



BOARD OF DIRECTORS REGULAR MEETING STUDY SESSION AGENDA

Thursday, February 15, 2024 at 3:00 PM

66575 Second St, Desert Hot Springs, CA AND/OR Via Teleconference

NOTICE IS HEREBY GIVEN THAT THE BOARD OF DIRECTORS OF MISSION SPRINGS WATER DISTRICT WILL HOLD ITS REGULAR MEETING(S) ON THE DATE LISTED ABOVE. THE BOARD WILL MEET IN PERSON AT 66575 SECOND STREET, DESERT HOT SPRINGS.

THE PUBLIC IS PERMITTED TO ATTEND THIS MEETING IN PERSON OR VIRTUALLY USING THE ZOOM LINK BELOW.

JOIN ZOOM MEETING:

<https://us02web.zoom.us/j/8220655340?from=addon>

DIAL BY PHONE:

+1 (408) 638-0968

Meeting ID: 822 065 5340

ACTION MAY BE TAKEN ON ANY ITEM LISTED ON THIS AGENDA

1. CALL TO ORDER
2. ROLL CALL
3. ANNOUNCEMENT AND VERIFICATION OF REMOTE MEETING PARTICIPATION PURSUANT TO AB 2449 OR GC 54953(b)
4. PLEDGE OF ALLEGIANCE
5. RULES OF PROCEDURE
6. PUBLIC INPUT
*This is the opportunity for members of the public to address the Board on matters within the Board's jurisdiction. **Please limit comments to three (3) minutes or less.** State law prohibits the Board from discussing or taking action on any item not listed on the agenda.*

EMPLOYEE RECOGNITION

7. HUMAN RESOURCES REPORT

ACTION ITEMS**8. APPROVAL OF THE UPDATE OF THE DEVELOPER/CONTRACTOR HANDBOOK & GUIDELINES FOR THE DESIGN AND CONSTRUCTION OF WATER AND SEWER FACILITIES**

It is recommended that the Board approve the updated Mission Springs Water District Developer/Contractor Handbook & Guidelines for Design and Construction of Water and Sewer Facilities (February 2024 Edition).

9. CONTRACT AMENDMENTS FOR CONSTRUCTION AND CONSTRUCTION SUPPORT AND INSPECTION SERVICES FOR THE WELL 42 PROJECT

It is recommended to authorize the General Manager to execute contract amendments with AECOM Technical Services Inc., EnviroLogic Resources Inc., and TKE Engineering Inc., for additional engineering services during construction and with Rollapart Buildings Inc. for additional construction support and inspection services during the construction of the Well 42 Project in the amount of \$113,605.00.

10. PURCHASE OF UTILITY EASEMENT FOR THE REGIONAL WATER RECLAMATION FACILITY MONITORING WELL ON APN 669-110-001

It is recommended to authorize the General Manager to take the necessary actions to negotiate, purchase, and record a permanent utility easement on a portion of real property in Riverside County, APN 669-110-001, for a monitoring well.

11. AWARD OF CONTRACT FOR THE COMPLETE DEPLOYMENT OF THE ARCGIS ENTERPRISE, UTILITY NETWORK, AND CITYWORKS TO TIMMONS GROUP

It is recommended to authorize the General Manager to execute a contract agreement for the complete deployment of the ArcGIS Enterprise, Utility Network, and Cityworks in the amount of \$849,596.00 plus a 10% contingency for a total of \$934,555.60 to Timmons Group, and authorize the General Manager to do all things necessary to complete the project.

DISCUSSION ITEMS**12. MSWD REGIONAL WATER RECLAMATION FACILITY UPDATE****13. CRITICAL SERVICES CENTER AND ADMINISTRATIVE BUILDING UPDATE****14. SEWER SERVICE RULES AND REGULATIONS ~ ARTICLE VI INDUSTRIAL DISCHARGE UPDATE****15. DESERT WATER AGENCY REPLENISHMENT ASSESSMENT CHARGE REPORT****CONSENT AGENDA**

Consent agenda items are expected to be routine and non-controversial, to be acted upon by the Board at one time, without discussion. If a member would like an item to be handled separately, it will be removed from the Consent Agenda for separate action.

16. APPROVAL OF MINUTES

It is recommended to approve the minutes as follows:

January 9, 2024 - Special Meeting Workshop Minutes
January 11, 2024 - Study Session Minutes
January 16, 2024 - Board Meeting Minutes

17. REGISTER OF DEMANDS

The register of demands totaling \$5,291,973.82

REPORTS

18. DIRECTOR'S REPORTS

19. GENERAL MANAGER'S REPORT

Included in this report are the following oral reports:

- A. Finance Report
- B. Public Affairs Report

COMMENTS

20. DISTRICT COUNSEL COMMENTS

21. DIRECTOR COMMENTS

CLOSED SESSION

22. CONFERENCE WITH LEGAL COUNSEL REGARDING POTENTIAL INITIATION OF LITIGATION

Pursuant to Government Code Section 54956.9(d)(4) One potential case.

23. REPORT ON ACTION TAKEN DURING CLOSED SESSION

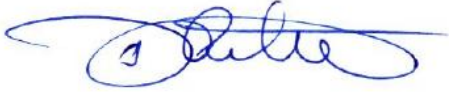
24. ADJOURN

If you need special assistance to participate in this meeting, please contact the Executive Assistant at (760) 660-4403 at least 48 working hours prior to the meeting.

ANY DISCLOSABLE PUBLIC RECORDS RELATED TO AN OPEN SESSION ITEM ON A REGULAR MEETING AGENDA AND DISTRIBUTED BY MISSION SPRINGS WATER DISTRICT TO ALL OR A MAJORITY OF THE BOARD OF DIRECTORS LESS THAN 72 HOURS PRIOR TO THAT MEETING ARE AVAILABLE FOR PUBLIC INSPECTION AT THE DISTRICT OFFICE, 66575 SECOND STREET, DESERT HOT SPRINGS, CALIFORNIA DURING NORMAL BUSINESS HOURS AND MAY ALSO BE AVAILABLE ON THE DISTRICT'S WEBSITE AT WWW.MSWD.ORG/MEETINGS. NOTE: THE PROCEEDINGS MAY BE AUDIO AND VIDEO RECORDED.

CERTIFICATION OF POSTING

I certify that on or before February 12, 2024, a copy of the foregoing notice was posted near the regular meeting place of the Board of Directors of Mission Springs Water District at least 72 hours in advance of the meeting (Government Code Section 54954.2).



Dori Petee
Executive Assistant

AGENDA STAFF REPORT

MEETING NAME: REGULAR BOARD MEETINGS

MEETING DATE(S): FEBRUARY 15 & 20, 2024

FROM: ORIANA HOFFERT-HUMAN
RESOURCES MANAGER



HUMAN RESOURCES REPORT

PERSONNEL ACTIVITY FOR THE PERIOD JANUARY 1-31, 2024

NEW HIRES

Josiah Perez Field Operations Technician I

ANNIVERSARIES

Eric Weck	Engineering Manager	2 Years
Adrian Perea	Field Operations Technician I	2 Years
Michael Platt	Engineering Technician II	3 Years
Rita Huber	Accountant	6 Years
Sierra Boyle	Customer Service Representative II	7 Years
Oriana Hoffert	Human Resources Manager	7 Years
Chris Jacobson	Wastewater Treatment Plant Operator II	20 Years

PROMOTIONS

CERTIFICATIONS/EDUCATIONAL ACCOMPLISHMENTS

AGENDA STAFF REPORT



MEETING NAME: REGULAR BOARD MEETING(S)

MEETING DATE(S): FEBRUARY 15 & 20, 2024

FROM: ERIC WECK, ENGINEERING MANAGER

FOR: ACTION **X** DIRECTION INFORMATION

APPROVAL OF THE UPDATE OF THE DEVELOPER/CONTRACTOR HANDBOOK & GUIDELINES FOR DESIGN AND CONSTRUCTION OF WATER AND SEWER FACILITIES

STAFF RECOMMENDATION

Staff recommends that the Board approve the updated Mission Springs Water District Developer/Contractor Handbook & Guidelines for Design and Construction of Water and Sewer Facilities (February 2024 Edition).

SUMMARY

The Developer/Contractor Handbook & Guidelines for Design and Construction of Water and Sewer Facilities (Development Handbook) that was last updated and approved in September 2012 by the Board of Directors.

Since that time, several water and sewer application processes, guidelines, construction standards and specifications for development and construction have been updated to reflect current industry development and construction standards.

Updates to the Development Handbook include creating separate sections for the various forms and checklists for developers and contractors to refer to and complete. Secondly, staff updated the approved materials listing that specifies the materials and improvements that the District will accept and incorporate into the District’s water and wastewater system. Another significant change was revising the standard drawings to reflect updated materials available for use and acceptable to the District. These, among other updates were necessary to allow contractors and developers to reference and construct improvements that meet the District’s needs for future residential, multifamily, and commercial developments.

The Standard Drawings and the Approved Materials List were updated as well and will now be separated from the Development Handbook, to allow staff to update and revise them accordingly to reflect changing construction methods, and technologies. This will avoid the need for recurring board action and allow the General Manager to review, update and approve as necessary.

FISCAL IMPACT AND STRATEGIC PLAN IMPLEMENTATION

There is no fiscal impact from this action.

ATTACHMENTS

- Draft February 2024 Developers and Contractors Handbook
- Materials List
- MSWD Standard Drawings

FINANCIAL DATA		
Cost Associated with this action:		\$0
Current FY cost:		\$0
Future FY cost:		\$0
Is it covered in current year budget:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Budget adjustment needed:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
If yes, year needed:		NA
All previous contracts including dates, amounts and board approvals are attached or have been made available.		
FUNDING SOURCES		
Source of funds:		NA
BID/Job#		NA
Current BID/Job balance		NA
Balance remaining if approved:		NA



**DEVELOPER / CONTRACTOR HANDBOOK
AND GUIDELINES
FOR DESIGN AND CONSTRUCTION OF
WATER AND SEWER FACILITIES**

**MISSION SPRINGS WATER DISTRICT
66575 2ND STREET
DESERT HOT SPRINGS, CA 92240
WWW.MSWD.ORG**

**UPDATED
FEBRUARY 2024**

MSWD DEVELOPER/CONTRACTOR HANDBOOK & GUIDELINES

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1.0 INTRODUCTION

Mission Springs Water District (MSWD) is a “Publicly Owned Water District” with the mission to “Provide, protect, preserve our most valuable resource . . . **water.**”

Those eight words capture a complex and dynamic task.

PROVIDE The District serves an area of 135 square miles, covering the communities of Desert Hot Springs, North Palm Springs, West Garnet, West Palm Springs Village, Palm Springs Crest, and some adjacent areas of Riverside County. As of January 2016, it serves 36,000 people in an estimated 12,500 households and 500 businesses.

Water service to residential and commercial accounts takes about 9,000 acre/feet per year. The water served comes primarily from the Mission Creek Groundwater Sub-basin and the Cabazon Groundwater Basin.

The District provides sewer service to over 50% of its customers and has worked with residents to form assessment districts that fund the replacing of customers' septic systems with more environmentally friendly sewer service. Wastewater treatment takes place in two treatment plants, the larger being the Alan L. Horton Wastewater Treatment Plant which can treat two million gallons of wastewater per day.

PROTECT Septic tank effluent contains significant amounts of nitrates and poses a great threat to local groundwater supplies.

Replacing septic systems with sewer connections is a high priority for the District and those efforts continue to pay off, with over 50% of the District now on sewer service.

Capital to fund the development of modern sewer systems is achieved by aggressively pursuing financial assistance through grants at the federal, state, and local levels.

PRESERVE Wisely managing water supplies today is the best way to assure water for the future.

The District's conservation and outreach program has been organized to educate and motivate the community to care about protecting the groundwater. The District's replenishment activities include obtaining water from sources outside the District and incorporating it into the District's water supply.

1.01 PURPOSE

The District developed this manual to guide developers and their engineers through the process of design and construction of new water and sewer facilities. Staff has included information pertinent to residential tract development, multi-family residential developments, industrial, and commercial developments. If, after reviewing this handbook, there are questions or comments regarding the contents, please contact the Engineering Department at (760) 329-6448 ext. 127 or by email at engineering@mswd.org.

1.02 BACKGROUND

While prospecting for water, early homesteaders in the desert discovered the hot springs that have made this area famous. It was not until 1940, however, that the first subdivisions were established and L. W. Coffee started the village he called Desert Hot Springs.

The critical need for fresh water led residents to form a mutual water company, which eventually proved unsatisfactory. Later, a privately-owned utility, called the Desert Hot Springs Water Company, acquired its assets. But this too failed and widespread dissatisfaction led local citizens to form a publicly owned water district.

By 1953, an election swept the new Desert Hot Springs County Water District into existence with a vote of 246 to 9. The new District began with 100,000 feet of pipelines, 5 water wells and two reservoirs. It covered one square mile.

The District expanded rapidly. It absorbed parts of the Coachella Valley County Water District, the West Palm Springs Village and San Geronio Mutual Water Company systems. Today, it boasts more than 1.9 million feet of pipelines, 14 water wells and 24 reservoirs, serving an area of 135 square miles.

As early as 1954, local citizens petitioned for sewer service. The cost, however, was prohibitive. But growth brought an overload to the septic systems and health hazards to the community. The District built the Alan J. Horton Wastewater Treatment Plant in 1972, and it has been expanded four times to a capacity of 2 million gallons of wastewater a day.

MSWD provides water supply, wastewater disposal, and water resource management to the public in a safe, reliable, environmentally sensitive, and financially responsible manner. The district strongly supports and encourages wise water use by our customers as well as the public.

Much of MSWD background, history and invaluable water conservation information can be found on its website at www.mswd.org.

1.03 GENERAL SERVICE CRITERIA

Within the design manual, the term “MSWD” means Mission Springs Water District. “developer’s engineer” means a currently licensed civil engineer retained by the owner or developer to perform engineering for water and sewer systems in conjunction with land division development.

Water facilities include water pipelines, related appurtenances, and may include offsite facilities such as pump stations, water storage reservoirs, and pressure regulating stations that are necessary to deliver sufficient water at adequate volume and pressure to the development.

Sewer facilities include sewer pipelines, manholes, clean outs, and lift stations necessary to deliver wastewater to a treatment facility.

If water or sewer service is desired within an existing service area, service can normally be provided if the developer meets the following conditions:

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1. Pays all applicable fees and rates.
2. Designs, constructs, and dedicates to MSWD the necessary facilities. MSWD will review all plans, and may revise, modify or request the redesign of any concepts, plans or details submitted. Signed engineers cost estimate and any recorded maps or easements will be required prior to MSWD approval. All plans must be approved and signed by MSWD district engineer or designee, prior to the issuance of a Notice to Proceed for construction. Treatment facilities (water or sewer) must already exist or their creation will be part of the obligation of the developer.
3. Grants Fee Title parcels to MSWD on MSWD Grant Deed forms for all facilities not located within public right-of-way. Fee Title parcels shall be a minimum of 30 feet in width unless otherwise approved by MSWD.
4. Pays current applicable charges in addition to completing the requirements listed above. Fees may include: plan check fees, water and/or sewer connection charges, inspection fees, front footage or fire flow charges, and meter charges or other charges authorized by MSWD Board of Directors. MSWD should be consulted for current and applicable fees.

The procedures for the development of water and/or sewer systems for tract maps, parcel maps, multi-family developments, commercial developments, and single lot development differ only slightly. The design standards contained herein are primarily prepared for residential tract map development but can be used for all types. The applicable minimum requirements are as follows:

1. Design required facilities to MSWD standards.
2. Prepare water and/or sewer plans. MSWD has the authority to waive this requirement for single lot developments.
3. MSWD staff reviews and approves plans.
4. Dedicate right-of-way for all facilities to be owned and operated by MSWD.
5. Provide an opinion of probable cost of all improvements.
6. Post all necessary fees.
7. Execute a water and/or sewer system construction agreement and post bonds with MSWD, retain a qualified licensed contractor, and provide proof of insurance.
8. Fund and obtain inspection services by MSWD.
9. Obtain a written Notice to Proceed before construction begins.
10. Have an engineer certify that the proposed final road grade (as shown on the plans and approved by the County of Riverside, the City of Palm Springs, or the City of Desert Hot Springs over the pipeline alignment has been achieved. If the existing surface of the alignment is not to be changed, the project engineer shall certify.

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11. Construct facilities to MSWD standards.
12. MSWD staff provides final approval of facilities constructed.
13. Complete "record drawings" plans (field changes recorded on the original plans) for MSWD.
14. MSWD accepts Bill of Sale for the transfer of title for the constructed water and/or sewer facilities to MSWD.
15. See Flow Chart Section 5.03.01.

Developer must make necessary financial arrangements with MSWD to accomplish the above items.

1.04 OTHER PUBLIC AGENCY REQUIREMENTS

The requirements for the design of water and sewer plans and systems specified herein do not waive nor are they intended to contradict any requirements required by other legal governing public agencies.

1. State of California Water Supply Assessment (WSA)

Subject: WSA Triggers

Here is what defines a project:

California Water Code section 10912.

For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

- (1) A proposed residential development of more than 500 dwelling units.
- (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- (4) A proposed hotel or motel, or both, having more than 500 rooms.
- (5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

MSWD DEVELOPER/CONTRACTOR HANDBOOK & GUIDELINES

- (6) A mixed-use project that includes one or more of the projects specified in this subdivision.
- (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.
- (b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

If a project falls within the above definitions, then the Developer will need to contact the County, or City (depending on the jurisdiction where the project is located) to request a WSA from MSWD. Upon receipt of the request MSWD will determine the costs involved for the WSA preparation by a District approved firm and will supply the Developer with an invoice for those costs. The Developer shall be responsible for all costs involved in preparation and the required MSWD Board of Director approval.

Engineers designing water and sewer plans and systems for the MSWD system must be knowledgeable of and comply with the regulations of the State of California, the County of Riverside, City of Palm Springs, the City of Desert Hot Springs, or other local agencies having jurisdiction, as appropriate. These regulations shall include administrative codes, civil codes, and health regulations, permit requirements.

1.05 WATER AND SEWER PLAN APPROVAL PROCESS

Note: For landscape plan submittals refer to the MSWD website for requirements; plan check review times will generally be the same as below.

The developer's engineer must design the facilities and prepare the "water and/or sewer construction" drawings to MSWD requirements and shall submit such designs to MSWD for review. MSWD staff may revise, modify, or otherwise require redesign of any concepts, drawings, or details submitted. Construction must begin within one year of approval of the water and/or sewer construction drawings. If more than one year has elapsed, before starting construction, the project must go through the plan check procedure again. The steps required to process a project and obtain plan approval are as follows:

1. Attend preliminary planning meeting.
 - a) Call or email the MSWD Engineering Department to arrange a preliminary planning meeting to discuss the proposed project. At the preliminary planning meeting, submit a tentative tract map or project site map with the preliminary water and/or sewer facilities shown. Upon review of the project, MSWD may require a preliminary report and/or hydraulic network analysis. MSWD files of the construction notes, title

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block and other required certificates can be downloaded from the [Water and Sewer CAD Toolbox](#).

- b) MSWD will discuss the general location and size of required facilities and will provide information on known existing MSWD facilities in the area. MSWD staff will provide available record drawings for existing facilities. MSWD staff will designate any special location, size, and depths, prior to the engineer preparing plans.
 - c) MSWD provides water and/or sewer service to customers directly when the customer’s property is located in one of its service districts. If customers are outside an existing service district, service may be obtained by (1) annexing into an existing service district (2) forming a new service district, or (3) seeking service from another nearby public or private utility. MSWD shall be consulted for advice regarding service in any of the above circumstances.
2. Submit a completed and signed Application for New Development along with the required deposit for plan check and inspection; MSWD staff will determine the amount based on the following:

MSWD staff will require a deposit to cover staff time and costs before plan checking and other related engineering services may proceed. The fee covers engineering services related to preliminary reports, hydraulic network analyses, plan checks, and inspection of the construction. When the staff time and costs have exhausted the deposit funds, MSWD will request an additional deposit to avoid an interruption in engineering, plan checking, inspection and other related services.

The normal plan check deposit is as follows:

Water and or Sewer Improvement Plans	\$2,250 per sheet (two sheet minimum including the cover sheet)
Landscape Improvement Plans	\$1,500
Waste Discharge Report (if applicable)	\$700

Any unused deposit funds will be refunded to the payee following the one-year warranty completion.

- 3. Submit preliminary report and/or hydraulic network analyses (if required).

If required, the preliminary report and hydraulic network analyses must be submitted to MSWD staff for review and comments. The preliminary report and/or hydraulic network analyses must be approved prior to submittal of any drawings for plan check. After MSWD

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staff and the developer's engineer have agreed on a conceptual design, detailed plans may be prepared and submitted.

After review and approval of the preliminary report and/or hydraulic network analyses, developer's engineer shall electronically submit first plan check.

Submit first plan check with the following required material:

- 1) Water construction drawings.
- 2) Sewer construction drawings.
- 3) Street improvement drawings.
- 4) Grading plans.
- 5) Storm drain plans.
- 6) Tentative tract/parcel map.
- 7) Tract phasing Map (including lot numbers and street names).
- 8) Letter stating fire flow requirements from the governing fire authority.
- 9) Soils Report. This report is to include information on:
 - a. Subsurface soil and groundwater conditions;
 - b. Site geology, regional faulting and seismicity, near source factors, and site seismic accelerations;
 - c. Soil conditions which may be aggressive to metal and concrete;
 - d. Soil infiltration rates;
 - e. Professional opinion on site grading and earthwork;
 - f. Professional opinion on lateral earth pressures;
 - g. Professional opinion on excavation conditions and buried utility installations; and
 - h. Professional opinion on pavement structural sections
- 10) Environmental Site Assessment, Phase 1 report with the following information, at a minimum:

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- a. Identify potential environmental hazards associated with past and present activities on the subject site or in the site vicinity, in general conformance to ASTM Standard E-1527-05, "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*" This report is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the project.
4. Incomplete submittals will be rejected. **Each submittal shall include a transmittal/email listing all items being submitted.** Details regarding design criteria are included in Sections 2.0 for water and 3.0 for sewer. Details regarding preparation of plans and grant deed documents are included in Section 4.0.
5. After MSWD staff reviews the first plan check submittal for completeness, the plans may be sent to an MSWD consultant for a detailed review. MSWD staff will provide to the reviewing consultant red line comments on the water and sewer construction drawings plus any supplemental information provided by the developer's engineer. MSWD will then return the reviewed plans to the developer's engineer for revisions. In addition, MSWD staff may provide additional comments clarifying all required resubmittal information.
6. It is the goal of MSWD staff and consultants to complete the first plan check within twenty-five (25) calendar days of receipt of a complete submittal. Plan review time varies depending on the number of plans in the review process, size of project, and the complexity and completeness of the project plans. Contact MSWD staff after first plan check submittal for estimated turnaround times.
7. The developer's engineer is to check off all completed items on the Plan Check Checklist. MSWD staff and consultants encourage the developer's engineer to contact them with any questions regarding the plan check comments prior to resubmitting the subsequent plan check.
8. It is the responsibility of the developer's engineer to arrange for any fire flow tests required. An [Application for Fire Flow Test Request](#) along with the required fee should be sent to MSWD allowing approximately two weeks for the District to complete the testing.
9. It is the responsibility of the developer's engineer to submit the water construction drawings and fire flow calculations to the Fire Marshal for review and approval. Any edits received from the fire department should be incorporated in the corrected plans and a copy of the correction notice or red line shall be sent to MSWD with the next submittal.
10. After the first set of check prints is returned, no changes, **except those requested or approved by MSWD**, shall be made by the developer's engineer. If the developer's engineer wishes to make a change other than those requested by MSWD, a copy marked with the proposed change in red shall be submitted to MSWD for approval. Only after written approval shall the original be changed. The authorized change shall be

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highlighted on the next recheck submittal. Drawings that do not follow the requirements contained in this Design Manual and/or that are unclear, misleading, or confusing will be subject to rejection without review.

11. Submit subsequent plan checks, MSWD staff and consultants will normally return subsequent plan checks within fifteen (15) business days.
12. For each subsequent plan check, developer's engineer must submit the following:
 - 1) Original plan check checklist(s) with comments.
 - 2) Revised construction drawings.
 - 3) Hydraulic fire flow calculations including proposed service demands signed by a registered engineer.
 - 4) Any additional material requested.
 - 5) Engineers estimate of probable costs for District facilities.
 - 6) Recorded Maps or Easements to MSWD as required.

MSWD staff will notify the developer's engineer to submit a PDF copy of signed plans when all plan checks are completed, and the plans are acceptable to MSWD staff and consultants. Any signed plans sent prior to being requested by MSWD staff will not be considered or returned. The plans must be signed by the developer's engineer, any other required agency, and Fire Marshal prior to being submitted to MSWD staff for signature. Prior to final approval of the construction drawings, developer must pay any deposit amounts deemed to be required for project completion through warranty and submit the required items. (Section 1.05.01).

13. MSWD Execution of Plans:

When all submittals have been completed to the satisfaction of MSWD staff, MSWD will notify the developer's engineer to route a PDF copy of the plans for signature from all other agencies then provide the plans for MSWD approval. MSWD staff will file and obtain four (4) bond copies for District use at project expense and provide a PDF file to the developer's engineer. The developer's engineer will be responsible for providing any additional copies needed. Original water and sewer plans become the property of MSWD. MSWD staff will furnish the developer with a fee letter and pre-construction requirements.

When signed, the original plans cannot be modified without written permission from the MSWD District engineer or designee. Any modification after signing shall "be clouded" with a revision number on the drawing and noted in the revision block for that sheet and the cover sheet revision block.

Plan checks resubmitted after one (1) year from date of last submittal, regardless of number of previous submittals, will be deemed "expired". "Expired" plan checks

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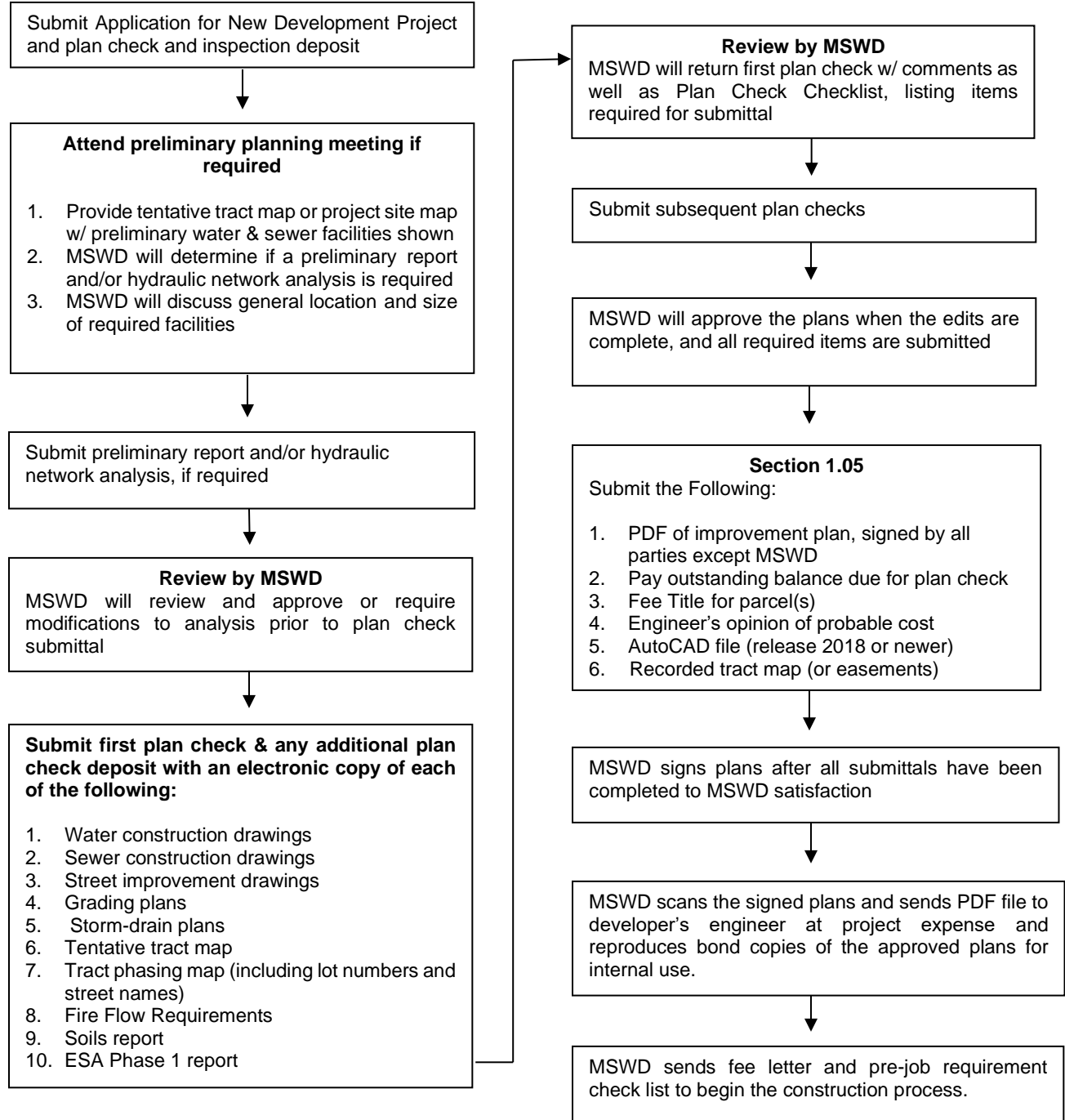
resubmitted will be subject to current MSWD design requirements and considered a “first plan check submittal”.

Approved plans not submitted for construction within one year from approval date will be considered expired and MSWD may require that plans be resubmitted for review prior to construction.

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1.05.01 FLOW CHART – WATER AND SEWER PLAN APPROVAL PROCESS

Reference section 1.05 Water and Sewer Plan Approval Process



1.06 WATER CONSERVATION AND LANDSCAPE REQUIREMENTS

All developments shall be required to prepare Landscape and Irrigation Plans in conformance with the latest version of the Mission Springs Water District Efficient Landscaping Guidelines and the requirements of the local city or county agency, whichever is more stringent.

Plans shall be submitted concurrently to MSWD and the appropriate local agency for review.

Plans will be reviewed by the MSWD Consultant and red line comments will be returned to the applicant for corrections. Where local agency comments conflict with MSWD requirements, the applicant shall contact the MSWD Consultant for resolution.

Final plans will be stamped and signed by the landscape architect and the MSWD General Manager.

All landscape and irrigation construction shall be subject to MSWD inspection and shall be complete and approved to receive MSWD Certificate of Completion. Certificate of Completion is required prior to issuance of Certificate of Occupancy by the governing land use authority.

1.06.01 MSWD RESIDENTIAL MODEL HOME REQUIREMENTS

1. At least one model home, within residential subdivisions, shall demonstrate a water conserving landscape. The MSWD one-acre garden which exhibits water-wise landscaping and showcases more than 250 water-efficient plants, opens daily at 10 a.m. closing at 4 p.m. and is free to the public.
2. The developer's landscape architect shall consult with the MSWD Engineering team prior to preparation of final plans to ensure compliance with MSWD guidelines and requirements. Contact the MSWD Engineering Department for the review fee charge.
3. The developer shall submit model home landscape and irrigation plans for MSWD review concurrently with the City or County submittal. MSWD approval is required prior to a building permit being issued.
4. Developer shall supply water conservation materials to buyers upon the sale of each dwelling unit within the development.
5. Developer shall display water conservation materials, inside the model homes.
6. No water meter installations will be permitted until the landscape and irrigation plans have been reviewed and approved by MSWD.

2.0 DESIGN CRITERIA FOR WATER DISTRIBUTION SYSTEMS

Water system improvements proposed for inclusion into the MSWD service area shall be designed in accordance with all appropriate AWWA standards and the following criteria:

2.01 SYSTEM DEMAND CRITERIA

MSWD staff reserves the right to determine specific criteria for each water system or sub-system based upon conditions that may exist for that location, anticipated level of development, planned use or other criteria. In general, however, water pipelines, reservoirs, pump stations, pressure reducing stations and appurtenances shall be sized to handle the highest demand on the system within the sphere of influence and shall provide capacity for the following:

1. The maximum hourly flow.
2. The maximum daily flow plus fire flow.

Average day domestic demand shall be calculated using 327 gallons per capita per day (gpcpd). For single family residences, use 3.0 residents per house, or 981 gpd/unit, and a peak factor of 2.0 to determine maximum daily flow. Consult with MSWD staff for required flows for other uses.¹

Fire flow requirements shall be in accordance with the specification of the Fire Protection Agency having jurisdiction.

Commercial and industrial development requirements shall be analyzed separately based on the specific proposed project.

Water pipelines to all service areas shall be looped to provide dual direction supply and system flexibility. Dead end water mains are undesirable but can be considered on a case-by-case basis.

2.02 SYSTEM ANALYSIS

The proposed water system shall be analyzed for the following three conditions:

1. Peak hour demands with booster pumping plants on.

For the peak hour demand flow analysis, the pressure at each node shall be a minimum of 40 psi and a maximum of 120 psi.

2. Maximum day demand plus fire flow with booster pumping plants off.

For the maximum day demand plus fire flow analysis, fire flow should be selected for the worst-case scenario (typically the hydrant farthest from the connection(s) to MSWD distribution system, at the highest system elevation) and as directed by MSWD staff. The pressure at each node shall be a minimum of 20 psi and the maximum velocity in existing and proposed pipelines shall be 7.5 feet per second.

¹ The figures above were derived using the 2010 MSWD Urban Water Management Plan, 2007 Water Master Plan and the "person per household" data from the 2010 U.S. Census Bureau – Desert Hot Springs.

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3. Minimum hour demands with wells and boosters on.

For the minimum hour demand analysis, the maximum velocity in existing and proposed pipelines shall be 5.0 feet per second and the maximum pressure at each node shall be 120 psi.

The developer's engineer will be required to submit an analysis of anticipated flow demands; average, maximum hour flow, and maximum day plus fire flow. The calculations shall be based on a fire hydrant test performed by MSWD within six (6) months of submittal. Upon review, MSWD shall accept or request the engineer to modify and resubmit the analysis.

2.03 WATER PIPELINE SIZING CRITERIA

Minimum size water pipeline for residential development is eight-inch (8") inner diameter (I.D.). Minimum size water pipeline for commercial development is twelve-inch (12") diameter (I.D.).

For maximum hourly flow, pipeline is to be sized to provide head losses not exceeding 3.5 feet per 1,000 feet of water pipeline.

For maximum daily flow plus fire flow, pipeline is to be sized to provide head losses not exceeding 5 feet per 1,000 feet of water pipeline.

For all cases, mainline velocities are not to exceed 7.5 feet per second for fire flow conditions or 5 feet per second for maximum daily flow.

Use a Hazen-Williams formula "C" value of 120 for cement mortar lined ductile iron pipe and all existing mains.

MSWD may approve use of higher head loss factors if a detailed hydraulic analysis is submitted, including analysis of a "pumps off and fire flow plus maximum hour flow from storage condition."

Provide a minimum of 40-psi pressure to each customer service using the pad elevation of the water tank serving the area as the starting hydraulic grade line. Fire hydrants are to have 20-psi minimum residual pressure at design capacities.

Commercial and industrial developments are to be analyzed by developer's engineer for review by MSWD staff. MSWD staff shall accept or modify the proposed pipe sizing.

MSWD staff reserves the right to specify sizing of any water pipeline.

MSWD staff may require a larger size pipeline than would normally be required for a project to satisfy MSWD design standards for system distribution requirement purposes. The MSWD Board of Directors may authorize participation and payment of increased cost of such water pipeline in accordance with MSWD criteria.

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2.04 WATER PIPELINE LOCATION

All locations shall be approved by MSWD staff prior to the preparation of plans and water pipelines shall generally be located on the northerly or easterly side of the street, six (6') to eight feet (8') from curb face or berm. The curb face or berm location shall be per the Riverside County Transportation Department or City design standards. The water main location shall not interfere with other existing utilities.

The cover over the water pipeline shall be sufficient to provide protection of the water pipeline and for the operation of the appurtenances. The minimum depth shall be three feet (3') from the ground surface (pavement, graded travel way, or open ground) to the top of the water pipeline for eight-inch (8") pipe or smaller. For water pipeline twelve-inch (12") or larger, the minimum depth shall be four feet (4').

MSWD staff may increase or decrease this required depth as necessary to cover non-standard conditions. Minimum slope of water pipelines shall be 0.2% unless otherwise authorized by MSWD staff.

2.05 CURVE DATA AND DEFLECTIONS

Water pipeline curvature shall be designed to maintain a maximum deflection angle of 2.5 degrees per joint for eight-inch (8") and smaller diameter mains and 1.5 degrees for twelve-inch (12") and larger diameter mains. Pipeline curve data shall be shown on the plans, including radius, central angle, and arc length. The minimum radius of curvature for water pipelines using standard pipe joints is as follows:

Diameter (in.)	D.I. Pipe (18' Joint Lengths Min. Radius (ft.))
8">	458'
12"<	764'

Smaller radius of curvature using specially manufactured shorter pipe lengths may be allowed only with prior approval of MSWD staff.

All other water pipeline alignments shall use allowable curves or straight-line segments in combination with standard manufactured bends of 11 ¼, 22 ½, 45, or 90 degrees maintaining the same maximum allowable deflection per joint of 2.5 degrees for eight-inch (8") and smaller pipe and 1.5 degrees for twelve-inch (12") and larger pipe.

Vertical alignments shall maintain these same deflection criteria. The maximum slope deflection is $S=0.0437$ for eight-inch (8") and smaller pipes and $S=0.0262$ for pipes twelve-inch (12") and larger. Grade breaks should be separated by at least one full pipe joint when feasible. Vertical standard bends shall be used if larger grade breaks are required.

2.06 OTHER UTILITIES

Water pipeline installation near sewer lines shall be in accordance with State Department of Health Services, Criteria for the Separation of Water mains and Sanitary Sewers or MSWD criteria, whichever is most restrictive. In general, water pipelines should cross perpendicular to sewer pipelines a minimum of one foot (1') above the sewer. If water pipeline crosses beneath the sewer, it should have a minimum separation of one-foot (1'), have no joints within nine feet (9') feet of each side of the sewer, and shall be constructed of materials per aforementioned criteria. Water pipelines parallel to sewer pipelines shall be located a minimum of ten feet (10') (outside to outside) from the sewer pipeline.

Storm drain crossings shall follow the same guidelines as sewer. When crossing other utilities, a minimum vertical clearance of six-inch (6") shall be provided (outside to outside).

2.07 FEE TITLE PARCELS AND EASEMENTS

Legal documentation for Fee Title Parcels and Easements shall be on MSWD forms and shall consist of three parts: Grant Deed (see section 2.08.01) or Grant of Easement form (see section 2.08.02, legal description, and plat.

The legal description shall be designated as Exhibit "A" and, if appropriate, shall have the assessor's parcel numbers indicated on the upper right corner of the exhibits. The legal description shall include the area of the parcel or easement and shall incorporate Exhibit "B" as a part of the description. The legal description shall be prepared by a California registered civil engineer with a registration number not larger than 33965, or California registered land surveyor and wet signed and stamped by said engineer or surveyor.

The plat shall be designated as Exhibit "B" and signed and stamped by a California registered civil engineer with a registration number less than 33965, or California registered land surveyor.

2.08 FEE TITLE CRITERIA

Water pipelines not located within the public rights-of-way must be in Fee Title parcels or Easements granted to MSWD on MSWD Grant Deed forms.

Fee Title parcels are generally required for Wells, Pumping, or Storage Facilities and will generally be a minimum of 0.5 acres.

Fee Title parcels shall have direct access to a public right-of way or dedicated easement to MSWD with no impediment to district access at any time.

Easements shall have a minimum width of thirty feet (30') unless otherwise authorized by MSWD staff. Easements are generally only used for sewer and water transmission lines.

2.08.01 GRANT DEED FORM

SEE APPENDIX A – GRANT DEED

2.08.02 GRANT OF EASEMENT DEED FORM

SEE APPENDIX B – GRANT OF EASEMENT DEED

2.09 WATER PIPELINE MATERIALS

Unless otherwise authorized by MSWD staff, all water pipelines up to and including forty-eight-inch (48") shall be Class 350 Ductile Iron (D.I.) pipe in accordance with MSWD standard specifications unless conditions dictate the use of CML/CMC welded steel pipe. Then ten (10) Ga. CML/CMC welded steel pipe and fittings shall be used in accordance with MSWD standard specifications.

Main sizes of eight-inch (8"), twelve-inch (12"), eighteen-inch (18"), twenty-four inch (24"), thirty-inch (30"), or forty-eight inch (48") shall be used in all new designs unless otherwise approved by the District.

2.10 VALVES

LOCATION:

1. Large water pipelines (greater than twelve-inch (12") diameter): To be determined for each system to meet operational requirements.
2. Small water pipelines (eight-inch (8") & twelve-inch (12") diameter): To provide flexibility of operation, generally located on discharge side of pipeline connections; three (3) at crosses, two (2) at tees and at beginning of dead-end mains.
3. If one of the options above does not apply, valves shall be spaced at 660-foot maximum intervals or as directed by MSWD.

SIZE:

1. Full line size gate valves through twelve-inch (12"). For larger than twelve-inch (12"), use full line size butterfly valves.
2. Unless otherwise approved by MSWD staff, all valves, four-inch (4") through twelve-inch (12"), shall be ductile iron body resilient seat gate valves in accordance with MSWD standards, as listed in the MSWD Approved Material List.
3. Valves larger than twelve-inch (12") shall be ductile iron body, rubber seated butterfly valve in accordance with MSWD specifications Approved Material List.
4. Valves shall be installed with valve can and cover as shown on MSWD Standard Drawings. Pressure class rating shall be the same as the water pipe on which the valve is being installed.

2.11 COMBINATION AIR VACUUM AND AIR RELEASE VALVES

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Air valves shall be located at all high points of water pipelines where trapped air could exceed one pipe diameter of main; however, air valves shall not be installed at the end of cul-de-sacs where water services are installed unless the slope of the water pipeline is 5% or greater. Minimum size of air valves shall be one inch (1") and shall be sized as follows:

Pipeline Diameter (in.)	Air Valve Size (in.)
8" & 12"	1"
18" & 24"	2"
30"	4"
>30"	Consult with MSWD

In phased tract development, air valves are often located at the end of the pipeline as dictated by the phasing plan. When additional phases are constructed, the air valve shall be removed unless it is required by creation of a high point with the new phase.

Provide four-inch (4") guard posts on either side of air valves that are not installed behind straight face curbs per MSWD Standard Drawings and paint all above ground material with two (2) coats approved paint per MSWD Standards (see approved Material List).

2.12 BLOW-OFF VALVE ASSEMBLIES

Blow-off valve assemblies shall be in accordance with MSWD Standard Drawings and shall be located behind the curb face at right angles to the water pipeline or as approved by MSWD staff. Blow-off assemblies shall be located at all low points of the pipeline and at all dead-ends or terminal points. Fire hydrants may be used as blow-offs. Where possible, isolated low points shall be located at fire hydrant tees to minimize the number of required blow-off assemblies.

Minimum size of blow-off assemblies shall be two-inch (2") for eight-inch (8") and twelve-inch (12") mains and for larger mains six-inch (6") fire hydrants shall be used as blow-offs per MSWD standard drawings.

2.13 FIRE HYDRANTS

Design per requirements of the fire protection agency having jurisdiction (Riverside County or applicable City). Developer's engineer shall obtain hydrant location and spacing information from the governing fire protection agency. Fire hydrants shall be in accordance with MSWD Standard Drawings, installed behind the curb face or sidewalk at right angles to the water pipeline. Minimum fire hydrant spacing shall be 350 feet between fire hydrants in any new development unless fire protection agency specified distances are less.

2.14 SERVICE INSTALLATIONS

Services shall be in accordance with MSWD Standard Drawings unless otherwise approved in writing by MSWD staff and shall be supplied from a MSWD water main. Private domestic water systems serving more than one building will not be allowed without specific approval in writing by the MSWD engineer. All domestic or landscape service installations larger than two-inch (2") will require approval by MSWD staff in writing. Domestic water services for commercial services shall be two inches (2") minimum and will be bushed down to the required meter size if smaller. This is required to facilitate future use changes that would require a larger meter.

Saddle connections are only allowable for services two-inches (2") in diameter and smaller. Tees and gate valves or approved hot tap assemblies will be required for larger connections.

2.15 CORROSIVE SOIL

Where pipelines are to be constructed in known or likely to be corrosive soil conditions, corrosion test stations shall be provided for steel pipe at locations determined by MSWD staff. If required, developer will install sacrificial anodes, etc. utilizing MSWD approved materials.

2.16 LARGE COMMERCIAL OR MULTI-FAMILY SYSTEMS

Minimum water main size for new commercial or industrial developments shall be twelve-inch (12"). Large commercial or multi-family developments consisting of multiple buildings within a private development shall provide Fee Title easements or dedicated right-of-way in favor of MSWD for all public water and sewer systems. The minimum easement width for water systems only shall be thirty feet (30') and shall be designed so that proposed meter locations fall within the easement, outside of any traveled way in islands or planting areas. Easements for both water and sewer systems shall be a minimum of thirty-one feet (31') in width with eleven feet (11') separation between domestic water and sewer lines. Domestic water lines shall be constructed using ductile iron pipe per MSWD standards and specifications. Free access shall be available for District crews at any time.

2.17 PRIVATE FIRE LINES

Private fire lines shall be isolated from the MSWD system by installation of a Double Check Detector Assembly per MSWD Standard Drawings. Private fire systems will be subject to approval and inspection by the appropriate City or Riverside County Engineering and Fire Departments. When private fire lines serve fire systems in more than one building, each building shall be separated from the main fire line by a position indicator valve and check valve per Fire Department specifications in such manner as required to prevent fire line failure due to failure of any separate building system. No private lines shall cross any parcel lines to serve a separate property.

2.18 PRESSURE REDUCING STATION

Pressure Reducing Stations shall be placed per MSWD staff direction when required. Pressure Reducing Stations, including various types of control valves, pressure relief valves, and other unique valves shall be individually designed specifically for each installation utilizing MSWD Standards. Design shall be subject to MSWD staff review and approval.

2.19 BACKFLOW PREVENTION

Where the MSWD domestic water system has the potential of becoming cross-connected to other water supplies or sources, an approved backflow prevention device is required by Title 17, Drinking Water Supplies, of the California Administrative Code, and shall be installed in accordance with MSWD Standard Drawings and Approved Materials List. A certified backflow technician approved by or provided by MSWD shall test the backflow device and submit the report for final approval by MSWD staff prior to use of the service. An approved backflow prevention device is required for any fire service connection except for Classes 1 and 2 fire protection systems. For further information, see the MSWD Ordinance. 97-1 section 8 Fire Services and 9 Cross Connection. All non-residential water services shall have a MSWD approved backflow prevention device installed adjacent to the meter unless otherwise approved by MSWD.

2.20 BEDDING AND BACKFILL

Pipe bedding shall be chosen and placed in accordance with MSWD Standard Drawings. Prior to placing backfill, all pipe shall be “shaded” at least twelve inches (12”) over the pipe with sufficiently granular material having a sand equivalent of at least 30 and free of any rock. Backfill placed at over three feet (3’) below finished grade shall be compacted to a minimum density of 90% maximum dry density per ASTM D1557-02; the upper three feet (3’) of backfill shall be compacted to a minimum density of 95% maximum dry density, per ASTM D1557-02, or to meet the requirements of a relevant local agency, if those standards are more rigorous.

2.21 CONCRETE THRUST BLOCKS AND RESTRAINED JOINTS

Concrete thrust blocks and restrained joints shall be installed in accordance with MSWD Std. Dwg. W-08A thru W-08C.

Beginning and ending stations for restrained joints shall be shown on the profile view of all water lines. Restrained joints shall be required whether or not shown on the plans.

2.22 WATER METER SIZING REQUIREMENTS

Meters and services shall be installed in accordance with MSWD Std. Dwg. W-09, W-09A, W-16 & W-16A, or W-17 & W-17A.

1. Commercial services shall all be two-inch (2”) with meters sized for actual fixture counts for maximum demand as supplied by a Licensed Engineer. All commercial meters will be required to provide meter size backflow prevention in accordance Section 2.19.
2. Dedicated irrigation meters shall be sized in accordance with the approved landscape plans and water budget calculations in accordance with Section 1.06. All irrigation meters will be required to provide meter size backflow prevention in accordance Section 2.19.
3. Residential meters shall be sized to provide for 5.0 GPM of domestic flow in addition to the fire sprinkler demands satisfying the requirements of NFPA 13D unless provided with an approved automatic diversion valve. The Developer or Engineer will be required to provide stamped and signed calculations prepared by a Licensed Civil Engineer or

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Licensed Fire Protection design professional showing the required flow and the required pressure at the meter for review and approval by MSWD.

4. Maximum allowable meter flow rates shall be as follows:

Meter Size (in.)	Maximum GPM	Meter Size (in.)	Maximum GPM
3/4"	30 GPM	3"	420 GPM
1"	50 GPM	4"	1100 GPM
1 1/2"	100 GPM	6"	1800 GPM
2"	160 GPM		

3.0 DESIGN CRITERIA FOR SEWER SYSTEM FACILITIES

The following design criteria shall be used for sewer systems to be included in MSWD service areas. Exceptions and deviations from these specifications must be approved in writing from MSWD staff.

3.01 SYSTEM FLOW RATE CRITERIA

Design flow rates shall be in accordance with the following formula:

$$Q \text{ design (GPM)} = \frac{\text{GPD from chart} \times \text{peak factor}}{1440}$$

DESIGN UNIT FLOWS			
LAND USE	UNIT	AV. DAILY FLOW	PEAK FACTOR
Residential	GPD/EDU	200	2.5
Commercial / Industrial	GPD/ACRE	2,000	1.33
Public Uses (excluding schools)	GPD/ACRE	1,000	1.33
Schools	GPD/ACRE	500	2.0

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The above chart is intended as a basic guide and Mission Springs Water District reserves the right to modify the flows on a case-by-case basis for developments.

3.02 SEWER PIPELINE SIZING

Pipeline sizing for gravity pipelines shall be determined on the basis of the design flow rate and incorporating the following criteria at the D/d max.:

Pipe Diameter (in.)	Manning's Roughness Coefficient	D/d Max.
8" to 12"	0.013	0.50
15" or greater	0.013	0.75

Required velocities at design flow (Q) shall be as follows:

	Minimum	Desired	Maximum
Sewer Pipelines	2 fps	3 fps	10 fps
Force Pipelines	3 fps		5 fps
Inverted Siphons	3 fps		5 fps

The maximum velocity at design flow allowed in any sewer pipeline is 10 fps.

Also see Section 3.07 Pipe Slope.

Do not increase sewer sizes in flat topography merely to justify use of flatter grades. Under minimal flow conditions, wastewater in larger pipelines can have velocities lower than that in smaller pipelines.

Head losses for force mains shall be approximately five (5) feet per one thousand (1,000) feet of force main. The developer's engineer shall evaluate the need for odor control facilities for all force mains.

3.03 SYSTEM ANALYSIS

Each sewer main in the proposed sewer system shall be analyzed for peak flow plus infiltration.

3.04 LOCATION

All locations shall be approved by MSWD staff prior to preparation of plans and sewer pipelines shall generally be located on the southerly or westerly side of the street, 6 feet from street centerline. Location shall not interfere with other existing utilities.

Horizontal curves are allowed on all pipe sizes eight-inch (8") and larger where necessary to maintain the required clearance from water pipelines and other utilities on curved streets. The minimum curve radius for sewers shall conform to the manufacturer's minimum recommendations. MSWD staff shall review, modify, and/or approve all proposed horizontal curved sewer designs.

Also see Section 3.08 Curved sewers

Vertical curves are not permitted within sewer systems except when approved by MSWD staff. Application for exceptions shall be in writing and submitted prior to plan check submittal and include justification.

The minimum depth of cover over the sewer pipeline should be sufficient to sewer adjacent properties. Typical depth from the finish street grade to sewer flow line is eight feet (8'). Adequate depth shall be provided so the sewer laterals will have a minimum cover of five feet (5') at the property line.

If an area is outside the development, but tributary to it, and can be logically served by future extension of a proposed sewer, the sewer pipeline shall extend to the tract boundary or to the end of a paved street in a manner to facilitate the future extension and include any necessary diameter over-sizing and extra depth.

Sewer installation near water pipelines shall be in accordance with State Department of Health Services, Criteria for the Separation of Water Mains and Sanitary Sewers, or MSWD criteria, whichever is most restrictive. In general, sewers should cross perpendicular to water lines a minimum of 1 foot below the water pipeline. Sewer pipelines parallel to water pipelines shall be located a minimum of ten feet (10') (outside to outside) from the water pipeline.

When crossing other utilities, a minimum vertical clearance of six inches (6") shall be provided (outside to outside), unless otherwise approved by MSWD and State Department of Health Services.

Sewer installation shall provide a minimum clearance of fifty feet (50') from all potable, non-potable, and water quality monitoring wells.

3.05 SEWER LATERALS

Sewer laterals shall have a minimum diameter of four-inch (4") for residential use up to four (4) units. Six-inch (6") diameter laterals are required for all commercial projects or residential use of four (4) or more units. Laterals shall have a minimum slope of 2% from sewer to property line and shall have a minimum cover of five feet (5') at the property line. Engineered laterals at 1% slope may be allowed with prior written approval of the MSWD engineer.

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3.06 MATERIALS AND INSTALLATION

Unless otherwise authorized by MSWD, all sewers and laterals shall be extra strength vitrified clay pipe (VCP) in accordance with MSWD Standards. All force mains shall be ductile iron pipe, conforming to ANSI/AWWA C150, or C900 PVC in accordance with MSWD specifications. All installations are to be as shown in MSWD Standard Drawings.

3.07 PIPE SLOPE

Gravity sewers shall have the following slopes at D/d minimum:

Pipe Dia. (in.)	Preferred Min. Slope (V=3 fps)	Min. Slope (V=2 fps)	Extreme Min. Slope (V=1.5 fps)	Max Slope (V=10 fps)
8"	0.0076	0.0040	0.0020	0.086
10"	0.0060	0.0028	0.0016	0.061
12"	0.0044	0.0020	0.0012	0.049
15"	0.0036	0.0016	0.0008	0.036
18"	0.0024	0.0012	0.0008	0.029
21"	0.0020	0.0010	0.0006	0.024
24"	0.0016	0.0008	0.0004	0.020
27"	0.0016	0.0008	0.0004	0.017
30"	0.0012	0.0006	0.0003	0.015
33"	0.0012	0.0006	0.0003	0.012

Extreme minimum slopes may be used only under special conditions approved by MSWD staff.

3.08 CURVED SEWERS

Curved sewers shall be used to follow street centerline alignments whenever possible. Curves shall be designed to limit deflections at each pipe joint to a maximum of 2.5 degrees for eight-inch (8") through twelve-inch (12") diameter sewer or 1.5 degrees for larger sewers. Manholes shall be placed so that no point of reverse curve and no more than one point of curvature or point of

tangency occurs between any two manholes. Pipe centerline curve data, beginning and end points of all curves shall be shown and stationed.

3.09 MANHOLES

All manholes with a depth less than twelve feet (12') and no sewer over eighteen-inch (18") diameter shall have a diameter of forty-eight inches (48").

All manholes with a depth greater than twelve feet (12') or with any sewer greater than eighteen-inch (18") diameter shall have a diameter of sixty-inches (60"). Manholes with a depth less than six feet (6') shall be constructed as a shallow manhole per MSWD Standard Drawings. All manholes shall be per MSWD Standard Drawings.

Manholes shall be spaced at three hundred-fifty foot (350') maximum intervals for all sewers. In addition, manholes shall be placed at all the following locations: grade breaks, changes in horizontal alignment, changes in sewer diameter, at street intersections, at sewer pipe intersections, at connections with laterals larger than six-inches (6") in diameter, and at the beginning of sewer runs such as a cul-de-sacs. On curvilinear sewers, there shall be no reverse curves between manholes and only one point of curvature or tangency between manholes.

A minimum drop of 0.1 feet for straight runs and bends up to 45° and 0.2 feet for 90° bends shall occur across manholes. Junction manholes shall be designed with the soffits of the intersecting sewer at the same elevation as the soffit of the upstream sewer. Where slopes of sewers in and out of manhole create a larger drop than the minimum then that shall be used through the manhole.

Clean-outs shall require prior MSWD approval and may be installed at the permanent end of a sewer pipeline if the distance from a manhole is less than one hundred seventy-five feet (175') and there are less than four (4) lateral connections.

Marker posts shall be required if manholes or clean-outs are to be installed outside of paved areas.

3.10 DROP MANHOLES

Drop manholes shall not be used without prior approval by MSWD staff.

3.11 LIFT STATIONS AND INVERTED SIPHONS

Lift stations, inverted siphons or nonstandard construction should be avoided whenever possible. In situations requiring such installations, facilities shall be designed by MSWD staff, a MSWD retained consultant, or the developer's engineer and reviewed and approved by MSWD staff. MSWD staff should be consulted in the early planning stages to assess the need for such installations and to develop the site-specific design criteria.

3.12 BACKWATER OVERFLOW VALVES

Backwater overflow valves shall be required wherever structures served by sewer laterals are subject to flooding in the event a sewer main stoppage causes the upstream manhole to overflow. Residences with slab elevations lower than street elevation and/or lower than the rim of the upstream manhole shall have backwater overflow valves installed according to MSWD Standard Drawings and plumbing code.

Backwater overflow valves will not be required wherever intermediate manholes can be economically placed to preclude the need for backwater valves (such spacing to be not less than one hundred twenty feet (120')). Ordinarily, one additional manhole can be economically justified if four backwater overflow valves can be eliminated.

Backwater overflow valves will be in accordance with MSWD standard drawings and installed at the shallowest location allowing for future inspection and maintenance. Backwater valve installations shall include provision for maintenance access.

The design engineer shall show all backwater overflow valves and their locations for installations on private property. These valves shall be indicated on both the location map (cover sheet) and the plan and profile sheets.

3.13 BEDDING AND BACKFILL

Pipe bedding shall be chosen and placed in accordance with MSWD standard drawings.

All pipes shall be "shaded" prior to placing backfill with sufficiently granular material having a sand equivalent of at least 30 for a minimum thickness of twelve-inch (12") over the pipe.

Backfill placed three feet (3') below finished grade and shall be compacted to at least 90% maximum dry density, per ASTM D1557-02; the upper three feet (3') of backfill shall be compacted to at least 95% maximum dry density, per ASTM D1557-02, or to meet requirements of local agency, whichever is more stringent.

3.14 GREASE INTERCEPTORS

Waste lines leading from sinks, drains, and other fixtures or equipment in establishments such as restaurants, cafes, lunch counters, cafeterias, bars and clubs, hotels, hospitals, sanitariums, factory and school kitchens or other establishments where grease may be introduced into the system shall be provided with a grease interceptor per MSWD Standards and Specifications, and ordinances. Waste lines leading from car washes or other facilities with the potential of discharging sands and oils shall be connected to a sand/oil interceptor per MSWD Standards and Specifications, and ordinances.

Required interceptors shall be placed on private property and shall be maintained in perpetuity by the property owner or their designated agent.

MSWD shall determine the initial minimum pumping, sampling, and inspection frequency for each interceptor. MSWD maintains the right of entry for the purpose of inspection of any interceptor.

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Design of the interceptors shall be shown on the plans submitted to MSWD for review and approval by MSWD staff.

3.15 FEE TITLE CRITERIA

Sewers not located within public rights-of-way must be located in Fee Title parcels or easements granted to MSWD on MSWD forms. Fee Title parcels or easements shall have the following minimum widths:

Sewer Flow Line Depth (Ft)	Minimum Width of Fee Title Parcel (ft)
10' and less	30'
11'-15'	35'
16'-20'	45'
21'-25'	50'

4.0 PLAN FORMAT AND REQUIREMENTS - WATER AND SEWER

The developer’s engineer shall prepare system improvement plans that are clear, concise, and meet MSWD standards. A set of plans that meets all the requirements set forth herein, but are difficult to interpret, likely to mislead a contractor, confuse the reader, or do not address previous plan check comments, are unacceptable and will be subject to rejection by MSWD staff without detailed review.

4.01 SHEET FORMAT – GENERAL

Please visit our website at www.mswd.org for the current Improvement Plan Title Block.

The improvement plans shall be of professional quality specifically prepared as WATER IMPROVEMENT PLANS, SEWER IMPROVEMENT PLANS or WATER AND SEWER IMPROVEMENT PLANS (for point of connection only). Work shall be of standard engineering practice and shall be well arranged, neat, and legible and present the proposed construction without confusion. Applicable prints submitted for checking shall also be clear, bright duplications. Water and sewer designs shall be shown on separate drawings. In some cases where no mainline construction is required, sewer and water improvements may be placed on the same drawing without profiles unless specifically required by MSWD staff. Drawings shall show both plan and profile of the facilities. The profile shall be shown on gridline background and shown vertically above the plan.

All drawings shall be drawn to scale using 1”=40’ horizontal scale, and 1”=4’ vertical scale. Scale bars shall be provided. Match lines and continuations from sheet to sheet shall be used and identified with applicable station points and cross-reference. Always indicate true north with a suitable north arrow. Indicate tract number and sheet number on all drawings. Each sheet shall have a title block with tract number, street name and stations appearing on that sheet. North is to be placed so that stationing runs from left to right wherever practical. Alternate positioning shall

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be approved by MSWD staff. (Orientation of North as “up” or to the “right” may not always be meaningful.)

For special assemblies, and unusual and/or complex connections, provide a detailed schematic plan, (preferably on the same sheet). The detailed schematic plan shall be drawn to scale, show pipe size, and shall fully identify all the parts in the detail. Show and call out all special features and indicate scale.

The engineer shall note on the plans all connections to existing water and sewer facilities and shall note who is to construct them. Contractors are not authorized to make connections to existing water facilities, unless approved by MSWD staff and performed under direct MSWD inspection. Contractors shall not operate any valve on any portion of MSWD system that is under pressure unless specifically directed by MSWD staff or inspector.

4.02 COVER SHEET

As a minimum, the Cover Sheet shall show the following:

1. General Notes (Section 4.06 for Water Drawings and Section 4.07 for Sewer Drawings). No changes or additions to said notes shall be allowed.
2. Legend with Standard MSWD Symbols (Std. Dwg. D-02).
3. Numbered Construction Notes with Estimate of Quantities (Std. Dwg. D-03).
4. Fire flow certification block for water plans.
5. Sheet Index
6. Vicinity and Location Map
 - a) Scale
 - b) North Arrow
 - c) Street Names
 - d) Section, Township, and Range
7. Signature Blocks for Approval (Std. Dwg. D-04)

4.03 INDEX MAP

Index map may be placed on the title sheet if all required information can be clearly shown. Otherwise index map shall be shown on the following sheet or sheets.

As a minimum, the Index Map shall show the following:

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1. Scale (1" = 100' or 1" = 200') and Graphic Scale Bar.
2. North Arrow (up, MSWD staff approval not required)
3. California Zone 6 State Plane Coordinates – Coordinates shall be shown for two field identifiable points for location purposes. Points shall be spaced as far apart as reasonable for the development.
4. The entire land division showing proposed tract layout with street names and lot numbers, last lot number shall be circled.
5. For water pipeline construction drawings, the following shall be shown under label of index map:
 - a) Pressure Zone _____
 - b) Highest Pad Elevation _____
 - c) Lowest Pad Elevation _____
6. Proposed water pipelines identified by diameter and materials
7. Proposed sewers identified by diameter and materials
8. Proposed water pipeline appurtenances:
 - a) Fire hydrants
 - b) Tees, crosses
 - c) Valves
9. Proposed sewer appurtenances
 - a) Manholes
 - b) Backwater valves
10. Sheet numbers corresponding to plan and profile sheets

4.04 PLAN AND PROFILE FORMAT

The plan/profile sheets shall be drawn at a horizontal scale of 1"=40' and a vertical scale of 1"=4'. A vertical scale of 1" = 8' is permissible only if approved in writing by MSWD staff prior to preparation of the construction drawings. As a minimum, the drawings shall show the following:

4.04.01 PLAN FORMAT REQUIREMENTS

1. Title Block - Title block shall include tract Number, street name, and stations. Current MSWD CAD files can be downloaded from the [MSWD Water and Sewer CAD Toolbox](#).
2. North Arrow - North is to be placed so that stationing runs from left to right when practical, review special conditions with MSWD staff.
3. Graphic Scale – A graphic scale bar shall be placed on each sheet showing the horizontal scale.
4. Numbered Construction Notes – A table showing numbered construction notes shall be included on each sheet conforming to the numbers used in the table on the cover sheet. Only items in use on the current sheet shall be shown (see Std. Dwg. D-03).
5. Street Names - All street names shall be shown.
6. Lot Lines - All lot lines and parcel lines shall be shown. All lots shall be numbered or labeled. All adjacent tracts shall be identified.
7. Right-of-Way - Existing and proposed right-of-way shall be identified with dimensions for same shown.
8. Curbs - Existing and/or proposed curbs shall be identified with dimensions from street centerline shown.
9. Fee Title Parcels - Existing or proposed Fee Title parcels shall be identified with dimensions for same shown.
10. Utilities - All existing and proposed utilities shall be shown including, but not be limited to, water (existing MSWD water pipelines shall be identified by MSWD Plan No.), sewer (existing MSWD sewer pipelines shall be identified by MSWD Plan No.), gas, power, telephone, storm drain, irrigation, traffic, and cable television. Each utility shall be identified with a symbol and the size of the utility shall be shown.
11. Existing and Proposed Improvements - All existing surface improvements shall be shown including, but not limited to, curb and gutter, edge of pavement, power poles, driveways, sidewalks, and fences.
12. Proposed Pipeline - Proposed pipeline shall be indicated with a heavy solid line. For water pipelines, dimensions from street centerline to centerline of water pipeline and from centerline of water pipeline to existing or proposed curb shall be shown. For sewers, dimensions from street centerline to centerline of sewer shall be shown. For both water and sewer, dimensions between water and sewer lines shall be shown.
13. Stationing - For water pipelines, stationing shall be along the centerline of pipe in the direction of any sewer on the same street or easement. For sewers, stationing shall be along the centerline of the sewers increasing upstream. Unless otherwise specified,

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stationing shall increase from left to right. Stationing shall be identified with tick marks at fifty-foot (50') intervals and labels at one hundred-foot (100') intervals. This shall apply for projects with water and sewer improvements are proposed.

For water pipelines and/or sewers with curves, stations for the beginning and end of each curve shall be shown. In addition, a curve data table shall be included showing the delta, curve radius, curve length, and tangent length for each curve. No more than one point of curvature will be allowed between two manholes and no reverse curves shall be allowed between manholes.

14. Matchlines – Matchlines for each end of the sheet shall be shown as follows:

STA 15+00.00 Match Line

See Sheet 5

15. Water pipelines - Water pipelines and appurtenances (valves, fittings, thrust blocks, fire hydrants, air valves, water services, and blow-offs) shall be identified by numerical identification and construction notes with the following sample format:

- a) 8" Class 350 D.I. Water Main.
- b) 1" Domestic Water Service per MSWD Std. Dwg. No. W-09.
- c) 4" Blow-off Assembly per MSWD Std. Dwg. No. W-04.

All water pipeline appurtenances, including services, valves, tees, crosses, elbows, plugs, thrust blocks, fire hydrants, air valves, and blow-offs, shall be identified by Station and a numerical identification.

All connections to existing water system shall be identified by station and size. Details for connections shall be used where required. Each connection shall have the following note, "Connection by contractor to be performed under direct MSWD inspection".

Only those construction notes that apply to each sheet shall be shown in the construction note legend on that sheet.

16. Sewers - Sewers and appurtenances (sewer laterals, manholes, and backwater valves) shall be identified by numerical identification and construction notes with the following sample format:

1. 8" VCP sewer.
2. 48" Dia. Sewer Manhole per MSWD Std. Dwg. No. S-05.
3. 4" Sewer Lateral per MSWD Std. Dwg. No. S-08.

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All sewer appurtenances, including laterals, shall be identified by station and a numerical identification.

Only those construction notes that apply to each sheet shall be shown in the construction note legend on that sheet.

All connections to existing sewer system shall be identified by station and size. Details for connections shall be used where required. Each connection shall have the following note, "Connection by contractor to be performed under direct MSWD inspection".

4.04.02 PROFILE FORMAT REQUIREMENTS

Only profiles for water and sewer mains shall be shown. All other utility profiles shall not be shown except where crossing over or under (i.e. storm drain, gas, electric, cable, etc.).

1. Stationing - Stations shall be shown along bottom of profile at one hundred-foot (100') intervals. Profile stationing shall line up as closely as possible above plan stationing.
2. Profiles shall be placed above the plan view with stationing aligned as close as possible to remain normal to the plan view below.
3. Elevations - Elevations shall be shown at even five-foot (5') gridlines on both ends of the profile sheet.
4. Existing and Proposed Ground Surface - Existing ground surface or pavement over the proposed pipeline shall be identified as follows:

Existing top of pavement (or ground surface) over centerline of water pipeline (or sewer): Proposed ground surface or pavement over the proposed pipeline shall be identified as follows: proposed top of pavement (or ground surface) over centerline of water pipeline (or sewer). Finished grade and existing grade shall be easily identifiable by different line type.

5. Match lines - Match lines for each end of sheet shall be shown as follows:

STA 15+00.00 Match Line

See Sheet 5

Match lines for sewers shall occur at manholes and manhole, including invert **elevations** in and out, shall be shown on each sheet.

Vertical match lines shall break by an even five (5) or ten (10) foot interval and shall label elevations on each side.

- **WATER PIPELINES:**

Water pipeline identification - Inverts of proposed water pipelines shall be identified as follows:

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- a) Invert ___" (Class ___) DI Water pipeline.
- b) Both the invert and top of water pipelines shall be shown.

Water pipeline Length - At bottom of profile, water pipeline length shall be identified as follows:

- a) _____ L.F. of ___" DI Water pipeline.

Restrained Joints - Locations that require restrained joints shall be identified as follows:

- a) Welded Steel Pipe:
 - 1) Full weld double pass all joints - beginning and end stations shall be shown
- b) Ductile Iron Pipe:
 - 1) Restrained joints - beginning and end stations shall be shown

Stationing and Invert Elevations - Pipeline stationing, flow line elevations and deflection, shall be shown for each grade break as follows:

- | | |
|-----------------------|----------------|
| a) STA 14+00.00 GB | Numerical |
| 1192.35 INV | Identification |
| $\Delta = 1.52^\circ$ | Deflection |

Pipeline stationing and invert elevations shall be shown for each tee, cross, air valve, and blow off as follows:

- | | |
|-----------------|----------------|
| a) STA 12+25.00 | Numerical |
| 1190.00 INV | Identification |

Pipeline stationing shall be shown for all fire hydrants, elbows, BCs, and ECs as follows:

- | | |
|-----------------|----------------|
| a) STA 12+25.00 | Numerical |
| DI Bend or etc. | Identification |

All pipeline stationing and flow line elevations shall be placed below the water pipeline.

Pipeline Slopes - Minimum slopes shall be 0.0020. Pipe slopes shall be shown between all grade breaks to four decimal places (i.e. +0.0076) with + or – for direction of slope with respect to increasing stationing.

Pipe Cover - For eight-inch (8") water pipelines, the pipe cover shall be three feet (3') and for water pipelines twelve-inch (12") and larger, the pipe cover shall be four-feet (4').

Utility Crossings - ALL UTILITY CROSSINGS shall be shown in the profile. Where water pipelines cross over or under utilities with a clearance of two feet (2') or less, the drawings

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shall show the elevations for the top or bottom of the water pipeline and the top or bottom of the utility. All existing crossings shall be noted for field verification.

- **SEWER PIPELINES:**

Sewer Identification - Invert of proposed sewers shall be identified as follows:

- INV ___" VCP Sewer.
- Both the invert and top of sewers shall be shown.

Stationing and Invert Elevation - Sewer stationing and invert elevations shall be shown at inlet and outlet of each sewer manhole as follows:

- | | |
|-----------------|----------------|
| a) STA 12+25.00 | Numerical |
| 1192.35 INV | Identification |
| IN/OUT W | Direction |

A minimum drop of 0.1' shall be shown across each manhole with a horizontal deflection of 45 degrees or less and a 0.2' drop for 45 to 90-degree deflection. In no case shall the drop across any manhole be less than the drop produced by the incoming and outgoing sewer grades.

Manholes - Each manhole shall be identified as follows:

- | | |
|-----------------|----------------|
| a) STA12+25.00 | Numerical |
| Manhole No. ___ | Identification |

Sewer Lengths and Sewer Slopes - Sewer lengths and sewer slopes shall be shown between all manholes as follows:

- | | | |
|---------------|-----------|--------|
| a) S = 0.0050 | 135.00 LF | X" VCP |
|---------------|-----------|--------|

Minimum Cover - The minimum cover shall be seven feet (7') between the top of sewer and existing or proposed ground surface.

Utility Crossing - ALL UTILITY CROSSINGS shall be shown in the profile. Where sewers cross under or over utilities with a clearance of two feet (2') or less, the drawings shall show the elevations for the top or bottom of the sewer and the top or bottom of the utility as applicable. All existing crossings shall be noted for field verification. Where crossing requires special pipe or concrete encasement this shall be shown and labeled in the profile.

4.05 STANDARD APPROVAL AND LEGEND BLOCKS

The following examples of standard information shall appear on all plans submitted to MSWD for approval. If too much information is required for a clear and concise single cover sheet, two separate sheets may be used.

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For Symbol Legend on cover sheet see MSWD Std. Dwg. D-02.

Cover Sheet of system improvement plans for other agencies to be reviewed by MSWD for non-interference compliance shall have the following:

Approved by MISSION SPRINGS WATER DISTRICT for Construction

MSWD GENERAL MANAGER; DATE

The time limit of drawing(s) approval shall be one year from the date of MSWD General Manager signature. If construction has not commenced within that year, MSWD requires re-review of the drawings by MSWD for possible changes in the project piping and in specifications and standards.

4.06 GENERAL CONSTRUCTION NOTES FOR BOTH WATER AND SEWER PLANS

GENERAL CONSTRUCTION NOTES:

(FOR BOTH WATER AND SEWER)

1. ALL CONSTRUCTION UNDER COUNTY, CITY OR CALTRANS JURISDICTION SHALL CONFORM TO ALL PROVISIONS OF THE PROJECT SPECIFICATIONS, SPECIAL CONDITIONS, STANDARD AND CONSTRUCTION DRAWINGS, ALL INCLUSIVE UNDER THIS CONTRACT. IN THE EVENT OF ANY CONFLICT, THE MOST STRINGENT REQUIREMENT SHALL GOVERN.
2. ALL WORK SHALL BE DONE IN STRICT CONFORMANCE WITH THE PROJECT SPECIFICATIONS, STANDARD DRAWINGS AND THE SPECIAL REQUIREMENTS FOR THIS PROJECT.
3. CONSTRUCTION WILL BE DONE ONLY UNDER SIGNED AND APPROVED PLANS. CUT SHEETS SHALL BE PROVIDED TO THE DISTRICT FOR THE REVIEW 24-HOURS PRIOR TO CONSTRUCTION.
4. THE SANITARY SEWER WILL BE INSTALLED BEFORE ANY OTHER UNDERGROUND FACILITIES ARE CONSTRUCTED EXCEPT WHEN OTHER UTILITIES ARE PROPOSED THAT WILL BE DEEPER THAN THE SANITARY SEWERS. INSTALLATION INCLUDES, BUT IS NOT LIMITED TO, STAKING, PIPELINE INSTALLATION, COMPACTION TESTING, AIR TEST, WASH AND VIDEO REVIEWS. AIR TESTS, WASH AND VIDEO WILL BE COMPLETED PRIOR TO INSTALLATION OF DOMESTIC WATER AND SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "GREENBOOK" OR AS DIRECTED BY THE DISTRICT RESIDENT INSPECTOR/REPRESENTATIVE. THE

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DISTRICT RESERVES THE RIGHT TO REQUIRE ADDITIONAL AIR TESTS, WASHES AND VIDEO REVIEWS PRIOR TO FINAL ACCEPTANCE OF FACILITIES.

