENT AND ELEVATION OF THE PIPE OR CONDUIT.
- COMPACTION IN THE HAUNCH ZONE SHALL BE COMPLETED BY HAND WITH TAMPERS OR SUITABLE POWER COMPACTORS IN MAXIMUM LIFTS OF SIX-INCHES (6"). TAMPERS SHALL NOT CONTACT PIPE OR CONDUITS DURING THE TAMPING PROCESS.
- THE CONTRACTOR SHALL NOT EMPLOY THE USE OF IMPACT TAMPERS DIRECTLY ABOVE THE PIPE OR CONDUIT UNTIL THE FULL LOOSE LAYER BACKFILL DEPTH ABOVE THE PIPE IS OBTAINED.
- TRENCHING AND EXCAVATION OPERATIONS SHALL CONFORM TO THE CURRENT FEDERAL, STATE, AND LOCAL SAFETY ORDINANCES; INCLUDING OSHA REGULATIONS.

SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

UTILITY TRENCH CROSS-SECTION DETAIL

ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:

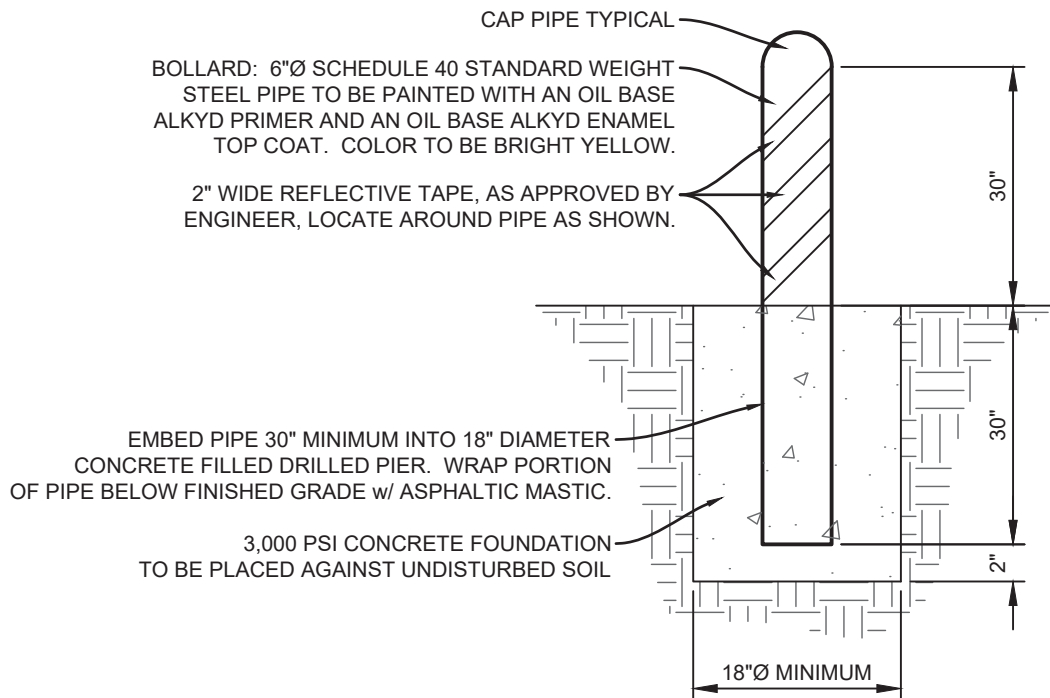
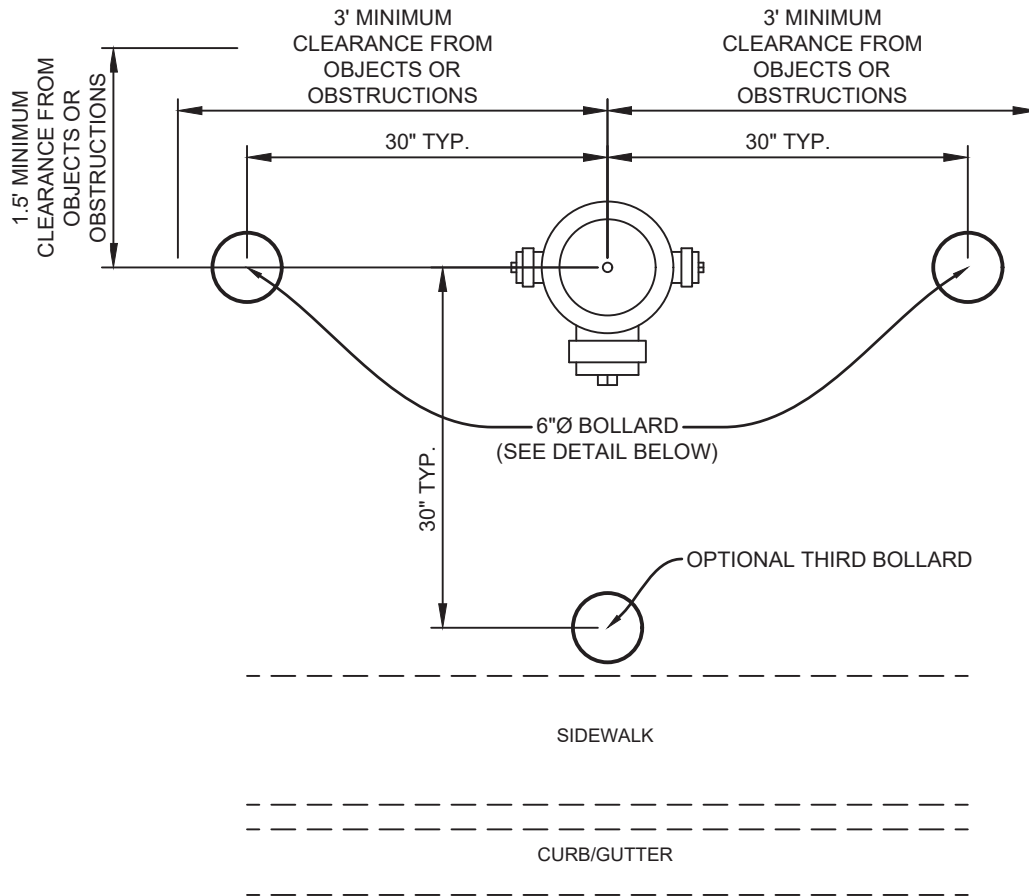
W-8



1. FIRE HYDRANT SHALL BE INSTALLED 6-FEET FROM BACK OF CURB TO CENTER OF HYDRANT OR AS SPECIFIED BY THE UTILITY DEPARTMENT AND/OR ENGINEERING DEPARTMENT.
2. ALL FITTINGS FROM WATER MAIN LINE TO FIRE HYDRANT SHALL BE M.J. FITTINGS.
3. USE OF RESTRAINED JOINTS IS MANDATORY. ALL FIRE HYDRANT LEG PIPING AND FITTINGS INCLUDING THE TEE AT THE MAIN SHALL BE RESTRAINED JOINT.
4. GRIP RING PIPE RESTRAINT, OR PRE-APPROVED EQUAL, SHALL BE INSTALLED ON PIPE FROM HYDRANT VALVE TO HYDRANT BOOT WHEN VALVE IS LOCATED WITH-IN THE 5-FEET MINIMUM SEPARATION, THIS INSTALLATION MUST BE PRE-APPROVED BY UTILITY DEPARTMENT AND/OR ENGINEERING DEPARTMENT.
5. FIRE HYDRANT VALVE SHALL NOT BE LOCATED IN THE CURB OR THE GUTTER; CONSULT WITH UTILITY DEPARTMENT AND/OR ENGINEERING DEPARTMENT FOR APPROPRIATE LOCATION.

FIRE HYDRANT DETAIL

W-9



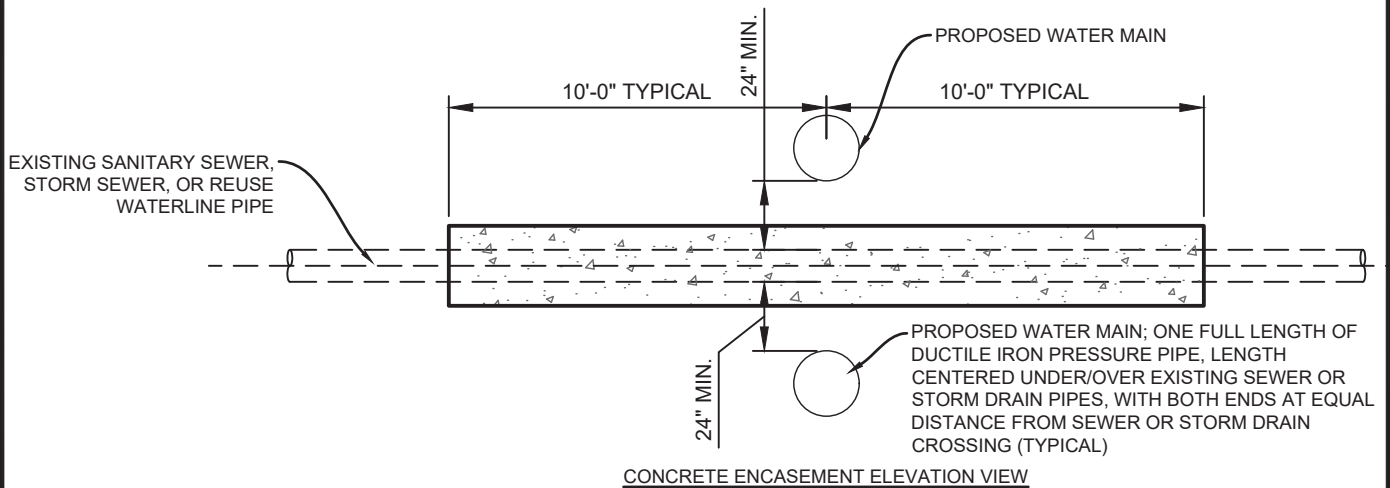
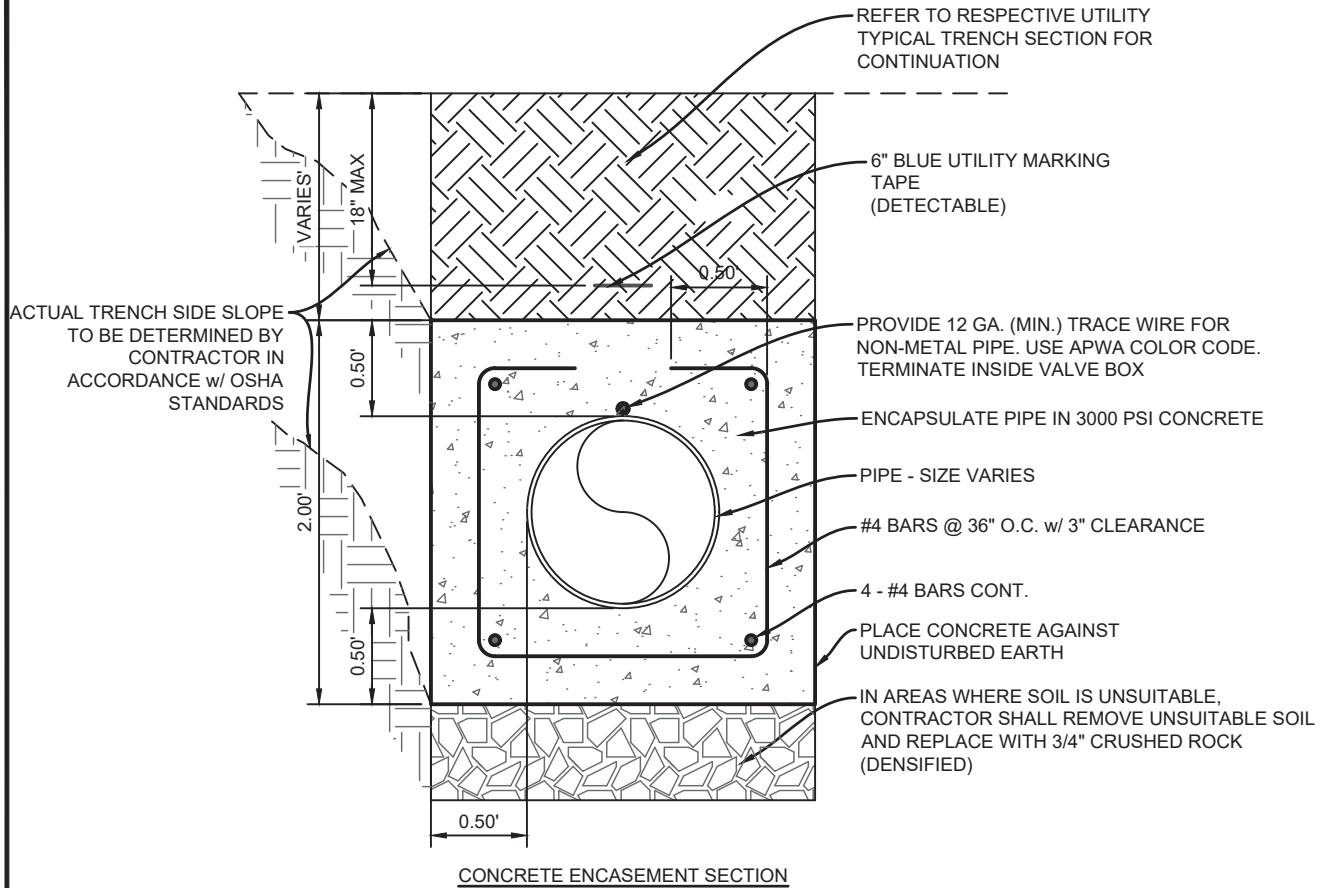
SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

FIRE HYDRANT BOLLARD DETAIL

ISSUE DATE:	JUNE 14, 2022
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GENERAL NOTES:

1. PROVIDE AT LOCATIONS WHERE WATERLINE CROSSES SANITARY SEWER LINE, STORM DRAIN LINE, AND/OR REUSE WATERLINE WITH A CLEARANCE LESS THAN 24-INCHES; ENCASE PIPE FOR A MINIMUM OF 10'-0" ON EACH SIDE OF THE CROSSING AND CROSSINGS TO BE ARRANGED SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SANITARY SEWER LINE, STORM DRAIN LINE, AND/OR REUSE WATERLINE JOINTS.
2. WHERE 36-INCH MINIMUM COVER CANNOT BE MAINTAINED CONSULT WITH UTILITY DEPARTMENT AND/OR ENGINEERING DEPARTMENT ON LOWERING OF UTILITY.

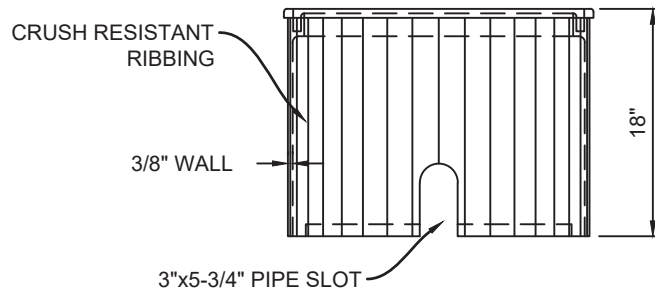
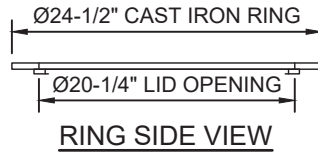
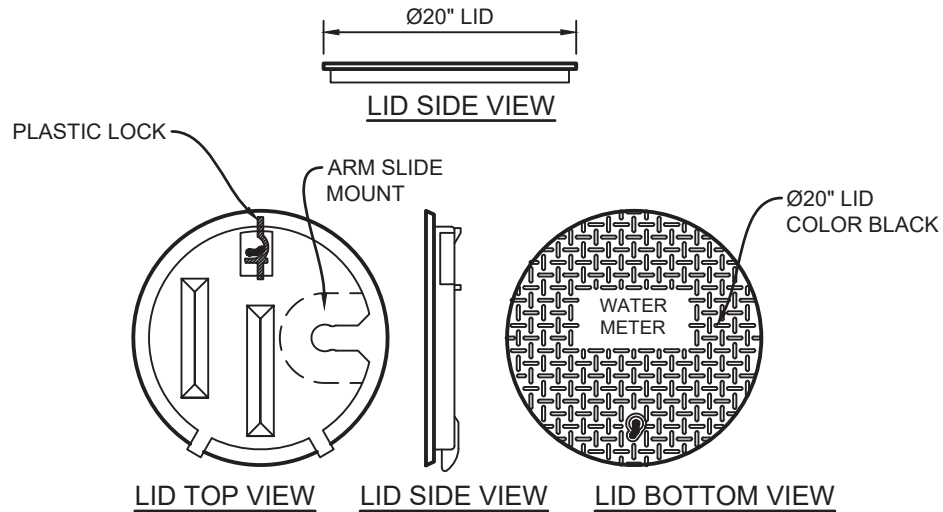
SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

PIPE CONCRETE ENCASEMENT DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
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METER CAN SIDE VIEW

GENERAL NOTES:

1. DIMENSION'S $\pm 1/8"$ U.N.O.
2. LID MATERIAL: HDPE
3. BODY MATERIAL: LLDPE
4. WALL THICKNESS: $3/8" \pm$ MINIMUM
5. I.W.A. = INSIDE WORK AREA
6. SNAP LOCK POCKET WILL RECEIVE AMR/AMI DEVICE ENDPOINT. SNAP LOCK SLOT IS $1.80" \pm .015"$ TO ALLOW FOR A FINGER FORCE INSTALL. POCKET HEIGHT IS $15/16"$ FOR A MINIMUM $1/8"$ AIR GAP.