5. CURBS AND GUTTERS SHALL BE IN PLACE BEFORE ANY DOMESTIC WATER PIPELINES AND APPURTENANCES ARE CONSTRUCTED. FINAL GRADES SHALL BE ESTABLISHED BEFORE THE INSTALLATION OF WATER SERVICES, FIRE HYDRANTS AND APPURTENANCES.
6. DOMESTIC WATER LINES SHALL BE INSTALLED IN ACCORDANCE TO THE DISTRICT STANDARD SPECIFICATIONS, AWWA (AMERICAN WATER WORKS ASSOCIATION) STANDARDS" AND/OR STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION – "GREENBOOK". INSTALLATION INCLUDING BUT IS NOT LIMITED TO STAKING, PIPELINE INSTALLATION, COMPACTION, HYDROSTATIC PRESSURE TEST AND CHLORINATION/DISINFECTION IN ACCORDANCE TO THE AWWA STANDARDS AND THE DISTRICT STANDARD SPECIFICATIONS FOR CONSTRUCTING WATER AND SEWER FACILITIES.
7. REPLACEMENT PAVING (ONSITE & OFFSITE), TRAFFIC CONTROL, RE-STRIPING, SPECIAL TRENCH BACKFILL, BASE REQUIREMENTS, ETC. SHALL BE IN ACCORDANCE WITH THE RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT ENCROACHMENT PERMIT AND/OR THE CITY ENCROACHMENT PERMIT REQUIREMENTS AND AS DETAILED IN THE PROJECT SPECIFICATIONS AT NO ADDITIONAL COST TO THE DISTRICT. THE CONTRACTOR SHALL NOTIFY THE COUNTY AND/OR CITY AT LEAST 48 WORKING HOURS PRIOR TO STARTING CONSTRUCTION. IF THE PROPOSED PIPELINE CROSSES A PAVED STREET AT OTHER THAN 90 DEGREES, THE LIMITS OF PAVEMENT OVERLAY SHALL BE AT RIGHT ANGLES TO THE STREET CENTERLINE AND SHALL ENCOMPASS THE ENTIRE TRENCH PAVING.
8. CONTRACTOR IS RESPONSIBLE FOR EROSION, DUST AND TEMPORARY DRAINAGE CONTROL DURING OPERATIONS AND AFTER WORKING HOURS. THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS IN ORDER TO COMPLY WITH ALL APPLICABLE REGULATIONS.
9. PIPE SHALL BE HANDLED SO AS TO PROTECT PIPE, JOINTS, AND LININGS AND COATINGS. THE PIPE SHALL BE BEDDED CAREFULLY TO PROVIDE CONTINUOUS BEARING AND PREVENT UNEVEN SETTLEMENT; PIPE SHALL BE PROTECTED AGAINST FLOTATION AT ALL TIMES, OPEN ENDS SHALL BE SEALED AT ALL TIMES WHEN CONSTRUCTION IS IN PROGRESS.
10. PIPE JOINTS SHALL NOT BE DEFLECTED AT ANY ANGLE GREATER THAN THE MAXIMUM DEFLECTION RECOMMENDED BY THE PIPE MANUFACTURER.
11. ALL REVISIONS TO THESE DRAWINGS MUST BE APPROVED IN WRITING BY THE MSWD DISTRICT ENGINEER OR DESIGNEE, PRIOR TO ACTUAL CONSTRUCTION.
12. TRAFFIC STRIPING AND/OR LANE MARKINGS WHICH ARE OBLITERATED SHALL BE REPLACED IN KIND AS DIRECTED BY THE AGENCY HAVING JURISDICTION.

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13. NO CONSTRUCTION OR INSTALLATION SHALL BE PERMITTED ON FILL MATERIAL WHICH DOES NOT MEET THE COMPACTION REQUIREMENTS DEFINED IN THESE SPECIFICATIONS
14. IN CASE OF ANY ACCIDENTS INVOLVING SAFETY MATTERS COVERED BY SECTION 6409.1(8) OF THE CALIFORNIA LABOR CODE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE STATE DIVISION OF OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.
15. ALL CONTRACTOR(S)/SUBCONTRACTOR(S) PERFORMING WORK ON THIS PROJECT SHALL BE FAMILIAR WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES DIRECTLY OR INDIRECTLY FROM OPERATIONS. SAID EXISTING IMPROVEMENTS SHALL INCLUDE, BUT ARE NOT LIMITED TO, DIRT BERMS, DITCHES, FENCES, MAILBOXES, DRIVEWAYS, SIDEWALKS AND PLANTS/LANDSCAPING. ANY REMOVAL OR DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPLACED OR REPAIRED AT THE CONTRACTOR'S EXPENSE AND SHALL BE APPROVED BY THE DISTRICT.
16. ALL CONTRACTOR(S)/SUBCONTRACTOR(S) SHALL EXAMINE CAREFULLY THE SITE OF THE WORK CONTEMPLATED AS WELL AS THE PLANS AND SPECIFICATIONS. THE SUBMISSION OF A BID SHALL BE CONCLUSIVE EVIDENCE THAT THE CONTRACTOR/SUBCONTRACTOR HAS INVESTIGATED THE PROJECT SITE AND REVIEWED THE PLANS & SPECIFICATIONS AND IS SATISFIED AS TO THE REQUIREMENTS, QUALITY, THE SCOPE OF WORK TO BE PERFORMED AND THE QUANTITIES OF MATERIALS TO BE FURNISHED.
17. ALL EXCESS MATERIAL GENERATED FROM THE PROJECT EXCAVATION AND/OR COMPACTION SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF AT THE CONTRACTOR'S EXPENSE UNLESS OTHERWISE NOTED.
18. ALL EXISTING AND NEW INFRASTRUCTURE (VALVE CANS, MANHOLES, ETC.) MUST BE ACCESSIBLE TO GRADE THROUGHOUT THE ENTIRE COURSE OF CONSTRUCTION.
19. SITE PAVING SHALL NOT BE PLACED UNTIL ALL UNDERGROUND FACILITIES HAVE BEEN INSTALLED, TESTED AND APPROVED BY THE DISTRICT, AND THE LAND USE AGENCY HAVING JURISDICTION.
20. STATIONS SHOWN ARE HORIZONTAL DISTANCES ALONG CENTERLINE OF PIPE, UNLESS OTHERWISE NOTED.
21. CONTRACTOR SHALL SHORE ALL TRENCHES AS REQUIRED AND CONDUCT ALL CONSTRUCTION AND OPERATIONS IN ACCORDANCE WITH CAL-OSHA REQUIREMENTS.
22. CONTRACTOR IS REQUIRED TO CONTACT MSWD INSPECTOR 72 HOURS PRIOR TO START OF CONSTRUCTION. DAILY COMMUNICATION THROUGHOUT THE

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ENTIRE DURATION OF THE PROJECT IS REQUIRED. CONTRACTOR SHALL CALL MISSION SPRINGS WATER DISTRICT'S OFFICE BY 3:00 P.M. FOR THE FOLLOWING DAY'S INSPECTION.

23. APPROVAL BY MSWD IMPLIES NO PERMISSION OTHER THAN THAT WITHIN THE DISTRICT'S JURISDICTION. ALL REQUIRED PERMITS BY LAW, SHALL BE OBTAINED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED IN MSWD PROJECT SPECIFICATIONS.

24. THE MINIMUM DEPTH OF COVER FOR THE VARIOUS UNDERGROUND UTILITIES IS DEPICTED IN THE PROFILE AND GIVEN BELOW. THE DEPTHS ARE BASED UPON AVAILABLE INFORMATION. THE ACCURACY OF THIS INFORMATION; HOWEVER, IS NOT GUARANTEED BY THE DISTRICT OR THE ENGINEER, NO ADDITIONAL COMPENSATION SHALL BE MADE BY THE DISTRICT FOR UTILITIES AT ELEVATIONS DIFFERENT THAN DEPICTED OR GIVEN BELOW:

WATER: 36" TO 48"

TELEPHONE CABLES: 30"

ELECTRICAL CABLES: 30"

CABLE TV. CABLES: 30"

GAS MAINS: 36"

25. THE CONTRACTOR SHALL DETERMINE LOCATION AND DEPTH OF ALL THE EXISTING UNDERGROUND FACILITIES BY POTHOLING PRIOR TO TRENCHING AND/OR EXCAVATION. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE (IN ACCORDANCE WITH THE SPECIFICATIONS, ONLY MAIN LINES ARE SHOWN; NO LATERALS OR SERVICES ARE SHOWN). CONTRACTOR SHALL COORDINATE WITH THE DISTRICT FOR FIELD LOCATION OF SERVICES AND CONTRACTOR SHALL ASSUME THE RESPONSIBILITY FOR PROTECTING ALL EXISTING SERVICES AT NO ADDITIONAL COST TO THE DISTRICT. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/OR ANY OTHER UNDERGROUND UTILITY LINES NOT OF RECORD OR NOT SHOWN ON THE PLANS. THE CONTRACTOR IS REQUIRED TO CALL UNDERGROUND SERVICE ALERT (USA DIG ALERT) AT (811), AT LEAST 2 WORKING DAYS PRIOR TO EXCAVATION.

26. ELEVATIONS SHOWN ON THE PROFILE FOR EXISTING AND/OR PROPOSED UTILITIES AT CROSSING ARE TO THE OUTSIDE OF CONDUIT (TOP & BOTTOM), UNLESS OTHERWISE INDICATED.

27. CONTRACTOR IS RESPONSIBLE FOR KEEPING-UP-TO-DATE RECORD DRAWINGS (RED-LINES) OF ANY CHANGES TO THE PLANS DURING CONSTRUCTION.

28. CONTRACTOR SHALL PROVIDE AN ACCURATE AND LEGIBLE COPY OF THE "RECORD DRAWING" PLANS TO THE DISTRICT AND THE DISTRICT WILL SEND

THESE TO THE ENGINEER AFTER APPROVAL. THE ENGINEER WILL SUPPLY THE DISTRICT WITH A COPY OF "RECORD DRAWING" MYLAR PLANS, ALONG WITH AN ELECTRONIC FILE (PDF & AUTOCAD FORMAT) AT NO ADDITIONAL COST TO THE DISTRICT.

29. THE DISTRICT RESERVES THE RIGHT TO MAKE ANY MODIFICATION TO THE PLANS DURING CONSTRUCTION AS NECESSARY AT NO ADDITIONAL COST TO THE DISTRICT.

4.07 UTILITY NOTIFICATIONS FOR BOTH WATER AND SEWER PLANS

NOTIFICATIONS:

THE CONTRACTOR IS REQUIRED TO NOTIFY THE EXISTING ORGANIZATIONS IN THE AREA BEFORE THE START OF ANY WORK. THE UTILITIES IN THE AREA ARE:

WATER/SEWER:

MISSION SPRINGS WATER DISTRICT (760) 329-6448

COUNTY ROADS:

RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT (760) 863-8267

CITY STREETS:

CITY OF DESERT HOT SPRINGS (760) 329-6411

CITY OF PALM SPRINGS (760) 323-8253

ELECTRICITY:

SOUTHERN CALIFORNIA EDISON (800) 655-4555

GAS:

SOUTHERN CALIFORNIA GAS (800) 427-2200

TELEPHONE:

FRONTIER (855) 988-0048

CABLE:

SPECTRUM (800) 892-2253

FLOOD CONTROL:

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RIVERSIDE COUNTY FLOOD CONTROL AND WATER
CONSERVATION DISTRICT

(951) 955-1200

UNDERGROUND UTILITIES:

UNDERGROUND SERVICE ALERT

(811)

4.08 GENERAL NOTES FOR WATER PIPELINES

WATER CONSTRUCTION NOTES:

1. ALL PIPELINES LESS THAN 12" DIA. SHALL BE INSTALLED WITH A MINIMUM OF 36" COVER TO FINISH GRADE OVER THE PIPE AND ALL PIPELINES 12" DIA. OR GREATER, SHALL HAVE A MINIMUM OF 48" COVER, UNLESS OTHERWISE SPECIFIED.
2. UNLESS OTHERWISE SHOWN ON THE PLANS OR SPECIFIED, PROPOSED WATER LINES SHALL BE: CLASS 350 DUCTILE IRON PIPE.
3. ALL WATER TIE-INS OR POINTS OF CONNECTION TO AN EXISTING SYSTEM SHALL HAVE A "TEST-PLATE" FOR A PHYSICAL SEPARATION BETWEEN APPROVED AND NON-APPROVED WATER SYSTEMS AT ALL TIMES. PLATE(S) SHALL NOT BE REMOVED UNTIL THE WATER SYSTEM HAS PASSED BACTERIOLOGICAL TESTING AND INSTRUCTION HAS BEEN GIVEN BY THE MSWD INSPECTOR.
4. HYDROSTATIC PRESSURE TESTING SHALL BE IN ACCORDANCE WITH AWWA C600-05 SPECIFICATIONS. NO VISIBLE LEAKAGE SHALL BE PERMITTED AND TEST DURATION IS A MINIMUM OF 4 HOURS. THE DISTRICT INSPECTOR SHALL BE NOTIFIED 48 HOURS PRIOR TO THE TEST DATE AND SHALL BE ON SITE DURING THE PRESSURE TEST. THE CONTRACTOR/SUBCONTRACTOR SHALL CONDUCT ALL PRESSURE AND LEAK TESTING USING CONTRACTOR PROVIDED PRESSURE GAUGES AND EQUIPMENT. TIME SPENT BY DISTRICT INSPECTOR INSPECTING ANY REQUIRED RETESTS (MSWD RATE INCLUDES OVERHEAD) SHALL BE AT THE CONTRACTOR'S EXPENSE.
5. ALL WATER LINES AND APPURTENANCES SHALL BE SUPER CHLORINATED/DISINFECTED AT AN INITIAL DOSAGE OF 100-PPM (PARTS PER MILLION) MINIMUM BY MEANS OF LIQUID SODIUM HYPOCHLORITE (APPROVED FOR POTABLE WATER USE) OR BY CHLORINE GAS. INITIAL DISINFECTION SHALL BE HELD FOR A MINIMUM PERIOD OF 24 HOURS AND A MAXIMUM 48 HOURS CONTACT TIME. AFTER INITIAL CONTACT TIME PERIOD, A MINIMUM OF 50 PPM (PARTS PER MILLION) CHLORINE RESIDUAL MUST BE MAINTAINED THROUGH OUT THE ENTIRE WATERLINE AND APPURTENANCES IN ORDER TO FLUSH SYSTEM. IF 50 PPM IS NOT MAINTAINED THE ENTIRE WATER LINE AND APPURTENANCES MUST BE RE-DISINFECTED TO 100 PPM MINIMUM AND

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SHALL BE HELD FOR AN ADDITIONAL 24 HOURS BEFORE FLUSHING THE SYSTEM.

- 6. THE SPECIFIED DISINFECTION OF THE PIPELINES MAY NOT BE PERFORMED CONCURRENT WITH THE HYDROSTATIC TESTING.
- 7. THE PIPELINE SHALL BE FILLED AT A RATE SUCH THAT THE AVERAGE VELOCITY OF FLOW IS NOT GREATER THAN TWO FEET PER SECOND. THE FOLLOWING TABLE GIVES FILLING RATES TO PROVIDE 2 FEET PER SECOND VELOCITY FOR VARIOUS PIPE DIAMETERS.

NOMINAL PIPE SIZE (INCHES)	FILLING RATES TO ACHIEVE VELOCITY OF 2 FPS (GPM)
4	80
6	180
8	320
10	490
12	700
16	1250
18	1580
20	1960
24	2820
30	4400

- 8. FLUSHING OF WATER LINES SHOULD BE CONDUCTED UNTIL THE CHLORINE RESIDUALS ARE LESS THAN 1 (ONE) PPM. BACTERIOLOGICAL SAMPLE TESTING WILL BE PERFORMED AFTER 24 HOUR PERIOD.
- 9. THE PIPELINE ALIGNMENT SHOWN ON THE PLANS IS APPROXIMATE AND MAY BE ADJUSTED IF NECESSARY, DUE TO UTILITY CONFLICT (BUT ONLY AS DIRECTED BY THE DISTRICT).
- 10. REFER TO MSWD STANDARD DRAWINGS FOR PLACEMENT OF ALL FIRE HYDRANTS WITH RESPECT TO RIGHTS-OF-WAY, SIDEWALKS AND CURB LINES. FIRE HYDRANTS SHALL BE CONSTRUCTED AT THE STATIONS INDICATED ON THE PLANS, UNLESS OTHERWISE DIRECTED BY THE DISTRICT INSPECTOR. ALL INSTALLATIONS SHALL CONFORM TO MSWD STANDARD DRAWINGS.

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(APPLICABLE TO ALL WATERLINE APPURTENANCES: AIR VALVES, BLOW-OFFS, SERVICES, ETC.).

11. ALL EXISTING ABOVE GROUND APPURTENANCES CONNECTED TO EXISTING WATERLINES WHICH ARE TO BE ABANDONED AS INDICATED ON THE PLANS, SHALL BE REMOVED AND DELIVERED TO THE DISTRICT YARD UPON COMPLETION OF THE NEW FACILITIES. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE CONTRACTOR'S BID AND THE DISTRICT SHALL MAKE NO ADDITIONAL COMPENSATION UNLESS OTHERWISE SPECIFIED.
12. ALL EXISTING WATERLINES AND APPURTENANCES THAT ARE TO BE ABANDONED SHALL REMAIN IN SERVICE UNTIL SUCH TIME THAT NEW WATERLINES AND APPURTENANCES ARE TESTED, DISINFECTED AND APPROVED FOR DOMESTIC USE BY MSWD.
13. STATIONS SHOWN ARE HORIZONTAL DISTANCE ALONG THE CENTERLINE OF PIPE.
14. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF THE EXISTING PIPELINE(S) AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY VARIATION OR DISCREPANCIES FROM PLAN DESIGN.
15. ALL HOT-TAPS OR TIE-INS MUST BE WITNESSED BY MSWD INSPECTOR.
16. ALL HIGH POINTS IN THE PIPE LINE SHALL HAVE AN AIR/VAC INSTALLED PER MSWD STANDARD DRAWINGS.

4.09 GENERAL NOTES FOR SEWER PLANS

SEWER CONSTRUCTION NOTES:

1. STATIONS SHOWN ARE HORIZONTAL DISTANCES ALONG CENTERLINE OF PIPE
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY NOT TO EXCEED THE PIPE MANUFACTURER'S DEFLECTION SPECIFICATIONS. SHORT LENGTH PIPES MAY BE REQUIRED IN SOME CASES.
3. ALL MANHOLE STUB-OUTS SHALL NOT EXCEED 18 INCHES BEYOND MANHOLE BASE. PLUG END WITH REMOVABLE WATERTIGHT CAP AS MANUFACTURED BY PIPE MANUFACTURER.
4. THE LOCATION OF NEW SEWER LATERALS SHALL BE MARKED AS FOLLOWS: STREETS WITH CURBS: A LETTER "S" SHALL BE CHISELED OR PERMANENTLY MARKED ON THE CURB AT THE LOCATION OF THE SEWER LATERAL; AND AN APPROPRIATE MID-RANGE OR FULL RANGE MAGNETIC MARKER MANUFACTURED BY 3M ELECTRICAL PRODUCTS DIVISION, SCOTCH MARK

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MARKER LOCATOR (EMS) SHALL BE PLACED ONE FOOT BELOW THE FINISHED GROUND SURFACE DIRECTLY ABOVE THE TERMINUS OF THE LATERAL. IF FINISH GRADE IS UNKNOWN, THE MARKER SHALL BE INSTALLED TWO FEET BELOW THE ASSUMED FINISHED GROUND SURFACE.

5. ALL SEWER LATERALS TO BE 4" OR 6" IN DIAMETER PER MSWD STANDARD DRAWINGS. LOCATIONS SHALL BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION. SEE SPECIFICATIONS FOR DETAILS.
6. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO SUPPORT AND PROTECT IN PLACE ALL EXISTING UTILITIES PARALLEL AND/OR PERPENDICULAR TO THE PROPOSED SEWER LINE. EXISTING UTILITIES SHALL REMAIN IN OPERATION AT ALL TIMES UNLESS APPROVED IN WRITING BY APPROPRIATE UTILITY COMPANY.
7. AIR TESTING OF ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION – "GREENBOOK" SECTION 306-1.4.4 "AIR PRESSURE TEST" AND CONDUCTED IN THE PRESENCE OF THE INSPECTOR.
8. ALL SEWER MAIN, LATERAL CONNECTIONS AND MANHOLES MUST BE WASHED AND VIDEOED IN THE PRESENCE OF THE INSPECTOR. THE DISTRICT REQUIRES A VIDEO COPY IN A DVD FORMAT OF THE ENTIRE VIDEO INSPECTION AT NO ADDITIONAL COST TO THE DISTRICT.
9. ALL PRIVATE SEWER SYSTEMS SHALL BE FLUSHED BY THE CONTRACTOR AND DETERMINED TO BE CLEAN BY THE MSWD INSPECTOR PRIOR TO CONNECTION TO DISTRICT FACILITIES.

4.10 WATER PLAN - CHECKLIST

SEE APPENDIX C – WATER PLAN CHECK PROCEDURES

4.11 SEWER PLAN – CHECKLIST

SEE APPENDIX D – SEWER PLAN CHECK PROCEDURES

4.12 WATER AND SEWER PLAN – CHECKLIST

SEE APPENDIX E – WATER AND SEWER PLAN CHECK PROCEDURES

4.13 WATER POINT OF CONNECTION PLAN – CHECKLIST

SEE APPENDIX F – WATER POINT OF CONNECTION PLAN CHECK PROCEDURES

4.14 DIGITAL PLAN SUBMITTAL

MSWD requires the developer's engineer preparing the improvement plans to submit approved plans in AutoCAD Drawing format.

Files shall be e-transmitted or otherwise packaged to include all appropriate font files and CTB or STB required for opening the file for plotting.

1. Software Format

The acceptable format for digital submissions shall be one of the following:

- a) AutoCAD's Release 2020 (.DWG) or an earlier version
- b) Drawing Exchange File (.DXF) subject to district approval

2. Digital Data Media

All digital information shall be submitted to MSWD on one of the following:

- a) DVD
- b) Flash or Thumb Drive (will be retained by MSWD)

The following information must be labeled on all digital data:

- DATE (Date submitted)
- MAP NAME (TR, PM, PP, Etc.)
- MSWD WO#
- COMPANY (engineering Firm Name)

5.0 PRE-CONSTRUCTION AND CONSTRUCTION PROCEDURES

All water and sewer facility projects shall be constructed by developer and inspected by MSWD inspectors. Work performed without the knowledge or the observation of a MSWD inspector will not be accepted. An outline of the required steps to construct water and sewer facilities is set forth in Section 5.01. The steps for the pre-construction and construction procedures are illustrated in a flow chart in Section 5.03.01; and outlined in greater detail in Section 5.02.

5.01 CONSTRUCTION STEPS

1. MSWD Engineering Department sends developer a Fee Letter and Pre-construction Requirements Checklist. See Section 5.03.02.

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2. All required items listed in a pre-construction requirements checklist must be received by MSWD prior to scheduling a pre-construction meeting.
3. Engineering Department notifies developer when all pre-construction requirements have been received.
4. Engineering Department schedules a pre-construction meeting with the developer.
5. MSWD, developer and contractor attend pre-construction meeting.
6. Engineering Department issues a Notice to Proceed.
7. Developer's contractor constructs water and/or sewer system facilities per MSWD specifications.
8. Developer's contractor pressure tests and disinfects water system facilities and leak tests sewer system facilities.
9. MSWD Inspector notifies the Engineering Department when the bacteriological and pressure tests have passed on an extension of pipeline.
10. Inspection deposit must be kept current throughout construction phase.
11. MSWD or Developer's contractor sets meter boxes.
12. Upon approval of meter box installation, the Engineering Department will process the application/request for meter installation. Meter installation can take up to two weeks.
13. Developer's contractor connects to existing water and sewer facilities.
14. MSWD notifies the City or County Fire Department and releases lots for fire protection and construction water.
15. Engineering Department coordinates installation of drop-in meters with MSWD field crew.
16. MSWD installs the meter(s).
17. MSWD releases lots for temporary occupancy to the City or County.
18. MSWD Inspector prepares preliminary final construction punch list items.
19. Developer's contractor completes all punch list items and prepares red line drawings given to MSWD for review and approval.
20. MSWD provides final inspection and acceptance and issues a Notice of Final Inspection.

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21. Notice of Final Inspection is forwarded to Engineering Department.
22. MSWD issues a Notice of Completion (NOC) and/or Bill of Sale.
23. Following the recording of the NOC or Board of Directors acceptance of the Bill of Sale, MSWD reduces the Faithful Performance Bond by 90% and holds a 10% retention for one year, if applicable.
24. MSWD closes project deposit account after the one-year warranty period established by the Bill of Sale and returns any remaining funds to the developer.

5.02 PRE-CONSTRUCTION AND CONSTRUCTION PROCEDURES DETAIL

1. The developer shall pay the following deposits, fees, and charges:
 - a) Engineering and plan check review fees.
 - b) Inspection Deposit – The inspection deposit is submitted with the initial plan check deposit (see 1.05 2). Engineering Department will determine if sufficient funds remain or if an additional deposit is required.
 - c) Meter Fees – Payment is required for each meter. MSWD will install the meters on behalf of the contractor.
 - d) Water Connection Charge – Payment of the distribution system fee is required for all new customers connecting to an existing MSWD water pipeline.
 - e) Back flow preventer assembly charges.
 - f) Sewer connection fees.
2. Submit three copies of water/sewer system construction agreement.

MSWD will prepare the Water/Sewer System Construction Agreement for execution by the developer and contractor. All three copies shall be returned to MSWD and all three copies shall have original signatures for the developer and contractor. A sample agreement is set forth in Sections 5.03.03 and 5.03.04.

3. Submit Two Copies of Participation/Refund Waiver Agreement.

MSWD will prepare the Participation/Refund Waiver Agreement for execution by the developer. Both copies shall be returned to MSWD and both copies shall have original signatures. A sample agreement is set forth in Section 5.03.05.

4. Submit Labor and Materials Bond and Faithful Performance Bond.

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Developer shall provide MSWD with evidence of a labor and materials bond and a faithful performance bond. Each bond shall be in the amount of the total contract price for construction of the water and sewer facilities.

5. Provide contractor's Name, Address, and License Number.

Developer shall provide MSWD with the name, address, and license number for the contractor that will construct the sewer and water system facilities.

6. Provide Certificate of Insurance Naming MSWD as Additional Insured.

Contractor shall provide MSWD with certificate of insurance and original endorsements in accordance with the insurance requirements as specified in the Water/Sewer Construction Agreement.

7. Provide copy of contractor's bid.

Developer shall provide MSWD with a copy of the contractor's bid for the water and sewer system facilities. The bid shall include line item costs of all work as specified on the approved construction drawings.

8. Provide copy of encroachment permit (if working in a public right-of-way).

If the project involves construction within a public right-of-way, developer shall provide MSWD with a copy of the encroachment permit from the public agency. Said permit shall allow the contractor to construct the facilities and shall allow MSWD to operate and maintain the facilities once completed.

9. Provide Letter from Licensed civil engineer that streets have been graded to rough grade.

Developer shall submit a letter from a licensed civil engineer stating that streets have been graded to rough grade (0.2'±). A sample letter is included as Section 5.03.06.

10. Provide Letter from Licensed civil engineer that Curb and Gutters have been constructed or submit a Letter Requesting a Waiver.

11. Developer shall submit a letter from a licensed civil engineer stating that curb and gutters have been constructed. As an alternative, developer may submit a letter requesting a waiver from construction of the curb and gutters prior to construction of the water pipelines. For a sample letter for an installation waiver, see Section 5.03.07.

12. Easements or Fee Title: Developer shall provide MSWD with an executed and notarized easement document or a grant deed, for any easements or Fee Title parcels shown on the water or sewer plans.

13. Soils Report: Developer shall provide MSWD staff with a copy of the soils report prepared for the site.

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14. Recorded Map: Developer shall submit a copy of the recorded map (MSWD requires copy of recorded map prior to recording the Notice of Completion). Dedicated easements will be required if the tract Map is not recorded. MSWD will not record the easement unless it is necessary to own, operate and maintain facilities.
15. Tract Construction phasing Maps: Developer shall submit a tract construction phasing map (8½" X 11" format) showing lot numbers and street names.
16. Schedule a Pre-construction Meeting with MSWD Engineering Department.
17. Developer shall schedule a pre-construction meeting with MSWD Engineering Department after all required fees and line items have been received by Development Services. A one-week notice is required prior to said pre-construction meeting.
18. Attend Pre-construction Meeting. Pre-construction meeting shall be held at MSWD administrative office, or via video conference, and shall be attended by developer's representative, developer's contractor, MSWD Engineering Department, City and County representatives, other utility agencies, as well as by MSWD staff.
19. Provide copies of cut sheets. The contractor shall submit three copies of the construction cut sheets for MSWD use during construction. Water pipelines shall be staked at 50' intervals (if curb and gutters are not installed, stake at 25' intervals) and at all water services, fire hydrants, tees, crosses, elbows, valves, air valves, blow-offs, and grade breaks. Sewers shall be staked at 25' intervals and at all sewer laterals and manholes.
20. MSWD issues notice to proceed. When all the above items are completed to the satisfaction of MSWD, MSWD Engineering Department will issue a notice to proceed for construction of the water and sewer system facilities.
21. Notify MSWD regarding construction start. The contractor shall notify MSWD a minimum of 48 hours prior to construction start.
22. Construct water and sewer system facilities. The water and sewer system facilities shall be constructed by developer's contractor per MSWD specifications and inspected by MSWD inspectors. Inspection requirements are set forth in (Section 5.03.08).
23. Compaction test: The contractor shall furnish evidence that compaction of trenches has been completed to the satisfaction of the County of Riverside, the City of Desert Hot Springs or the City of Palm Springs, as appropriate.
24. Pressure test and disinfect water system facilities and leak test sewer system facilities. After water facilities are completed to the satisfaction of MSWD inspector including all items on inspector's construction deficiencies list, and after compaction of trenches has been completed to the satisfaction of MSWD, the County of Riverside, the City of Desert Hot Springs, or the City of Palm Springs, as appropriate, contractor shall test and disinfect the water facilities in accordance with MSWD standards. Contractor shall video

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inspect all welded steel water pipelines twelve-inch (12") or larger prior to testing and disinfection.

25. After sewer facilities are completed to the satisfaction of MSWD inspector including all items on inspector's construction deficiencies list, and after contractor furnishes evidence that compaction of trenches has been completed to the satisfaction of MSWD, the County of Riverside, the City of Desert Hot Springs or the City of Palm Springs, as appropriate, contractor shall test the sewer facilities in accordance with MSWD standards. Contractor shall video inspect all sewer pipelines.
26. Landscape meters: The developer will install the landscape lateral, meter box and backflow device but not the meter. MSWD will install the meter after all meter fees have been paid. Meters will be locked off until backflow device has been installed, tested and certified by MSWD.
27. After the water system is tested and disinfected, contractor may connect water facilities to existing water facilities. Contractor shall provide MSWD with two weeks written notification requesting a system shutdown to make connections to existing MSWD facilities. After all sewer connection fees have been paid, and the sewer system is tested, contractor may connect sewer facilities to existing sewer facilities. Contractor shall perform all connections with continuous inspection by MSWD. Thereafter, MSWD will release lots for fire protection and construction water.
28. Developer will install meter boxes. MSWD Engineering Department provides work orders to MSWD Operations Department to schedule meter installation. When meters have been installed, the Engineering Department will release lots for occupancy and will provide notices to the County of Riverside, the City of Desert Hot Springs, and the City of Palm Springs, as appropriate.
29. After construction of the water and sewer system facilities for the entire tract, MSWD inspector will prepare a preliminary final construction punch list and deliver copies to contractor.
30. The contractor shall complete all items listed on MSWD preliminary final construction punch list.
31. The contractor shall provide MSWD inspector with accurate record drawings.
32. When the water system and sewer system facilities have been accepted by MSWD, MSWD will issue a Notice of Final Inspection stating that the final inspection has been made and the construction is complete.
33. MSWD prepares a notice of completion and/or Bill of Sale for the water and sewer system facilities to the Board of Directors for acceptance.
34. When the developer executes the Notice of Completion and/or Bill of Sale, developer shall return the documents to MSWD. When MSWD has received the executed

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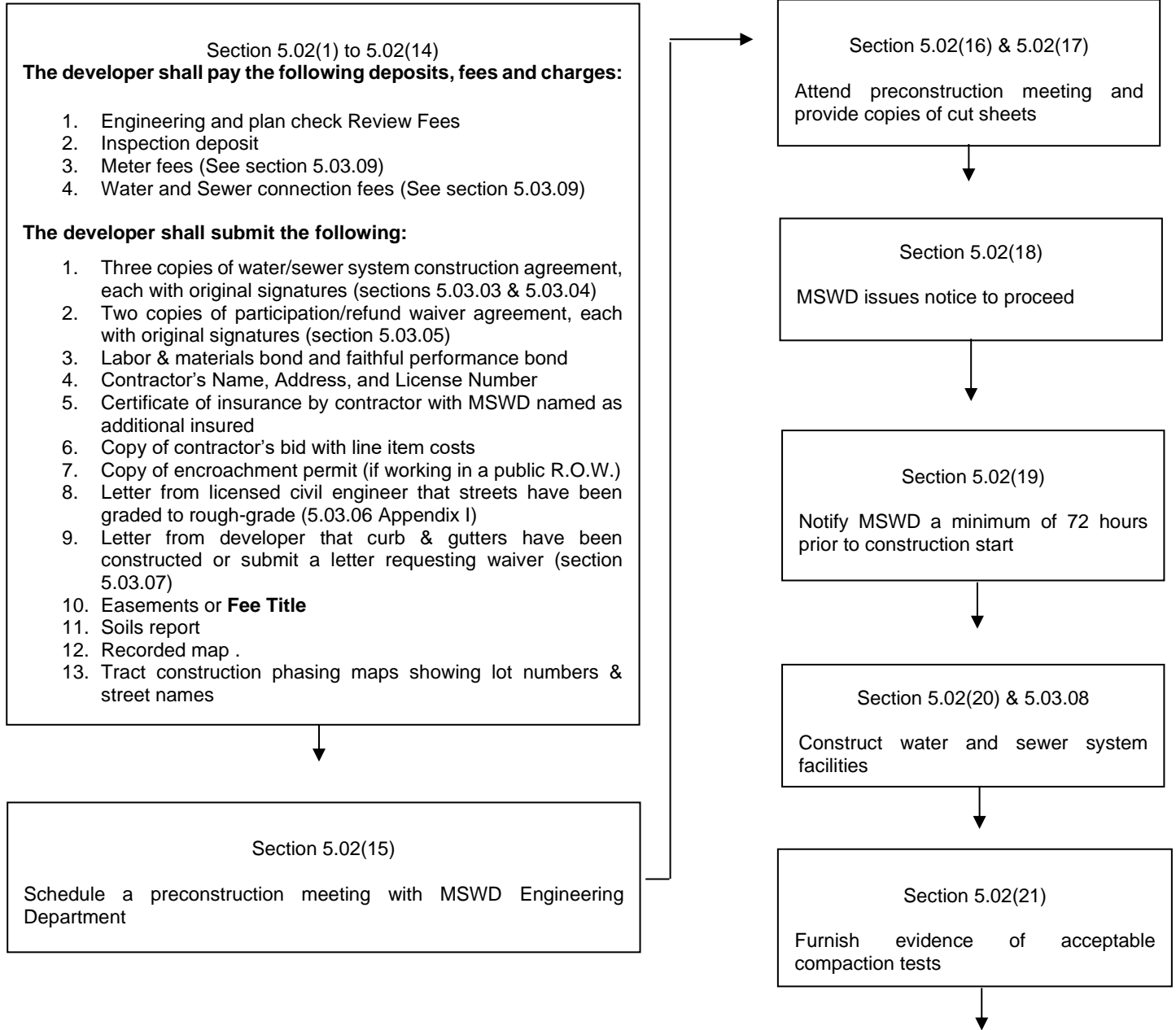
documents, MSWD Submits Notice of Completion for Recordation and Releases the Labor and Materials Bond.

35. After the Notice of Completion is recorded and following the 90-day lien period, MSWD will reduce the Faithful Performance Bond by 90%.
36. MSWD issues a letter of acceptance of water and/or sewer system for the County of Riverside or the City of Desert Hot Springs.
37. MSWD performs a warranty inspection at one (1) year from the NOC and/or Bill of Sale.
38. MSWD will close the deposit account and return any remaining deposit after one (1) year warranty period has expired.

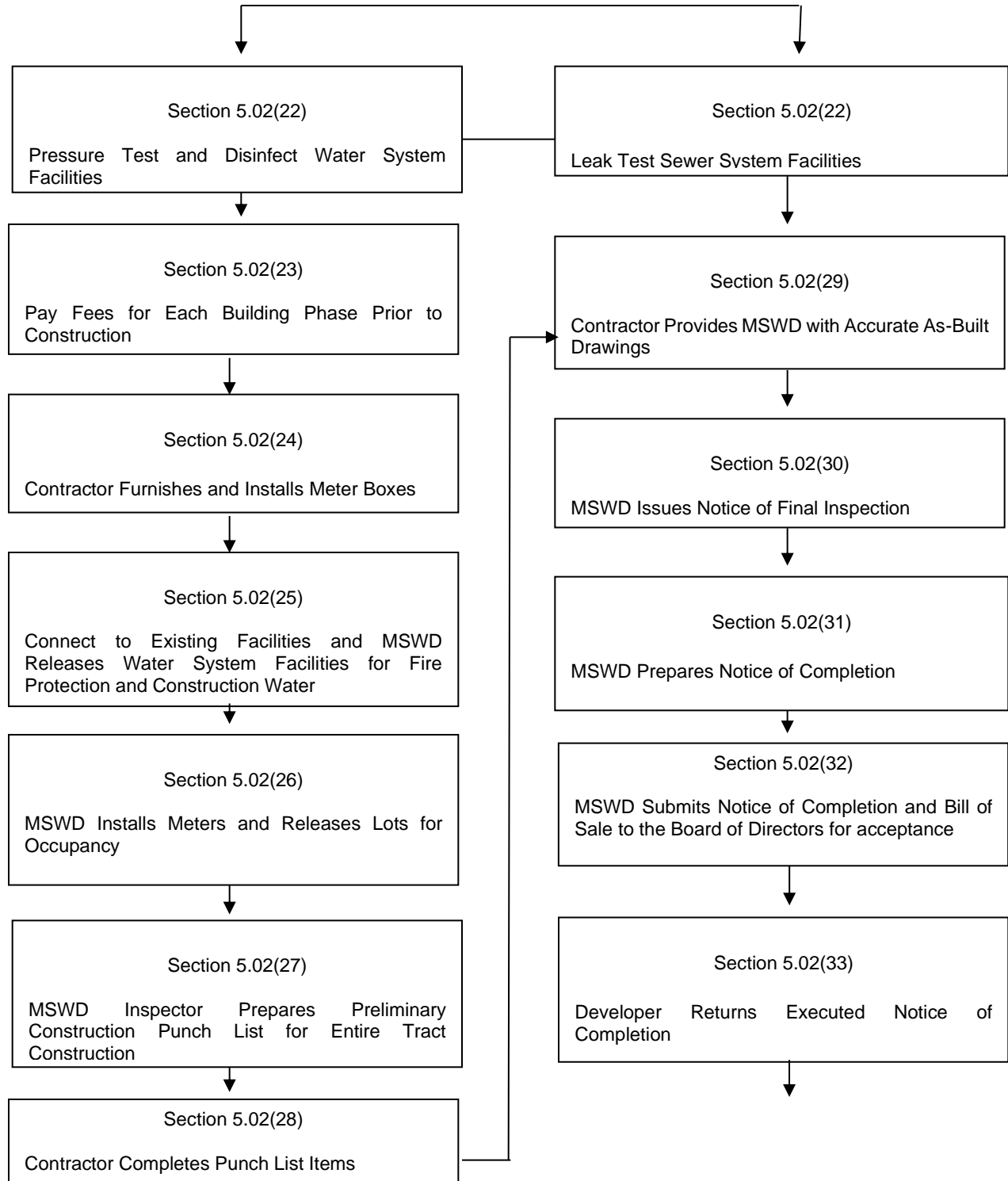
5.03 PRE-CONSTRUCTION AND CONSTRUCTION FORMS INDEX

- | | |
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| 5.03.02 | Pre-construction requirement checklist |
| 5.03.03 | Water system construction agreement |
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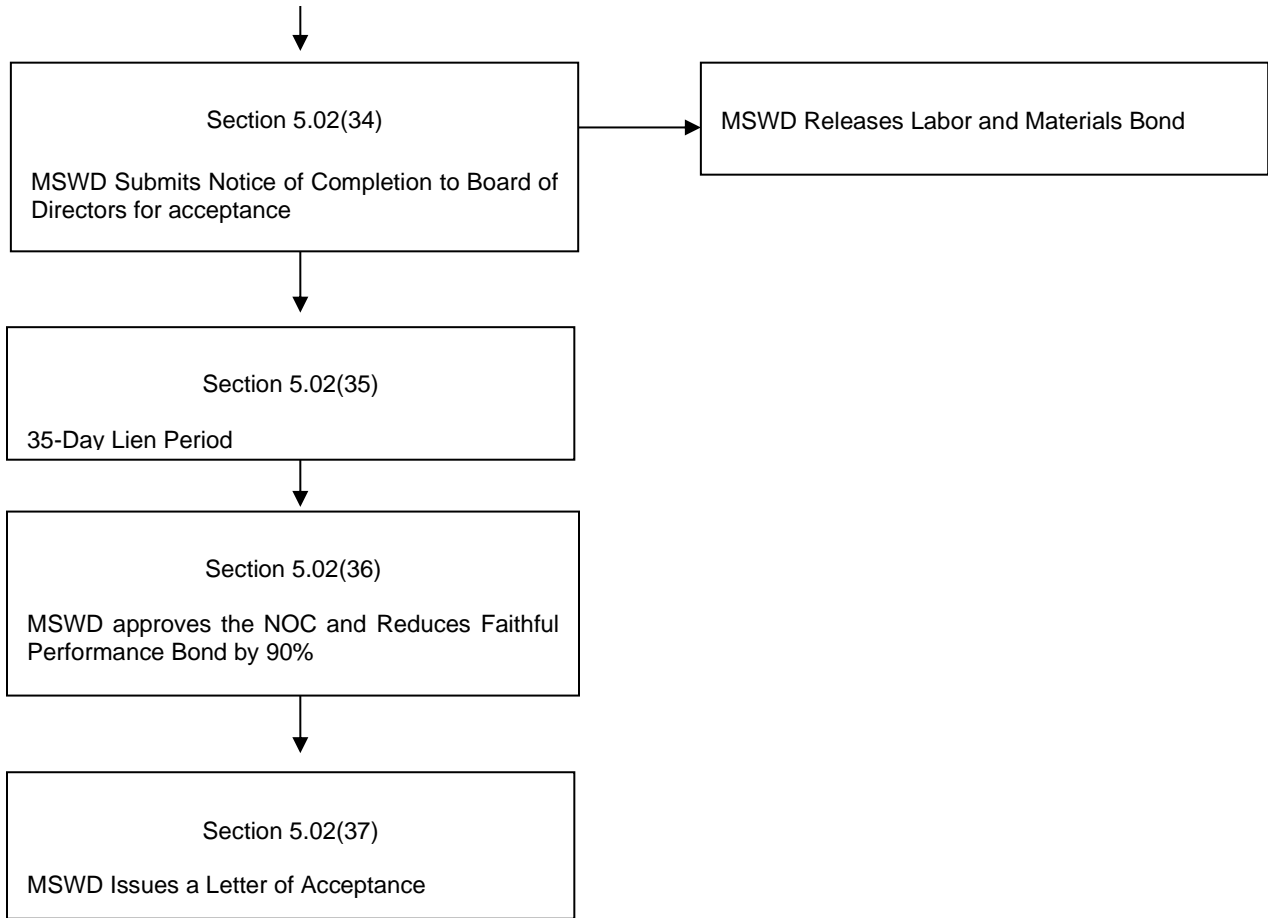
5.03.01 FLOW CHART – PRE-CONSTRUCTION AND CONSTRUCTION



5.03.01 FLOW CHART – PRE-CONSTRUCTION AND CONSTRUCTION (continued)



5.03.01 FLOW CHART – PRE-CONSTRUCTION AND CONSTRUCTION (continued)



5.03.02 TRACT PRE-CONSTRUCTION WATER & SEWER CHECKLIST – FORM T-1

SEE APPENDIX E – TRACT DEVELOPMENT FEE CHECKLIST

5.03.03 WATER SYSTEM CONSTRUCTION AGREEMENT

SEE APPENDIX F – WATER SYSTEM CONSTRUCTION AGREEMENT (DEVELOPER INITIATED/CONTRACTOR INSTALLED)

5.03.04 SEWER SYSTEM CONSTRUCTION AGREEMENT

SEE APPENDIX G – SEWER SYSTEM CONSTRUCTION AGREEMENT (DEVELOPER INITIATED/CONTRACTOR INSTALLED)

5.03.05 AGREEMENT FOR ON-SITE WATER/SEWER PARTICIPATION WAIVER

SEE APPENDIX H – AGREEMENT FOR ON SITE WATER / SEWER SYSTEM PARTICIPATION / REFUND WAIVER

5.03.06 ROUGH GRADE VERIFICATION FORM T-3

SEE APPENDIX I – ROUGH GRADE VERIFICATION FORM T-3

5.03.07 CURB AND GUTTER INSTALLATION WAIVER REQUEST FORM T-4

SEE APPENDIX J – CURB AND GUTTER INSTALLATION WAIVER REQUEST FORM T-4

5.03.08 INSPECTOR REQUIREMENTS - FORM G-4

SEE APPENDIX K – INSPECTOR REQUIREMENTS – FORM G-4

5.03.09 METER FEE COST WORKSHEET - FORM T-6

SEE APPENDIX L – METER FEE COST WORKSHEET

5.03.10 INSTRUCTIONS FOR ORDERING METERS – FORM T-8

SEE APPENDIX M – INSTRUCTIONS FOR ORDERING METERS – FORM T-8

6.0 TECHNICAL PROVISIONS**6.01 CONSTRUCTION METHODS**

It shall be the responsibility of the contractor to perform the construction in a neat, orderly and professional manner. The contractor must provide an adequate number of trained personnel to perform the work with safety always the first concern.

6.01.01 PROJECT SITE

It shall be the responsibility of the contractor to examine the site of the work and to make all investigation necessary, both surface and sub-surface, to determine the character of materials to be encountered and all other existing conditions affecting the work.

The entire site within the area affected by construction shall be cleared and bladed. Surfaces shall be cut or filled to the extent indicated by finish grade stakes. Finish surfaces shall slope uniformly between spot elevations or finish contour lines shown on the drawings and away from structures. Grading tolerance will be plus or minus 0.1 feet from surface elevations indicated.

All lines and grades shall be established before Notice to Proceed, and the contractor shall provide such assistance and materials as may be required. The contractor shall carefully preserve all survey stakes and reference points. Any stakes or points removed or destroyed by any act of the contractor will be reset at the contractor's expense.

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The contractor shall inform MSWD a reasonable length of time in advance of the times and places at which he intends to work in order that lines and grades may be furnished, that inspection may be provided, and that necessary measurements for records and payments may be made with minimum inconvenience.

6.01.02 ADMINISTRATIVE REQUIREMENTS

The contractor shall comply with all applicable federal, state, county and municipal rules and regulations pertaining to sanitation, fire protection, and safety contractor shall obtain and have available at the job site a copy of these specifications to comply with all provisions herein.

The contractor shall provide such modern plant and equipment as may be necessary to perform all the work in a satisfactory and acceptable manner, and in accordance with the specifications.

The contractor shall file with MSWD a written list giving the names, addresses, and telephone numbers of at least two (2) of the contractor's representatives who can be contacted at any time in case of emergency. The representatives shall be fully authorized and equipped to correct unsafe or inconvenient conditions on short notice. The contractor shall promptly notify MSWD of all changes in the listing.

The contractor shall provide all necessary power required for the contractor's operations under the contract. The contractor shall provide and maintain in good order such modern power equipment as shall be adequate, in the opinion of MSWD, to perform in a safe and satisfactory manner, the work required by the contract.

The contractor shall obtain construction water for work under this specification. All water used to fill potable water distribution systems must meet state and local health requirement for domestic consumption.

6.01.03 PROTECTION OF FACILITIES AND PROPERTY

The drawings identify the various pipelines, conduits, and other existing utility structures as they are supposed to exist in construction areas, but no error or omission on said drawings shall be construed to relieve the contractor from the responsibility of protecting any such pipeline, conduit, or other existing utility structures.

When deemed necessary by MSWD, revisions of the contract drawings and additional detailed drawings will be issued to the contractor during the progress of the work.

When performing underground work, the contractor shall call Underground Service Alert (USA), the on-call underground facility locating service, two (2) working days prior to making an excavation. Contractor shall be responsible for such notification of sub-contractor's work or shall require sub-contractor to assume this responsibility.

No MSWD valves or appurtenances of other utility facilities shall be operated by the contractor without approval and/or instruction from MSWD or the utility, as appropriate.

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Insofar as practical during the progress of the work, the property of any owner (including facilities such as a pipeline, conduit, sewer, culvert, storm drain, drainage ditch, flood control channel, overhead wire, cable, underground wire, or any other facility) shall not be disturbed but shall be supported and protected against injury and maintained in good operating condition at the expense of the contractor. In no case shall any such property be disturbed or removed without the consent of the owner and approval of MSWD. The contractor shall be responsible for making good all damage due to the contractor's operations and the provisions of this section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of backfilling.

The contractor shall explore the location and depth of under-ground facilities, sewers, and storm drains sufficiently in advance of pipeline laying or other construction operations so that changes in line or grade, or both, can be made in the pipeline without delay of the contractor's construction schedule, without relaying or reconstructing previously installed pipelines or other facilities and to avoid wherever possible moving, altering, or reconstruction of the obstructing underground facilities, sewers, or storm drains.

It shall be the responsibility of the contractor to verify the location of all obstructions shown on the plans and to locate any other underground utilities and structures which might necessitate a change in the line and grade of the new work. If the contractor, while performing the work of construction, discovers utility facilities not identified in contract plans or specifications, the contractor shall immediately notify MSWD.

In no case shall any utility that has been damaged, whether shown or not shown on the plans, be backfilled without the contractor notifying the utility company of the damage.

If the work requires, as shown on the drawings or as specified, or as required for the contractor's convenience, that the surface and overhead facilities, underground facilities, sewers and storm drains should be moved, altered, relocated, reconstructed, or temporarily supported, in order that the facilities included in the contract can be constructed, the contractor shall make all arrangements, therefore, with the respective owners and shall bear all expenses for moving, altering, relocating, or temporarily supporting the facilities.

In addition, MSWD may require the moving, altering, or reconstructing of obstructing underground facilities, sewers, or storm drains, and any compensation, therefore, will be the responsibility of the contracting party and not MSWD.

Pipelines determined to be abandoned may be destroyed if conflicting with the contract work and properly disposed of after approval by MSWD.

All pipelines abandoned in place shall be crushed or filled (sand/cement slurry) and exposed ends of abandoned pipelines shall be plugged for water tightness as approved by MSWD.

6.01.04 RIGHTS-OF-WAY

Rights-of-way for the pipelines to be constructed shall be acquired before Notice to Proceed is issued. Neither the terms hereof nor anything shown on the drawings in connection with the right-of-way shall be construed to entitle the contractor to conduct operations in said right-of-way in

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violation of any public agency ordinance or regulation restricting interference with water courses and drainage channels, road, alley, or street, until the contractor has obtained permits from the proper authorities.

In all of the streets in which the contractor's work may interfere with ingress or egress of the occupants of the abutting property or of their vehicles, the contractor shall maintain temporary practical means of ingress and egress or shall make satisfactory arrangements with the occupants for the obstruction of ways to their properties for the duration of the interference. Such arrangements shall be made in writing and a copy submitted to MSWD.

Nothing herein shall be construed to entitle the contractor to the exclusive use of any public street or way during performance of the contract work, and the contractor shall so conduct the work as not to interfere unnecessarily with the authorized work of other agencies in such streets and ways.

Fences on the rights-of-way shall be removed by the contractor where necessary for the performance of the work, but, where required, shall be maintained until the work is completed or removal is authorized. Where the contractor removed existing fences to facilitate the work, temporary fence protection for lands adjacent to the rights-of-way shall be provided at all times during the continuation of the contract. Such temporary fence protection shall be adequate to prevent livestock from straying from or onto adjacent lands and shall be constructed complete with gates and/or cattle guards. The cost of all work described in this paragraph shall be included in the prices bid for other items of work and no separate payment shall be made.

Where pipelines are to be constructed through and adjacent to tracts of improved property, the contractor shall, where practical, confine the contractor's operations within a thirty foot (30') wide right-of-way or such other width rights-of-way as may be designated on the drawings or in the Special Provisions. If contractor's operations are such as to require additional space, the contractor shall arrange for and secure at the contractor's own expense any additional right-of-way required. The contractor shall enter into written agreements with the landowners and copies of the agreements shall be furnished to MSWD.

Where the pipeline is to be constructed through cultivated fields not in public road rights-of-way, the contracting party will obtain and pay for damage to crops over a total overall width of 30' or such other width as may be designated. Any damage to crops outside of the designated right-of-way shall be paid for by the contractor.

6.01.05 JOB SITE SAFETY

The contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. This requirement will apply continuously 24 hours a day every day until final acceptance of the work and shall not be limited to normal working hours.

The contractor shall provide and maintain barricades, guards, temporary bridges and walkways, watchmen, night-lights, and danger signals illuminated from sunset to sunrise, and all other necessary appliances and safeguards to protect the work, life, property, the public, excavations, equipment, and materials. Barricades shall be of substantial construction and shall be painted such as to increase their visibility at night. Suitable warning signs shall be placed and illuminated

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at night as to show in advance where construction, barricades, or detours exist. Guardrails shall be provided for bridges and walkways over or adjoining excavations, shafts, and other openings and locations where injury may occur.

The contractor's Safety Officer shall inspect the entire work and site, including storage areas, at frequent intervals to verify that fire prevention measures are constantly enforced.

The contractor shall furnish and maintain fully charged fire extinguishers of the appropriate type, supplements with temporary fire hoses wherever an adequate water supply exists, at the places where burning, welding, or other operations that may cause a fire are being performed.

Only a working supply of flammable or toxic materials shall be permitted on any of the permanent structures and improvements and shall be removed at the end of each day's operations. The contractor shall store flammable or toxic materials and waste separate from the work and stored materials for the work in a manner that prevents spontaneous combustion or dispersion, and none shall be placed in any sewer or drain piping or buried on the site.

The contractor shall not permit any person for whom the contractor is responsible or liable to enter or remain on the site of the work unless the person is equipped with and wearing a safety helmet and other protective clothing and safety equipment conforming to the requirements of MSWD or regulatory agencies and shall discharge from the site all persons not so equipped. The contractor shall post conspicuous signs at appropriate locations warning the public and persons engaged upon the work of this requirement. The contractor shall furnish for their temporary use such safety helmets, protective clothing, and safety equipment as MSWD may request.

The contractor shall not permit or allow any person or persons to enter any pipeline or space containing hazardous or noxious substances or gases, or where there is an insufficient amount of oxygen to sustain life and consciousness, or any other hazardous area unless equipped with lawful and appropriate safety equipment and life support apparatus, and unless those entering are continually monitored and guarded by and in communications with other persons outside the space or area who are equipped in the same way, can give an alarm to others for assistance, and initiate immediate rescue operations in the event of mishap.

The contractor shall perform any and all operations and shall furnish any materials and equipment necessary during an emergency endangering life or property and, in all cases, shall notify MSWD of the emergency as soon as practical, but shall not wait for instruction before proceeding to properly protect both life and property.

Excavations shall be adequately shored and braced so that the earth will not slide or settle and so that all existing improvements of any kind will be fully protected from damage. Any damage resulting from a lack of adequate shoring and bracing shall be the responsibility of the contractor. The contractor shall affect all necessary repairs or reconstruction at the contractor's own expense as directed by MSWD and shall bear all other expenses resulting from such damage.

Each contract for construction subject to these specifications for the construction of a water pipeline, sewer pipeline, sewage disposal system, boring and jacking pits, or similar trenches or open excavations, or the use of such a trench or open excavation, shall include the costs necessary to provide adequate sheeting, shoring, and bracing, or equivalent method for the

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protection of life or limb, which shall conform to applicable safety order, including the Construction Safety Orders of the California Division of Industrial Safety, in accordance with the requirements of the California Occupational Safety and Health Act.

When working in, or connecting to, existing systems in operation, the required safety provisions work in an operating system will be enforced, including provisions for working in confined air spaces when appropriate.

Nothing in this requirement shall be construed to impose tort liability on MSWD or any of its officers, or employees.

6.01.06 JOB SITE MAINTENANCE

Excavating and grading shall be performed only when the weather conditions do not adversely affect the quality of the finished product. Any graded or excavated areas that are damaged by the effect of rain, or other weather conditions, during any phase of the construction, shall be re-excavated, re-graded, and re-compacted to conform to the herein specified requirements, at the contractor's expense.

The contractor shall furnish all labor, equipment and means required and shall carry out protective measures wherever and as often as necessary, in the opinion of MSWD, to prevent contractor's operations from producing dust in amounts damaging to property or causing nuisance. The contractor shall be responsible for any damage resulting from dust originating from his operations. The dust abatement measures shall be continued until all required resurfacing is completed or until the contractor has completed arrangements with the proper authorities whereby the contractor is relieved of further responsibility.

The contractor shall acquire such permits and take such measures as may be required, and shall furnish, install, and operate such pumps or other devices as may be necessary to remove any seepage, storm water, or sewage that may be found or may accumulate in excavations during the progress of the work. The contractor shall keep all excavations entirely free from water at all times during the construction of the work and until MSWD has given permission to cease pumping. The contractor shall keep the complete work reasonably free from accumulations of water and sewage and shall free it entirely at such times as may be required by MSWD for inspection or other purposes. Any accumulated water or sewage thus pumped shall be disposed of in accordance with good practice and local ordinances.

The contractor shall provide an adequate dewatering system for the control of surface and groundwater seepage into the excavations as may be required during the construction period. The proposed plan of this dewatering system shall be submitted to MSWD for concept approval prior to the installation of the system.

6.01.07 PROJECT CLEAN-UP

The contractor shall keep the premises occupied by him in a neat and clean condition, and free from the unsightly accumulation of rubbish. Upon completion of the work and before the final estimate is submitted, the contractor shall, at contractor's own cost and expense, satisfactorily dispose of or remove from the vicinity of the work all plants, buildings, rubbish, rock, unused and

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excavated materials belonging to the contractor or used under the contractor's direction during the construction, and in the event of the contractor's failure to do so, the same may be removed and disposed of by MSWD at the contractor's expense. Contractor's responsibility shall include satisfactory disposal of all debris or protective material resulting from material delivery such as plastic wrappings, pipe stulls, etc., whether or not the contractor furnished such material.

The contractor's operations shall be carried on in such sequence and in such manner as to interfere as little as possible with other improvements. When the construction is adjacent to or on residential property or cultivated fields or orchards, disposal of material and backfill operations shall be performed in such manner as to restore the properties to their original condition as nearly as practical as determined by MSWD. Topsoil shall be carefully removed, stockpiled, and replaced after the backfill is placed.

As a part of the clean-up operation of facilities in private right-of-way, the contractor shall restore the soil over the full width of the right-of-way to a condition equivalent to that which existed at the time of the construction operations on such areas, by thoroughly loosening the soil with subsoilers, or other acceptable means and by disking and leveling, if necessary, any stones, gravel, or other deleterious material left in spoil banks. On such lands, debris shall be removed by the contractor before final preparation of the soil and shall be disposed of as required for excavated materials.

6.02 EARTHWORK SPECIFICATIONS

6.02.01 EXCAVATION

Excavation shall include, without classification, the removal of all materials of whatever nature encountered, including all vegetation or other obstructions of every nature that would interfere with the proper execution and completion of the work. The contractor shall furnish, place, and maintain all supports and shoring required for the sides of the excavations. The contractor shall perform all pumping, ditching or other approved measures for the removal or exclusion of water (including taking care of storm water and wastewater reaching the site of the work from any source) so as to prevent damage to the work or adjoining property. Excavations shall be supported in the manner set forth in the rules, orders and regulations prescribed by the Department of Industrial Relations, Division of Industrial Safety.

Unless otherwise approved, all pipeline trenches shall have vertical sides and shall have a minimum width equal to the outside diameter of the pipe plus twelve-inches (12") and a maximum width equal to the outside diameter of the pipe plus twenty-inches (20").

Any excavation carried down below the grades shown on the drawings or in excess of those ordered by MSWD shall be backfilled to the required grade with sand or suitable selected sandy material. Such material shall be properly moistened and thoroughly compacted in a manner consistent with the project soils report, excepting that the layers shall not exceed four-inches (4") in thickness, compacted by means of a hand-operated, power-driven tamper.

All excavations shall be kept free of water while concrete or pipeline is being placed and until concrete has attained its initial set to eliminate any possible damage from such water. Any water accumulations in excavations from any source shall be removed by the contractor at the

contractor's expense. Wastewater shall be disposed of in such a manner that it will not cause any damage to public or private property or will not be a menace or inconvenience to the public.

Excess excavated material shall be removed from the site and disposed of by the contractor at the contractor's expense.

6.02.02 PREPARATION OF PIPE AND STRUCTURE FOUNDATIONS

Normal bedding shall be used unless otherwise shown or ordered. For normal bedding of pipe, the bottom of the trench shall be excavated uniformly to the grade shown on the drawings. The trench bottom shall be given a final trim such that each pipe section when first laid shall be continually in contact with the ground along the extreme bottom of the pipe. Rounding out of the trench to form a cradle for the pipe will not be required. Where called for on the bidding sheets or otherwise ordered by MSWD, the contractor shall furnish imported sand bedding. Said material shall be placed in accordance with the details shown in the plans.

Where the bottom of the trench is in rock or boulders, such material shall be removed to a minimum depth of six inches (6") below the grade of the bottom of the pipe and the trench refilled to the grade of the pipe with sand or suitable selected sandy material. The material shall be properly moistened and thoroughly compacted in a manner consistent with the project soils report, excepting that the layers shall not exceed four-inches (4") in thickness, compacted in layers not exceeding four-inches (4") in thickness by means of a hand-operated, power-driven tamper.

6.02.03 BACKFILL AND COMPACTION

All excavations shall be backfilled to the level of the original ground surfaces except where otherwise shown or ordered by MSWD. The trench shall be backfilled to a level twelve inches (12") below the top of the trench with sufficiently granular material obtained from the excavation having a sand equivalent of at least 30. Such material shall be compacted to 90 percent of maximum dry density per ASTM D1557-02.

The remaining backfill shall be placed in horizontal layers not exceeding six inches (6") in depth before compaction. Each layer shall be moistened, tamped, rolled, or otherwise compacted to 95 percent of maximum dry density per ASTM D1557-02 as determined by the compaction test specified herein.

Where backfill is required to be compacted to a specified percentage of maximum dry density, tests for compliance may be made by a qualified soils technician using the test procedure specified in "Methods of Test for Moisture-Density Relations of Soils Using a 10-lb. Rammer and an eighteen-inch (18") Drop", (ASTM Designation D1557), modified to use 3 layers. Field density tests shall be performed in accordance with the test procedure specified in "Method of Test for Density of Soil in Place by the Sand-Cone Method" (ASTM Designation D1556).

6.02.04 CUTTING AND RESTORING ROAD SURFACING, ETC.

In cutting or breaking up road surfacing, the contractor shall not use equipment which will damage the adjacent surfacing. All cement concrete surfaces shall be scored with concrete sawing equipment of a type meeting the approval of MSWD; provided however, that any cement concrete

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base under an asphaltic mix surface will not be required to be scored by sawing. Existing paved surfaces shall be cut back beyond the edges of the trenches to form neat square cuts before paving is commenced.

Surfacing, gutters, and culverts destroyed in connection with performing the work required under the contract shall be replaced with the same kind or with better surfacing, gutters, and culverts by the contractor in accordance with the latest specifications, rules and regulations and subject to the inspection of the agency having jurisdiction over the street or highway. Damaged or destroyed sidewalks shall be replaced with new sidewalks having a minimum thickness of 3-1/2 inches.

Valve box sleeves or covers damaged or destroyed shall be replaced with the same kind of sleeves or covers.

6.03 CONCRETE SPECIFICATIONS**6.03.01 CONCRETE AND MORTAR MIX**

Contractor shall furnish all materials for concrete and mortar, and shall form, mix, place, cure, repair, finish and do all other work required to produce finished concrete structures. No exposed concrete such as pads, manhole collars, or valve collars shall be placed during high wind conditions. Any concrete showing surface cracking due to exposure shall be replaced at the request of the MSWD inspector.

The concrete mix used for all concrete required hereunder shall be composed of Portland Cement and properly graded sand and rock. The proportions of cement and aggregates shall be such as to produce a workable mix with a minimum compressive strength of 3,250 psi at the age of 28 days. The quantity of water used shall be just sufficient, with a normal mixing period, to produce a concrete, which, in the judgment of the engineer, can be worked properly into place without segregation.

4,000 psi concrete may be used for same day placement of manhole shafting with prior written approval of the MSWD inspector.

Mortar shall consist of 1 part of Portland cement and 1-1/2 parts of sand, all by volume. The materials shall be thoroughly mixed dry until the mixture assumes a uniform color and then sufficient water shall be added to bring the mixture to a workable consistency.

6.03.02 CEMENT

All cement used on the work shall be standard brand Portland Cement conforming to the "Specifications for Portland Cement", Type II (ASTM Designation C150).

6.03.03 AGGREGATES

All aggregates shall be obtained from pits approved by the engineer. Fine aggregate shall be composed of clean, hard, strong, durable, uncoated grains, free from shale, lumps and soft or flaky particles and from injurious amounts of dust, alkali, organic matter, loam, mica, or other deleterious substances. The grading as determined in accordance with the "Method of Test for

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Sieve Analysis of Fine and Coarse Aggregates" (ASTM Designation C136) shall conform approximately to the following:

SIEVE SIZE	PERCENTAGE PASSING SIEVES
3/8"	100
NO. 4	90 - 100
NO. 8	65 - 90
NO. 16	45 - 70
NO. 30	25 - 45
NO. 50	10 - 20
NO. 100	2 - 8
NO. 200	0 - 4

Fine aggregate shall in all cases be washed. The control of washing of fine aggregate shall be such that the finer particles of sand are retained or removed as required. Washed or saturated sand shall be allowed to drain at least 24 hours to uniform moisture content before batching. Dry sand shall be moistened before handling when necessary to prevent segregation. The fine aggregate shall be well graded so as to insure a dense concrete.

When tested in accordance with the "Method of Test for Organic Impurities in Sand for Concrete" (ASTM Designation C40-04), it shall show a color not darker than the standard color and shall contain not more than a total of 5 percent by volume of clay, silt, mica, or other objectionable inorganic materials as determined after shaking well with two and one-half times (2 1/2) its volume of water in a graduated cylinder. At least 400 cc of sand by volume shall be used in this test.

Coarse aggregate shall be composed of strong, hard, clean, durable, uncoated pebbles or rock fragments, free from alkali, organic or other deleterious matter and shall contain not more than 25 percent of crushed material. Not more than 5 percent by weight of soft or friable particles and not more than 3 percent of thin, elongated, or laminated pieces will be allowed. Coarse aggregate shall be washed, and if necessary, shall be again uniformly moistened just before batching. Coarse aggregate shall be furnished in the primary sizes specified below, and shall be stored in separate batching bins, and batched as required to conform to the combined grading requirement. The grading or proportioning of the fine and coarse aggregates in the mix shall be varied as directed by the engineer and will be based on securing a well-graded aggregate and producing concrete having the required workability, density, and strength, without the use of excess sand,

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water or cement. The grading of the primary size of the coarse aggregates shall be within the limits in percentages, by weights, as follows:

PRIMARY AGGREGATE SIZE NO. 2 (1-1/2 inch maximum size)

	Percent	
Passing a 2-inch square sieve		100
Passing a 1-1/3 in square sieve	90	- 100
Passing a 1 in square sieve	20	- 55
Passing a 3/4 in square sieve	0	- 15
Passing a 3/8 in square sieve	0	- 5

PRIMARY AGGREGATE SIZE NO. 3 (1-inch maximum size)

	Percent	
Passing a 1-1/2 in square sieve		100
Passing a 1 in square sieve	90	-100
Passing a 3/4 in square sieve	60	- 80
Passing a 3/8 in square sieve	0	-15
Passing a No. 4 square sieve	0	- 5

PRIMARY AGGREGATE SIZE NO. 4 (3/8 in. maximum size, pea gravel)

	Percent	
Passing a 1/2 in square sieve		100
Passing a 3/8 in square sieve	90	- 100
Passing a No. 4 square sieve	0	- 5

In the event coarse aggregate is stored in stockpiles in advance of concreting operations, such stockpiles shall be built up by approved methods so that coning or segregating of the materials cannot occur.

6.03.04 WATER

Water shall be clean and free from objectionable quantities of organic matter, alkali, salts, and other impurities.

6.03.05 FORMS

Forms to confine the concrete and shape it to the required lines shall be used wherever necessary. Forms shall be smooth, tongue and groove boards, shiplap, or plywood. Forms shall not be removed until the engineer has given permission to do so.

6.03.06 TAMPING AND VIBRATING

As concrete is placed in forms or in excavations, it shall be thoroughly settled and compacted throughout the entire depth of the layer being consolidated, into a dense, homogeneous mass. Except in special cases where the engineer deems their use impracticable, the contractor shall use high-speed internal vibrators of an approved immersion type.

6.04 WATER PIPELINE CONSTRUCTION SPECIFICATION

6.04.01 GENERAL

This Specification for water pipeline construction is prepared and presented to provide general information and requirements for construction of water pipelines within Mission Springs Water District (MSWD).

Compliance with these requirements does not waive the requirements of other governing public bodies or agencies. Requirements of all other governing public bodies are to be closely adhered to, including all safety orders, encroachment permits, and other federal, state, county and local laws and ordinances.

This specification is applicable to the construction phase of water facilities and is effective only after MSWD design requirements for water plans and systems have been complied with and water plan drawings have been approved and signed. A contractor holding either a current and valid Class "A" General engineering contractor's License or a Class "C-34" Pipeline Specialty License shall install all water pipeline work.

In general, all material furnished and all construction including trenching, installation, backfill, testing and disinfection shall conform to the applicable specifications of the following standards in the precedence indicated:

1. The specifications contained herein,
2. "American Water Works Association Standards" for the applicable work,

3. "Standard Specifications for Public Works Construction", (GreenBook, current edition, as published by Building News, Inc. of Los Angeles). MSWD designated Inspector may issue supplemental orders and instructions.

6.04.02 PRE-CONSTRUCTION CONFERENCE AND NOTICE-TO-PROCEED

MSWD requires that a Pre-construction Conference be held. A formal written "Notice-to-Proceed" will be issued prior to the commencement of work.

6.04.03 MATERIALS

All materials shall be new materials, and must be from MSWD Approved Materials List (Section 8.0), and shall be provided in accordance with the following:

WATER PIPE:

Water pipe shall be in accordance with (Section 6.04.06) STEEL CYLINDER WATER PIPE SPECIFICATIONS or in accordance with (Section 6.04.07) DUCTILE IRON WATER PIPE SPECIFICATIONS included herein. "PRE-TENSIONED CONCRETE CYLINDER PIPE" is not to be used unless specifically specified and approved by MSWD. Asbestos-Cement pipe is not permitted.

All steel cylinder pipe shall have cement mortar lining and cement mortar coating (CML & C) unless specifically stated otherwise on the drawings.

Steel cylinder pipe ends shall normally be prepared for rubber gasket bell and spigot joints except as modified in Section 6.04.06, STEEL CYLINDER WATER PIPE SPECIFICATIONS included herein. FITTINGS: All fittings shall be in accordance with Section 6.04.08 STEEL FITTINGS SPECIFICATIONS (for use with steel cylinder pipe) or with Section 6.04.09, DUCTILE IRON FITTINGS SPECIFICATIONS included herein. Cast iron fittings are not acceptable. All fittings (tees, crosses, elbows, reducers, etc.) shall be fabricated from steel or be forged steel. Lining and coating shall be shop applied and shall be equal to the pipeline lining and coating. Elbows shall be smooth radius construction and long radius dimension. MSWD shall approve special fittings requiring reinforcement. Reducers shall always be eccentric type and installed with the horizontal side up.

VALVES:

All valves two-inch (2") to twelve-inch (12") shall be gate valves; all valves fourteen-inch (14") and larger shall be butterfly valves, and all valves shall be in accordance with Section 6.05 Valves. Valves shall always be pressure rated for design service conditions. Valves shall be installed as shown on MSWD Standard Drawings and protectively coated as specified in Section 6.06 PAINTING AND PROTECTIVE COATINGS.

FLANGES:

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Flanges shall be per AWWA Standard C207, forged steel, slip-on, hub type, Class E (Table 3) for welded installation. For service above a design pressure of 275 psi, higher pressure rated flanges shall be provided.

FLANGE GASKETS:

Flange gaskets shall be first-rate natural or synthetic material, non-asbestos, ring type for the size installation required.

COMBINATION AIR VACUUM AND AIR RELEASE VALVES:

Valves shall be installed per MSWD Standard Drawings.

FIRE HYDRANTS:

Hydrants shall be installed per MSWD Standard Drawings.

6.04.04 WARRANTY

The contractor shall guarantee that the entire work constructed, and all materials furnished, will meet all the requirements specified herein. This warranty shall include both the quality of the workmanship and the materials used as well as that of subcontractors and suppliers.

The contractor shall agree to make any repairs or replacements made necessary by defective materials or workmanship in the pipe materials supplied which have become evident within one year after date of recording Notice of Completion, and to restore to full compliance with the requirements of these specifications, including the test requirements, any part of the water system, which during said one-year period, is found to be deficient with respect to any provision of this specification. The contractor shall make all repairs and replacements promptly upon receipt of written orders from MSWD or if in the event the repair work must be performed by MSWD, shall reimburse MSWD for actual labor, equipment and material expenses incurred to perform such corrective work. If the contractor fails to make the repair and replacements promptly, MSWD may do the work, and the contractor shall be liable to MSWD for the cost thereof as described above.

6.04.05 WATER PIPELINE INSTALLATION SPECIFICATIONS

Installation of water pipeline, fittings, valves, hydrants and other appurtenances shall be in accordance with all provisions of these specifications including (Sections 6.02 and 6.03) EARTHWORK, CONCRETE SPECIFICATIONS, Standard Drawings (Section 9.0), Approved Materials List (Section 8.0). MSWD shall make all connections to existing MSWD facilities. The contractor shall notify Underground Service Alert at 811 at least two (2) working days prior to construction to locate potential utility interference in the right-of-way.

MSWD will provide an Inspector for inspection of pipeline construction work. The Inspector will check for compliance with MSWD requirements for pipeline construction but will not have the responsibility for checking survey work (horizontal and vertical control) nor installed quantities of pipe for developer projects. The MSWD Inspector is not a Safety Inspector and is not responsible

for enforcing compliance with OSHA or other safety requirements. Job site safety is not MSWD responsibility and MSWD does not accept any liability connected with the construction.

Thrust resistance is required to restrain the Class 350 Ductile Iron pipe from pulling apart due to pressure forces (i.e.: elbows, dead ends, tees, etc.), restraint joints shall be installed per MSWD Standard Drawings. Where thrust resistance is required to restrain steel cylinder pipe from pulling apart due to pressure forces (i.e.: elbows, dead ends, tees, etc.), joints shall be welded per MSWD Standard Drawings for at least the full distance indicated on the plans.

6.04.06 STEEL CYLINDER WATER PIPE SPECIFICATIONS

It is required that the contractor shall furnish, deliver, and install, all pipe and material as hereinafter described in these specifications. All fabrication, workmanship, material and testing of pipe shall conform to the latest revision of the standard specifications specified herein.

STEEL CASING:

Steel casing shall be butt welded of sheets conforming to ASTM Specification A-283 and shall be installed at the location shown on the plans or as directed by the District. Installation may be by open trench. If the contractor elects to install the casing pipe by jacking, the provisions of these specifications for jacked steel casing pipe shall apply. However, payment shall be at the bid price for steel casing.

The casing pipe shall have a steel thickness not less than ½ inch with a yield strength of 35,000 psi min. It shall be the contractor's responsibility for selecting a size of casing, at or above the minimum specified, in order that the installation may be done with a sufficient degree of accuracy. Any and all increased costs resulting from the contractor's use of steel casing pipe with greater diameter or thickness than the minimum specified shall be borne by the contractor. Carrier pipe conforming to these specifications for the designed pipe shall be installed within the casing pipe to the lines and grades shown on the plans. The carrier pipe shall be supported within the casing on steel casing insulators with the following minimum properties:

Bandwidth shall be eight-inch (8") for nominal twelve-inch (12") diameter pipe and twelve-inch (12") for sixteen-inch (16") nominal diameter and larger. Band shall be minimum fourteen-inch (14") gauge (.074") steel, hot rolled and pickled and manufactured in two halves.

The liner shall be of polyvinyl chloride, with a minimum thickness of .090" and a durometer of "A" 55.90. The liner shall have a minimum dielectric strength of 57,000 V. (1/8" thick) and a maximum water absorption of 1%.

The runners shall be manufactured of two-inch (2") wide glass reinforced plastic molded under high pressure. Height of runners to be appropriate to center carrier pipe in casing. Runners shall be 7" long for eight-inch (8") steel band width and eleven-inch (11") long for twelve-inch (12") bandwidth and shall have the following minimum qualities.

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Tensile strength	- (ASTM D638) – 17,600 psi
Flexural strength	- (ASTM D790) – 25,300 psi
Compression strength (10% deformation)	- (ASTM D695) – 18,000 psi
Deflection temp. @ 264 psi Deformation under load	- (ASTM D648) - 405°F (250°C)
(@ 122°F (50°C) – 2,000 lb. load)	- (ASTM D621) – 1.2%

Minimum number of runners per band shall be:

4" through 14" diameter – 2 top, 2 bottom

16" through 36" diameter – 2 top, 4 bottom

Insulators shall be arranged within the casing as follows: The first insulator at each end of casing shall be maximum one foot (1') from the end of casing. The second insulator shall be five (5') from end of casing. The remainder of the casing length shall have insulators distributed throughout at a maximum spacing of 15' O.C.