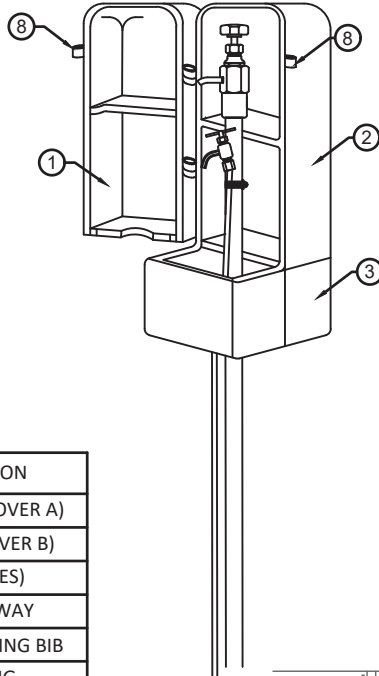
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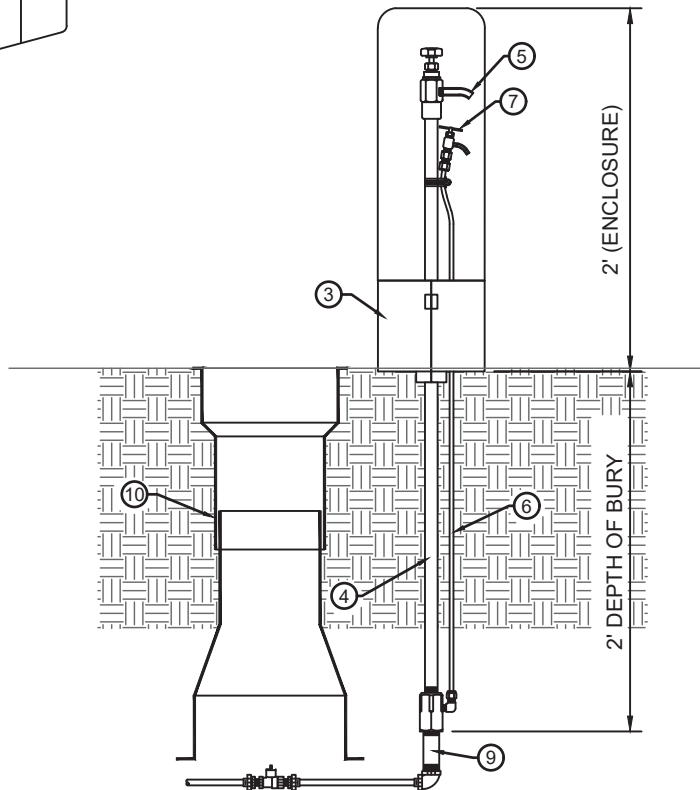
CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

WATER METER CAN DETAIL

ISSUE DATE:	JUNE 14, 2022
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ITEM	ITEM/DESCRIPTION
1	88 FRONT DOOR (COVER A)
2	88 REAR DOOR (COVER B)
3	88 BASE (2-PIECES)
4	1/2" S.S. WATERWAY
5	BLOW OFF & SAMPLING BIB
6	1/4" S.S. TUBING
7	PET COCK
8	LOCKING HOLE
9	3/4" S.S. NIPPLE
10	VALVE BOX



SAMPLING STATION NOTES:

1. ALL NEW SUBDIVISIONS SHALL INCLUDE A MINIMUM OF ONE SAMPLING STATION. TOTAL NUMBER OF SAMPLE STATIONS REQUIRED SHALL BE COORDINATED WITH THE UTILITY DEPARTMENT AND/OR ENGINEERING DEPARTMENT.

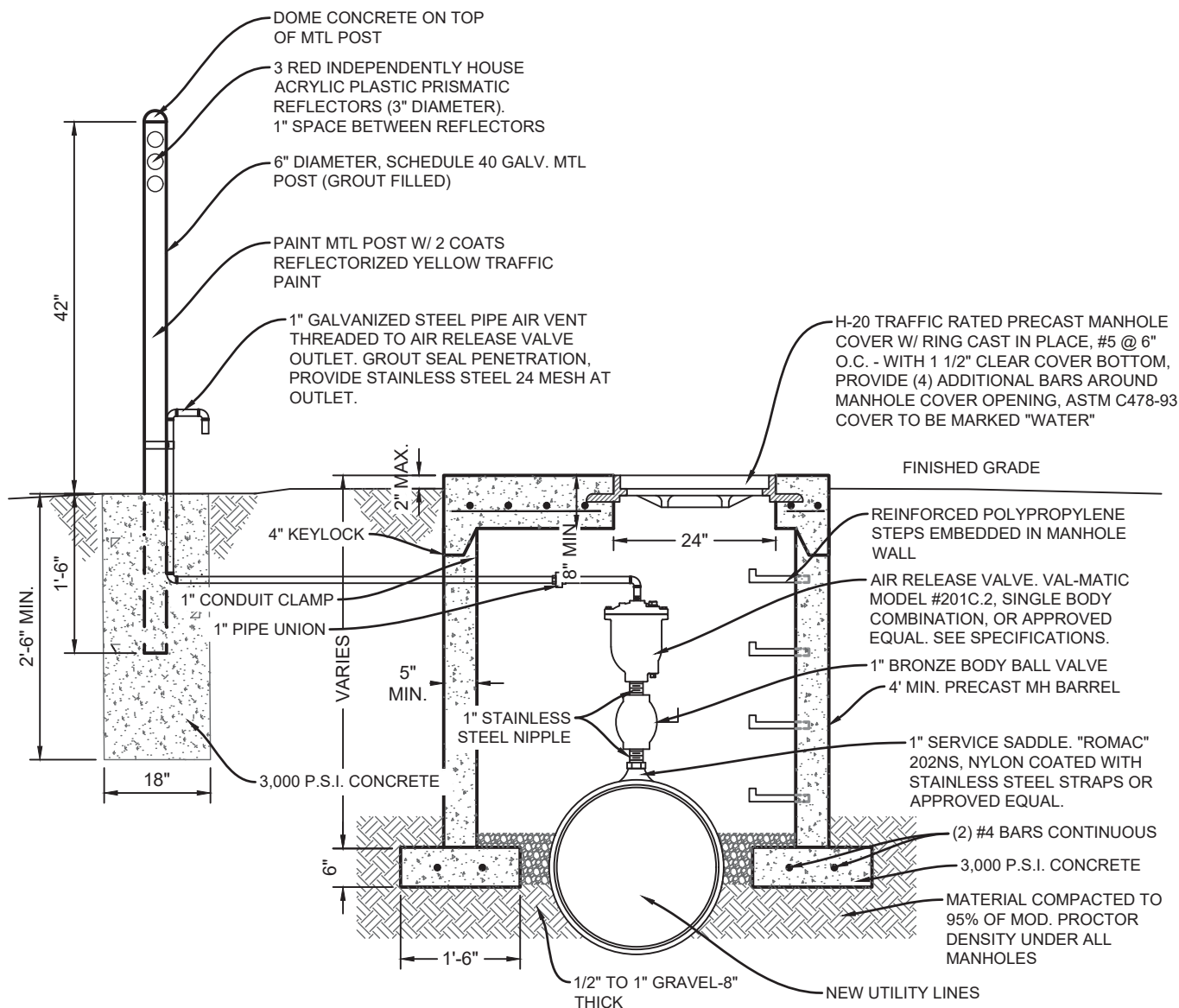
SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

SAMPLING STATION DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
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AIR RELEASE VALVE

NOTE:
DETAIL AS SHOWN IS TYPICAL OF 1" COMBINATION AIR & VACUUM VALVE ASSEMBLY. ACTUAL VALVE & ASSOCIATED VENT PIPE SHALL BE SIZED PER PIPELINE BEING DESIGNED.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

COMBINATION AIR & VACUUM RELEASE VALVE DETAIL

ISSUE DATE:

JUNE 14, 2022

RESOLUTION NO:

2022-28

REVISION DATE:

SHEET NO:

W-14

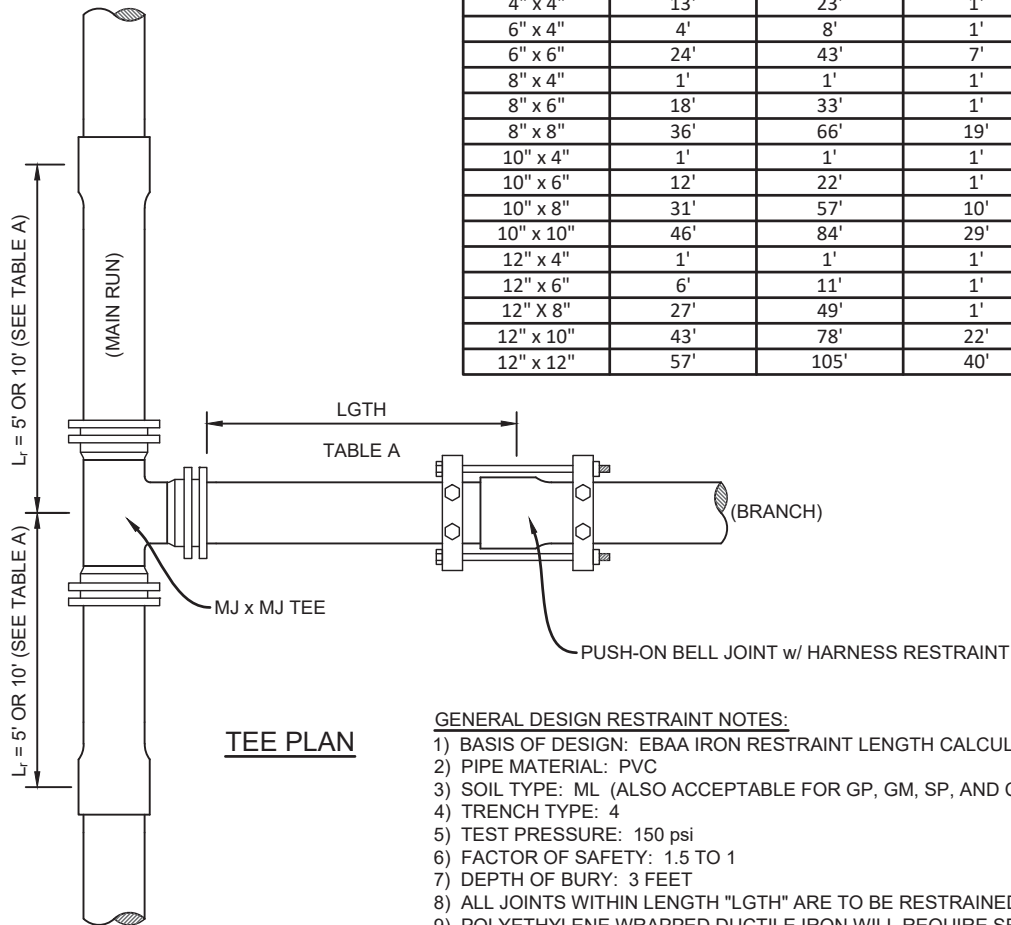


TABLE A				
PIPE SIZE	$L_r = 5' \text{ MINIMUM}$		$L_r = 10' \text{ MINIMUM}$	
	LGTH (D.I.)	LGTH (PVC)	LGTH (D.I.)	LGTH (PVC)
4" x 4"	13'	23'	1'	1'
6" x 4"	4'	8'	1'	1'
6" x 6"	24'	43'	7'	13'
8" x 4"	1'	1'	1'	1'
8" x 6"	18'	33'	1'	1'
8" x 8"	36'	66'	19'	35'
10" x 4"	1'	1'	1'	1'
10" x 6"	12'	22'	1'	1'
10" x 8"	31'	57'	10'	18'
10" x 10"	46'	84'	29'	53'
12" x 4"	1'	1'	1'	1'
12" x 6"	6'	11'	1'	1'
12" x 8"	27'	49'	1'	1'
12" x 10"	43'	78'	22'	40'
12" x 12"	57'	105'	40'	73'

GENERAL DESIGN RESTRAINT NOTES:

- 1) BASIS OF DESIGN: EBAA IRON RESTRAINT LENGTH CALCULATOR
- 2) PIPE MATERIAL: PVC
- 3) SOIL TYPE: ML (ALSO ACCEPTABLE FOR GP, GM, SP, AND CL)
- 4) TRENCH TYPE: 4
- 5) TEST PRESSURE: 150 psi
- 6) FACTOR OF SAFETY: 1.5 TO 1
- 7) DEPTH OF BURY: 3 FEET
- 8) ALL JOINTS WITHIN LENGTH "LGTH" ARE TO BE RESTRAINED.
- 9) POLYETHYLENE WRAPPED DUCTILE IRON WILL REQUIRE SEPARATE CALCULATIONS.
- 10) PIPE SIZES LARGER THAN 12" DIAMETER WILL REQUIRE A SEPARATE DESIGN.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

RESTRAINED TEE DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	W-15

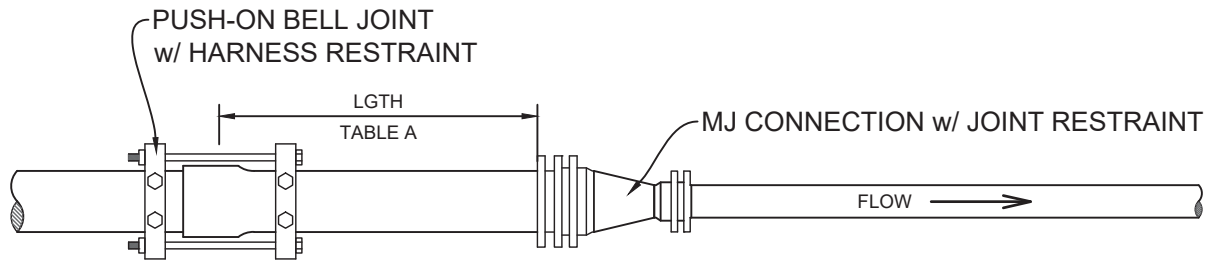
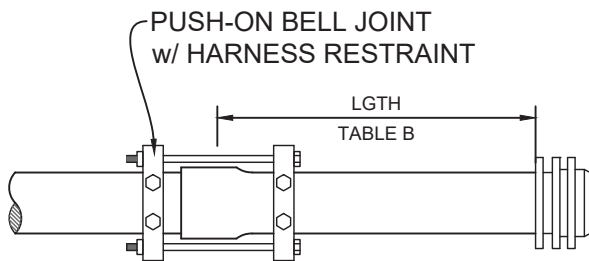


TABLE A		
PIPE SIZE	D.I.	PVC
6" x 4"	21'	38'
8" x 4"	38'	70'
8" x 6"	22'	41'
10" x 4"	52'	94'
10" x 6"	39'	71'
10" x 8"	22'	39'
12" x 4"	65'	118'
12" x 6"	54'	99'
12" x 8"	40'	73'
12" x 10"	22'	40'

REDUCER PLAN

GENERAL DESIGN RESTRAINT NOTES:

- 1) BASIS OF DESIGN: EBAA IRON RESTRAINT LENGTH CALCULATOR
- 2) PIPE MATERIAL: PVC
- 3) SOIL TYPE: ML (ALSO ACCEPTABLE FOR GP, GM, SP, AND CL)
- 4) TRENCH TYPE: 4
- 5) TEST PRESSURE: 150 psi
- 6) FACTOR OF SAFETY: 1.5 TO 1
- 7) DEPTH OF BURY: 3 FEET
- 8) ALL JOINTS WITHIN LENGTH "LGTH" ARE TO BE RESTRAINED.
- 9) POLYETHYLENE WRAPPED DUCTILE IRON WILL REQUIRE SEPARATE CALCULATIONS.
- 10) PIPE SIZES LARGER THAN 12" DIAMETER WILL REQUIRE A SEPARATE DESIGN.



DEAD END PLAN

TABLE B		
PIPE SIZE	D.I.	PVC
4"	29'	53'
6"	41'	74'
8"	53'	97'
10"	63'	116'
12"	74'	136'

SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

RESTRAINED DEAD END & REDUCER DETAILS

ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:

2022-28

REVISION DATE:

SHEET NO:

W-16

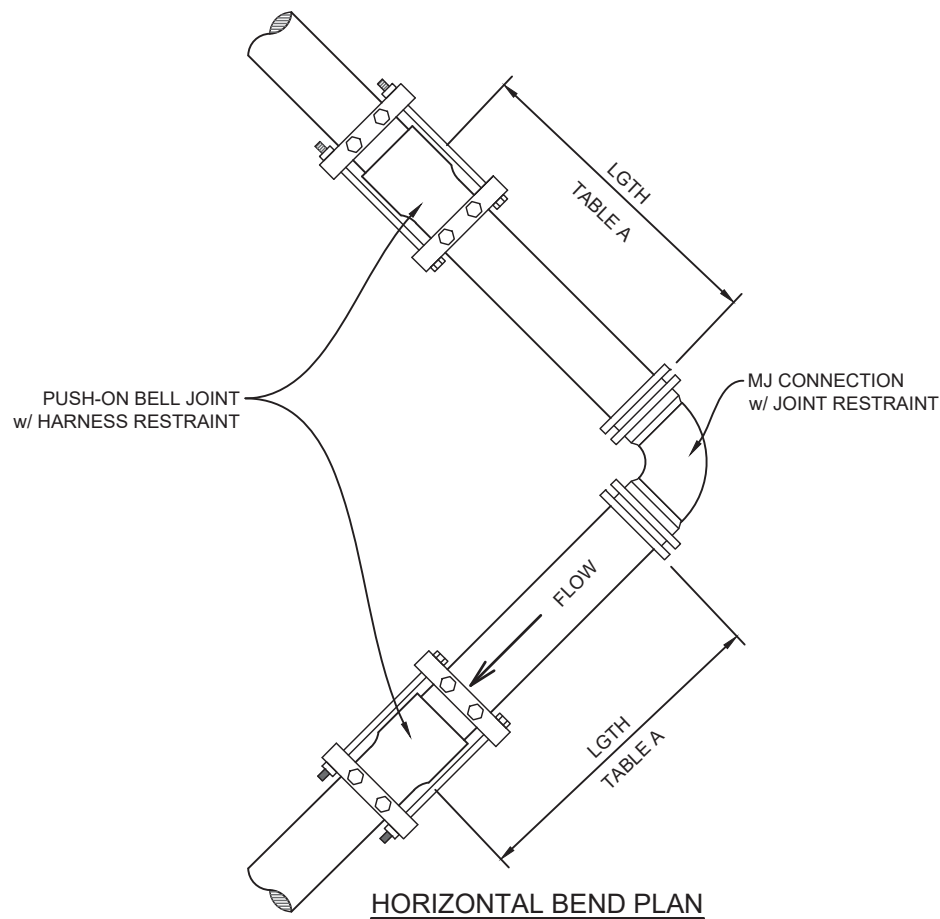


TABLE A (RESTRAINED LENGTH [FT] FOR PVC)				
PIPE SIZE	11.25° BEND	22.5° BEND	45° BEND	90° BEND
4"	2'	4'	8'	18'
6"	3'	5'	11'	25'
8"	4'	7'	14'	32'
10"	4'	8'	16'	38'
12"	5'	9'	19'	44'

TABLE A (RESTRAINED LENGTH [FT] FOR DI)				
PIPE SIZE	11.25° BEND	22.5° BEND	45° BEND	90° BEND
4"	2'	3'	6'	14'
6"	2'	4'	8'	19'
8"	3'	5'	11'	25'
10"	3'	6'	13'	30'
12"	4'	7'	15'	35'

GENERAL DESIGN RESTRAINT NOTES:

- 1) BASIS OF DESIGN: EBAA IRON RESTRAINT LENGTH CALCULATOR
- 2) PIPE MATERIAL: PVC
- 3) SOIL TYPE: ML (ALSO ACCEPTABLE FOR GP, GM, SP, AND CL)
- 4) TRENCH TYPE: 4
- 5) TEST PRESSURE: 150 psi
- 6) FACTOR OF SAFETY: 1.5 TO 1
- 7) DEPTH OF BURY: 3 FEET
- 8) ALL JOINTS WITHIN LENGTH "LGTH" ARE TO BE RESTRAINED.
- 9) POLYETHYLENE WRAPPED DUCTILE IRON WILL REQUIRE SEPARATE CALCULATIONS.
- 10) PIPE SIZES LARGER THAN 12" DIAMETER WILL REQUIRE A SEPARATE DESIGN.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

RESTRAINED HORIZONTAL BEND DETAILS

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	W-17

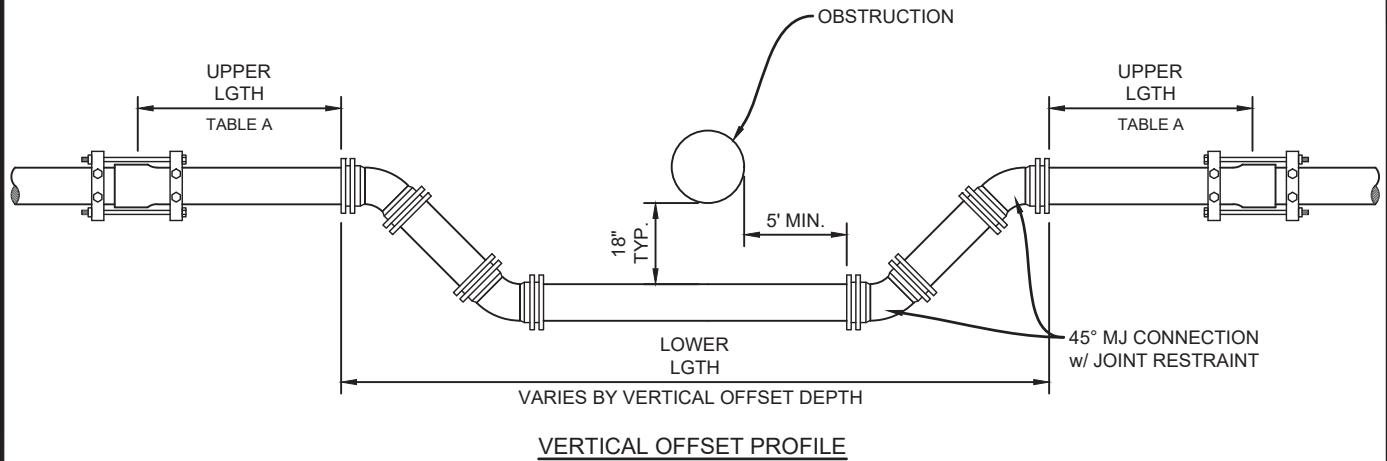


TABLE A		
PIPE SIZE	D.I.	PVC
4"	12'	22'
6"	17'	31'
8"	22'	40'
10"	27'	48'
12"	31'	57'

GENERAL DESIGN RESTRAINT NOTES:

- 1) BASIS OF DESIGN: EBAA IRON RESTRAINT LENGTH CALCULATOR
- 2) PIPE MATERIAL: PVC
- 3) SOIL TYPE: ML (ALSO ACCEPTABLE FOR GP, GM, SP, AND CL)
- 4) TRENCH TYPE: 4
- 5) TEST PRESSURE: 150 psi
- 6) FACTOR OF SAFETY: 1.5 TO 1
- 7) DEPTH OF BURY: 3 FEET
- 8) ALL JOINTS WITHIN LENGTH "LGTH" ARE TO BE RESTRAINED.
- 9) POLYETHYLENE WRAPPED DUCTILE IRON WILL REQUIRE SEPARATE CALCULATIONS.
- 10) PIPE SIZES LARGER THAN 12" DIAMETER WILL REQUIRE A SEPARATE DESIGN.

SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

WATER LINE LOWERING DETAIL

ISSUE DATE:
JUNE 14, 2022

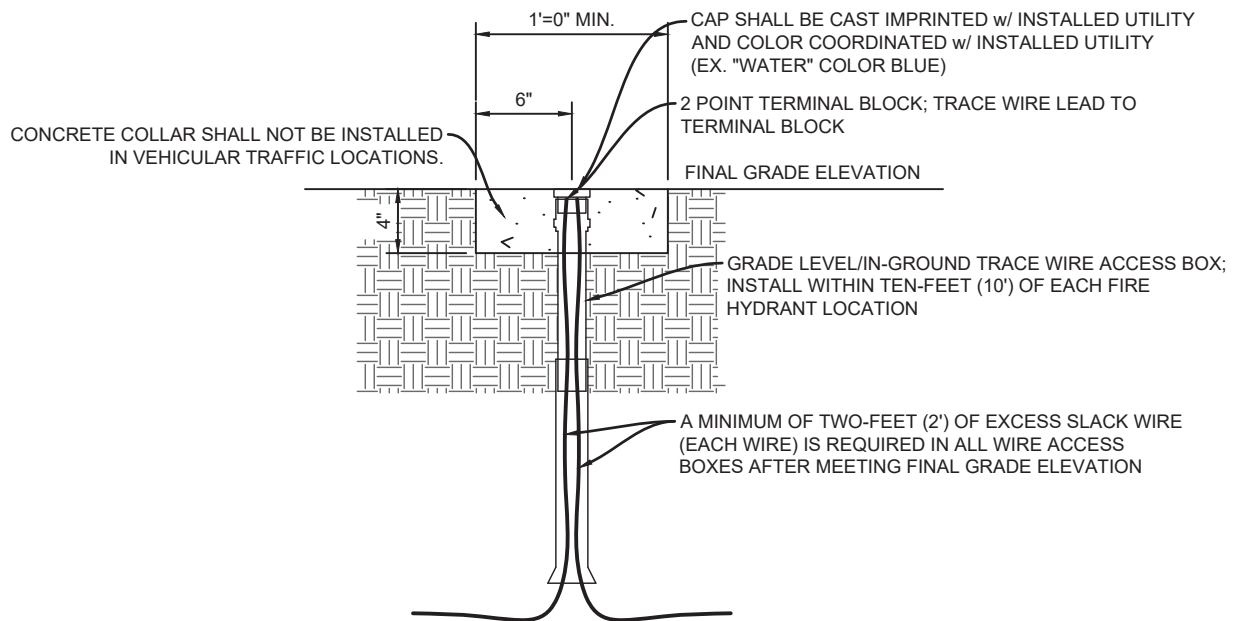
RESOLUTION NO:

2022-28

REVISION DATE:

SHEET NO:

W-18



Trace Wire Termination Detail

CONTRACTOR NOTES:

1. TRACE WIRE ACCESS BOXES SHALL BE LOCATED AT ALL FIRE HYDRANT LOCATIONS.
2. TRACE WIRE ACCESS BOXES SPACING SHALL NOT EXCEED 500 LINEAR FEET.
3. COORDINATE WITH UTILITY DEPARTMENT AND/OR ENGINEERING DEPARTMENT FOR TRACE WIRE ACCESS BOXES FINAL LOCATION(S).

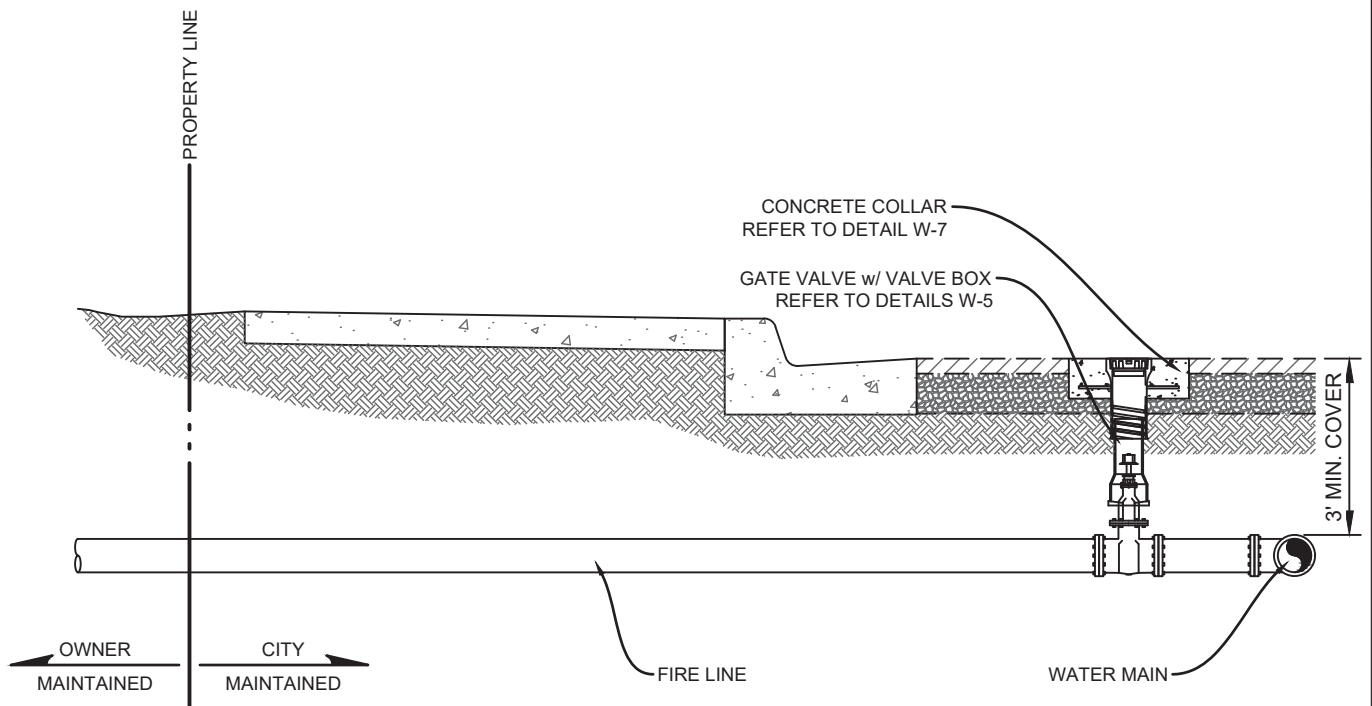
SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

TRACE WIRE TERMINATION DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
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MAINTENANCE RESPONSIBILITY NOTE:

THE UTILITY DEPARTMENT WILL BE RESPONSIBLE FOR MAINTENANCE OF THE FIRE LINE FROM THE WATER MAIN TO THE PROPERTY LINE. THE OWNER WILL BE RESPONSIBLE FOR MAINTENANCE OF THE FIRE LINE FROM THE PROPERTY LINE TO THE BUILDING.

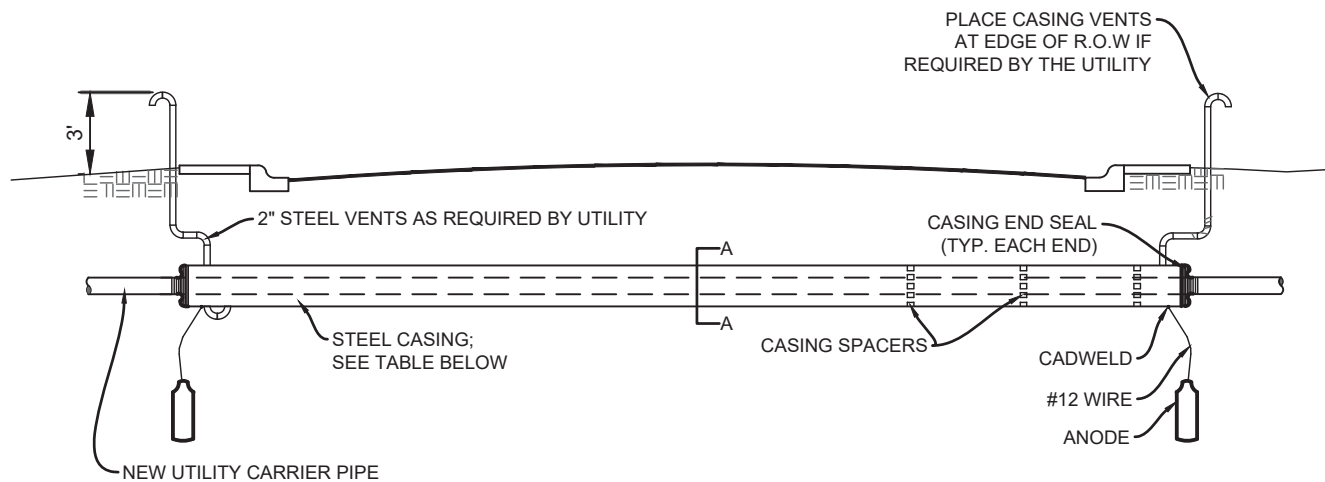
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**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

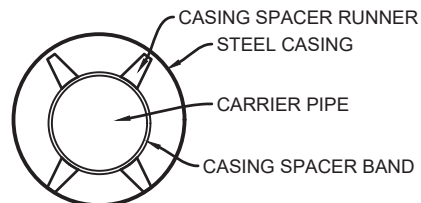
FIRE LINE DETAIL

ISSUE DATE:	JUNE 14, 2022
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SHEET NO:	W-20



GENERAL NOTES:

1. CASING END SEALS SHALL BE T.D. WILLIAMSON, INC Z-SEALS OR ENGINEER APPROVED EQUAL.
2. CASING SPACERS SHALL BE ADVANCE PRODUCTS & SYSTEMS, LLC MODEL SSIM OR ENGINEER APPROVED EQUAL.
3. STEEL CASING PIPE SHALL BE SIZED TO ADEQUATELY ACCOMMODATE CARRIER PIPE AND ADHERE TO THE REQUIREMENTS PROVIDED IN THE TABLE BELOW.
4. PIPE JOINT(S) INSIDE CASING SHALL BE JOINT RESTRAINED.
5. CASING VENTS TO BE PAINTED WITH AN OIL BASE ALKYD PRIMER AND AN OIL BASE ALKYD ENAMEL TOP COAT. COLOR SHALL BE PER APWA UNIFORM COLOR CODE FOR RESPECTIVE UTILITY.



SECTION A-A

STEEL CASING MINIMUM WALL THICKNESS		
NOMINAL DIAMETER (INCHES)	MIN. WALL THICKNESS FOR COATED (INCHES)	MIN. WALL THICKNESS NON-COATED (INCHES)
14 AND UNDER	0.1880	0.1880
16	0.2190	0.2810
18	0.2500	0.3120
20 AND 22	0.2810	0.3440
24	0.3120	0.3750
26	0.3440	0.4060
28	0.3750	0.4380
30	0.4060	0.4690
32	0.4380	0.5000
34 AND 36	0.4690	0.5310
42	0.5000	0.5630
48	0.5630	0.6250

1. WALL THICKNESS DESIGNATIONS FOR STEEL CASING PIPE FOR E-80.
2. STEEL PIPE SHALL HAVE A MINIMUM YIELD STRENGTH OF 35,000 PSI.
3. CORROSION CONTROL MEASURES MUST INCLUDE CATHODIC PROTECTION.