The insulators shall be as manufactured Pipeline Seal & Insulator, Inc. (psi) or District approved equal.

The ends of the steel casing shall be sealed with synthetic rubber casing end seals with a minimum thickness of 1/8" and secured with stainless steel bands and clamps. End seals shall maintain the casing pipe in a watertight condition. The end seals shall be as manufactured by Pipeline Seal & Insulator, Inc. or District approved equal. The annular space between the seal casings and carrier pipe shall be left empty.

Voids, if developed outside the casing and within limits for boring or jacking, from any cause such as removal of rocks encountered in boring, shall be filled with lean grout forced in under pressure by insertion of a grout pipe outside of the casing. The lean grout shall consist of one part of Portland cement to not more than four parts of sand by volume, paced at low pressure. Grout pressure is to be controlled so as to avoid deformation of the casing. Sand for grout to be placed outside the casing shall be of such fineness that 100% will pass a No. 8 sieve and no less than 35% will pass No. 50 sieve.

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Measurement for payment for casing pipe excluding carrier pipe within said casing shall be made along the centerline of the casing pipe between the limits shown on the plans and/or staked in the field.

Payment for steel casing pipe will be at the contract unit price per linear foot for steel casing pipe placed in accordance with these plans and specifications. Payment shall be full compensation for furnishing all labor, excavation, backfill, boring, jacking, steel casing pipe, insulated pipe supports, casing end seals, shoring, equipment, services, transportation, sand cement, concrete, all grouting operations described herein, and other appurtenant items of labor and material required to complete the work. The water carrier pipe will be paid for under the bid item for pipe.

TYPE OF PIPE:

This specification includes steel pipe, cement mortar lined and coated steel pipe classes 150 and 200.

Steel pipe with the various coatings and linings shall conform to the provisions of AWWA specifications C200 and C205, unless otherwise specified herein.

PIPE DIAMETER:

Nominal pipe diameter for all pipe shall mean the approximate inside diameter of the cement lining of the pipe, the permissible tolerance shall be plus or minus 1/4-inch.

PIPE JOINTS:

All joints shall conform to MSWD Standard Specifications, AWWA Standard C200, AWWA M9, and AWWA M11.

BELL AND SPIGOT JOINTS:

Pipe larger than twenty-four-inch (24") diameter and having a wall thickness greater than 0.1875, shall be Carnegie type joints. Bell and Spigot joints for pipe twenty-four-inch (24") diameter and smaller shall be formed joints either by swaging or rolling the end of the steel cylinder. The joint shape shall conform to a rolled groove rubber gasket joint as shown in AWWA M11. The nominal thickness of a preformed bell ring shall not be less than the thickness of the steel cylinder to which it is attached. Bell and Spigots shall be the same nominal diameter as the pipeline.

WELDED FIELD JOINTS:

Welded field joints shall be lap welded. A bell shall be formed on the steel cylinder to accommodate the spigot. The spigot insertion shall be a minimum of one- and one-half inches (1-1/2").

FLANGED JOINTS:

Steel flanges shall conform to the requirements of AWWA C207, Class E or Class F. Flange faces shall be machined flat with serrated finish for connection to valves and equipment. Bolts and nuts for buried or non-buried service shall be carbon steel conforming to ASTM A307, Grade B. Bolts and nuts used for buried service shall be coated per Division 6 using protective coating system P6. Bolts and nuts for immersed or intermittently immersed installations shall be 316 stainless steel conforming to ASTM A276. All assembly bolts shall be hexagonal head conforming to ANSI B18.2.1 for wrench head bolts and nuts. All threads shall be coarse threaded in accordance with ANSI B1.1, Class 2A and 2B.

Joint rings for steel pipe shall be manufactured of the same material as the pipe cylinder.

Where called for, the joint shall be sealed with a continuous ring gasket made of a special composition rubber of such size and cross section as to fill completely the recess provided for it. The gasket shall be the sole element depended upon to make the joint watertight. Gasket shall be furnished with the pipe. The rubber compound shall consist of first grade natural rubber, synthetic rubber, or a suitable combination thereof. The compound shall conform to the requirements of Section 3.4 of AWWA Specification C301 and Shore Durometer, Type A, 50-65. All gasket material shall be stored in a cool, well-ventilated place and protected from direct sunlight. The contractor shall submit test results showing the physical properties of the materials used in the manufacture of the rubber gaskets, if requested by MSWD. All rubber gaskets furnished under this specification shall be subject to inspection and/or test by MSWD. Any gasket found to be unsatisfactory by MSWD should be immediately replaced by the contractor, at no expense to MSWD.

Joints requiring thrust restraint shall be lap welded utilizing certified welders and multiple pass welds. Such joints will be at the joints of all fittings such as elbows, tees, crosses, laterals, reducers and bulkheads. Engineers shall supply MSWD the calculations determining the length of welded joints (minimum factor of safety shall be 2). Additional weld joints shall be shown on the plans.

PIPE TESTING:

All steel cylinders shall be hydro-statically tested to a stress equal to seventy-five percent (75%) of the minimum yield point.

STEEL PIPE DESIGN:

Cylinder thickness shall be calculated in accordance with AWWA C200 and AWWA M11. Allowable stresses shall not exceed 18,000 PSI, or fifty percent (50%) of the minimum yield strength of steel.

STEEL PIPE MATERIALS:

All materials used shall conform to the requirements of standards specified in these specifications except as otherwise specified or approved by MSWD.

STEEL:

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Steel shall be hot rolled low carbon steel plates or sheets conforming to ASTM A283 Grade D, ASTM A516 Grade 60, and ASTM A572 Grade 42. Steel plates shall be fully kilned steel to fine grained practice.

Steel sheet and coil shall conform to ASTM A570 Grades 33, 36, 40 or 45, or ASTM A635 Grade 1015, 1018 or 1020. Steel coil shall be fully kilned to fine grained practice.

Cement mortar lining shall be as specified in AWWA 205. Cement mortar coating shall be as specified in AWWA 205.

STEEL PIPE FABRICATION:

All fabrication shall conform to the requirements of standards in these specifications except as otherwise specified or approved by MSWD.

The cement mortar lining for all sizes of pipe shall be applied to the inside of the steel cylinder after it has been fabricated, tested, and cleaned of all loose mill scale and rust. Inside cement mortar lining shall be in accordance with AWWA Standard C205, Section 4 except that the lining thickness shall be no less than that amount specified in Table 1 of AWWA standard C205. The lining thickness may be increased to that amount which provides a pipe I.D. equal to the nominal pipe diameter size.

Before applying the exterior coating, the exterior surface of the pipe shall be thoroughly cleaned to bright metal and shall be free from all-loose mill scale and rust.

Exterior cement mortar coating shall conform to Section 5 of AWWA C205, except exterior coating shall be a minimum of 3/4" thick. The mortar shall be applied pneumatically or by impaction, resulting in a dense, uniform coating that shall adhere tightly to the pipe.

PIPE SUPPLIER REQUIREMENTS:

All pipe furnished under this specification shall be the product of an organization which has had not less than three (3) years successful experience in the manufacture of pipe of the type specified, or comparable. The total pipeline shall be the product of one company, or more than one integrated company, in business for the design and manufacture of the pipeline materials required herein. The name of the manufacturer of the pipe to be furnished shall be from MSWD list of approved manufacturers.

All pipe and joints proposed to be furnished under this specification and the materials, methods and processes of the manufacturer, must have been approved prior to the Notice to Proceed. If approval by MSWD has not been made, such product cannot be used under this specification. Such approval will be considered and may be obtained after completion by MSWD of design review, manufacturing inspection and performance evaluation. Requests for consideration of approval must be received in writing, not less than ninety (90) days prior to the date that acceptance is desired.

DEFECTIVE LINING AND COATING:

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Any defective area in the lining or coating shall be removed to the pipe wall and the area shall be repaired by hand application to the full-required thickness. The coating shall be repaired or replaced as necessary to assure a complete and soundly reinforced coating. The materials used for repair of defective lining and coating shall be the same type of materials.

PROTECTION OF PIPELINE MATERIALS:

During the entire period of the application of the lining and coating and the curing thereof, the materials shall be protected from freezing, and the pipe sections shall be carefully supported and handled so as to avoid injury to the linings and coatings. The pipe shall be properly stored to prevent damage to the linings and coatings, including excessive cracking or separation from the steel surfaces.

CORROSION PROTECTION:

The unlined interior surface of each bell, the uncoated exterior of each spigot, and bare metal surface of specials and fittings shall be protected against corrosion by shop applying one coat of Rust-Oleum No. 769 damp-proof red primer (SO) or approved equal.

LONG RADIUS CURVES AND PULLED JOINTS:

Horizontal and vertical long radius curves, when specified, may be accomplished by taking small angular deflections at the field joints and the use of short length pipe sections. Maximum joint deflection shall not exceed one half of that recommended by the manufacturer.

PIPE OUTLETS 2 INCHES AND SMALLER:

Small outlets (two-inch (2") or less) shall be standard steel pipe couplings, shop welded to the pipe in a manner conforming to the requirements of the A.P.I. - A.S.M.E. code for Unfired Pressure Vessels for Petroleum Liquids and Gasses. Plugs of the proper diameter shall be provided for each pipe outlet. The threads for each pipe outlet two inches (2") and smaller shall be free from burrs and obstructions after the coupling has been welded to the pipe wall.

PIPE OUTLETS LARGER THAN 2 INCHES:

Large outlets (more than two-inches (2")) including Wye-branches, crosses, and tees, shall be reinforced with a cross-sectional area at least twice the area of the steel removed from the pipe walls, except that the minimum combined thickness of the pipe wall and reinforcement shall be not less than 3/16 inch. At the option of the pipe manufacturer, pipe outlets larger than two-inches (2") may be formed in the pipe sections with a nominal wall thickness of 3/16 inch without additional reinforcement. The outlets shall have protective linings and coatings equivalent to that of the adjoining pipe.

BUTT STRAPS:

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Butt Straps shall be split and shall have a minimum thickness of 3/16 inch and a five-inch (5") half coupling with plug. Two hand-holes shall be required on pipelines fourteen-inch (14") and larger. All butt straps shall be shipped loose.

TESTING JOINTS:

Every pipe section shall be tested hydro-statically. After the joint ends have been formed and attached, a dye-check method or approved equal of testing the end ring welds shall be used.

LOADING AND TRANSPORTING PIPE:

After the pipe has been properly cured as set forth above, it shall be loaded on trucks or railroad cars, adequately supported and chocked with sawdust bags or other methods approved by MSWD. During loading and unloading operations, the pipe shall be moved with non-metallic slings of sufficient width to prevent damage to the exterior coating and in such a manner to prevent injury to the cement mortar lining. The sling webbing shall be no less than four inches (4") in width. The Material Supplier shall accomplish unloading in a workmanlike manner, and every precaution shall be taken to prevent damage to the pipe. Under no circumstances are pipe sections to be dropped or bumped in handling.

6.04.07 DUCTILE IRON WATER PIPE SPECIFICATIONS

It is required that the contractor shall furnish, deliver, and install all pipe and material as hereinafter described in these specifications. All fabrication, workmanship, material and testing of pipe shall conform to the latest revision of the standard specifications specified herein.

TYPE OF PIPE:

Ductile Iron Pipe waterlines shall be pressure rated to minimum Class 350 w/ Tyton Joint & Spigot. Pipe shall come with an asphaltic outside coating in accordance with ANSI/AWWA C151/A21.51 (current revision) and standard thickness cement-mortar lining and inside coating in accordance with ANSI/AWWA C104/A21.1 (current revision) which includes all sizes up to forty-eight-inches (48") unless otherwise specified.

All Ductile Iron pipe shall be eighteen (18) or twenty (20) foot laying lengths.

The contractor shall submit test results showing the physical properties of the materials used in the manufacture of the rubber gaskets, if requested by MSWD. All rubber gaskets furnished under this specification shall be subject to inspection and/or test by MSWD. Any gasket found to be unsatisfactory by MSWD shall be immediately replaced by the contractor, at no expense.

TESTING:

Each piece of pipe shall be hydro-statically proof-tested at four (4) times its rated class pressure for a minimum duration of five (5) seconds. Integral bells shall be tested with the pipe.

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MATERIALS:

All fabrication, workmanship and materials used shall conform to the requirements of standards specified in these specifications.

EXPERIENCE REQUIREMENT:

All pipe furnished under these specifications shall be the project of an organization, which has had not less than three (3) years successful experience in the manufacture of pipe of the type specified. The total pipeline shall be the product of one company (or integrated companies) in the business for the design and manufacture of the pipeline materials required herein, unless approved in writing by MSWD.

PIPE MANUFACTURER:

The name of the manufacturer of the pipe to be furnished by the contractor shall be stated on the bidding sheets. All pipe proposed to be furnished under this specification must have been approved prior to the time of receiving the bids.

PIPE MARKINGS:

All pipe to be supplied under these specifications must have the following markings on the pipe barrel: Nominal size and O.D. base, dimension ratio number; AWWA pressure class; and manufacturer's name or trademark and production record code.

LONG RADIUS CURVES AND PULLED JOINTS:

Horizontal and vertical long radius curves, when specified, may be accomplished by taking small angular deflections at the field joints and the use of short length pipe sections. Maximum joint deflections shall not exceed that recommended by the manufacturer. Vertical curves require specific written authorization from MSWD.

PIPE OUTLETS 2 INCHES AND SMALLER:

Outlets two inches (2") inches and smaller shall be standard full circle bronze double strap saddles designed specifically for ductile iron pipe. Single strap saddles are not allowed.

PIPE OUTLETS LARGER THAN 2 INCHES:

Outlets in Ductile Iron pipe larger than two inches (2") shall be accomplished through the use of ductile iron fittings (Section 6.04.09).

For outlets installed after initial pipeline, a tapping tee may be used if approved in writing by MSWD.

LOADING AND TRANSPORTING PIPE:

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Pipe shall be properly crated and packaged in a manner acceptable to the manufacturer. Pipe shall be loaded on trucks and securely strapped to the truck bed to prevent movement and distortion. Straps must be wide fabric web type.

Chains or cables shall not be utilized. During loading and unloading operations the pipe shall be moved with slings whose webbing is no less than four inches (4") in width. Unloading shall be accomplished in a workmanlike manner and pipe shall not be dropped or damaged.

CERTIFICATE OF COMPLIANCE:

MSWD may require the manufacturer to submit a certificate stating that all pipe has been manufactured and tested in accordance with this specification.

6.04.08 STEEL FITTINGS SPECIFICATIONS

This specification covers shop manufactured pipe fittings for use with steel cylinder piping including tees, crosses, elbows, reducers, laterals, flanges and related special fittings. All fittings shall be fabricated from steel or be forged steel. Cast iron fittings are not permitted. Pipelines twelve-inch (12") and smaller shall have flanged connections unless weld joint fittings are approved by MSWD. Pipelines fourteen-inch (14") and larger may utilize weld joint fittings when approved by MSWD.

STEEL FITTINGS:

Special fittings and sections shall be in accordance with the requirements of AWWA Standards C200 (Section 4), C207 and C208. Fittings shall be designed and fabricated for a pressure which is 150 percent of the pressure class as designated for the pipeline, except where otherwise indicated. Dye penetrant process may be used on all untested welds in lieu of hydrostatic testing if straight pipe used in fabricating the special has passed a hydrostatic test of 75 percent of the yield point. All defective welds shall be removed, re-welded and retested. Lining and coating material shall be shop applied and be the same as that indicated for the mating piping. Flanges, where indicated, shall be AWWA Class E, bored in accordance with the recommended clearance for the O.D. of the cylinder pipe being served.

Special fittings and sections shall be reinforced with stiffener rings, collars, crotch plates, etc. as necessary to keep the maximum working stress to that level permitted for the pipe in accordance with AWWA M11 Steel Pipe Manual, Section 13.3.

Non-flanged joints shall be designed for lap-weld joints and shall have bell ends for receiving the O.D. of the mating steel pipe cylinder.

Approved manufacturers must be used for steel fittings to be furnished under this Specification (approved Materials List, (Section 8.0). Manufacturers of steel fittings that seek MSWD approval are to submit sample fittings for testing and acceptance by MSWD and must submit samples together with detail drawings, not less than 90 calendar days prior to the time acceptance is desired.

TESTS:

The special fittings shall be factory tested in accordance with AWWA Standard C200, Section 4.3, except that the test pressure shall be 1-1/2 times the specified pipe class.

GUARANTEE:

The contractor shall guarantee all materials and workmanship of items furnished under these Specifications shall be free from defects for a period of one (1) year after final completion and acceptance of the entire contract work. The contractor shall, at contractor's own expense, repair or replace all defective materials or workmanship found to be deficient with respect to any provisions of this specification.

6.04.09 DUCTILE IRON FITTINGS SPECIFICATIONS**DUCTILE IRON FITTINGS:**

All Ductile Iron fittings (Tees, elbows, crosses, adapters, etc.) shall be ductile iron per ASTM A536 in accordance with ANSI/AWWA C110/A21.10 AND ANSI B16.1 Class 125 Flanges. Flanged fittings sizes 4" thru 48" shall be pressure rated @ 250 psi minimum. All mechanical Joint (MJ) or Tyton® interchangeability (PO, TJ, UT) shall be ductile iron per ASTM A536. Fitting 4" thru 24" shall be pressure rated @ 350 psi minimum and 36" thru 48" size shall be pressure rated @ 250 psi minimum. All fittings shall conform to either ANSI/AWWA Standard C110/A21.10 and/or ANSI/AWWA Standard C153/A21.53 (both current revisions) with cement-lining and seal coating in accordance with ANSI/AWWA C104/A21.4 unless specified otherwise.

MANUFACTURER:

Manufacturers of ductile iron fittings proposed to be furnished under the specification must be approved by MSWD. Manufacturers of ductile iron fittings, which seek MSWD approval, are to submit sample fittings for testing and detail drawings, not less than 90 calendar days prior to the time acceptance is desired.

TESTS:

The special fittings shall be factory pressure tested in accordance with Sections 10-10 and 1012 of AWWA C110, except that the test pressure shall be 1-1/2 times the specified pipe class.

GUARANTEE:

The contractor shall guarantee that all materials and workmanship of items furnished under these specifications shall be free from defects for a period of one (1) year after final completion and acceptance of the entire contract work. The contractor shall repair or replace all defective materials or workmanship supplied found to be deficient with respect to any of these specifications.

6.04.10 WATER PIPELINE INSTALLATION SPECIFICATIONS

The contractor shall install pipe, closure sections, fittings, valves and appurtenances, including pipe supports, bolts, nuts, gaskets, and jointing materials. All exposed piping shall be adequately supported with devices of appropriate design approved by MSWD.

At all times when the work of installing pipe is not in progress, all openings into the pipe and the ends of the pipe in the trenches or structure shall be kept tightly closed to prevent entrance of animals and foreign materials. The contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, shall assume full responsibility for any damage due to this cause and shall restore and replace the pipe to its specified condition and grade if it is displaced during this period. The contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by MSWD.

Where closure sections are required by the contractor laying operations, the sections shall be installed in accordance with the applicable sections of these Specifications.

The pipe sections shall be laid in the trench to true alignment and grade in accordance with the plans. Exceptional care shall be taken in placing the pipe and making the field joint. Bumping of the pipe in the trench will not be permitted. Concrete thrust blocks shall be provided at the locations and of the sizes as shown on the drawings. Welded joints shall be provided where indicated on the drawings.

LAYING AND JOINTING STEEL CYLINDER AND DUCTILE IRON PIPE:

Trenches shall be in a reasonably dry condition when the pipe is laid. Necessary facilities shall be provided for lowering and properly placing the pipe sections in the trench without damage. All handling of the piping shall be done with slings that will not damage the pipe. The slings shall bear uniformly against the pipe. When not being handled, all pipe shall be supported on timber cradles, sand bags, or mounds of earth. The pipe shall be laid carefully to the lines and grades given and the sections shall be closely jointed to form a smooth flow line. Where no grades are given, pipe shall be laid in a smooth continuous grade between connections to other mains, blowoffs and/or air relief valves with a minimum cover of thirty-six-inches (36"). Immediately before placing each section of pipe in final position for jointing, the bedding for the pipe shall be checked for firmness and uniformity of surface.

Where called for on the plans, the bell end of steel cylinder piping shall be circumferentially welded to the spigot end of the adjoining pipe as shown on MSWD Standard Drawings. The weld shall be continuous and ample bell holes shall be dug to permit proper welding. The field weld between the bell and spigot ends shall be made in two (2) or more passes so as to build up a fillet weld having a minimum thickness of 1/4 of an inch. Three (3) passes will be required for 5/16-inch thick plate with one additional pass for each 1/8 inch of plate thickness above 5/16 inch. Prior to welding those joints designated for welding, the joints shall be made up in accordance with this section, except that the rubber gasket and the bond wire may be omitted. All joints shall be inspected and approved by MSWD before the coating is placed on the outside of the joint. Where butt-straps or closure pieces are used, the exterior of the closure pieces shall be given a coating at least equal to that on the pipe.

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Prior to joining bell and spigot pipe, the rubber gasket shall be placed in the spigot groove and shall be properly lubricated with a suitable compound soap supplied by the pipe manufacturer. The gasket shall not be twisted, rolled, cut, crimped, or otherwise injured or forced out of position during the closure of the joint.

CONNECTIONS TO EXISTING FACILITIES:

All wet tap connections to existing facilities will be made by MSWD or by the contractor in the presence of the MSWD inspector if approved by MSWD staff. contractor shall make all non-pressure connections to existing facilities, as shown on the plans.

INSTALLATION OF VALVES:

All buried valves shall be installed with the stems in a vertical position except as otherwise noted. Valve boxes shall be centered over the operating nuts and shall be set plumb. Installation shall be per MSWD Standard Drawing.

INSTALLATION OF AIR VACUUM/AIR RELEASE VALVES:

Air Vacuum/Air release valve assemblies with guard posts shall be installed as shown on MSWD Standard Drawings.

INSTALLATION OF BLOW-OFF VALVE ASSEMBLIES:

Blow-off Assemblies shall be installed as shown on MSWD Standard Drawings.

INSTALLATION OF FIRE HYDRANTS:

Fire hydrants shall be installed as shown on MSWD Standard Drawings.

FIELD APPLICATION OF PROTECTIVE COATINGS:

All unburied metal surfaces of piping and appurtenances in structures and above ground shall be prepared for paint. All ungalvanized metal surface shall have deposits of dirt, grease, tar and oil removed by the use of Amercoat No. 57 Surface Cleaner or approved equal. All sharp edges and weld splatter shall be removed. The surface to be painted shall be wire-brushed to remove all dust, mill scale, paint, or other foreign matter. All dust shall be removed from the surface by brush or industrial vacuum.

All buried miscellaneous ferrous surfaces including buried valves, flanged joints and other buried miscellaneous fittings and appurtenances, not specifically covered elsewhere herein, shall be thoroughly cleaned and field coated with Koppers Bitumatic, or approved equal. The coating shall be applied in strict accordance with the manufacturer's recommendations. Bare metal pipe and weldments shall be cleaned and then coated with an approved primer and two layers (20 mils min.) of Protector-Wrap or approved equal. At no time shall epoxy lined and/or coated pipe be field fabricated.

THRUST RESTRAINT:

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Thrust shall be contained by welding joints (steel cylinder pipe) or by use of thrust blocks and restrained joints (Ductile Iron pipe). Thrust blocks and restrained joints shall be in accordance with MSWD standards.

TEMPORARY PIPELINE TERMINATION (FOR FUTURE):

When tees and crosses are installed for future water system expansion, a line sized valve shall be installed on the portions of the cross or tee designated for future water pipelines. One full length of pipe shall then be installed from the valve in the direction of the future pipeline. The end of the pipe shall be plugged, and a concrete thrust block shall be poured to prevent movement at the dead end.

FIELD FABRICATION:

At all locations where field fabrication of fittings occurs, the contractor shall fabricate the fittings in accordance with AWWA C208 and in such a manner that the adjacent rubber gasket joint is in close enough proximity to permit field repair of the mortar lining or the contractor shall furnish and install suitable hand holes to permit the hand lining and repair and patching of the field fabrication joint. The completed field fabricated fitting shall provide a smooth transition surface across the fabricated joint. The exterior coating of the fitting shall be repaired as hereinbefore specified.

CORROSION TEST STATIONS (STEEL PIPE):

Corrosion test stations shall be installed at the locations shown on the drawings.

FLANGE INSULATING JOINTS (STEEL PIPE):

Flange insulation joints shall be installed at the locations shown on the drawings. Insulating joints shall prevent the flow of electric current across the joint and is of adequate strength to withstand the working water pressure of the adjacent piping. Flange insulation joints shall consist of:

Dielectric gaskets: Full-faced, 1/8-inch thickness, phenolic with gaskets on each side, Type "E", PSI Line Backer, or equal.

Insulating stud sleeves for each bolt: High-density polyethylene or spiral wound Mylar.

Two insulating washers for each bolt: 1/8-inch thick phenolic.

Bolts shall conform to ASTM A193, Grade B7, Heavy Hex, stainless steel, Type 316.

Nuts shall conform to ASTM A194; Grade 2H, Heavy Hex, stainless steel, Type 316.

Steel washers over each insulating washer: 1/8-inch-thick hardened stainless steel, Type 316, with the same outside diameter as the insulating washer.

One-piece molded acetal resin combination sleeve and washers are acceptable. Flange Insulation Products: PSI Industries, Central Plastics Company, or equal.

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INSTALLATION OF FLANGE INSULATION JOINTS:

Flange insulation joints shall be installed as follows:

Insulating materials shall be verified to be of proper size and type.

Faces of flange pairs shall be cleaned of all dirt, rust or fouling materials, which would interfere with a watertight joint or insulating properties of the flange insulation material.

Full-length insulating sleeves and insulating washers and insulating gaskets shall be as required herein. Alignment pins shall be used to properly align the flange and gasket. The manufacturer's recommended bolt-tightening sequence shall be followed. Bolt insulation sleeves shall be centered within the insulation washers so that the insulating sleeve is not compressed and cracked.

For buried insulators, the entire flange assembly and all bolts shall be covered with 20 Mils bitumastic coal tar epoxy.

A cathodic Protection bonding test station shall be installed at each buried insulating joint. Two test wires shall be installed on each side of the buried insulator.

TESTING FLANGE INSULATING JOINTS:

Contractor shall retain the services of a corrosion engineer registered in the State of California to check each insulation joint for electrical continuity and potential after installation is completed. Test results at each insulating joint shall be recorded in a notebook, which shall be submitted to MSWD upon completion of the project. If a discontinuity should occur, the system shall be repaired and retested at the contractor's expense.

6.04.11 TESTING AND DISINFECTING SPECIFICATIONS

The contractor shall furnish all equipment, labor, and material, exclusive of water, for testing and disinfecting the pipelines. MSWD will furnish water used for testing, but the contractor shall provide the necessary means to deliver water from the designated connection to the points of use. All tests of the piping shall be made in the presence of MSWD. All pipelines and appurtenances shall be thoroughly flushed out with water prior to testing. Where deemed appropriate by MSWD, video inspection of water pipelines shall be performed in the presence of the Inspector. Prior to inspection, the equipment to be used shall be disinfected and lines shall be drained. Complete videotapes and a detailed report of the inspection shall be furnished to MSWD.

TESTING PIPELINES:

The contractor shall pressure test the pipeline either in sections or as a unit before any resurfacing is done except for resurfacing at intersections which may be done prior to testing. (The pipeline shall not be tested before the mortar lining and coating on all of the steel cylinder pipe lengths in the pipeline has attained at age of 14 days.) The test shall be made by placing temporary bulkheads in the pipe where needed and filling the line slowly with water. Care shall be used to see that all air vents are open during the filling.

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After the pipeline, or section thereof, has been completely filled, it shall be allowed to stand under a slight pressure for a sufficient length of time to allow the mortar lining to absorb what water it will and/or to allow the escape of air from any air pockets. During this period, the bulkheads, valves, and connections shall be examined for leaks. If any are found, they shall be stopped, or in case of leakage through valves in the pipeline or through bulkheads, provisions shall be made for measuring such leakage during the test. The test shall consist of holding the test pressure on each section of the line between valves or bulkheads for a period of four (4) hours. The test pressure at the lowest point in the line, or in the section of line being tested, shall be not less than 150% of the specified class pipe. The water necessary to maintain the pressure shall be measured through a meter or by other means satisfactory to MSWD. The leakage shall be considered the amount of water entering the pipeline during the test, less the measured leakage through valves and bulkheads. This leakage shall not exceed ten (10) gallons per inch of diameter per mile per twenty-four (24) hours. Any noticeable leaks shall be stopped and any defective pipe shall be replaced with new sections.

DISINFECTING:

All water lines and appurtenances shall be super chlorinated/disinfected at an initial dosage of 100-PPM (parts per million) minimum by means of liquid sodium hypochlorite (approved for potable water use) or by chlorine gas. Initial disinfection shall be held for a minimum period of twenty-four (24) hours and a maximum of forty-eight (48) hours contact time. After initial contact time period, a minimum of 50 PPM (parts per million) chlorine residual must be maintained throughout the entire waterline and appurtenances in order to flush system. If 50 PPM is not maintained the entire water line and appurtenances must be re-disinfected to 100 PPM minimum and shall be held for an additional twenty-four (24) hours before flushing the system.

During the process of chlorinating the pipeline, all valves or other appurtenances shall be operated while the pipeline is filled with the heavily chlorinated water. Care shall be exercised such that no valve shall be opened that allows the heavily chlorinated water to enter portions of the pipelines, which are already in service.

FINAL FLUSHING AND BACTERIOLOGIC TEST:

Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the replacement water throughout its lengths shows upon test, a chlorine residual of less than one (1) mg/l. In the event chlorine is normally used in the source of supply, the chlorine test shall indicate chlorine residual less than or equal to that carried in the system.

Contractor shall provide all equipment and supplies for performance work and shall flush water at locations or by procedures approved by MSWD. The contractor shall obtain permission and permits from regulatory agencies for discharging water. If required, the contractor shall (at his expense) apply a reducing agent to the solution to neutralize residual chlorine or chloramines remaining in the water. Flow of water shall be controlled to prevent erosion, damage to vegetation, and altering ecological conditions. After final flushing, and before the water pipeline is placed in service, water samples shall be taken

and tested for bacteriological quality. If the initial disinfection fails to produce satisfactory samples, the disinfection process shall be repeated until satisfactory samples have been obtained. Once samples are satisfactory and MSWD has given approval, the pipeline may be placed in service. After passing an initial bacteriological test with a negative Coliform Test but having a high plate count, the contractor may, with the approval of MSWD, be allowed to flush using a six-inch (6") or greater connection to MSWD domestic system.

An acceptable test shall be a negative Total Coliform twenty-four (24) hour Presence/Absence Test and a standard plate count (Heterotrophic Plate Count or HPC) of less than 100 colony-forming units (cfu) per milliliter. Alternately a plate count of no more than 50% greater than MSWD incoming supply water to the project area will be considered passing.

All disinfection testing shall be at the contractor's expense and shall be inspected/monitored by MSWD. Bacteriologic samples will be taken by MSWD personnel and tested at a MSWD approved laboratory.

6.05 VALVES SPECIFICATIONS

The contractor shall be required to furnish and deliver valves as specified in these specifications and all valves and operators shall be Class 150 or greater unless noted otherwise on the plans. All valves shall be designed to work equally well with pressure on either side, have non-rising stems, open left (counterclockwise).

GATE VALVES:

All valves shall conform to the standards as set forth in the latest revision of AWWA Standard for Gate Valves for Water and other Liquids C-509 (resilient seat). All valves shall be iron body, bronze mounted, and resilient seat. Resilient seat valves shall have a "flow through" passage with no depressions for the sealing disc. All gate valves, two-inch (2") – fourteen-inch (14") shall be constructed in the vertical position.

CAST MARKING:

In addition to markings required by AWWA Standards C-500 and C-509, valves shall have the manufacturer's name, the size of the valve and the working pressure cast on the side of valves.

VALVE ENDS:

Valves for use with steel cylinder pipe shall be flanged on both ends. Valves for use with Ductile Iron pipe shall have flanges both ends, push-on both ends, or a combination of one each end. All ends shall be designed for the water pressure as specified in AWWA Standards C-500 or C509. Flange ends shall be drilled to the American Standard for 125# Cast Iron Flanges, flange face shall not be raised and the flange face shall have standard machine finish. Push-on (Hub) ends shall be "Griptite" or approved equal with hubs dimensioned for C.I.O.D. pipe.

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STEM:

All valve stems shall be of bronze having a minimum tensile strength of 55,000 P.S.I. and a yield point of not less than 40,000 P.S.I., with an elongation of not less than 10 percent in two-inches (2"). Heat treatment will be permitted to develop these requirements. All bronze shall contain not more than 7 percent zinc or more than 2 percent aluminum. Stem seals shall consist of a minimum of two "O" rings above the stem collar under full working water pressure with the valves in full open position.

OPERATING MECHANISM:

All valves unless otherwise specified shall be provided with a two-inch (2") square operating nut with a cast arrow showing directing in which the nut is to be turned to open the valve. AWWA Standard C-500 Section 3.12, and Standard C-509 Section 4.7 shall be amended by this requirement to limit the number of turns to a maximum of five over the minimum number specified in Table 5 and Table 3 respectively.

GEARS:

Where required by the sizing table above, valves shall be equipped with gears of the totally enclosed type in conformance with AWWA Standard C500, and suitable for installation of the valve underground. All parts requiring lubrication shall be provided with Alemite grease fittings.

INDICATORS:

When required on the supplemental specifications, valves shall be equipped with indicators to show the position of the gates. The indicator mechanism shall be made of bronze or other non-corrodible metal throughout, except for the case that may be cast iron.

HORIZONTAL VALVES (DOUBLE DISC VALVES):

Double square bottom construction (double disc) valves are not approved.

DOUBLE SQUARE BOTTOM CONSTRUCTION (DOUBLE DISC) VALVES:

Double square bottom construction (double disc) valves are not approved.

RESILIENT WEDGE AND SEAT:

Resilient seated gate valves shall test "bubble tight" with zero leakage allowed. Resilient coating of the gate shall be fusion bonded to prevent future separations.

RUBBER SEATED BUTTERFLY VALVE:

Butterfly valves shall meet the provision of AWWA Specification C-504 for rubber-seated, tight-closing valves. Operators shall be sized as recommended by the manufacturer.

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Buried operators shall be equipped with a two-inch square operating nut and shall be waterproof and suitable for burial. contractor shall coordinate pipe fabrication to insure free movement of valve disc. All valves shall have their internal and external surfaces (except stainless steel parts, rubber surfaces, and flange faces) epoxy coated, with a minimum of 10 mils of holiday free Keysite 750, (white) epoxy, or MSWD approved equal, or Shop applied by manufacturer at his plant with Keysite 750 (white) epoxy (10 Mils min.).

VALVE MANUFACTURER:

The name of the manufacturer of the valves to be furnished by the contractor shall be listed on the APPROVED MATERIALS LIST (Section 8.0).

GUARANTEE:

The contractor shall guarantee all materials and workmanship of valves furnished under these specifications shall be free from defects for a period of one (1) year after final completion and acceptance of the entire contract work. The contractor shall repair or replace all defective materials or workmanship found to be deficient with respect to any provisions of this specification.

6.06 PAINTING AND PROTECTIVE COATINGS**6.06.01 GENERAL**

The work included in this section consists of the furnishings of all labor, materials, apparatus, scaffolding, and all appurtenant work in connection with painting. In no case shall any concrete, wood, metal, or any other surface requiring protection be left unpainted even though not specifically defined herein. All paints and coatings shall be in compliance with all South Coast Air Quality Management District requirements including volatile organic chemicals (VOC). The contractor shall take the necessary steps to protect the work of others during the time his work is in progress. The contractor shall be responsible for all damage to the work. Motors, pumps, and other equipment that might be damaged by sandblasting and that are furnished with approved, factory-applied finish shall be solvent cleaned, lightly sanded, and given one (1) coat of painting system "P2" per Section 2.01 herein. MSWD shall be the final judge as to which equipment the above requirement applies. Color shall be as determined by MSWD.

6.06.02 MATERIALS**PAINT:**

All materials specified by name and/or manufacturer or selected for use under these specifications shall be delivered unopened at the job site in their original containers and shall not be opened until inspected by MSWD. Whenever a manufacturer's brand name is specified, it is intended to define the general type and quality of paint desired. Other paints of equal quality may be used only with written approval of MSWD. No paint, varnish, or stain shall be reduced or applied in any way, except as herein specifically called for or if not specifically called for, then it shall be applied in accordance with the manufacturer's recommendations.

POWDER EXPOXY:

Heat Fusion Method shall apply Epoxy as a powder to heated metal either by Electrostatic Method or, as specified herein.

Electrostatic Method: The powder shall be applied to the heated, grounded metal part which has been electrostatically charged by means of a current of approximately 400 volts. After application of the epoxy, the part shall be reheated as specified by the manufacturer. Particular care shall be taken to protect non-ferrous masked parts. The finished product shall be carefully examined for epoxy interference on working parts.

Heat Fusion Method: The powder shall be applied to the heated, grounded metal part which has been electrostatically charged by means of a current of approximately 1 1/2 amperes at approximately 400 volts. After application of the epoxy, the part shall be reheated as specified by the manufacturer. Particular care shall be taken to protect non-ferrous masked parts. The finished product shall be carefully examined for epoxy interference on working parts.

Thickness of Coating: The minimum dry coating thickness shall be 8 mils provided, however, that the thickness of coating in the grooves for valves of fittings designed to receive a rubber gasket shall be approximately 5 mils.

LIQUID EPOXY:

Where the size of the valve or other item is too large to be coated by the powder epoxy method, it shall be prepared in accordance with the requirements specified herein and coatings shall conform to the following requirements.

Thickness of Coating: The epoxy shall be applied in 2-5 spray coats to a minimum dry film thickness of 8 mils.

Application and Cure: The first coat of liquid epoxy shall be spray applied to the prepared surface within four (4) hours after completion of sandblasting. All items to be coated with the epoxy to be applied shall be at a minimum temperature of 50° F and a maximum surface temperature of 100° F at time of application. The first coat shall be air-dried with adequate ventilation for five (5) days at a minimum temperature of 65° F.

6.06.03 COLOR SELECTION

All color sections shall be subject to approval of submittals by MSWD.

6.06.04 PRIMER AND INTERMEDIATE COATS

Primer and intermediate coats of paint shall be unscarred and completely integral at the time of application of each succeeding coat. Each coat shall be subject to the inspection and approval of MSWD before the next succeeding coat is applied, and defective work of any kind shall be deemed sufficient cause for recoating the entire surface involved.

Sufficient time shall be allowed between coats to insure proper drying, unless these specifications or manufacturer's recommendations specifically state otherwise. Excessive time or exposure between coats shall not occur in cases where such excessive time or exposure will impair the bond between coats.

6.06.05 SUBMITTALS

Submit samples of field-applied paint and coating finishes, colors, and covering at least sixty (60) days prior to start of such finishing operations.

6.06.06 IDENTIFICATION

Label or tag each sample or set of samples identifying the manufacturer's name and address, brand name, catalog number, project title, and intended use.

6.06.07 COLORS, PATTERNS, AND TEXTURES

For items required to be of selected and approved colors, patterns, textures, or other finish, submit sufficient samples to show the range of shades, tones, values, patterns, textures, or other features corresponding to the instructions and requirements specified.

6.06.08 FACTORY FINISH COLORS

Colors of material specified to be furnished with a factory finish are subject to approval. Submit duplicate samples of factory finishes showing the full range of available colors for selection and approval.

6.06.09 PROTECTIVE COATING MATERIALS

For items required to be selected and approved, material submittal required for review and approval by MSWD.

6.06.10 SURFACE PREPARATION AND COATING THICKNESS

Surface preparation shall be per manufacturers' current recommendations.

6.06.11 COLOR AND PAINT SCHEDULE

PROCESS SYSTEM	DESCRIPTIVE COLOR CODING	MANUFACTURERS' COLOR DESIGNATION
All exposed piping standards	Per MSWD Approved Material List	Submit to MSWD for approval

6.06.12 PREPARATION

1. Surface Preparation:

The contractor shall carefully examine all surfaces to be finished and before beginning any of his work shall see that the work of the other trades has been left or installed in a

workmanlike condition to receive paint. Metals shall be clean, dry, and free from mill scale, rust, grease, and oil.

Except as otherwise provided, all preparation of metal surfaces shall be in accordance with Specifications SP-1 through SP-10 of the Steel Structures Painting Council (SSPC). Grease and oil shall be removed by wiping with mineral spirits or naphtha per Specification SP-1. Rust, scale, welding slag, and spatter shall be removed by wiping with mineral spirits or naphtha per Specification SP-1. Rust, scale, welding slag, and spatter shall be removed, and the surface prepared by hand tool cleaning, power tool cleaning, or blast cleaning in accordance with the appropriate Specification SP-2 through SP-10.

2. Mixing:

Paint containers shall be opened only when required for use. Paint shall be mixed only in designated rooms or spaces in the presence of MSWD. Paint shall be thoroughly stirred or agitated to uniformly smooth consistency suitable for proper application. In all cases, paint shall be prepared and handled in a manner to prevent deterioration and inclusion of foreign matter.

a) EPOXY COATINGS:

All oil and grease shall be removed from the metal by caustic degreasing or steam cleaning. The surface shall be sandblasted to near-white metal in accordance with SSPC-SP10. To obtain maximum adhesion of epoxy coating, the grit used for blasting shall be coarse enough to impact a tooth in the metal equal to 25% of the thickness of the coating to be applied. The metal shall be cleaned, after sandblasting, with clean, dry compressed air. Use of rags to remove residual dust after sandblasting will not be permitted.

b) POWDER EPOXY:

Where the size of the valve or other item is not too large, it shall be coated by the powder epoxy method. Application of powder epoxy shall conform to the following requirements:

c) PREHEATING:

Areas that are not to be coated shall be masked using 500° F. Masking tape, similar to Permacel, as by Minnesota Mining and Manufacturing Company. The part to be coated shall be placed in an oven and preheated to the temperature specified by the epoxy manufacturer. An accurate temperature-measuring device such as a pyrometer shall be used to determine the substrate temperature.

6.06.13 VENTILATION

The contractor shall not permit painting to begin in enclosed places until a forced draft ventilation system of sufficient air volume has been placed in operation.

6.06.14 APPLICATION OF PAINT

The applicator of the paint shall have had experience in applying the type or types of coatings and under similar conditions that he will be required to meet in this contract. The contractor shall verify the paint applicator's qualifications before subcontracting the work to him.

No painting shall be done under dusty conditions, during or immediately after a rain, during rainy weather, or when the temperature is less than 50° F.

Except that prime coats shall be applied by brush and well worked into the surface, paint may be applied by brush, roller, trowel, or spray, unless the manufacturer's recommendations or these specifications call for some particular type of application.

Where spray application is used, each coat of paint shall be applied to a thickness equivalent to a brush coat application at coverage not greater than that specified by the manufacturer for a brush coat application.

All work shall be done in a workmanlike manner, leaving the finished surfaces free from drops, waves, holidays, laps, or brush marks. Drop cloths and other coverings shall be placed at all times as to protect floors and other surface from spatter and droppings. Hardware, plates, lighting fixtures, nameplates, and similar articles, which are not to be painted, shall be masked off or removed completely. After completion of painting, any spatter or droppings shall be removed.

The number of coats specified is the minimum to be applied. Suction spots between coats shall be touched up, and additional coats shall be provided if required to produce a finished surface of solid, even color, free from defects. The total thickness of the coating shall be as specified. Additional coats of paint shall be added if necessary to bring the total thickness up to not less than that specified. No holidays shall be left.

Particular care shall be used to assure that the specified coverage is secured on the edges and corners of all surfaces. Additional brush coats shall be applied if necessary to cover the edges and corners. The contractor shall control and check the dry film thickness of the coatings on metal surfaces with a correctly calibrated thickness meter and shall check for holidays with a low-voltage holiday detector. MSWD may use the contractor's meter and detector for additional checking.

Damaged paint or scratched painted surfaces shall be sanded smooth before repainting. Sanding areas to be repainted shall be done to such a degree and in such a manner that all evidence of the scratches or damages are obscured.

6.06.15 CLEAN UP

Upon completion of his work, the painting contractor shall remove his surplus materials. All paint spills shall be removed, and the entire premises shall be free from rubbish, debris, etc., caused by his work. He shall present the work clean and free from blemish so that it is acceptable in every way.

6.06.16 PAINT TO BE PROVIDED TO MSWD

At the end of the project, the contractor shall turn over to MSWD a gallon can of each type and color of paint, primer, thinner, or other coating used in the field painting. If the manufacturer packages the material concerned in gallon cans, then it shall be delivered in unopened labeled cans as it comes from the factory. If the manufacturer does not package the material in gallon cans, and in the case of special colors, the materials shall be delivered in new gallon containers, properly closed with typed labels indicating brand, type, color, etc. The manufacturer's literature describing the materials and giving directions for their use shall be furnished in three (3) bound copies. A typewritten inventory list shall be furnished at the time of delivery.

6.06.17 WARRANTY INSPECTION

Warranty inspections shall be conducted during the eleventh (11th) month following completion of all coating work. All personnel present at the pre-job conference shall be present at this inspection. All defective work shall be repaired in strict accordance with this specification and to the satisfaction of MSWD.

6.07 SEWER PIPELINE CONSTRUCTION**6.07.01 GENERAL**

These specifications for construction are for use by the contractor when installing sewerage systems within Mission Springs Water District (MSWD).

These specifications are intended to be used in conjunction with the Standard Specifications for Public Works construction, latest edition, (herein referred to as the "Green Book"), and all requirements of applicable Codes and Regulations from the State of California Department of Health Services regarding the construction phase of sanitary sewerage systems. MSWD should be consulted for any modifications or deviations from these Specifications.

Certain work in connection with tying into existing sewers and manholes may require the temporary handling of sewage either by temporary bypass lines, pumping, bulk heading at low flows, or other means, to be approved by MSWD. Sewage so diverted shall be handled in a manner so as not to create a public nuisance or health hazard. Bypassing of untreated or partially treated wastewater to surface waters, drainage courses, or storm drains will not be permitted.

6.07.02 MATERIALS

All material shall be new and conform to, or exceed, the standard for each type of pipe, fitting, manhole, etc. as required by this specification and shall be from the Approved Materials List, (Section 8.0)

SEWER PIPE:

Unless otherwise approved by MSWD, all sewers shall be extra strength Vitrified Clay Pipe (VCP) and shall conform to the requirements of ASTM C-700 "Specifications for Extra

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Strength Vitrified Clay Pipe), the "Green Book" 207-8, 208-2, and the requirement specified herein.

All Vitrified Clay Pipe shall be subject to the Bearing Strength Tests and hydrostatic pressure tests described in ASTM C-301. MSWD may select at random and test one length of pipe for each 200 lengths of pipe (or fraction thereof) delivered to the project site.

Ductile Iron Pipe and fittings shall be used only in special circumstances and only when approved in writing by MSWD.

JOINTS:

For Vitrified Clay Pipe shall be made up using a factory-made mechanical or compression joint meeting the requirements of ASTM C-425 "Specification for Vitrified Clay Pipe Joints Using Material Having Resilient Properties".

FITTINGS:

Vitrified Clay Pipe fittings shall include branches of every type and stoppers. These fittings shall conform to these specifications, ASTM C-301 and shall equal or exceed the pipe in quality. Branches shall be of the type called for on the plan and standard drawings and shall be securely and completely fastened to the barrel of the pipe in the process of manufacture.

Stoppers shall be strong enough to sustain all applied earth and hydrostatic tests or air testing. Stoppers shall be capable, unbraced, of remaining in place when subjected an air pressure up to 5 psi.

MANHOLES:

Shall be constructed of precast concrete manhole sections with a minimum wall thickness of 6 inches. Manholes, manhole covers, and frames shall conform to the specification shown on MSWD Standard Drawings.

CLEANOUTS:

Where approved, cleanouts shall conform to MSWD Standard Drawings.

BACKFLOW VALVES:

Where required by the plans or specified by MSWD, sewer backflow valves shall be installed. These valves shall conform to MSWD Standard Drawings.

6.07.03 WARRANTY

The contractor shall guarantee the entire work constructed and all materials furnished will meet all the requirements specified herein. This warranty shall include both the quality of the workmanship and the materials used as well as that of subcontractors and suppliers.

The contractor shall agree to make at any repairs or replacements made necessary by defective materials or workmanship in the pipe materials supplied which have become evident within one-year after date of recording Notice-of-Completion, and to restore to full compliance with the requirements of these specifications, including the test requirements, any part of the sewer system which during said one year period is found to be deficient with respect to any provision of this specification. The contractor shall make all repairs and replacements promptly upon receipt of written orders for same from MSWD or if in the event the repair work must be performed by MSWD, shall reimburse MSWD for actual labor, equipment and material expenses incurred to perform such corrective work. If the contractor fails to make the repair and replacements promptly, MSWD may do the work, and the contractor shall be liable to MSWD for the cost thereof as described above.

6.07.04 SEWER PIPE INSTALLATION

Installation of all sewer pipeline materials required for the construction of sewer collection systems shall be in accordance with all provisions of these specifications including ASTM C-12 - Installing Vitrified Clay Pipelines, (Section 6.01) Construction Methods, (Section 6.02) Earthwork, (Section 6.03) Concrete, MSWD Standard Drawings (Section 9.0) the Approved Materials List (Section 8.0), and in accordance with the manufacturers specifications and applicable published standards unless modified herein. Contractor shall notify Underground Service Alert at 811 at least 2 working days prior to construction to locate potential utility interference in the project right-of-way.

MSWD will provide an Inspector for inspection of sewer pipeline construction work. The Inspector will check for compliance with MSWD requirements for sewer pipeline construction but will not have the responsibility for checking survey work (horizontal and vertical control) nor installed quantities of pipe. MSWD Inspector is Not a Safety Inspector and is not responsible for enforcing compliance with OSHA or other safety requirements. Jobsite safety is not MSWD responsibility and MSWD does not accept any liability connected with the construction.

Installation requiring connection to existing MSWD facilities must be done as shown on MSWD Standard Drawings and under continuous inspection by MSWD. Any existing sewer pipeline damaged by such work will be completely removed and replaced as directed by MSWD Inspector.

Pipe laying shall proceed upgrade with the spigot ends of bell-and-spigot pipe pointing in the direction of flow. Each pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with the adjoining pipe. Care shall be taken by the contractor to ensure safe installation of the pipe in an undamaged condition. Pipe which is damaged after installation shall be removed and replaced.

At all times when the work of installing sewer pipeline is not in progress, all openings into the pipe and the ends of the pipe in the trench shall be kept tightly closed to prevent entrance of animals and foreign materials. The contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source. The contractor shall assume full responsibility for any damage due to any cause and shall restore and replace the pipe to its specified condition and grade if it is damaged during construction. The pipe sections shall be installed in the trench to true alignment and grade in accordance with the plans and these

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specifications. Exceptional care shall be taken in placing the pipe and making the field joint. All pipes shall be installed without break, up-grade from structure to structure, with the socket (bell) ends of the pipe up-grade.

Pipe shall be installed true to line and grade with a uniform bearing under the full length of the barrel of the pipe. Suitable excavation shall be made to receive the socket (bell) of each pipe section. All adjustments to line and grade must be made by scraping away or tamping earth under the body of the pipe, and not by wedging or blocking up the spigot. Pipe shall be installed only in dry trenches.

Unless waived by MSWD, metallic locator tape 2 inches wide shall be placed in the trenches of all mains and laterals for future pipeline locating. The tape shall be placed at least 6 feet above the pipe but no deeper than 4 feet below final grade.

Where sewer lines are placed crossing above existing waterlines, ductile iron pipe with hot dip bituminous coating shall be used 10 feet on each side of the waterline (or suitable concrete encasement in accordance with State Health Department requirements).

Curved sewers (vertical and horizontal) shall be avoided where practical alignments are available, pipe sections for curved sewers shall be chosen by the contractor based on the required radius called out on the plans in conjunction with the manufacturer's recommendations. Curved sewers shall be constructed to not exceed or equal the minimum radius specified in the manufacturer's recommendations. Vertical curves are discouraged and require specific written approval by MSWD.

Pipe bedding and pipe placement shall be in accordance with MSWD Standard Drawings. All pipe shall be "shaded" (with granular material having a sand equivalent of at least 30) to at least 12 inches over the pipes and prior to placing backfill. Backfill shall be placed to at least 3 feet below finished grade and shall be compacted to a minimum density of 90% of maximum dry density, per ASTM D1557-02, or to the compaction level required by the local agency having jurisdiction, whichever is greater. The upper 3 feet shall be compacted to a minimum density of 95% maximum dry density, per ASTM D1557-02 or to the compaction level required by the local agency having jurisdiction, whichever is greater. Before final acceptance of sewer facilities or prior to putting any sewer on line, all sewer facilities shall be flushed with water and "balled" or cleaned by acceptable method prior to final air testing to ensure that all dirt, debris, and obstructions are removed from the system. After cleaning, backfill, and compaction, the contractor shall provide a video inspection of the sewer lines by a MSWD approved firm experienced in performing sewer system services. The video inspection shall be performed in the presence of the Inspector. A complete CD, DVD or thumb drive and a detailed report of the inspection shall be furnished to MSWD.

6.07.05 TESTING OF SEWER LINE INSTALLATIONS

All tests for exfiltration from, and infiltration into, the system shall be in accordance with Section 306-1.4.4 of the Green Book except as modified herein.

If leakage of infiltration, as shown in the tests, exceeds the standards set forth in said section, the contractor shall take any actions necessary to correct the deficiencies. All tests must be

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completed before the street or trench is resurfaced with permanent pavement, but after complete installation and trench compaction of all facilities within a particular section between manholes.

The air test specified herein, unless otherwise directed by MSWD, shall be used by the contractor to test all sewers. The air test shall be in accordance with Section 306-1.4.4 of the Green Book, except as herein modified.

Air shall be introduced into the pipeline until 3-1/2 PSIG pressure has been reached, at which time the flow of air to the pipe shall be shut off. After the temperature has stabilized the air pressure shall be permitted to drop and, when the internal pressure has reached 3.0 PSIG, the time lapse required for the air pressure to drop to 2.0 PSIG shall be measured. The time lapse (in seconds) required for the air pressure to decrease from 3.0 to 2.0 PSIG shall be more than that given in the following table:

SEWER PIPE DIAMETER	MINIMUM TIME LAPSE (SEC)
8"	140
10"	170
12"	200
15"	260
18"	310
21"	360
24"	410
27"	460
30"	510
33"	560
36"	610

If the time lapse exceeds that shown in the table, the pipe shall be presumed to be within acceptable limits; if the time lapse is less, the contractor shall make the necessary corrections to reduce the leakage to acceptable limits.

The water infiltration test shall be used in lieu of the air test where ground water conditions are encountered and the water level prior to any pumping or dewatering operations is above the top of the proposed sewer pipeline. The water infiltration test shall be in accordance with Section 306-1.4.3 of the Green Book, except as herein modified.

The infiltration shall not exceed ten (10) gallons per day per thousand (1000) feet of sewer, per inch of pipe diameter. The test shall be run for a minimum period of two (2) hours.

If ground water conditions are such that the ground water level is between the flow line of the proposed sewer pipeline and the top of the pipe, both the air test and the water infiltration test shall be conducted. In such cases, the section of pipe being tested shall be deemed acceptable only if it passes both the air test and the water infiltration test.

All sewer force mains shall be water pressure tested in accordance with Section 306-1.4.5 of the Green Book.

6.07.06 MANHOLE INSTALLATION AND TESTING

Manholes shall be constructed using precast manhole section unless other methods are specifically approved in writing by MSWD. Precast manhole sections shall conform to the size, shape, form, and details shown on MSWD Standard Drawings. Shop drawings for precast manholes shall be submitted by the contractor to MSWD for approval prior to installation. All precast units shall meet the strength requirements for "pre-cast concrete manhole risers and tops", ASTM C478. Precast sections shall be set in a bed of grout to make a watertight joint with the base. Manholes shall be set perfectly plumb, and all grout neatly pointed. Different height sections may be used in constructing the manhole to bring the manhole ring and cover to the desired elevation shown on the plans. The manhole shall be constructed so that there is not less than twelve-inch (12") or more than twenty-inch (20") of throat section between the top of the cone and the bottom of the frame.

Precast rings are to be joined with a minimum thickness of 1/2" of Portland Cement mortar. Mortar for joining ring sections shall be composed of not less than one part Portland Cement to two parts of clean, well-graded sand of such size that all will pass a No. 8 sieve. Mortar sand shall conform to the strength requirements specified for mortar strength under ASTM C87.

Manhole bases shall be constructed of "Class A" concrete poured against native undisturbed material and to the form and dimensions shown on MSWD Standard Drawings. If excavations beyond the required vertical dimension are made during construction, the depth of concrete below the invert of the pipe shall be increased beyond the 9-inch minimum as necessary to meet the invert with the undisturbed excavation. Placement of compacted fill to the desired grade in lieu of concrete will not be allowed.

Concrete shall be poured to a level ring-section seating surface with the base centered over the sewer intersection unless otherwise specified. A metal forming ring shall be used to form a level

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joint groove in the manhole base, which will join with the first precast section to form a watertight joint. Base inverts (channel) shall be formed in the field using forms with width and depth equal to the diameter of the sewer pipeline. Channels shall be finished smooth with constant slope from inlet to outlet (at least 2 inches across base). A two-foot (2') Vitrified Clay Pipe joint (with-out bell) of the same inside diameter as the adjoining pipe shall be placed at the inlet and outlet to each manhole or structure with at least one foot of pipe extending outside of the manhole ring. The floor of the manhole shall slope at least two inches (2") from the sides of the manhole to the open channel. All concrete used to construct the manhole base shall achieve the specified compressive strength prior to installation of the precast sections.

Manhole frames and covers shall be in accordance with MSWD Standard Drawings. All frames and covers shall be traffic strength and shall be monogrammed with the letters "MSWD SEWER". Manhole frame and covers shall not be set to final grade until final paving has been completed. Elevations to which frames and covers are to be constructed shall conform to the construction plans. Where the cover is in an existing road shoulder or other unpaved area, it shall be placed flush with the existing surface or as specified on the plans or by MSWD. Manhole frames shall be secured to the upper precast section with a grout bed and filled as shown on the detail drawing.

Once the manhole has been completely constructed and the covers installed, cleaning and scraping of foreign materials from the frames, covers, interior walls and base shall be done to ensure a satisfactory fit.

Drop manholes shall be constructed in accordance with MSWD Standard Drawings. All materials and construction of drop manholes shall conform in all respects to the applicable provisions of the above specifications with modifications for the addition of drop inlets as set forth in the detail drawing. The inside diameter of the drop inlet pipe and channel shall be the same diameter as the intercepted sewer.

Cleanouts shall be constructed in accordance with MSWD Standard Drawings.

The contractor shall make connections to existing manholes at the location and elevation shown on the plans. Where new flow-through channels must be cut in the existing manhole base, they shall be cut so that the resulting section is smooth and conforms to the intended shape. The contractor shall make necessary provisions to keep pieces of concrete and debris out of the sewer. Deviation from form and grade shall not be greater than ¼ inch. The channel surface shall be smoothed with epoxy mortar. The new VCP sewer pipeline (not to exceed twenty-four-inch (24") in length) shall be firmly embedded in epoxy grout where it joins the existing manhole. Where holes are required in existing manhole walls for new or revamped connections, the contractor will be required to use coring type equipment.

Upon completion, manholes shall be tested for leakage using either of the following test methods:

a. Ground water conditions:

Infiltration test all manholes in areas where groundwater exists over the top of the pipe shall be water tested. All pumping of ground water shall be discontinued for at least three (3) days, after which the manhole shall be tested for infiltration. The inlet(s) and outlet of each manhole shall be plugged and any infiltrated water shall be collected in the manhole and measured.

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b. Dry conditions:

Exfiltration test where no groundwater exists, approximately one (1) of every ten (10) manholes, as directed by MSWD, shall be water tested. Each manhole shall be filled with water 4 feet 0 inches above the flow line of the manhole with the inlet(s) and outlet of each manhole plugged.

The maximum allowable leakage rate for each type test shall be ten (10) gallons per hour per manhole as tested for a period of thirty (30) minutes (minimum). Where test results indicate that the allowable leakage is exceeded, the contractor shall make the necessary repairs to reduce the leakage to acceptable limits.

6.07.07 SEWER LATERAL INSTALLATION

Laterals of the proper size specified on the plans shall be installed at the locations shown on the plans and shall end at the property line of the lot served. The exact location may be determined in the field by MSWD Inspectors. The contractor shall field reference each lateral connection with a surface marker and record the sewer main station for the As-built documentation.

Tees and wyes shall be of the same material as the sewer main. Tees and wyes of the proper size shown on the plans shall be installed at approximately the locations shown on the plans. The exact location will be determined in the field by MSWD and shall be referenced by the contractor with a stake or suitable surface marker. A suitable plug shall be provided and installed prior to backfilling operations to ensure watertight joints.

Sewer laterals shall be installed per MSWD Standard Drawings. In no case shall any lateral be constructed at less than a 2% slope unless specifically shown on the plans and approved by MSWD. Sewer laterals shall be constructed a minimum distance of 5 feet from water service lines and pass at least 4 inches beneath them.

Unless otherwise approved by MSWD, any required saddle connections to existing mains shall be made with an approved sewer tapping machine or apparatus in accordance with MSWD Standard Drawings. The contractor shall submit his proposed method for tapping. MSWD may also require the contractor to provide the manufacturer's tapping equipment descriptions for its review. Under no circumstances will such connections be made by "knocking out" openings in the existing main. Pipe sections damaged during construction shall be removed and replaced at the contractor's expense.

Once curb and gutter has been placed, an "S" imprint shall be chiseled on the curb face at each service lateral location.

6.07.08 CONCRETE FOR SEWER SYSTEMS

Concrete shall be composed of Portland Cement (Type II or V as appropriate) natural hard rock aggregates, and water proportioned to produce required strength and well mixed into required consistency.

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Portland Cement concrete for manhole bases, cradles, encasements, thrust blocks and structures shall be composed of Portland Cement, fine aggregates, coarse aggregates, and water proportioned and mixed in accordance with the requirements of Section 90 of the State Highway Standard Specifications, except as may be herein modified.

Concrete for manhole bases, cradles and encasements, and all other concrete structures, shall be constructed to the lines and grades and in accordance with the design shown in the details on the plans, and current MSWD Standard Drawings

Prior to placing any concrete, the contractor shall submit to MSWD the design mix proposed to be used. Said mix shall set forth the weights of cement, sand, coarse aggregate, and the amount of water to be used. (Source of supply shall also be furnished to MSWD.) The proposed mix shall be approved by MSWD prior to placing concrete.

PORTLAND CEMENT CONCRETE CLASSIFICATION		
CONCRETE CLASS	28 DAY COMP STRENGTH	SACKS CEMENT/CY
"A"	3,250 PSI	6
"D"	4,000 PSI	7

The amount of free water used in concrete shall not exceed 312 pounds per cubic yard, plus 20 pounds for each required 100 pounds of cement in excess of 564 per cubic yard.

Class "B" Concrete shall be used for encasements as specified on the plans or as required by MSWD Inspector to remedy unforeseen field conditions.

At the locations shown on the sewer plans, and in accordance with the details shown on the plans or detail drawing, the contractor shall construct reinforced concrete encasement around the sewer carrier pipe. Concrete for reinforced concrete encasement shall be Class "A". Reinforcing steel (unless otherwise indicated) shall be No. 4 bar, billet steel having a minimum yield point of 60,000 PSI, formed and spaced as shown on the plans or the detail drawing.

6.07.09 STEEL CASINGS FOR SEWER INSTALLATIONS

Steel casing shall be continuously butt-welded of sheets conforming to ASTM specification A-283. Casing construction shall be either by open trench or by jacking. If jacked installation is performed, construction shall be in accordance with the specifications herein for jacked steel casing.

The casing pipe shall have a steel thickness not less than 3/8 inch. Steel casing pipe of the minimum size and thickness specified shall be installed in place by jacking and boring methods, without the use of water or air, at the locations shown on the plans, and to grades required to install the carrier pipe at its required grade.

The carrier pipe shall be supported within the casing on redwood skids secured with stainless steel bands. The ends of the steel casing shall be sealed with brick and/or mortar with weep holes installed at the lower end. The annular space between the steel casing and carrier pipe shall be left empty unless grouting is specified.

Voids, which may develop outside the casing, caused by the removal of rocks or obstructions while jacking or boring, shall be filled with a lean grout mix forced in under pressure by insertion of a grout pipe outside of the casing. The lean grout shall consist of one part of Portland Cement to not more than four parts of sand by volume, placed at low pressure. Grout pressure is to be controlled so as to avoid deformation of the casing and to prevent disturbance of the cavity walls. Sand for grout to be placed outside the casing shall be of such fineness that 100% will pass a No. 8 sieve and no less than 35% will pass a No. 50 sieve.

6.07.10 BACKWATER VALVE INSTALLATION

Backflow valves shall be installed as required per the sewer plans and in accordance with MSWD Standard Drawings. All valves shall be installed at the shallowest level of the appropriate location and allowing for future inspection and maintenance. Installation of plastic valves and appurtenances shall be permanently made with appropriate solvent glue providing a waterproof connection.

6.07.11 SEWER PIPE BEDDING

All sewer pipe bedding shall be in accordance with the plans and the detail drawings. Except as modified here following, all earthwork shall be in accordance with MSWD Standard Drawings and (Section 6.02) Earthwork. All bedding shall be granular aggregate material achieving sand equivalent of 30 or better. Bedding material should be moisture conditioned per the project soils report prior to placement in the trench and shall be compacted to a minimum density of 90% of maximum dry density, per ASTM D1557-02. Native material determined to be satisfactory for pipe bedding shall be graded to provide continuous support of the pipe prior to placing of the pipe.

Where rock is encountered, it shall be removed below grade and the trench backfilled with suitable material to provide a compacted base with a thickness under the pipe of not less than 1/2 inch per inch of nominal pipe diameter with a minimum allowable of 6 inches.

When groundwater or soft base material is encountered in the bottom of the trench, the inappropriate material shall be removed to the satisfaction of MSWD and replaced with 3/4-inch crushed rock compacted to a minimum density of 90% of maximum dry density, per ASTM D1557-02.

The crushed rock shall have the following gradational characteristics:

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Sieve Size	% Passing
1"	100
3/4"	90-100
3/8"	20-55
No. 4	0-10
No. 8	None

6.08 CHAIN LINK FENCE AND GATES SPECIFICATION

Contractor shall furnish all materials, labor, tools, and equipment required to completely construct the fencing, posts, gates, and miscellaneous material, including removal of trees, brush and other obstacles, as shown on the Drawings and as specified in these specifications. Necessary rights-of-way shall be provided as specified in (Section 6.01.04).

6.08.01 POWER

The contractor shall provide at his own expense all necessary power required for his operations under the contract. The contractor shall provide and maintain in good order such modern power equipment and installation as shall be adequate in the opinion of MSWD to perform in a safe and satisfactory manner the work required by the contract.

6.08.02 MATERIALS

All materials shall be newly manufactured and be free from defect.

Posts, braces and top rail shall be new schedule 40 galvanized pipe manufactured in accordance with S.T.M. A120 and shall be of the following sizes and weights:

ITEM	OUTSIDE DIAMETER (SIZE IN INCHES)	MIN.WT.(LBS/FT)
Fencing: End and corner posts	2-7/8"	5.79
* Line posts	2-3/8"	3.65
Braces and top rail	1-5/8"	2.27
Bottom tension wire	7 Ga.	--

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NOTE:

Walk gateposts shall conform to the requirements specified above for end and corner posts.

Top rail shall run continuously throughout the length of the fence.

Changes in alignment where the angle of deflection is 30 degrees or more shall be considered as corners and corner posts, and braces shall be installed.

* Line post outside diameter shall be 1-7/8" for fencing less than 6' high.

GATE OPENINGS	OUTSIDE DIAMETER	MIN.WT.
Single to 6' or double 12' incl.	2-7/8"	5.79
Single over 6' to 13' or double over 12' to 26' incl.	3-1/2"	7.58
Single over 13' to 18' or double over 26' to 36' incl.	6-5/8"	18.97

The chain link fabric shall be No. 9 AFC gauge galvanized steel wire woven in a two-inch (2") mesh, manufactured in accordance with the requirements of A.S.T.M. A392. The fabric shall have a heavy zinc coating by hot dip galvanizing after weaving. The fabric shall have a barbed finish at the top and bottom.

All tension wire shall be No. 7 gauge galvanized, hard drawn, steel spring wire and shall conform to the requirements of A.S.T.M. A227.

All tie wire shall be No. 9 AWG gauge galvanized steel wire manufactured in accordance with the requirements of A.S.T.M. A112.

All barbed wire shall be made of two strands of No. 12 1/2 AWG gauge galvanized steel wire twisted with two-point No. 14 AWG gauge barbs spaced at not more than five inches, and manufactured in accordance with the requirements of A.S.T.M. A121, Class I.

All truss rods shall be made from a 3/8" diameter galvanized steel rod, with drop forged turnbuckles, and galvanized in accordance with A.S.T.M. A153.

All hardware, hinges, clamps, fasteners, bolts, nuts, turn-buckles, fittings, post caps, stretcher bars, and other ferrous material not previously covered in these specifications, shall be manufactured of steel, malleable iron or wrought iron, and shall be galvanized in accordance with

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the requirements of A.S.T.M. A153. All the above hardware and fittings shall be manufactured so as to allow and assemble in accordance with the drawings and these specifications.

All ferrous materials shall have a heavy zinc coating by hot dip galvanizing, after fabrication or weaving, applied in accordance with the requirements of the A.S.T.M. A153.

Concrete footings shall be concrete Class 500-C-2500 per Standard Specification Public Works construction, ("Green Book") Section 201.

6.08.03 CONSTRUCTION WORK AND METHODS

All fencing shall be installed in a professional manner and shall be inspected by MSWD for compliance with these specifications.

Posts shall be spaced not more than ten feet center to center of posts and be set in a vertical position. Top of the concrete foundations shall be troweled smooth sloping outward from the post. End, corner and gateposts shall be braced to the nearest line post. Line posts, at intervals not greater than 1000 feet and at locations shown on the plans, shall be braced both ways. All posts shall have post caps. The minimum depth of footings shall be 2'-2" for fences of heights less than or equal to 5' and 2'-8" for fences of heights of over 5'. In cross sections, diameter of the footing shall be a minimum of 10" and not be less than three (3) times the outside diameter of the post.

Chain link fabric shall be fastened on the side of the posts as shown on the drawings and shall be stretched taut and securely fastened to the posts, the top rails and tension wires. The fabric shall be fastened to end, corner, and gate posts with 1/4" by 3/4" steel stretcher bars and not less than 1/4" by 3/4" steel stretcher bar bands, spaced not more than one foot apart. The fabric shall be fastened to line posts, rails, and tension wires with NO. 9 AWG gauge tie wires or equivalent metal bands spaced approximately at 14" on line posts and eighteen-inch (18") on rails and tension wires. Bottom tension wires and fabric shall be stretched straight from post to post. Excavating at high places may be required and filling at low places will not be permitted.

Walk gates and drive gates shall be of the width as shown on the drawings. Gate frames shall be cross trussed with 3/8" truss steel rods equipped with drop-forged turnbuckles.

The corners of gate frames shall be fastened together and reinforced with a malleable iron fitting designed for the purpose or welded securely. Surplus welding material shall be removed prior to galvanizing. Chain link wire fabric shall be of the same type as specified for the fence and shall be fastened to the frame by the use of stretcher bars, clamps and tie wire as specified for the fence, and suitable tension connectors spaced at approximately one-foot intervals. Gates shall be hung by not less than two steel or malleable iron hinges not less than three inches in width so designed as to securely clamp to the gatepost and permit the gate to swing back against the fence. Hinges shall be of high-grade malleable iron of the ball and socket type, which will permit the gate to swing back against the fence. The lower hinges of the gate shall support the entire vertical load of the gates as well as provide for the resultant horizontal reaction. Each gate shall be outfitted with approved latches and provisions for padlocking. Latches, hasps, and bolts shall be accessible from either side of the gate.

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Repair of any minor galvanized coating damage shall be made by thoroughly wire brushing the damaged areas and removing all loose and cracked coating, after which the cleaned areas shall be painted with 2 coats of paint, high zinc dust content, conforming to the requirements of Federal Specification: MIL-P-21035.

The contractor shall provide written guarantees that the entire work constructed by him under the contract will fully meet all requirements thereof as to quality of workmanship, and of materials. The contractor shall make at his own expense any repairs or replacements made necessary by defective materials or workmanship supplied by him which have become evident within one year after date of notice of completion and acceptance of the work is filed, and to restore to full compliance with the requirements of these specifications any part of the fencing, posts, gates, or miscellaneous materials which during said one year period is found to be deficient with respect to any provision of this specification. The contractor shall make all repairs and replacements promptly upon receipt of written orders for same from MSWD. If the contractor fails to make the repair and replacement promptly, MSWD may do the work, and the contractor and his surety shall be liable to MSWD for the cost thereof.

6.09.01 PIPE ZONE BACKFILL

Except as modified here following, all earthwork shall be in accordance with MSWD Standard Drawings and (Section 6.02) Earthwork.

Where rock is encountered, it shall be removed below grade and the trench backfilled with suitable material to provide a compacted base with a thickness under the pipe of not less than 1/2 inch per inch of nominal pipe diameter with a minimum allowable of 6 inches.

When groundwater or soft base material is encountered in the bottom of the trench, the inappropriate material shall be removed to the satisfaction of MSWD and replaced with 3/4-inch crushed rock a minimum density of 90% of maximum dry density, per ASTM D1557-02.

The pipe zone shall extend to 6 inches (minimum) below the pipe and 12 inches (minimum) above the pipe. The pipe zone backfill shall consist of crushed rock conforming to the "Green Book" Section 200-1.2 for 1/2-inch maximum rock gradation as follows:

Sieve Size	% Passing
3/4"	100
1/2"	90-100
3/8"	20-60
No. 4	0-15
No. 8	0-5

6.09.02 MINIMUM AND MAXIMUM DEPTH OF COVER

The minimum cover shall be 5 feet and the maximum cover shall be 20 feet. For depths of cover less than 5 feet or for depths of cover more than 20 feet, a special design will be required and shall be approved by MSWD prior to construction.

6.09.03 DEFLECTION AND MANDREL TESTING

Following the placement, cleaning, and backfill and prior to placing permanent asphalt pavement, all sewers shall be cleaned and measured for obstructions or pipe deflections as set forth in Section 306-1.2.12 of the Green Book and as summarized as follows:

A rigid mandrel shall be pulled through the pipe by hand. The mandrel shall be fabricated of steel and shall be nonadjustable with a length of not less than its nominal diameter. The mandrel shall be certified by MSWD prior to use. The diameter of the mandrel shall be in accordance with Table 306-1.2.12 (B) of the Green Book (PVC-ASTM D 3034 (SDR 35)).

Deflection tests shall be performed no sooner than 30 days after placement and compaction of back fill.

7.0 SEWER LIFT STATION AND FORCE MAIN GUIDELINES

7.01 INTRODUCTION

Sewage collection within MSWD service area shall be provided by the construction of gravity sewers, except where it is demonstrated unfeasible, and pumping is required. If a sewage lift station is proposed, it shall be the developer's responsibility to provide the services of a licensed civil engineer to demonstrate to MSWD that a sewage lift station is the most feasible method for sewage conveyance.

These guidelines present basic concepts and general criteria for sewage lift station facilities. Each lift station shall be reviewed and approved by MSWD from concept through design, construction, and start-up. MSWD reserves the right to modify and supplement these guidelines and require additional facilities, depending upon the specific project location, limitations, and changes in government regulations and standards.

7.02 PROCEDURES

Procedures required for MSWD approval of sewage lift stations are as follows:

1. Developer's engineer shall acquire and review these guidelines.
2. Developer and engineer shall request a concept meeting with MSWD staff to demonstrate the need for a sewage lift station and to review requirements, guidelines, criteria, right-of-way, and location of specific project facilities. MSWD will provide list of preferred equipment and materials.

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3. Developer shall submit documentation requested by MSWD to demonstrate need for lift station, complete calculations for entire drainage area flows, and size lift station for present planned development and ultimate development.
4. Submit design, drawings, and specifications for MSWD approval as follows:
 - a) Preliminary design including capacity, hydraulic design, pump selection and system curves, preliminary site layout, and list of selected equipment and materials. Depending upon location, MSWD will establish site improvements such as block wall or chain link fence, asphalt concrete or concrete pavement, lighting, access, etc. MSWD will provide specialty specifications to be utilized.
 - b) Submit 75% complete construction drawings and specifications (if requested by MSWD).
 - c) Submit final design and 100% complete construction drawings and specifications.
 - d) Shop drawing submittals for all equipment and materials prior to construction (installation).
5. Construction of facilities shall be in accordance with MSWD guidelines for construction. See guidelines for inspection fee deposit, Pre-construction meeting and Notice to Proceed requirements. MSWD will provide part-time inspection of facilities, witness start-up, and provide final inspection of facilities. MSWD staff shall receive operation and maintenance manuals for all equipment a minimum of 10 working days prior to receiving training for station operation and equipment operation. A factory trained equipment manufacturer's representative shall provide the training.
6. Final acceptance of the facilities by MSWD will be done upon payment of all associated fees, filing of a Notice of Completion by MSWD and execution of Grant Deeds of the facilities to MSWD by the developer. MSWD will then allow properties served by the facility to be occupied and start discharging wastewater into the sewer system.

7.03 GENERAL

1. Raw sewage lift stations shall be designed and constructed in accordance with MSWD guidelines herein, MSWD Standards, good engineering practice, applicable government regulations, Riverside County Health Services Department and California Department of Health Services (Health Department), Cal OSHA, Standard Specifications for Public Works Construction (Standard Specification), Uniform Building Code, National Electric Code, Uniform Fire Code, and as approved by MSWD.
2. Facilities shall be designed by a licensed civil engineer, registered in the State of California, experienced in the design of wastewater facilities. Drawings and specifications shall be submitted for review and approval by MSWD. Soils investigation shall be performed for the lift station site and related interceptor and force main by a licensed soils engineer. Force main and lift station construction drawings shall be submitted

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simultaneously; force main shall include plan (40 scale) and profile, and lift station shall include site work, structural, mechanical, and electrical details.

3. All costs of facilities including but not limited to the cost of all permit fees, connection fees, utility charges, and inspection fees shall be borne by the developer.
4. Upon approval and acceptance by MSWD, facilities shall be owned by MSWD. Ownership shall include the lift station site and right-of-way for force main and gravity sewers. Gravity sewers and force main shall be constructed on MSWD property, MSWD right-of-way, or within public right-of-way whenever possible. Easements for gravity sewers and force main will only be considered under special conditions. All right-of-way and easement documents shall be submitted to and approved by MSWD prior to approval of the construction drawings. All right-of-way and easement documents shall be conveyed to MSWD and recorded prior to acceptance of facilities.
5. Developer shall guarantee all facilities free of defect for a period of one year after final acceptance of all facilities by MSWD. The developer, at no cost to MSWD, shall repair any deficiencies occurring during the one-year period. A performance bond approved by MSWD shall be furnished. All manufacturer's warranties shall be fully transferred to MSWD.
6. Prior to completion of the facility and MSWD acceptance, complete records shall be furnished to MSWD including:
 - a) As-Built record drawings
 - b) Final approved shop drawings and submittals for all equipment and materials
 - c) Record electrical and control diagrams
 - d) Electronic copy of PLC program if part of project
 - e) Electronic copy of Operation and Maintenance Manuals on all equipment
 - f) MSWD staff training for station operation and equipment operation and maintenance
 - g) Right-of-way, grant deed, and easement records
 - h) All construction and operating permits

7.04 CAPACITY

1. Size and capacity of facilities shall be based on peak flow of the development to be serviced with consideration of the entire drainage area and master planned facilities. Criteria for peak flow are given in MSWD Design Standards. Flows shall be provided for initial and ultimate conditions. If necessary, lift stations shall be located to maximize sewage collection for the entire drainage area and shall conform to MSWD Wastewater

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Master Plan. Lift station pumping capacity may be dictated by minimum acceptable force main size and velocities therein.

2. Where Master Plan facilities have not been established, the developer shall be responsible to prepare wastewater flow projections for the drainage area.
3. Hydraulic calculations and system/pump curves for pump sizing and required capacity shall be submitted for both initial and ultimate peak flows. System curves shall be developed for friction coefficients of C=100, C=130 and C=150.

7.05 SEWAGE LIFT STATION SITE

1. Site shall be of adequate size to operate, maintain, and repair the lift station facilities including access for truck cranes and sewer cleaning trucks (Vactor).
2. All sewage lift station sites require the parcel to be deeded to MSWD. Before construction, a Grant Deed with legal description and plat map must be prepared, approved, and recorded by MSWD.
3. Site shall be secured by commercial grade 6-foot-high chain link fence with 3-strand barbed wire per MSWD specifications or masonry block wall. Access gates shall include minimum 15-foot-wide double gate for vehicles and a 3-foot gate for maintenance personnel.
4. Site shall be provided with weed control, A.C. pavement, concrete driveway, adequate drainage facilities, and concrete sidewalks.
5. All backfill and compaction shall be a minimum density of 90% of maximum dry density, per ASTM D1557-02 unless soils engineer or encroachment permit requirements are more stringent. Compaction adjacent to lift station wet well and under the valve vault shall be a minimum density of 95% of maximum dry density, per ASTM D1557-02.
6. If required by MSWD, based on proximity of the facility to other public facilities, residences, or buildings, landscaping shall be provided in accordance with the surrounding area.
7. Potable water shall be provided to the site by hose bibs with anti-siphon devices, water meter, and a backflow device as approved by MSWD and Health Department.
8. All lift stations shall have a street address sign affixed to the fence at the front of the station.
9. Site shall be designed with a lighting system operating on a photocell and on/off switch with a manual switch override located within the Control Building. Site lighting shall be designed to minimize offsite impacts while maintaining functionality for maintenance personnel working on lift station components.

7.06 FORCE MAIN

1. Force main size (diameter) shall be based on the following:
 - a) Minimum size shall be 4-inch diameter.
 - b) Peak flow design point between 4 fps and 5 fps
 - c) Minimum velocity of 3 fps and maximum velocity of 6 fps under all operating conditions. MSWD shall approve all proposed operating conditions.
2. Material shall be ductile iron, minimum pressure Class 150, Class 53 thickness per ANSI/AWWA. Pipeline shall be constructed using restrained joints.
3. Pipeline profile shall avoid intermediate high points if feasible. All high points shall be provided with combination sewage air and vacuum valve installation and special corrosive resistant pipeline materials.
4. Pipe cover shall be minimum 42-inches.
5. Pipe bedding and backfill in pipe zone to 12-inches above pipe shall be sandy soil with sand equivalent of 50, compacted to a minimum density of 95% compaction, per ASTM D1557-02 The Remaining backfill shall be compacted to a minimum density of 95% compaction, per ASTM D1557-02, in accordance with MSWD standards, unless soils engineer or encroachment permit requirements are more stringent.
6. Separation from water lines shall be in accordance with Health Department requirements.
7. Force main shall be pressure and leak tested at pipe class pressure in accordance with Standard Specification.
8. Force main construction drawings shall include plan (40 scale) and profile.

7.07 LIFT STATION

1. Raw sewage lift station shall be the submersible type with 100% redundancy, electrical service, switchgear, emergency power, control building, and appurtenances.
2. Raw Sewage Pumps:
 - a) Number of pumps furnished shall provide complete redundancy. Minimum of two identical pumps each sized for 100% station capacity shall be installed. Discharge to the downstream system may require use of variable speed drives.
 - b) Pump Specifications:
 - i. Raw sewage non-clog submersible pumps.

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- ii. Minimum 4-inch discharge.
 - iii. Ability to pass minimum 2-inch diameter sphere.
 - iv. Maximum 1800 rpm explosion-proof submersible motor with moisture and temperature sensors.
 - v. Motor and cooling rating suitable to run dry for 15 minutes without damage to the pump.
 - vi. UL or Factory Mutual explosion-proof rating without being submerged.
 - vii. Constructed of corrosion resistant materials and provided with corrosion resistant factory coating.
 - viii. Prior to acceptance, pump tests shall be performed to verify pump curves and system head curves.
- c) Pump Mounting and Removal:
- i. Provide rail-type guide system with intermediate supports to allow pump removal without removal of discharge piping or entering the wet well. All materials to be stainless steel.
 - ii. Provide stainless steel cable or chain fastened to each pump. MSWD will utilize their crane truck for removal of pumps.
 - iii. Electrical cable(s) shall be spliced at a junction box located 36-inches above wet well roof and meet all provisions of the NEC.
- d) Spare parts shall include one set of seals and bearings.
3. Wet Well Specifications:
- a) Cast-in-place concrete or precast concrete pipe constructed watertight, with concrete base and cover. Wet well shall be placed on a 24-inch-thick mat of crushed rock. Concrete shall be designed with T-Lock PVC liner, or approved equal, on the interior wet well walls and roof. Wet well bottom shall slope towards pumps.
 - b) Size based on maximum pump cycling of six times per hour and to provide adequate spacing to permit adjacent pumps to operate simultaneously. Wet well shall have an emergency storage capacity of a minimum of 60 minutes at peak flow conditions. (Use of storage within the gravity sewer is not acceptable.)
 - c) Concrete roof shall have hatch openings (one hatch per pump) for pump removal and access hatch for floats and level transducer. Hatches shall be Aluminum construction as manufactured by Bilco or equal, with stainless steel hardware, lockable diamond plate cover, safety chain, and spring assisted hinges.

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- d) Discharge piping shall be flanged Class 53 ductile iron pipe, outside coated with coal tar epoxy, inside coating of ceramic, minimum 40 mils. Discharge piping shall be designed for a maximum velocity of 10 feet per second. Discharge piping shall be properly supported with pipe supports.
 - e) Pipe supports, brackets, and all other equipment and fasteners within the wet well shall be stainless steel.
 - f) All collection sewers shall join and enter a single manhole just prior to entering the wet well. Only one sewer shall enter the wet well to allow MSWD to plug influent sewer and bypass around wet well for maintenance and repairs.
 - g) A concrete pump wash down pad shall be located adjacent to the wet well for pump wash down. Pad shall be provided with a drain and P-trap draining back into the wet well. A potable water wash down hose bib shall be provided.
4. Pump Discharge Piping Out of Wet Well:
- a) Discharge from each pump shall exit the wet well and enter a concrete vault with easy access to valves and piping.
 - b) Valve vault shall be precast concrete vault with concrete floor. Cover shall be aluminum construction with spring assisted hinged covers designed for parkway loading.
 - c) Each pump shall be provided with 150 lb. swing check valve (AWWA C508 with bronze trim) and shut-off valves (AWWA C509 solid wedge resilient seated gate valve or eccentric nonlubricated plug valve by DeZurk, Clow or approved equivalent). Sewage combination air and vacuum valves shall be provided at high points.
 - d) A bypass connection to the force main shall be provided to bypass station with portable pumps.
 - e) A magnetic type flow meter (type and model to be approved by MSWD) shall be installed on the discharge piping to provide instantaneous flow and total flow from the lift station.
5. Odor Control:
- a) Sewage lift station shall be evaluated for odor control facilities including calculations for hydrogen sulfide generation. Odor control facilities may include but are not limited to: air scrubber system, chemical addition, wet well aeration, and/or aeration of the force main.
 - b) Provide odor control equipment if determined necessary by MSWD. If odor control is not required, provisions for future addition of odor control facilities (i.e. installation of ventilation pipe and penetration into wet well for future connections) shall be provided.

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All equipment shall include all required construction and operating permits (i.e. SCAQMD) and permits shall be provided to MSWD in MSWD name.

7.08 ELECTRICAL AND CONTROLS

1. All electrical equipment shall be in accordance with the NEC and, where applicable, meet all requirements for hazardous locations. Developer shall coordinate with the electrical utility providing electrical service. Station shall be provided with a separate utility transformer and meter/main with ground fault protection. Primary power to the station shall be 480-volt, 60 Hz, 3-phase service per applicable standards of the utility provider. Single-phase 120-volt power shall be provided for lights, controls, convenience receptacles, and miscellaneous equipment. Provide a minimum of four spare 120-volt circuit breakers. All conduit shall be run concealed below grade or in concrete slabs, and shall not impose tripping or maintenance hazards. All exposed conduit shall be galvanized rigid metal pipe.
2. Automatic transfer switch (ATS) shall be provided to switch from normal utility power to standby emergency power upon normal power fail, and switch back to normal power when restored. ATS shall have indicating lights for normal power, emergency power, and a digital panel indicating volts and amps. Acceptable manufactures are ONAN, Zenith, Russelectric or approved equivalent.
3. Electric switchgear shall be mounted in NEMA 12 Motor Control Center with removable buckets, and shall include, as a minimum, Motor Circuit Protector (MCP), motor starters with electronic overload protection, selector switch (hand-off-load standby), run and fail lights, control transformer, and elapsed time meter. All motors shall be protected by a power monitor, which monitors phase un-balance, phase reversal, and high or low voltage. Switchgear shall be Cutler-Hammer, Allen Bradley, Square "D", or equal.
4. Complete controls for automatic pump operation shall be provided using Milltronics ultrasonic level controller and float switches as back-up. HOA switch for each pump and selector switches shall allow for any pump to operate in any position (lead, lag, or standby). Controls shall limit pump operation and start up emergency power to prevent overloading the standby generator.
5. Milltronics ultrasonic level controller shall have a minimum of five differential level set points for low water level, start/stop lead pump, start/stop lag pump, start/stop standby pump (if required), and high-water level. Controller shall have a digital screen for programming and to indicating water level and capable of outputting a 4-20ma signal corresponding to water level.
6. Back-up float switches shall be provided for low water level, and high-water level. High and low water levels shall override Milltronics unit and shall start all pumps and stop all respectively. Float switches shall be Flygt, Roto-Float, Warrick, or Consolidated Electric Co. provided with intrinsically safe relays. Install floats so levels are readily adjustable.
7. Controls shall provide automatic reset of alarm conditions for normal power fail, high water level, low water level, standby pump run, and a common alarm contact. However, alarm conditions shall activate an alarm light, which once activated shall require manual reset.

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Each pump shall be provided with alarm light and pump shut down for pump high temperature, pumps moisture and pump overload fail conditions.

Pump alarm conditions shall require manual reset. Where programmable logic controllers are provided, battery backup shall be furnished.

7.09 EMERGENCY POWER

1. Provide prefabricated skid-mounted diesel engine driven, radiator-cooled, automatic emergency standby generator to power the lift station during normal power failure. Liquid Propane or Natural Gas may be considered based on site location and availability.
2. Acceptable manufacturers are Onan, Caterpillar, or approved equivalent.
3. Generator shall automatically start upon failure of normal power and be sized to operate lighting loads, and number of pumps necessary to meet flow requirements with maximum voltage DIP of 20 percent. Where two-pump station is provided, the generator shall be sized to sequence start and run both pumps.
4. Exhaust system shall be fully insulated and equipped with a residential-type silencer.
5. Fuel tank for generator shall be base type mounted with unit or aboveground out of doors. Tank shall be double-wall welded steel sized for 24 hours of continuous operation at 100% of generator capacity. Tank shall have secondary containment and alarm floats for low fuel and fuel in containment area. Facilities shall meet fire department criteria.
6. Furnish all air quality permits, including payment of fees for the first year of operation. Permits shall have no less than a 200-hour annual operating limit and shall be in MSWD name. The permit to construct shall be transferred into a permit to operate prior to acceptance by MSWD.

7.10 TELEMETRY EQUIPMENT

1. Provide MSWD standard telemetry equipment system to transmit alarm conditions to existing central receiving system at MSWD Operations Center. Provide facilities at MSWD Operations Center central receiving system to receive and display alarms.
2. Connection to MSWD existing telemetry system shall be provided through a direct burial cable connection. Optional radio telemetry will be considered under special circumstances only. Consult with MSWD regarding selection of telemetry based on project location, availability of direct burial cable, radio receiver capability or other operational requirements.
3. Provide telemetry signals as follows; common alarm, normal power failure, wet well water level (4-20 mA), auto status of pump including status of lead/lag or alternative mode operation, discharge pumping flow rate (4-20 mA) and pump fail, at a minimum. MSWD shall approve final signal requirements based operational requirements of the installation.

7.11 CONTROL BUILDING

1. Masonry block building to house standby generator, electrical service, switchgear, and controls.
2. Building construction:
 - a) Colored masonry block, solid grouted.
 - b) Concrete footing and slab.
 - c) Isolated concrete generator foundation.
 - d) Wood roof with lightweight concrete shingles.
 - e) Dry wall ceiling with insulation.
 - f) Thermostat and timer operated forced air ventilation (roof exhausters).
 - g) Metal doors with dead bolt locks.
3. Sized for ease of operation and maintenance.

7.12 MISCELLANEOUS MATERIALS

1. Concrete shall be reinforced concrete Class 560-C-3250 with materials and installation per Standard Specifications.
2. Chain link fence shall be per MSWD specifications.
3. Earthwork shall be in accordance with Standard Specifications. All backfill shall be considered structural backfill and compacted to a minimum density of 95% compaction, per ASTM D1557-02, or as required by the soils engineer or encroachment permit if more stringent.
4. Site within chain link fence that is not otherwise paved or concreted shall have 6" of 3/4" graded crushed rock, furnace slag, or approved equal.

8.0 APPROVED MATERIALS

8.01 GENERAL

Mission Springs Water District (MSWD) maintains a list of Approved Materials, and only those materials on the most current list have been approved for use within MSWD. It is the sole responsibility of the user to assure that the product proposed is currently approved. MSWD may require installation of a different product in special circumstances.

8.02 APPROVED MATERIALS

Manufacturers may request approval by (1) making a formal written request for approval, (2) providing detailed drawings and technical information on their product, and (3) providing a non-returnable sample of the product. Documentation of use by other local water and sewer purveyors (with telephone numbers and contact names) will assist MSWD in evaluating the request for approval. MSWD will evaluate the product and if approved, the product will be placed on the Approved Materials List. All products shall always comply with MSWD Standard Specifications

8.03 APPROVED MATERIALS LIST

See Mission Springs Water District Approved Material List, available on our website at www.mswd.org.

9.0 MISSION SPRINGS WATER DISTRICT STANDARD DRAWINGS

See Mission Springs Water District Standard Drawings, available on our website at www.mswd.org.

10.0 SSMP GUIDELINES

See Mission Springs Water District Sewer System Management Plan (SSMP Development Guide), available on our website at www.mswd.org.

APPENDICIES

APPENDIX A

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:
Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240

EXEMPT – GOV'T CODE 6103

The undersigned grantor declares:
Documentary transfer tax is \$0.00.
() computed on the full value of property conveyed, or
() computed on full value less value of liens and
encumbrances remaining at time of sale.
() Unincorporated area: () City of,
and County of.

FOR RECORDER'S USE ONLY

GRANT DEED

This is to certify that the interest in real property conveyed by the Grant Deed dated - _____, _____ hereby acknowledge **MISSION SPRINGS WATER DISTRICT**, a County Water District and public agency formed pursuant to Water Code §§ 30000 et seq. ("Grantor") is hereby accepted by order of the **MISSION SPRINGS WATER DISTRICT**, a County Water District and public agency formed pursuant to Water Code §§ 30000 et seq. ("Grantee") and the grantee consents to the recordation thereof by its duly authorized officer.

Dated this _____ day of _____, 20____

MISSION SPRINGS WATER DISTRICT

By: _____

General Manager

APPENDIX B

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:
Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240

EXEMPT – GOV'T CODE 6103

The undersigned grantor declares:
Documentary transfer tax is \$0.00.
() computed on the full value of property conveyed, or
() computed on full value less value of liens and
encumbrances remaining at time of sale.
() Unincorporated area: () City of,
and County of.

FOR RECORDER'S USE ONLY

GRANT OF EASEMENT DEED

This is to certify that the interest in real property conveyed by the Grant Deed dated - _____, _____ hereby acknowledge **MISSION SPRINGS WATER DISTRICT**, a County Water District and public agency formed pursuant to Water Code §§ 30000 et seq. ("Grantor") is hereby accepted by order of the **MISSION SPRINGS WATER DISTRICT**, a County Water District and public agency formed pursuant to Water Code §§ 30000 et seq. ("Grantee") and the grantee consents to the recordation thereof by its duly authorized officer.

Dated this _____ day of _____, 20____

MISSION SPRINGS WATER DISTRICT

By: _____

General Manager

APPENDIX C

MISSION SPRINGS WATER DISTRICT WATER PLAN CHECKING PROCEDURES

DEVELOPER: _____

ENGINEER: _____ MSWD JOB No: _____

DEVELOPMENT: _____ PHASE No: _____

PLAN CHECKED BY: _____ REVIEWED BY: _____

REVIEW DATES: 1st: _____ 2nd: _____ 3rd: _____ 4th: _____ Final: _____

Cover Sheet and General Requirements

- All sheets shall be 24" high X 36" wide overall sheet size with a minimum clear border of 1/2" on the top, bottom, and right, and 1" minimum on the left for binding.
- A title in bold print centered near the top of the sheet. City and/or County jurisdiction and sectional location by quarter section, township, and range shall be included.

In the City of Desert Hot Springs, County of Riverside, State of California
"WATER IMPROVEMENT PLANS"
For
"Tract, Parcel Map Number, or Project Name"
Located in the northeast quarter of Section 36, T-2-S, R-1-E, SBBM
- A vicinity map drawn to scale clearly showing the project location within the surrounding area including major and bounding street names and City, County, or District boundaries as applicable. Bar Scale, north arrow, and scale in feet per inch shall be included and north shall be oriented to the top of sheet.
- Mission Springs Water District "**General Construction Notes**" current as of submittal date.
- Mission Springs Water District "**Notifications**" current as of submittal date.
- Mission Springs Water District "**Water Construction Notes**" current as of submittal date.
- A "Title Block" located on the front sheet and all sheets, usually located along the bottom or sometimes along the right side of all sheets. The title block shall be in the same location on all sheets of the sets. The sheet number and total sheets (1 of 6) and a 1/2 " x 1 3/4 " blank space for the district file number (district will fill in this number when mylars are submitted for signature). The title block shall contain Water Improvement Plans, Tract Number (or other project designation), and sheet description (cover sheet, Street Name, Easement Designation, etc.).
- The preparer's logo or block containing name, address, and telephone number shall appear on each sheet of the plans.
- Engineer's stamp and signature block including RCE number, signature line and date shall appear on each sheet of the set.
- Fire Department Approval block shall appear on each sheet of the plans for the Fire Marshal signature and date.
- Mission Springs Water District Approval block for General Manager including signature line and space for date shall be provided on each sheet of the set. The notation VOID AFTER ONE YEAR FROM

THIS DATE shall be at the bottom of this approval block.

- A revision block located in the title block, usually located on the left side of the title block. (The revision block shall contain space for the revision number with revision symbol, revision description, date, and initials of person submitting revisions).
- Developer's information shall be shown on the cover sheet. The Developer's Name, address, and telephone number with area code and contact person must be included.
- An "Underground Service Alert" notice with the phone number (811) shall be clearly shown on all sheets.
- Bench mark including description and NAVD 88 datum elevation shall be shown on all sheets.
- Basis of Bearings shall appear on the title sheet.
- A Sheet Index shall appear on the cover sheet (acceptable on sheet two if the project is too large).
- A Material Quantity Estimate shall be on the cover sheet.
- A Symbol Legend shall be on the cover sheet and symbols shall match those used on plans.
- A fire flow certification block including the design Engineers signature and date shall appear on the cover sheet.
- Typical Street Sections for all streets showing typical Sewer, Water, and Storm Drain locations and depths. Minimum cover for water and minimum and maximum cover for sewer and storm drains. These may appear on the second sheet if space prevents placement on cover sheet.
- An Index Map to scale (1"=200' preferred) shall appear on the cover or second sheet. The Index Map shall include the following:
 - Sheet locations for this plan shall be clearly indicated and any adjoining plans or phases referenced.
 - The tract and lot numbers or Assessors Parcel Numbers for the project and immediately adjacent properties.
 - Any phase lines for the project.
 - The location and size of all existing water lines showed dashed in light or ghosted line type.
 - Street names and right-of-way lines, easement lines, lot lines shall be shown within the project limits.
 - A North arrow and graphic scale including scale in feet per inch (1'=200"). North shall be up or to the right on sheet.

Water Plan and Profile Requirements

- Water Plan and profiles shall be prepared at scale of 1" = 40' horizontal and 1" = 4' vertical for all projects unless prior approval is obtained from the District.
- Plan view shall be aligned beneath the profile by stationing as closely as possible and shall be oriented with north up or to the right using the 45 degree rule as permissible variation.
- All street names correct, lot numbers and parcel numbers shown on all properties.
- All existing water lines and existing utilities shall be shown in half tone or dashed lines.
- Proposed water mains shall be shown as bold solid lines in plan and profile views and proposed sewer and storm drains shall be shown in lighter solid lines.
- Proposed finish surface grade over water main shall be shown in profile where project is to be graded prior to construction.
- For construction of water mains through future phases or in dedicated easements that are not currently graded both existing and proposed grades over the water main shall be shown in the profile and existing contours shall be shown in plan view.
- The plan view shall show the location of proposed sewer and storm drain lines including laterals and catch basins and manholes. Linear dimensions to centerline shall be shown on all sheets.
- The waterline stationing shall be along the horizontal centerline of the pipe, continuous through all bends and curves and shall be tied to the street centerlines by dimensions. The water line stationing shall run in the same direction as sewer stationing. Waterline stationing shall be laid out beginning at tie in points on existing mains or tees or crosses within the project with station ticks at 50' intervals and station labels at even 100' stations.
- The size of the proposed water mains, material and class shall be correctly shown on both plan and profile. All water mains shall be class 350 ductile iron pipes unless the District Engineer has approved special arrangements. All fittings shall be ductile iron. Are all tie-in details required for clarity and are these tie-in points correctly called and shown on both the plan and profile view?
- The alignment shall be maintained consistent to centerline or curb face whenever possible, A minimum horizontal clearance of 11' shall be maintained between water and sewer mains. Minimum clearance from curbs shall be 4' unless otherwise approved by the District Engineer (See design requirements).
- The depth of the waterline shall be shown correctly in the profile. 3' minimum cover for 8" or smaller mains and 4' minimum cover for 12" and larger mains. Deep water mains, over 6' to the bottom of the pipe should be avoided where there may be conflicts with sewer laterals.
- Curved alignments are allowed on water mains and shall be designed to maintain maximum joint deflections of 2.5 degrees (0.0437S) for 8" and smaller mains and 1.5 degrees (0.0262S) for 12" & larger mains. A Curve Data Table shall be included on each sheet for all curves on the water main. Acceptable radii are as follows:
 - 458' min. radius for 12" and smaller mains based on 20' pipe joints with 2.5 degrees deflection.
 - 764' min. radius for mains 12" & over based on 20' pipe joints with 1.5 degrees deflection.
 - 229' min. radius for 8" and smaller mains based on 10' pipe joints with 2.5 degrees deflection.
 - 382' min. radius for mains 12" & over based on 10' pipe joints with 1.5 degrees deflection.

- Where curves require use of 10' pipe joints, the sections shall be clearly called out in profile.
- Where curves cannot be used then the alignment shall be designed using standard bends of 11 ½ degrees, 22 ½ degrees, or 45 degrees maintaining minimum clearances from sewers and curbs.
- When there is more than one water line shown on any alignment they shall be clearly labeled and the labels shall remain constant throughout the plans and profiles.
- The profile shall show all sewer and storm drain crossings with stations, elevations and clearances.
- Existing utility crossings or proposed points of connection to existing water mains shall be shown in the profile and show detail drawing on the plan view with a note to "field verify the location and elevation prior to construction".
- All water main junctions shall be made with standard ductile iron tees or crosses and valves shall be provided to minimize loss of service for maintenance or repair shutdowns. This usually requires at least 2 valves at tees and 3 at crosses.
- All water services, valves, fire hydrants, air valves, blow offs, points of curvature and grade breaks shall be shown in the profile with stations and invert elevations.
- Gate valves shall be used for mains 12" and smaller and butterfly valves shall be used for larger mains. All valves shall be called out on the plan and profile.
- Vertical grade breaks shall be limited to maximum deflection of 2.5 degrees (0.04375) for 12" and smaller mains and 1.5 degrees (0.02625) for larger mains.
- Water services shall be shown and stationed for each lot or property including size. All services shall be copper and sized per district requirements. Only one water service per property is allowed without the prior approval of the district engineer. Meter locations shall be clear of driveways or within 2' of common lot line if no driveway locations are shown. A minimum horizontal clearance of 10' (12' preferred) shall be maintained between water services and sewer laterals.
- All irrigation meters shall be shown and stationed on the plans drawing. Irrigation meters should indicate size, installation of back flow prevention device and location. Meter location shall comply with MSWD Standard specification for constructing water and sewer facilities.
- Air & vacuum release valves are required at all high points in main and may be required on long mains without services and shall be installed according to MSWD Standard Specifications for constructing water and sewer facilities.
- Blow offs are required at all low points on water mains. Use of fire hydrants for blow offs at low points is encouraged whenever practical and shall be installed according to MSWD Standard specification for constructing water and sewer facilities.
- Fire hydrants are required at all intersections and at the end of all cul-de-sac and at spacing in conformance with the Fire Department requirements on all streets. Fire hydrants shall be provided with a shut off valve at the main and no services shall be allowed on fire hydrant runs. Location shall be according with MSWD Standard Specifications for constructing water and sewer facilities and approved by the Fire Marshal.
- Fire services and fire hydrant locations shall be approved by the Fire Marshal prior to MSWD approval of plans.
- A Fire Flow Letter from the Fire Marshal stating the fire flow requirements and Conditions of

Approval for the project shall be provided to the District.

- Waterline easements shall be minimized and only when necessary the District will require that water main shall be provided with shutoff valves at both ends of any easement section. Easement shall be a minimum of 20 feet wide.
- Provide fire flow calculations showing full compliance with the Fire Marshal requirements for the project with the second plan check.
- Fire flow requirements shall be shown on the plans for all projects requiring a DCDA for building sprinkler systems listing the required pressure and demand for each building.
- Easement documents including grant deed, exhibit A (Legal Description), and exhibit B (Plat) are complete for the project.
- Engineers estimate has been received, reviewed and approved for the project.
- Approved landscape plans shall be received prior to approval of plans.
- Provide AutoCadd Drawing files in DWG e-transmitted including all xref, font, and plot files required for MSWD to plot or edit the files as needed.

WATER PLAN - COMMENT SHEET

1st PLAN CHECK: DATE: _____ BY: _____

COMMENTS
WATER PLANS: _____

2nd PLAN CHECK: DATE: _____ BY: _____

COMMENTS
WATER PLANS: _____

3rd PLAN CHECK: DATE: _____ BY: _____

COMMENTS
WATER PLANS: _____

4th PLAN CHECK: DATE: _____ BY: _____

COMMENTS
WATER PLANS: _____

FINAL PLAN CHECK REVIEW AND APPROVAL DATE: _____

APPENDIX D

MISSION SPRINGS WATER DISTRICT SEWER PLAN CHECKING PROCEDURES

DEVELOPER: _____

ENGINEER: _____ MSWD JOB No: _____

DEVELOPMENT: _____ PHASE No: _____

PLAN CHECKED BY: _____ REVIEWED BY: _____

REVIEW DATES: 1st: _____ 2nd: _____ 3rd: _____ 4th: _____ Final: _____

Cover Sheet and General Requirements

- All sheets shall be 24" high X 36" wide overall sheet size with a minimum clear border of 1/2" on the top, bottom, and right, and 1" minimum on the left for binding.
- A title in bold print centered near the top of the sheet. City and/or County jurisdiction and sectional location by quarter section, township, and range shall be included.

In the City of Desert Hot Springs, County of Riverside, State of California
"SEWER IMPROVEMENT PLANS"
For
"Tract, Parcel Map Number, or Project Name"
Located in the northeast quarter of Section 36, T-2-S, R-1-E, SBBM
- A vicinity map drawn to scale clearly showing the project location within the surrounding area including major and bounding street names and City, County, or District boundaries as applicable. Bar Scale, north arrow, and scale in feet per inch shall be included and north shall be oriented to the top of sheet.
- Mission Springs Water District "**General Construction Notes**" current as of submittal date.
- Mission Springs Water District "**Notifications**" current as of submittal date.
- Mission Springs Water District "**Sewer Construction Notes**" current as of submittal date.
- A "Title Block" located on the front sheet and all sheets, usually located along the bottom or sometimes along the right side of all sheets. The title block shall be in the same location on all sheets of the sets. The sheet number and total sheets (1 of 6) and a 1/2" x 1 3/4" blank space for the District file number (District will fill in this number when mylars are submitted for signature). The title block shall contain Sewer Improvement Plans, Tract Number (or other project designation), and sheet description (cover sheet, Street Name, Easement Designation, etc.).
- The preparer's logo or block containing name, address, and telephone number shall appear on each sheet of the plans.
- Engineer's stamp and signature block including RCE number, signature line and date shall appear on each sheet of the set.
- Mission Springs Water District Approval block for General Manager including signature line and space for date shall be provided on each sheet of the set. The notation VOID AFTER ONE YEAR FROM THIS DATE shall be at the bottom of this approval block.

- A revision block located in the title block, usually located on the left side of the title block. (The revision block shall contain space for the revision number with revision symbol, revision description, date, and initials of person submitting revisions).
- Developer's information shall be shown on the cover sheet. The developer's name, address, and telephone number with area code and contact person must be included.
- An "Underground Service Alert" notice with the phone number (811) shall be clearly shown on all sheets.
- Bench mark including description and NAVD 88 datum elevation shall be shown on all sheets.
- Basis of Bearings shall appear on the title sheet.
- A Sheet Index shall appear on the cover sheet (acceptable on sheet two if the project is too large).
- A Material Quantity Estimate shall be on the cover sheet.
- A Symbol Legend shall be on the cover sheet and symbols shall match those used on plans.
- A Manhole and Cleanout Legend including number, station, rim elevation, invert elevation in and out with stub direction (N,E,S,W) shall be on the cover sheet.
- Typical Street Sections for all streets showing typical Sewer, Water, and Storm Drain locations and depths. Minimum cover for water and minimum and maximum cover for sewer and storm drains. These may appear on the second sheet if space prevents placement on cover sheet.
- An index Map to scale (1"=200' preferred) shall appear on the cover or second sheet. The index map shall include the following:
 - Sheet locations for this plan shall be clearly indicated and any adjoining plans or phases referenced.
 - The tract and lot numbers or Assessors Parcel Numbers for the project and immediately adjacent properties.
 - Any phase lines for the project.
 - The location and size of all existing sewer lines showed dashed in light or ghosted line type.
 - Street Names and right-of-way lines, easement lines, lot lines shall be shown within the project limits.
 - A North arrow and graphic scale including scale in feet per inch (1' = 200"). North shall be up or to the right on sheet.

Sewer Plan and Profile Requirements

- Sewer Plan and profiles shall be prepared at a scale of 1" = 40' horizontal and 1" = 4' vertical for all projects unless prior approval is obtained from the district.
- Plan view shall be aligned beneath the profile by stationing as closely as possible and shall be oriented with north up or to the right using the 45 degree rule as permissible variation.
- Sewer stationing and manhole numbering shall commence at the lowest manhole or point of connection for the project and shall proceed upstream on the **centerline of pipe** by street or easement alignment. Station Equations shall appear at all junction manholes and shall show reference to the appropriate sheet, stationing for lines from the junction shall begin at the centerline of the manhole and proceed upstream. All match lines shall be stationing in both plan and profile and should be placed at manholes when practical. Station ticks shall be placed at 50' Intervals on centerline of pipe and labeled at even 100' stations.
- Sewer alignments should parallel street centerline whenever possible. Curved sewers are permitted with a 2 ½" degree (0.04375) joint deflection for 12" and smaller pipes and 1 ½" degree (0.02625) joint deflection for 12" to 24" pipes. Where shorter than standard 6' pipe joints are required, the sections and required length shall be clearly noted in the profile.
- Minimum horizontal clearance between sewer and water mains shall be 11'.
- Only one point of curvature shall be allowed between manholes and no reverse curves will be allowed.
- No vertical curves are allowed in sewers, all grade breaks shall occur at manholes.
- Minimum grades for sewer mains are 0.40% for 8", 0.28% for 10", and 0.22% for 12". Larger trunk lines will be based on the district approved hydraulic calculations.
- Manholes shall be designed with 0.10' minimum fall from inlet to outlet for straight through to 45 degree horizontal deflections and 0.20' minimum fall from inlet to outlet for junctions or deflections greater than 45 degrees. If the average slope of the inlet and outlet yields a greater drop then this shall control. For any junction manhole of sewers of the same diameter the inlets shall be the same elevation.
- Where sewers of different diameters junction at a manhole the inverts shall be based on matching the crown of the junctioning sewers.
- Maximum manhole spacing is 350' center to center.
- 48" (4') diameter manholes shall be used for sewers 8" through 24" diameter. 60" (5') diameter manholes for larger sewers and for sewer manholes with less than 5 foot in depth.
- Profile shall show inlet and outlet elevations and direction of all pipes, including stubs (100.00 Inv I inlet w) for all manholes except terminus manholes, which have a center grade and outlet. All manholes shall be shown with proposed rim elevations and labeled with depth to deepest invert.
- Pipe slopes in profile shall reflect actual pipe gradient between manholes, excluding manhole drops.
- Proposed finish surface grade over sewer shall be shown in profile where project is to be graded prior to sewer construction.

- For construction of sewers through future phases or in dedicated easements that are not currently graded both existing and proposed grades over the sewer main shall be shown in the profile and existing contours shall be shown in plan view.
- The profile shall show stations and invert elevations at all match lines, points of curvature, and water or storm drain crossing. Top or bottom of pipe elevations and clearances shall be labeled for proposed crossings. Crossings involving existing utilities shall call for field verification prior to construction.
- Where sewer lines cross under storm drains, structural encasement or special pipe will be required if vertical clearance is less than 3'.
- Plan view shall show all existing utilities in dashed lines with dimensions to centerline of street. All proposed water services and meter locations, fire hydrants, blow offs, and air valves shall be shown by symbol in proper locations consistent with appropriate plans.
- Plan view shall show all existing and proposed curbs, gutters, sidewalks, and paving type and locations to scale with dimensions to centerline of streets. Driveway locations shall be shown.
- Proposed sewer later shall be shown and stationed for all lots. Laterals shall be shown with the line at actual station with the wye symbol shown in the direction of flow at the main line. Laterals shall have a minimum of 4' clearance of any manhole or lateral and may not be placed into any manhole. Laterals shall maintain a minimum of 10' clearance from water services (12' preferred) and shall be 4' clear of driveways. Sewer laterals shall extend to the right-of-way or public utility easement line, whichever is greater, perpendicular to the sewer main wherever possible.
- Minimum grade for normal 4" sewer laterals shall be 2.00%. Where sewers are less than 8' deep or parallel storm drains or large water lines may conflict with laterals then a special detail section shall be shown for "engineered laterals" and invert elevations shall be specified on the plan.
- Sewer size and materials shall be called out in both plan and profile.
- Easement documents including grant deed, exhibit A (Legal Description), and exhibit B (Plat) are complete for the project.
- Engineers estimate has been received, reviewed and approved for the project.
- Approved landscape plans shall be received prior to approval of plans.
- Provide AutoCadd Drawing files in DWG e-transmitted including all xref, font, and plot files required for MSWD to plot or edit the files as needed.

SEWER PLAN - COMMENT SHEET

1st PLAN CHECK: DATE: _____ BY: _____

COMMENTS
SEWER PLANS: _____

2nd PLAN CHECK: DATE: _____ BY: _____

COMMENTS
SEWER PLANS: _____

3rd PLAN CHECK: DATE: _____ BY: _____

COMMENTS
SEWER PLANS: _____

4th PLAN CHECK: DATE: _____ BY: _____

COMMENTS
SEWER PLANS: _____

FINAL PLAN CHECK REVIEW AND APPROVAL DATE: _____

APPENDIX E

MISSION SPRINGS WATER DISTRICT WATER & SEWER POINT OF CONNECTION PLAN CHECKING PROCEDURES

DEVELOPER: _____

ENGINEER: _____ MSWD JOB No: _____

DEVELOPMENT: _____ PHASE No: _____

PLAN CHECKED BY: _____ REVIEWED BY: _____

REVIEW DATES: 1st: _____ 2nd: _____ 3rd: _____ 4th: _____ Final: _____

Cover Sheet and General Requirements

- All sheets shall be 24" high X 36" wide overall sheet size with a minimum clear border of ½" on the top, bottom, and right, and 1" minimum on the left for binding.
- A title in bold print centered near the top of the sheet. City and/or County jurisdiction and sectional location by quarter section, township, and range shall be included.

In the City of Desert Hot Springs, County of Riverside, State of California
"WATER and SEWER IMPROVEMENT PLANS"
For
Project Name
Located in the southeast quarter of Section 15, T-3-S, R-4-E, SBBM (UPDATE FOR PROJECT)
APN
- A vicinity map drawn to scale clearly showing the project location within the surrounding area including major and bounding street names and City, County, or District boundaries as applicable. Bar Scale, north arrow, and scale in feet per inch shall be included and north shall be oriented to the top of sheet.
- Mission Springs Water District "**General Construction Notes**" current as of submittal date.
- Mission Springs Water District "**Notifications**" current as of submittal date.
- Mission Springs Water District "**Water Construction Notes**" current as of submittal date.
- A "Title Block" located on all sheets usually located along the bottom or sometimes along the right side of all sheets. The title block shall be in the same location on all sheets of the sets. The sheet number and total sheets (1 of 6) and a ½" x 1 ¾" blank space for the district file number (district will fill in this number when mylars are submitted for signature). The title block shall contain Water and Sewer Improvement Plans, Tract Number (or other project designation), and sheet description (cover sheet, Street Name, Easement Designation, etc.).
- The preparer's logo or block containing name, address, and telephone number shall appear on each sheet of the plans.
- Engineer's stamp and signature block including RCE number, signature line and date shall appear on each sheet of the plans.
- Fire Department Approval block shall appear on each sheet of the plans for the Fire Marshal signature

and date.

- Mission Springs Water District Approval block for General Manager including signature line and space for date shall be provided on each sheet of the set. The notation VOID AFTER ONE YEAR FROM THIS DATE shall be at the bottom of this approval block.
- Revision block located in the title block, usually located on the left side of the title block. (The revision block shall contain space for the revision number with revision symbol, revision description, date, and initials of person submitting revisions).
- Developer's information shall be shown on the cover sheet. The Developer's Name, address, and telephone number with area code and contact person must be included.
- An "Underground Service Alert" notice with the phone number (811) shall be clearly shown on all sheets.
- Bench mark including description and NAVD 88 datum elevation shall be shown on all sheets.
- Basis of Bearings shall appear on the title sheet.
- A Sheet Index shall appear on the cover sheet (acceptable on sheet two if the project is too large).
- A Material Quantity Estimate for MSWD items, including Std. Dwg. numbers shall be on the cover sheet.
- A Symbol Legend shall be on the cover sheet and symbols shall match those used on plans.
- A fire flow certification block including the design Engineers signature and date shall appear on the cover sheet.
- Typical Street Sections for all streets showing typical Sewer, Water, and Storm Drain locations and depths. Minimum cover for water and minimum and maximum cover for sewer and storm drains. These may appear on the second sheet if space prevents placement on cover sheet.
- An Index Map to scale (1"=200' preferred) shall appear on the cover or second sheet. The Index Map shall include the following:
 - Sheet locations for this plan shall be clearly indicated and any adjoining plans or phases referenced.
 - The tract and lot numbers or Assessors Parcel Numbers for the project and immediately adjacent properties.
 - Project parcel lines need to be bold.
 - The location and size of all existing water lines showed dashed in light or ghosted line type.
 - Street names and right-of-way lines, easement lines, lot lines shall be shown within the project limits, including both sides of streets.
 - A North arrow and graphic scale including scale in feet per inch (1'=200"). North shall be up or to the right.

Water and Sewer Plan Requirements

- Plans shall be prepared at horizontal scale of 1"= 20' or 1"= 40' for all projects unless prior approval is obtained from the District.
- Plan view shall be oriented with north up or to the right using the 45° rule as permissible variation.
- All street names correct, lot numbers and parcel numbers shown on all properties.
- Existing water and sewer lines and existing utilities shall be shown in half tone or dashed lines and shall be dimensioned from centerline.
- Proposed water and sewer connections shall be shown as bold solid lines and other proposed utilities and storm drains shall be shown in lighter solid lines.
- Plan view shall show the stationed location of proposed water and sewer connections. Connections shall be installed perpendicular to the right-of-way with no bends.
- The stationing shall be along the horizontal centerline of the pipe, continuous through all bends and curves and shall be tied to the street centerlines by dimensions. Stations may reference existing MSWD plans or may be stationed using an assumed tie location shown on the plans.
- MSWD Dwg. Numbers shall be shown for all new water or sewer connections.
- Water service installations shall be performed under direct MSWD inspection as follows:
 - 1" and 2" services shall be per MSWD Std. Dwg. W-09 by hot-tap method.
 - 4" and larger shall be installed using a cut-in tee and mainline valve and service valve unless prior approval by MSWD.
- Sewer lateral connections to existing, active sewers shall be labeled with invert elevations, slopes, length, and "install under direct MSWD inspection" shall generally be designed as follows:
 - 4" VCP lateral connecting to 8" or larger VCP sewer main shall be per MSWD Std. Dwg. S-16.
 - 6" VCP lateral connecting to 10" or larger VCP sewer main shall be per MSWD Std. Dwg. S-16.
 - 6" VCP lateral connecting to 8" VCP sewer main shall be per MSWD staff direction.
 - 8" or larger VCP lateral shall be installed using a hot tap sewer manhole per MSWD Std. Dwg. S-10 constructed on the existing sewer and shall terminate in a standard manhole located on the right-of-way line.
- Existing utility crossings shall be shown on the plan with a note to "field verify the location and elevation prior to construction".
- Vertical grade breaks shall be limited to maximum deflection of 2.5° (0.0437S) for 12" and smaller pipes and 1.5° (0.0262S) for larger pipes and shall not coincide with horizontal deflections.
- Water services shall be shown and stationed for each lot or property including size. All services shall be copper and sized per district requirements. Only one water service per property is allowed without the prior approval of the District engineer. Meter locations shall be clear of driveways or within 2' of common lot line if no driveway locations are shown. A minimum horizontal clearance of 10' (12' preferred) shall be maintained between water services and sewer laterals.
- All irrigation meters shall be shown and stationed on the plans drawing. Irrigation meters should indicate size, installation of back flow prevention device and location. Meter location shall comply with MSWD Standard specification for constructing water and sewer connections.

- Fire hydrants are required at all intersections and at the end of all cul-de-sac and at spacing in conformance with the Fire Department requirements on all streets. Fire hydrants shall be provided with a shut off valve at the main and no services shall be allowed on fire hydrant runs. Location shall be according with MSWD Standard Specifications for constructing water and sewer connections and approved by the Fire Marshal.
- Fire services and fire hydrant locations shall be approved by the Fire Marshal prior to MSWD approval of plans.
- A Fire Flow Letter from the Fire Marshal stating the fire flow requirements and Conditions of Approval for the project shall be provided to the District.
- Waterline easements shall be minimized and only when necessary, the District will require that water main shall be provided with shutoff valves at both ends of any easement section. Easement shall be a minimum of 20' wide.
- Provide fire flow calculations showing full compliance with the Fire Marshal requirements for the project with the second plan check.
- Fire flow requirements shall be shown on the plans for all projects requiring a DCDA for building sprinkler systems listing the required pressure and demand for each building.
- Easement documents including grant deed, exhibit A (Legal Description), and exhibit B (Plat) are complete for the project.
- Engineers estimate has been received, reviewed and approved for the project.
- Approved landscape plans shall be received prior to approval of plans.
- Provide AutoCadd Drawing files in DWG e-transmitted including all xref, font, and plot files required for MSWD to plot or edit the files as needed.

WATER and SEWER POC PLAN - COMMENT SHEET

1st PLAN CHECK: DATE: _____ BY: _____

COMMENTS
WATER AND SEWER POC PLANS: _____

2nd PLAN CHECK: DATE: _____ BY: _____

WATER AND SEWER POC PLANS: _____

3rd PLAN CHECK: DATE: _____ BY: _____

WATER AND SEWER POC PLANS: _____

4th PLAN CHECK: DATE: _____ BY: _____

WATER AND SEWER POC PLANS: _____

FINAL PLAN CHECK REVIEW AND APPROVAL DATE: _____

APPENDIX F

MISSION SPRINGS WATER DISTRICT WATER POINT OF CONNECTION PLAN CHECKING PROCEDURES

DEVELOPER: _____
 ENGINEER: _____ MSWD JOB No: _____
 DEVELOPMENT: _____ PHASE No: _____
 PLAN CHECKED BY: _____ REVIEWED BY: _____
 REVIEW DATES: 1st: _____ 2nd: _____ 3rd: _____ 4th: _____ Final: _____

Cover Sheet and General Requirements

- All sheets shall be 24" high X 36" wide overall sheet size with a minimum clear border of ½" on the top, bottom, and right, and 1" minimum on the left for binding.
- A title in bold print centered near the top of the sheet. City and/or County jurisdiction and sectional location by quarter section, township, and range shall be included.

In the City of Desert Hot Springs, County of Riverside, State of California
"WATER IMPROVEMENT PLANS"
For
Project Name
Located in the southeast quarter of Section 15, T-3-S, R-4-E, SBBM (UPDATE FOR PROJECT)
APN
- A vicinity map drawn to scale clearly showing the project location within the surrounding area including major and bounding street names and City, County, or District boundaries as applicable. Bar Scale, north arrow, and scale in feet per inch shall be included and north shall be oriented to the top of sheet.
- Mission Springs Water District "**General Construction Notes**" current as of submittal date.
- Mission Springs Water District "**Notifications**" current as of submittal date.
- Mission Springs Water District "**Water Construction Notes**" current as of submittal date.
- A "Title Block" located on all sheets usually located along the bottom or sometimes along the right side of all sheets. The title block shall be in the same location on all sheets of the sets. The sheet number and total sheets (1 of 6) and a ½" x 1 ¾" blank space for the district file number (district will fill in this number when mylars are submitted for signature). The title block shall contain Water and Sewer Improvement Plans, Tract Number (or other project designation), and sheet description (cover sheet, Street Name, Easement Designation, etc.).
- The preparer's logo or block containing name, address, and telephone number shall appear on each sheet of the plans.
- Engineer's stamp and signature block including RCE number, signature line and date shall appear on each sheet of the plans.
- Fire Department Approval block shall appear on each sheet of the plans for the Fire Marshal signature and date.

- Mission Springs Water District Approval block for General Manager including signature line and space for date shall be provided on each sheet of the set. The notation VOID AFTER ONE YEAR FROM THIS DATE shall be at the bottom of this approval block.
- Revision block located in the title block, usually located on the left side of the title block. (The revision block shall contain space for the revision number with revision symbol, revision description, date, and initials of person submitting revisions).
- Developer's information shall be shown on the cover sheet. The Developer's Name, address, and telephone number with area code and contact person must be included.
- An "Underground Service Alert" notice with the phone number (811) shall be clearly shown on all sheets.
- Bench mark including description and NAVD 88 datum elevation shall be shown on all sheets.
- Basis of Bearings shall appear on the title sheet.
- A Sheet Index shall appear on the cover sheet (acceptable on sheet two if the project is too large).
- A Material Quantity Estimate for MSWD items, including Std. Dwg. numbers shall be on the cover sheet.
- A Symbol Legend shall be on the cover sheet and symbols shall match those used on plans.
- A fire flow certification block including the design Engineers signature and date shall appear on the cover sheet.
- Typical Street Sections for all streets showing typical Sewer, Water, and Storm Drain locations and depths. Minimum cover for water and minimum and maximum cover for sewer and storm drains. These may appear on the second sheet if space prevents placement on cover sheet.
- An Index Map to scale (1"=200' preferred) shall appear on the cover or second sheet. The Index Map shall include the following:
 - Sheet locations for this plan shall be clearly indicated and any adjoining plans or phases referenced.
 - The tract and lot numbers or Assessors Parcel Numbers for the project and immediately adjacent properties.
 - Project parcel lines need to be bold.
 - The location and size of all existing water lines showed dashed in light or ghosted line type.
 - Street names and right-of-way lines, easement lines, lot lines shall be shown within the project limits, including both sides of streets.
 - A North arrow and graphic scale including scale in feet per inch (1'=200"). North shall be up or to the right.

Water Plan Requirements

- Plans shall be prepared at horizontal scale of 1"= 20' or 1"= 40' for all projects unless prior approval is obtained from the District.
- Plan view shall be oriented with north up or to the right using the 45° rule as permissible variation.
- All street names correct, lot numbers and parcel numbers shown on all properties.
- Existing water and sewer lines and existing utilities shall be shown in half tone or dashed lines and shall be dimensioned from centerline.
- Proposed water and sewer connections shall be shown as bold solid lines and other proposed utilities and storm drains shall be shown in lighter solid lines.
- Plan view shall show the stationed location of proposed water and sewer connections. Connections shall be installed perpendicular to the right-of-way with no bends.
- The stationing shall be along the horizontal centerline of the pipe, continuous through all bends and curves and shall be tied to the street centerlines by dimensions. Stations may reference existing MSWD plans or may be stationed using an assumed tie location shown on the plans.
- MSWD Dwg. Numbers shall be shown for all new water or sewer connections.
- Water service installations shall be performed under direct MSWD inspection as follows:
 - 1" and 2" services shall be per MSWD Std. Dwg. W-09 by hot-tap method.
 - 4" and larger shall be installed using a cut-in tee and mainline valve and service valve unless prior approval by MSWD.
- Existing utility crossings shall be shown on the plan with a note to "field verify the location and elevation prior to construction".
- Vertical grade breaks shall be limited to maximum deflection of 2.5° (0.0437S) for 12" and smaller pipes and 1.5° (0.0262S) for larger pipes and shall not coincide with horizontal deflections.
- Water services shall be shown and stationed for each lot or property including size. All services shall be copper and sized per district requirements. Only one water service per property is allowed without the prior approval of the district engineer. Meter locations shall be clear of driveways or within 2' of common lot line if no driveway locations are shown. A minimum horizontal clearance of 10' (12' preferred) shall be maintained between water services and sewer laterals.
- All irrigation meters shall be shown and stationed on the plans drawing. Irrigation meters should indicate size, installation of back flow prevention device and location. Meter location shall comply with MSWD Standard specification for constructing water and sewer connections.
- Fire hydrants are required at all intersections and at the end of all cul-de-sac and at spacing in conformance with the Fire Department requirements on all streets. Fire hydrants shall be provided with a shut off valve at the main and no services shall be allowed on fire hydrant runs. Location shall be according with MSWD Standard Specifications for constructing water and sewer connections and approved by the Fire Marshal.
- Fire services and fire hydrant locations shall be approved by the Fire Marshal prior to MSWD approval of plans.
- A Fire Flow Letter from the Fire Marshal stating the fire flow requirements and Conditions of Approval for the project shall be provided to the District.

- Waterline easements shall be minimized and only when necessary the District will require that water main shall be provided with shutoff valves at both ends of any easement section. Easement shall be a minimum of 20' wide.
- Water main under crossings shall be per district standards and shall include a blow off at the low point and an air release valve at any high point. Locations, stations, elevations, and clearances shall be shown in the plan view and a detail.
- Provide fire flow calculations showing full compliance with the Fire Marshal requirements for the project with the second plan check.
- Fire flow requirements shall be shown on the plans for all projects requiring a DCDA for building sprinkler systems listing the required pressure and demand for each building.
- Easement documents including grant deed, exhibit A (Legal Description), and exhibit B (Plat) are complete for the project.
- Engineers estimate has been received, reviewed and approved for the project.
- Approved landscape plans shall be received prior to approval of plans.
- Provide AutoCadd Drawing files in DWG e-transmitted including all xref, font, and plot files required for MSWD to plot or edit the files as needed.

WATER PLAN - COMMENT SHEET

1st PLAN CHECK: DATE: _____ BY: _____

COMMENTS
WATER PLANS: _____

2nd PLAN CHECK: DATE: _____ BY: _____

COMMENTS
WATER PLANS: _____

3rd PLAN CHECK: DATE: _____ BY: _____

COMMENTS
WATER PLANS: _____

4th PLAN CHECK: DATE: _____ BY: _____

COMMENTS
WATER PLANS: _____

FINAL PLAN CHECK REVIEW AND APPROVAL DATE: _____

APPENDIX G

TRACT DEVELOPMENT FEE CHECKLIST

DEVELOPER'S NAME: _____ TRACT/PM: _____

DATE RECEIVED: _____

- Bonds:** Labor & Materials & Faithful Performance or copies from County or City
- Contracts:** Water/Sewer System Construction Agreement (3 signed originals)
- Contractor:** Name _____
- Contractor:** Copy of contractor's bid with unit cost breakdown
- Contractor:** Certificate of Insurance and endorsements (MSWD named as additional insured)
- Deposit:** engineering and plan check plan review fees \$ _____
- Fees:** Landscape Plan Review Fee \$ _____
- Fees:** Sewer Connection Fee – See attached cost worksheet.
- Fees:** Meter Fees / Fire flow or front footage fees - See attached cost worksheet.
- Form Letter:** Curb and gutter installed waiver letter: (developer signs)
- Form Letter:** Roads graded to sub-grade letter: (Licensed civil engineer signs)
- Maps:** 4 bond copies of approved water/sewer plans.
- Maps:** Recorded Record Map: (copy or supply blanket easement)
- Maps:** Tract phasing Map: Lot numbers and street names (8½"x 11" Black & White)
- Maps:** Chart: Lot #'s and pad elevation for entire tract
- Right of Way:** Type of Easement(s):
- Right of Way:** Encroachment Permit if working in a Public Right of Way
- Notice to Proceed:** Issued after all line items received and deposits paid.

Mail to:

Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240
Phone (760) 329-6448 Fax (760) 329-2482

APPENDIX H

Improvement District No. N/A

**MISSION SPRINGS WATER DISTRICT
WATER SYSTEM CONSTRUCTION AGREEMENT
(DEVELOPER INITIATED/CONTRACTOR INSTALLED)**

THIS WATER SYSTEM CONSTRUCTION AGREEMENT ("Agreement") is made on this _____ day of _____, 20__ by and between MISSION SPRINGS WATER DISTRICT, a County Water District ("District") with its headquarters at 66575 2nd Street, Desert Hot Springs, Riverside County, California," and _____ ("Developer") located at DEVELOPER ADDRESS, phone No. DEVELOPER PHONE NUMBER.

RECITALS

WHEREAS, Developer is planning the construction of a project ("Project") of seventy-six (76) residential lot(s) which is the subject to a **Tract Map No.** _____ further described and identified on the map attached to and made a part of this Agreement as Exhibit "A" ("Property") and which is subject to the Landscape Plan attached hereto and made a part hereof by this reference as Exhibit "B"; and

WHEREAS, the Project will require a water distribution system to provide domestic water service to the to be designed and built by Developer (the "System"); and

WHEREAS, said Developer is desirous of having the District provide domestic water service to said Project and is willing to convey to the District the System after the construction thereof, contingent upon the District's acceptance of such conveyance on the terms and conditions set forth herein.

AGREEMENT

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. **Compliance with Law.** Developer will comply with all applicable state, federal and local laws, statutes and ordinances and the District's ordinances, policies and regulations for planning and constructing the System ("Requirements"). The forgoing laws and regulations, as amended from time to time, are hereby incorporated herein by reference. Developer agrees to comply with the water conservation requirements set by MSWD and the Land Use Agency as well as the Landscape Plan.
2. **District Expenses Covered.** The Developer shall deposit, with the District, costs to cover necessary engineering and other services, permits, inspections and water system connection costs in an amount estimated by the District. Said deposit shall be increased and/or replenished if District determines that the amount deposited is not sufficient to cover the costs as estimated by the District from time to time.
3. **Completion of Work.** The Developer shall contract for the design of the System by a licensed civil engineer experienced in the design of similar systems. The System to service the Project shall comply with the Requirements and construction plans for the same shall be presented

to the District for approval by the District prior to the presentation thereof to Contractors for bidding purposes. Such System shall include all pipelines, valves, hydrants and appurtenances as required by District subject to the Requirements. The Developer shall at its sole cost and expense secure title to property, easements, and rights of way needed for the System prior to the commencement of construction and shall convey offers of dedication or grant deeds along with necessary roads for ingress and egress and for maintenance and operation of the water system. The Developer shall file a Notice of Completion upon completion of the water system.

4. **Licensed Contractor.** The Developer will contract for the services of a licensed and qualified contractor ("Contractor") to construct the System. Said contract shall be signed by Developer and the licensed Contractor. Said Contractor shall be currently licensed by the State of California with a General engineering Contractor, "A" license and/or other appropriate license needed to construct the System. Said Contractor shall be experienced in the construction of domestic water systems and shall have been reviewed by the District and listed by the District as qualified contractor before a contract is signed and actual system construction begins. However, the District's approval of the Contractor shall in no way be deemed to impose on District any liability for the acts or omissions of said Contractor.

5. **Payment and Performance.** The entire cost of the construction of the System shall be paid by the Developer as and when the amounts are due in such regards. Developer and Contractor shall assure that such construction is inspected by District personnel for conformance with the approved plans and specifications and the Requirements. Whenever the Contractor desires to work outside the regular or specified work periods or to vary the work period during any particular day, Contractor shall request permission from the District at least 24 hours in advance so that inspection services may be provided. If the District grants permission and if the work period includes hours outside the normal work hours of the District, the Developer shall pay for the inspection services provided outside of normal work hours in accordance with established District rates. Construction shall not begin until the "Notice to Proceed" is given by the District inspector nor until the Developer, or other authorized party, completes a "CERTIFICATION OF STREETS TO FINAL GRADE" for the streets in which the water pipelines are to be constructed. District inspection is for the purpose of conformance of construction with District requirements, and not for compliance by the Contractor with safety requirements. Inspection or final acceptance shall not constitute a waiver by the District of any claims against Developer and/or Contractor for any defects in the work performed hereunder and shall not result in the imposition on District of any liability with regards to the same. Developer shall guarantee the completion of construction of the Work by _____. Developer agrees to pay all costs incurred by the District as it may incur and as may be necessary in connection with Contractor completing the Work, including administrative costs.

6. **Insurance and Indemnity.** Developer's contractor shall provide required insurance certificates and endorsements as outlined below:

6.1 Indemnification: To the extent permitted by law, Developer (as well as Contractor and any other contractors or subcontractors hired to do any construction work), shall defend, indemnify and hold harmless Mission Springs Water District, its directors, officers, employees, and authorized volunteers from and against all claims, damages, losses and expenses, including reasonable attorneys' fees and costs to defend arising out of the performance of the work described herein, and caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone whose acts any of them may be liable, except where

caused by the active negligence, sole negligence, or willful misconduct of the Mission Springs Water District, its directors, officers, employees, and authorized volunteers.

6.2 Minimum Insurance Requirements: The Developer shall require Contractor (including any contractors or subcontractors hired to do any construction work) to procure and maintain for the duration of the proposed construction, insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the proposed construction and the activities of the Contractor, guests, agents, representatives, employees or contractors and subcontractors. The Developer's contractor shall provide and maintain the following commercial general liability, automobile liability, workers' compensation coverages as permitted by law:

6.3 Coverage: Coverage shall be at least as broad as the following:

- a) **General Liability** - Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury and personal & advertising injury with limits of at least two million dollars (\$5,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If Commercial General Liability Insurance or other form with a general aggregate limit, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 25 03, or ISO CG 25 04, or insurer's equivalent endorsement provided to MSWD) or the general aggregate limit shall be twice the required occurrence limit.
- b) **Automobile Liability** - Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) or if Contractor has no owned autos, Symbol 8 (hired) and 9 (non-owned) with limit of one million dollars (\$1,000,000) for bodily injury and property damage each accident.
- c) **Workers' Compensation Coverage** – By his/her signature hereunder, Developer certifies that it is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and it shall cause Contractor to comply with such provisions before commencing the performance of the work of this agreement. Contractors and sub-contractors will keep workers' compensation insurance for their employees in effect during all work covered by this Agreement. The Contractor shall provide workers' compensation coverage as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limits of no less than \$1,000,000 per accident for bodily injury or disease. **Waiver of Subrogation** (also known as Transfer of Rights of Recovery Against Others to Us): The Contractor will be required to waive rights of subrogation to obtain endorsement necessary to affect this waiver of subrogation in favor of the Mission Springs Water District, its directors, officers, employees, and authorized volunteers, for losses paid under the terms of this coverage which arise from work performed by the Named Insured for the Mission Springs Water District; this provision applies regardless of whether or not the Mission Springs Water District has received a waiver of subrogation from the insurer.
- d) **Builder's Risk** – (Course of Construction) if necessary- insurance utilizing an "All Risk" (Special Perils) coverage form with limits equal to the completed value of the project and no coinsurance penalty provision.

- e) Contractor's Pollution Liability – (optional: if project involves environmental hazards) with limits no less than \$5,000,000 per occurrence or claim, and \$10,000,000 policy aggregate.

If the Contractor maintains broader coverage and/or higher limits than the minimums shown above, the District requires and shall be entitled to the broader coverage and/or higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the District.

6.4 Required Provisions - The Commercial General Liability policies are to contain, or be endorsed to contain, the following provisions:

- a) **Additional Insured Status:** MSWD, its directors, officers, employees, and authorized volunteers are to be given insured status (at least as broad as ISO Form CG 20 12 05 09 or for projects including construction ISO Form CG 20 10 11 85 or both CG 20 10 10 01 and CG 20 37 10 01 including ongoing and completed operations), as respects: liability arising out of the work or activities performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations, and automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to District, its directors, officers, employees, and authorized volunteers.
- b) **Primary Coverage:** For any claims related to this project, the Contractor's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 as respects to the District, its directors, officers, employees, and authorized volunteers. Any insurance or self-insurance maintained by the District, its directors, officers, employees, and authorized volunteers; shall be excess of the Contractor's insurance and shall not contribute with it.

6.5 Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the Mission Springs Water District.

6.6 Acceptability of Insurers: Insurance is to be placed with insurers having a current A.M. Best rating of no less than A: VII, or as otherwise approved by Mission Springs Water District.

The Contractor agrees and he/she will comply with such provisions before commencing project. All of the insurance shall be provided on policy forms and through companies satisfactory to Mission Springs Water District. Mission Springs Water District reserves the right to require complete, certified copies of all required insurance policies, including policy Declaration and Endorsement pages. Failure to continually satisfy the Insurance requirements is a material breach of contract.

6.7 Verification of Coverage: Contractor shall furnish the District with certificates and amendatory endorsements affecting coverage required by the above provisions. All certificates and endorsements are to be received and approved by the District least five days before the Contractor commences activities.

6.8 Contractors and Subcontractors: Contractor shall require and verify that all Contractors and subcontractors maintain the liability insurance requirements stated

herein, and Contractor shall ensure that Mission Springs Water District, its directors, officers, employees, and authorized volunteers are additional insureds on the commercial general liability insurance policy of all Contractors who hire subcontractors to perform work on the scheduled project with a form at least as broad as CG 20 38 04 13.

6.9 Continuation of Coverage: Contractor shall maintain for the duration of the contract, and for 5 years thereafter, insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors. Contractor shall be required to waive all rights of subrogation under this Agreement. If any of the required coverages expire during the term of this Agreement, the Contractor shall be required to provide a renewal Certificate including the Additional Insured endorsement to the District at least ten (10) days prior to the expiration date.

6.10 Other Considerations/Exceptions: When the Mission Springs Water District determines that any construction work may involve potential environmental pollution liability, the Commercial General Liability policy shall include Contractor's Pollution Liability –with limits no less than \$5,000,000 per occurrence or claim, and \$10,000,000 policy aggregate.

- 7. Bonds.** Developer shall provide the District with bonds or evidence of bonds as follows:
- a) Performance bond with corporate surety or sureties satisfactory to the District said performance bond being for not less than one hundred percent (100%) of the total contract price.
 - b) A labor and materials payment bond being for not less than one hundred percent (100%) of the total contract price.
- 8. Notice of Completion.** The District's Inspector shall complete a "Notice of Final Inspection" when all work has been completed in accordance with District requirements and prior to the Acceptance of said domestic water system by the District. An executed Notice of Completion shall be filed by the District. The Developer shall comply with the following requirements:
- a) A Bill of Sale executed by the Developer vesting title of said water system and appurtenances to the District;
 - b) A copy of the contract between Developer and Developer's Contractor or other documents which verify the actual cost of the domestic water system as installed.
 - c) Payment to the District by the Developer of any and all applicable fees including, but not limited to Connection Charge, Fire flow or front footage fee, and meter installation fees.
- 9. Warranty.** The Developer shall guarantee the entire work shall be constructed in a good and workman like manner and all materials furnished shall be new and of high quality and both of the forgoing will meet all the requirements specified herein. This warranty shall include both the quality of the workmanship and the materials used as well as that of subcontractors and suppliers.

- a) The Developer shall agree to make any repairs or replacements made necessary by defective materials or workmanship in the pipe materials supplied which have become evident within one year after date of recording Notice of Completion, and to restore to full compliance with the requirements of these specifications, including the test requirements, any part of the water system, which during said one-year period, is found to be deficient with respect to any provision of this specification.
- b) The Developer shall make all repairs and replacements promptly upon receipt of written orders from MSWD or if, in the event the repair work must be performed by MSWD, shall reimburse MSWD for actual labor, equipment and material expenses incurred to perform such corrective work. If the Developer fails to make the repair and replacements promptly, MSWD may do the work, and the Developer shall be liable to MSWD for the cost thereof as described above.

10. Water Services. The District will not furnish service to the water system until the completed system passes final inspection by the District, and Developer has fully complied with all provisions of this Agreement. Following fulfillment of the terms and conditions herein and acceptance by the District of said domestic water system, the District will provide service to said lands in accordance with the District's rules and regulations governing the provisions of such service. District requires that a permanent meter must be installed prior to landscaping.

11. Successors and Assigns. This agreement is binding on the assigns of the District and on the assigns, successors and representatives of the Developer. Assignment of this agreement by the Developer shall require the prior written consent of the District.

12. Contractor's License. The Contractor must possess at the time of commencing work and throughout the Project duration, a Contractor's License, issued by the State of California, which is current and in good standing. The Developer and Contractor shall ensure that any subcontractor working on the Project possesses at the time of commencing work and throughout the Project duration, a Contractor's License, issued by the State of California, which is current and in good standing.

13. Corporation In Good Standing. If Contractor and/or Developer is a corporation or other entity, the undersigned hereby represents and warrants that the corporation or other entity is duly incorporated and in good standing in the State of California, and that the undersigned is authorized to act for and bind the corporation.

14. Provisions Required by Law. Each and every provision of law and clause required by law to be inserted in this Agreement shall be deemed to be inserted herein and the Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not currently inserted, then upon application of either party the Agreement shall forthwith be physically amended to make such insertion or correction.

15. Attorneys' Fees. In the event that either party brings an action to enforce this Agreement, the prevailing party in such action shall be entitled to an award of the costs and expenses incurred in connection with such action including but not limited to attorneys fees, expert witness fees, and filing fees.

16. Entire Agreement. This Agreement and the Exhibits and Recitals to this Agreement, which are incorporated herein by this reference, constitute the entire contract of the parties. No other

agreements or contracts, whether oral or written, pertaining to the work to be performed, exists between the parties. This Agreement can be modified only by an amendment in writing, signed by both parties.

EXHIBITS:

- Project Overview Map – Exhibit A
- Approved Landscape Plan – Exhibit B

MISSION SPRINGS WATER DISTRICT

DEVELOPER

By: _____

Company: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

APPENDIX I

Improvement District No. N/A

**MISSION SPRINGS WATER DISTRICT
SEWER SYSTEM CONSTRUCTION AGREEMENT
(DEVELOPER INITIATED/CONTRACTOR INSTALLED)**

THIS SEWER SYSTEM CONSTRUCTION AGREEMENT ("Agreement") is made on this _____ day of _____, 20__ by and between MISSION SPRINGS WATER DISTRICT, a County Water District ("District") with its headquarters at 66575 2nd Street, Desert Hot Springs, Riverside County, California," and **DEVELOPER** ("Developer") located at DEVELOPER ADDRESS, phone No. DEVELOPER PHONE NUMBER.

RECITALS

WHEREAS, Developer is planning the construction of a project ("Project") of _____ (XX) residential lot(s) which is the subject to a **Tract Map No.** _____ further described and identified on the map attached to and made a part of this Agreement as Exhibit "A" ("Property") and which is subject to the Landscape Plan attached hereto and made a part hereof by this reference as Exhibit "B"; and

WHEREAS, the Project will require a sewer distribution system to provide sewer service to the to be designed and built by Developer (the "System"); and

WHEREAS, said Developer is desirous of having the District provide sewer service to said Project and is willing to convey to the District the System after the construction thereof, contingent upon the District's acceptance of such conveyance on the terms and conditions set forth herein.

AGREEMENT

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. **Compliance with Law.** Developer will comply with all applicable state, federal and local laws, statutes and ordinances and the District's ordinances, policies and regulations for planning and constructing the System ("Requirements"). The forgoing laws and regulations, as amended from time to time, are hereby incorporated herein by reference.
2. **District Expenses Covered.** The Developer shall deposit, with the District, costs to cover necessary engineering and other services, permits, inspections and sewer system connection costs in an amount estimated by the District. Said deposit shall be increased and/or replenished if District determines that the amount deposited is not sufficient to cover the costs as estimated by the District from time to time.
3. **Completion of Work.** The Developer shall contract for the design of the System by a licensed civil engineer experienced in the design of similar systems. The System to service the Project shall comply with the Requirements and construction plans for the same shall be presented to the District for approval by the District prior to the presentation thereof to Contractors for bidding purposes. Such System shall include all pipelines, pumps, manholes, lift stations, cleanouts and appurtenances as required by District subject to the Requirements. The

Developer shall at its sole cost and expense secure title to property, easements, and rights of way needed for the System prior to the commencement of construction and shall convey offers of dedication or grant deeds along with necessary roads for ingress and egress and for maintenance and operation of the sewer system. The Developer shall file a Notice of Completion upon completion of the sewer system.

4. **Licensed Contractor.** The Developer will contract for the services of a licensed and qualified contractor ("Contractor") to construct the System. Said contract shall be signed by Developer and the licensed Contractor. Said Contractor shall be currently licensed by the State of California with a General engineering Contractor, "A" license and/or other appropriate license needed to construct the System. Said Contractor shall be experienced in the construction of sewer systems and shall have been reviewed by the District and listed by the District as qualified contractors before a contract is signed and actual system construction begins. However, the District's approval of the Contractor shall in no way be deemed to impose on District any liability for the acts or omissions of said Contractor.

5. **Payment and Performance.** The entire cost of the construction of the System shall be paid by the Developer as and when the amounts are due in such regards. Developer and Contractor shall assure that such construction is inspected by District personnel for conformance with the approved plans and specifications and the Requirements. Whenever the Contractor desires to work outside the regular or specified work periods or to vary the work period during any particular day, Contractor shall request permission from the District at least 24 hours in advance so that inspection services may be provided. If the District grants permission and if the work period includes hours outside the normal work hours of the District, the Developer shall pay for the inspection services provided outside of normal work hours in accordance with established District rates. Construction shall not begin until the "Notice to Proceed" is given by the District inspector nor until the Developer, or other authorized party, completes a "CERTIFICATION OF STREETS TO FINAL GRADE" for the streets in which the sewer pipelines are to be constructed. District inspection is for the purpose of conformance of construction with District requirements, and not for compliance by the Contractor with safety requirements. Inspection or final acceptance shall not constitute a waiver by the District of any claims against Developer and/or Contractor for any defects in the work performed hereunder and shall not result in the imposition on District of any liability with regards to the same. Developer shall guarantee the completion of construction of the Work by _____. Developer agrees to pay all costs incurred by the District as it may incur and as may be necessary in connection with Contractor completing the Work, including administrative costs.

6. **Insurance and Indemnity.** Developer's contractor shall provide required insurance certificates and endorsements as outlined below:

6.1 Indemnification: To the extent permitted by law, Developer (as well as Contractor and any other contractors or subcontractors hired to do any construction work), shall defend, indemnify and hold harmless Mission Springs Water District, its directors, officers, employees, and authorized volunteers from and against all claims, damages, losses and expenses, including reasonable attorneys' fees and costs to defend arising out of the performance of the work described herein, and caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone whose acts any of them may be liable, except where caused by the active negligence, sole negligence, or willful misconduct of the Mission Springs Water District, its directors, officers, employees, and authorized volunteers.

6.2 Minimum Insurance Requirements: The Developer shall require Contractor (including any contractors or subcontractors hired to do any construction work) to procure and maintain for the duration of the proposed construction, insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the proposed construction and the activities of the Contractor, guests, agents, representatives, employees or contractors and subcontractors. The Developer's contractor shall provide and maintain the following commercial general liability, automobile liability, workers' compensation coverages as permitted by law:

6.3 Coverage: Coverage shall be at least as broad as the following:

- a) **General Liability** - Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury and personal & advertising injury with limits of at least two million dollars (\$5,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If Commercial General Liability Insurance or other form with a general aggregate limit, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 25 03, or ISO CG 25 04, or insurer's equivalent endorsement provided to MSWD) or the general aggregate limit shall be twice the required occurrence limit.
- b) **Automobile Liability** - Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) or if Contractor has no owned autos, Symbol 8 (hired) and 9 (non-owned) with limit of one million dollars (\$1,000,000) for bodily injury and property damage each accident.
- c) **Workers' Compensation Coverage** – By his/her signature hereunder, Developer certifies that it is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and it shall cause Contractor to comply with such provisions before commencing the performance of the work of this agreement. Contractors and sub-contractors will keep workers' compensation insurance for their employees in effect during all work covered by this agreement. The Contractor shall provide workers' compensation coverage as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limits of no less than \$1,000,000 per accident for bodily injury or disease. **Waiver of Subrogation** (also known as Transfer of Rights of Recovery Against Others to Us): The Contractor will be required to waive rights of subrogation to obtain endorsement necessary to affect this waiver of subrogation in favor of the Mission Springs Water District, its directors, officers, employees, and authorized volunteers, for losses paid under the terms of this coverage which arise from work performed by the Named Insured for the Mission Springs Water District; this provision applies regardless of whether or not the Mission Springs Water District has received a waiver of subrogation from the insurer.
- d) **Builder's Risk** – (Course of Construction) if necessary- insurance utilizing an "All Risk" (Special Perils) coverage form with limits equal to the completed value of the project and no coinsurance penalty provision.