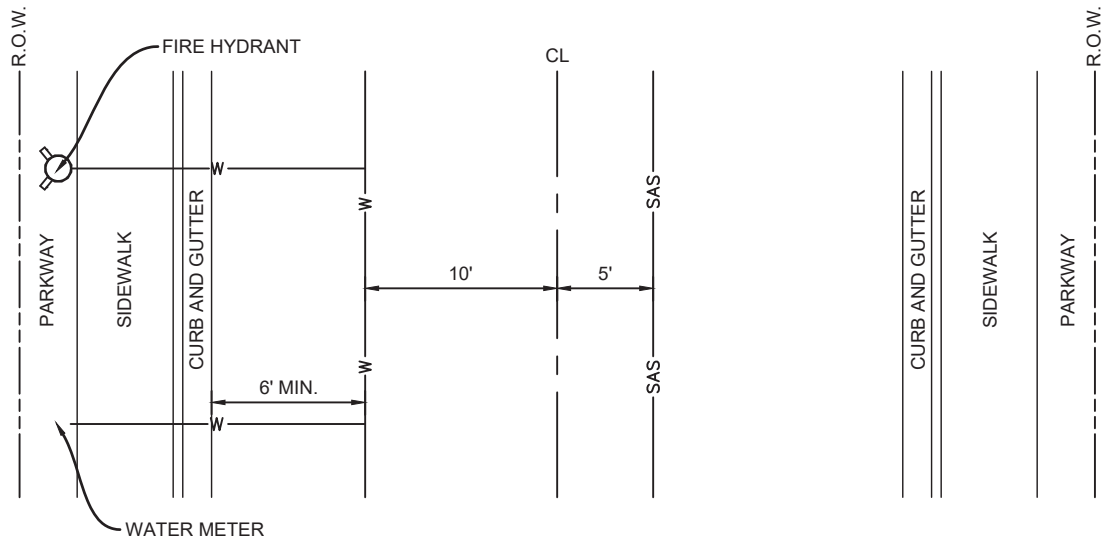
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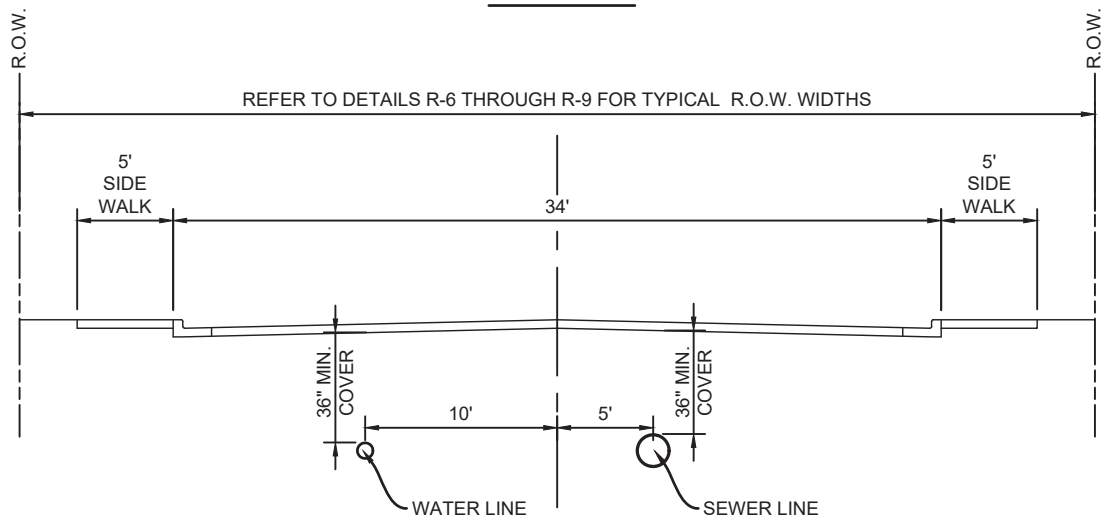
**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

WATER LINE BORE & CASE DETAIL

ISSUE DATE: JUNE 14, 2022
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PLAN VIEW



SECTION VIEW

CONTRACTOR NOTES:

1. WATER LINE WILL BE LOCATED 10' NORTH OF STREET CENTERLINE ON EAST TO WEST STREETS AND 10' WEST OF STREET CENTERLINE ON NORTH AND SOUTH STREETS.
2. WATER LINE MINIMUM COVER SHALL BE 36".
3. SANITARY SEWER MINIMUM COVER SHALL BE 36".
4. SANITARY SEWER WILL BE LOCATED 5' SOUTH OF STREET CENTERLINE ON EAST AND WEST STREETS AND 5' EAST OF STREET CENTERLINE ON NORTH AND SOUTH STREETS.
5. NONSTANDARD LOCATIONS REQUIRE WRITTEN APPROVAL OF THE CITY OF ALAMOGORDO .
6. UTILITY EASEMENT WILL BE AT THE DISCRETION OF THE CITY OF ALAMOGORDO.

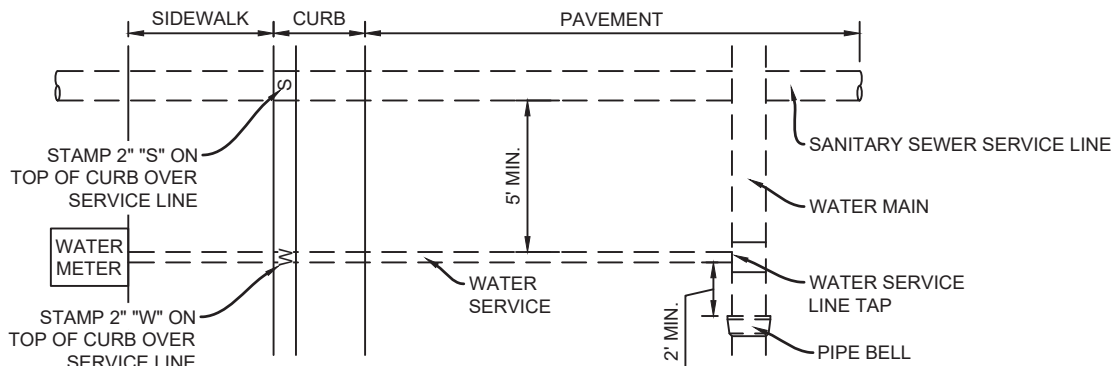
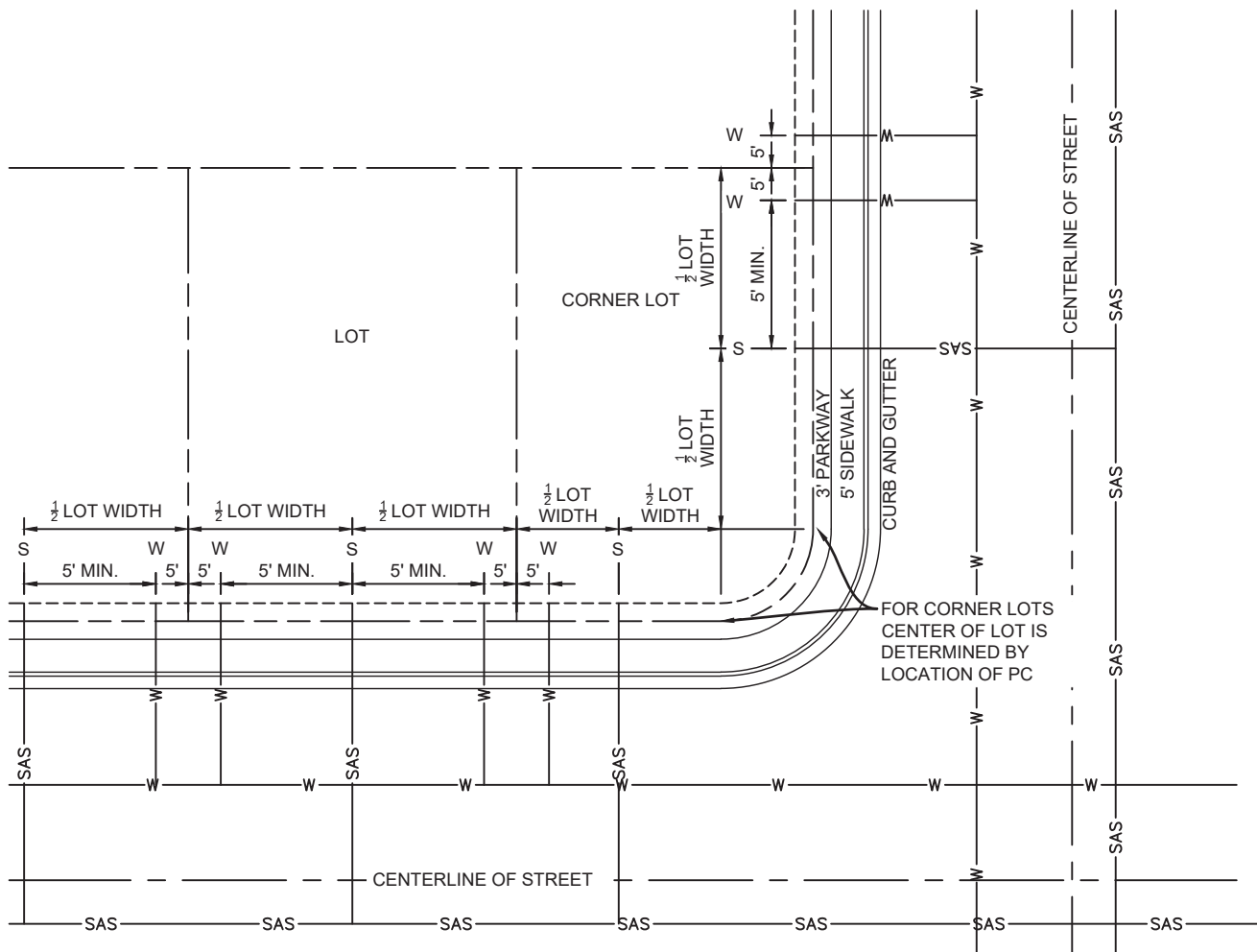
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**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

TYPICAL UTILITY LOCATIONS

ISSUE DATE:	JUNE 14, 2022
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CONTRACTOR NOTES:

1. THE WATER SERVICE WILL ENTER 5' FROM THE PROPERTY LINE AS SHOWN. THE SEWER SERVICE WILL ENTER AT THE CENTER OF THE LOT; A MINIMUM WATER SERVICE TO SANITARY SEWER SERVICE SEPARATION OF 5' SHALL BE MAINTAINED.
2. FOR CORNER LOTS UTILITY STANDARD LOCATIONS AS SHOWN.
3. UTILITY EASEMENTS WILL BE AT THE DISCRETION OF THE CITY OF ALAMOGORDO.
4. STAMPED/INSCRIBED SERVICE LINE MARKS AT TOP OF CURB SHALL BE PLACED ON PROPOSED OR EXISTING CURB & GUTTER AT THE TIME OF SERVICE LINE INSTALLATION.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

TYPICAL LOT UTILITY LOCATIONS

ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:

2022-28

REVISION DATE:

SHEET NO:

W-23

TYPICAL MINIMUM HORIZONTAL UTILITY SEPARATION						
	GAS MAIN	GAS SERVICE	SEWER MAIN	SEWER SERVICE	WATER MAIN	WATER SERVICE
GAS MAIN	5 FEET	5 FEET	10 FEET	5 FEET	10 FEET	5 FEET
GAS SERVICE	5 FEET	5 FEET	5 FEET	5 FEET	5 FEET	5 FEET
SEWER MAIN	10 FEET	5 FEET	10 FEET	5 FEET	10 FEET	5 FEET
SEWER SERVICE	5 FEET	5 FEET	5 FEET	5 FEET	5 FEET	5 FEET
WATER MAIN	10 FEET	5 FEET	10 FEET	5 FEET	5 FEET	5 FEET
WATER SERVICE	5 FEET	5 FEET	5 FEET	5 FEET	5 FEET	5 FEET
STORM SEWER	10 FEET	5 FEET	10 FEET	5 FEET	5 FEET	5 FEET
WIRE UTILITY	5 FEET	5 FEET	5 FEET	5 FEET	5 FEET	5 FEET
MANHOLE	10 FEET	5 FEET	N/A	N/A	10 FEET	5 FEET
SEPARATION TYPICALLY MEASURED FROM CENTER OF UTILITY						
10 FOOT SEPARATION BETWEEN WATER AND SEWER MAINS SHALL BE MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE						
SEPARATION MAY VARY WITH FIELD CONDITIONS AND WITH SUBSEQUENT CITY APPROVAL						

TYPICAL MINIMUM VERTICAL UTILITY SEPARATION						
	GAS MAIN	GAS SERVICE	SEWER MAIN	SEWER SERVICE	WATER MAIN	WATER SERVICE
GAS MAIN	NMGCO	NMGCO	NMGCO	NMGCO	NMGCO	NMGCO
GAS SERVICE	NMGCO	NMGCO	NMGCO	NMGCO	NMGCO	NMGCO
SEWER MAIN	12 INCHES	6 INCHES	12 INCHES	6 INCHES	24 INCHES	6 INCHES
SEWER SERVICE	6 INCHES	6 INCHES	6 INCHES	6 INCHES	6 INCHES	6 INCHES
WATER MAIN	12 INCHES	12 INCHES	24 INCHES	6 INCHES	12 INCHES	6 INCHES
WATER SERVICE	12 INCHES	12 INCHES	6 INCHES	6 INCHES	6 INCHES	6 INCHES
STORM SEWER	12 INCHES	6 INCHES	12 INCHES	6 INCHES	12 INCHES	6 INCHES
WIRE UTILITY	PNM/CITY	PNM/CITY	PNM/CITY	PNM/CITY	PNM/CITY	PNM/CITY
NMGCO - VERTICAL SEPARATION OF GAS MAINS AND GAS SERVICES SHALL BE PER REQUIREMENTS OF NEW MEXICO GAS COMPANY.						
PNM/CITY - VERTICAL SEPARATION OF WIRE UTILITIES SHALL BE DISCUSSED AND APPROVED WITH THE WIRE UTILITY PROVIDER.						
VERTICAL SEPARATION FROM GAS MAINS MAY VARY DEPENDING ON OPERATIONAL PRESSURES AND MAIN LINE MATERIAL (STEEL OR POLY); REQUIRED SEPARATION SHALL BE DISCUSSED WITH GAS PROVIDER.						
SEPARATION MAY VARY WITH FIELD CONDITIONS AND WITH SUBSEQUENT CITY APPROVAL						
WHEN REQUIRED VERTICAL SEPARATION OF SEWER MAINS AND WATER/REUSE MAINS CANNOT BE OBTAINED REFER TO DETAIL W-11 FOR ADDITIONAL GUIDANCE.						
WHEN WATER MAINS CROSS SEWER MAINS THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.						

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

TYPICAL UTILITY SEPARATION

ISSUE DATE:

JUNE 14, 2022

RESOLUTION NO:

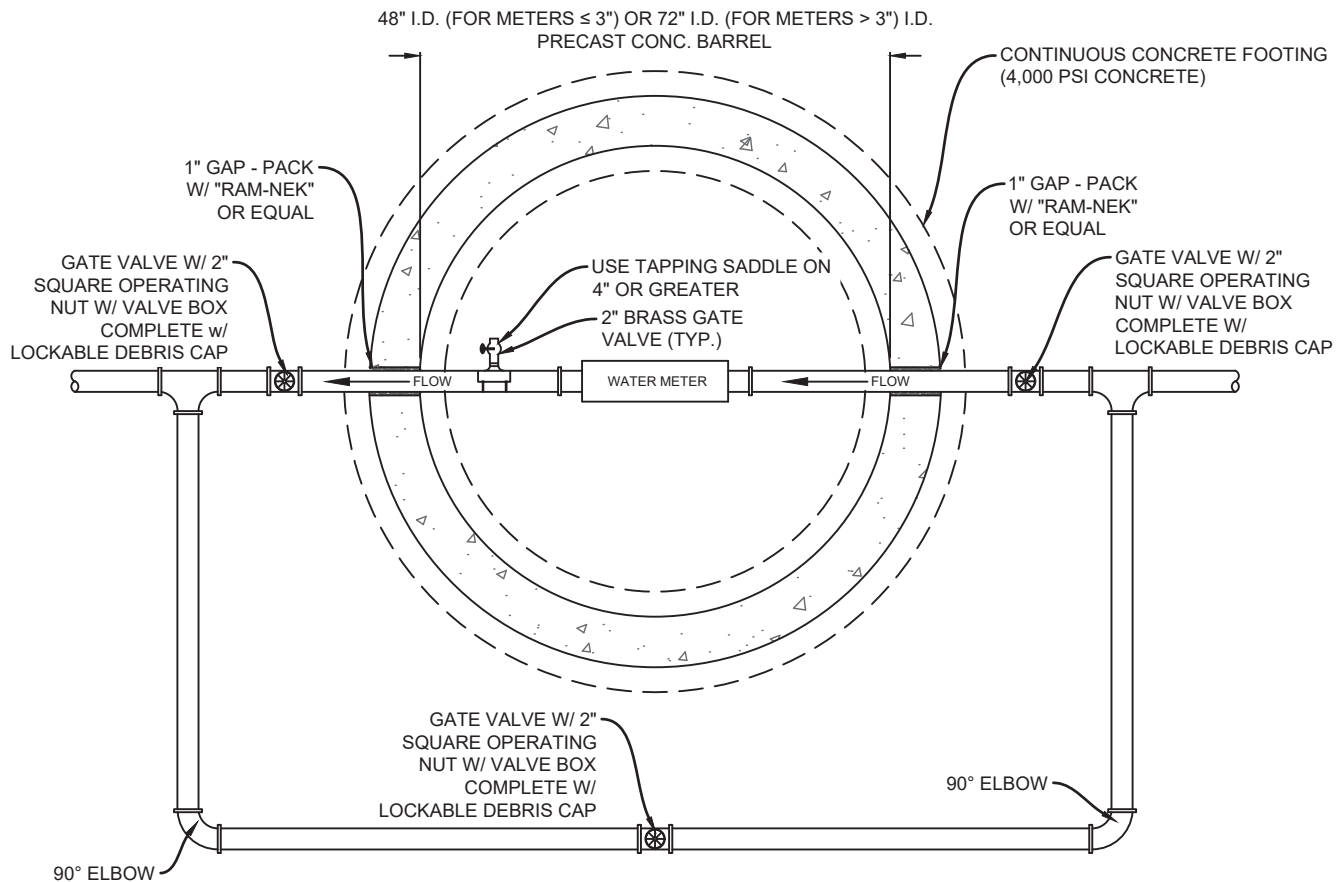
2022-28

REVISION DATE:

SHEET NO:

W-24

W-25



CONTRACTOR NOTES:

1. C-900 PVC PIPE OR DUCTILE IRON PIPE ON 3" OR GREATER.
2. MAINTENANCE BY CITY OF ALAMOGORDO UP TO AND INCLUDING THE METER, BYPASS PIPING, AND THE BYPASS VALVES.
3. ALL CITY OF ALAMOGORDO MAINTAINED WATER PIPING SHALL BE EVEN PIPE SIZES WITH MINIMUM DIAMETER OF 4-INCHES.
4. DEBRIS CAP SHALL BE MANUFACTURED BY SW SERVICES, LLC OR CITY APPROVED EQUAL. LOCKS SHALL BE SUPPLIED BY THE CITY.