- e) Contractor's Pollution Liability – (optional: if project involves environmental hazards) with limits no less than \$5,000,000 per occurrence or claim, and \$10,000,000 policy aggregate.

If the Contractor maintains broader coverage and/or higher limits than the minimums shown above, the District requires and shall be entitled to the broader coverage and/or higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the District.

6.4 Required Provisions - The Commercial General Liability policies are to contain, or be endorsed to contain, the following provisions:

- a) **Additional Insured Status:** MSWD, its directors, officers, employees, and authorized volunteers are to be given insured status (at least as broad as ISO Form CG 20 12 05 09 or for projects including construction ISO Form CG 20 10 11 85 or both CG 20 10 10 01 and CG 20 37 10 01 including ongoing and completed operations), as respects: liability arising out of the work or activities performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations, and automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to District, its directors, officers, employees, and authorized volunteers.
- b) **Primary Coverage:** For any claims related to this project, the Contractor's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 as respects to the District, its directors, officers, employees, and authorized volunteers. Any insurance or self-insurance maintained by the District, its directors, officers, employees, and authorized volunteers; shall be excess of the Contractor's insurance and shall not contribute with it.

6.5 Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the Mission Springs Water District.

6.6 Acceptability of Insurers: Insurance is to be placed with insurers having a current A.M. Best rating of no less than A: VII, or as otherwise approved by Mission Springs Water District.

The Contractor agrees and he/she will comply with such provisions before commencing project. All of the insurance shall be provided on policy forms and through companies satisfactory to Mission Springs Water District. Mission Springs Water District reserves the right to require complete, certified copies of all required insurance policies, including policy Declaration and Endorsement pages. Failure to continually satisfy the Insurance requirements is a material breach of contract.

6.7 Verification of Coverage: Contractor shall furnish the District with certificates and amendatory endorsements affecting coverage required by the above provisions. All certificates and endorsements are to be received and approved by the District least five days before the Contractor commences activities.

6.8 Contractors and Subcontractors: Contractor shall require and verify that all Contractors and subcontractors maintain the liability insurance requirements stated herein, and Contractor shall ensure that Mission Springs Water District, its directors,

officers, employees, and authorized volunteers are additional insureds on the commercial general liability insurance policy of all Contractors who hire subcontractors to perform work on the scheduled project with a form at least as broad as CG 20 38 04 13.

6.9 Continuation of Coverage: The Contractor shall, Contractor shall maintain for the duration of the contract, and for 5 years thereafter, insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors. Contractor shall be required to waive all rights of subrogation under this Agreement. If any of the required coverages expire during the term of this Agreement, the Contractor shall be required to provide a renewal Certificate including the Additional Insured endorsement to the District at least ten (10) days prior to the expiration date.

6.10 Other Considerations/Exceptions: When the Mission Springs Water District determines that any construction work may involve potential environmental pollution liability, the Commercial General Liability policy shall include Contractor's Pollution Liability –with limits no less than \$5,000,000 per occurrence or claim, and \$10,000,000 policy aggregate.

- 7. Bonds.** Developer shall provide the District with bonds or evidence of bonds as follows:
- a) Performance bond with corporate surety or sureties satisfactory to the District said performance bond being for not less than one hundred percent (100%) of the total contract price.
 - b) A labor and materials payment bond being for not less than one hundred percent (100%) of the total contract price.
- 8. Notice of Completion.** The District's Inspector shall complete a "Notice of Final Inspection" when all work has been completed in accordance with District requirements and prior to the Acceptance of said sewer system by the District. An executed Notice of Completion shall be filed by the District. The Developer shall comply with the following requirements:
- a) A Bill of Sale executed by the Developer vesting title of said sewer system and appurtenances to the District;
 - b) A copy of the contract between Developer and Developer's Contractor or other documents which verify the actual cost of the sewer system as installed.
 - c) Payment to the District by the Developer of any and all applicable fees including, but not limited to Connection Charge, Fire flow or front footage fee, and meter installation fees.
- 9. Warranty.** The Developer shall guarantee the entire work shall be constructed in a good and workman like manner and all materials furnished shall be new and of high quality and both of the forgoing will meet all the requirements specified herein. This warranty shall include both the quality of the workmanship and the materials used as well as that of subcontractors and suppliers.
- a) The Developer shall agree to make any repairs or replacements made necessary by defective materials or workmanship in the pipe materials supplied which have become

evident within one year after date of recording Notice of Completion, and to restore to full compliance with the requirements of these specifications, including the test requirements, any part of the sewer system, which during said one-year period, is found to be deficient with respect to any provision of this specification.

- b) The Developer shall make all repairs and replacements promptly upon receipt of written orders from MSWD or if, in the event the repair work must be performed by MSWD, shall reimburse MSWD for actual labor, equipment and material expenses incurred to perform such corrective work. If the Developer fails to make the repair and replacements promptly, MSWD may do the work, and the Developer shall be liable to MSWD for the cost thereof as described above.

- 10. Sewer Services.** The District will not furnish service to the sewer system until the completed system passes final inspection by the District, and Developer has fully complied with all provisions of this Agreement. Following fulfillment of the terms and conditions herein and acceptance by the District of said sewer system, the District will provide service to said lands in accordance with the District's rules and regulations governing the provisions of such service. District requires that a permanent meter must be installed prior to landscaping.
- 11. Successors and Assigns.** This agreement is binding on the assigns of the District and on the assigns, successors and representatives of the Developer. Assignment of this agreement by the Developer shall require the prior written consent of the District.
- 12. Contractor's License.** The Contractor must possess at the time of commencing work and throughout the Project duration, a Contractor's License, issued by the State of California, which is current and in good standing. The Developer and Contractor shall ensure that any subcontractor working on the Project possesses at the time of commencing work and throughout the Project duration, a Contractor's License, issued by the State of California, which is current and in good standing.
- 13. Corporation In Good Standing.** If Contractor and/or Developer is a corporation or other entity, the undersigned hereby represents and warrants that the corporation or other entity is duly incorporated and in good standing in the State of California, and that the undersigned is authorized to act for and bind the corporation.
- 14. Provisions Required by Law.** Each and every provision of law and clause required by law to be inserted in this Agreement shall be deemed to be inserted herein and the Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not currently inserted, then upon application of either party the Agreement shall forthwith be physically amended to make such insertion or correction.
- 15. Attorneys' Fees.** In the event that either party brings an action to enforce this Agreement, the prevailing party in such action shall be entitled to an award of the costs and expenses incurred in connection with such action including but not limited to attorneys fees, expert witness fees, and filing fees.
- 16. Entire Agreement.** This Agreement and the Exhibits and Recitals to this Agreement, which are incorporated herein by this reference, constitute the entire contract of the parties. No other agreements or contracts, whether oral or written, pertaining to the work to be performed, exists

between the parties. This Agreement can be modified only by an amendment in writing, signed by both parties.

EXHIBITS:

- Project Overview Map – Exhibit A
- Approved Landscape Plan – Exhibit B

MISSION SPRINGS WATER DISTRICT

DEVELOPER

By: _____

Company: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

APPENDIX J

Sewer Extension No. _____

Water Extension No. _____

MISSION SPRINGS WATER DISTRICT

**AGREEMENT FOR
ON SITE WATER / SEWER SYSTEM PARTICIPATION / REFUND WAIVER**

THIS AGREEMENT is made by and between MISSION SPRINGS WATER DISTRICT, a public agency of the State of California with its headquarters in Desert Hot Springs, California, hereinafter designated as the "District" and

hereinafter designated as the "developer".

WHEREAS, developer is proposing a development requiring a water and/or sewer system located within a portion of Section _____, Township _____ South, Range _____ West, San Bernardino Base and Meridian, on a division of land referenced as

and

WHEREAS, developer is desirous of having the District provide water and/or sewer service to this development and is willing to convey to the District the water and/or sewer system after the construction thereof, and

WHEREAS, developer will comply with the District's rules and regulations for such water and/or sewer systems, and

WHEREAS, developer has deposited with the District costs necessary to satisfy necessary financial arrangements in amounts estimated by the District, and

WHEREAS, developer has arranged for the services of a licensed qualified contractor evaluated by the District for the construction of said water and/or sewer system, and

WHEREAS, the entire cost of the construction of such water and/or sewer system shall be paid by the developer;

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. Developer hereby agrees to pay for all costs associated with the planning, development, construction and acceptance of the water and/or sewer system.
2. Developer agrees that the water and/or sewer system being installed will be for the benefit of the parcels shown on the map attached and made a part of this Agreement and for the benefit of others as deemed necessary by the District.

- 3. Developer agrees to waive refunds of any participation in this water system, and further agrees that continuation of the water and/or sewer system shall be initiated at any time by the District for the benefit of others.
- 4. This Agreement shall be binding on the heirs, successors, and assigns of the parties hereto. All rights, title and interest in the sewer extension and all the appurtenances, and other items as may be shown on the map or installed subsequently by the District shall become the property of the District upon their installation. The developer agrees to hold the District harmless from any claim of right against the property so transferred.

MISSION SPRINGS WATER DISTRICT

DEVELOPER

Reviewed By: _____

Company: _____

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

CONTRACTOR

Company: _____

By: _____

Name: _____

Title: _____

Date: _____

APPENDIX K

(Please put this letter on your letterhead)

ROUGH GRADE VERIFICATION

TRACT

SEC. _____, T _____ S, R _____ E

GRID #:

I hereby approve the rough grading performed for the above referenced project. The rough grading, in reference to line and grade, has been completed within substantial conformance (+/- .20) to the approved Grading Plan.

Sincerely,

(PROJECT ENGINEER TO EXECUTE)

APPENDIX L

(Please put on your letterhead)

CURB AND GUTTER INSTALLATION WAIVER REQUEST

TRACT

SEC. _____, T _____ S, R _____ E

GRID #:

_____ understands that it is a MISSION SPRINGS WATER DISTRICT (MSWD) policy that curb and gutters be installed prior to installation of in-tract water lines. We are requesting a waiver so that our pipeline contractor can continue with the water installation. All work will conform to MSWD standards and policies.

Sincerely,

(DEVELOPER TO EXECUTE)

APPENDIX M

MISSION SPRINGS WATER DISTRICT
 66575 Second St., Desert Hot Springs, CA 92240
 Tel: (760) 329-6448 Fax: (760) 329-2482

Inspector's Name: _____ Tel: _____

INSPECTOR REQUIREMENTS

1. Inspections will be part-time (1 to 2 hours per day). Inspector will not be continuously available and will reject work not meeting all MSWD standards and specifications.
2. Developer and contractor are reminded that MSWD is not working for them. They will build facilities to MSWD specification; MSWD will inspect the work for conformance with the specifications and plans then accept and maintain these facilities.
3. Contractor shall call for inspection when needed, 24-hours minimum notice. Special events (pipe delivery, backfill, testing, etc.) require a minimum of 48-hour notice to schedule.
4. **Any work completed without the Inspector's prior knowledge is cause for automatic rejection. Any work buried without inspection shall be exposed and inspected prior to acceptance.**
5. Contractor shall protect existing water and sewer systems at all times or work will be stopped.
6. All damage to existing facilities or work under way shall be reported immediately. If unreported damage is discovered, all work in area shall be exposed and re-inspected or reconstructed.
7. Any revision to plans must be approved in writing by MSWD.
8. No MSWD valves or appurtenances of other utility facilities shall be operated by the contractor without approval and/or instruction from MSWD.
9. Contractor shall have a competent and knowledgeable foreman on the job site at all times.
10. Repeated failure to adhere to MSWD guidelines may result in fines and/or file complaints to the State contractor's Board.

MSWD reserves the right to make changes to these Inspector Requirements at any time.

BACKFLOW REQUIREMENTS - 2 DAYS NOTICE

1. MSWD Inspector shall inspect all materials before installation. MSWD field crew will inspect backflow device before service is turned on.
2. MSWD will perform initial backflow test.

APPENDIX N



NEW SERVICE COST WORKSHEET

Date: _____

Project Name: _____

Tract No.: _____

Developer: _____

Tel: _____

Developer Contact: _____

Cell: _____

Building Phase No.: _____

Meter Size: _____

Lot No(s): _____

Total # of Lots: _____

WATER CONNECTION FEES

Amount (USD)

Meter Installation Fee:	\$ -
Back-up Facility Charge:	\$ -
Front Footage Charge	\$ -
Backflow Prevention Device:	\$ -
Fire Flow Charge:	\$ -
Annexation Charge:	\$ -

WATER CONNECTION FEE TOTAL \$ -

SEWER CONNECTION FEES

Back-up Facility Charge (Residential):	\$ -
Back-up Facility Charge (Commercial):	\$ -
Front Footage Charge:	\$ -

SEWER CONNECTION FEE TOTAL \$ -

GRAND TOTAL \$ -

APPENDIX O

MISSION SPRINGS WATER DISTRICT
66575 Second St., Desert Hot Springs, CA 92240
Tel: (760) 329-6448 Fax: (760) 329-2482

INSTRUCTIONS FOR ORDERING NEW METERS

ORDERING METERS

1. MSWD inspector must approve all meter boxes prior to meter installation.
2. Call MSWD Inspection Line at (760) 329-6448 Ext. 190 to schedule final meter box inspection.
3. Meter installation can take up to six weeks. Occupancy will not be permitted until the meter is installed.
4. A permanent meter must be installed prior to landscaping.

LANDSCAPE METERS

1. Developer installs landscape lateral, meter box and backflow device but **NOT** the meter. MSWD drops in the landscape meter **AFTER** all meter fees have been paid. Meter will be locked off until backflow device has been tested and certified by MSWD.
2. Four weeks' advance notice is required for drop-in landscape meter.

OCCUPANCY RELEASE

1. Call MSWD Engineering Department at (760) 329-6448 ext. 127 for occupancy releases within the County of Riverside or City of Desert Hot Springs.

APPENDIX P

MISSION SPRINGS WATER DISTRICT
FAITHFUL PERFORMANCE BOND

(Name of Project/Tract Number of Subdivision)

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, _____,
(hereinafter designated as "Principal") has executed a Public Water and Sewer System Improvement Bonding Agreement ("Agreement" herein) with the Mission Springs Water District, a county water district and public agency of the State of California (the "District" herein), whereby Principal agrees to construct, install, complete and guarantee for one year after acceptance thereof certain designated public improvements generally identified as follows:

_____;

WHEREAS, said Agreement is incorporated herein by this reference; and

WHEREAS, said Principal is required under the terms of said Agreement to furnish a corporate surety bond or other approved improvement security to guarantee the faithful performance of said Agreement;

NOW, THEREFORE, the Principal designated above, and _____,
as Surety, are held and firmly bound unto the District in the penal sum of _____ Dollars (\$_____), lawful money of the United States, for the payment of which we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents.

The condition of this obligation is such that the obligation shall become null and void if the above-bounded Principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to, abide by, well and truly keep and perform the covenants, conditions and provisions in said Agreement and any modification thereof made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the District, its officers, agents and employees, as therein stipulated; otherwise, this obligation shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified, costs and reasonable expenses and fees shall be included, including reasonable attorneys' fees, incurred by the District in successfully enforcing the obligation, all to be taxed as costs and included in any judgment rendered.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Agreement, the work to be performed thereunder, or the Improvement Plans and related specifications accompanying the Agreement shall in any manner affect its obligations on this bond. The Surety hereby waives notice of any such change, extension of time, alteration or addition to the terms of the Agreement, the work, or the Improvement Plans and related specifications.

IN WITNESS WHEREOF, this instrument has been duly executed by the above-named Principal and Surety as of the date or dates set forth below the signatures of their authorized officers.

Note: All signatures must be acknowledged before a notary public. Attach appropriate acknowledgement.

“PRINCIPAL”

(Type name of Principal)

(Street Address)

(City) (State) (Zip)

By: _____

(Title of officer)

Date: _____

“SURETY”

(Type name of Surety)

(Street Address)

(City) (State) (Zip)

By: _____
(Signature of authorized officer)

(Title of officer)

Date: _____

APPROVED BY DISTRICT:

Brian Macy, General Manager

MISSION SPRINGS WATER DISTRICT

PAYMENT BOND

(Name of Project/Tract Number of Subdivision)

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, _____,
(hereinafter designated as "Principal") has executed a Public Water and Sewer System Improvement Bonding Agreement ("Agreement" herein) with the Mission Springs Water District, a county water district and public agency of the State of California (the "District" herein), whereby Principal agrees to construct, install and complete certain designated public improvements generally identified as follows:

_____;

WHEREAS, said Agreement is incorporated herein by this reference; and

WHEREAS, said Principal is required under the terms of said Agreement, before entering upon the performance of the work, to file with the District a good and sufficient payment bond, or other approved security, to secure the claims to which reference is made in Title 15 (commencing with Section 3082) of Part 4 of Division 3 of the California Civil Code and in Government Code Section 66497;

NOW, THEREFORE, the Principal designated above, and _____, as Surety, are held firmly bound unto the District and all contractors, subcontractors, laborers, materialmen and other persons employed in the performance of said Agreement and referred to in the above-referenced Civil Code and Government Code in the sum of _____

_____ Dollars (\$_____), for materials furnished or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor; that said Surety will pay the same in an amount not exceeding the amount hereinabove set forth; and in case suit is brought upon this bond, will pay, in addition to the face amount thereof, costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by the District in successfully enforcing such obligation, to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under

Title 15 (commencing with Section 3082) of Part 4 of Division 3 of the Civil Code, and under Government Code Section 66497, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of said Agreement or the Improvement Plans or related specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration or addition.

IN WITNESS WHEREOF, this instrument has been duly executed by the above-named Principal and Surety as of the date or dates set forth below the signatures of their authorized officers.

Note: All signatures must be acknowledged before a notary public. Attach appropriate acknowledgement.

“PRINCIPAL”

(Type name of Principal)

(Street Address)

(City) (State) (Zip)

By: _____

(Title of officer)

Date: _____

“SURETY”

(Type name of Surety)

(Street Address)

(City) (State) (Zip)

By: _____
(Signature of authorized officer)

(Title of officer)

Date: _____

APPROVED BY DISTRICT:

Brian Macy, General Manager

APPENDIX Q



**PUBLIC WATER AND SEWER IMPROVEMENT BONDING AGREEMENT FOR:
TRACT MAP No. _____**

THIS AGREEMENT made and entered into this ____ day of _____, 20__ by and between, **DEVELOPER**, a (insert LLC, Inc, etc.), (“Developer”) and the MISSION SPRINGS WATER DISTRICT, a County Water District, (“District”).

RECITALS

WHEREAS, the Developer is the owner and developer of land in the City of Desert Hot Springs, County of Riverside, State of California, generally described as follows:

See Exhibit “A” attached hereto and made a part hereof by this reference.

WHEREAS, said Developer has or will cause the recordation of a final approved map known as **Tract Map No. _____** (“Map”), and the Map requires water and sewer improvements to facilities to be owned and maintained by the District for the proposed development project (“Project”), and;

WHEREAS, said Developer has prepared and submitted water and sewer improvement plans (“Plans”) for the Project to the District for the construction of said improvements which District has approved prior to the date of this Agreement, and;

WHEREAS, said Developer is desirous of complying with the requirements of the District, relative to the installation and payment for the water and sewer improvements provided in the Project.

AGREEMENT

NOW, THEREFORE, in consideration of the approval by the District of the proposed Plans required for the development and recordation with the County Recorder of the Map within the City of Desert Hot Springs, the Developer agrees that the foregoing Recitals are hereby incorporated by reference and it will comply with the following requirements:

Within one (1) year from the date hereof, said Developer shall cause the water and sewer improvements to be constructed in accordance with all agreements, the Plans, the Mission Springs Water District policies, rules, regulations, ordinances and resolutions and standards, the Map, the Subdivision Map Act, and all applicable state, federal and local laws, regulations, ordinances and policies, all of which are hereby incorporated herein by this reference.



Handed you herewith is a Surety Bond (Faithful Performance and Warranty a copy of which is attached hereto as Exhibit "B") executed _____ in the sum of TOTAL WRITTEN IN WORDS and no/100 (\$XXX,XXX.00), guaranteeing the faithful performance of this Agreement and Warranty for one (1) year from date of final acceptance by the Mission Springs Water District Board of Directors, together with a Payment Bond in the sum of TOTAL WRITTEN IN WORDS and no/100 (\$XXX,XXX.00), securing payment to the contractor, his subcontractors and to persons renting equipment or furnishing labor or materials for the improvements a copy of which is attached hereto as Exhibit "C"

IT IS UNDERSTOOD and AGREED, that upon completion of the work in accordance with all agreements, state, federal and local laws, regulations, ordinances and policies and acceptance thereof by the Mission Springs Water District, said Payment Bond shall be exonerated and the Faithful Performance/Warranty Bond shall continue in force for one (1) year (warranty period) after the date of final acceptance by Mission Springs Water District.

The Bonds required by this Agreement shall be kept on file with the District and they must be issued by a surety company currently admitted to transact surety insurance business in California by the California Department of Insurance, with a Best's Insurance Guide rating of no less than A:VII. The terms of any documents evidencing such Improvement Securities as set forth in this paragraph are incorporated into this Agreement by this reference as if set forth fully herein.

IN WITNESS WHEREAS, the undersigned have affixed their signatures at Desert Hot Springs, California the day and year first above written.

MISSION SPRINGS WATER DISTRICT

DEVELOPER

By: _____

Developer: _____

Name: _____

By: _____

Title: _____

Name: _____

Date: _____

Title: _____

Date: _____

ATTEST

By: _____

Name: _____

Title: _____

EXHIBIT "A"

INSERT LEGAL DESCRIPTION OF PROJECT

EXHIBIT "B"

Faithful Performance and Warranty Bond

EXHIBIT "C"

Payment Bond



**MISSION SPRINGS WATER DISTRICT
APPROVED MATERIALS LIST
(Capital and Developer Projects)**

**MISSION SPRINGS WATER DISTRICT
66575 2ND STREET
DESERT HOT SPRINGS, CA 92240
WWW.MSWD.ORG**

**UPDATED
FEBRUARY, 2024**



APPROVED MATERIAL LIST (AML) FOR CONSTRUCTION OF DISTRICT WATER AND SEWER FACILITIES

*****DIRECTIONS FOR COMPLETING THE AML*****

1. Complete **ALL** pages of this document. Note “N/A” if an item or sheet does not pertain to the project.
2. Provide separate shop drawings/ cut sheets for **ALL** items not listed on the AML.
3. Submit the completed AML by email to engineering@mswd.org.

Project Name:	
MSWD Job #:	
Submittal #:	
Supplier Name:	
Contractor:	
Contractor Contact Person:	
Phone:	
Contractor email:	

FOR MSWD USE ONLY

<u>MISSION SPRINGS WATER DISTRICT</u>	
REVIEWED BY:	_____
APPROVED BY:	_____
DATE:	_____
<u>COMMENTS</u>	

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION A: PIPE (Continued)

A-05: Brass Pipe

- 1. 3/4" – 2" Red Hard Brass per ASTM-B43 Std. Wt.

Bridgeport
Merit Brass
Mueller Company

A-06: Standard Galvanized

- 1. 1" Schedule 40 per ASTM-A53F
- 2. 2" Schedule 40 per ASTM-A53F

Frontier
Stockton Pipe
Grinnell

Frontier
Stockton Pipe
Grinnell

A-07: Standard Wt. Black

- 1. Pipe Schedule 40 per ASTM-A53A

Frontier
Kelly Pipe

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION B: VALVES

B-01: Gate

Gate Valves sizes 4"-12" shall be ductile iron body and bonnet with 316 stainless steel bolting only and resilient wedge fully encapsulated in molded rubber. Valve body and bonnet shall be coated with fusion bonded epoxy both interior and exterior conforming to ANSI/AWWA C 550 Standard and certified to ANSI/NSF 61, with a 2" AWWA operating nut opening in a counter-clockwise direction conforming to AWWA Standard C509 ductile iron only and C515. Valves shall be furnished with Flange x Flange end configuration only, unless otherwise specified.

1.	2" Threaded End, Resilient Seat Epoxy Lined and Coated Ductile Iron Body	Clow Valve Co. Clow Valve Co. Mueller Company Kennedy Valve M & H Valve	2638 DI <hr/> 2639 DI ONLY <hr/> A2362 DI <hr/> DI 7000 Series <hr/>
2.	4" to 12" Flanged, Resilient Seat, Epoxy Lined and Coated Ductile Iron Body	Clow Valve Co. Mueller Company Kennedy Valve M & H Valve	2639 DI ONLY <hr/> A2362 DI <hr/> DI 7000 SERIES <hr/> DI 7000 SERIES <hr/>

B-02: Butterfly Valves

Valves larger than 12" shall be butterfly valves, unless plans specify otherwise. Butterfly valves shall be ductile iron and furnished with Flange x Flange end configurations only. Valves shall have a 2" AWWA operating nut for buried service. All butterfly valves shall be epoxy lined/coated inside and outside, with a minimum 8 mils in accordance to AWWA C550 Standard, with rubber seat on the body (Rubber on the disc not allowed) and traveling nut design actuator, conforming with Class 150B AWWA C504 Standard (latest revision), unless plans specify otherwise. For above ground applications provide valve with hand wheel and position indicator.

1.	12" to 42" Flanged, Rubber Body Seat, Epoxy Coated Disc., Epoxy Lined and Coated Body for Buried Service, Ductile	Pratt a Mueller Brand (Groundhog) Mueller Company (Linesal III) Dezurik	<hr/> <hr/> <hr/> <hr/>
----	--	--	-------------------------

B-03: Air Valves

Air Valves shall be furnished with ductile iron bodies and stainless steel trim. The epoxy lining / coating shall be fusion bonded – typical of all air valves. APCO models for larger applications or for sewer applications will be addressed on a case by case basis and approved by MSWD. Submit with manufacturer's cut-sheet per project specifications.

1.	1" Air Valve	Apco	143C <hr/>
2.	2" Air Valve	Apco	145C <hr/>
3.	4" Air Valve Class 150 Flange Only	Apco	149C <hr/>
4.	6" Air Valve Class 150 Flange only	Apco	<hr/>

DESCRIPTIONMANUF./SUPPLIERMODEL NUMBER**B-04: Brass Ball Valves and Gate Valves**

1. 3/4" – 2 1/2" Ball Valve Domestic – 1/4 turn	Nibco Apollo	T585-70 77C-104-01
2. 3/4" – 2 1/2" Gate Valve Domestic	Nibco	T113
3. 3/4" full port, tapped ball valve for backflow assemblies (Made for Febco Watts, Hersey, or Zurn Wilkins)		601-QT
4. 1" fill port, tapped ball valve for backflow assemblies (Made for Febco Watts, Hersey, or Zurn Wilkins)		601-QT
5. 1 1/2" full port, tapped ball valves for backflow assemblies (Made for Febco Watts, Hersey, or Zurn Wilkins)		601-QT
6. 2" fill port, tapped ball valves for backflow assemblies (made for Febco Watts, Hersey, or Zurn Wilkins)		601-QT

B-05: Flap Valve

Clow Valve Co.

F3012

<u>DESCRIPTION</u>	<u>MANUF./SUPPLIER</u>	<u>MODEL NUMBER</u>
SECTION C: BRONZE SERVICE VALVES		
C-01: 1" Corporation Stop		
1. Ball Style – IPT Inlet X CTS Compression	Ford Meter Box Jones a Mueller Brand Mueller Company	<u>FB-1100-4Q-NL</u> <u>J-1935-SG-NL</u> <u>B-25028N</u>
2. Ball Style – MIPT Inlet x MIPT Outlet	Ford Meter Box Jones a Mueller Brand Mueller Company	<u>FB500-4-NL</u> <u>J-1943-NL</u> <u>B-20013N</u>
C-02: 2" Corporation Stop		
1. Ball Style – IPT Inlet X CTS Compression	Ford Meter Box Jones a Mueller Brand Mueller Company	<u>FB-1100-7Q-NL</u> <u>J-1935-SG-NL</u> <u>B-25028N</u>
2. Ball Style – MIPT Inlet x MIPT Outlet	Ford Meter Box Jones a Mueller Brand Mueller Company Mueller Company	<u>FB-500-7-NL</u> <u>J-1943-NL</u> <u>B-2969N</u> <u>H-9969-N</u>
C-03: 1" Curb Stop		
1. Ball Style – FIPT x FIPT with Lockwing (use T Head for Air/ vac	Ford Meter Box Jones a Mueller Brand Mueller Company	<u>B11-444-W-NL</u> <u>J-1990-W-NL</u> <u>B-20283-N</u>
C-04: 2" Curb Stop		
1. Ball Style – FIPT x FIPT w/ Lockwing (use T Head for Air/ vac	Ford Meter Box Jones a Mueller Brand Mueller Company	<u>B11-777-W-NL</u> <u>J-1900-W-NL</u> <u>B-20283N</u>
C-05: 1" Angle Meter Stop		
1. Ball Style – CTS Compression x Meter Swivel, full port, Lockwing	Ford Meter Box Jones a Mueller Brand Mueller Company	<u>BA43-444-W-Q-NL</u> <u>J-1963-WSG-NL</u> <u>B-24258-1N (no lip)</u>
2. Ball Style – FIPT x Meter Swivel, full port, Lockwing (MSWD use only)	Ford Meter Box Jones a Mueller Brand Mueller Company	<u>BA13-444W-NL</u> <u>J-1966-W-NL</u> <u>B-24265-1N (no lip)</u>
C-06: 2" Angle Meter Stop		
1. Ball Style – CTS Compression X Meter Flange, full port Lockwing	Ford Meter Box Jones a Mueller Brand Mueller Company	<u>BFA43-777WQ-NL</u> <u>J-1975-WSG-NL</u> <u>B-24276N</u>

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION C: BRONZE SERVICE VALVES (Continued)

2. Ball Style – FIPT x Meter Flange, full port, Lockwing (MSWD use only)	Ford Meter Box Jones a Mueller Brand Mueller Company	<u>BFA13-777W-NL</u> <u>J-1974-W-NL</u> <u>B-24286N</u>
--	--	---

NOTE: Use 2" angle meter stop for all 1 1/2" water services.

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION D: FLANGES

All flanges shall be forged or plate steel material; 2" through 12" shall be AWWA Class E Hub or ANSI B16.5 Class 150; Flanges 16" and larger shall be Table 5 AWWA Class E Ring Flanges.

D-01: Welded Flanges

1. Raised Face	Ameri-Forge Corp Daniel Industrial Hackney Flange National Flange	_____ _____ _____ _____
----------------	--	----------------------------------

2. 6 Hole FH Flange	Ameri-Forge Corp Daniel Industrial Hackney Flange National Flange	_____ _____ _____ _____
---------------------	--	----------------------------------

D-02: Reducing Flanges

1. Raised Face	Ameri-Forge Corp Daniel Industrial Hackney Flange National Flange	_____ _____ _____ _____
----------------	--	----------------------------------

D-03: Companion Flanges

1. Full Face	Ameri-Forge Corp Daniel Industrial Hackney Flange National Flange	_____ _____ _____ _____
--------------	--	----------------------------------

D-04: Blind Flanges

1. Raised Face	Ameri-Forge Corp Daniel Industrial Hackney Flange National Flange	_____ _____ _____ _____
----------------	--	----------------------------------

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION E: FITTINGS

E-01: Steel, CML/CMC 10 Ga.

Ameron International/Ferguson	_____
Ca. Steel Industries	_____
Northwest Pipe Co.	_____
Southland Pipe Corp	_____

E-02: Steel, CML/CMC Std.

Ameron International/Ferguson	_____
Ca. Steel Industries	_____
Northwest Pipe Co.	_____
Southland Pipe Corp	_____

Ductile Iron flange fittings (Tees, elbows, crosses, adapters, etc.) shall be ductile iron per ASTM A536 in accordance with ANSI/AWWA C110/A21.10 AND ANSI B16.1 Class 125 Flanges. Flanged fittings sizes 4" thru 48" shall be pressure rated @ 250 psi minimum. All mechanical Joint (MJ) or Tyton® interchangeability (PO, TJ, UT) shall be ductile iron per ASTM A536. Fitting 4" thru 24" shall be pressure rated @ 350 psi minimum and 36" thru 48" size shall be pressure rated @ 250 psi minimum. All fittings shall conform to either ANSI/AWWA Standard C110/A21.10 and/or ANSI/AWWA Standard C153/A21.53 (both current revisions) with cement-lining and seal coating in accordance with ANSI/AWWA C104/A21.4 unless specified otherwise.

E-03: Ductile Iron, CML

- | | | |
|--|--|----------------------------------|
| 1. Flanged C110/A21.10 (Full Body, Long Lay Length) | Star Pipe Products
Tyler Union Pipe
U.S. Pipe
Sigma Corp | _____

_____ |
| 2. Push-on Rubber Gasket ANSI/AWWA C153/A21.53 (Compact Body) (Tyton) | Star Pipe Products
Tyler Union Pipe
U.S. Pipe
Sigma Corp | _____

_____ |
| 3. Ductile Iron Fabricated Pipe Spools (C115/A21.51) Cement Lined and BIT Coated | Custom Pipe & Fabrication, Inc.
U.S. Pipe Coupling Co.
U.S. Pipe | _____

_____ |

E-04: Brass (U.S. Only)

Lee Brass	_____
Elkhart	_____
Merit Brass	_____

E-05: Galvanized (USA Made)

Ward Mfg.	_____
Grinnell	_____

E-06: Black Steel (USA Made)

Ward Mfg.	_____
Grinnell	_____

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION G: METER BOXES AND VAULTS

G-01: DFW Meter Box with Lid, 3/4" & 1" Service

DFW
J & R Concrete Products Inc.

DFW1324C412

G-02: DFW Meter Box with Lid, 1 1/2" & 2" Service and Blow Off

DFW
J & R Concrete Products Inc.

DFWPW6C412
W6B Series Meter Box

G-03: Vault (w/SWF & C Armored, Plain)

G-04: Street Valve Box with Lid

Brooks Products
J & R Concrete Products Inc.
South Bay Foundry

4TT MSWD Lid & Box
V4-T MSWD Lid & Box

G-05: Meter Vault, 5'-0" x5'-0" – 3", 3", or 6" meter per Std. Dwg. W-16 or W-17with U.S.F. 4' x 5' TPD, Aluminum Diamond Plate, Springs assist Parkway Cover with S.S. hardware and oversized recessed padlock hasp

J & R Concrete Products Inc.

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION H: FIRE HYDRANTS

Fire hydrants shall be 6" commercial hydrants only with (2) 2 1/2" nozzles and (1) 4" nozzle, 6-hol standard drill, brass caps only (applies to bronze FH) and painted safety yellow per AWWA C503 Standard, unless specified otherwise. All fire hydrant runs from the gate valve to the hydrant bury shall be restrained at all times.

H-01: Residential (1) 2 1/2" x (1) 4" Nozzles (MSWD USE ONLY)

1. Bronze	Jones	J-3700
-----------	-------	--------

H-02: Commercial (2) 2 1/2" x (1) 4" Nozzles

1. Bronze	Jones	J3765
-----------	-------	-------

2. Ductile (Case by case approval Only)	Jones Clow Valve Co.	J4060 DI 860 DI
---	-------------------------	--------------------

H-03: Angle Fire Plug (warf head) (MSWD USE ONLY)

1. Bronze 4" x 2 1/2" (brass cap)	Jones	J-344 HP
-----------------------------------	-------	----------

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION I: HYDRANT BURY

Buries shall be ductile iron, pressure rate @ 250 psi minimum and conform to ANSI/AWWA Standard C153/A21.53 and shall be cement line, conforming to ANSI/AWWA Standard C104/A21.4 unless otherwise specified. Inlet shall be flanged, Push-on (P.O.) or MJ with top outlet flange being 6 or 8 hole.

NOTE: Furnish the proper length bury to accommodate a break-off or break-off check valve spool listed below maintaining compliance with height specifications.

I-01: Hydrant Bury

Sigma Corp.	_____
Star Pipe Products	_____
South Bay Foundry	_____
Clow Valve Co.	_____

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION J: HYDRANT BREAK-OFF SPOOL, MSWD USE ONLY

Fire hydrants shall be 6" commercial hydrants only with (2) 2 1/2" nozzles and (1) 4" nozzle, 6-hol standard drill, brass caps only (applies to bronze FH) and painted safety yellow per AWWA C503 Standard, unless specified otherwise. All fire hydrant runs from the gate valve to the hydrant bury shall be restrained at all times.

NOTE: Furnish the proper length bury to accommodate a break-off or break-off check valve spool listed below maintaining compliance with height specifications.

J-01: Break-off Spool (MSWD USE ONLY)

Sigma Corp.
Star Pipe Products
South Bay Foundry
Clow Valve. Co

J-02: Break-Off Check Valve Assembly

Clow Valve Co.

LBI 400A _____

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION K: BACKFLOW ASSEMBLIES

K-01: Reduced Pressure Device

1. ¾", 1", 1 ½", 2"

Febco Watts
Febco Watts
Zurn Wilkins

LF825Y
LF909
975XL2

2. 3", 4", 6", 8"

Febco Watts
Zurn Wilkins

LF880V
475 DA

3. Valve Setter

Febco Watts
Zurn Wilkins

611 FL x FL
Model FLS

K-02: Double Check Detector Assembly

1. 3", 4", 6", 8", 10"

Febco Watts
Zurn Wilkins

875V
450 DA

2. Valve Setter

Febco Watts
Febco Watts
Zurn Wilkins

611 FL x FL
611 MJ x FL
Model FLS or MJFS

3. 12" DCDA

AMES

3000SS-OSY-CFM
(Prior MSWD
approval required)

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION N: MISCELLANEOUS (Continued)

- | | | |
|---|--|---|
| 1. 8" diameter 20 Ga.
Galvanized valve can
24", 30", and 36" length | R-K Industries | _____ |
| 2. 8" SDR-35 and 8"
C-900 PVC pipe cut to
length in field | Vinyltech Corporation
JM Eagle
Diamond Plastics Corporation
PW Pipe
Apache | _____

_____ |

**N-06: Valve Box Slip-can
Extension Section
(replacement only)**

- | | | |
|---|----------------|----------------|
| 1. 8" diameter 20 Ga.
Galvanized split-top | R-K Industries | _____ |
| 2. Extension – 12" and
18" length | R-K Industries | _____
_____ |

N-07: Valve Stem Extensions

Pipeline Products Fiberglass Tube w/coatings	_____
---	-------

N-08: Nuts and Bolts

Fire hydrant (FH) break-away bolts shall conform to ASTM A-307 Grade A Standard, Zinc plated and filled with 100% Silicon from the factory. Nuts shall conform to ASTM A563 and shall conform in dimensions prescribed in ANSE/ASME B18-2.2 and be Zinc plated, unless otherwise specified.

- | | | |
|---|---------------------------|----------------|
| 1. FH Bots Breakaway | Nucor | _____ |
| 5/8" x 2 3/4", and 3" U.S.
only | Tripac Fasteners | _____ |
| 2. FH Hex Nuts | Nucor
Tripac Fasteners | _____
_____ |
| 3. All other bolts (buried
and non-buried) | | |

5/8" to 1 1/2" diameter – U.S. Only – Bolts shall conform to ASTM A-307 Grade A Standard, Zinc plated, 150# kits, or SAE J429, Grade 5, Zinc plated, 150# kits, unless specified otherwise.

- | | | |
|---------|---------------------------|----------------|
| | Nucor
Tripac Fasteners | _____
_____ |
| 4. Nuts | | |

Hex nuts shall conform to ASTM A-563 and shall conform in dimensions prescribed in ANSI/ASME B18.2.2 unless otherwise specified. Hex nuts shall be furnished Zinc plated and conform to the same grade as the bolts.

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION N: MISCELLANEOUS (Continued)

	Nucor Tripac Fasteners	_____
N-09: Tracing Wire (500 ft. rolls max)		
1. Coated 14 gauge	N/A	N/A
N-10: Pipe Wrap	Protecto Wrap Mueller Company	#200A H15533
N-11: Stainless Steel Bands Band-It		_____
N-12: Pipe Dope	J.C. Whitlam Mfg. Select Teflon LA-CO Slic-Tite a/Teflon Hercules (Real Tuff)	Unyte TF8 42019 15-620
N-13: Bolt Anti-Seize Material		
	Flo-Pro Hi-Temp Lawson Lubri-Temp Markal/E-Z Break Sanchem, Inc.	C5-A 19920 8910 NO-OX-ID
N-14: Air Valve Cover (canister)		
For 1" thru 2" air valves furnish in Tan Polyethylene Construction	Pipeline Products	VCAS-1830
N-15: Air Valve Bug Screen Flow Ezy	Ferguson	_____
N-16: MJ Restraints	EBBA Iron Sales, Inc. Uni-Flange Star Pipe Products Romac Industries, Inc. Sigma Corp. Tyler Union Pipe U.S. Pipe	_____
		GripRing

		MJ Field-Lok
N-17: Push-on (P.O.) Restraints		
1. 1" thru 24"	U.S. Pipe	_____
2. Tlok		_____

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION N: MISCELLANEOUS (Continued)

N-18: Detectable Tape

- 1. With all pipelines –
Green for sewer and
Blue for water

T-Christy
Northtown Company

3" wide
3" wide

**N-19: 4" thru 10" Victaulic Style
Coupling**

N-20: Plumbing Insulation

**N-21: Blue Retro-Reflective
Pavement Marker**

Traffic Zone Safety Warehouse
EMEDCO
3M

TPM-2B 4" x 4" x 3/4"
RPM8-KIT (24)
Series 290 4" x 4" x
3/4"

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

Item 8.

SECTION O: TAPPING SLEEVES

Tapping Sleeves shall be used for tie-in unless a "cut-in" requirement is specified and shall be full stainless steel body with stainless steel flange unless specified otherwise. Size on size hot taps not allowed. Factory Certified to 1.5 WPR (or 225 psi).

**O-01: Stainless steel full (long)
Body with stainless steel
Flange**

Romac Industries, Inc.
Smith-Blair / Xylem
JCM Industries
Mueller Company

SST
663
432
H304

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

Item 8.

SECTION P: WATER QUALITY SAMPLING STATION

**P-01: 3/8" Brass Compression
Adapter Male Connector
(Std.) 3/8" Tube x 3/4"
Pipe Thread**

**P-02: Water Quality Sample
Station Cover**

Pipeline Products

WTS 858

**P-03: 3/4" Full-Port Ball Valve
(Untapped)**

Febco Watts
Zurn Wilkins

P-04: 1" x 3/4" Meter Adapter

Ford Meter Box

#24

P-05: 1" x 1/2" Brass Bushing

**P-06: 1/2" Soft Copper Tubing
Heavy Duty**

See A-04 3

**P-07: 3/4" M.P.T. x 3/4" CTS
Adapter**

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

Item 8.

SECTION Q: SEWER MAIN AND LATERALS

Sewer material shall be Vitrified Clay Pipe (VCP) for mainline and laterals conforming to ASTM C700, ASTI C425, AND ASTM C301. Pipe shall be bell and spigot and/or Band-seal for 4" and 6" laterals. MAINLINE SEWER 8" and larger shall be gasketed bell and spigot. MSWD does not allow mitered joints and fittings.

Q-01: V.C.P. Pipe and Fittings

Mission Clay Pipe
Gladding McBean

Q-02: SDR35 PVC Sewer Pipe & Fittings (MSWD or Sewer Cleanout use only)

Vinyltech Corporation
JM Pipe
Diamond
PW Pipe
Apache

Q-03: Ductile Iron Pipe w/ Protecto 401 Epoxy Lining

Pacific States
U.S. Pipe

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

Item 8.

SECTION R: MANHOLE FRAME AND COVER

Submit manufacturer's cut sheets. Covers shall be traffic rated, marked with MSWD SEWER and have a closed/blind pick hole pocket per standard drawing 5-03.

R-01: 24" Sewer Manhole

Alhambra Foundry
National Casting Corp
South Bay Foundry

A1254 (MSWD Use)
NC-257
SBF1254 MSWD

R-02: 24" Bolt-down Sewer Manhole

Alhambra Foundry
South Bay Foundry

A1254-B
SBF1254B MSWD

R-03: 36" Sewer Manhole

Alhambra Foundry
National Castings Corp
South Bay Foundry

A1251 (MSWD Use)
NC-250
SBF1241

R-04: 36" Bolt-down Sewer Manhole

Alhambra Foundry
South Bay Foundry

R-05: Sewer Cleanout Box & Cover

Alhambra Foundry
South Bay Foundry

A1241
SBF1241

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

Item 8.

SECTION S: PRECAST SEWER MANHOLE

Submit manufacturers cut sheets and specifications for all precast manhole sections. All concrete shall be 3000 psi minimum. Un-reinforced sections to be 6" thick.

S-01: 48" Dia. Shaft Sections

S-02: 60" Dia. Shaft Sections

S-03: 48" x 24" Eccentric Cone Section

S-04: 60" x 36" Eccentric Cone Section

S-05: 24" Dia. Grade Rings

S-06: 36" Dia. Grade Rings

S-07: 48" x 36" Eccentric Flat Manhole Top Section

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION T: MISCELLANEOUS SEWER FINTTINGS AND APPURTENANCES

T-01: Band Seal Couplings w/ Stainless Steel Clamps		
T-02: Band Seal Cap w/ Stainless Steel Clamp		
T-03: 3M Mid-Range Locator Disk		
T-04: 4" or 6" Tap-N-Tee	Joints Connect	
T-05: 4" or 6" V.C.P. Epoxy Wye Fittings	Mission Clay Products	
T-06: Wyn-Stik Epoxy Adhesive	Mission Clay Products	ES-4
T-07: Inside Drop Bowl Assembly	Reliner/Duran	Type "B" size per main

DESCRIPTION

MANUF./SUPPLIER

MODEL NUMBER

SECTION U: MSWD PAINT SPECIFICATION

U-01: Fire Hydrant and Water Valve Lid and Box

Sherwin Williams Pro-Industrial DTM Acrylic Gloss Custom Safety Yellow



U-02: DCDA and RP Backflow Device

Sherwin-Williams Pro-Industrial High Performance Acrylic Gloss Custom Desert Sand-Mission Springs



U-03: Red Valve and DCDA Handles

Rust-Oleum Acrylic High Performance 3800 Safety Red Gloss

#454H2O Mfr. Model # 314410

Sherwin-Williams Pro-Industrial Multi-Surface Acrylic Real Red Gloss

B66T1504 SW6868

U-04: Manhole Frame and Cover

Rust-Oleum Acrylic Enamel High Performance 3800 Gloss Black

#454H19 Mfr. Model # 314387

Sherwin-Williams Pro-Industrial Multi-Surface Acrylic Black Magic Gloss

SW6991



STANDARD DRAWINGS

**MISSION SPRINGS WATER DISTRICT
66575 2ND STREET
DESERT HOT SPRINGS, CA 92240
WWW.MSWD.ORG**

**UPDATED
FEBRUARY 2024**

SEWER PLAN VIEW

SEWER MAIN ————— 0.65 mm

MANHOLES ————— 0.45 mm

LATERALS, TEXT ————— 0.30 mm

OTHER UTILITIES ————— 0.20 mm

SEWER PROFILE VIEW

SEWER MAIN ————— 0.65 mm

MANHOLES ————— 0.45 mm

INTERSECTING
SEWER, TEXT ————— 0.30 mm

OTHER UTILITIES ————— 0.20 mm

WATER PLAN VIEW

WATER MAIN ————— 0.65 mm

FIRE HYDRANT ————— 0.45 mm

WATER SERVICE
VALVES, TEXT ————— 0.30 mm

OTHER UTILITIES ————— 0.20 mm

WATER PROFILE VIEW

WATER MAIN ————— 0.65 mm

FIRE HYDRANTS
TEXT ————— 0.30 mm

OTHER UTILITIES ————— 0.20 mm



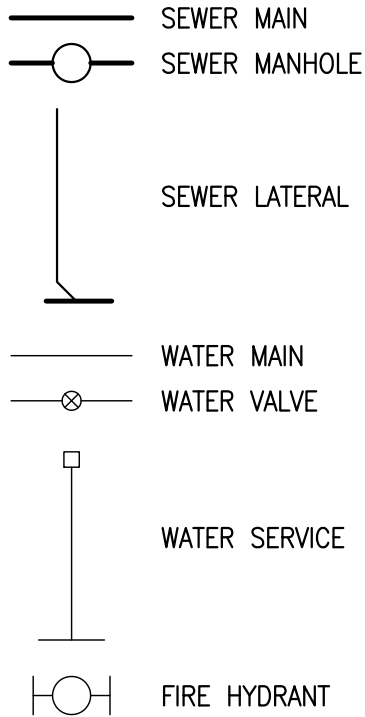
TYPICAL LINE TYPES
AND SIZES

Approved: _____
 Brian Macy
 General Manager/Chief Engineer

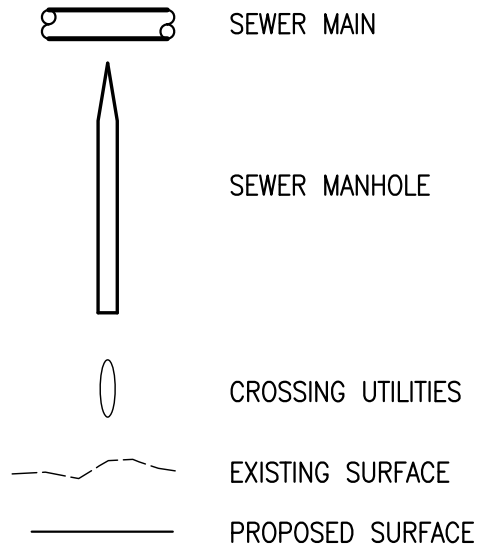
Drawn: MP _____ Date: 1/31/2024

DRAWING No.
 D-01

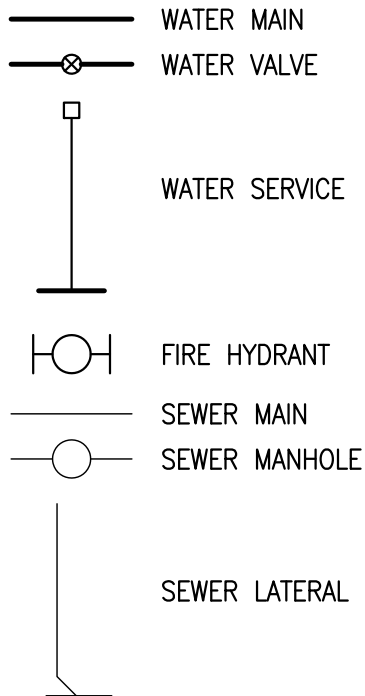
SEWER PLAN VIEW



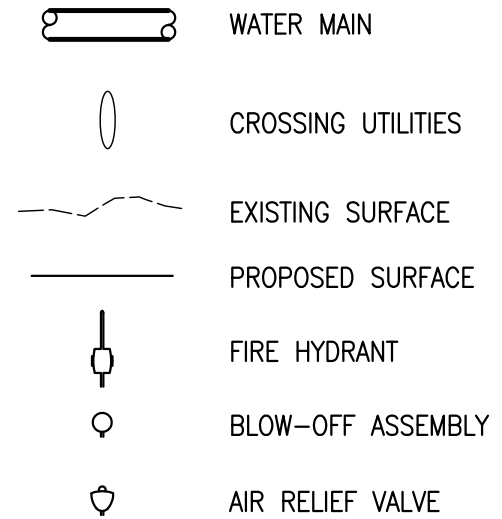
SEWER PROFILE VIEW



WATER PLAN VIEW



WATER PROFILE VIEW



TYPICAL LEGEND

Approved: _____
 Brian Macy
 General Manager/Chief Engineer
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 D-02

CURVE DATA TABLE				
C#	DELTA	RADIUS	LENGTH	TANGENT
C1	-	-	-	-
C2	-	-	-	-
C3	-	-	-	-
C4	-	-	-	-
C5	-	-	-	-
C6	-	-	-	-
C7	-	-	-	-

MANHOLE / CLEANOUT LEGEND								
NO.	STATION	RIM/C.O. ELEV.(FT)	INV. ELEV. (IN)	DIR.	INV. ELEV. (OUT)	DIR.	SHEET #	DEPTH (FT)
M.H. 1	-	-	-	-	-	-	-	-
M.H. 2	-	-	-	-	-	-	-	-
M.H. 3	-	-	-	-	-	-	-	-
M.H. 4	-	-	-	-	-	-	-	-
M.H. 5	-	-	-	-	-	-	-	-

QUANTITIES & UNITS ON TITLE SHEET ONLY

PLAN SHEETS SHOW ONLY NOTES PERTAINING TO SHEET


CONSTRUCTION NOTES & QUANTITY ESTIMATE			
NO.	ITEM	QUANTITY	UNIT
①	-	-	-
②	-	-	-
③	-	-	-
④	-	-	-
⑤	-	-	-
⑥	-	-	-
⑦	-	-	-
⑧	-	-	-
⑨	-	-	-
⑩	-	-	-
⑪	-	-	-
⑫	-	-	-
⑬	-	-	-
⑭	-	-	-



CURVE DATA TABLE,
MANHOLE / CLEANOUT LEGEND,
AND CONSTRUCTION NOTES &
QUANTITY ESTIMATE

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 D-03

8.9"



DIG ALERT
DIAL BEFORE YOU DIG
TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 811
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT


UNAUTHORIZED CHANGES & USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

ENGINEER'S NOTE TO CONTRACTOR: CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

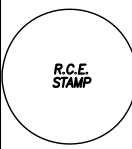
THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN IN THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN AND IS RESPONSIBLE FOR THE PROTECTION OF, AND ANY DAMAGE TO THESE LINES OR STRUCTURES.

0.08"

#	REVISIONS	DATE	APP.



14.42"

BENCHMARK:	DESIGN ENGINEER		PREPARED UNDER THE DIRECT SUPERVISION OF:
BASIS OF BEARING:	DEVELOPER		_____ DATE _____ DATE
SCALE: PLOT DATE: DESIGN BY: DRAWN BY: CHECKED BY:			

10.8"

FOR WATER PLANS ONLY

APPROVED BY MISSION SPRINGS WATER DISTRICT:

MISSION SPRINGS WATER DISTRICT

PROJECT NAME

TYPE OF IMPROVEMENT PLAN

SHEET NAME

EXTRA SPACE

BRIAN MACY
GENERAL MANAGER / CHIEF ENGINEER

DATE _____

"VOID AFTER ONE YEAR FROM THIS DATE"

0.15"

0.225"

0.25"

APPROVED BY:
RIVERSIDE COUNTY FIRE DEPARTMENT

FIRE MARSHAL _____ DATE _____

0.20"

SHEET # _____

OF # _____

PRIVATE REFERENCE # _____

MSWD REFERENCE # _____

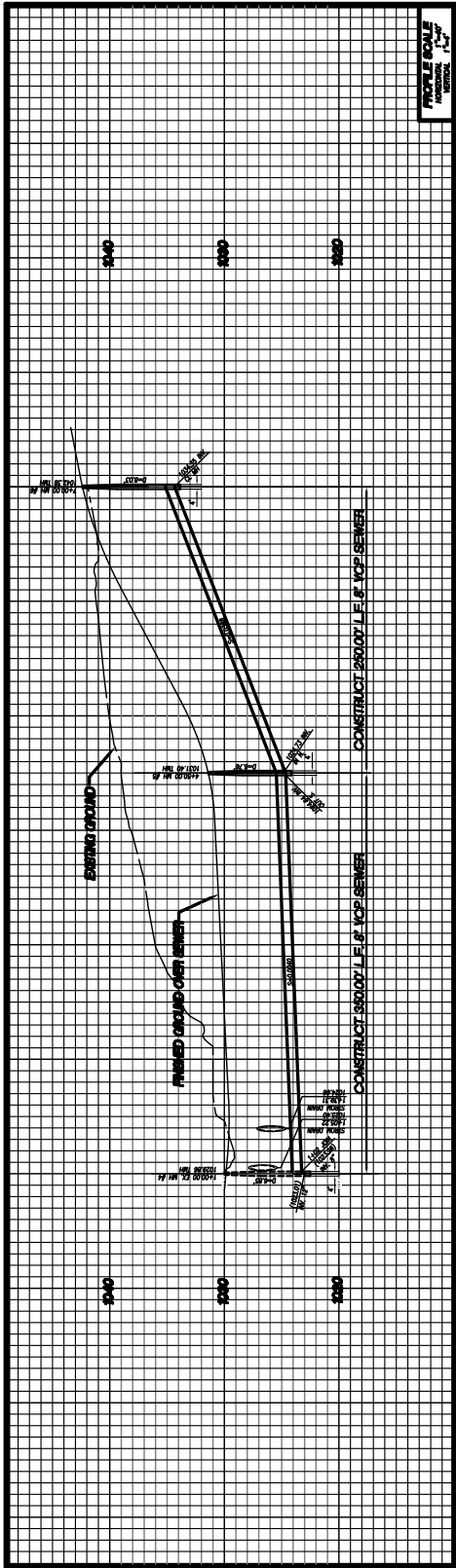
ALL TITLE BLOCK TEXT TO BE 0.10"
UNLESS OTHERWISE SPECIFIED

TITLE BLOCK AVAILABLE FOR
DOWNLOAD FROM MSWD'S WEB SITE

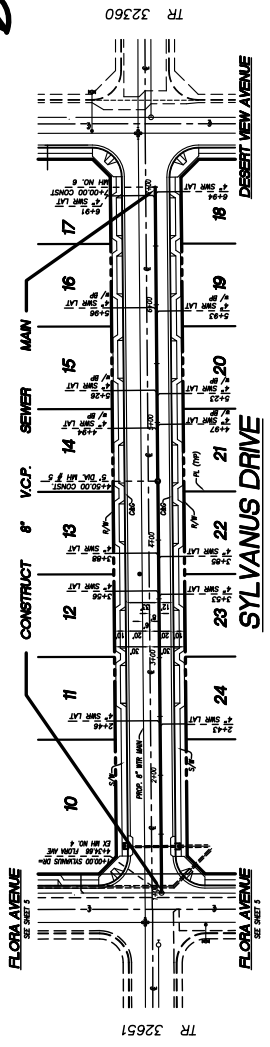


TYPICAL TITLE BLOCK

Approved: _____
 Brian Macy
 General Manager/Chief Engineer
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 D-04



PROFILE SCALE
 1" = 10'
 HORIZONTAL SCALE
 1" = 100'



TR 32360

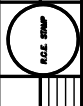
TR 32651

DIG PROTECT
 CALL BEFORE YOU DIG
 800-4-A-DIG
 800-472-4343
 WWW.CALLBEFOREYUDDIG.COM
 OR
 1-800-472-4343



DATE	BY	REVISIONS

DESIGN ENGINEER



APPROVED BY MISSION SPRINGS WATER DISTRICT

DESIGNER: _____ DATE: _____

CHECKER: _____ DATE: _____

CREATING: _____ DATE: _____

VERIFIED AFTER ONE YEAR FROM THIS DATE

MISSION SPRINGS WATER DISTRICT
PROJECT NAME
SEWER IMPROVEMENT PLAN
SYLVANUS DRIVE
 FROM TR 32651 TO TR 32360
 SHEET 3 OF 6
 1" = 100' HORIZONTAL
 1" = 10' VERTICAL

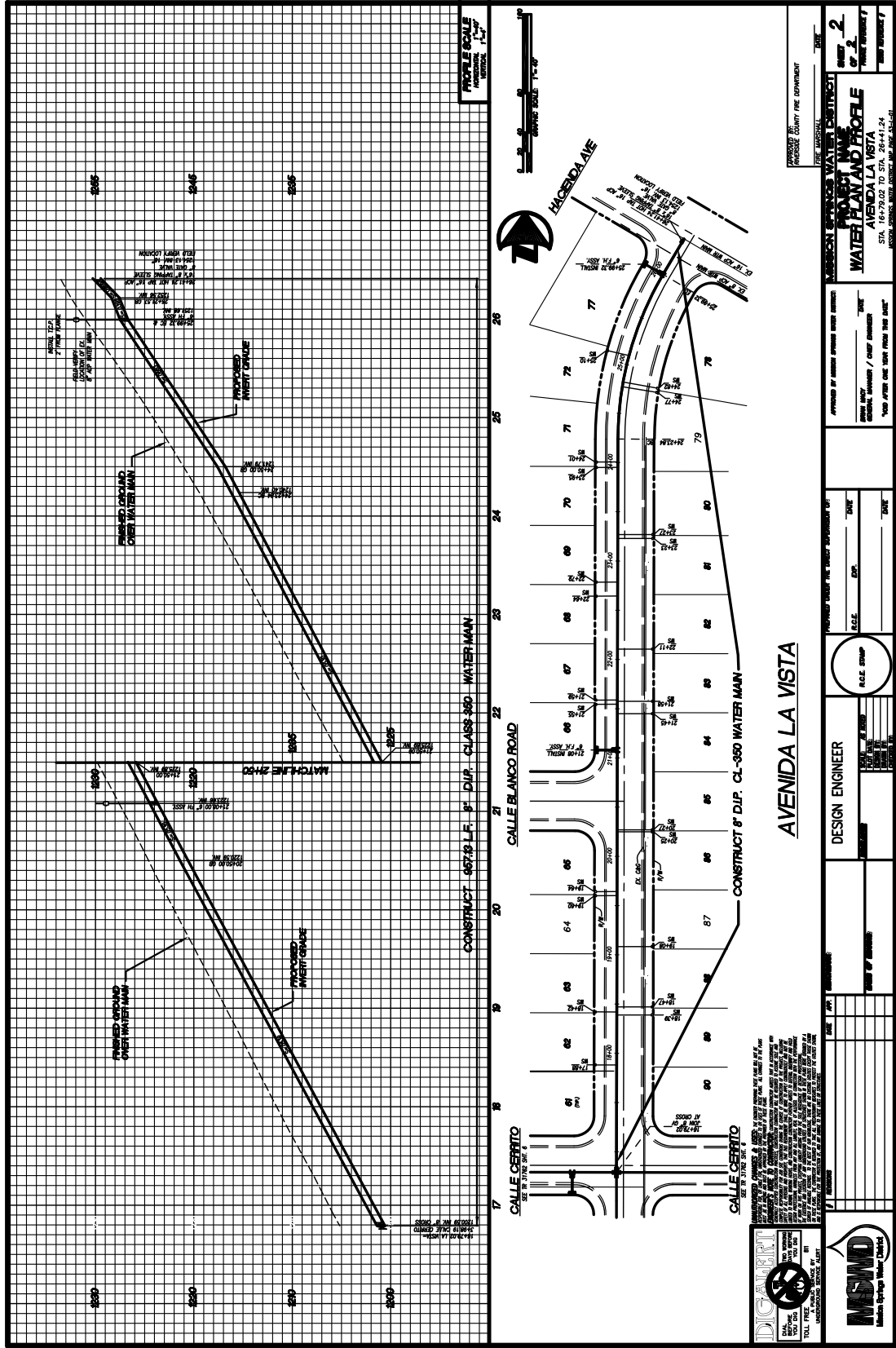


TYPICAL SEWER PLAN AND PROFILE

Approved: Brian Macy
 General Manager

Drawn: MP Date: 1/31/2024

DRAWING No.
 D-06

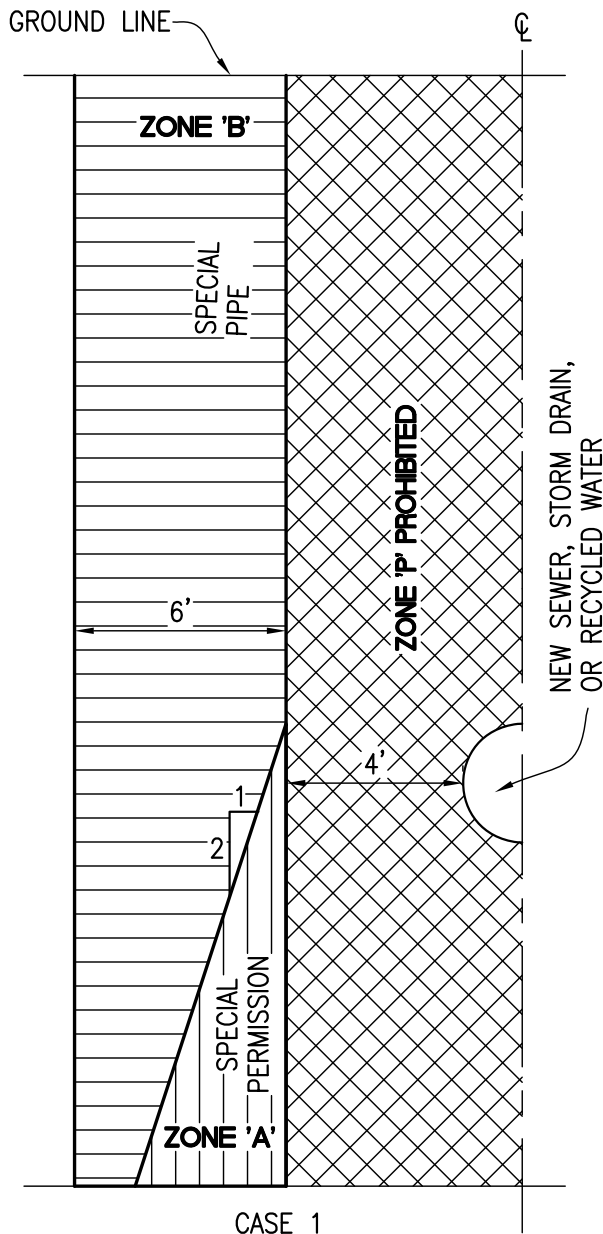


TYPICAL WATER PLAN AND PROFILE

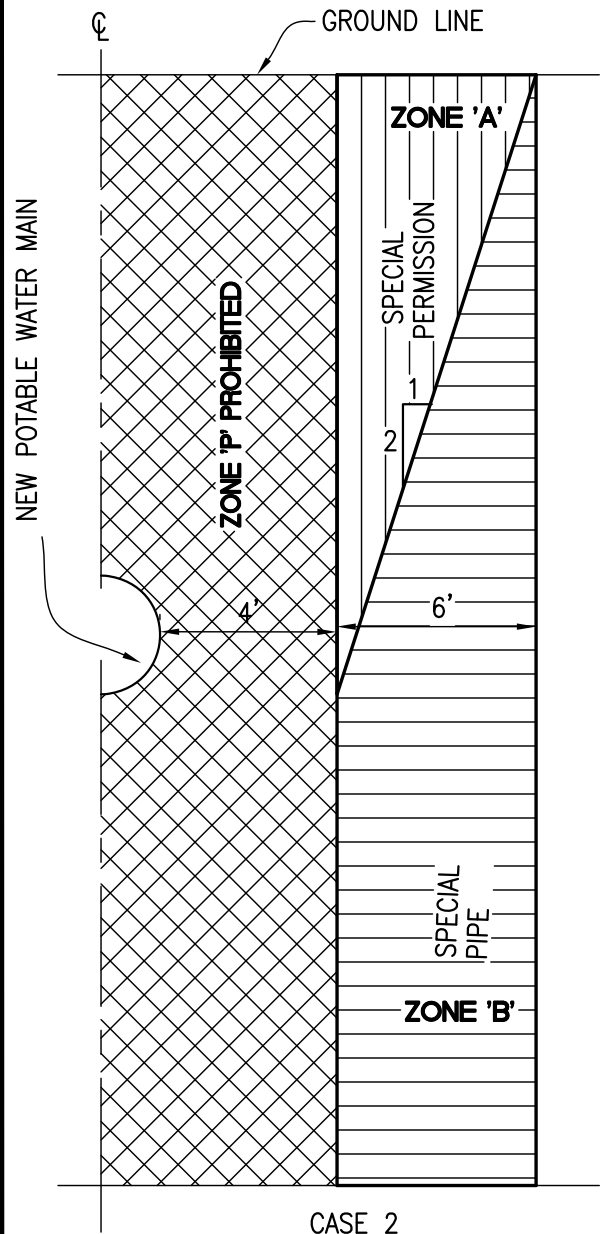
Approved: Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No. D-08

NOTES:

1. ZONES ARE IDENTICAL ON EITHER SIDE OF CENTERLINE AS SHOWN BELOW AND REFERENCE ALLOWED DISTANCES TO POTABLE WATER MAINS.
2. REQUIREMENTS ARE PER THE CALIFORNIA WATERWORKS STANDARDS (CALIFORNIA CODE OF REGULATIONS, TITLE 22, DIVISION 4, CHAPTER 16, SECTION 64572) 12/14/2017.
3. SEE G-03 FOR NOTES ON WATER, RECYCLED WATER STORM DRAINS AND SEWER MAIN PARALLEL AND PERPENDICULAR SEPARATIONS.
4. NEW STORM DRAINS SHALL BE AT LEAST 4' AND 1' BELOW WATER LINES.
5. ZONE A REQUIRES SPECIAL PERMISSION FROM THE STATE. ZONE B REQUIRES SPECIAL PIPE APPROVED BY MSWD. ALL DIMENSIONS ARE FROM OUTSIDE OF PIPES.



CASE 1
NEW RECYCLED WATER,
STORM DRAIN, OR SEWER



CASE 2
NEW POTABLE WATER MAIN

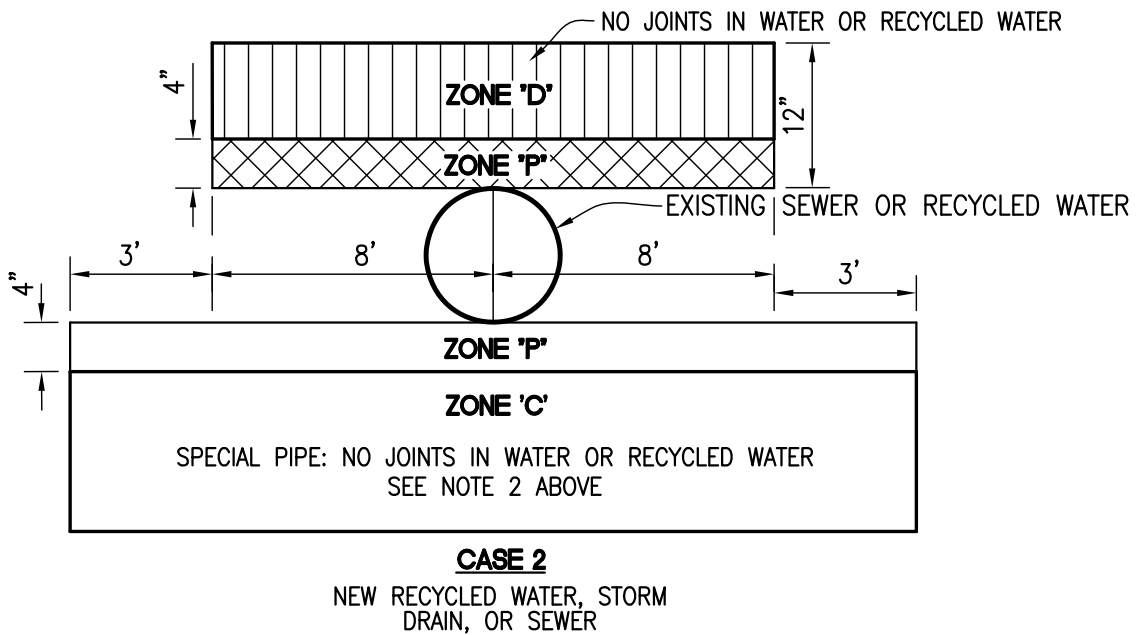
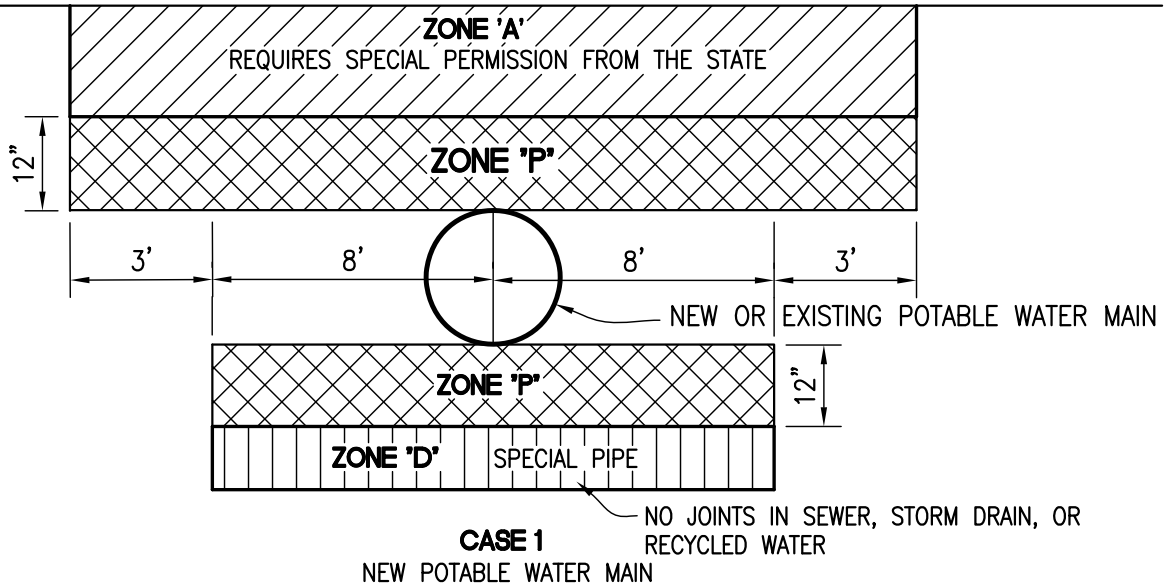


PARALLEL SEPARATIONS
NEW AND EXISTING WATER, SEWER,
STORM DRAIN, OR RECYCLED WATER

Approved: Brian Macy
General Manager
Drawn: MP Date: 1/31/2024
DRAWING No.
G-01

NOTES:

1. REQUIREMENTS OF THE CALIFORNIA WATERWORKS STANDARDS (CALIFORNIA CODE OF REGULATIONS, SECTION 64572, TITLE 22, CHAPTER 16) 12/29/2017.
2. SEE G-03 FOR NOTES ON WATER, RECYCLED WATER, STORM DRAINS AND SEWER MAIN PARALLEL AND PERPENDICULAR SEPARATIONS.
3. MAINS SHALL CROSS OTHER UTILITIES AT A PERPENDICULAR ANGLE, UNLESS OTHERWISE APPROVED. IN ANY CASE, UTILITIES CROSSING AT A SKEW ANGLE OF SEVENTY-FIVE DEGREES (75°) OR LESS SHALL BE AVOIDED.
4. REFER TO THE MSWD STANDARD DESIGN GUIDELINES FOR NEW PIPE SEPARATION REQUIREMENTS. MINIMUM SEPARATION BETWEEN WATER, RECYCLED WATER, AND SEWER MAINS SHALL BE 10' FROM PIPE O.D. UNLESS SPECIAL PERMISSION IS ACQUIRED



PERPENDICULAR SEPARATIONS
NEW AND EXISTING WATER, SEWER,
STORM DRAIN OR RECYCLED WATER

Approved: _____
Brian Macy
General Manager
Drawn: _____ Date: 1/31/2024
DRAWING No.
G-02

CONSTRUCTION REQUIREMENTS FOR WATER, RECYCLED WATER AND SEWER MAINS

NOTES:

1. ALL CONSTRUCTION SHALL ADHERE TO THE MOST CURRENT REQUIREMENTS OF THE CALIFORNIA WATERWORKS STANDARDS (CALIFORNIA CODE OF REGULATIONS, SECTION 64572, TITLE 22, CHAPTER 16) 12/29/2017.
2. SEE STANDARD G-01 FOR GRAPHIC DIAGRAM OF PARALLEL INSTALLATIONS.
3. SEE STANDARD G-02 FOR GRAPHIC DIAGRAM OF PERPENDICULAR CROSSINGS.
4. CONSTRUCTION IN ZONE 'A', SPECIAL PERMISSION SHALL APPLY FOR SPECIAL PERMISSION FOR CONSTRUCTION WHEN LOCAL OR EXISTING CONDITIONS LEAVE NO FEASIBLE ALTERNATIVE.
5. CONSTRUCTION IN ZONE 'B', SPECIAL PIPE, SHALL REQUIRE APPROVAL FROM MSWD.
6. NEW WATER MAINS OR SUPPLY LINES SHALL BE INSTALLED AT LEAST 4' HORIZONTALLY AND 1' ABOVE ANY EXISTING STORM DRAIN.
7. FOR NEW CONSTRUCTION OF STORM DRAINS, THE REQUIRED CLEARANCES SHALL BE THE SIMILAR TO THE REQUIREMENTS FOR NEW WATER LINES AND SHALL PROVIDE 4' HORIZONTAL CLEARANCE AND 1' VERTICAL CLEARANCE BELOW EXISTING WATER LINE.