SCALE: NOT TO SCALE

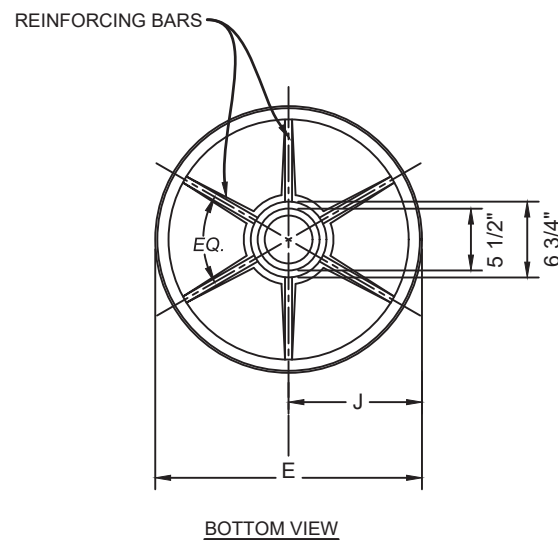
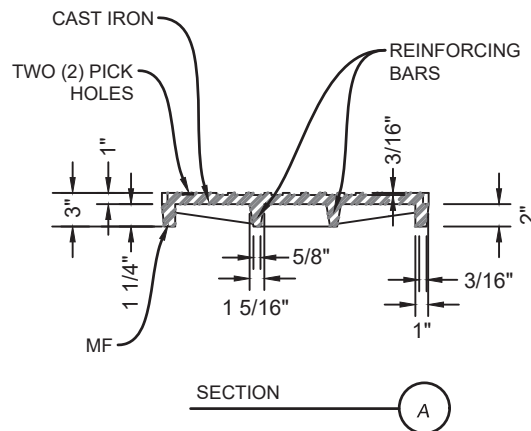
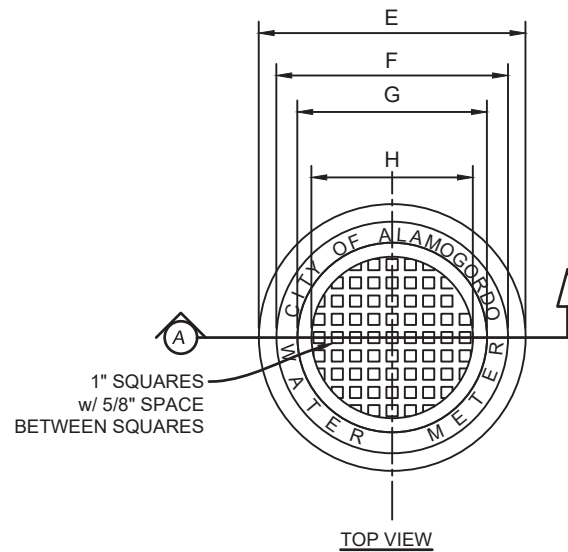


CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS

TYPICAL TRAFFIC WATER METER VAULT & BYPASS LINE

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	W-26

MANHOLE RING	48" MANHOLE	72" MANHOLE
WEIGHT	175 LBS.	310 LBS.
E	23 3/4"	31 1/4"
F	20 5/8"	28 1/8"
G	16 7/8"	24 3/8"
H	14 3/8"	21 7/8"
J	11 7/8"	15 5/8"



TYPICAL LID DETAIL

GENERAL NOTES:

1. MATCHING SURFACES MARKED "MF" TO BE MACHINE FINISHED AND BE FREE OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH AND FREE OF AIR VOIDS.
3. MANHOLE RING AND LID SHALL BE DESIGNED FOR H-20 WHEEL LOADING.
4. MINIMUM TOTAL WEIGHT (RING AND LID) SHALL BE 300 LBS.
5. TOP OF LID MAY VARY FROM DETAIL SHOWN. LID SHALL BE MARKED FOR APPROPRIATE UTILITY.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

WATER METER LID DETAIL

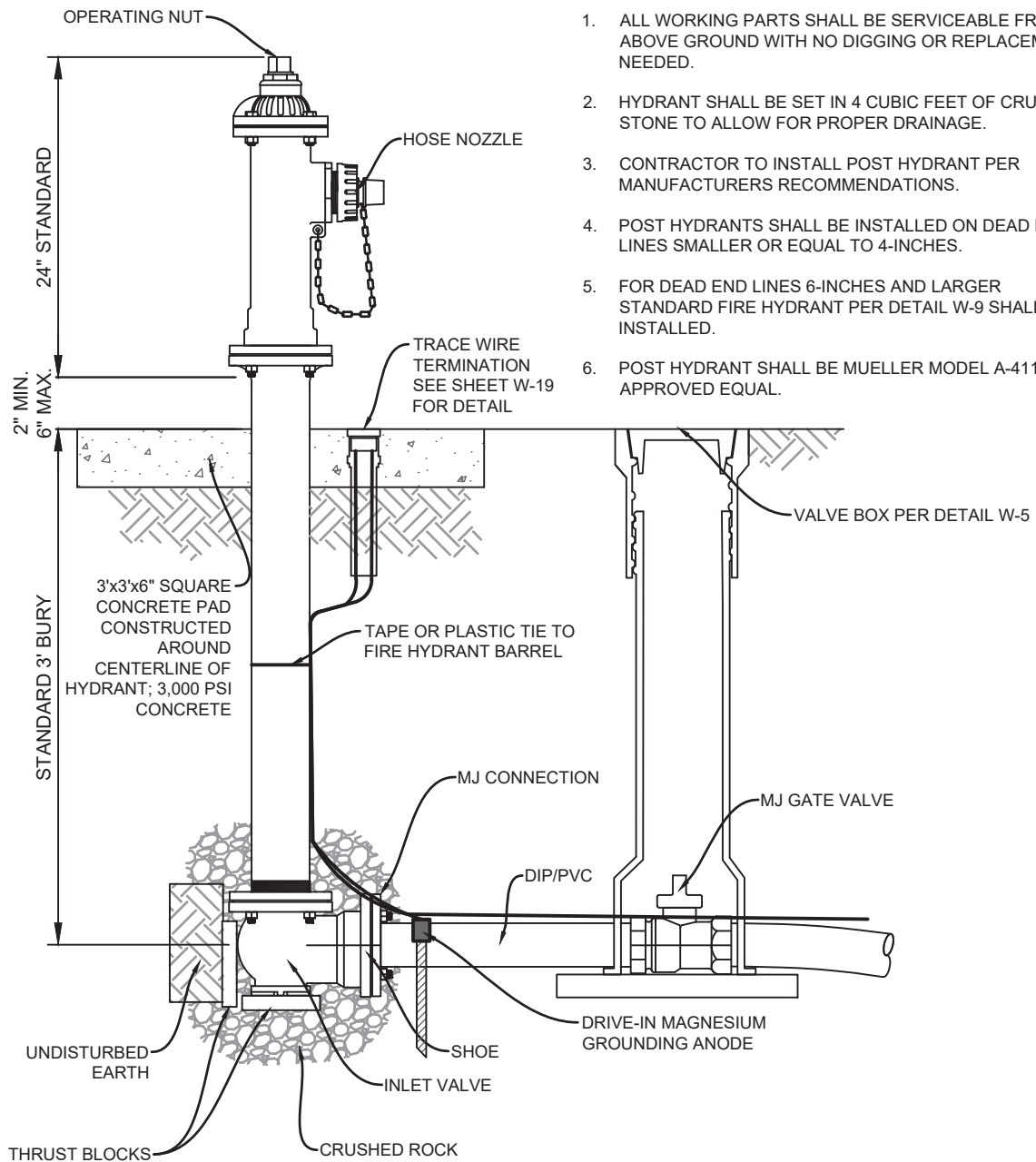
ISSUE DATE:
JUNE 14, 2022

RESOLUTION NO:
2022-28

REVISION DATE:

SHEET NO:

W-27



NOTES:

1. ALL WORKING PARTS SHALL BE SERVICEABLE FROM ABOVE GROUND WITH NO DIGGING OR REPLACEMENT NEEDED.
2. HYDRANT SHALL BE SET IN 4 CUBIC FEET OF CRUSHED STONE TO ALLOW FOR PROPER DRAINAGE.
3. CONTRACTOR TO INSTALL POST HYDRANT PER MANUFACTURERS RECOMMENDATIONS.
4. POST HYDRANTS SHALL BE INSTALLED ON DEAD END LINES SMALLER OR EQUAL TO 4-INCHES.
5. FOR DEAD END LINES 6-INCHES AND LARGER STANDARD FIRE HYDRANT PER DETAIL W-9 SHALL BE INSTALLED.
6. POST HYDRANT SHALL BE MUELLER MODEL A-411 OR APPROVED EQUAL.

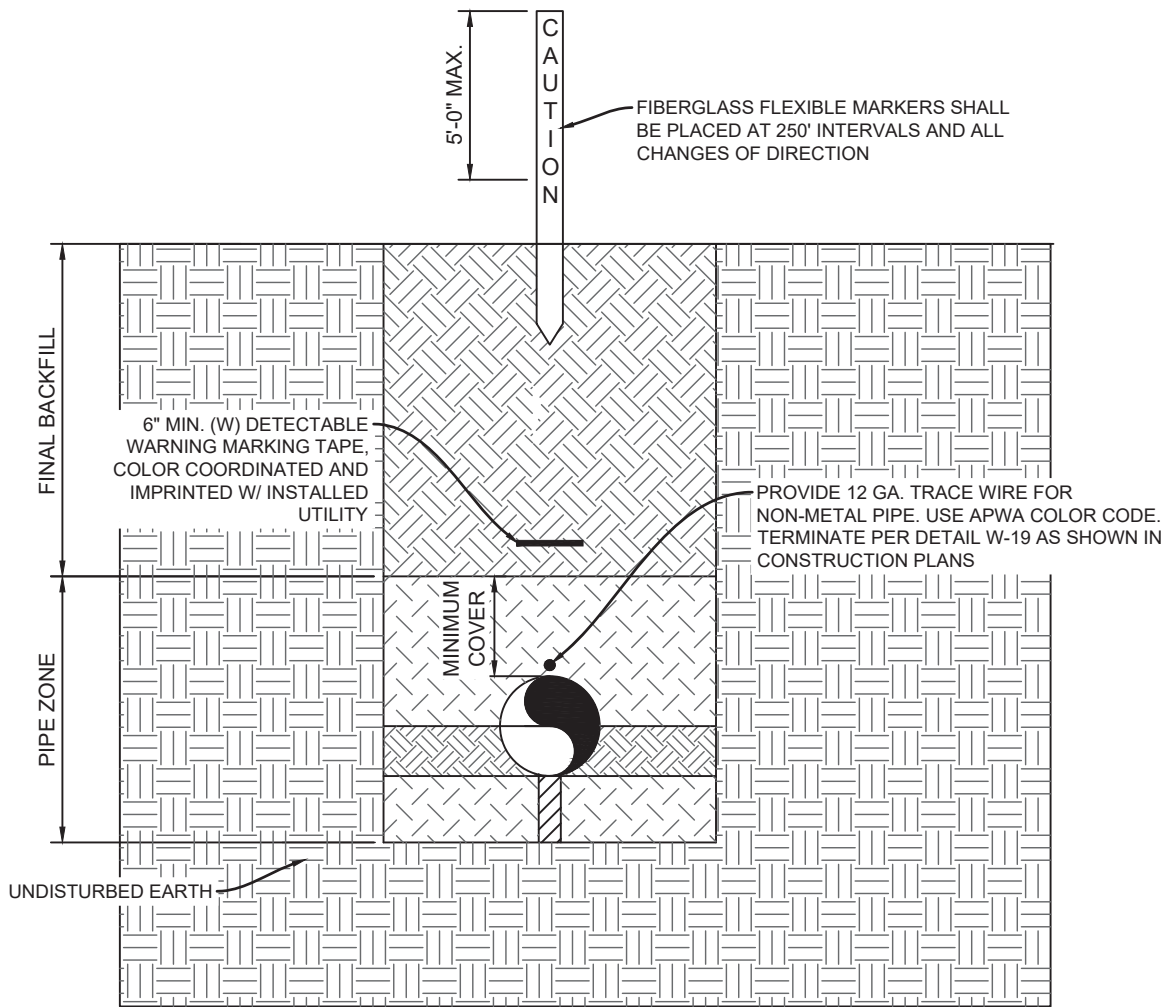
SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

POST TYPE FLUSH HYDRANT DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	W-28



UNPAVED AREAS

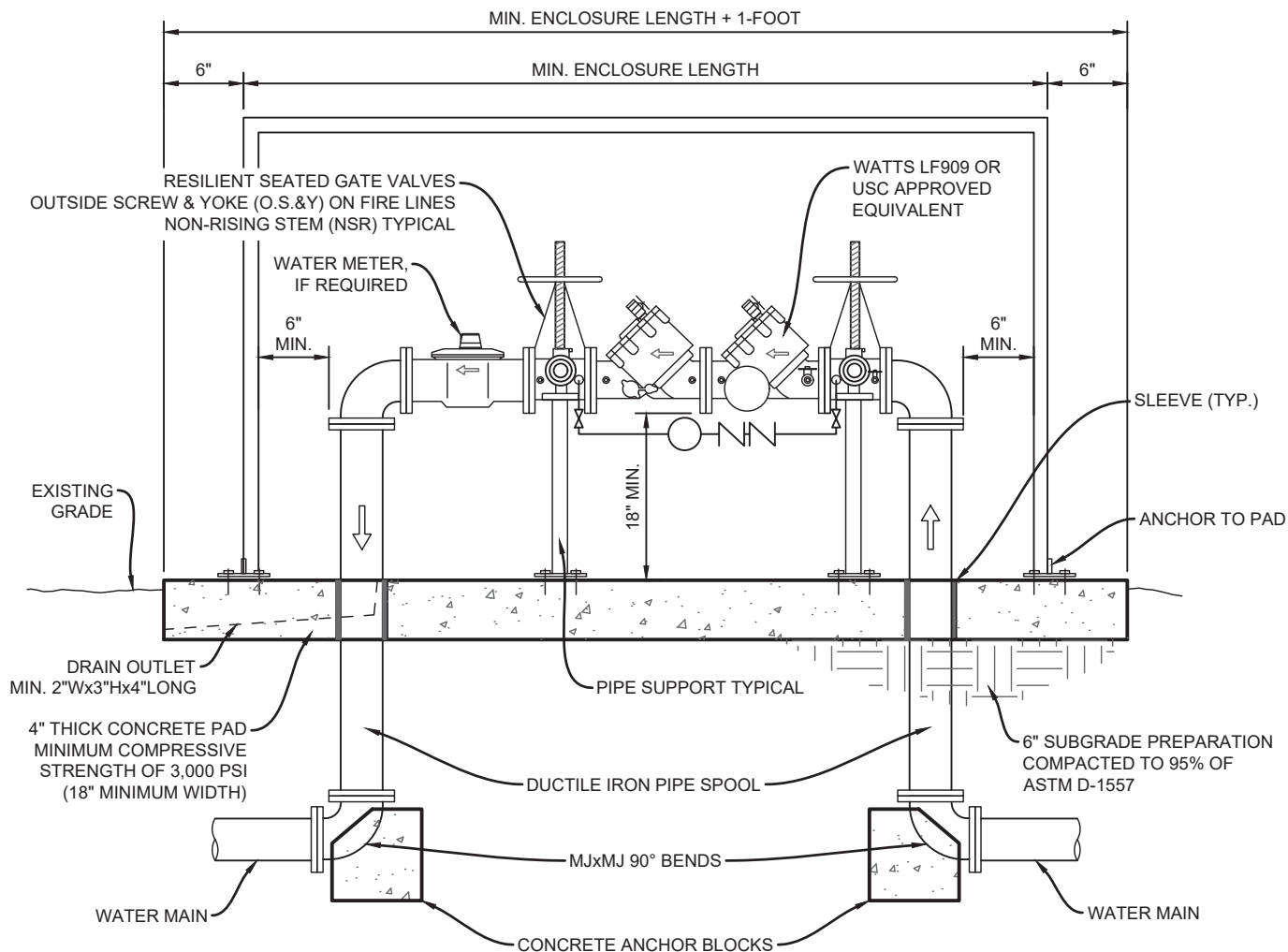
SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

WATER LINE FLEXIBLE MARKER DETAIL

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	W-29



NOTES:

1. ALL ABOVE GROUND FITTINGS, VALVES, WATER METERS, BACKFLOW ASSEMBLY SHALL BE FLANGE-BY-FLANGE (FLxFL) CONSTRUCTION.
2. BOLLARDS MAY BE REQUIRED BY THE CITY FOR ADDITIONAL PROTECTION.
3. THE BACKFLOW PREVENTION DEVICE SHALL BE LOCATED ON PRIVATE PROPERTY AND A MAXIMUM OF FIVE-FEET (5') FROM THE METER VAULT OR AS DIRECTED BY THE UTILITY AND/OR ENGINEERING DEPARTMENT.
4. BACKFLOW ASSEMBLIES INSTALLED ON POTABLE WATER SERVICES SHALL BE LEAD FREE.
5. BACKFLOW ASSEMBLIES SHALL BE THE SAME SIZE AS THE WATER METER.
6. BACKFLOW ASSEMBLIES SHALL BE EQUIPPED WITH FOUR (4) TEST COCKS.
7. BACKFLOW ASSEMBLIES MUST BE TESTED ANNUALLY PER CITY OF ALAMOGORDO ORDINANCE NO. 1604.
8. ENCLOSURES OR SCREENING MEASURES FOR BACKFLOW ASSEMBLIES SHALL BE PRE-APPROVED BY THE UTILITY AND/OR ENGINEERING DEPARTMENT.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

REDUCED PRESSURE BACKFLOW PREVENTION - 3IN AND OVER DETAIL

ISSUE DATE:

JUNE 14, 2022

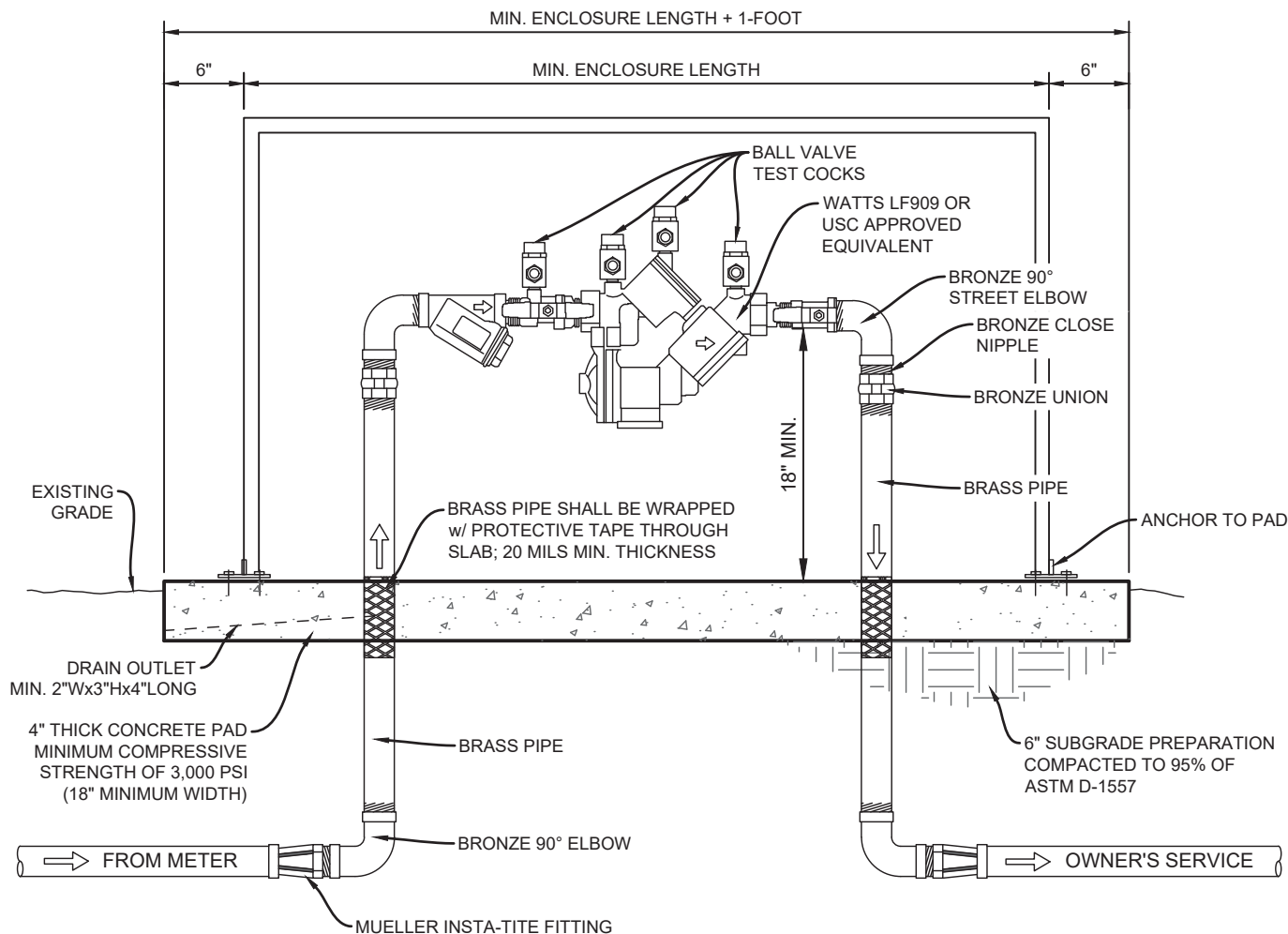
RESOLUTION NO:

2022-28

REVISION DATE:

SHEET NO:

W-30



NOTES:

1. BOLLARDS MAY BE REQUIRED BY THE CITY FOR ADDITIONAL PROTECTION.
2. THE BACKFLOW PREVENTION DEVICE SHALL BE LOCATED ON PRIVATE PROPERTY AND A MAXIMUM OF FIVE-FEET (5') FROM THE WATER METER OR AS DIRECTED BY THE UTILITY AND/OR ENGINEERING DEPARTMENT.
3. BACKFLOW ASSEMBLIES INSTALLED ON POTABLE WATER SERVICES SHALL BE LEAD FREE.
4. BACKFLOW ASSEMBLIES SHALL BE THE SAME SIZE AS THE WATER METER.
5. BACKFLOW ASSEMBLIES SHALL BE EQUIPPED WITH FOUR (4) TEST COCKS.
6. BACKFLOW ASSEMBLIES MUST BE TESTED ANNUALLY PER CITY OF ALAMOGORDO ORDINANCE NO. 1604.
7. ENCLOSURES OR SCREENING MEASURES FOR BACKFLOW ASSEMBLIES SHALL BE PRE-APPROVED BY THE UTILITY AND/OR ENGINEERING DEPARTMENT.

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

REDUCED PRESSURE BACKFLOW PREVENTION - 2IN AND UNDER DETAIL

ISSUE DATE:

JUNE 14, 2022

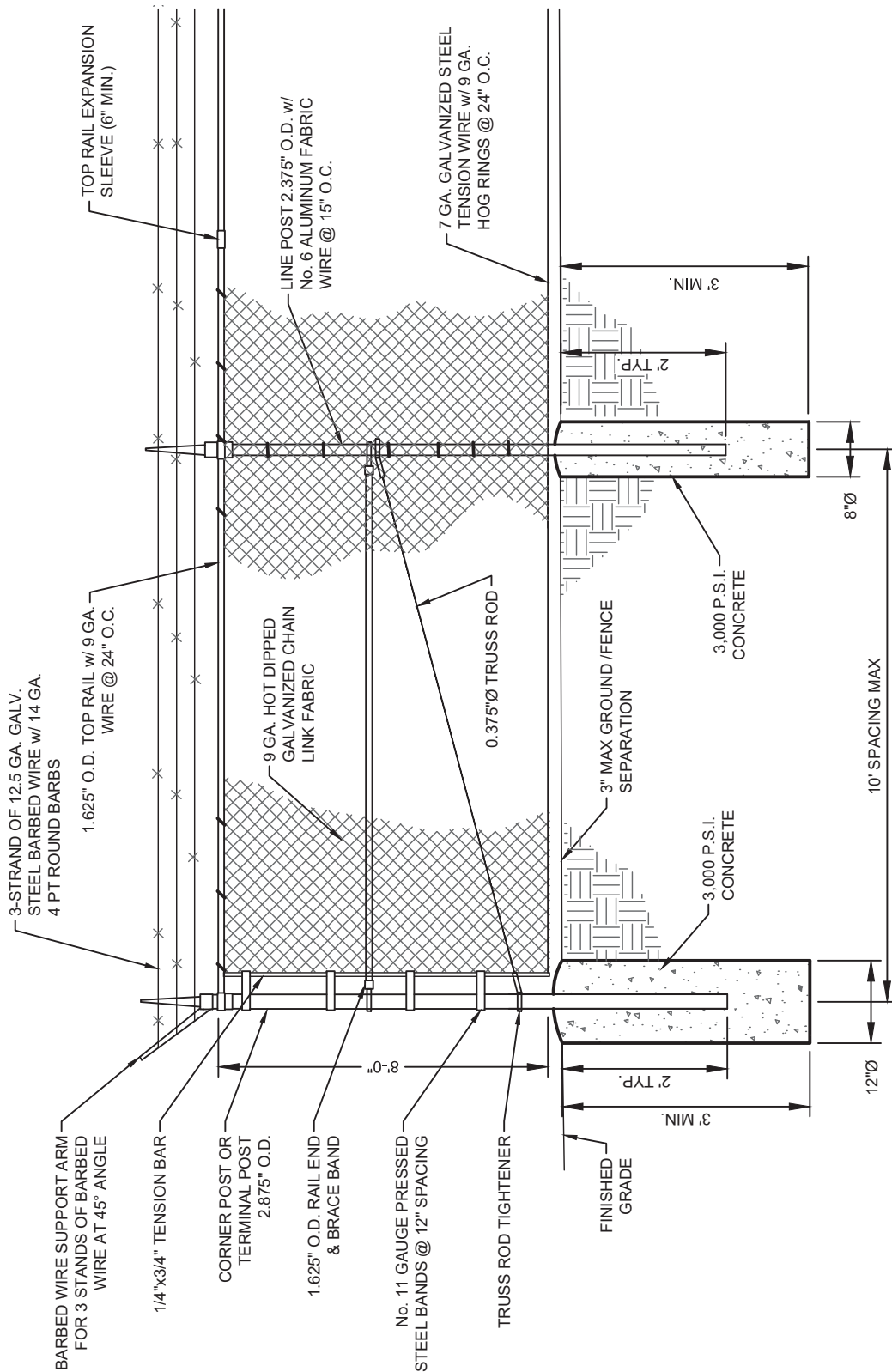
RESOLUTION NO:

2022-28

REVISION DATE:

SHEET NO:

W-31



CHAIN LINK FENCE DETAIL

SCALE: NOT TO SCALE



CITY OF ALAMOGORDO TECHNICAL STANDARD DRAWINGS

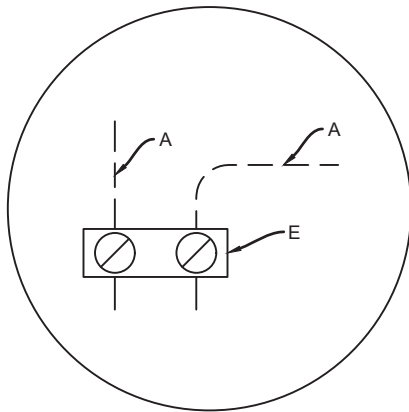
FACILITY SECURITY CHAIN LINK FENCE DETAIL

ISSUE DATE:
JUNE 14, 2022

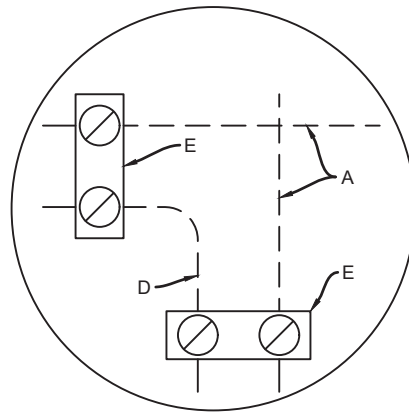
RESOLUTION NO:
2022-28

REVISION DATE:

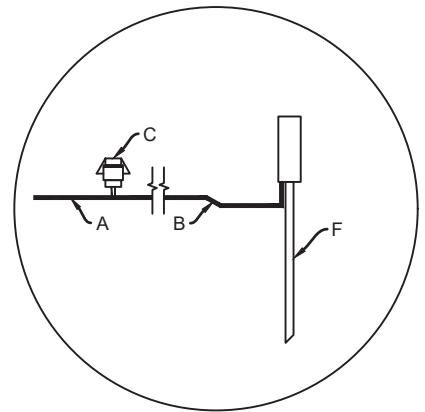
SHEET NO:
W-32



Tee Connection Detail



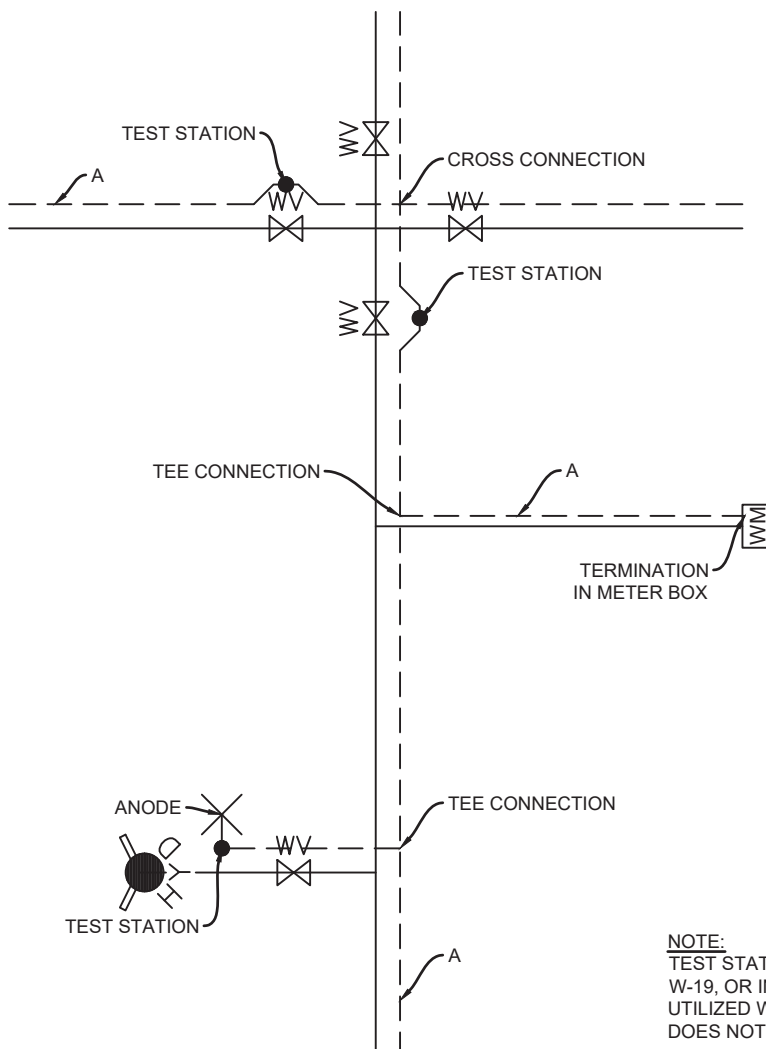
Cross Connection Detail



Anode Detail

CONSTRUCTION NOTES:

- A. TRACE WIRE #12 AWG COPPER CLAD STEEL, TAPED TO TOP OF PIPE; HDPE INSULATION APWA COLOR CODED FOR RESPECTIVE UTILITY
- B. TRACE WIRE #12 AWG COPPER CLAD STEEL - RED FACTORY CONNECTED TO GROUND ANODE
- C. SPLICE CONNECTION
- D. TRACE WIRE JUMPER
- E. LOCKING WATERPROOF CONNECTOR
- F. DRIVE-IN MAGNESIUM GROUNDING ANODE AT ALL TERMINATION/DEAD ENDS (INCLUDING EDGE OF RIGHT-OF-WAY AND CONNECTION POINTS/TERMINAL ENDS OF REHABBED SECTIONS). CONNECT TO MAIN LINE TRACE WIRE USING SPLICE CONNECTIONS



NOTE:

TEST STATIONS OUTSIDE THE ROADWAY SECTION, DETAIL W-19, OR INTEGRAL WITH VALVE BOX COLLAR SHALL ONLY BE UTILIZED WHERE FIRE HYDRANT SPACING w/ TEST STATION DOES NOT ALLOW FOR CONTINUITY OF TRACE WIRE.