MSWD APPROVED SPECIAL PIPE:

1. FOR SEWER MAINS AND LATERALS MSWD SHALL CONSIDER EPOXY LINED (PROTECTO 401 OR EQUAL) CLASS 350 DUCTILE IRON PIPE WITH RUBBER SEALED JOINTS. NO JOINTS TO BE ALLOWED WITHIN 9' OF A WATER OR STORM DRAIN CROSSING.
2. FOR STORM DRAIN PIPES MSWD WILL ACCEPT HDPE PIPE WITH FUSED JOINTS, REINFORCED CONCRETE PIPE WITH FULLY GROUTED OR SEALED JOINTS.
3. FOR WATER MAINS, MSWD REQUIREMENTS FOR CEMENT MORTAR LINED CLASS 350 DUCTILE IRON PIPE WITH RUBBER SEALED JOINTS COMPLIES WITH SPECIAL PIPE REQUIREMENTS. NO JOINTS TO BE ALLOWED WITHIN 9' OF A SEWER OR STORM DRAIN UNDER-CROSSING.
4. FOR WATER SERVICES, MSWD REQUIRES CONTINUOUS COPPER SERVICES WITH NO JOINTS OR COUPLINGS WITHIN 10' OF A CROSSING.
5. NEW WATER MAINS OR SUPPLY LINES SHALL BE INSTALLED AT LEAST 4' HORIZONTALLY AND 1' ABOVE ANY EXISTING STORM DRAIN.
6. FOR NEW CONSTRUCTION OF STORM DRAINS, THE REQUIRED CLEARANCES SHALL BE THE SIMILAR TO THE REQUIREMENTS FOR NEW WATER LINES AND SHALL PROVIDE 4' HORIZONTAL CLEARANCE AND 1' VERTICAL CLEARANCE BELOW EXISTING WATER LINE.

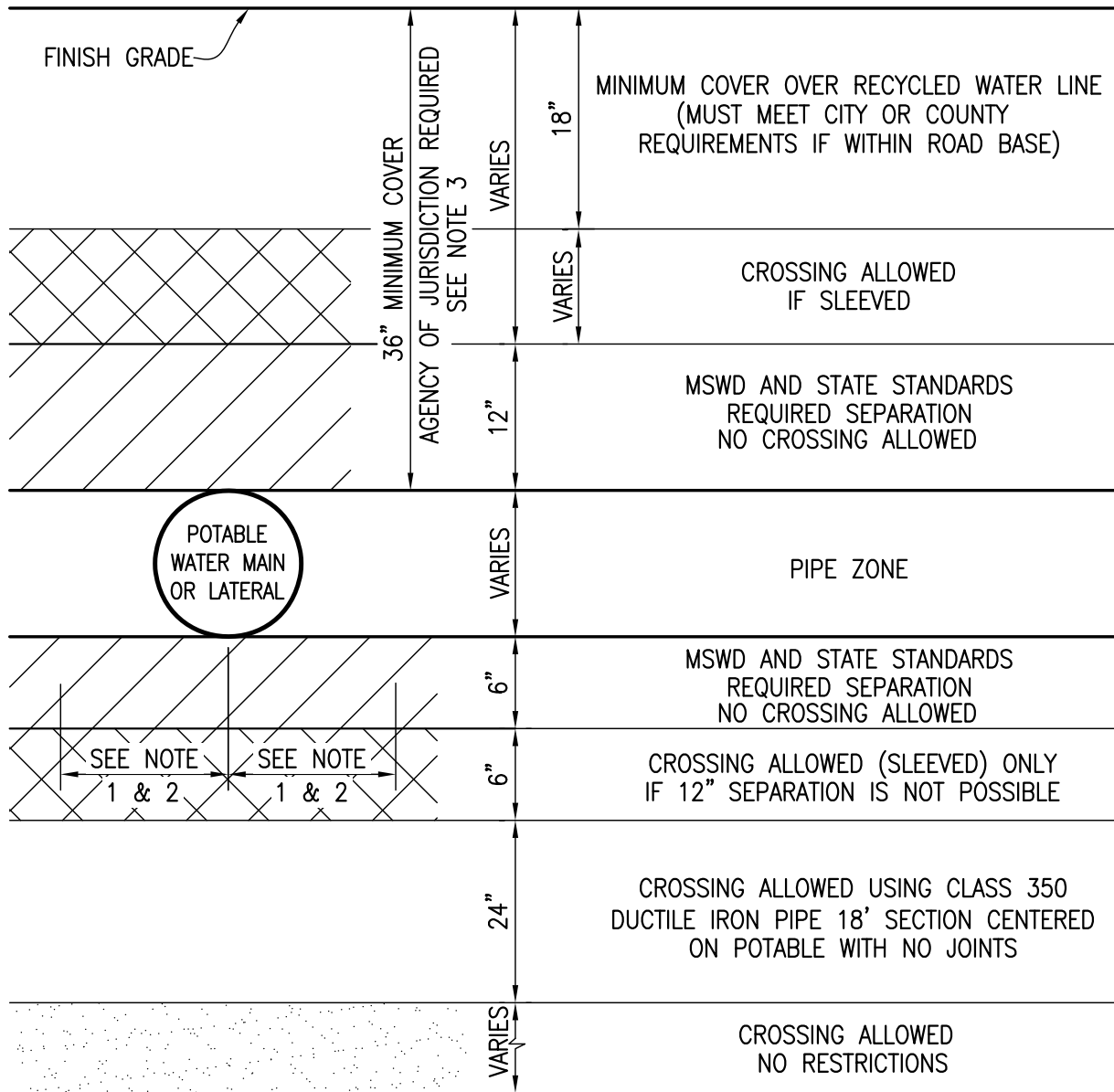


WATER, RECYCLED WATER
AND SEWER MAIN
PARALLEL AND PERPENDICULAR
SEPARATION NOTES

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 G-03

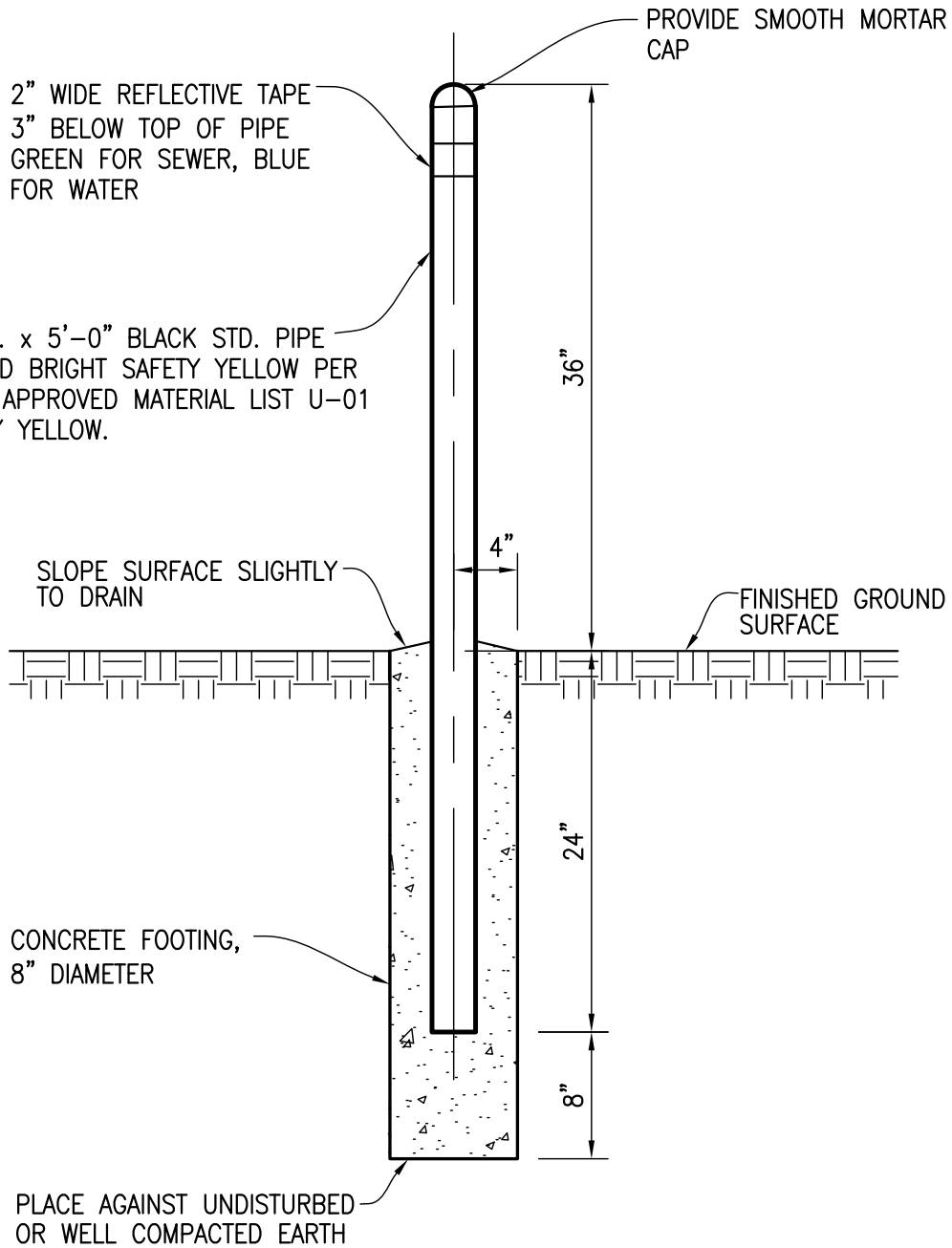
NOTES:

1. EXTEND SLEEVE 5' ON EITHER SIDE OF POTABLE WATER LATERALS 3" DIAMETER OR SMALLER.
2. EXTEND SLEEVE 10' ON EITHER SIDE OF POTABLE WATER LATERALS 4" DIAMETER OR LARGER (NO JOINTS IN SLEEVE OR PIPE).
3. IF POTABLE WATER LINE HAS LESS THAN 36" COVER, RECYCLED WATER LINE MUST CROSS BELOW POTABLE WATER.
4. ALL SEPARATION REQUIREMENTS MUST BE PER CALIFORNIA WATERWORKS STANDARDS (CALIFORNIA CODE OF REGULATIONS, TITLE 22, DIVISION 4, CHAPTER 16, SECTION 64572) 12/14/2017.



POST METER CONSTANT PRESSURE
 RECYCLED WATER LINE CROSSING
 POTABLE WATER MAIN OR LATERAL
 WITHIN PUBLIC RIGHT OF WAY

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 G-04

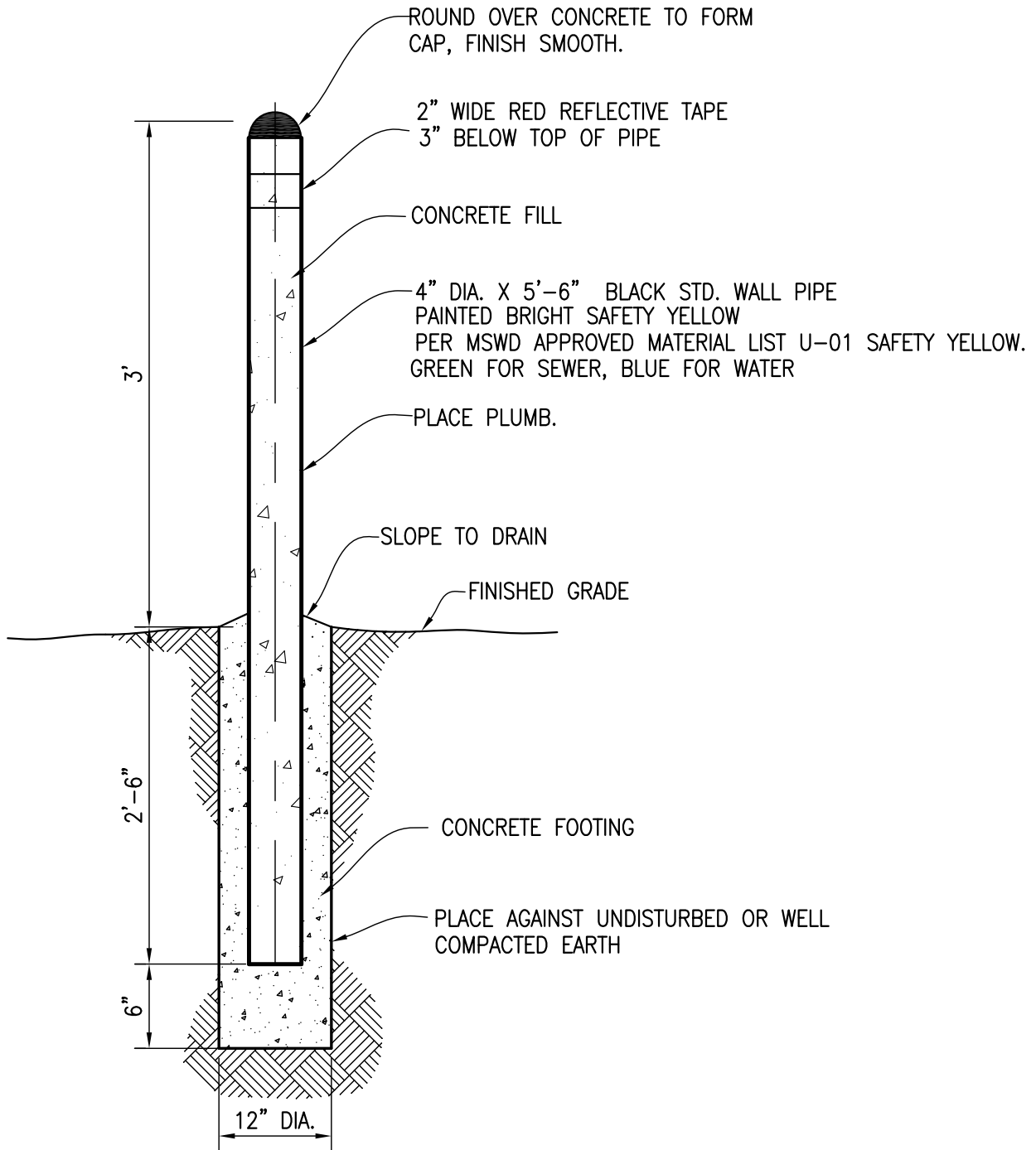


NOTE:
MARKERS TO BE INSTALLED AS
DIRECTED IN THE FIELD BY THE
DISTRICT TO INDICATE LOCATION OF
VALVES OR MANHOLES.



MARKER POST INSTALLATION

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024
DRAWING No.
G-05

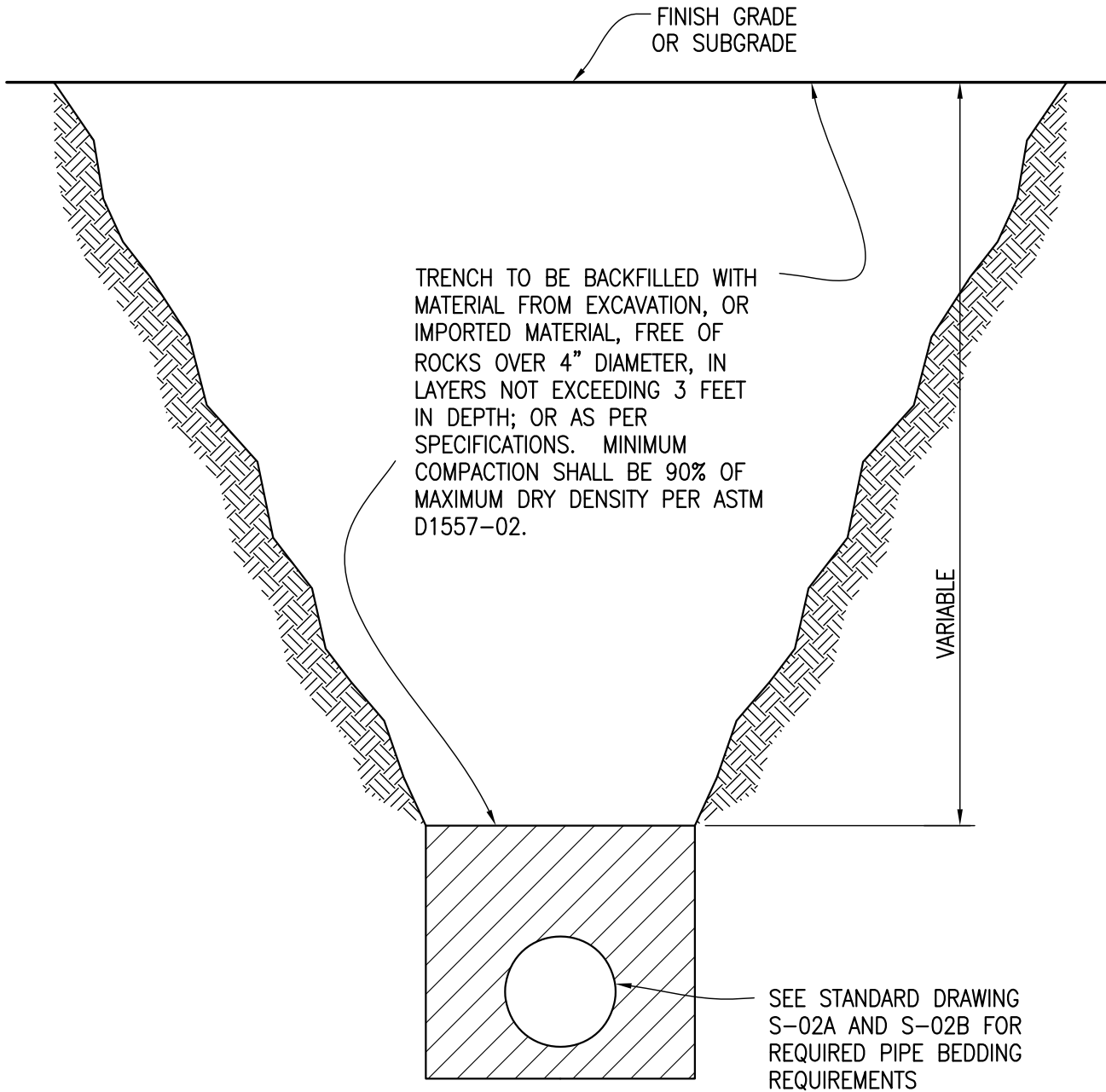


NOTE:
LOCATION SHALL BE AS SHOWN ON PLAN VIEW, OR AS DIRECTED IN THE
FIELD BY THE DISTRICT



GUARD POST
INSTALLATION

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024
DRAWING No.
G-06



NOTES:

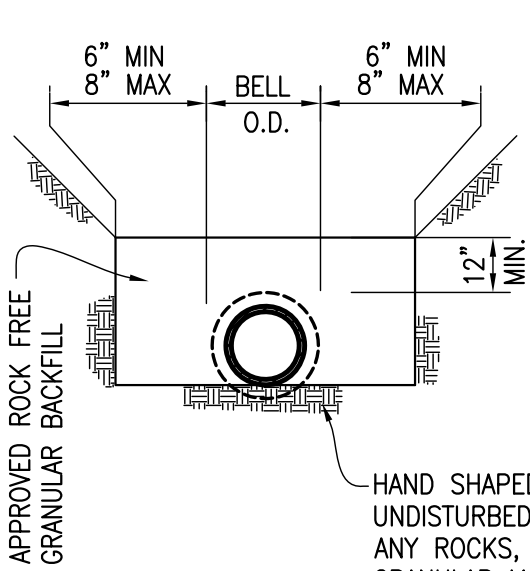
1. ALL TRENCHING SHALL CONFORM TO CAL-OSHA SAFETY STANDARDS.
2. ALL TRENCH SHALL BE BACKFILLED DAILY AFTER APPROVED INSPECTION BY THE MSWD INSPECTOR UNLESS SPECIFICALLY APPROVED AND SAFELY BARRICADED.



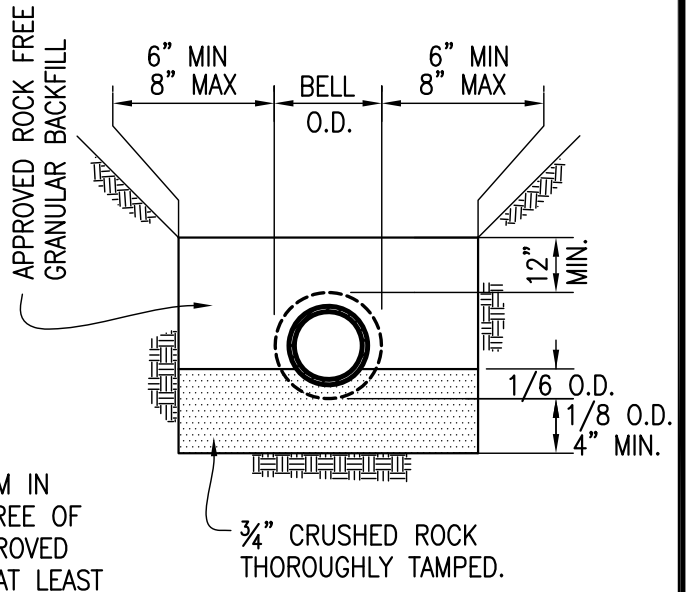
TYPICAL SEWER TRENCH
DETAIL

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-01

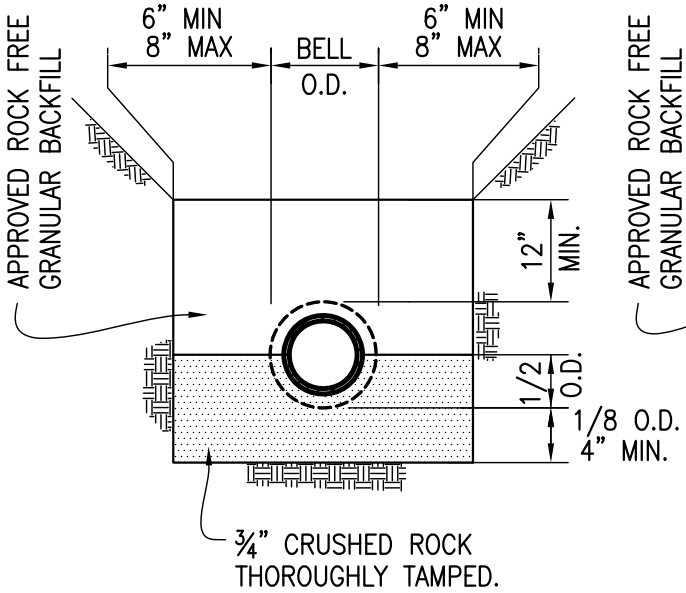
NOTE: ALL DIMENSIONS REFERRING TO O.D. SHALL BE BASED ON THE MAXIMUM BELL OR COUPLING DIAMETER



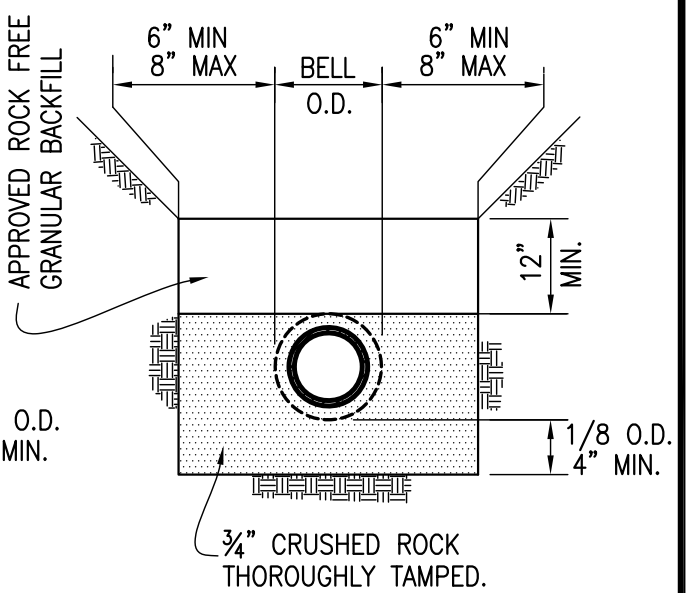
**CLASS D
NATIVE BEDDING**
(LOAD FACTOR = 1.1)



**CLASS C
SPECIAL BEDDING**
(LOAD FACTOR = 1.5)



**CLASS B
SPECIAL BEDDING**
(LOAD FACTOR = 1.9)



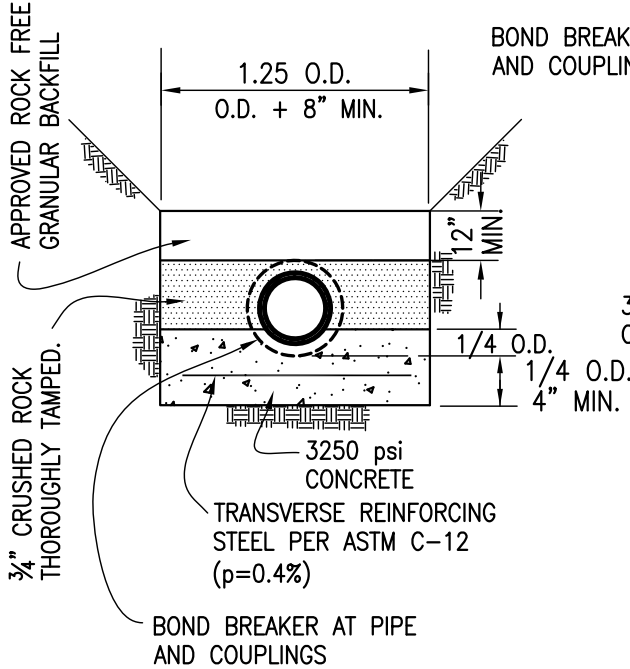
**CRUSHED STONE
ENCASEMENT**
(LOAD FACTOR = 2.2)



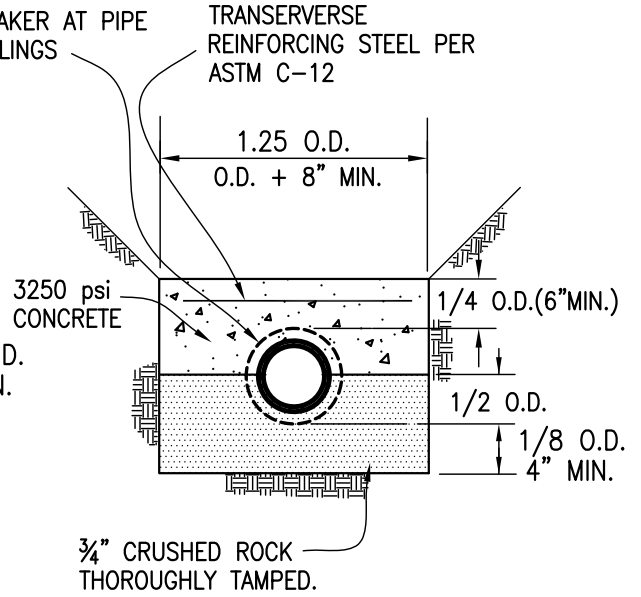
SEWER
PIPE BEDDING

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024
DRAWING No.
S-02A

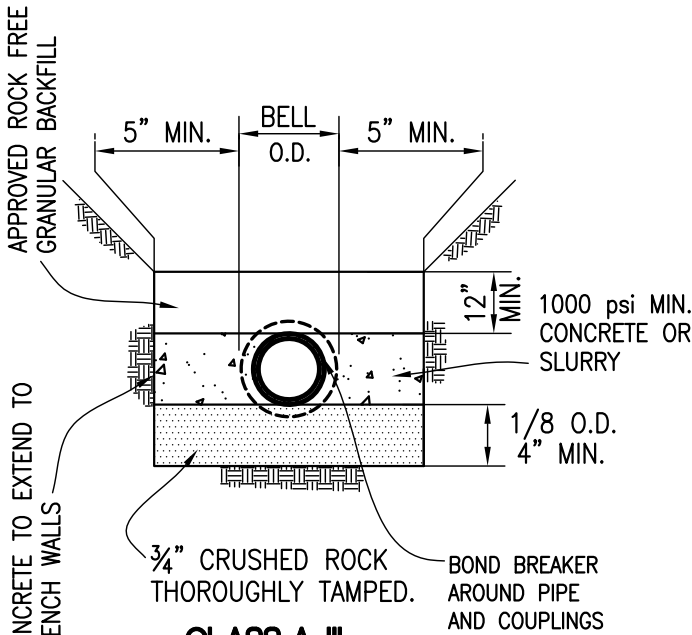
NOTE: ALL DIMENSIONS REFERRING TO O.D. SHALL BE BASED ON THE MAXIMUM BELL OR COUPLING DIAMETER



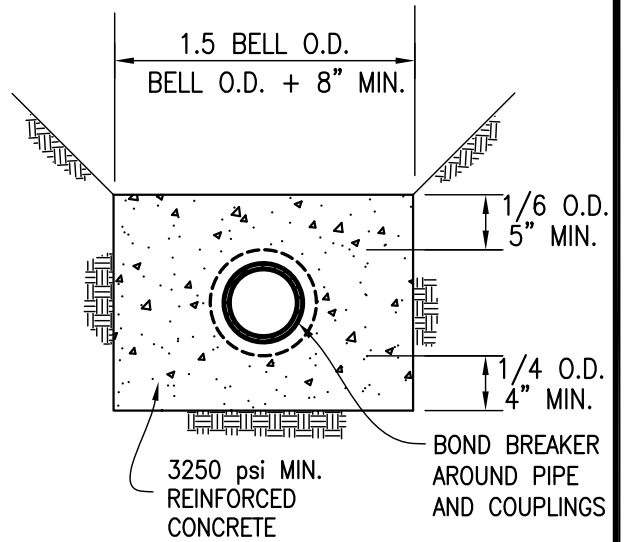
**CLASS A-I
CONCRETE CRADLE**
(NON-REINFORCED LOAD FACTOR = 2.8)
(REINFORCED LOAD FACTOR = 3.4)



**CLASS A-II
CONCRETE ARCH**
(REINFORCED $p=0.4\%$ LOAD FACTOR = 3.4)
(REINFORCED $p=1.0\%$ LOAD FACTOR = 4.5)



**CLASS A-III
SIDECRADLING**
(LOAD FACTOR = 2.7)
NOT RECOMMENDED FOR USE
IN EXPANSIVE SOILS



**CLASS A-IV
CONCRETE ENCASEMENT**
(LOAD FACTOR OVER 4.5)
SHALL BE DESIGNED BY A
REGISTERED ENGINEER

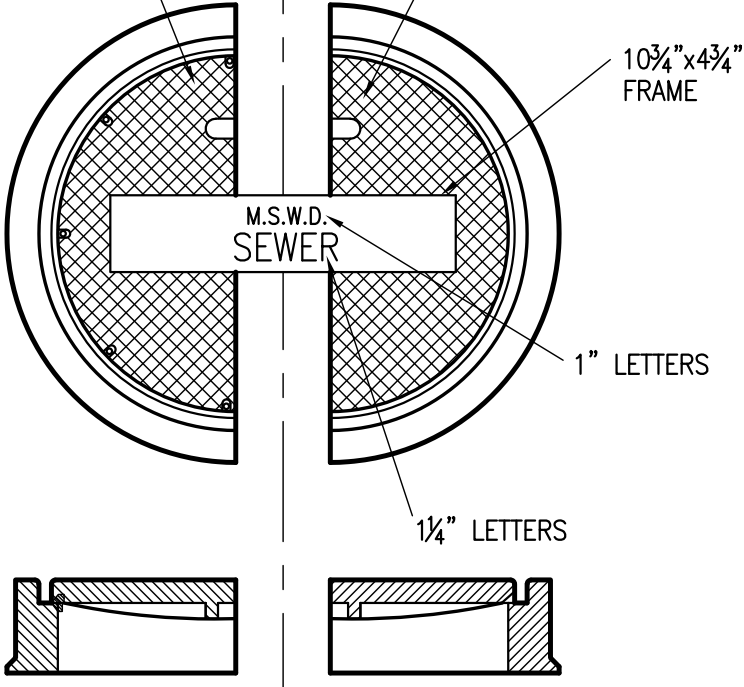


CONCRETE SEWER
PIPE BEDDING AND
ENCASEMENT

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024
DRAWING No.
S-02B

BOLT DOWN
24" R-02
36" R-04

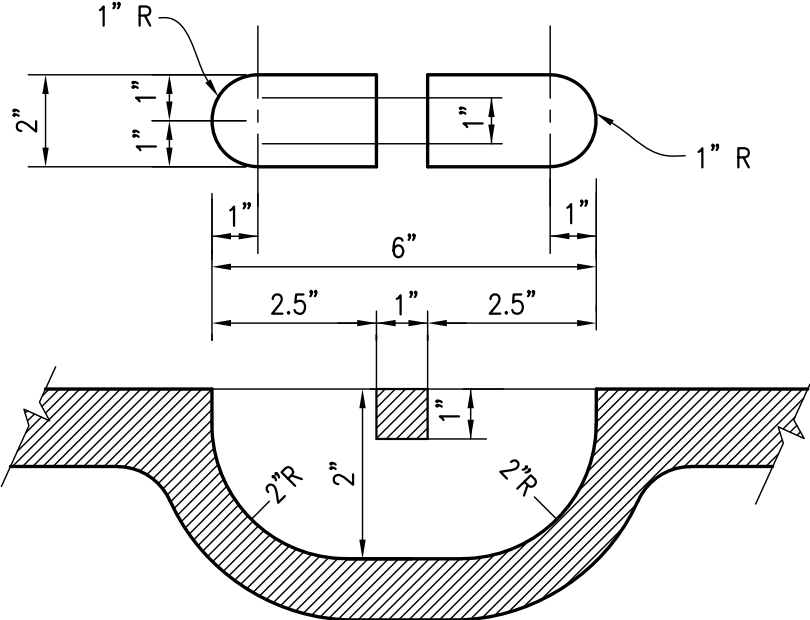
STANDARD
24" R-01
36" R-03



NOTES:

1. FRAME AND COVER SHALL BE PER APPROVED MATERIALS LIST WITH LIFTING DEVICE CAST COVER AS PER DETAIL SHOWN BELOW. COVER SHALL BE DIAMOND TREAD WITH NAME LETTERED AS SHOWN.
2. BOLT-DOWN COVERS ARE REQUIRED IN SOME LOCATIONS AS SPECIFIED ON THE PLANS. GENERALLY REQUIRED FOR EASEMENT LOCATIONS.
3. FOR 60" MANHOLE USE 36" DIA. FRAME AND COVER.

FRAME AND COVER DETAIL



LIFTING RECEPTACLE DETAIL



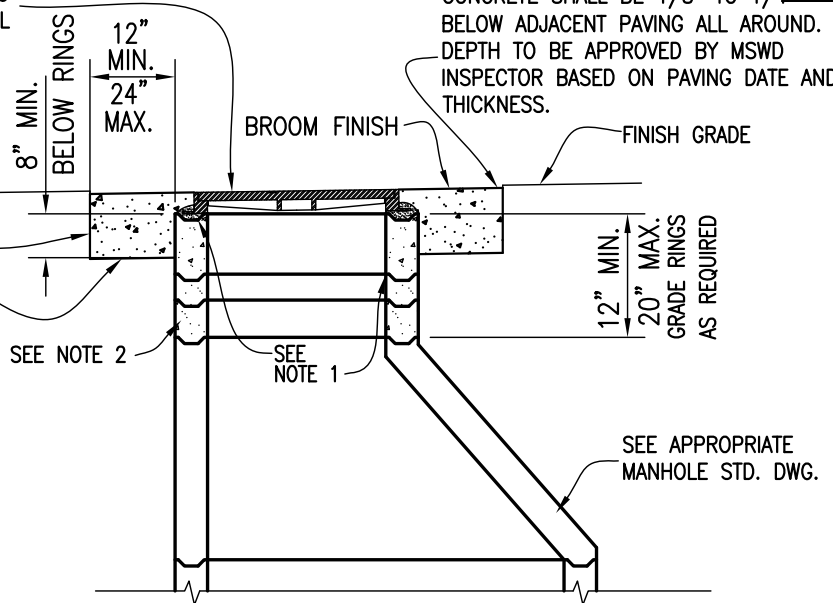
MANHOLE FRAME AND COVER

Approved: Brian Macy
General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No. S-03

FRAME AND COVER PER STD. DWG. S-03
 PAINT GLOSS BLACK PER MSWD MATERIAL
 LIST U-04

CONCRETE SHALL BE 1/8" TO 1/4"
 BELOW ADJACENT PAVING ALL AROUND.
 DEPTH TO BE APPROVED BY MSWD
 INSPECTOR BASED ON PAVING DATE AND
 THICKNESS.

CONTRACTOR SHALL FORM AND POUR
 CONCRETE COLLAR WITH COVER
 ADJUSTED AS SHOWN AFTER FINAL
 PAVING OPERATION. ENTIRE ASPHALT AND
 DIRT EXCAVATION FOR FRAME
 ADJUSTMENT TO BE BACKFIELD WITH
 CONCRETE. COLLAR SHALL BE A UNIFORM
 WIDTH ALL AROUND.



**DETAIL FOR MANHOLE
 IN PAVED SURFACES**

NOTES:

1. ALL SECTIONS TO BE WASHED TO
 REMOVE ANY LOOSE MATERIAL AND WHILE
 STILL WET, THEY ARE TO BE SET IN 1:3
 MORTAR MIX TRIMMED SMOOTH INSIDE AND
 OUTSIDE, INCLUDING FRAME.

2. CONCRETE FOR GRADE RINGS SHALL BE
 3000 P.S.I. MIN.

3. CONCRETE COLLAR SHALL BE 3250 P.S.I.
 MIN. WITH FIBERMESH AND BROOM FINSH.

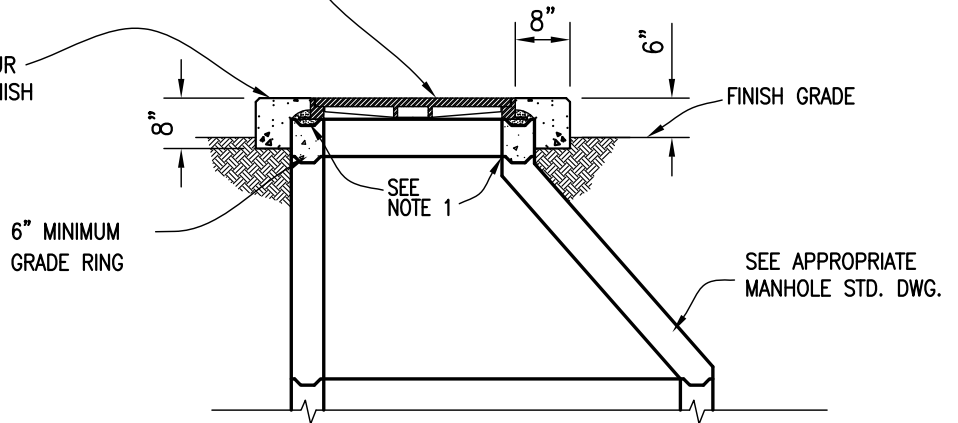
4. FOR 60" MANHOLES USE 36" DIA. FRAME
 AND COVER.

NOTE:

24" GRADE RINGS PER MATERIAL LIST # S-05
 36" GRADE RINGS PER MATERIAL LIST # S-06

CONTRACTOR SHALL FORM AND POUR
 CONCRETE COLLAR WITH BROOM FINISH
 AND 1" CHAMFER ALL AROUND.

FRAME AND COVER PER STD. DWG. S-03
 PAINT GLOSS BLACK PER MSWD MATERIAL
 LIST U-04



**DETAIL FOR MANHOLES
 IN EASEMENTS**



**MANHOLE COLLAR
 AND GRADE RINGS
 DETAIL**

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-04

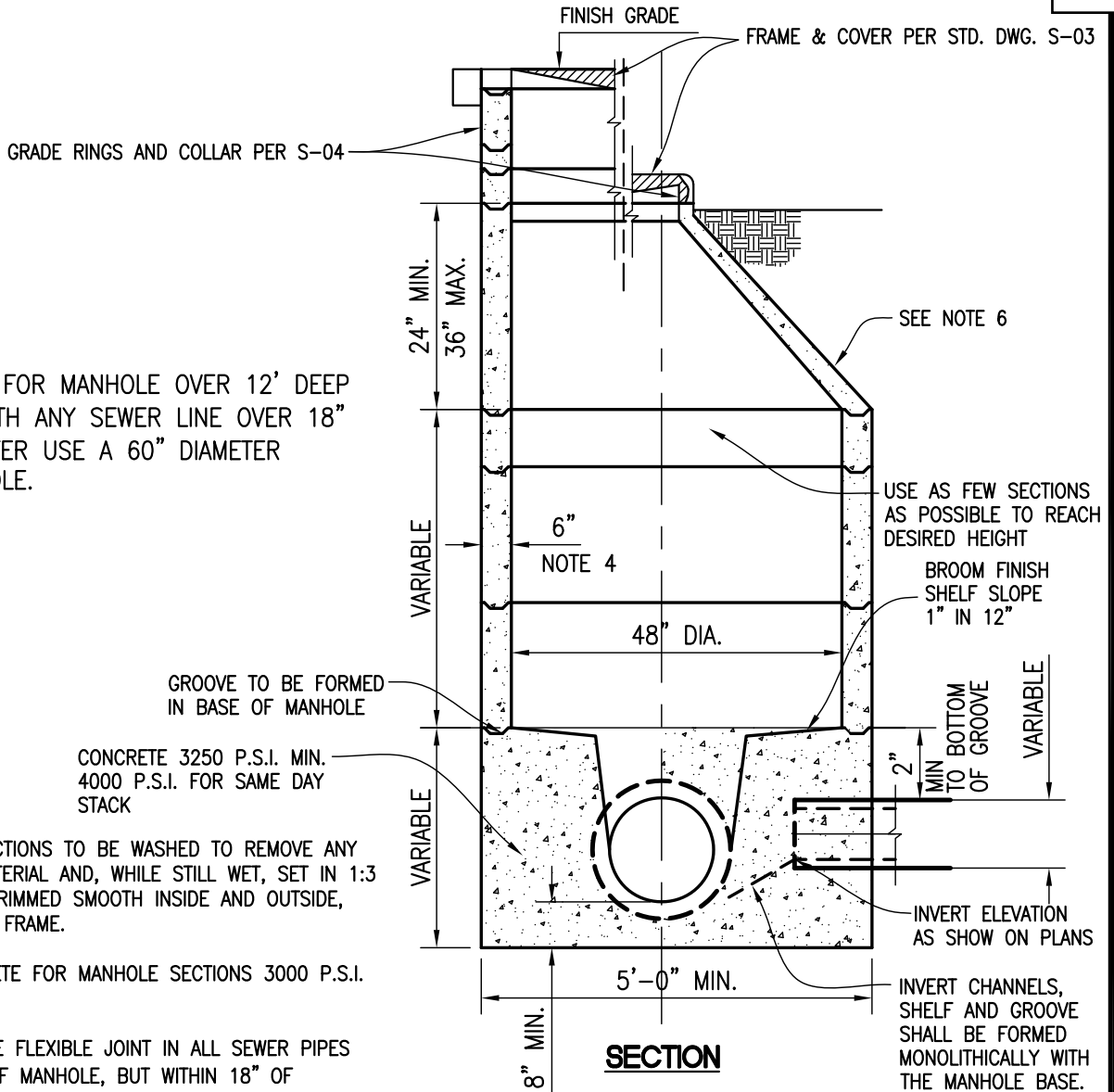
NOTE: FOR MANHOLE OVER 12' DEEP OR WITH ANY SEWER LINE OVER 18" DIAMETER USE A 60" DIAMETER MANHOLE.

NOTES:

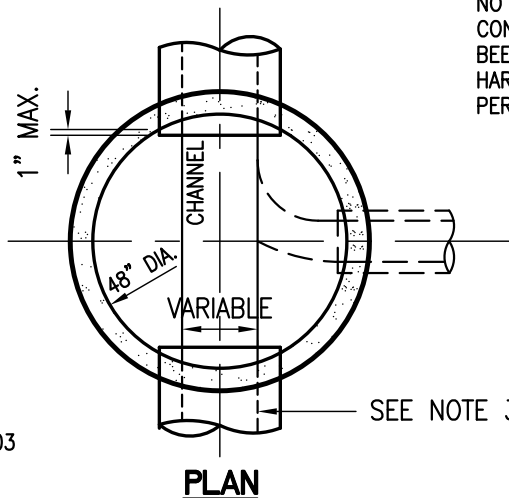
1. ALL SECTIONS TO BE WASHED TO REMOVE ANY LOOSE MATERIAL AND, WHILE STILL WET, SET IN 1:3 MORTAR, TRIMMED SMOOTH INSIDE AND OUTSIDE, INCLUDING FRAME.
2. CONCRETE FOR MANHOLE SECTIONS 3000 P.S.I. MIN.
3. PROVIDE FLEXIBLE JOINT IN ALL SEWER PIPES OUTSIDE OF MANHOLE, BUT WITHIN 18" OF CONCRETE BASE. USE 24" MAXIMUM PIPE JOINT.
4. REINFORCED CONCRETE SECTIONS MAY BE USED WITH MSWD APPROVAL. THICKNESS MAY VARY PER MANUFACTURER.
5. THE TOP OF MANHOLE SHALL BE PLACED DIRECTLY OVER THE OUTLET OF THE STRUCTURE EXCEPT AS OTHERWISE NOTED ON PLANS.
6. ECCENTRIC CONE SECTION SHALL BE INSTALLED WITH TAPERED SIDE FACING UPSTREAM.

NOTE:

- 48" MANHOLE SHAFT PER MATERIAL LIST # S-01
- 48"x 24" ECCENTRIC CONE PER MATERIAL LIST # S-03



SECTION



PLAN



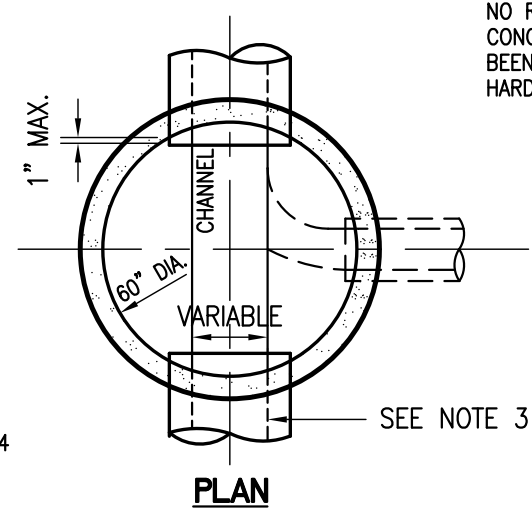
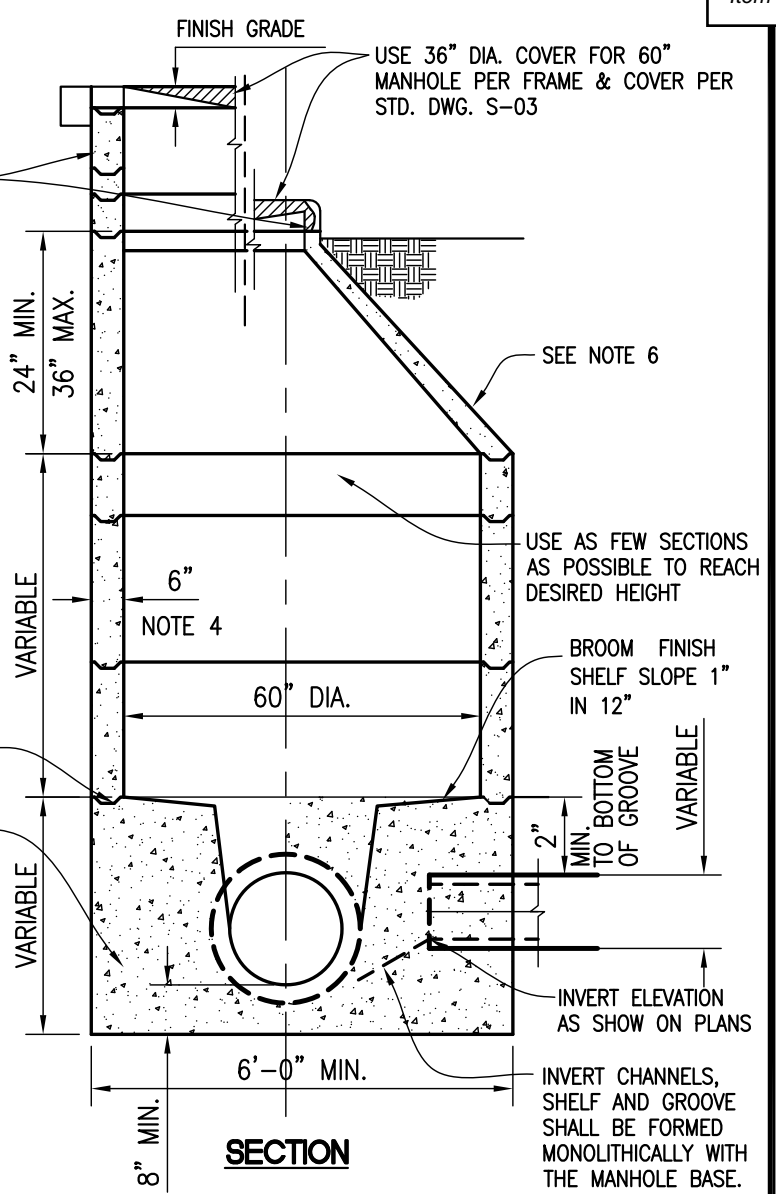
**4' DIAMETER
PRECAST MANHOLE**

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
S-05

NOTE: USE 60" DIAMETER MANHOLE FOR MANHOLE DEPTH GREATER THAN 12' OR WHERE ANY SEWER IS LARGER THAN 18" DIAMETER.

- NOTES:**
1. ALL SECTIONS TO BE WASHED TO REMOVE ANY LOOSE MATERIAL AND WHILE STILL WET, THEY ARE TO BE SET IN 1:3 MORTAR TRIMMED SMOOTH INSIDE AND OUTSIDE, INCLUDING FRAME.
 2. CONCRETE FOR MANHOLE SECTIONS 3000 P.S.I. MIN.
 3. PROVIDE FLEXIBLE JOINT IN ALL SEWER PIPES OUTSIDE OF MANHOLE, BUT WITHIN 18" OF CONCRETE BASE. USE 24" MAXIMUM PIPE JOINT.
 4. REINFORCED CONCRETE SECTIONS MAY BE USED WITH MSWD APPROVAL. THICKNESS MAY VARY PER MANUFACTURER.
 5. THE TOP OF MANHOLE SHALL BE PLACED DIRECTLY OVER THE OUTLET OF THE STRUCTURE EXCEPT AS OTHERWISE NOTED ON PLANS.
 6. ECCENTRIC CONE SECTION SHALL BE INSTALLED WITH TAPERED SIDE FACING UPSTREAM.

NOTE:
 60" MANHOLE SHAFT PER MATERIAL LIST # S-02
 60"x 36" ECCENTRIC CONE PER MATERIAL LIST # S-04



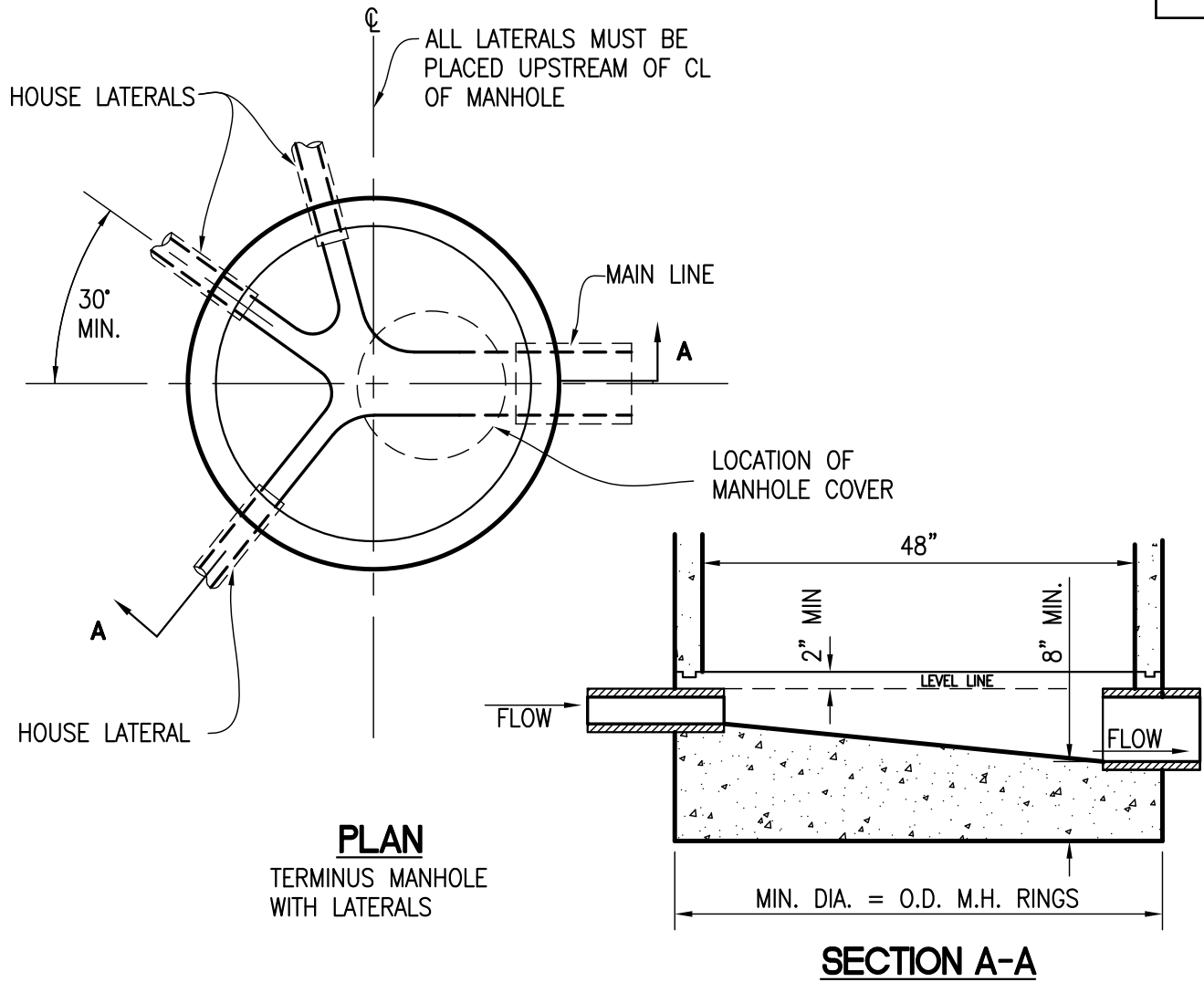
SECTION

PLAN



5' DIAMETER
 PRECAST MANHOLE

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-06



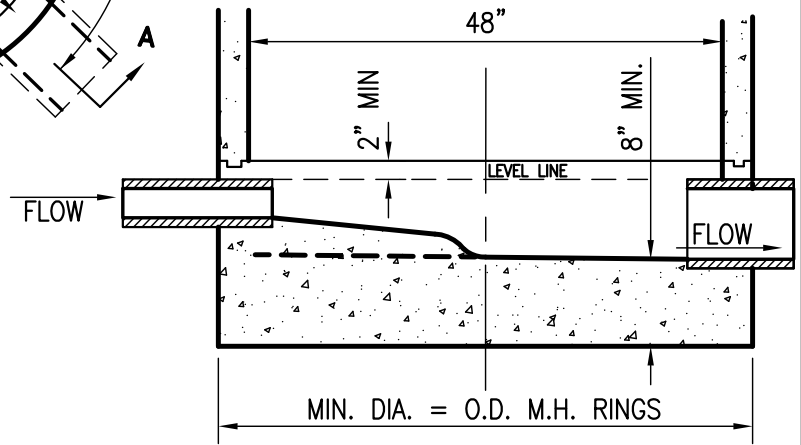
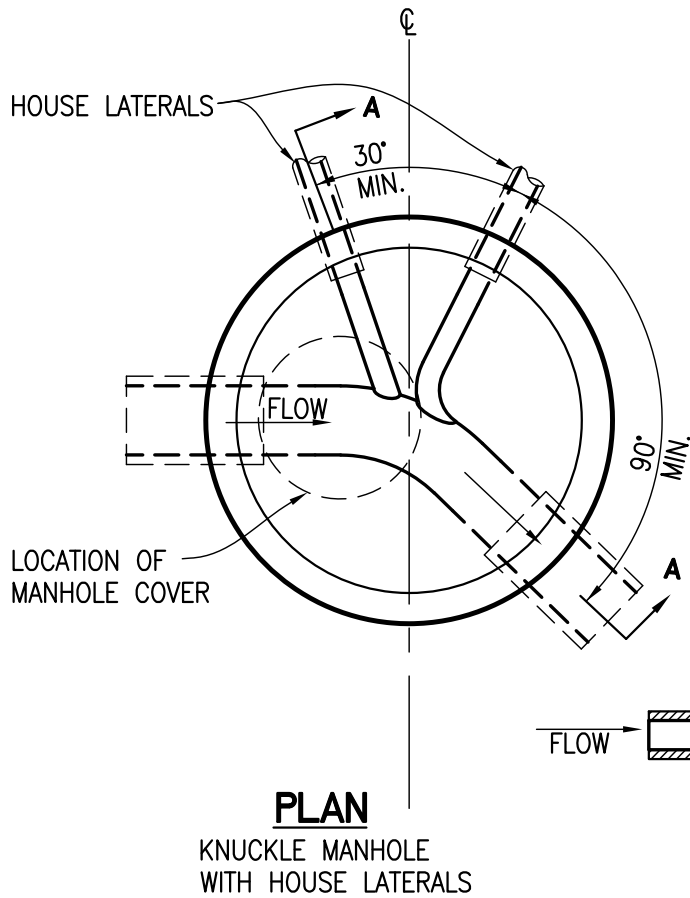
NOTES:

1. REFER TO STANDARD DRAWINGS S-03, S-04, AND S-05 FOR DETAILS PERTAINING TO MANHOLES.
2. THE MAXIMUM NUMBER OF LATERALS INTO A TERMINUS MANHOLE SHALL BE LIMITED TO THREE.
3. ALL LATERAL CONNECTIONS SHALL BE ORIENTED SO THAT NONE IS LESS THAN 30° TO THE CONNECTING SEWER MAIN.



TERMINUS MANHOLE
WITH LATERALS

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-07



SECTION A-A

NOTES:

1. REFER TO STANDARD DRAWINGS S-03, S-04, AND S-05 FOR DETAILS PERTAINING TO MANHOLES ONLY.
2. LATERAL TROUGHS SHALL BE INDEPENDENT AND SMOOTH FINISHED INTO THE MAIN SEWER CHANNEL AT 2" ABOVE THE INVERT AT THE JUNCTION.
3. THE MAXIMUM NUMBER OF LATERALS INTO A KNUCKLE MANHOLE SHALL BE LIMITED TO TWO.
4. ALL LATERAL CONNECTIONS SHALL BE ORIENTED SUCH THAT THEY WILL NOT BE IN LINE WITH ANY OF THE CONNECTING SEWER MAINS.
6. ALL LATERAL CONNECTIONS IN A KNUCKLE MANHOLE SHALL NOT CONNECT WITHIN 90° THE OUTLET DIRECTION OF FLOW IN THE MANHOLE.



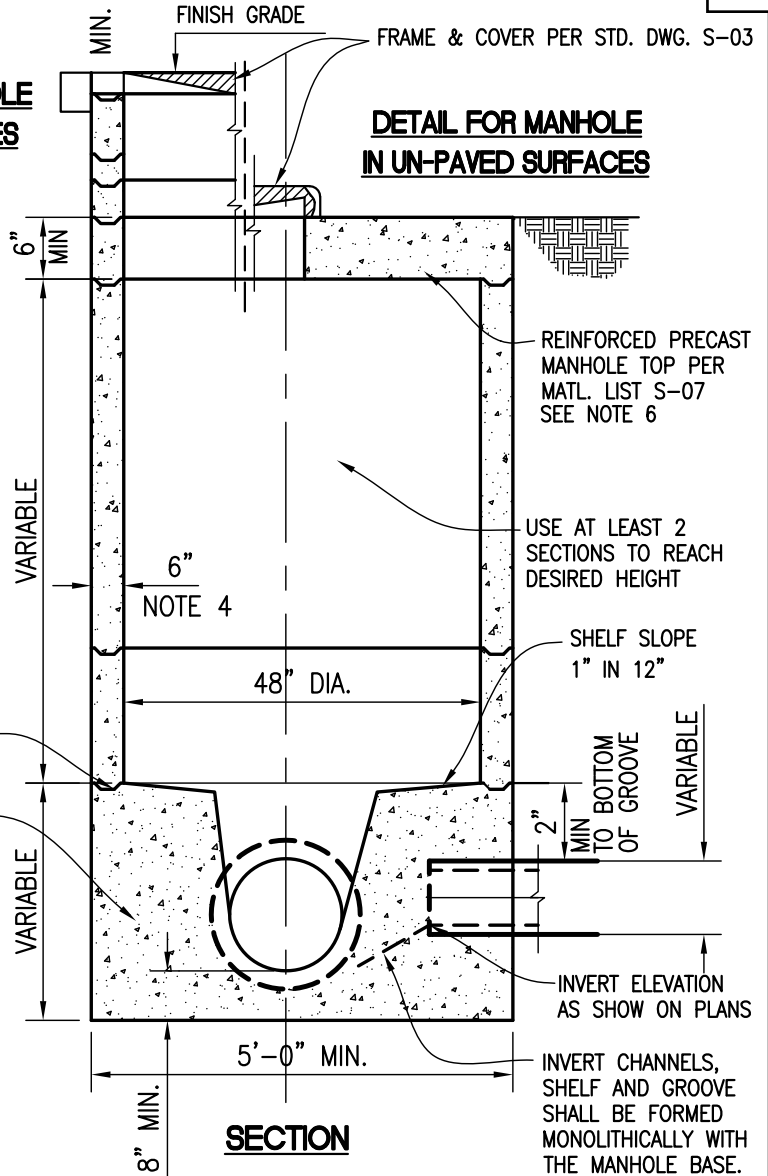
NUCKLE MANHOLE WITH LATERALS

Approved: Brian Macy
General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No. S-08

**DETAIL FOR MANHOLE
IN PAVED SURFACES**

**DETAIL FOR MANHOLE
IN UN-PAVED SURFACES**

NOTE: FOR ANY SEWER LINE OVER 18" DIAMETER USE A 60" DIAMETER MANHOLE.



NOTES:

1. ALL SECTIONS ARE TO BE WASHED TO REMOVE ANY LOOSE MATERIAL AND, WHILE STILL WET, TO BE SET IN 1:3 MORTAR TRIMMED SMOOTH INSIDE AND OUTSIDE, INCLUDING FRAME, EXCEPT AS PROVIDED IN NOTE 4.

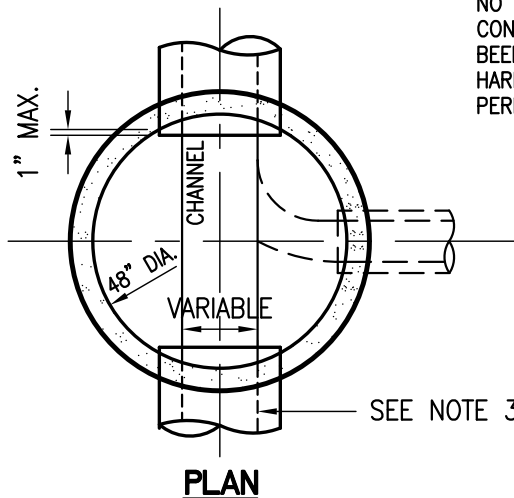
2. CONCRETE FOR MANHOLE SECTIONS TO BE 3000 P.S.I. MIN.

3. PROVIDE FLEXIBLE JOINT IN ALL SEWER PIPES OUTSIDE OF MANHOLE, BUT WITHIN 18" OF CONCRETE BASE. USE 24" MAXIMUM PIPE JOINT.

4. REINFORCED CONCRETE SECTIONS MAY BE USED WITH MSWD APPROVAL. THICKNESS MAY VARY PER MANUFACTURER.

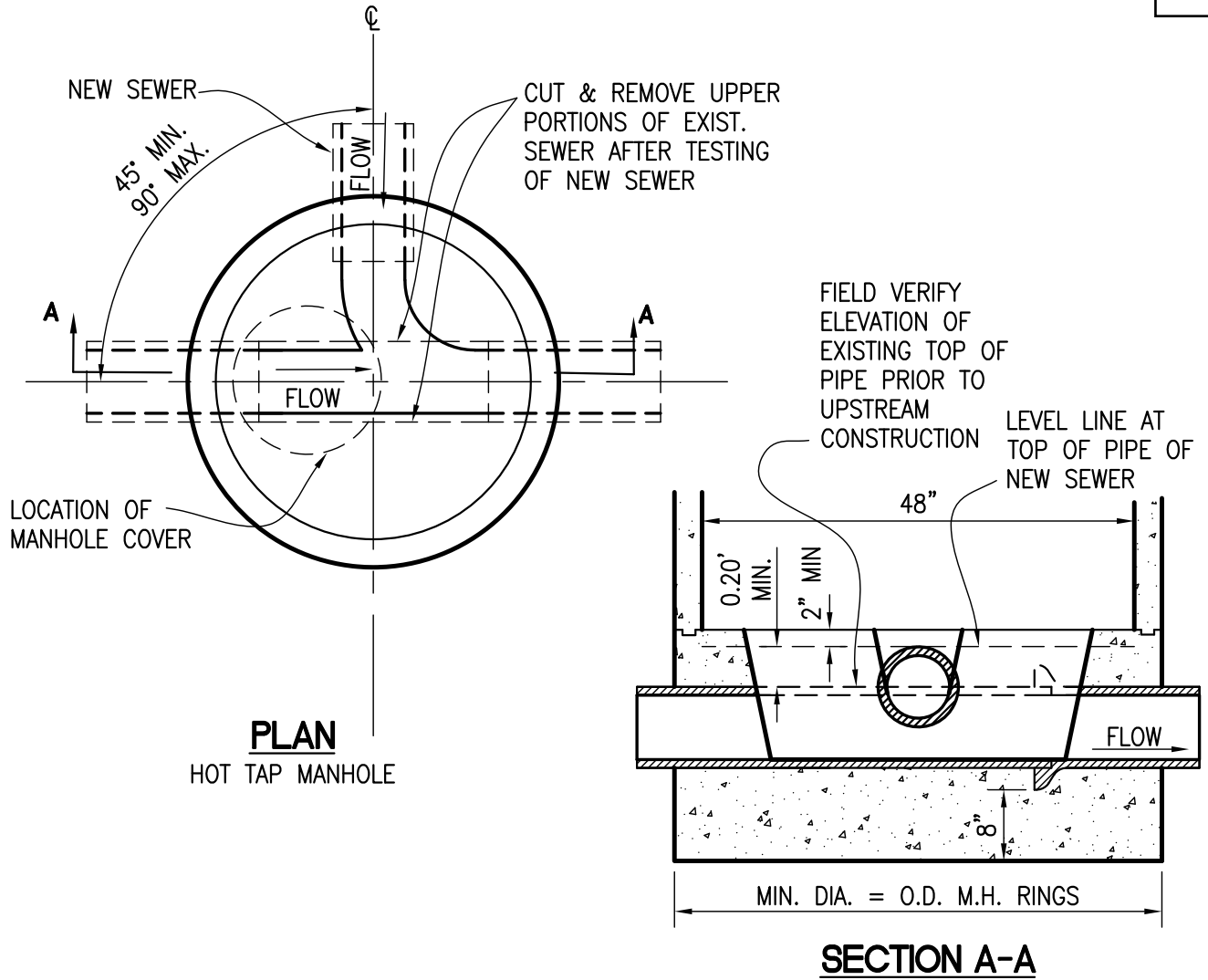
5. THE TOP OF MANHOLE SHALL BE PLACED DIRECTLY OVER THE OUTLET OF THE STRUCTURE EXCEPT AS OTHERWISE NOTED ON PLANS.

6. PRECAST MANHOLE SLAB SHALL BE INSTALLED WITH MANHOLE FACING UPSTREAM.



**PRECAST SHALLOW MANHOLE
DEPTH LESS THAN 6'**

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-09



NOTES:

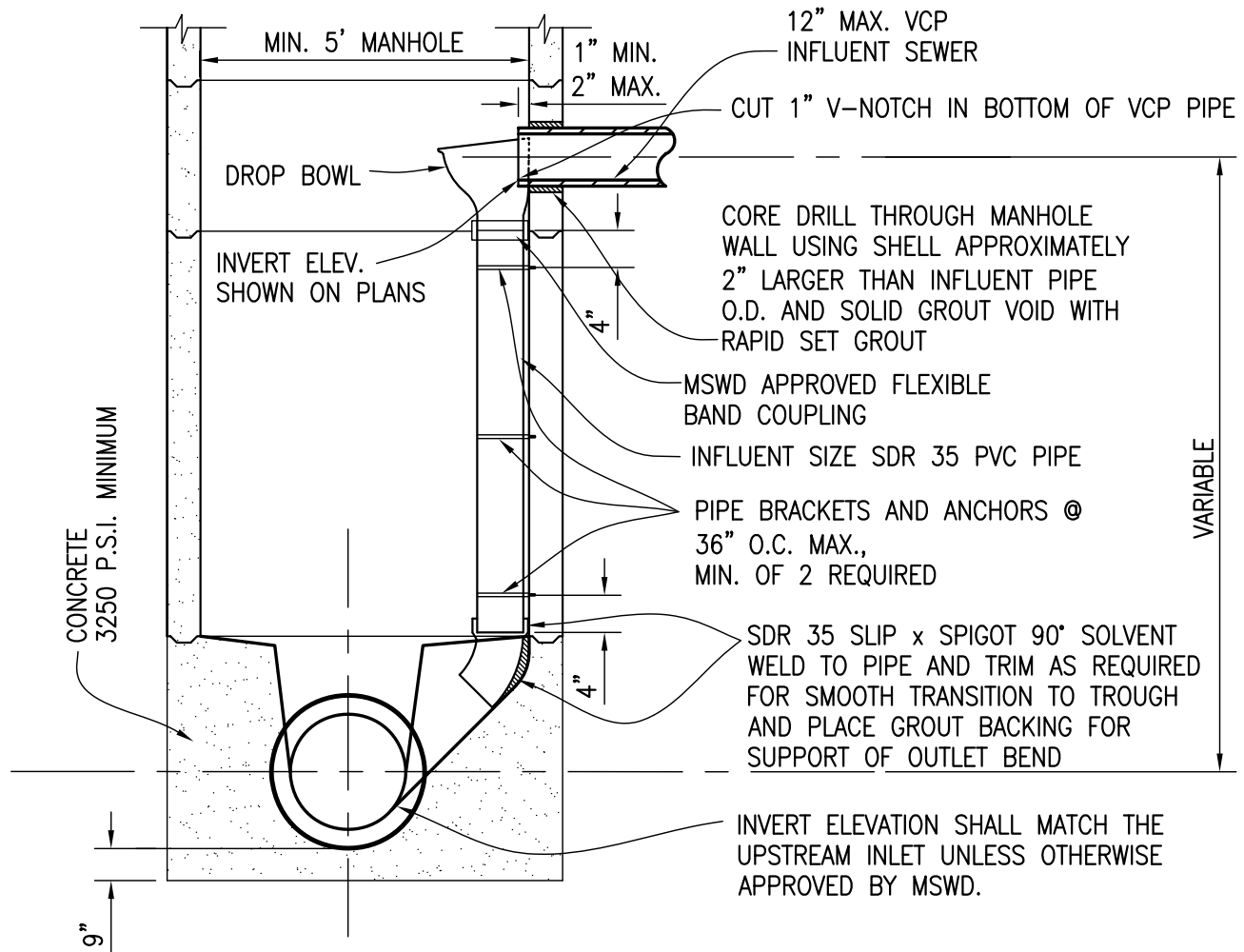
1. REFER TO STANDARD DRAWINGS S-03, S-04, AND S-05 FOR DETAILS PERTAINING TO MANHOLES.
2. EXISTING SEWER TO REMAIN INTACT UNTIL NEW SEWER HAS BEEN TESTED AND APPROVED BY THE MSWD INSPECTOR.
3. INTERFERING PORTIONS OF THE EXISTING PIPE SHALL BE CUT AND/OR BROKEN OUT TO A NEAT LINE. BROKEN EDGES SHALL BE PLASTERED SMOOTH WITH CEMENT MORTAR.
4. CARE SHALL BE TAKEN TO PREVENT BROKEN PIECES OF PIPE FROM ENTERING EXISTING SEWER. MSWD MAY REQUIRE TEMPORARY PLUG UPSTREAM OF CONNECTION DURING BREAKOUT OPERATIONS.
5. ANY EXISTING BELL JOINT WITHIN THE MANHOLE BASE SHALL BE SUPPORTED DURING EXCAVATION AND POUR TO PREVENT SETTLEMENT.
6. PROVIDE FLEXIBLE JOINT WITHIN 18" OF MANHOLE BASE ON NEW SEWER.



HOT TAP
MANHOLE

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-10

SEE DRAWING NO. S-03
AND S-05 FOR
MANHOLE DETAIL



SECTION

NOTES:

1. DROP BOWL AND MOUNTING HARDWARE SHALL BE RELINER/DURAN "B" DROP BOWL SIZED INFLUENT SEWER SIZE AND MANHOLE DIAMETER, OR APPROVED EQUAL, INSTALLED PER MANUFACTURERS SPECIFICATIONS.
2. DROP BOWL SHALL BE CENTERED DIRECTLY BELOW INFLUENT PIPE WITH APPROXIMATELY 1" CLEARANCE BELOW PIPE AND SHALL BE ATTACHED USING 3/8" x 1" STAINLESS STEEL ANCHOR KITS SUPPLIED BY THE APPROVED MANUFACTURER.
3. PIPE BRACKETS SHALL BE 11 GAUGE 304 STAINLESS STEEL 1 1/2" WIDE WITH STAINLESS STEEL HARDWARE AS SUPPLIED BY THE APPROVED MANUFACTURER.
4. THE MANHOLE CONE SECTION SHALL BE PLACED TO ALLOW CLEAR ACCESS WITHOUT INTERFERENCE WITH THE DROP ASSEMBLY, LOCATION TO BE APPROVED BY THE MSWD INSPECTOR.
5. USE OF THE DROP MANHOLE SHALL REQUIRE PRIOR APPROVAL BY MSWD ENGINEERING STAFF.



INSIDE DROP MANHOLE
REQUIRES MSWD APPROVAL

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-11

PAINT GLOSS BLACK PER MSWD MATERIAL LIST U-04

**DETAIL FOR CLEAN-OUTS
IN PAVED SURFACES**

**DETAIL FOR CLEAN-OUTS
IN EASEMENTS**

CONCRETE SHALL BE 1/8" TO 1/4"
BELOW ADJACENT PAVING ALL AROUND.

CONCRETE SHALL BE 3250 PSI WITH
FIBERMESH

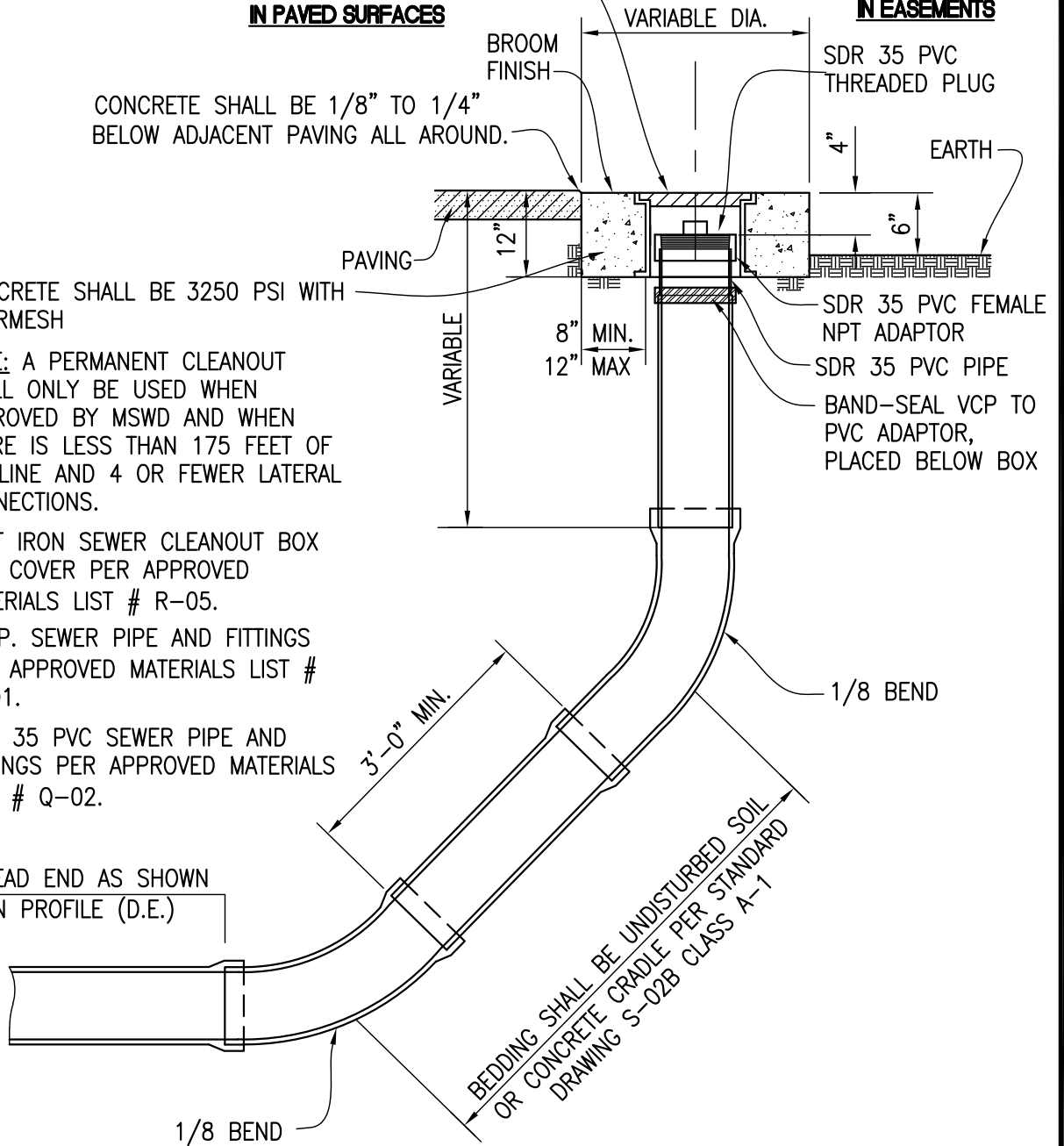
NOTE: A PERMANENT CLEANOUT
SHALL ONLY BE USED WHEN
APPROVED BY MSWD AND WHEN
THERE IS LESS THAN 175 FEET OF
MAINLINE AND 4 OR FEWER LATERAL
CONNECTIONS.