SCALE: NOT TO SCALE



**CITY OF ALAMOGORDO
TECHNICAL STANDARD DRAWINGS**

WATERLINE OR RECLAIMED WATER TRACE WIRE DETAILS

ISSUE DATE:	JUNE 14, 2022
RESOLUTION NO:	2022-28
REVISION DATE:	----
SHEET NO:	W-33

Inspector Name: _____ Date: _____
Date of Notification: _____ Date Tap was Performed: _____
Applicant / Owner: _____
Address / Parcel ID #: _____

Tap Information

Is location consistent with initial site visit? ☐ Yes ☐ No

Depth to connection invert: _____ Method of connection: ☐ Wye ☐ Tee ☐ Saddle ☐ Manhole

Diameter of Sewer Main being tapped: ☐ 4" ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ Other

Material of Sewer Main being tapped: _____

Tap Type Tap Size

☐ Commercial ☐ 4" ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ Other

☐ Residential ☐ 4" ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ Other

☐ Other Other: _____

Material of Sewer Service Line: _____

Sewer Service installed per current standard? ☐ Yes ☐ No

Is bedding material acceptable? ☐ Yes ☐ No GIS Data Collected? ☐ Yes ☐ No

☐ FSE? Grease Pumping Schedule Established? ☐ Yes ☐ No ☐ N/A

Sketch of Tap / Notes

Contractor Signature: _____ Date: _____

Inspector Signature: _____ Date: _____



Sewer Test Information

If a Manhole Vacuum Test Fails, the Following Items Shall be Completed:

Contractor Signature: _____ Date: _____

Inspector Signature: _____ Date: _____

Reference Table

Minimum Test Times for Various Manhole Diameters 30-120 in, [750 – 3000 mm] in Seconds																	
Diameter, in. [mm]																	
Depth ft	30	33	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
[m]	[750]	[825]	[900]	[1050]	[1200]	[1350]	[1500]	[1650]	[1800]	[1950]	[2100]	[2250]	[2400]	[2550]	[2700]	[2850]	[3000]
<4 [1.2]	6	7	7	9	10	12	13	15	16	18	19	21	23	24	25	27	29
6 [1.8]	9	10	11	13	15	18	20	22	25	26	29	31	34	36	38	41	43
8 [2.4]	11	12	14	17	20	23	26	29	33	35	38	41	45	48	51	54	57
10 [3.0]	14	15	18	21	25	29	33	36	41	44	48	52	56	60	63	67	71
12 [3.7]	17	18	21	25	30	35	39	43	49	53	57	62	67	71	76	81	85
14 [14.3]	20	21	25	30	35	41	46	51	57	62	67	72	78	83	89	94	100
16 [4.9]	22	24	29	34	40	46	52	58	67	70	76	83	89	95	101	108	114
18 [5.5]	25	27	32	38	45	52	59	65	73	79	86	93	100	107	114	121	128
20 [6.1]	28	30	35	42	50	53	65	72	81	88	95	103	111	119	126	135	142
22 [6.7]	31	33	39	46	55	64	72	79	89	97	105	114	122	131	139	148	156
24 [7.3]	33	36	42	51	59	64	78	87	97	106	114	124	133	143	152	161	170
26 [7.9]	36	39	46	55	64	75	85	94	105	114	124	134	144	155	164	175	185
28 [8.5]	39	42	49	59	69	81	91	101	113	123	133	145	155	167	177	188	199
30 [9.1]	42	45	53	63	74	87	98	108	121	132	143	155	166	178	189	202	213

Inspector Name: _____ Date: _____

Specified Maximum Pressure Drop: _____ Test # _____

Contractor: _____

Project Location: _____

Sewer Test Information

Diameter of Sewer Main being tested: ☐4" ☐6" ☐8" ☐10" ☐12" ☐Other

Material of Sewer Main being tested: _____

Pipe Under Test				Specification Time	Field Test Operations Data			
Upstream MH STA	Downstream MH STA	Diameter D (in.)	Length L (ft.)	Refer To Minimum Time Reference Sheet	Start Time Pressure (psig)	Stop Test Pressure (psig)	Elapsed Time (min:sec)	Pass or Fail
								☐ Pass ☐ Fail
								☐ Pass ☐ Fail
								☐ Pass ☐ Fail
								☐ Pass ☐ Fail
								☐ Pass ☐ Fail
								☐ Pass ☐ Fail
								☐ Pass ☐ Fail
								☐ Pass ☐ Fail
								☐ Pass ☐ Fail

If a Section Fails, the Following Items Shall be Completed:

Identify section(s) that failed: _____

Leak located? ☐Yes ☐No

For test results after repair refer to test # _____

Method used to locate leak: _____

Description of leakage found: _____

Description of corrective action taken: _____

Contractor Signature: _____ Date _____

Inspector Signature: _____ Date: _____

Reference Tables

Minimum Specified Time for a 0.5 PSIG Pressure Drop for Size and Length of Pipe Indicated for Q = 0.0015

Pipe Diameter (in.)	Minimum Time (min:sec)	Length for Minimum Time (ft)	Time for Longer Length (sec)	Specification Time for Length (L) Shown (hr:min:sec)								
				100	150	200	250	300	350	400	450	500
				ft	ft	ft	ft	ft	ft	ft	ft	ft
4	1:53	597	0.190 L	0:01:53	0:01:53	0:01:53	0:01:53	0:01:53	0:01:53	0:01:53	0:01:53	0:01:53
6	2:50	398	0.427 L	0:02:50	0:02:50	0:02:50	0:02:50	0:02:50	0:02:50	0:02:51	0:03:12	0:03:34
8	3:47	298	0.760 L	0:03:47	0:03:47	0:03:47	0:03:47	0:03:48	0:04:26	0:05:04	0:05:42	0:06:20
10	4:43	239	1.187 L	0:04:43	0:04:43	0:04:43	0:04:57	0:05:56	0:06:56	0:07:55	0:08:54	0:09:54
12	5:40	199	1.709 L	0:05:40	0:05:40	0:05:42	0:07:07	0:08:33	0:09:58	0:11:24	0:12:49	0:14:15
15	7:05	159	2.671 L	0:07:05	0:07:05	0:08:54	0:11:08	0:13:21	0:15:35	0:17:48	0:20:02	0:22:16
18	8:30	133	3.846 L	0:08:30	0:09:37	0:12:49	0:16:02	0:19:14	0:22:26	0:25:39	0:28:51	0:32:03
21	9:55	114	5.235 L	0:09:55	0:13:05	0:17:27	0:21:49	0:26:11	0:30:32	0:34:54	0:39:16	0:43:38
24	11:20	99	6.837 L	0:11:24	0:17:06	0:22:48	0:28:30	0:34:11	0:39:53	0:45:35	0:51:17	0:56:59
27	12:45	88	8.653 L	0:14:25	0:21:38	0:28:51	0:36:04	0:43:16	0:50:29	0:57:42	1:04:55	1:12:07
30	14:10	80	10.683 L	0:17:48	0:26:43	0:35:37	0:44:31	0:53:25	1:02:20	1:11:14	1:20:08	1:29:02

Minimum Specified Time for a 1.0 PSIG Pressure Drop for Size and Length of Pipe Indicated for Q = 0.0015

Pipe Diameter (in.)	Minimum Time (min:sec)	Length for Minimum Time (ft)	Time for Longer Length (sec)	Specification Time for Length (L) Shown (hr:min:sec)								
				100	150	200	250	300	350	400	450	500
				ft	ft	ft	ft	ft	ft	ft	ft	ft
4	3:46	597	0.380 L	0:03:47	0:03:47	0:03:47	0:03:47	0:03:47	0:03:47	0:03:47	0:03:47	0:03:47
6	5:40	398	0.854 L	0:05:40	0:05:40	0:05:40	0:05:40	0:05:40	0:05:40	0:05:42	0:06:25	0:07:07
8	7:34	298	1.520 L	0:07:33	0:07:33	0:07:33	0:07:33	0:07:36	0:08:52	0:10:08	0:11:24	0:12:40
10	9:26	239	2.374 L	0:09:27	0:09:27	0:09:27	0:09:54	0:11:52	0:13:51	0:15:50	0:17:48	0:19:47
12	11:20	199	3.418 L	0:11:20	0:11:20	0:11:24	0:14:15	0:17:06	0:19:57	0:22:48	0:25:39	0:28:30
15	14:10	159	5.342 L	0:14:10	0:14:10	0:17:48	0:22:16	0:26:43	0:31:10	0:35:37	0:40:04	0:44:31
18	17:00	133	7.692 L	0:17:00	0:19:14	0:25:39	0:32:03	0:38:28	0:44:52	0:51:17	0:57:42	1:04:06
21	19:50	114	10.470 L	0:19:50	0:26:11	0:34:54	0:43:38	0:52:21	1:01:05	1:09:48	1:18:32	1:27:15
24	22:40	99	13.674 L	0:22:48	0:34:11	0:45:35	0:56:59	1:08:23	1:19:47	1:31:10	1:42:34	1:53:58
27	25:30	88	17.306 L	0:28:51	0:43:16	0:57:42	1:12:07	1:26:33	1:40:58	1:55:24	2:09:49	2:24:14
30	28:20	80	21.366 L	0:35:37	0:53:25	1:11:14	1:29:02	1:46:51	2:04:39	2:22:28	2:40:16	2:58:04

Note: If there has been no leakage (zero psig drop) after one hour of testing, the test section shall be accepted and the test complete.

Inspector Name: _____ Date: _____

Date of Notification: _____ Date Tap was Performed: _____

Applicant / Owner: _____

Address / Parcel ID #: _____

Tap Information

Is location consistent with initial site visit? ☐ Yes ☐ No

Tap Type: ☐ Utility Extension ☐ General Service

Diameter of Water Main being tapped: ☐ 2" ☐ 3" ☐ 4" ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ Other

Material of Water Main being tapped:

Tap Type	Tap Size
----------	----------

☐ Fire Hydrant ☐ Fire Line	☐ 4" ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ Other
--	--

☐ Irrigation	☐ 3/4" ☐ 1" ☐ 2" ☐ 3" ☐ 4" ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ Other
-------------------------------------	--

☐ Commercial	☐ 3/4" ☐ 1" ☐ 2" ☐ 3" ☐ 4" ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ Other
-------------------------------------	--

☐ Residential	☐ 3/4" ☐ 1" ☐ 2" ☐ 3" ☐ 4" ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ Other
--------------------------------------	--

☐ Other	Other:
--------------------------------	--------

Material of Service Line or New Water Main:

Water Service Installed per Current Standard? ☐ Yes ☐ No ☐ N/A

Is bedding material acceptable? ☐ Yes ☐ No

GIS Data Collected? ☐ Yes ☐ No

Water Meter Serial Number:

Water Meter Model:

☐ FSE? Cross-Connection Hazard(s):

PRV Installed? ☐ Yes ☐ No ☐ N/A

Double Check Valve Installed? ☐ Yes ☐ No ☐ N/A

Sketch of Tap / Notes

Contractor Signature: _____ Date: _____

Inspector Signature: _____ Date: _____

Inspector Name: _____ Date: _____

Specified Maximum Pressure Drop: _____ Test # _____

Contractor: _____

Location of Test: _____

Pressure Test Information

Test shall be of at least 2-hour duration. Test pressure shall not vary by more than ± 5 psi for the duration of the test.

Start Time: _____ Initial Pressure (PSI): _____

End Time: _____ Final Pressure (PSI): _____

☐ Pass ☐ Fail

Leakage Test Information

$$\text{Allowable Leakage in Gallons per Hour} = (\text{DI Pipe}) L_{ALL} = \frac{SD\sqrt{P}}{133,200} \quad (\text{PVC Pipe}) L_{ALL} = \frac{ND\sqrt{P}}{7,400}$$

S = Length of Pipe Tested = _____ ft

N = Number of Joints in Length = _____ number

D = Pipe Diameter = _____ Inches

P = Average Test Pressure = _____ psi

Allowable Leakage * 2 Hours = _____ Gallons

Water Added to Maintain 150 PSI $\pm$ 5 PSI for Two Hours = _____ Gallons

*** If actual amount of water added is LESS THAN total leakage allowed, test PASSED.

*** If actual amount of water added is GREATER THAN total leakage allowed, test FAILED.

☐ Pass ☐ Fail

Comments

Contractor Signature: _____ Date _____

Inspector Signature: _____ Date: _____

Reference Tables

Allowable Leakage (GPH) Per 1,000 Feet of Ductile Iron (DI) Pipeline									
Average Test Pressure	6	8	10	12	14	16	18	24	30
PSI	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
350	0.84	1.12	1.40	1.69	1.97	2.25	2.53	3.37	4.21
300	0.78	1.04	1.30	1.56	1.82	2.08	2.34	3.12	3.90
275	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.99	3.73
250	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.85	3.56
225	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.70	3.38
200	0.64	0.85	1.06	1.27	1.49	1.70	1.91	2.55	3.19
175	0.60	0.79	0.99	1.19	1.39	1.59	1.79	2.38	2.98
150	0.55	0.74	0.92	1.10	1.29	1.47	1.66	2.21	2.76

Allowable Leakage (GPH) Per 1,000 Feet of Polyvinyl Chloride (PVC) Pipeline									
Average Test Pressure	6	8	10	12	14	16	18	24	30
PSI	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
300	0.70	0.94	1.17	1.40	1.64	1.87	2.11	2.81	3.51
275	0.67	0.90	1.12	1.34	1.57	1.79	2.02	2.69	3.36
250	0.64	0.85	1.07	1.28	1.50	1.71	1.92	2.56	3.21
225	0.61	0.81	1.01	1.22	1.42	1.62	1.82	2.43	3.04
200	0.57	0.76	0.96	1.15	1.34	1.53	1.72	2.29	2.87
175	0.54	0.72	0.89	1.07	1.25	1.43	1.61	2.15	2.68

Alamogordo Technical Standards – Public Comment & Responses

Comment: Chapter 1, Page 4 (01-01-140) - What certifications or licenses are required for Public Works Inspector? We believe these inspectors need to be required to be licensed and certified in areas they will be inspecting and/or enforce codes/standards on.

Response: Public Works Inspectors are not required to have professional licensure; the City Inspector's primary duty is to verify that construction is progressing in accordance with the approved construction documents and in compliance with the City Technical Standards. City Inspectors do attend training to continuously learn and improve. The responsibility for the correctness of the construction plans and construction means/methods are the responsibility of the architects, engineers, and contractors.

Comment: Chapter 1, Page 15 (01-01-140d) - Photographic evidence will not be replaced by physical inspection. Current City employees only work from 6:30 AM – 2:30 PM. Private Contractors work 6:00 AM – 5:30 PM and beyond especially in emergencies. There should be some variance or compromise with the Contractors that are working after hours and on weekends to repair services for Citizens.

Response: Emergency repairs typically require attention outside the scope of these Technical Standards regarding working hours and conditions to remedy the situation. These Technical Standards are typically meant to address new construction. New construction installations are not usually required to be placed into service immediately; therefore, the inspection can occur during regular operating hours as soon as possible after the written inspection request is made by the Contractor. With that said, photographic evidence will not be accepted in lieu of physical inspection.

Comment: Chapter 6, Page 4 (06-01-070) - Water/Sewer separation of 10'. Multiple times in this document, it calls for 10' separation of lines running in the street. This refers to water/sewer mains, not services. Also, there is a Table in the document that allows a 5' horizontal separation on services. City staff has also passed that table/document out prior to acceptance "for use moving forward". UPC allows 12" vertical/12" horizontal separation. This should be acceptable for services. We have been told this is a federal requirement, please send us a copy of the Federal Requirement for water/sewer service lines to have a 10' horizontal separation.

Response: The ten-foot (10') edge-to-edge pipe spacing requirement is exclusively for potable water distribution/supply main lines and sanitary sewer main collection lines. The minimum required horizontal and vertical spacing of service lines shall adhere to the requirements provided in the Table in Standard Detail W-24. Reference shall also be made to Standard Drawings W-23 which depicts typical service line entrances into individual lots.

Comment: Chapter 6, page 14 (06-04-040) - Private/Local Contractors should not be required to replace 5'-10' section of City Sewer Main if the pipe condition is not acceptable. This is City

owned and Contractors should not be responsible to replace main. The City should make replacement and the Contractor can install the tap and lateral. Who is responsible for the City main if it fails where flexible couplings are installed to replace section of pipe? Contractors should not be.

Response: The Contractor will be responsible for the removal of replacement of the section of the main sanitary sewer line as provided in the Technical Standards. The Contractor may submit a written request for City assistance for the segment replacement. Currently, the City does not employ a dedicated crew to complete this work and as such the Contractor will be subject to the City's schedule and staffing availability (potentially up to 30 days).

Comment: Standard Drawing S-4 – Rebar requirement in concrete collars for manholes is excessive!

Response: The concrete collar is subjected to a multitude of vehicle loadings. The rebar requirement will remain as shown.

Comment: Standard Detail S-9 – Detail shows a mechanical type coupling similar to a Dresser Coupling. This should not be required on a sewer service lateral.

Response: Standard Detail S-9 has been updated depicting an appropriate fitting.

Comment: Standard Detail S-20 – Rebar in clean-out collars is very excessive!

Response: The concrete collar is subjected to a multitude of vehicle loadings. The rebar requirement will remain as shown.

Comment: Chapter 9, Page 4 – Water meters are not allowed in driveways, but service lines must be perpendicular to the mains. What is the method to fix the existing conditions where service line ends up in driveway and cannot be offset to shift out of drive? This should not be a cost passed on to the customer.

Response: Existing conditions will not be remedied as part of the Technical Standards. This requirement is for new development installations. If the water meter must be placed in a driveway a traffic rated meter can be utilized.

Comment: Chapter 9, Page 8 (09-02-080e) – Removal of existing fire hydrant, says hydrant pipe to main shall be removed and capped at tee. Dave Nunnelley says the tee fitting needs to be removed out of the main line (3 joints) and replaced with two dressers (4 joints) inline to get rid of additional joints that may leak. Is the New Tech Standard allowing the line to be capped at the tee?

Response: The removal shall be as shown in the Technical Standards; remove piping to the tee and install a restrained blind flange/cap at the tee.

Comment: Chapter 9, Page 13 (09-02-100n) – Customer shut-off valve shall be installed on the customer side of the meter install. The City is required to provide shut-off at the meter, customer typically installs a valve in the house. Can the City force homeowners the expense of installing an additional valve at this location, it is the homeowner's line and they are responsible beyond the meter, not City.

Response: This requirement is for new service construction and affords the property owner the ability to shutoff service at the meter while minimizing the potential to damage the meter inadvertently or intentionally. The City is not looking for the shutoff valves to be installed on meters currently in service, only those that will be coming online in the future. This requirement will be the responsibility of the developer (commercial, private, or new City facility).

Comment: Chapter 9, Page 22 (09-03-030j) – This note again calls for 10' separation, when New Table allows 5' vertical separation for services. We believe 5' separation is more than adequate. UPC allows 12" vertical and 12" horizontal separation for services.

Response: The ten-foot (10') edge-to-edge pipe spacing requirement is exclusively for potable water distribution/supply main lines and sanitary sewer main collection lines. The minimum required horizontal and vertical spacing of service lines shall adhere to the requirements provided in the Table in Standard Detail W-24. Reference shall also be made to Standard Drawings W-23 which depicts typical service line entrances into individual lots.

Comment: Standard Detail W-1 – Public Works Inspector would not pass a water meter inspection because water meter setter was not 8" from the bottom of the water meter can lid, then came back and approved because it was allowed to be within 6"-8" from bottom of lid. Where is the requirement stated in the Tech Standards? The reference on drawing W-1 shows a 6"-8" space but appears to be a concrete collar or sidewalk around the meter can.