CAST IRON SEWER CLEANOUT BOX
AND COVER PER APPROVED
MATERIALS LIST # R-05.

V.C.P. SEWER PIPE AND FITTINGS
PER APPROVED MATERIALS LIST #
Q-01.

SDR 35 PVC SEWER PIPE AND
FITTINGS PER APPROVED MATERIALS
LIST # Q-02.

DEAD END AS SHOWN
ON PROFILE (D.E.)



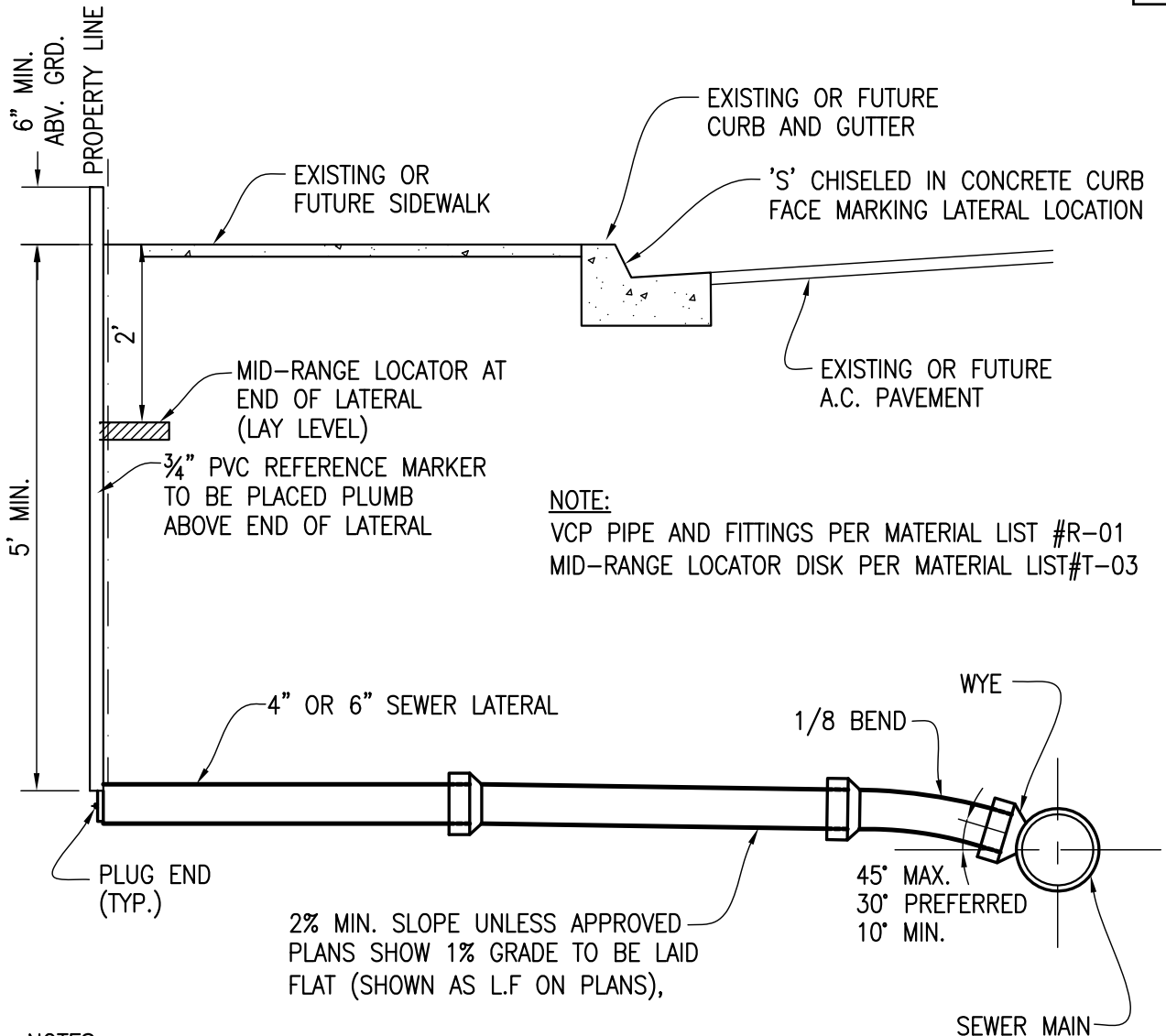
NOTE:

CLEAN-OUT TO BE OF THE SAME MATERIAL & SIZE AS SEWER MAIN. THE SEWER MAIN SHALL BE LAID FOR THE FULL LENGTH & DEPTH SHOWN ON THE PLAN & PROFILE TO THE STATION MARKED DEAD END (D.E.). THE TRENCH FOR A DEAD END SHALL BE EXCAVATED ONLY TO SUBGRADE WHICH IS THE BOTTOM OF THE SLOPING PIPE AND FITTINGS. SHOULD THE EXCAVATION, FOR ANY REASON, BE CARRIED BELOW SUBGRADE, IT SHALL BE REFILLED TO SUBGRADE WITH ROCK OR GRAVEL, WHICH SHALL BE TAMPED UNTIL FIRM AND UNYIELDING. SHOULD A FIRM AND UNYIELDING FOUNDATION BE UNATTAINABLE BY THIS METHOD, A CONCRETE PIPE CRADLE SHALL BE USED.



MAINLINE CLEANOUT
REQUIRES MSWD APPROVAL

Approved:	Brian Macy General Manager	
Drawn: MP	Date:	1/31/2024
DRAWING No. S-12		



NOTE:
 VCP PIPE AND FITTINGS PER MATERIAL LIST #R-01
 MID-RANGE LOCATOR DISK PER MATERIAL LIST#T-03

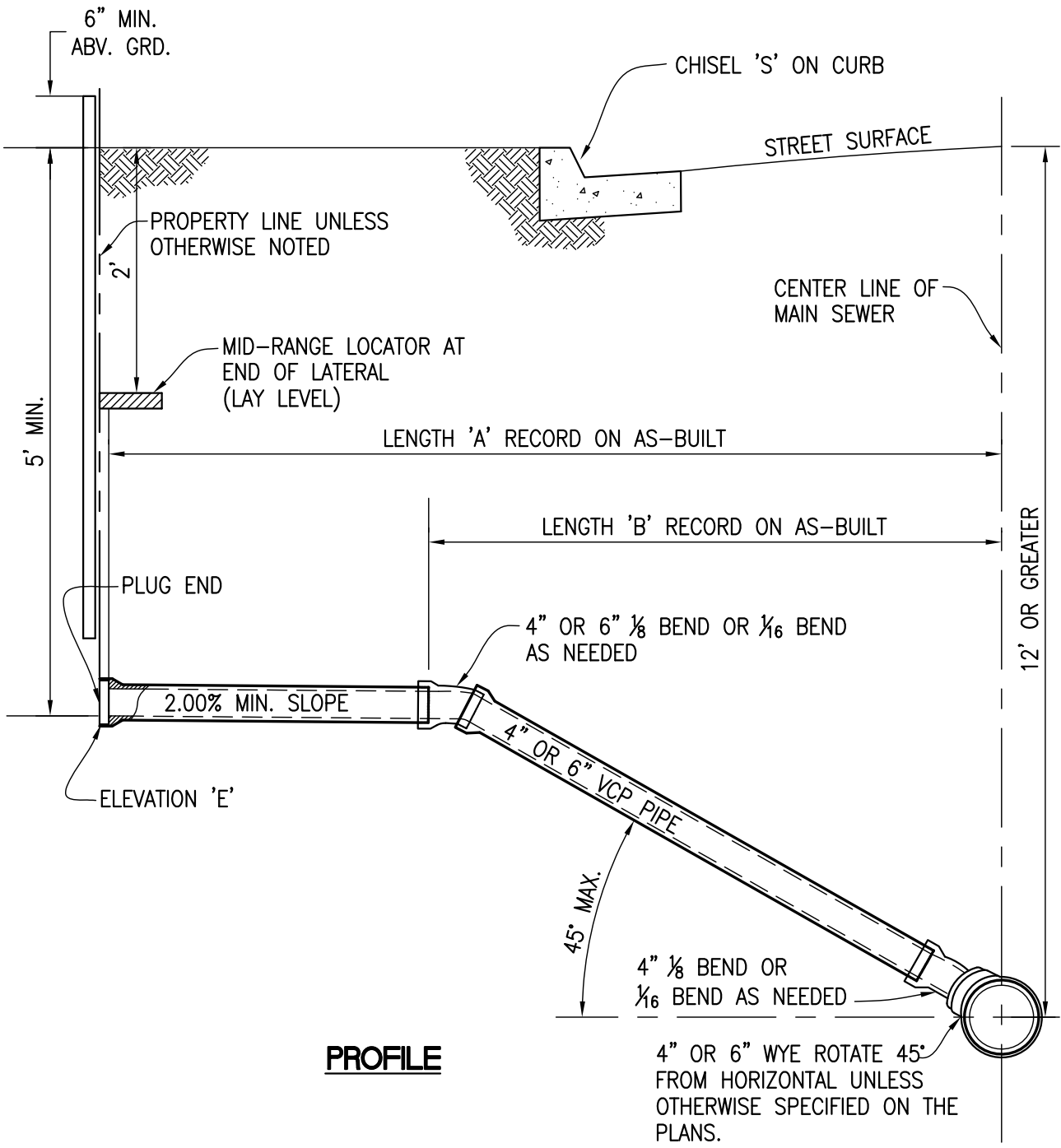
NOTES:

1. A VCP SEWER LATERAL SHALL PLACED FOR EVERY LOT. 4" V.C.P. SHALL BE PROVIDED FOR 4 OR LESS DWELLING UNITS. A 6" VCP LATERAL SHALL BE USED FOR ANY COMMERCIAL PROPERTY OR MULTIFAMILY UNIT WITH OVER 4 RESIDENTIAL UNITS.
2. LATERAL LOCATIONS, AS NOTED ON THE 'AS-BUILT' PLANS, SHALL BE MEASURED AT RIGHT ANGLES TO STREET CENTERLINE, FROM THE CENTERLINE OF THE NEAREST DOWNSTREAM MANHOLE COVER, DEPTH FROM FINISH GRADE AND LENGTH AT THE END OF LATERAL AT CUSTOMERS' PROPERTY LINE.
3. CONTRACTOR SHALL REFERENCE EACH LATERAL IN THE FIELD WITH A SURFACE MARKER. MARKER SHALL BE A SCH 40 PVC MARKER PLACED AT TIME OF BACKFILLING. MARKER SHALL BE INSTALLED VERTICAL, CUT OFF AT 6" MIN. ABOVE GRADE.
4. LATERAL SHALL BE INSTALLED AT A CONSTANT GRADE UNLESS SPECIFICALLY APPROVED BY THE MSWD INSPECTOR.



4" OR 6" STANDARD SEWER LATERAL

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-13



PROFILE

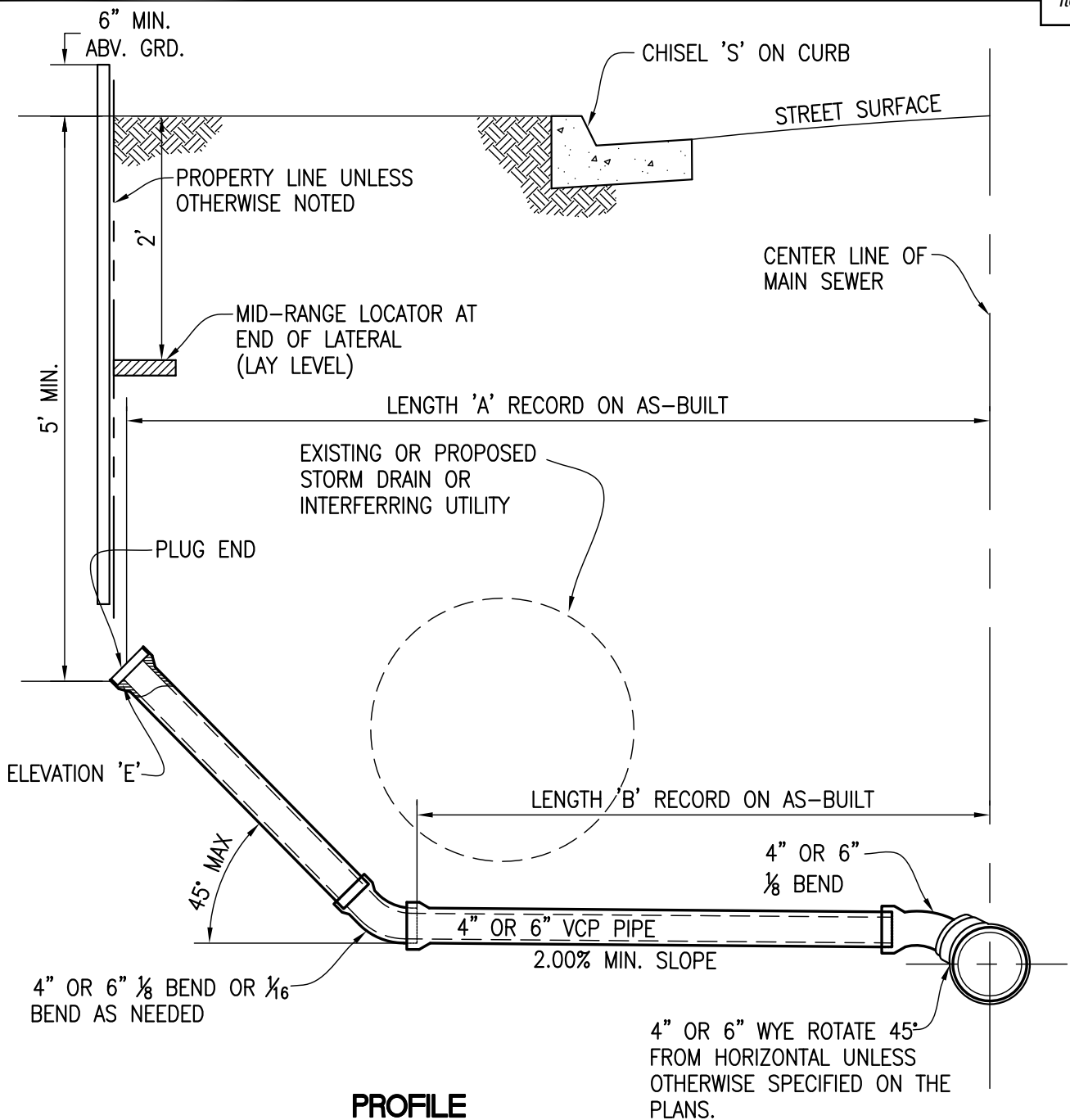
- NOTES:
1. RECORD LENGTH 'A', LENGTH 'B' AND ELEVATION 'E' ON CONTRACTOR RED LINE PLAN.
 2. PIPE SIZE FOR LATERAL SHALL BE SHOWN ON PLANS WITH MSWD STD. DWG S-14.

NOTE:
 VCP PIPE AND FITTINGS PER MATERIAL LIST #R-01
 MID-RANGE LOCATOR DISK PER MATERIAL LIST #T-03



LATERAL FOR DEEP SEWER
 WITHOUT UTILITY CROSSING

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-14



PROFILE

NOTES:

1. RECORD LENGTH 'A', LENGTH 'B' AND ELEVATION 'E' ON CONTRACTOR RED LINE PLAN.
2. PIPE SIZE FOR LATERAL SHALL BE SHOWN ON PLANS WITH MSWD STD. DWG S-15.
3. CLEARANCES FROM UTILITY SHALL BE IN ACCORDANCE WITH MSWD STD. DWG'S G-02, G-03, AND G-04 AS APPLICABLE.

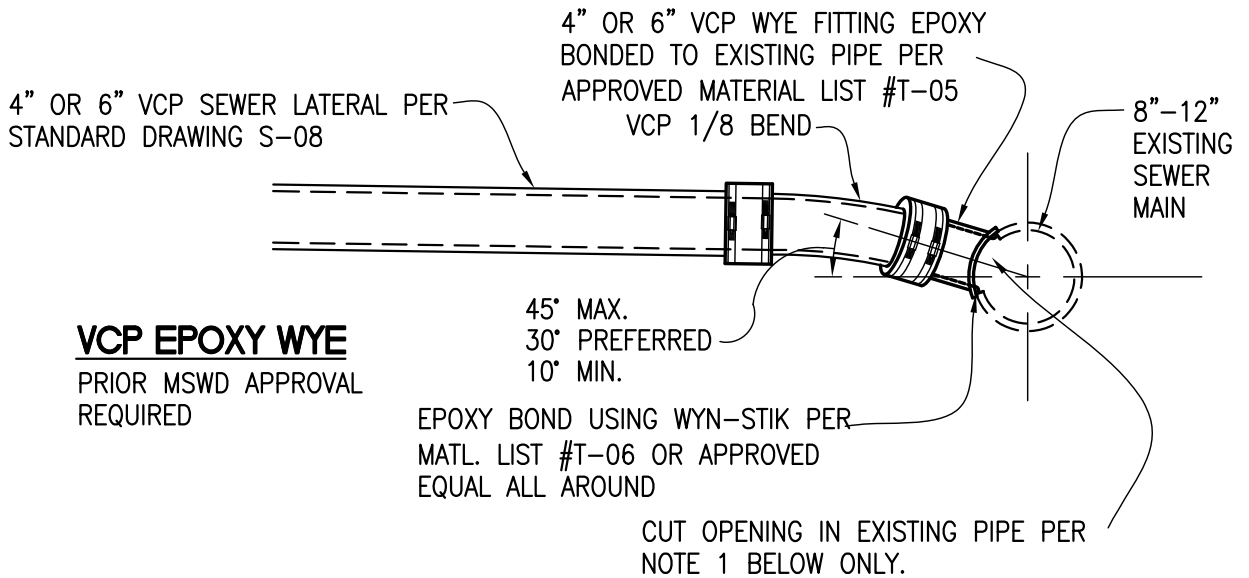
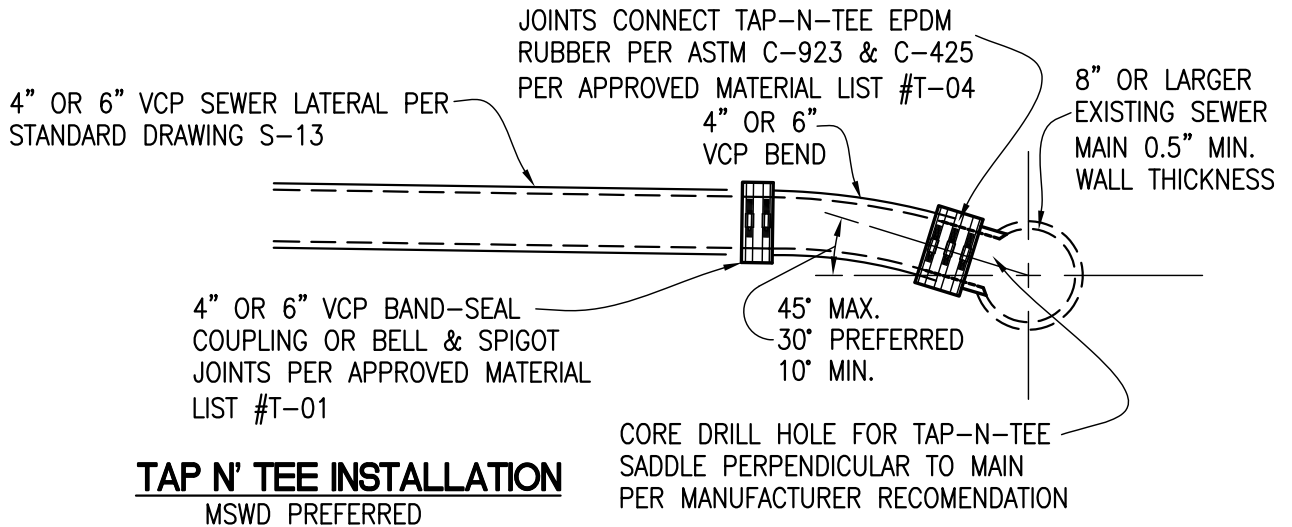
NOTE:

VCP PIPE AND FITTINGS PER MATERIAL LIST #R-01
 MID-RANGE LOCATOR DISK PER MATERIAL LIST #T-03



LATERAL FOR DEEP SEWER
 WITH UTILITY CROSSING

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31.2024
 DRAWING No.
 S-15



NOTES FOR EPOXY WYE:

1. OPENING IN EXISTING VCP PIPE SHALL BE CUT ON THE ANGLE OF THE WYE FITTING USING A STABILIZED SHELL CUTTER SIZED PER MANUFACTURERS SPECIFICATION OF SUFFICIENT DEPTH TO PERFORM A CLEAN ELLIPTICAL CUT COMPLETELY THROUGH THE EXISTING PIPE WALL.
2. ALL CUTTINGS SHALL BE REMOVED FROM PIPE AND WYE FITTING SHALL BE TESTED FOR FLUSH FIT TO EXISTING MAIN IN THE PRESENCE OF THE MSWD INSPECTOR PRIOR TO PERMANENT ATTACHMENT OF THE FITTING.
3. ALL MAINS WITH VCP EPOXY WYE TO BE VIDEO INSPECTED PER MSWD SPECIFICATIONS PRIOR TO ACCEPTANCE.

GENERAL NOTES:

1. ALL HOT TAPS SHALL BE PERFORMED UNDER DIRECT MSWD INSPECTION.
2. CONTRACTOR SHALL CHECK DEPTH OF FLOW IN THE UPSTREAM MANHOLE ON THE EXISTING SEWER AND VERIFY THAT CORE DRILL WILL BE ABOVE THE FLOW LEVEL IN THE PIPE.

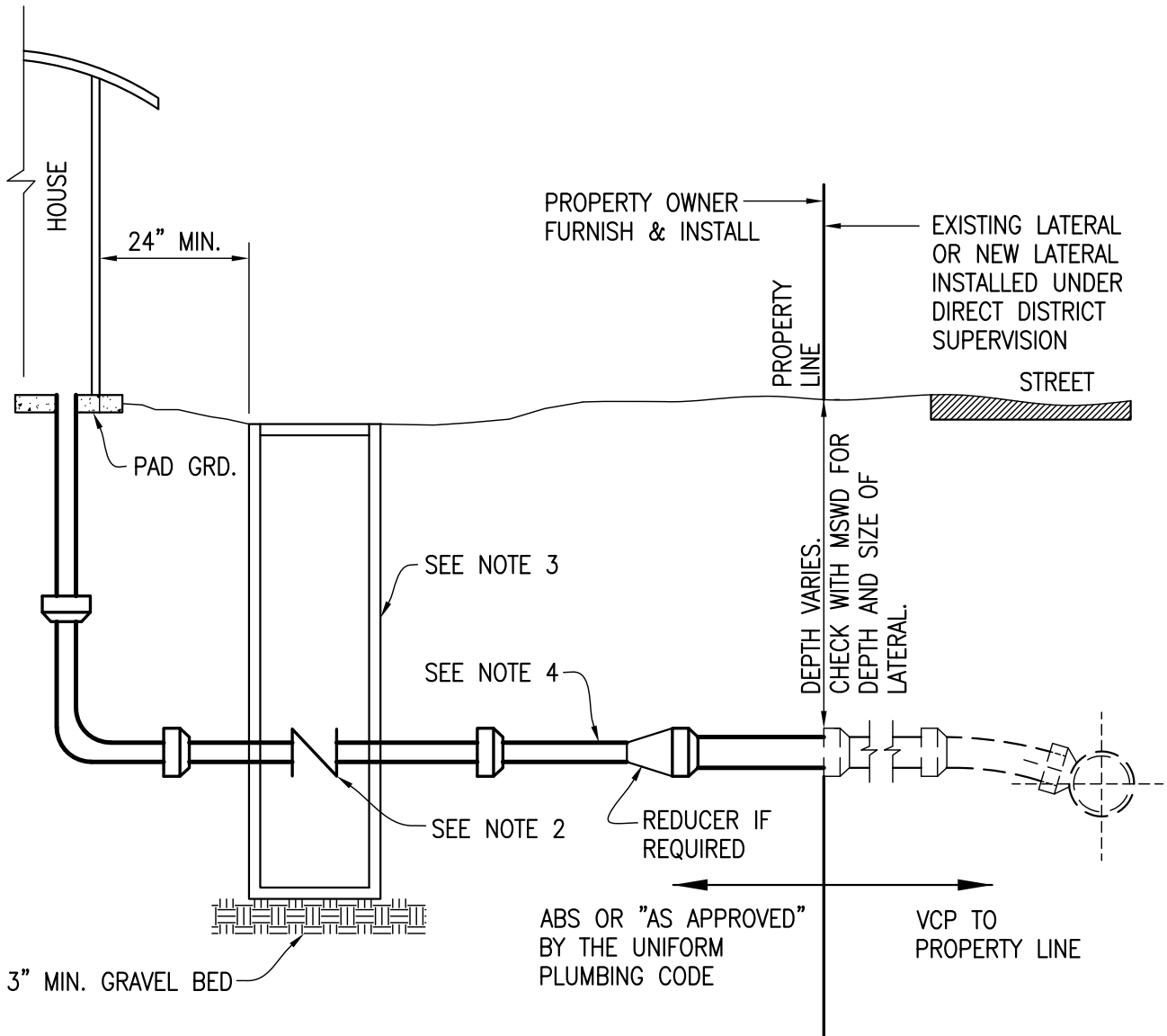


HOT TAP
SEWER LATERAL

Approved: _____
 Brian Macy
 General Manager

Drawn: MP Date: 1/31/2024

DRAWING No.
 S-16



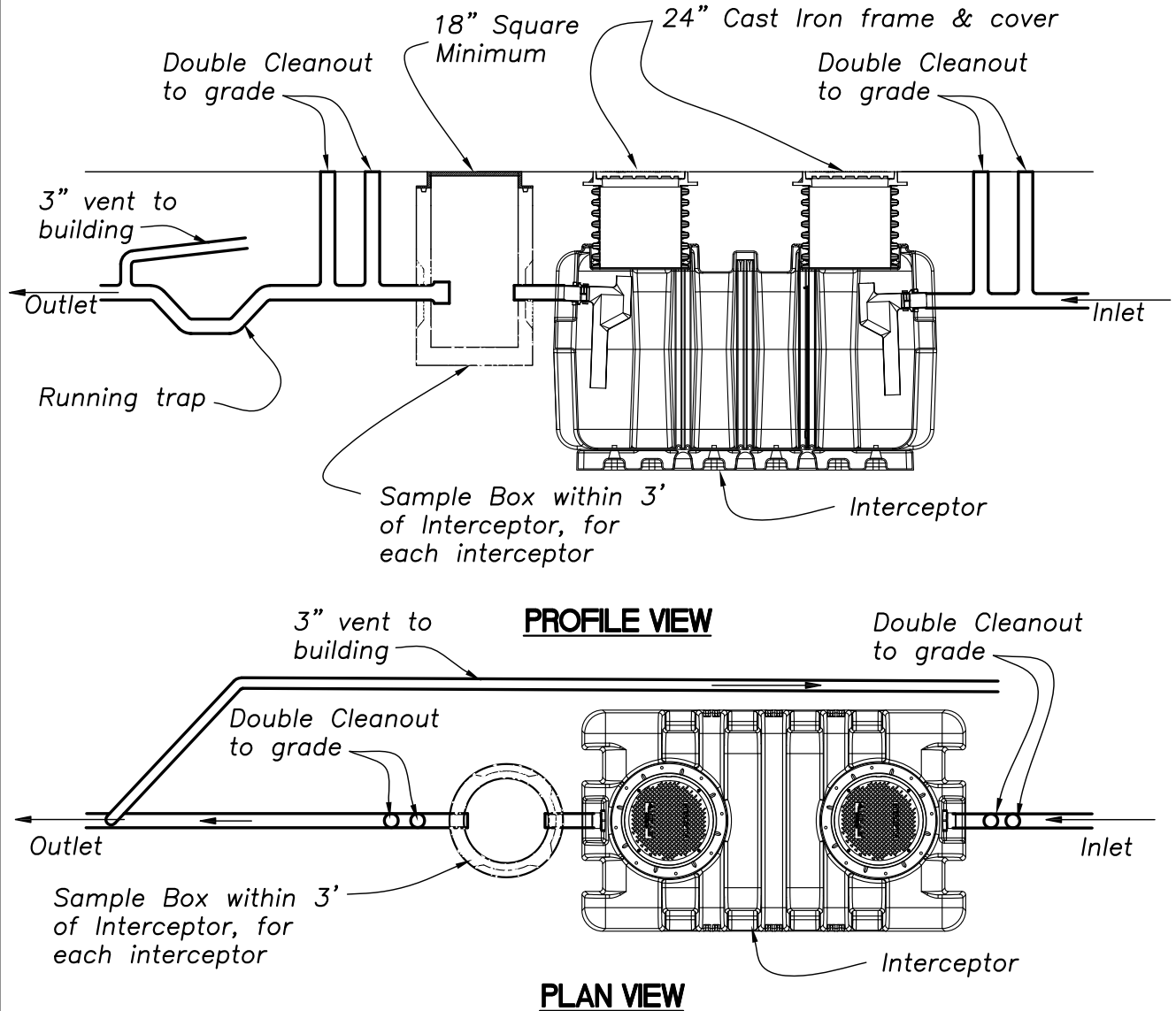
NOTES:

1. MAINTENANCE OF THE LATERAL TO THE SEWER MAIN IS THE RESPONSIBILITY OF THE PROPERTY OWNER.
2. A BACKWATER VALVE SHALL BE PROVIDED BY THE OWNER AS SPECIFIED IN THE UNIFORM PLUMBING CODE WHERE THE PAD ELEVATION OF THE PROPERTY IS LOCATED BELOW THE ELEVATION OF THE TOP OF THE NEXT UPSTREAM MANHOLE ON THE MAIN SEWER. THE BACKWATER VALVE SHALL BE PER LOCAL AGENCY STANDARDS.
3. THE BACKWATER VALVE, IF REQUIRED, SHALL BE ENCLOSED IN A VALVE BOX OR A VAULT IN ACCORDANCE WITH LOCAL AGENCY STANDARDS.
4. SEWER LATERAL SHALL BE AT A 2% MINIMUM SLOPE UNLESS OTHERWISE APPROVED.



BACKWATER VALVE ON PRIVATE PROPERTY

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 S-17



NOTES:

1. MINIMUM SIZE FOR ALL INTERCEPTORS SHALL BE 1,000 GALLONS.
2. INTERCEPTOR MATERIALS SHALL AS APPROVED BY U.P.C. AND GOVERNING LOCAL AGENCY.
3. A 24" DIAMETER SANITARY MANHOLE RING AND COVER SHALL BE INSTALLED TO GRADE OVER BOTH THE INLET AND OUTLET SANITARY TEES FOR INSPECTION.
4. INLET, OUTLET, AND CLEANOUT PIPES SHALL BE 4" OR LARGER SCHEDULE 40 ABS OR CAST IRON PIPE AND THE INLET PIPE SHALL BE 2" HIGHER THAN THE OUTLET.
5. A SANITARY TEE SHALL BE INSTALLED ON BOTH THE INLET AND OUTLET PIPES. THE INLET AND OUTLET PIPES SHALL BOTH EXTEND TO WITHIN 12" OF THE INTERCEPTOR FLOOR.
6. WHEN AN INTERCEPTOR AND SAMPLE BOX ARE INSTALLED IN A TRAFFIC AREA, THE TOPS SHALL BE TRAFFIC RATED.
7. A DOUBLE COMBINATION TEE MUST BE INSTALLED ON BOTH THE INLET AND OUTLET PIPES JUST OUTSIDE OF THE INTERCEPTOR AND SAMPLE BOX.
8. ALL MANHOLES, CLEANOUTS, AND SAMPLE BOX ACCESS SHALL BE ACCESSIBLE AT GRADE AND SHALL BE CAPPED OR GASKETED VAPOR TIGHT.

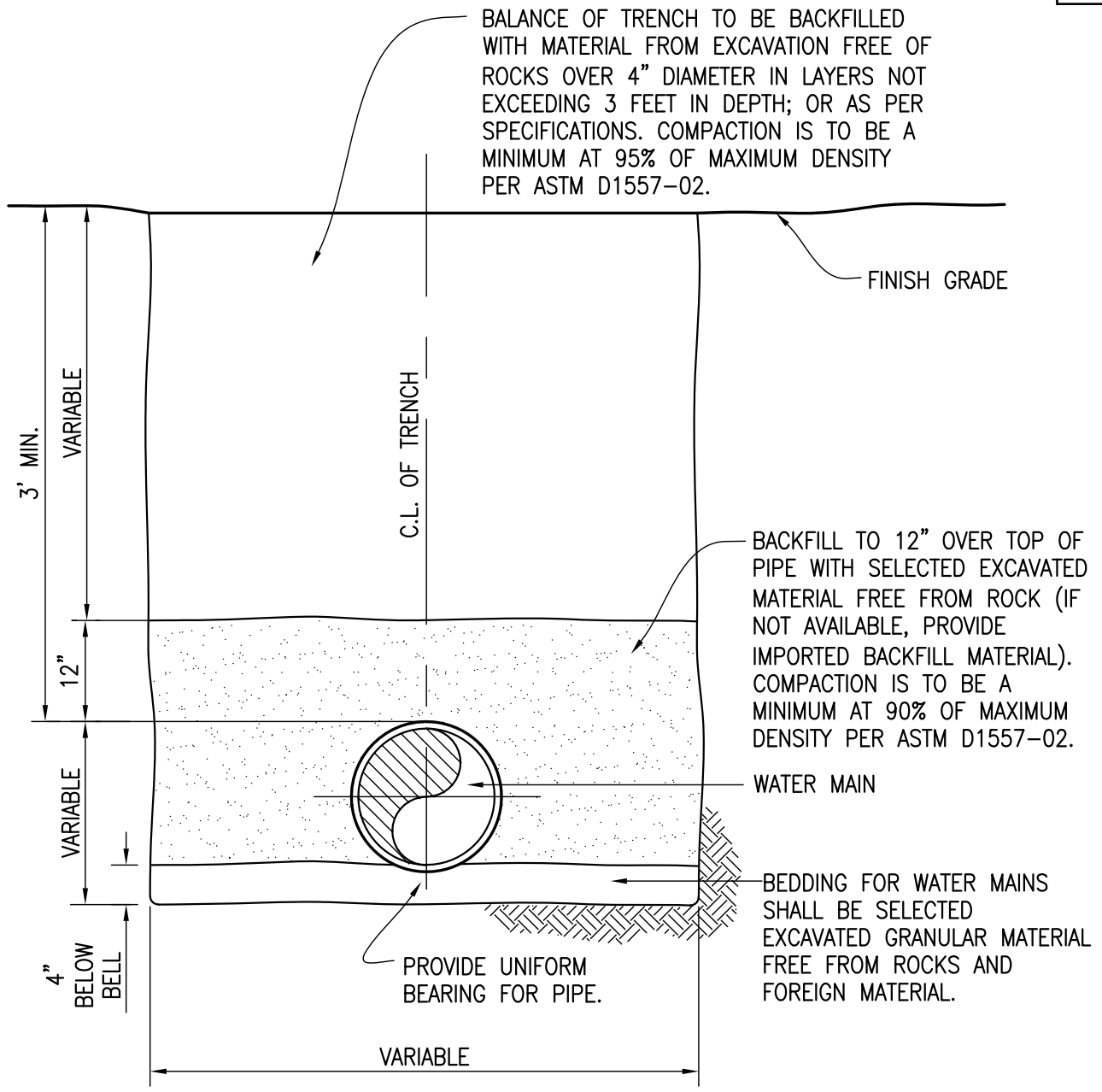


GREASE INTERCEPTOR

Approved: Brian Macy
General Manager

Drawn: MP Date: 1/31/2024

DRAWING No. S-18



MIN. WIDTH OF TRENCH FOR 4" TO 48" DIA. PIPE = O.D. PIPE + 12"

NOTES:

1. WHERE BOTTOM OF EXCAVATION IS IN ROCK WHICH CANNOT BE EXCAVATED TO PROVIDE UNIFORM BEARING FOR THE PIPE, OVEREXCAVATE 6" MINIMUM BELOW DESIGN GRADE AND REFILL IN 3" THICK COMPACTED LAYERS WITH SELECTED EXCAVATED MATERIAL OR PROVIDE IMPORTED BACKFILL MATERIAL PER SPECIFICATIONS
2. PIPE COVER SHALL BE 3' MINIMUM FOR 8" DIA. FOR 12" DIA. WATER MAINS AND LARGER, MINIMUM COVER SHALL BE 4'.



TYPICAL WATER TRENCH DETAIL

Approved: _____
 Brian Macy
 General Manager

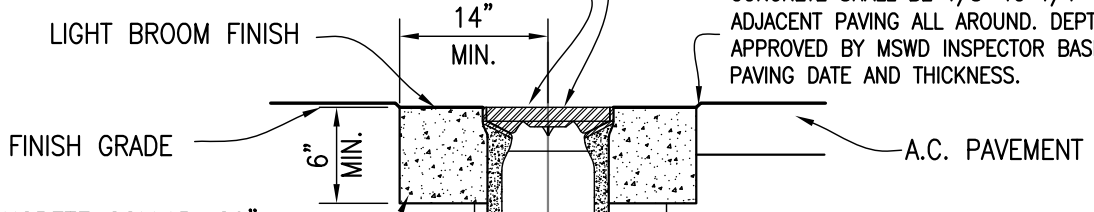
Drawn: MP Date: 1/31/2024

DRAWING No.
 W-01

VALVE BOX AND COVER SHALL BE PAINTED WITH GLOSS ENAMEL PER MSWD APPROVED MATERIAL LIST U-01 YELLOW OR U-03 RED.

① TRIANGULAR TRAFFIC RATED CAST IRON FRAME AND COVER MARKED "WATER MSWD"

CONCRETE SHALL BE 1/8" TO 1/4" BELOW ADJACENT PAVING ALL AROUND. DEPTH TO BE APPROVED BY MSWD INSPECTOR BASED ON PAVING DATE AND THICKNESS.



CONCRETE COLLAR. 20" ROUND. PLACE AGAINST COMPACTED EARTH, 95% MAXIMUM DRY DENSITY PER ASTM D1557-02.

2" SQ. OPERATING NUT
PER APPROVED MATERIAL LIST



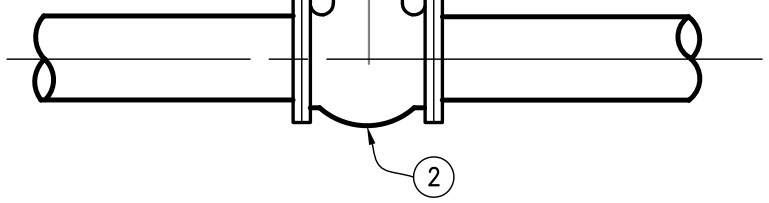
BRACING PLATE DETAIL

GATE VALVE PER APPD. MATL. LIST

④ FIBERGLASS STEM EXTENSION

PROVIDE VALVE STEM EXTENSION WHERE DEPTH TO OPERATOR NUT EXCEEDS 2'.

③ 8" DIA. SDR-35 PVC PIPE



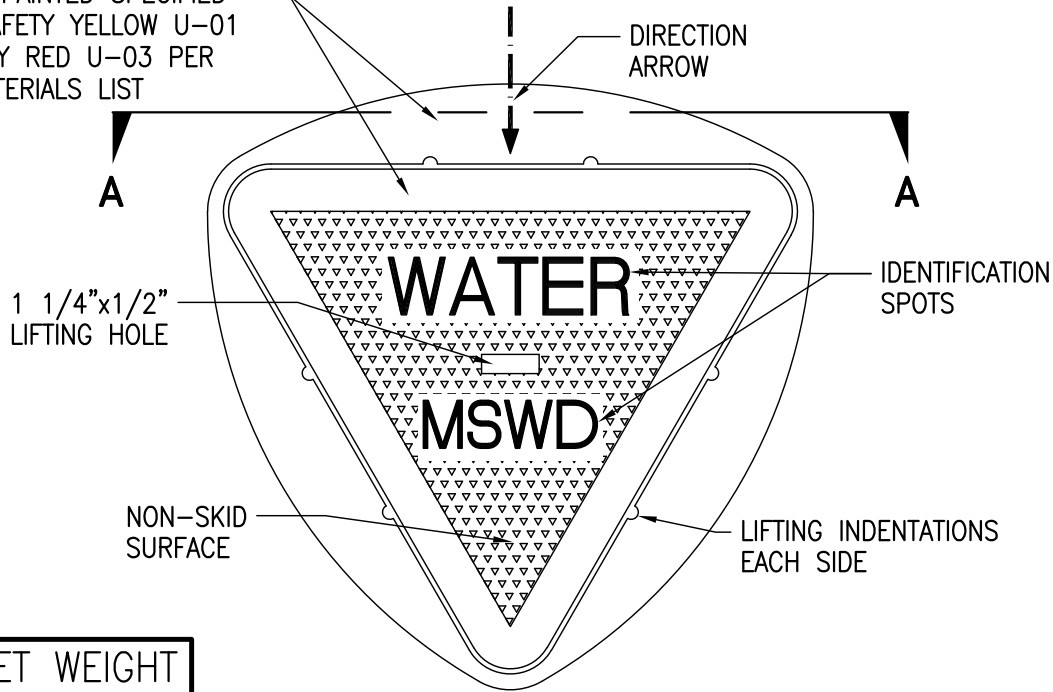
ITEM	No. Req'D.	DESCRIPTION	Matl. List#
①	1	TRIANGULAR TRAFFIC FRAME AND COVER MARKED "WATER"	G-04
②	1	FLANGED GATE VALVE 12" OR SMALLER OR BUTTERFLY VALVE (B-02)	B-01
③	VARIABLE	8" DIA. x REQUIRED LENGTH SDR-35 PVC	N-05-2
④	If Req'd.	FIBERGLASS VALVE STEM EXTENSION	N-07



GATE VALVE INSTALLATION

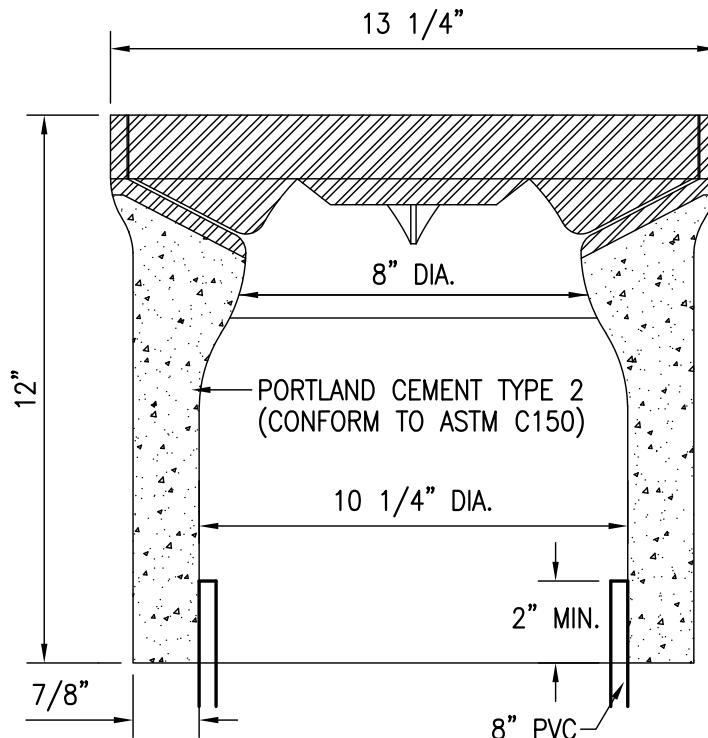
Approved: Brian Macy
General Manager
Date: 1/31/2024
Drawn: MP
DRAWING No. **W-02**

FRAME AND COVER SHALL BOTH BE PAINTED SPECIFIED COLOR SAFETY YELLOW U-01 OR SAFETY RED U-03 PER MSWD MATERIALS LIST



SET WEIGHT	
FRAME	61 lbs.
LID	15 lbs.
TOTAL	76 lbs.

PLAN VIEW



SECTION A-A

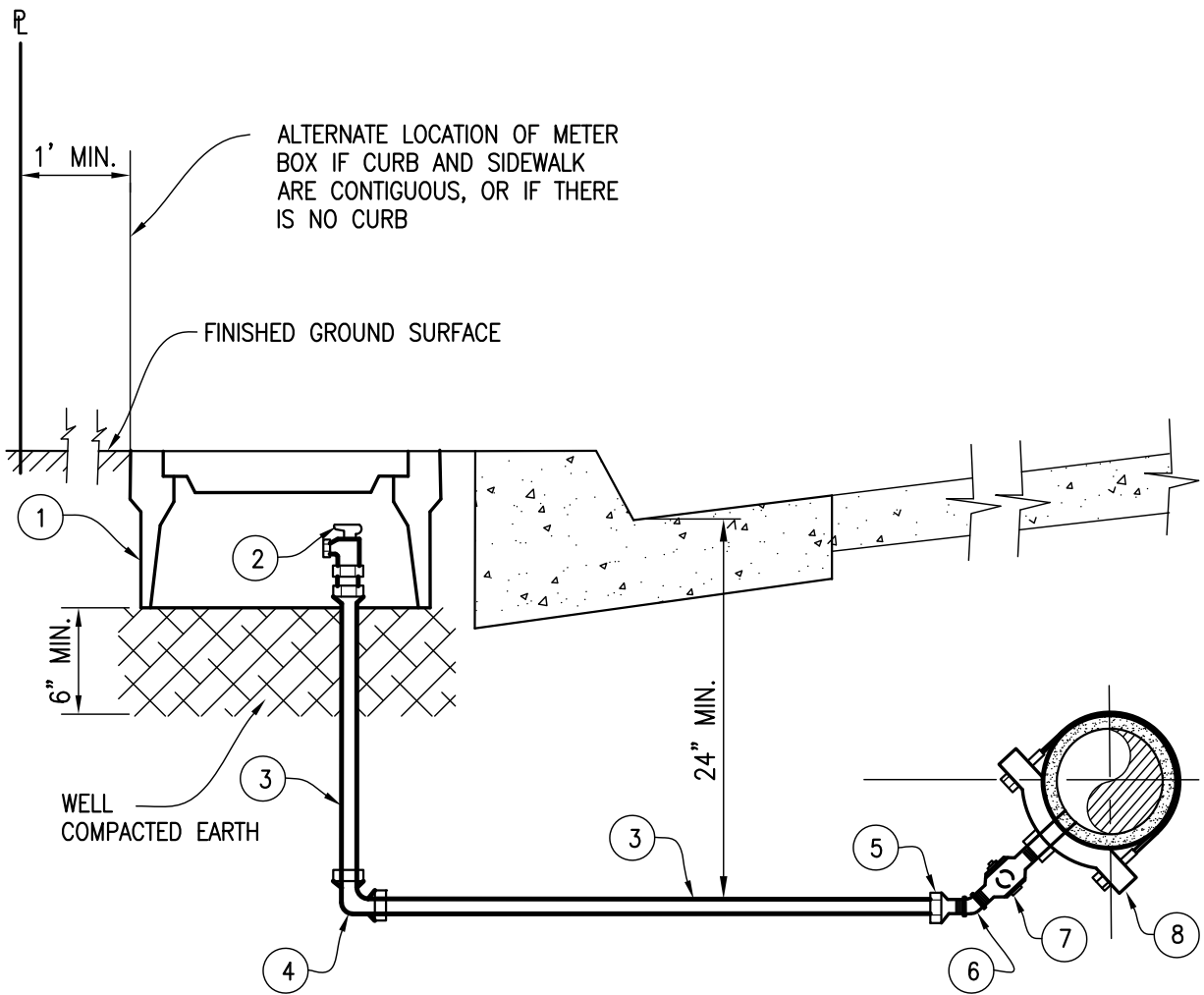
NOTES:

1. ALL METALLIC MATERIALS SHALL BE CAST IRON OR DUCTILE IRON.
2. FRAME AND LID SHALL HAVE CAST SEAT AND SIDE TO ASSURE CLOSE FIT.
3. CASTING SHALL BE DIPPED IN BLACK BITUMINOUS PAINT.
4. FOR INSTALLATION, SEE STANDARD DRAWING W-02.
5. FRAME AND LID SHALL EXCEED H-20 WHEEL LOADING.
6. SEE APPROVED MATERIALS LIST G-04.



TRIANGULAR WATER VALVE
CAP AND FRAME

Approved: Brian Macy
General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-02A



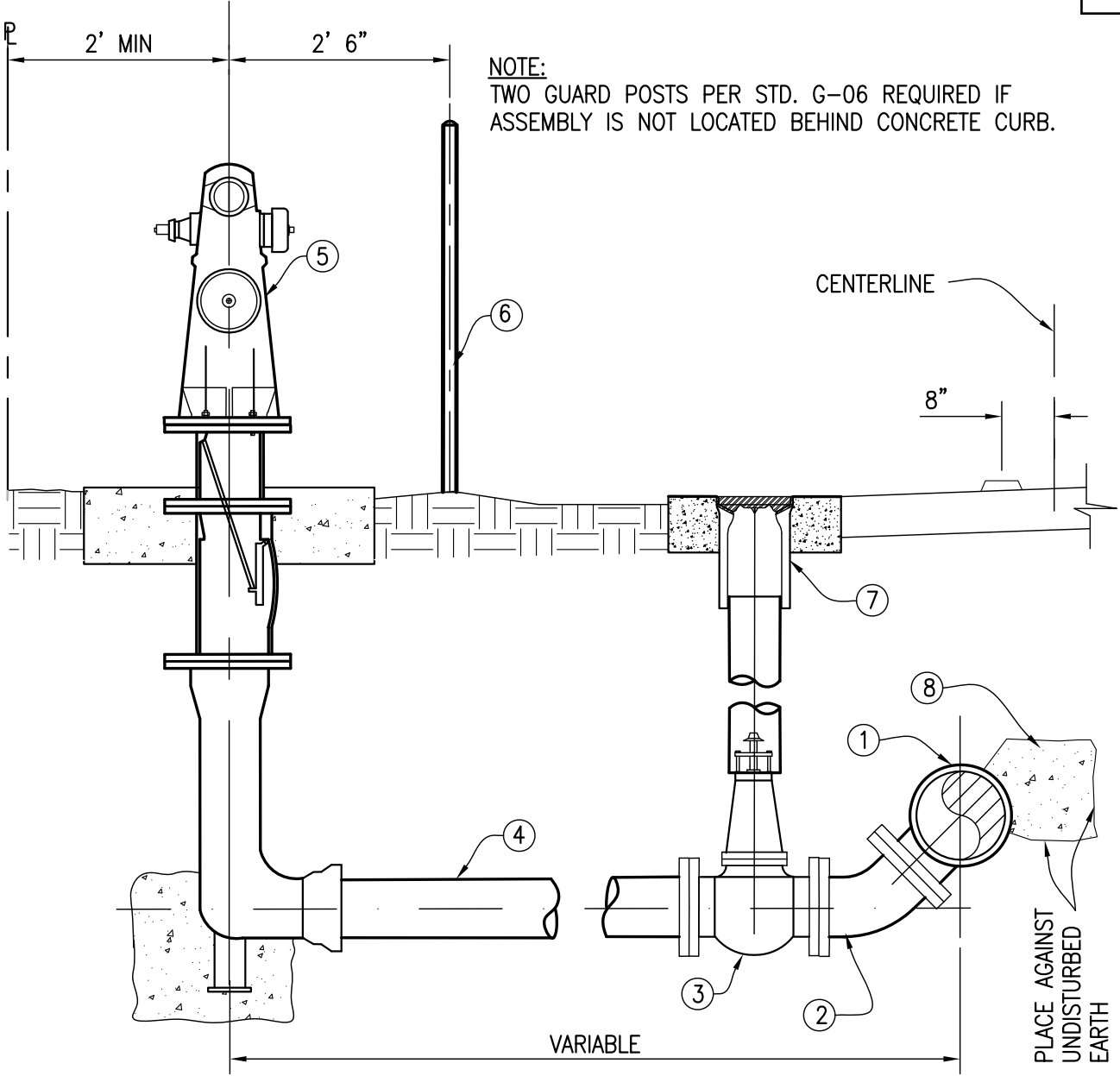
ITEM	No. Req'D.	DESCRIPTION	Matl. List#
①	1	D.F.W. GRAY POLYMER 6B METER BOX AND SOLID LID	G-02
②	1	2" BALL ANGLE METER STOP	C-06
③	VARIABLE	2" x REQUIRED LENGTH TYPE "K" SOFT TEMPER COPPER	A-04
④	1	2" CTS COMPRESSION 90° ELBOW	M-06
⑤	1	2" STRAIGHT COUPLING-CTS O.D. x M.I.P.	M-02-3
⑥	1	2" BRASS FIPT 45° ELBOW	E-04
⑦	1	2" BALL CORP STOP, I.P.T. INLET AND OUTLET	C-02-2
⑧	1	2" x MAIN SIZE DOUBLE STRAP BRONZE SERVICE SADDLE	L-01

NOTE:
PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.



2" DIAMETER BLOW-OFF
ASSEMBLY
INSTALLATION

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024
DRAWING No.
W-03



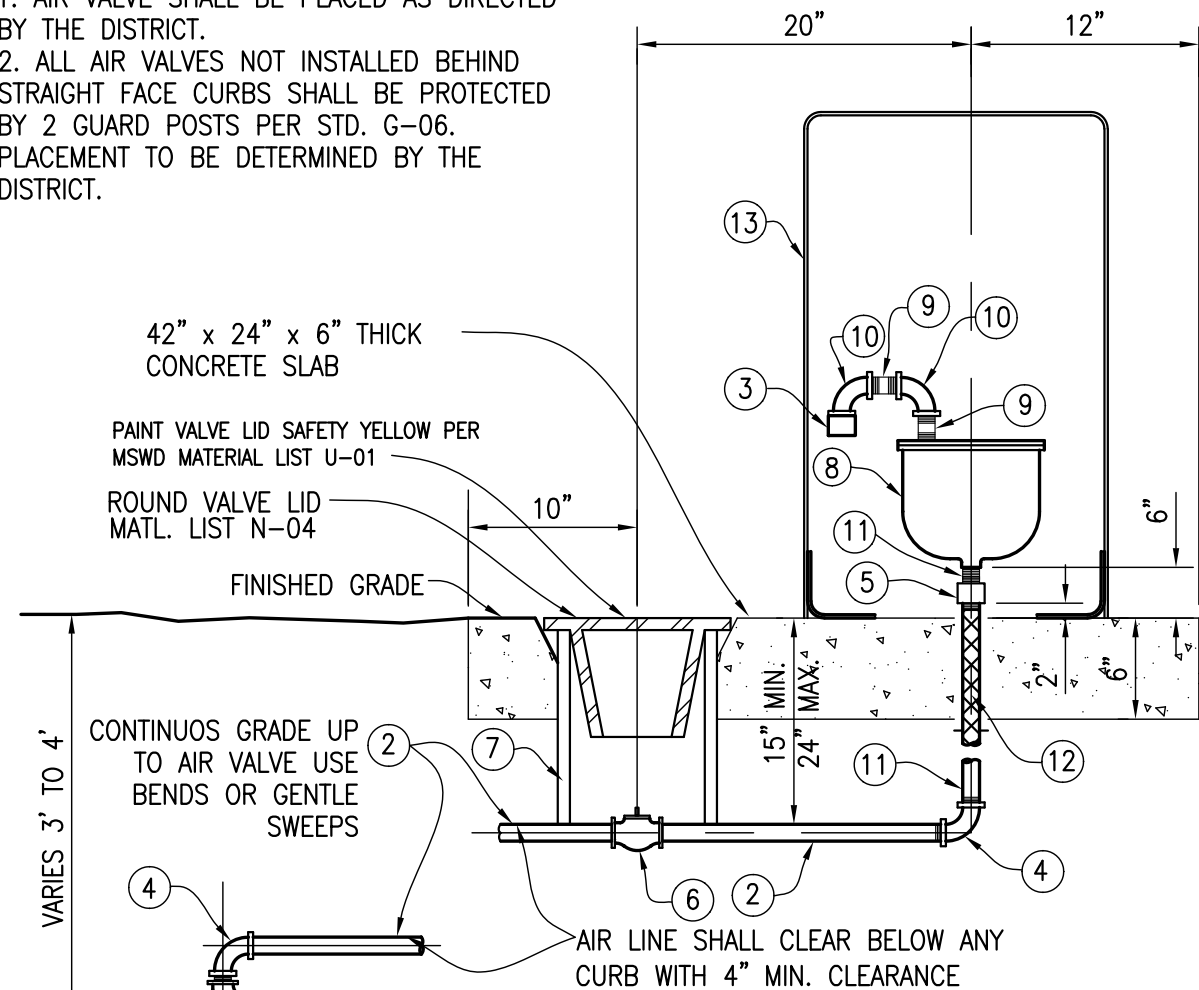
ITEM	No. REQUIRED	DESCRIPTION	MTL.#
①	1	MAIN SIZE x 6" FLANGED OUTLET DUCTILE IRON TEE	E-03-1
②	1	6" FLANGED 45° DUCTILE IRON BEND	E-03-1
③	1	6" GATE VALVE ASSEMBLY PER STD. W-2	B-01-2
④	VAR. AS REQUIRED	6" DIA. CLASS 350 DUCTILE IRON PIPE WITH RESTRAINED JOINTS	A-03
⑤	1	6" DUCTILE IRON FIRE HYDRANT ASSEMBLY PER STD. W-07	H-02
⑥	2	4" GUARD POST PER STD. G-06 (IF REQUIRED)	A-07
⑦	1	STANDARD VALVE BOX INSTALLATION PER STD. W-02 & W-02A	G-04
⑧	1	CONCRETE THRUST & SUPPORT BLOCK PER DETAIL DRAWING W-8 AND W-8A	N-02
⑨	1	BLUE RETRO-REFLECTIVE PAVEMENT MARKER	N-21



6" DIA. FIRE HYDRANT BLOWOFF ASSEMBLY

Approved: Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No. W-04

NOTE:
 1. AIR VALVE SHALL BE PLACED AS DIRECTED BY THE DISTRICT.
 2. ALL AIR VALVES NOT INSTALLED BEHIND STRAIGHT FACE CURBS SHALL BE PROTECTED BY 2 GUARD POSTS PER STD. G-06. PLACEMENT TO BE DETERMINED BY THE DISTRICT.



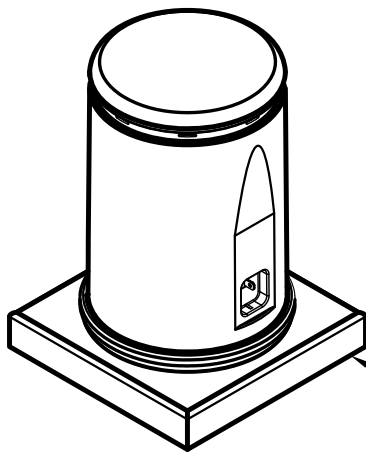
NOTES:
 1. ALL PIPE, FITTINGS, AND VALVES SHALL BE SAME DIA. AS THE AIR VALVE INLET.
 2. ALL PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.

ITEM #	REQ'D	DESCRIPTION	MTL. #
①	1	M.N.P.T. BRONZE BALL CORP. STOP	C-01-2
②	VAR.	TYPE "K" SOFT COPPER WATER TUBE	A-04
③	1	STAINLESS STEEL BUG SCREEN	N-15
④	2	1/4 BEND BRONZE UNION N.P.T. x C.T.S.	M-07
⑤	1	EXTRA HEAVY N.P.T. BRASS COUPLING	E-04
⑥	1	COMP. BRONZE BALL CURB VALVE W/TEE HEAD	B-04
⑦	1	8" CIRC. VALVE BOX	N-05
⑧	1	HEAVY DUTY COMB. AIR RELEASE VALVE	B-03
⑨	2	3" LONG STD. BLK. N.P.T. NIPPLE	A-07
⑩	2	STD. BLK. 90° ELBOW	E-06
⑪	2	EXTRA HEAVY BRASS PIPE NIPPLE N.P.T.	A-05
⑫	1	PIPE WRAP	N-10
⑬	1	AIR VALVE ENCLOSURE	N-14



AIR VALVE INSTALLATION
 1" OR 2" DIA.

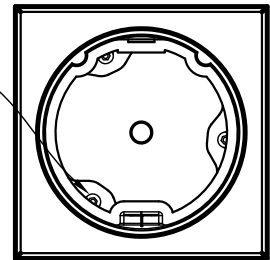
Approved: Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No. W-05



18" DIA. x 30" TALL VALVE ENCLOSURE. ENCLOSURE TO HAVE A BOLT DOWN BASE WITH REMOVABLE COVER. COVER & BASE TO BE MANUFACTURED FROM 3/16" WALL POLYETHYLENE WITH UV STABILIZERS. COVER SHALL LOCK TO BASE WITH AN INTEGRAL AUTO-LATCH AND PADLOCK HASP. MSWD TO PROVIDE PADLOCK.

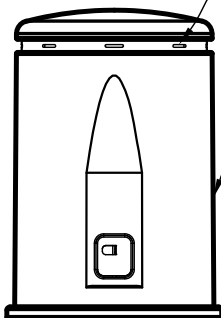
CONCRETE PAD

3 - 1/2" CONCRETE ANCHORS WITH STAINLESS FENDER WASHERS



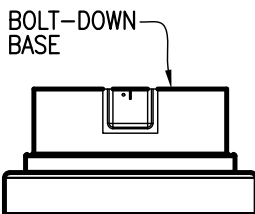
TOP VIEW

8 - 1/4" x 1 3/4" VENT SLOTS



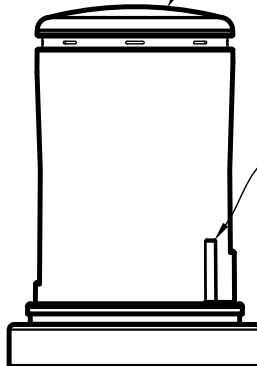
VALVE COVER
MTL. LIST N-14

DOMED TOP



BOLT-DOWN
BASE

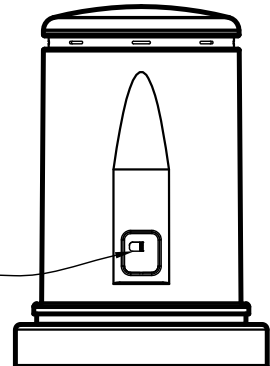
FRONT VIEW
(OPENED)



COVER
ALIGNMENT
TABS

SIDE VIEW

STAINLESS STEEL
PADLOCK BACKING
PLATE



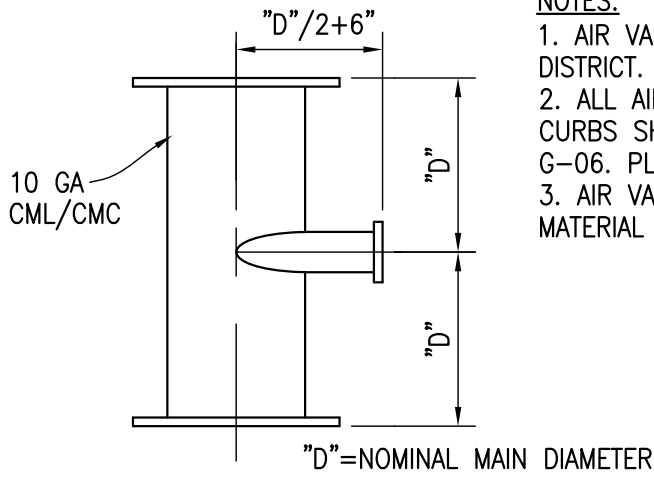
FRONT VIEW



1" OR 2" POLYETHYLENE
AIR VALVE ENCLOSURE

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024

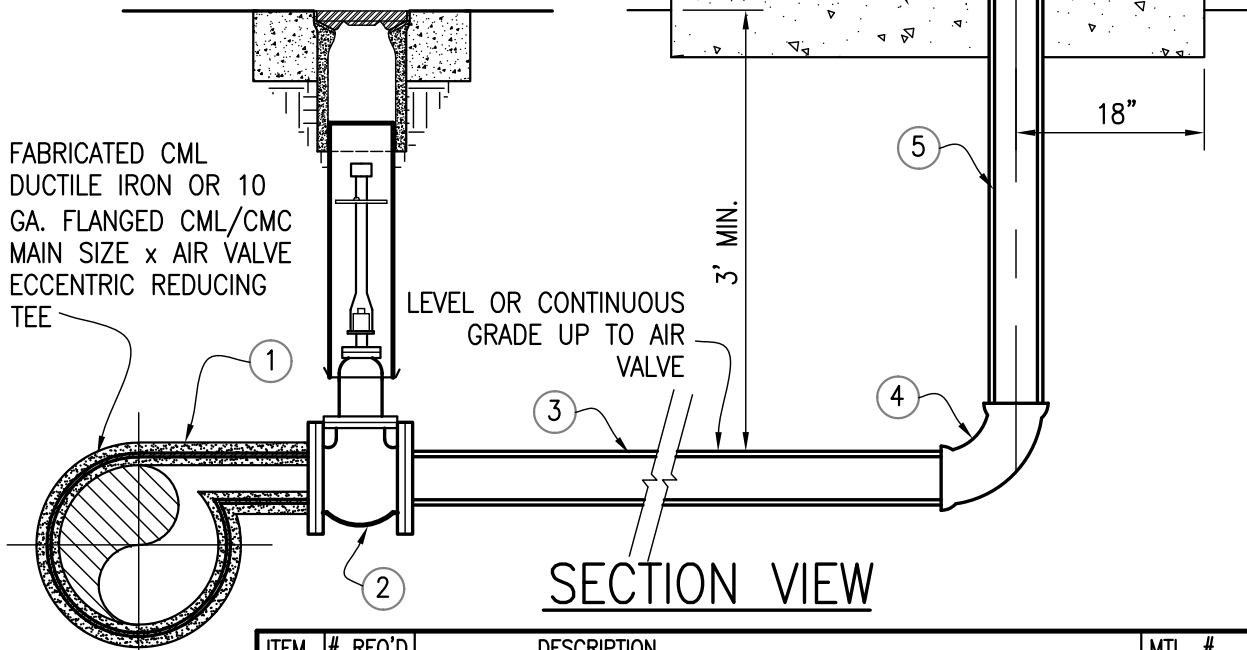
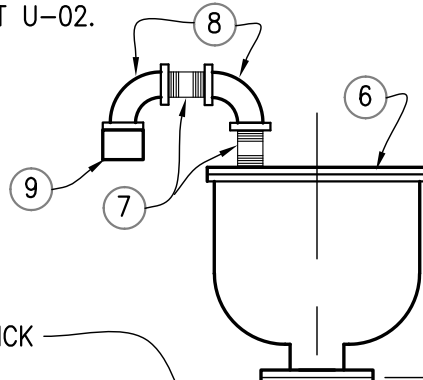
DRAWING No.
W-05A



FABRICATED FLANGED CML
DUCTILE IRON OR CML/CMC 60" x 36" x 6" THICK
PLAN VIEW CONCRETE SLAB

NOTES:

1. AIR VALVE SHALL BE PLACED AS DIRECTED BY THE DISTRICT.
2. ALL AIR VALVES NOT INSTALLED BEHIND STRAIGHT FACE CURBS SHALL BE PROTECTED BY 2 GUARD POSTS PER STD. G-06. PLACEMENT TO BE DETERMINED BY THE DISTRICT.
3. AIR VALVE SHALL BE PAINTED MSWD DESERT TAN PER MATERIAL LIST U-02.



SECTION VIEW

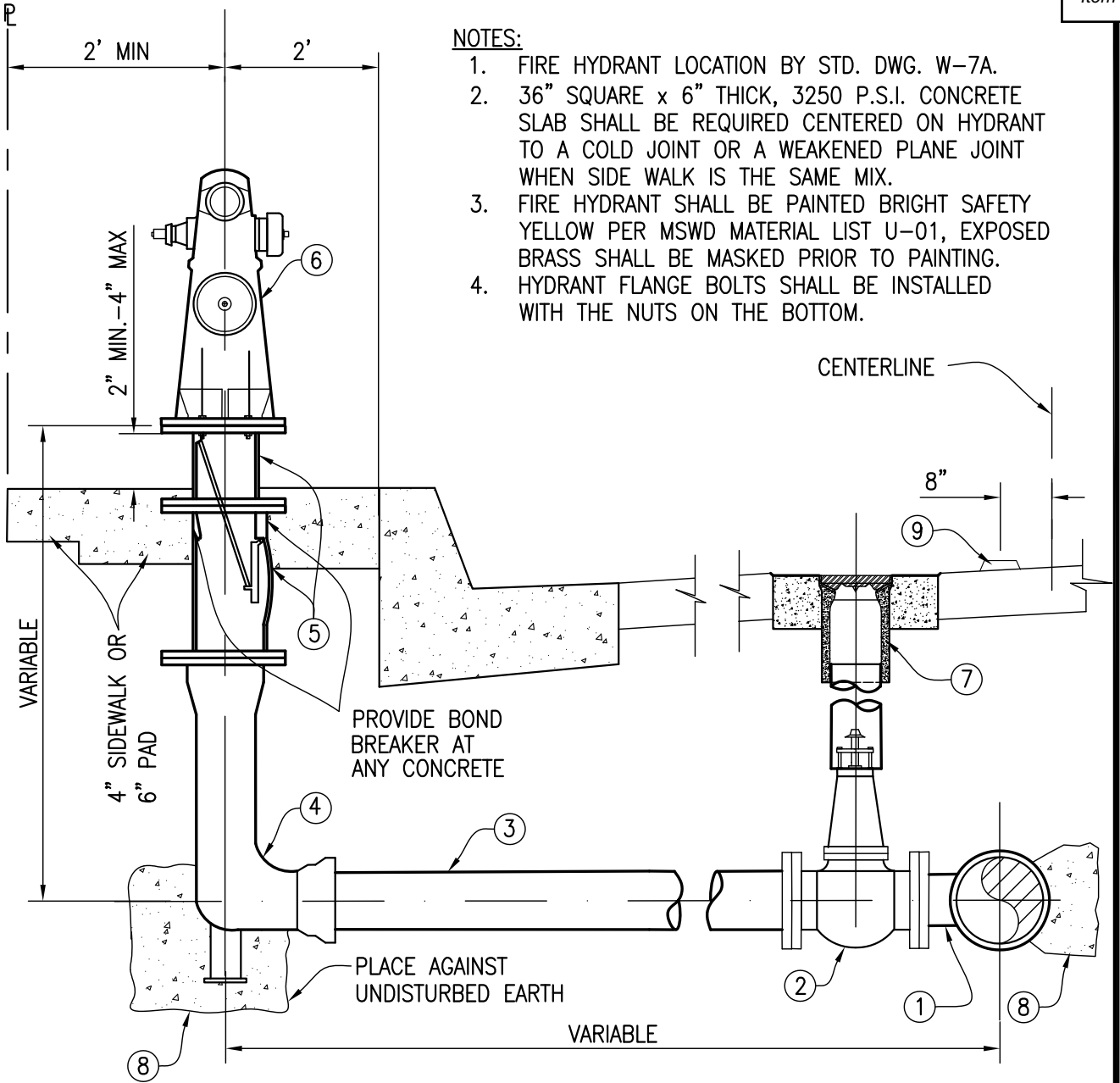
ITEM	#	REQ'D	DESCRIPTION	MTL. #
①	1		MAIN SIZE x AIR VALVE SIZE FABRICATED CML DUCTILE IRON OR 10 GA. CML/CMC FLANGED ECCENTRIC REDUCING TEE	E-03-1 E-01-1
②	1		AIR VALVE SIZE FLANGED GATE VALVE ASSEMBLY PER STD. DWG. W-02	B-01-2
③	VARIABLES		AIR VALVE SIZE CLASS 350 DUCTILE IRON PIPE	A-03
④	1		AIR VALVE SIZE DUCTILE IRON 90° BEND, RESTRAINED JOINTS	E-03-2
⑤	1		AIR VALVE SIZE DUCTILE IRON FLANGED SPOOL	E-03-3
⑥	1		HEAVY DUTY COMB. AIR RELEASE VALVE, SIZE PER PLAN	B-03
⑦	2		AIR VALVE SIZE x 4" LONG STD. BLK. N.P.T. NIPPLE	A-07
⑧	2		AIR VALVE SIZE HEAVY DUTY 90° NPT ELBOW	E-06
⑨	1		STAINLESS STEEL BUG SCREEN	N-15



4" OR LARGER AIR VALVE ASSEMBLY

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024

W-06



NOTES:

1. FIRE HYDRANT LOCATION BY STD. DWG. W-7A.
2. 36" SQUARE x 6" THICK, 3250 P.S.I. CONCRETE SLAB SHALL BE REQUIRED CENTERED ON HYDRANT TO A COLD JOINT OR A WEAKENED PLANE JOINT WHEN SIDE WALK IS THE SAME MIX.
3. FIRE HYDRANT SHALL BE PAINTED BRIGHT SAFETY YELLOW PER MSWD MATERIAL LIST U-01, EXPOSED BRASS SHALL BE MASKED PRIOR TO PAINTING.
4. HYDRANT FLANGE BOLTS SHALL BE INSTALLED WITH THE NUTS ON THE BOTTOM.

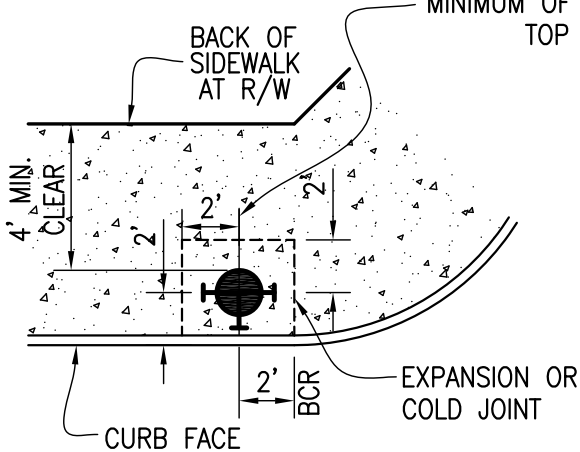
ITEM	No. REQUIRED	DESCRIPTION	MTL.#
①	1	MAIN SIZE x 6" FLANGED OUTLET DUCTILE IRON TEE	E-03-1
②	1	6" GATE VALVE ASSEMBLY PER STD. W-2	B-01-2
③	VAR. AS REQUIRED	6" DIA. CLASS 350 DUCTILE IRON PIPE WITH RESTRAINED JOINTS	A-03
④	1	6" DUCTILE IRON HYDRANT BURY	I-01
⑤	1	6" DIA. BREAK OFF CHECK VALVE ASSEMBLY	J-02
⑥	1	6" DIAMETER FIRE HYDRANT ASSEMBLY	H-02
⑦	1	STANDARD VALVE BOX INSTALLATION PER STD. W-2	G-04
⑧	2	CONCRETE THRUST & SUPPORT BLOCK PER DETAIL DRAWING W-8 AND W-8A	N-02
⑨	1	BLUE RETRO-REFLECTIVE PAVEMENT MARKER	N-21



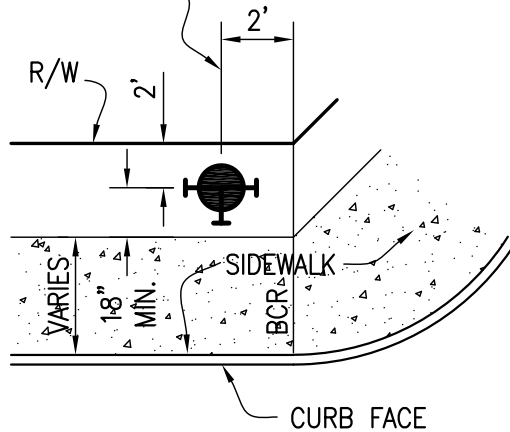
6" DIA. FIRE HYDRANT
INSTALLATION

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-07

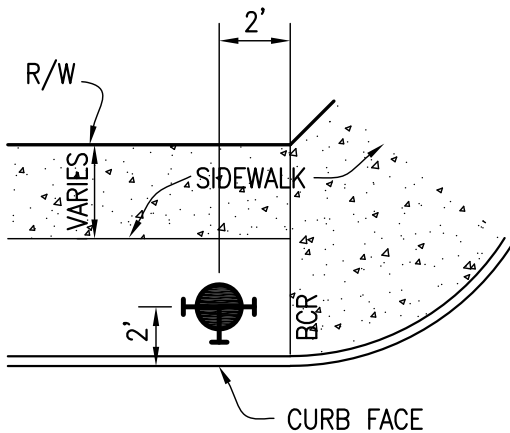
MID-BLOCK HYDRANT SHALL BE LOCATED AT A LOT LINE AND A MINIMUM OF 2' CLEAR OF THE TOP OF ANY DRIVEWAY



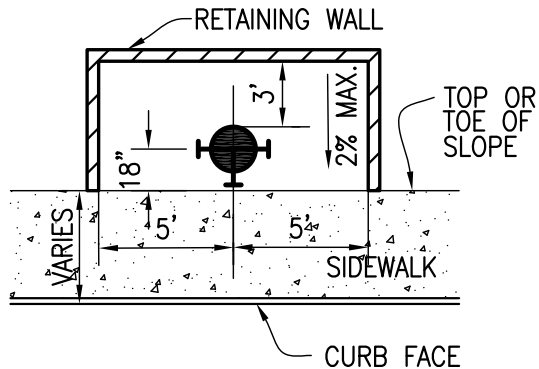
DETAIL 'A'
FULL COMMERCIAL SIDEWALK



DETAIL 'B'
RESIDENTIAL WITH ATTACHED SIDEWALK OR NO SIDEWALK



DETAIL 'C'
PARKWAY WITH DETACHED SIDEWALK



DETAIL 'D'
RETAINING WALL FOR SLOPE ADJACENT TO SIDEWALK

NOTES:

1. ALL FIRE HYDRANTS SHALL BE LOCATED WITHIN PUBLIC RIGHT-OF-WAY OR DEDICATED PUBLIC UTILITY EASEMENTS.
2. ALL FIRE HYDRANT LOCATIONS SHALL BE SUBJECT TO FIRE DEPARTMENT AND DISTRICT APPROVAL.



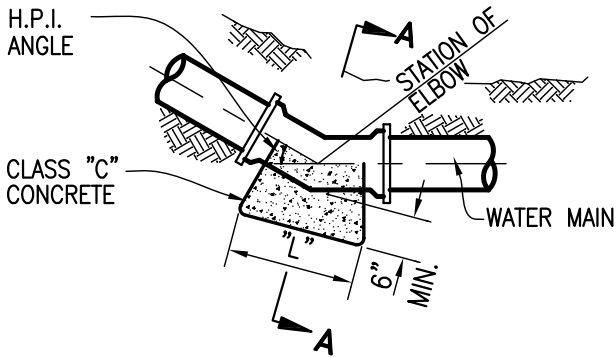
FIRE HYDRANT LOCATION

Approved: Brian Macy
General Manager
Date: 1/31/2024

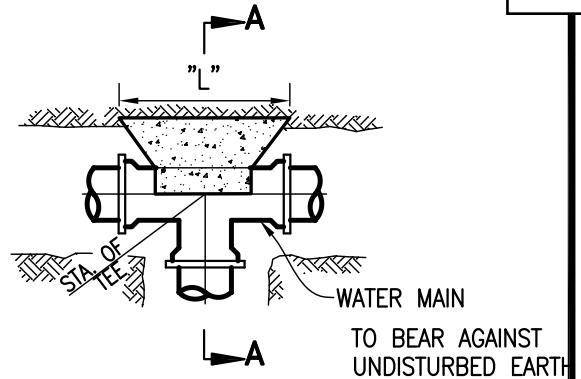
Drawn: MP

DRAWING No.

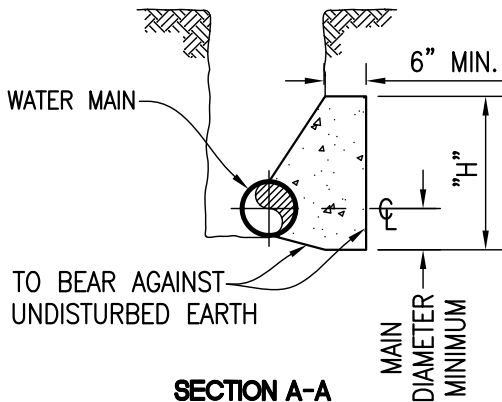
W-07A



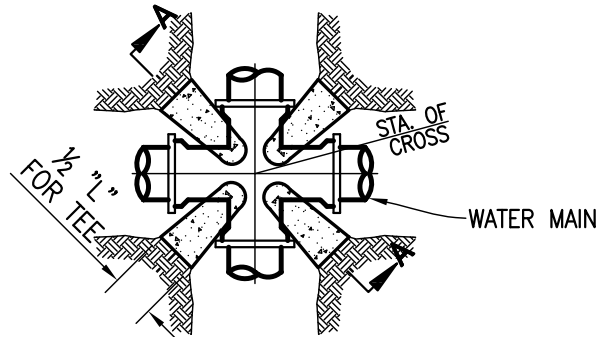
PLAN VIEW BEND



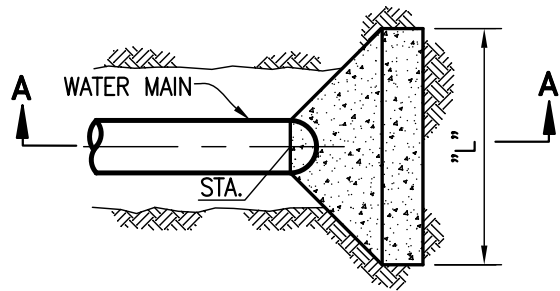
PLAN VIEW TEE



SECTION A-A
HORIZONTAL THRUST BLOCK



PLAN VIEW CROSS



PLAN VIEW END

NOTES:

1. CONCRETE SHALL BE 3250 PSI PER MATERIAL LIST N-02
2. TOTAL BEARING AREA, "A", SHALL BE BASED ON SOILS CONDITIONS AND MAIN SIZE FROM STD. DWG. W-8B.
3. "H" DIMENSION SHALL NORMALLY BE BETWEEN 3 AND 4 MAIN DIAMETERS.
4. "L" DIMENSION SHALL BE AS REQUIRED TO SATISFY THE EQUATION "L"x"H"="A".

SAMPLE CALCULATION

FOR 8" TEE OR END WITH SOILS PRESSURE OF 1500 LBS/SF FROM CHART REQUIRED "A"=12 S.F.

USE "H"=3 DIA.=2' THEN "L"="A"(12)/"H"(2')=6'.

OR USE "H"= 4 DIA.=2.67' THEN "L"="A"(12)/"H"(2.67)=4.5'

"L" AND "H" MAY BE VARIED TO MEET FIELD CONDITIONS SO LONG AS "L"x"H"="A"

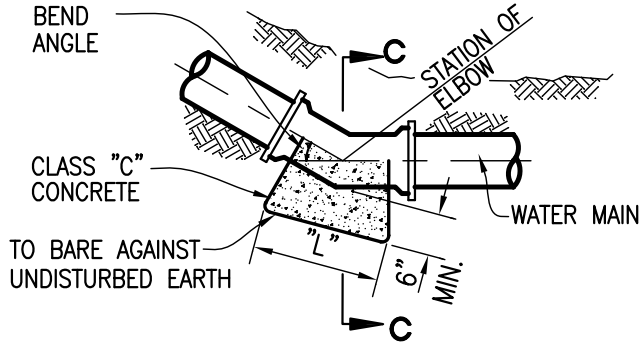


HORIZONTAL THRUST BLOCKS

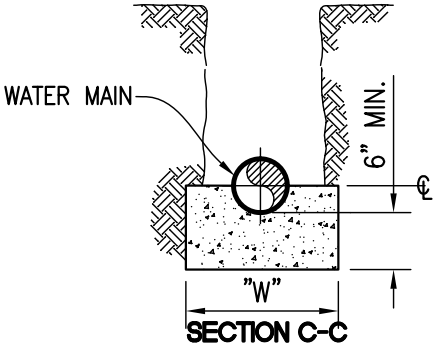
Approved: Brian Macy
General Manager
Drawn: MP Date: 1/31/2024

DRAWING No.

W-08



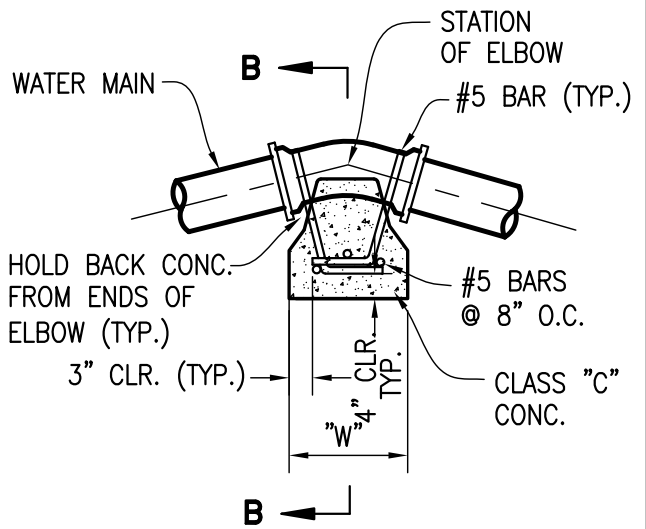
SECTIONAL ELEVATION



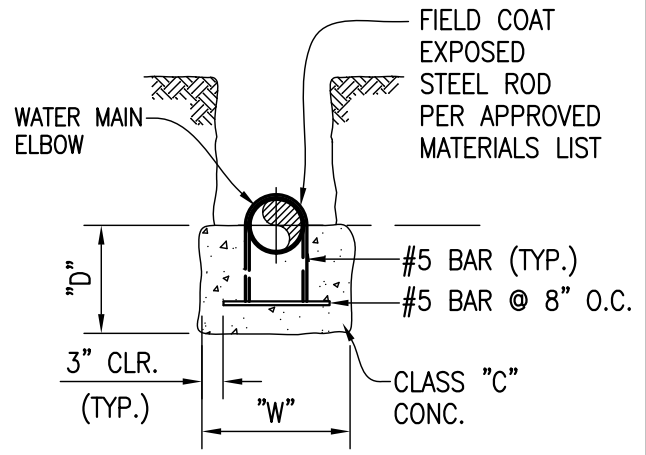
VERTICAL BEARER BLOCK

- NOTES:**
1. CONCRETE SHALL BE 3250 PSI PER MATERIAL LIST N-02.
 2. TOTAL BEARING AREA, "A", SHALL BE BASED ON SOILS CONDITIONS AND MAIN SIZE FROM STD. DWG. W-8B.
 3. "H" DIMENSION SHALL NORMALLY BE BETWEEN 3 AND 4 MAIN DIAMETERS.
 4. "L" DIMENSION SHALL BE AS REQUIRED TO SATISFY THE EQUATION "L"x"H"="A".

SAMPLE CALCULATION
 FOR 8" 45° BEND WITH SOILS PRESSURE OF 1500 LBS/SF
 FROM CHART REQUIRED "A"=12x0.8=9.6 S.F.
 USE "W"=3' THEN "L"="A"(9.6)/"W"(3')=3.2'.
 "L" AND "W" MAY BE VARIED TO MEET FIELD CONDITIONS SO LONG AS "L"x"H"="A"



SECTIONAL ELEVATION



SECTION B-B

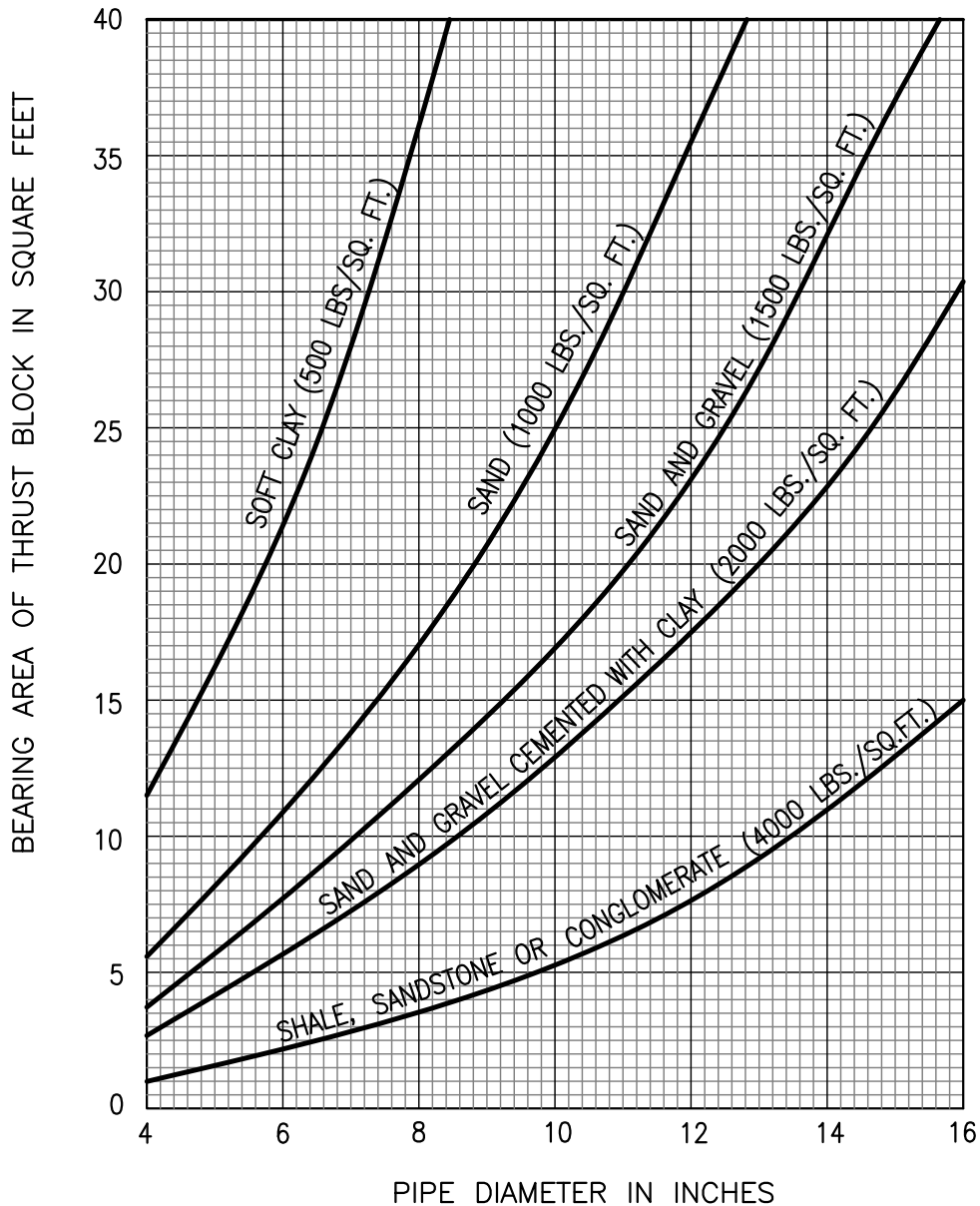
VERTICAL ANCHOR BLOCK

PIPE DIA.	BEND ANGLE	"W"	"D"
6"	11 1/4°	2'-0"	1'-0"
6"	22 1/2°	2'-0"	1'-3"
6"	45°	2'-0"	2'-6"
8"	11 1/4°	2'-8"	1'-2"
8"	22 1/2°	2'-8"	1'-4"
8"	45°	2'-8"	2'-8"
12"	11 1/4°	4'-0"	1'-2"
12"	22 1/2°	4'-0"	1'-4"
12"	45°	4'-0"	2'-8"
18"	11 1/4°	6'-0"	1'-2"
18"	22 1/2°	6'-0"	1'-4"
18"	45°	6'-0"	2'-8"



VERTICAL THRUST BLOCKS

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-08A



NOTES:

1. BASED ON A 225 PSI TEST PRESSURE AND BEARING VALUES OF DRY SOILS.
2. VALUES FROM CURVES ARE FOR TEES AND DEAD ENDS I.E. STRAIGHT LINE THRUST.
 FOR 90° BENDS: 1.4 x VALUE FROM CURVE
 FOR 45° BENDS: 0.8 x VALUE FROM CURVE
 FOR 22 1/2° BENDS: 0.4 x VALUE FROM CURVE
3. FOR CONDITIONS NOT COVERED BY CURVES, THRUST DEVICES MUST BE APPROVED BY THE ENGINEER.
4. FOR LOCATION OF THRUST BLOCKS, SEE STANDARD DRAWING W-8 OR W-08A.
5. CONCRETE THRUST BLOCKS SHALL BE CONSTRUCTED OF CONCRETE PER APPROVED MATERIALS LIST.



THRUST BLOCK BEARING AREAS

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-08B

REQUIRED LENGTH OF RESTRAINED JOINTS

PIPE SIZE	END OR VALVE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
4"	18'	11'	5'	2'	1'
6"	27'	16'	7'	3'	2'
8"	35'	21'	9'	4'	2'
10"	42'	25'	10'	5'	3'
12"	48'	29'	12'	6'	3'
14"	45'	34'	14'	7'	3'
16"	63'	38'	16'	8'	4'
18"	70'	42'	17'	8'	4'
20"	77'	46'	19'	9'	5'
24"	90'	54'	22'	11'	5'
30"	109'	65'	27'	13'	6'
36"	125'	75'	31'	15'	7'

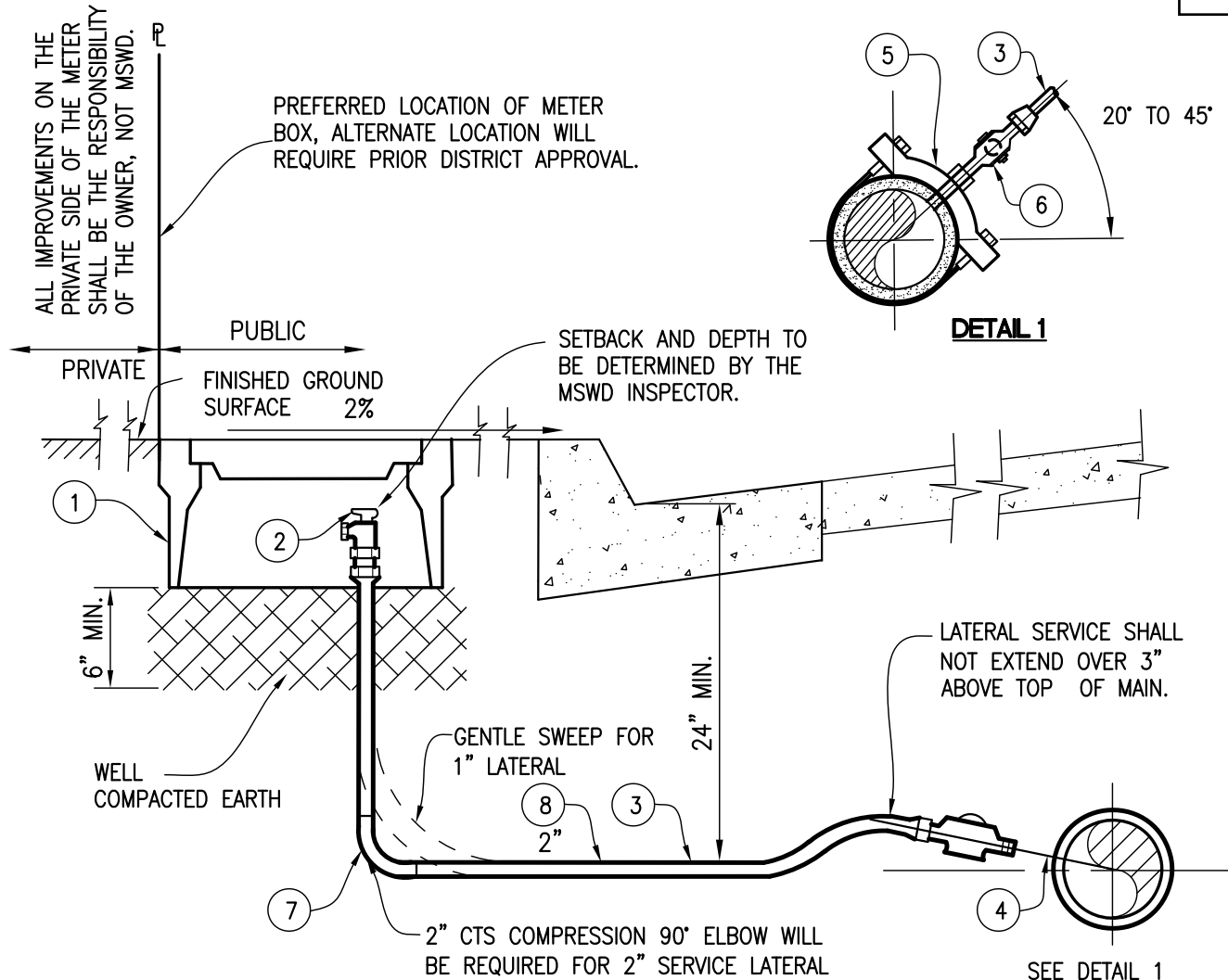
NOTES:

1. THE ABOVE REQUIREMENTS ARE FOR USE IN ADDITION TO REQUIRED THRUST BLOCKS.
2. RESTRAINED JOINTS WILL BE REQUIRED AT ALL FITTINGS, VALVES, AND ANY ADDITIONAL JOINT OCCURRING WITHIN THE GREATEST LENGTH SPECIFIED IN THE TABLE.
3. THE PIPE LENGTHS SHOWN ARE BASED ON A 100 PSI WORKING PRESSURE. FOR HIGHER PRESSURES, INCREASE THE PRESSURE RATIO TO 100.



RESTRAINED JOINT
REQUIREMENTS

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-08C



ITEM	No. Req'D.	DESCRIPTION	Mtl. #
①	1	D.F.W. GRAY POLYMER 5.25 OR 6B METER BOX AND READING LID	G-01 G-02
②	1	1" or 2" BALL ANGLE METER STOP	C-05-1 C-06-1
③	VARIABLE	1" or 2" x REQUIRED LENGTH TYPE "K" SOFT TEMPER COPPER	A-04-1 A-04-2
④	1	1" or 2" SERVICE CONNECTION. SEE DETAIL 1	N/A
⑤	1	BRONZE SERVICE SADDLE	L-01
⑥	1	1" OR 2" BALL CORP STOP, M.N.P.T. INLET x CTS OUTLET	C-01-1 C-02-2
⑦	1	2" CTS COMPRESSION ELBOW REQUIRED FOR 2" SERVICE	M-01-2
⑧	1	2" CTS x CTS COMPRESSION COUPLING REQUIRED FOR 2" SERVICE	M-02-2

NOTE:
PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.

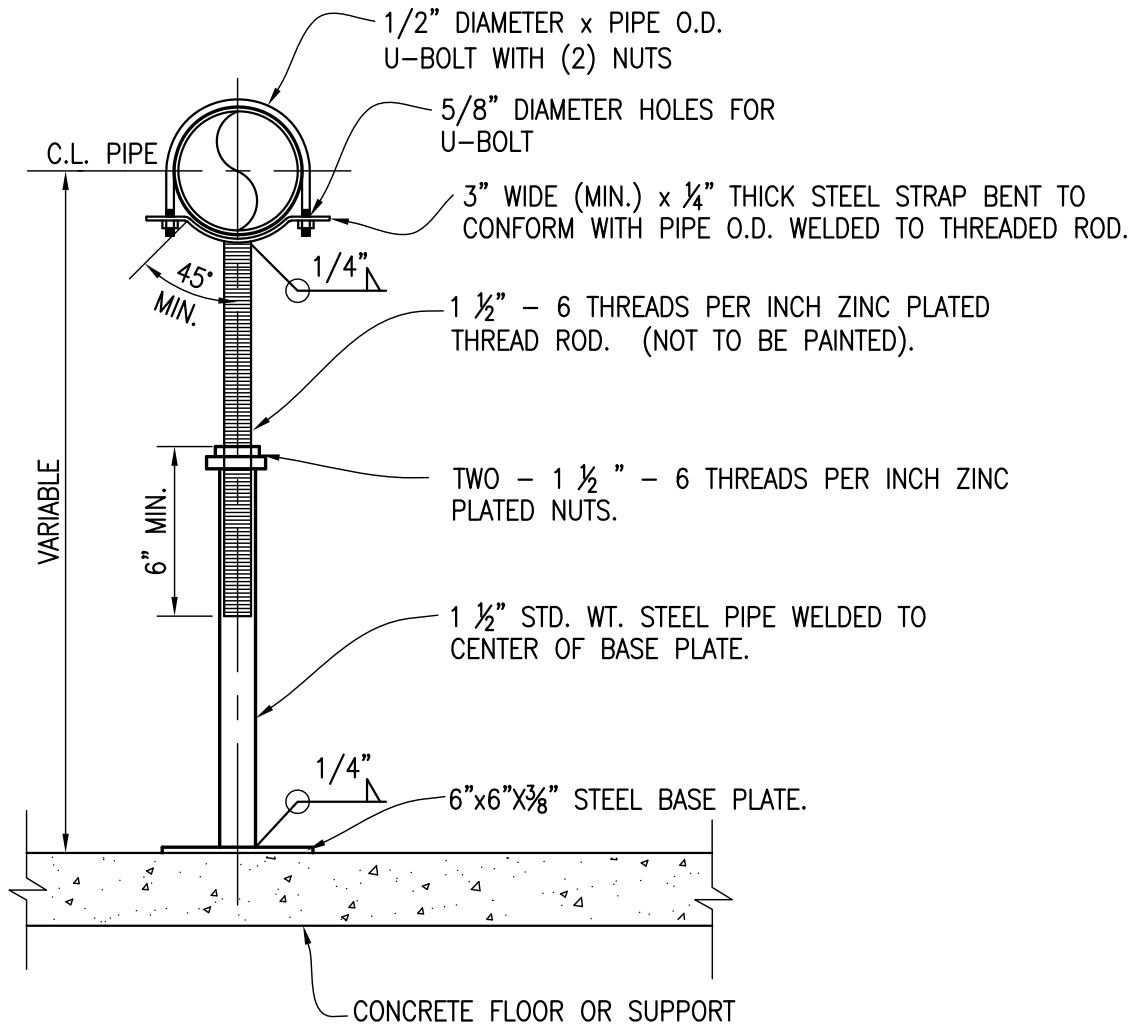


1" AND 2" DIAMETER
SERVICE LATERAL
INSTALLATION

Approved: _____
Brian Macy
General Manager

Drawn: MP Date: 1/31/2024

DRAWING No.
W-09



NOTE:

1. 3"x 1/4" STEEL STRAP SHALL BE FORMED TO HAVE FULL & UNIFORM CONTACT FOR FULL 90°.
2. PAINT PER MSWD MATERIAL LIST U-02 UNLESS SPECIFIED OTHERWISE ON PLANS.

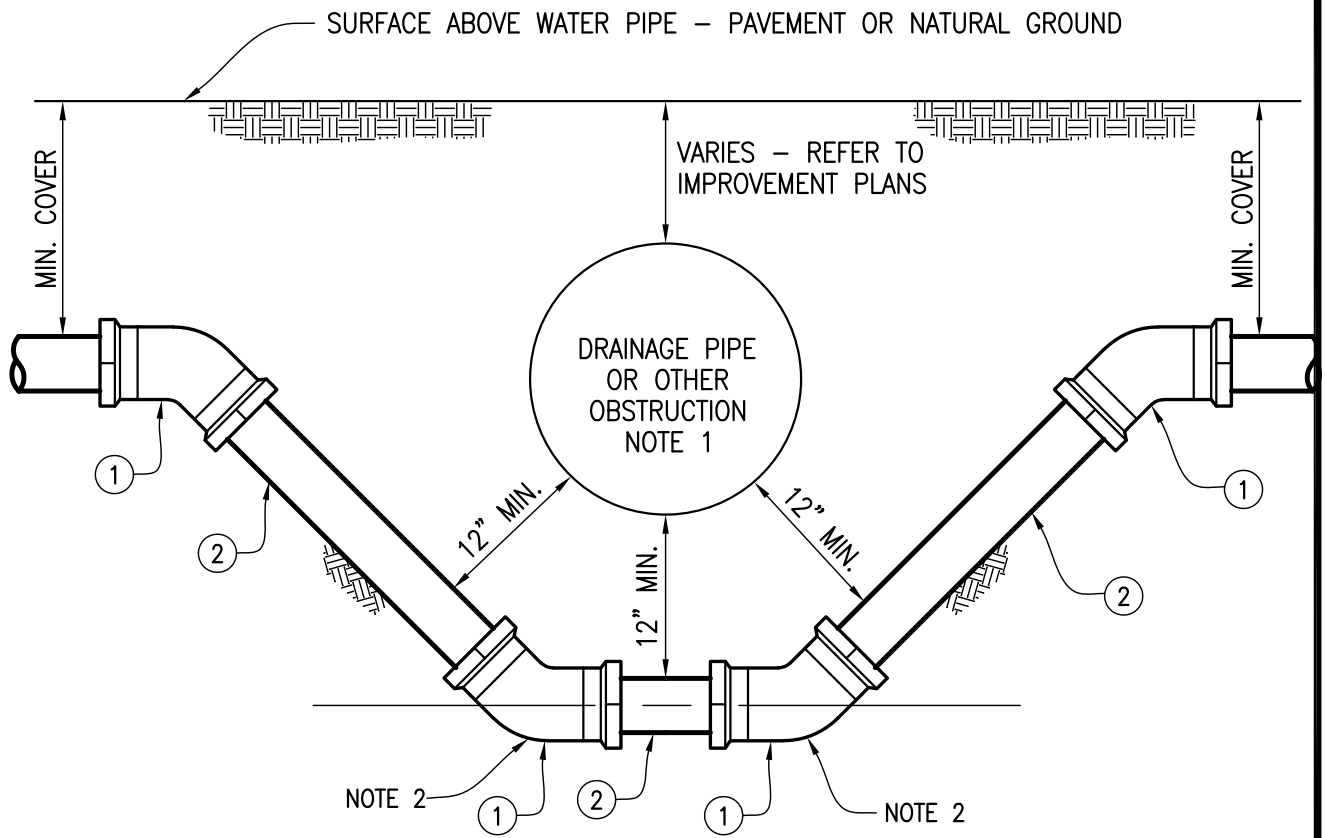


PIPE SUPPORT DETAIL

Approved: _____
 Brian Macy
 General Manager

Drawn: MP Date: 1/31/2024

DRAWING No.
 W-10



ITEM	No. Req'd.	SIZE & DESCRIPTION	MTL. LIST NO.
①	4	45° ELBOW - PIPE SIZE PER WATER PLAN	E-03-2
②	3	WATER PIPE - SIZE PER PLAN (LENGTH AS REQ'D)	A-03

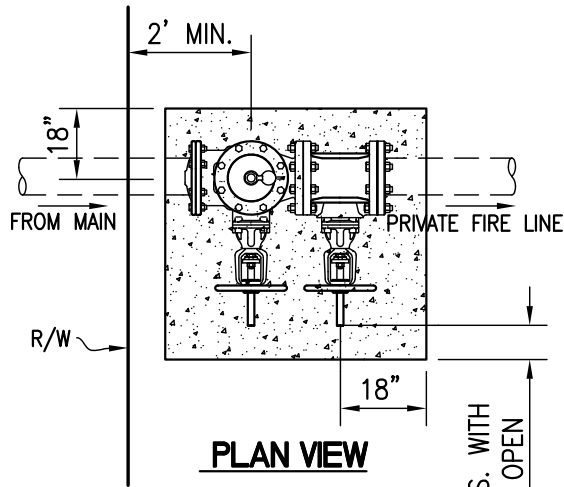
NOTES:

1. MINIMUM COVER SHALL BE 36" FOR 8" OR SMALLER PIPE, OR 48" FOR 12" OR LARGER PIPE OR FOR ANY PIPE IN UNPAVED AREAS.
2. DIMENSIONS AND DESCRIPTION AS SHOWN ON IMPROVEMENT PLANS AND/OR WATER PLANS. ALL FITTINGS SHOULD BE RESTRAINED JOINT M.J./PUSH-ON OR FLANGED.
3. PROVIDE THRUST BLOCKS PER STANDARD DWG NO. W-8 AND W-8A.
4. SPECIAL CROSSING AS SHOWN SHALL BE PROVIDED WHEREVER NOTED ON WATER PLANS OR WHERE CROSSING OVER OBSTRUCTION SHALL RESULT IN LESS THAN SPECIFIED MINIMUM COVER OVER WATER MAIN.
5. 2" BLOW-OFF SHALL BE PROVIDED PER STD. DWG. W-03 AT ALL UNDER-CROSSINGS.
6. AIR VALVE WILL BE REQUIRED IF UNDER-CROSSING CAUSES A HIGH POINT GREATER THAT ONE DIAMETER IN MAIN.



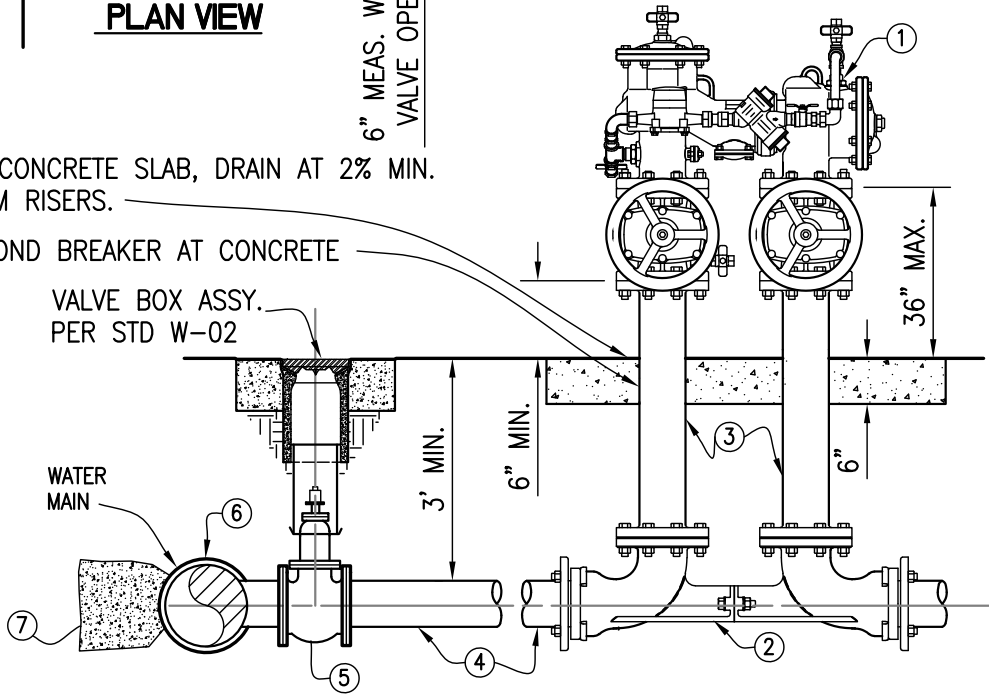
OBSTRUCTION UNDER CROSSING

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-11



- NOTES:**
1. DETECTOR CHECK ASSEMBLY SHALL BE LOCATED ON PRIVATE PROPERTY OUTSIDE OF THE PUBLIC RIGHT-OF-WAY.
 2. AREA WITHIN 2' OF VALVE ASSEMBLY SHALL BE MAINTAINED CLEAR OF ANY OBSTRUCTIONS TO ALLOW FOR INSPECTION AND MAINTENANCE.
 3. DETECTOR CHECK ASSEMBLY BELONGS TO THE PRIVATE PROPERTY OWNER BUT WILL BE TESTED AND MAINTAINED BY THE DISTRICT AT THE OWNER'S EXPENSE.
 4. MASK ALL COPPER, BRASS, NAME PLATES, AND METER ASSEMBLY AND PAINT DUCTILE IRON PER MSWD MATERIAL LIST U-02 DESERT TAN AND VALVE HANDLES U-03 SAFETY RED.

3250 PSI CONCRETE SLAB, DRAIN AT 2% MIN. AWAY FROM RISERS.
 PROVIDE BOND BREAKER AT CONCRETE



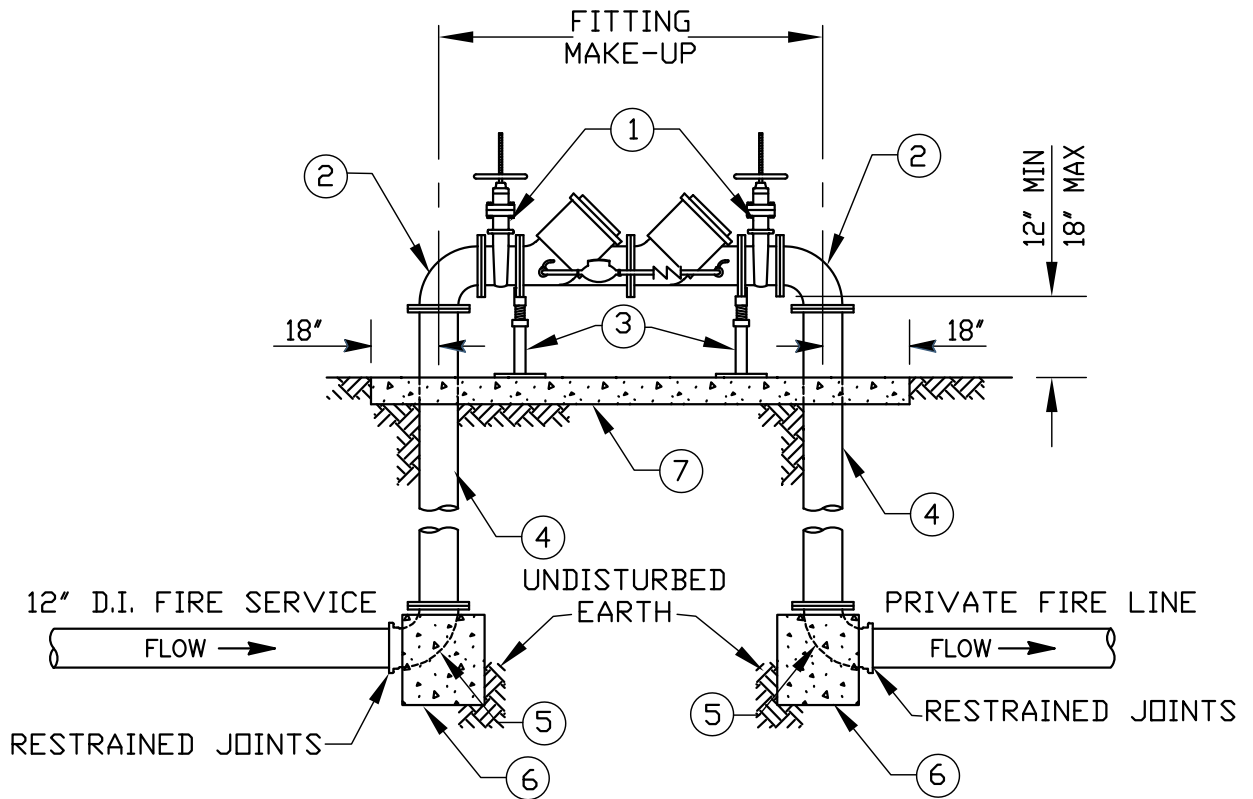
DETAIL SECTION

ITEM	No. Req'D.	DESCRIPTION	Matl. List#
①	1	4", 6", 8", OR 10" DOUBLE CHECK DETECTOR VALVE ASSEMBLY INCLUDING O.S.&Y. GATE VALVES	K-02-1
②	1	D.C.D.A. SIZE & MFR VALVE SETTER ASSEMBLY	K-02-2
③	2	D.C.D.A. SIZE D.I.P. FLANGED SPOOL, LENGTH AS REQUIRED	E-03-3
④	VARIES	D.C.D.A. SIZE DUCTILE IRON PIPE, LENGTH AS REQUIRED	A-03-1
⑤	1	D.C.D.A. SIZE GATE VALVE	B-01-2
⑥	1	MAIN SIZE x D.C.D.A. SIZE TEE	E-03-1
⑦	1	CONCRETE THRUST BLOCK PER W-08	N-02



4", 6", 8", OR 10" DOUBLE CHECK
 DETECTOR
 VALVE ASSEMBLY
 FOR ALL NEW INSTALLATIONS

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-12



NOTES:

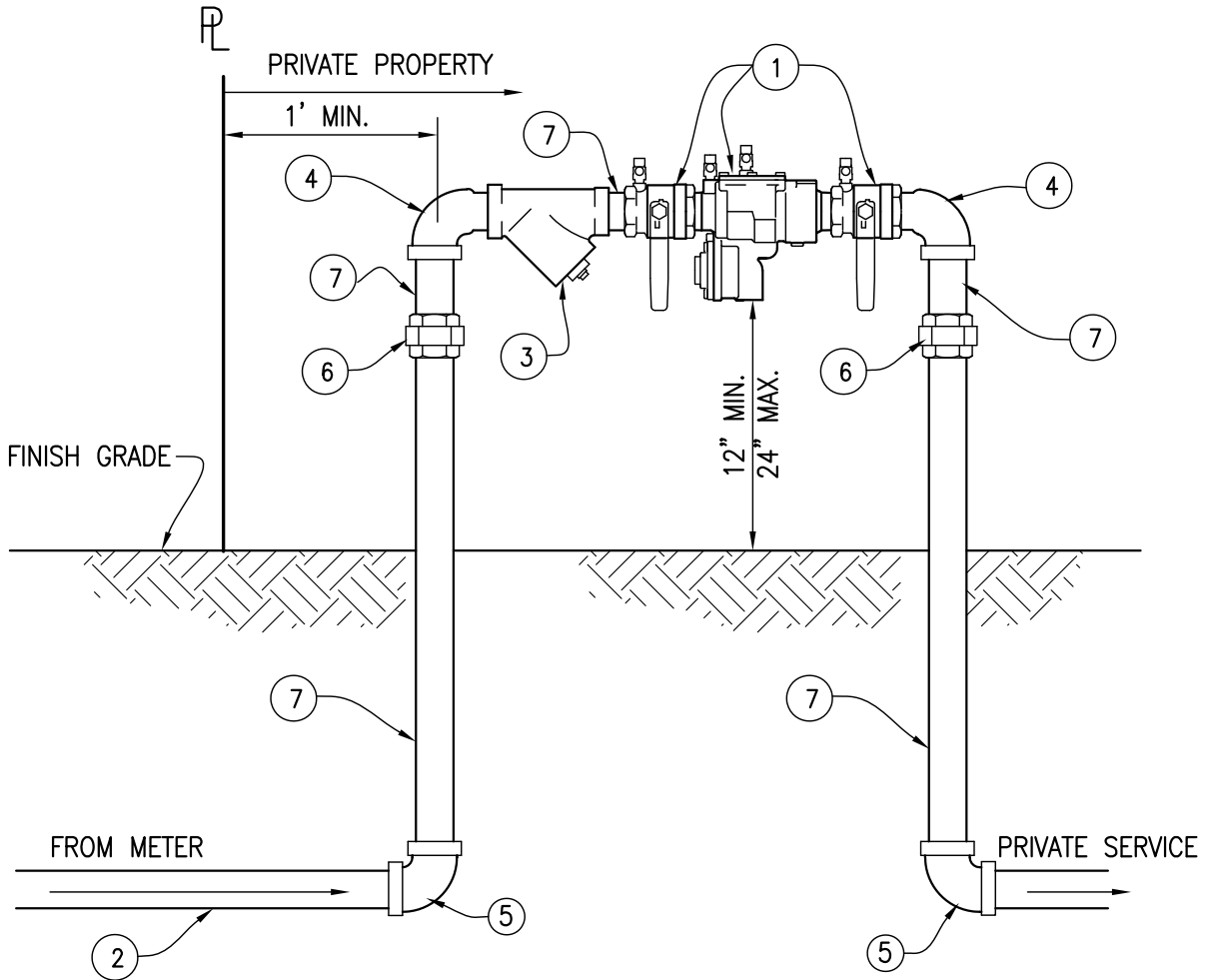
1. DETECTOR CHECK ASSEMBLY SHALL BE LOCATED ON PRIVATE PROPERTY 2' MIN. OUTSIDE OF THE PUBLIC RIGHT-OF-WAY.
2. AREA WITHIN 2' OF DCDA SLAB SHALL BE MAINTAINED CLEAR OF ANY OBSTRUCTIONS TO ALLOW FOR INSPECTION AND MAINTENANCE.
3. DETECTOR CHECK ASSEMBLY BELONGS TO THE PRIVATE PROPERTY OWNER BUT WILL BE TESTED AND MAINTAINED BY THE DISTRICT AT THE OWNERS EXPENSE.
4. ALL BRASS, METER AND NAME PLATES SHALL BE MASKED PRIOR TO PAINTING ALL DUCTILE IRON AND VALVES DESERT TAN PER MSWD MATERIAL LIST U-02 AND VALVE HANDLES SAFETY RED PER U-03.

ITEM	No. Req'D.	DESCRIPTION	Matl. List#
①	1	12" DOUBLE CHECK DETECTOR VALVE ASSEMBLY INCLUDING O.S.&Y. GATE VALVES	K-02-3
②	2	FLANGE x FLANGE DUCTILE IRON CEMENT MORTAR LINED 90° BEND	E-03-1
③	2	PIPE SUPPORTS PER MSWD STD. DWG. W-10, HEIGHT AS REQUIRED	N/A
④	2	FLANGE x FLANGE DUCTILE IRON CEMENT MORTAR LINED SPOOL	E-03-3
⑤	2	FLANGE x MJ RESTRAINED JOINT CEMENT MORTAR LINED 90° BEND	E-03-2
⑥	2	CONCRETE THRUST/ANCHOR BLOCK PER STD. DWG. W-08 & W-08A	N-02
⑦	1	4' WIDE x 6" THICK 3250 PSI CONCRETE SLAB 2% MIN. SLOPE	N-02



12" DOUBLE CHECK DETECTOR
ASSEMBLY INSTALLATION
MSWD PRIOR APPROVAL

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024
DRAWING No.
W-13



NOTES:

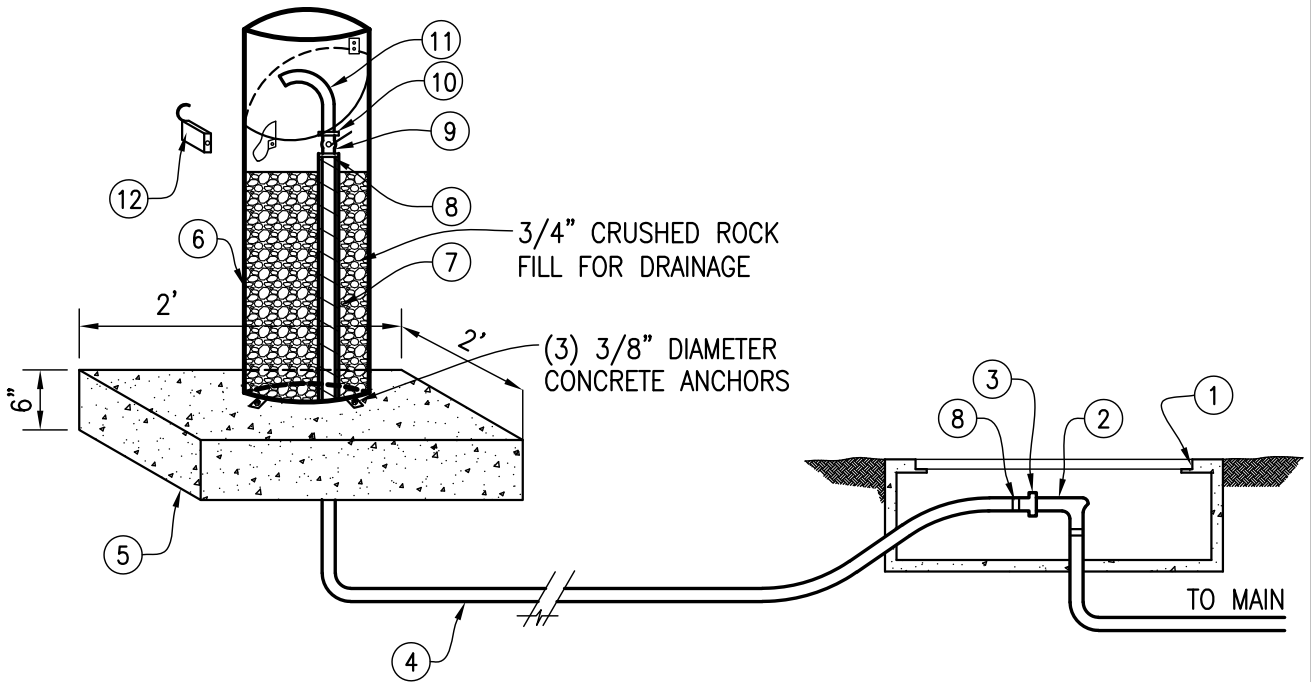
1. ALL PIPE AND FITTINGS TO BE THE SAME SIZE AS THE METER AND BACKFLOW PREVENTER ASSEMBLY.
2. DISTANCE FROM THE METER TO THE BACKFLOW DEVICE SHALL BE 3' MAXIMUM WITHOUT MSWD APPROVAL.
3. ASSEMBLY CAN BE PAINTED GRAY FOR DOMESTIC WATER SERVICE OR DARK GREEN OR TAN FOR LANDSCAPE SERVICE.
4. PROTECTIVE CAGE MAY BE INSTALLED AT THE OWNERS DISCRETION SO LONG AS MSWD HAS ACCESS FOR TESTING.

ITEM #	REQ'D	DESCRIPTION	MTL. #
①	1	REDUCED PRESSURE BACKFLOW PREVENTER ASSYEMBLY	K-01-1
②	VAR.	HARD BRASS PIPE 3' MAXIMUM	A-05-1
③	1	BRONZE WYE STRAINER	M-08
④	2	EXTRA HEAVY BRASS 90° STREET ELBOW	M-10
⑤	2	EXTRA HEAVY N.P.T. BRASS 90° ELBOW	M-11
⑥	2	EXTRA HEAVY BRASS UNION	M-12
⑦	5	EXTRA HEAVY BRASS PIPE NIPPLE N.P.T. x. VARIES	A-05-1



3/4", 1", 1 1/2", OR 2" REDUCED PRESSURE BACKFLOW PREVENTER

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-14

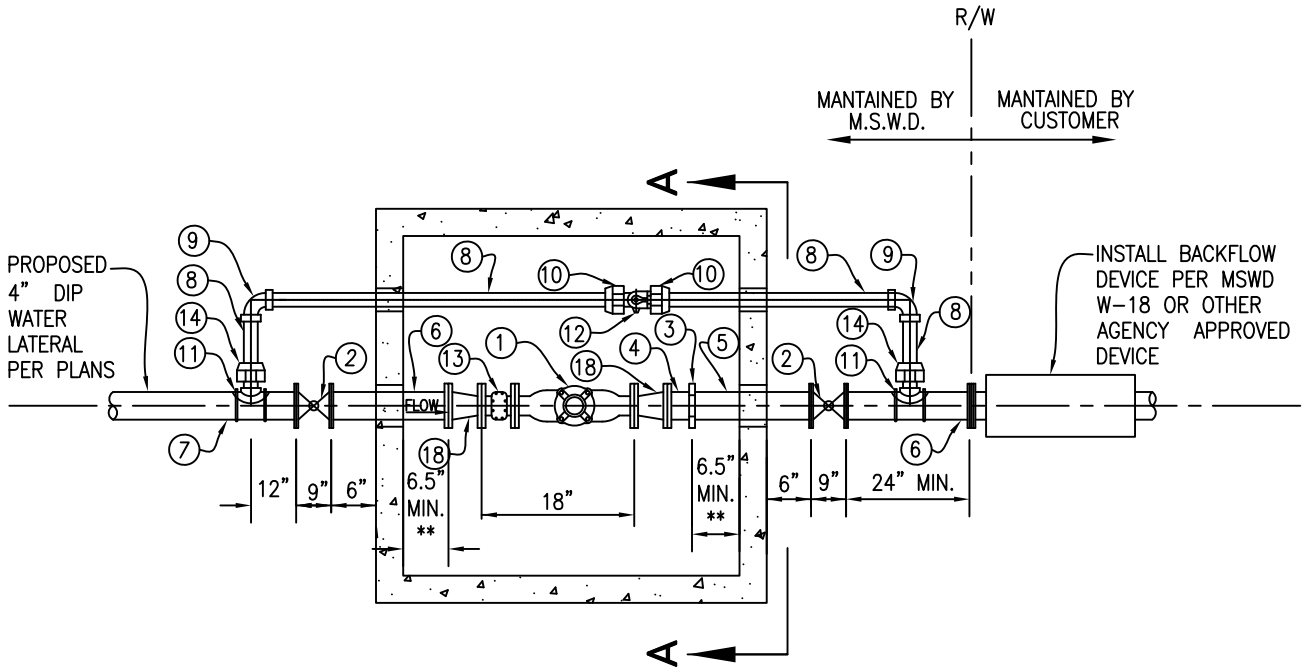


ITEM	#	REQ'D	DESCRIPTION	MTL. #
①	1		D.F.W. GRAY 5.25 POLYMER METER BOX AND LID	G-02
②	1		1" BALL ANGLE STOP	C-05-1
③	1		1" x 3/4" BRASS METER ADAPTER	P-04
④	VARIABLES		3/4" TYPE K COPPER TUBE	A-04-1
⑤	1		24" x 24" x 6" CEMENT PAD	N-02
⑥	1		SAMPLE STATION CANISTER, WTS 858 OR EQUAL	P-02
⑦	VARIABLES		PLUMBING INSULATION	N-20
⑧	2		3/4" M.P.T. x 3/4" CTS FERRULE FITTING	P-07
⑨	1		3/4" FULL PORT BRASS BALL VALVE	P-03
⑩	1		3/4" M.P.T. x 3/8" CTS FERRULE FITTING	P-01
⑪	1		3/8" COPPER GOOSE NECK	A-04-3
⑫	1		MASTER PADLOCK SUPPLIED BY MSWD	N/A
⑬	Varies		MSWD DESERT SAND PAINT FOR CANISTER ITEM *	U-02

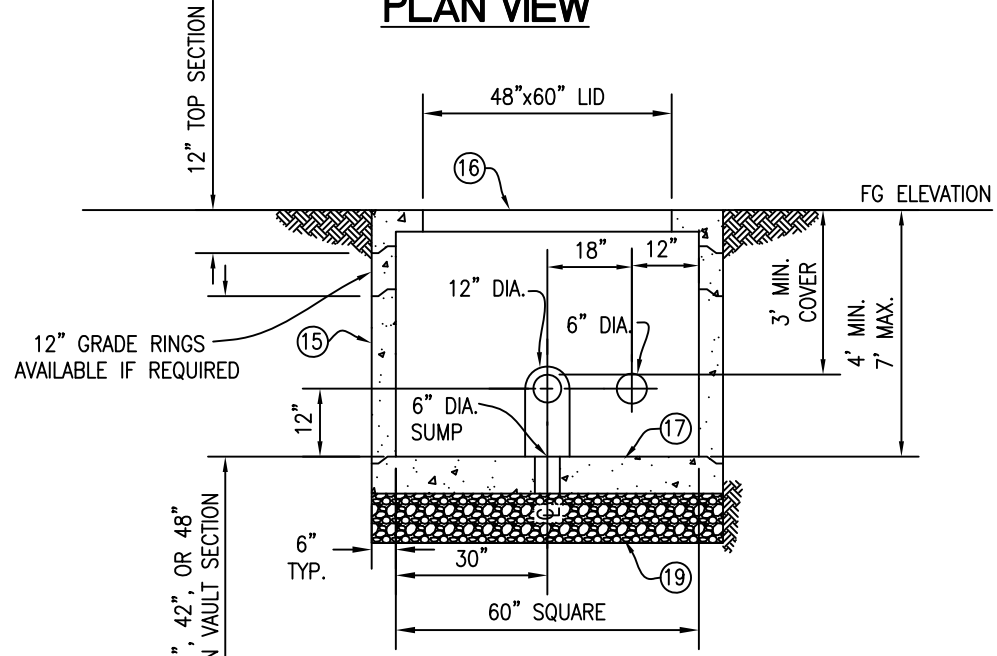


BACTERIOLOGICAL SAMPLE
STATION DETAIL
M.S.W.D. APPROVAL

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-15



PLAN VIEW



SECTION A-A

SEE W-16A FOR NOTES AND MATERIAL LIST



MSWD VAULT DETAIL
3" WATER METER INSTALLATION

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP date: 1/31/2024
 DRAWING No.
 W-16

MATERIAL LIST			
ITEM	QTY.	DESCRIPTION	MATL. LIST #
①	1	M.S.W.D. TO PROVIDE METER AT CONTRACTOR EXPENSE	F-01
②	2	4" RESILIENT SEAT FLANGED GATE VALVE	B-01-2
③	1	4" STYLE 77 VICTAULIC COUPLING	N-19
④	1	4" DIP FLG. x VICTAULIC SPOOL x 6" LONG	E-03-3
⑤	1	4" DIP FLG X VICTAULIC SPOOL (LENGTH VARIES)	E-03-3
⑥	2	4" FLANGED DIP SPOOL (LENGTH VARIES)	E-03-3
⑦	LF	4" DIP PIPE (FLANGED END)	E-03-3
⑧	15±	2" COPPER TUBING TYPE K	A-04-2
⑨	2	2" x 90° BRONZE CTS COMPRESSION	M-02-2
⑩	2	2" BRONZE CTS COMPRESSION x 2" MALE IRON PIPE THREAD (MIPT) ADAPT.	M-07-1
⑪	2	4" x 2" BRONZE DOUBLE STRAP SERVICE SADDLE PER MSWD W-09	L-01
⑫	1	2" BRASS CURB BALL STOP - FIPTxFIPT	C-04-1
⑬	1	M.S.W.D. TO PROVIDE STRAINER AT CONTRACTOR EXPENSE	F-02
⑭	2	2" MIPT x 2" CTS COMPRESSION BALL CORP. STOP	C-01-2
⑮	1	60"x 60" ID UTILITY BOX/VAULT	G-05
⑯	1	TORSION SPRING 2-PC LID: PARKWAY OR TRAFFIC COVER (ALUMINUM). 2" DIAMETER READ HOLE TO BE HOLE SAW CUT PER LOCATED PER M.S.W.D. INSPECTORS DIRECTION	G-05
⑰	1	PRECAST CONCRETE BASE W/6" SUMP	G-05
⑱	2	4" x 3" ECCENTRIC DIP FLANGED REDUCER	E-03-1
⑲	36 CF	12" THICK CRUSHED ROCK BASE	N/A

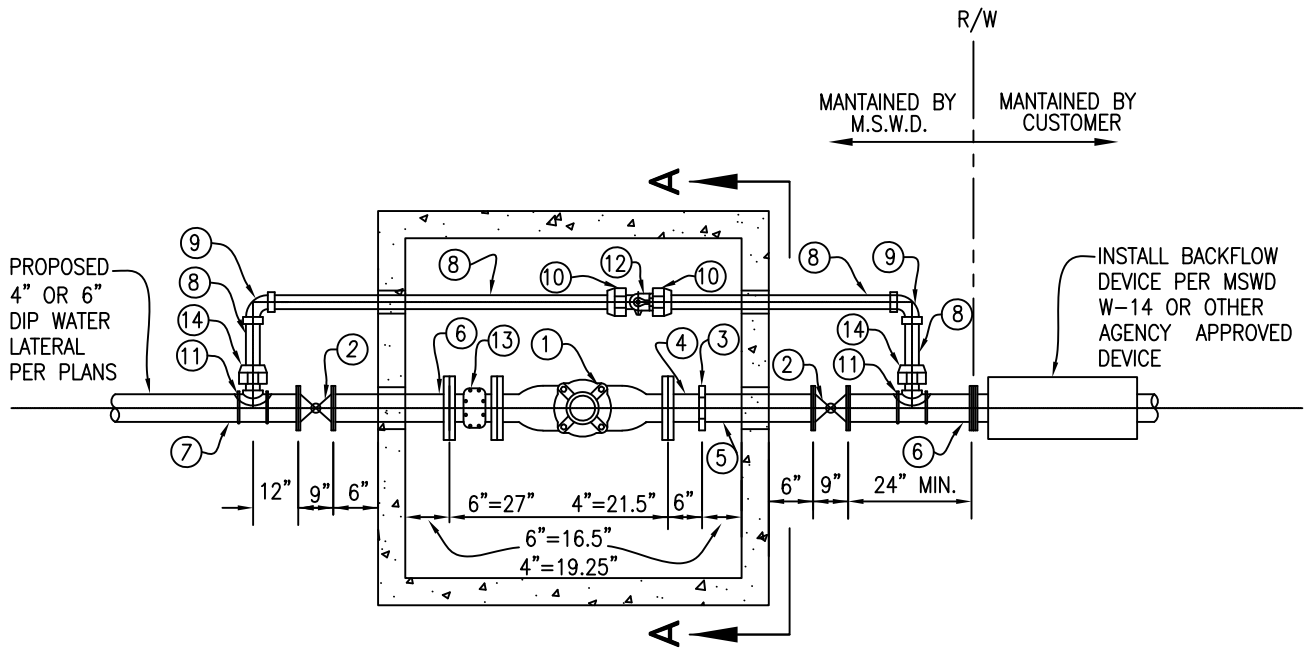
NOTES:

- 1. PROVIDE METER SUPPORT AS REQUIRED.
- ** 2. METER DIMENSIONS MAY VARY. CONTRACTOR SHALL VERIFY METER DIMENSIONS AND VARY CLEARANCE DIMENSIONS TO CENTER METER AND STRAINER IN UTILITY BOX WITH SPECIFIED CLEARANCES.
- 3. CABLE FOR METER REGISTER SHALL BE 20' LENGTH.
- 4. VAULT SHALL BE 60"x 60" J&R PRODUCTS NO. 1289 OR APPROVED EQUAL.
- 5. READ HOLE SHALL BE CUT WITH A 2" DIAMETER HOLE SAW AT A LOCATION DIRECTED BY THE INSPECTOR.
- 6. VAULT LID TO BE "U.S.F." 4' x 5' TPD, ALUMINUM DIAMOND PLATE, SPRING ASSIST PARKWAY COVER WITH S.S. STANDARD HARDWARE & OVERSIZED RECESSED PADLOCK HASP. OR APPROVED EQUAL.
- 7. ALL MATERIALS PER MSWD APPROVED MATERIAL LIST.
- 8. DEPTH OF METER SHALL BE 5 FT. MAX. FROM VAULT LID TO TOP OF METER AND STRAINER ASSEMBLY.
- 9. PROVIDE A MINIMUM OF 4" CLEARANCE BETWEEN PIPE AND KNOCK OUT HOLE WITH A MINIMUM OF 6" CLEARANCE ABOVE THE VAULT FLOOR.

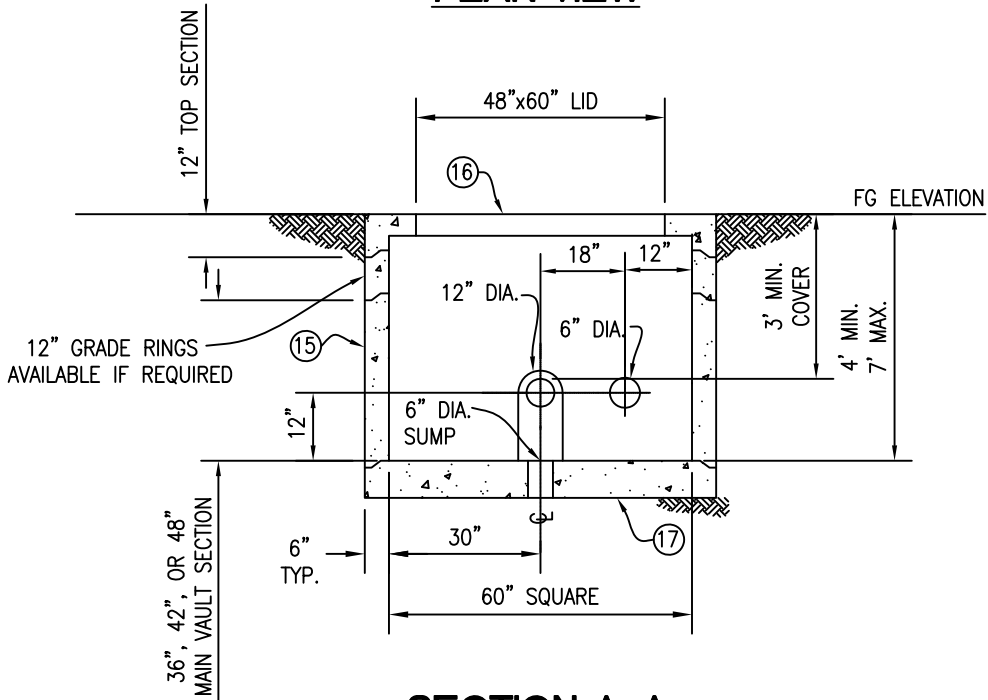


MSWD VAULT DETAIL
3" WATER METER INSTALLATION
NOTES AND MATERIAL LIST

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-16A



PLAN VIEW



SECTION A-A

SEE W-17A FOR NOTES AND MATERIAL LIST



MSWD VAULT DETAIL
4" OR 6" WATER METER
INSTALLATION

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024

DRAWING No.
W-17

MATERIAL LIST			
ITEM	QTY.	DESCRIPTION	MATL. LIST #
①	1	M.S.W.D. TO PROVIDE METER AT CONTRACTOR EXPENSE	F-01-1
②	2	4" OR 6" RESILIENT SEAT FLANGED GATE VALVE	B-01.2
③	1	4" OR 6" VICTAULIC COUPLING	N-19
④	1	4" OR 6" x 6" LONG FLG. X VICTAULIC DIP SPOOL	E-03-3
⑤	1	4" OR 6" DIP FLG X VICTAULIC SPOOL (LENGTH VARIES)	E-03-3
⑥	2	4" OR 6" FLANGED DIP SPOOL (LENGTH VARIES)	E-03-3
⑦	LF	4" OR 6" DIP PIPE (FLANGED END)	E-03-3
⑧	15±	2" COPPER TUBING TYPE K	A-04-2
⑨	2	2" x 90° BRONZE CTS COMPRESSION	M-02-2
⑩	2	2" BRONZE CTS COMPRESSION x 2" MALE IRON PIPE THREAD (MIPT) ADAPT.	M-07-1
⑪	2	4" x 2" BRONZE DOUBLE STRAP SERVICE SADDLE PER MSWD W-09	L-01
⑫	1	2" BRASS CURB BALL STOP - FIPTxFIPT	C-04-1
⑬	1	M.S.W.D. TO PROVIDE STRAINER AT CONTRACTOR EXPENSE	F-02-1
⑭	2	2" MIPT x 2" CTS COMPRESSION BALL CORP. STOP	C-01-2
⑮	1	UTILITY BOX/VAULT **	G-05
⑯	1	TORSION SPRING 2-PC LID: PARKWAY OR TRAFFIC COVER (ALUMINUM). 2" DIAMETER READ HOLE TO BE HOLE SAW CUT PER LOCATED PER M.S.W.D. INSPECTORS DIRECTION	G-05
⑰	1	PRECAST CONCRETE BASE W/8" SUMP ****	G-05
⑱	36 CF	12" THICK 3/4" CRUSHED ROCK BASE	N/A

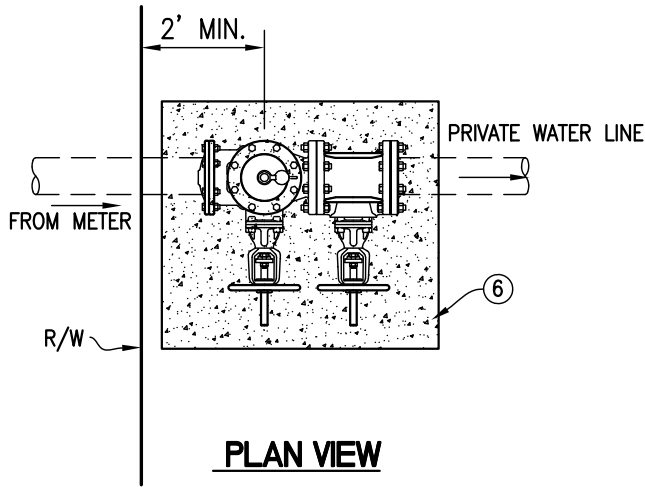
NOTES:

1. PROVIDE METER SUPPORT AS REQUIRED.
- ** 2. METER DIMENSIONS MAY VARY. CONTRACTOR SHALL VERIFY METER DIMENSIONS AND VARY CLEARANCE DIMENSIONS TO CENTER METER AND STRAINER IN UTILITY BOX WITH SPECIFIED CLEARANCES.
3. CABLE FOR METER REGISTER SHALL BE 20' LENGTH.
4. VAULT SHALL BE 60"x 60" J&R PRODUCTS NO. 1289 OR APPROVED EQUAL.
5. READ HOLE SHALL BE CUT WITH A 2" DIAMETER HOLE SAW AT A LOCATION DIRECTED BY THE INSPECTOR.
6. VAULT LID TO BE "U.S.F." 4' x 5' TPD, ALUMINUM DIAMOND PLATE, SPRING ASSIST PARKWAY COVER WITH S.S. STANDARD HARDWARE & OVERSIZED RECESSED PADLOCK HASP. OR APPROVED EQUAL.
7. ALL MATERIALS PER MSWD APPROVED MATERIAL LIST.
8. DEPTH OF METER SHALL BE 5 FT. MAX. FROM VAULT LID TO TOP OF METER AND STRAINER ASSEMBLY.
9. PROVIDE A MINIMUM OF 4" CLEARANCE BETWEEN PIPE AND KNOCK OUT HOLE WITH A MINIMUM OF 6" CLEARANCE ABOVE THE VAULT FLOOR.



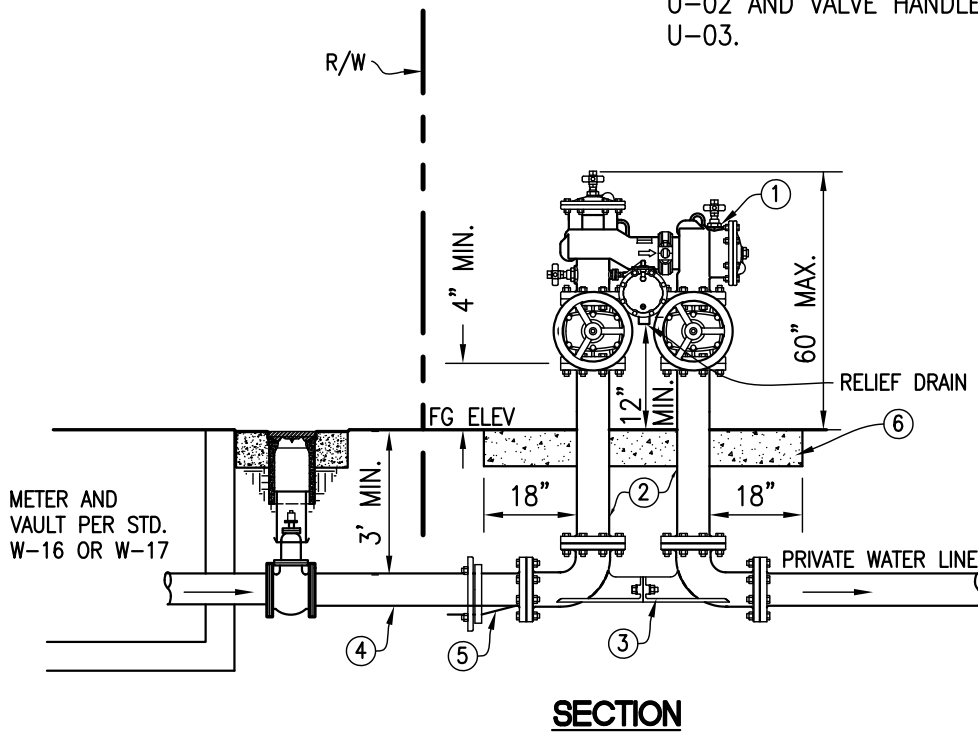
MSWD VAULT DETAIL
4" OR 6" WATER METER
INSTALLATION NOTES AND
MATERIAL LIST

Approved: _____
Brian Macy
General Manager
Drawn: MP Date: 1/31/2024
DRAWING No.
W-17A



NOTES:

1. REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SHALL BE LOCATED ON PRIVATE PROPERTY OUTSIDE OF THE PUBLIC RIGHT-OF-WAY.
2. 6" THICK CONCRETE HOUSE KEEPING PAD SHALL EXTEND 18" OUTSIDE OF ASSEMBLY ON ALL SIDES TO ALLOW FOR INSPECTION AND MAINTENANCE AND SHALL SLOPE 2% AWAY FROM RISERS.
3. R.P. ASSEMBLY BELONGS TO THE PRIVATE PROPERTY OWNER BUT WILL BE TESTED AND MAINTAINED BY THE DISTRICT AT THE OWNER'S EXPENSE.
4. ALL BRASS AND NAMEPLATES SHALL BE MASKED AND ALL DUCTILE IRON SHALL BE PAINTED MSWD DESERT TAN PER MATERIAL LIST U-02 AND VALVE HANDLES SAFETY RED PER U-03.

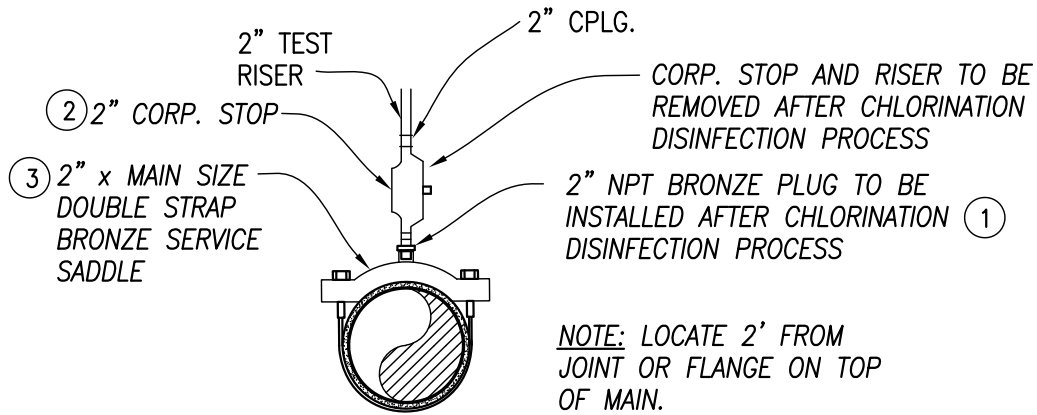


ITEM	No. Req'D.	DESCRIPTION	Matl. List#
①	1	METER SIZE REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY	K-01-2
②	2	METER SIZE DUCTILE IRON FLANGED SPOOL, LENGTH AS REQUIRED	E-03-3
③	1	METER SIZE FLG.xFLG. VALVE SETTER ASSEMBLY (BY R.P. MFR.)	K-01-3
④	VARIES	METER SIZE OR 4" MIN. D.I.P PIPE SPOOL, LENGTH AS REQUIRED	E-03-3
⑤	1*	4"x 3" D.I. ECCENTRIC REDUCER TOP FLAT, FOR 3" METER SIZE ONLY	E-03-1
⑥	VARIES	6" THICK 3250 PSI CONCRETE HOUSE KEEPING SLAB	N-02



3", 4", AND 6" REDUCED PRESSURE BACKFLOW PREVENTER

Approved: Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-18



ELEVATION VIEW

ITEM	No. Req'D.	DESCRIPTION	Matl. List#
①	1	2" DOMESTIC M.N.P.T. BRONZE PLUG	M-09
②	1	2" BALL CORP STOP, M.N.P.T. INLET AND OUTLET	C-02-2
③	1	2" x MAIN SIZE DOUBLE STRAP BRONZE SERVICE SADDLE	L-01

NOTES:

1. PIPE THREADS SHALL BE CLEAN AND SHARP AND SEALED WITH AN APPROVED JOINT COMPOUND.
2. RISER SHALL INCLUDE SHUT-OFF VALVE AND FITTINGS AS NEEDED.
3. ASSEMBLY SHALL BE PROTECTED WITHIN PVC RISER CAPPED WITH A TRAFFIC COVER AS APPROVED BY THE MSWD INSPECTOR WHEN LOCATED WITHIN A STREET OR OTHER AREA SUBJECT TO TRAFFIC.

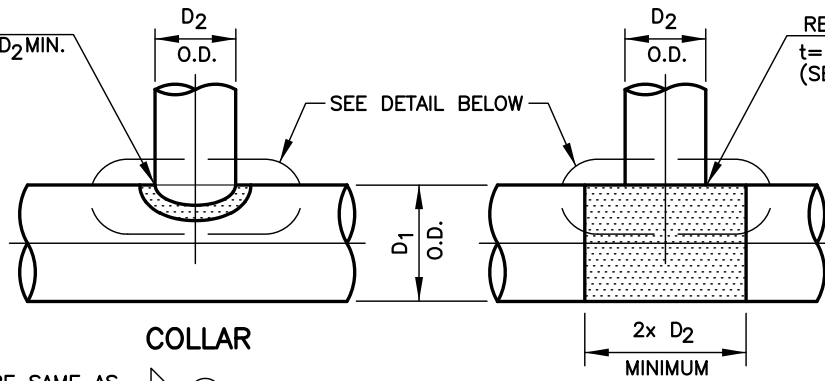


TEMPORARY CHLORINATION POINT
(T.C.P.)

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-19

REINFORCING COLLAR
 I.D. = D_2 , O.D. = $2 \times D_2$ MIN.
 t = THICKNESS
 (SEE CHART BELOW)

REINFORCING WRAPPER
 t = THICKNESS
 (SEE CHART BELOW)