Response: The water meter shall be within 6"-8" from the bottom of the water can lid. This requirement has been clarified in Article 09-02-100(k).

Comment: Standard Detail W-7 – Rebar mat in a simple valve collar is way too excessive!

Response: The concrete collar is subjected to a multitude of vehicle loadings. The rebar requirement will remain as shown.

Comment: Standard Detail W-24 – This Table confirms the water/sewer services are allowed a 5' horizontal separation and 6" vertical separation, why is the City contradicting themselves and forcing the 10' separation in current subdivisions, especially if we've been handing this table out for the past year "for use moving forward"?

Response: The minimum horizontal and vertical separations presented in Standard Detail W-24 shall govern new construction within the City. Existing field conditions could prevent these minimum spacing requirements and as noted this will require coordination with the City. In regards to residential development, the developer should also reference Standard Detail W-23 for standard service line entry to individual lots.

Comment: Will everyone that works on City water and sewer utilities be required to follow these standards?

Response: The Technical Standards will govern all design and construction within the City right-of-way (engineers, architects, private homeowners, contractors, plumbers, and City crews).

Comment: When referred to as notify in writing, where is the appropriate location to send this notice? Is there a mailing address or an email address how would the city like to receive their in writing notice?

Response: The City has procured the Tyler Technologies Munis Permits module(s) to help streamline the permitting process within the City. Full deployment of the system's offerings is forthcoming. This system will also provide the City Inspector with a tablet-based application to view and process inspections in real-time in the field. The intent is to expedite the forms and follow-up from the inspector and provide the Contractor with a printout of the findings.

In writing shall be an electronic mailing (email) to the following address:
contractor@ci.alamogordo.nm.us

This email should be utilized for requests for information (RFIs), variance requests, substitution requests, submittals, test reports, inspection requests, etc. This email will be monitored by City personnel and distributed within various City departments applicable to the submission contents.

Comment: If the standard is approved and adopted by the City Commission it is my belief that it should not be able to be amended without City Commission approval.

Response: Wholesale modification of a Chapter within the Technical Standards will be subject to Commission review and approval. Modifications for day-to-day operational changes will be determined at the staff level. For example: if a named Model fire hydrant were discontinued by the Manufacturer, a replacement can be listed within the modified document. These modifications or updates will be posted at the same location as the Technical Standards on the City's website.

Comment: **Article 01-01-040 C** – Clarification needed regarding materials damaged after installation. Once inspected it's all yours, if someone bores thru a sewer line 2 years later I'm not responsible.

Response: The responsibility remains within the one-year (1) warranty after complete acceptance of the project/work by the City for work completed for the City or to be turned over to the City (private developments). For work completed within the public right-of-way on sanitary sewer services (resident/business owner's responsibility), the work will be inspected by the City and the warranty will be by and between the plumber and property owner.

Comment: Article 01-01-05 Paragraph 9 – Should be added indicating a purple hydrant at Hamilton and Desert Lakes.

Response: The reclaimed hydrant at the southwest corner of Hamilton Road and Desert Lakes Road is part of the golf course irrigation system and is not utilized for purchase of reclaimed water.

Comment: Article 01-01-130 Paragraph B – A provision needs to be added for emergency work does not require two days advance notice.

Response: Emergency repairs typically require attention outside the scope of these Technical Standards regarding working hours and conditions to remedy the situation. These Technical Standards are typically meant to address new construction. New construction inspections are not usually required to be placed into service immediately; therefore, the inspection can occur during regular operating hours as soon as possible after the written inspection request is made by the Contractor. With that said, photographic evidence will not be accepted in lieu of physical inspection.

Comment: Article 01-01-140 Paragraph A – Within the City right away. Once we cross onto private property line the City no longer has jurisdiction CID is responsible for the private property line to the home.

Response: That is correct the Technical Standards shall govern work within the public right-of-way; once a service line crosses onto private property CID will be responsible for inspection and approval. The sanitary sewer service, from the main line, is the responsibility of the parcel owner and is subject to inspection by the City and CID within the right-of-way (in this case the most stringent requirements shall govern). Once the sanitary sewer service enters private property it falls within the sole discretion of CID inspection.

Comment: Article 01-01-140 – The City should have an inspector available 24-7 should an emergency arise we all know that an open excavation poses an increased risk for our community, and it should not be acceptable to leave an excavation open overnight just because an Inspector only works from 7:30 AM to 3 PM. If the City is not able to make an on-call inspector available, there needs to be a contingency plan to allow the Contractor to backfill the excavation and restore traffic flow and the safety to the community.

Response: As mentioned, public safety is the paramount concern of all parties. Emergency repairs typically require attention outside the scope of these Technical Standards regarding working hours

and conditions to remedy the situation. The City is not staffed to provide around the clock on-call inspection services, the Contractor has the option to backfill an excavation and re-expose the repair during business hours to complete the inspection of the repair.

Comment: Article 01-01-140 – If an inspector’s determination is disagreed upon by the Contractor there needs to be an appeal process listed here to follow and resolve. I believe our current inspector has common sense but one day that may not be the case.

Response: An appeal can be submitted in writing, via email, to the following address:

contractor@ci.alamogordo.nm.us

Comment: Article 02-01-010 Paragraph B – should be deleted. There’s no definition for “complex traffic control plans” this leaves the potential for requiring an Engineer stamp on all TCPs and that is highly irregular.

Response: A definition of traffic control plan and complex traffic control plan has been added to Article 01-01-010 for additional clarification.

Comment: Article 02-02-040 Paragraph A – this is an overreach by the City, the City has no business designating a Contractor’s employees responsibilities. So long as the TCS duties are performed properly this paragraph should be deleted.

Response: Public safety is the ultimate goal of all parties. The determination of the need for a dedicated traffic control supervisor remains at the City’s discretion. Simple traffic control plans for a pavement patch, sidewalk/curb repair, or service line repair do not carry the need for a supervisor whose sole employment is on the traffic control management. This requirement typically falls to complex traffic control plans.

Comment: Article 02-02-070 All Paragraphs – the same should be said of the City inspector.

Response: The City is not responsible for the construction requiring the traffic control’s implementation, monitoring, and repair (if necessary) and are not responsible for the Contractor’s traffic control. Similar to inspection, the City will notify the traffic control supervisor if the plan is not in compliance during the course of their normal duties.

Comment: Article 02-03-010 Paragraph A – should include an appropriate amount of time to correct the issue before the suspension of the Contractor’s operations.

Response: With public safety in mind, traffic control is typically the first line of protection and as such will be addressed first and foremost.

Comment: Article 02-03-010 Paragraph F – typo delete Contractor insert City

Response: This Article has been re-worded for clarity as follows: “If the Contractor requests full or partial suspension of the work, the Contractor shall perform the additional traffic control to accommodate the suspension duration at no additional cost to the City.”

Comment: Article 04-02 Paragraph B – is not legally permitted so long as all specifications meet or exceed the product specified a substitution should be allowed.

Response: Products listed by name shall include an allowance for “an approved equal”.

Comment: Article 05-02-100 Paragraph C – in many instances, especially during fall and winter months the one and only asphalt plant in town does not produce asphalt for several weeks at a time. The 14-day requirement is unrealistic as we have no control of when asphalt will be batched and made.

Response: We realize this condition occurs and cannot be held against the Contractor performing the work. In such instances, a written statement from the batch plant listing their shutdown and anticipated production date should be provided to the City in writing, via email, to the following address:

contractor@ci.alamogordo.nm.us

Comment: Article 05-08-010 Paragraph B – the City needs a permit system or program.

Response: The City has procured the Tyler Technologies Munis Permits module(s) to help streamline the permitting process within the City. Full deployment of the system’s offerings is forthcoming. This system will also provide the City Inspector with a tablet-based application to view and process inspections in real-time in the field. The intent is to expedite the forms and follow-up from the inspector and provide the Contractor with a printout of the findings.

Comment: Article 06-01-010 – a minimum of three manufacturers should be listed as preapproved for each. This is sole sourcing forcing us to use a single manufacturer is illegal.

Response: Items/Products listed by name shall include an allowance for “an approved equal”.

Comment: Article 06-01-030 – leaves no discretion for roads that curve where it will be impossible to maintain a 5 foot off the centerline.

Response: The intent is to provide a standardized location for new construction; the sanitary sewer alignment will shift away from the centerline around horizontal curves. Examination of manhole spacing will be critical during design to maintain the required horizontal separation from other utilities.

Comment: Article 06-01-040 – this should be revised to 1 foot as 3 foot is excessive and unnecessary if 3 foot is required 30% of the sewer services currently installed in Alamo don't meet this code. Per the governing 2021 uniform plumbing code, which has been adopted by the State of New Mexico, Code 718.3, 1-foot minimum buried depth of any drain line. Maybe you meant sewer mains but that's not what it says.

Response: The intent is exclusively related to sanitary sewer mains and this Article has been updated stating this.

Comment: Article 06-01-050 Paragraph B – again this is another overreach by the City the actual drain size should be determined by the current plumbing code 2021 UPC, Code 703.0. There's no reason a customer should be required to install a bigger pipe when it is not needed.

Response: All sanitary sewer service constructed, on new developments, shall be a minimum of four-inches (4") in diameter to the right-of-way line/property line. Within private properties adherence to the UPC and their sizing requirements are acceptable.

Comment: Article 06-01-070 – this entire section should be deleted as water and sewer lines are permitted in the same ditch per current plumbing code unless clay pipe is utilize UPC 2021 Code 720.1. There's no good reason to double the excavation cost for a customer's service. Again you might be referring to mains but that's not what it says.

Response: The intent is exclusively related to sanitary sewer mains and water transmission/distribution main lines. This Article has been updated stating this.

Comment: Article 06-03-040 Paragraph B – not necessary as long as the home cleanouts are within 100 feet of the sewer main.

Response: The requirement for cleanouts to be placed at the right-of-way line is for new developments. The intent is to aide plumbers and/or individual lot owners for service connection location without unnecessary excavation within the public right-of-way.

Comment: Article 06-03-050 – This should only apply to sewer mains not sewer services.

Response: The intent is exclusively related to sanitary sewer main lines and this Article has been updated stating this.

Comment: Article 06-03-060 Paragraph B Paragraph 1 – a 50 gallon interceptor should not be the minimum the sizing should be deferred to CID as this is there jurisdiction and an interceptor can be properly sized using plumbing code.

Response: This is the current City Ordinance requirement and is the minimum allowable interceptor size.

Comment: Article 06-04-040 Paragraph C – this one is just ridiculous why is a manhole required? Yet another overreach. In no plumbing or utility code is this required. You're telling me my two-bathroom office would require to install a manhole? Basically every business in town would have to install a manhole. I respect you people but this one takes the cake.

Response: Article 06-04-040 (b) and (c) have been updated to further clarify what facilities shall tap the sanitary sewer main versus a manhole connection.

Comment: Article 06-04-040 Paragraph D – this is a City owned and City maintained main. I believe the City should have to replace this 5 foot section not the Contractor which subsequently means the Citizen and the customer would have to pay for it.

Response: The Contractor will be responsible for the removal of replacement of the section of the main sanitary sewer line as provided in the Technical Standards. The Contractor may submit a written request for City assistance for the segment replacement. Currently, the City does not employ a dedicated crew to complete this work and as such the Contractor will be subject to the City's schedule and staffing availability (potentially up to 30 days).

Comment: Article 06-04-060 Paragraph A – the City should perform the service in emergency situations since you already own the pumper trucks.

Response: Temporary bypass pumping activities for scheduled construction shall remain the responsibility of the Contractor. In emergency situations, a written request can be submitted and evaluated on a case-by-case basis.

Comment: Article 06-05-010 Paragraph D – is this required for a new sewer tap for an existing home? If so I object to this added cost to my customers.

Response: This is related to new development and construction, servicing of an existing tap is not subject to these requirements.

Comment: Standard Detail S-24 – you have no right to tell a property owner where the sewer and water will enter their property. You not only require locate wire, locate tape, and curb stamps of the utility locations but now you want it to enter the lot at an exact location, this is absurd.

Response: Routing of service lines within the property owner's property will be at their discretion; the requirements set forth in Standard Detail S-24 show where the service lines should enter from the main line(s) within the public right-of-way. This requirement is exclusive to new development and construction.

Comment: Article 09-01-010 – Three manufacturers should be listed on each, except for the water meters. This will help eliminate submitting substitutions and wasting lots of time on everyone's part.

Response: Items/Products listed by name shall include an allowance for "an approved equal".

Comment: Article 09-01-030 – 3 feet of cover is not required for plumbing code and there's no reason it should be required for a simple water service.

Response: The three-foot (3') cover requirement is for water transmission/distribution main lines only. This Article has been clarified accordingly.

Comment: Article 09-02-100 Paragraph C – service line splitting should be allowed when properly sized and the easements and property lines allow this to be done correctly.

Response: Service line splitting for single-family residences will not be allowed. Each parcel/address shall have a dedicated service line and meter.

Comment: Article 09-02-100 Paragraph E – this paragraph should be deleted entirely there's no reason that a water service has to enter and 90° angle. If you were to take the time to ask to maintenance crew, they would inform you that they prefer a little slack for future repairs.

Response: The intent is the water service line runs perpendicular from the tap, at the main line, to right-of-way/property line on all new development and construction.

Comment: Article 09-03-030 Paragraph J – this paragraph should be deleted as water and sewer is allowed to run in the same ditch per plumbing code 2021 UPC which is the governor in plumbing code of the State of New Mexico.

Response: The intent is exclusively related to sanitary sewer mains and water transmission/distribution main lines. This Article has been updated stating this.

Comment: Article 09-03-030 Paragraph U – typo delete sewer insert water.

Response: This revision has been incorporated.

Comment: Article 09-05-010 Paragraph D – Should not be required for service replacement.

Response: This is related to new development and construction. Service replacement is not subject to these requirements.

Comment: Article 10-01-010 – Three manufacturers should be listed to avoid wasting City and Contractors time for substitutions.

Response: Items/Products listed by name shall include an allowance for “an approved equal”..

Comment: Standard Detail W-1 – the customer valve should be allowed to be installed in the meter can on the outlet of the meter setter.

Response: This requirement is for new service construction and affords the property owner the ability to shutoff service at the meter while minimizing the potential to damage the meter inadvertently or intentionally. The City is not looking for the shutoff valves to be installed on meters currently in service, only those that will be coming online in the future. This requirement will be the responsibility of the developer (commercial, private, or new City facility).

Comment: Standard Detail W-23 – Again the City has no right to tell property owner where utilities enter their property.

Response: Routing of service lines within the property owner’s property will be at their discretion; the requirements set forth in Standard Detail W-23 show where the service lines should enter from the public right-of-way.

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/08/2022

Report No: 18.

Submitted By: Dylan Aleshire

Subject: Appointments to Boards and Committees. (*Susan Payne, Mayor*)

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation: One application was received; staff recommends appointment to the Senior Volunteer Programs Advisory Council.

Background: Airport Advisory Board

- Two (2) upcoming vacancies due to the expiring terms of Erich Wuerschling and Manuel Gonzales Jr.
- No applications were received.

Airport Zoning Board

- Two (2) current vacancies.
- No applications were received.

Alamogordo Public Library Board

- One (1) current vacancy.
- No applications were received.

Parks and Recreation Board

- One (1) current vacancy.
- One (1) upcoming vacancy due to the expiring term of Lori Armstrong.
- No applications were received.

Senior Volunteer Programs Advisory Council

- Two (2) current vacancies.
- One (1) application by Carmen Chavez, if appointed this will be her first term.

If anyone is interested in serving on a Board or Committee, you may apply in-person at the City Clerk's office, or online via the City website.

URL Link: <https://ci.alamogordo.nm.us/353/Boards-Committees>

You may check if you live within City limits by using the online, interactive GIS Alamogordo Public Map on the City website. City limits appear as dotted red lines. URL Link: <https://coa-nm.maps.arcgis.com/home/index.html>

City of Alamogordo
APPLICATION TO SERVE ON A
CITY BOARD/COMMITTEE

RECEIVED
JUN 01 2022
CITY CLERK

Name: Carmen Chavez
Home Phone: 925-759-6382 Work Phone: 575-443-6166
Cell Phone: 925-759-6382 Fax No: _____
e-mail address: chavezcarmen317@gmail
Physical Address: 1505 Walnut Drive Alamogordo, NM 88310
Is the above address within City limits? Yes No _____
Mailing Address: Same
Present Employer: Blue Sky Counseling Job Title: Mental Health
Therapist

Board/Committee you wish to serve on:

First choice: Senior Citizen Advisory Council
Second choice: _____

Are you related to anyone who is presently employed by the City of Alamogordo:

Yes _____ No If so, what is their relation to you? _____

Are you related to any Elected Official of the City of Alamogordo?

Yes _____ No If so, what is their relation to you? _____

Experience and education relating to the Board/Committee: _____

BA Human Development, minor Sociology
MA Counseling & Psychology

Please indicate your interest in serving on a City Board/ Committee: The Senior
Center is a valuable and well organized Resource in
our community. It provides rich opportunity such as
nutritious meals, valued socialization, exercise age-
appropriate, & other Creative opportunities

Please return completed application to:

City Clerk's Office
1376 E. Ninth Street
Alamogordo, NM 88310
PHONE: (575)439-4205
FAX: (575)439-4396

AGENDA REPORT

CITY OF ALAMOGORDO

CITY COMMISSION

Meeting Date: 6/14/2022

Report Date: 06/06/2022

Report No: 19.

Submitted By: Brian Cesar

Subject: Adjourn into Executive Closed Session in compliance with 10-15-1(H)(8) NMSA (as amended) to discuss a land swap of disposal of real property of 200 South Florida and acquisition of right-of-way, South of Highway 70 West of Airport. (Roll Call Vote Required)

Fiscal Impact:

Amount Budgeted:

Fund:

Additional Fiscal Impact:

Recommendation:

Background: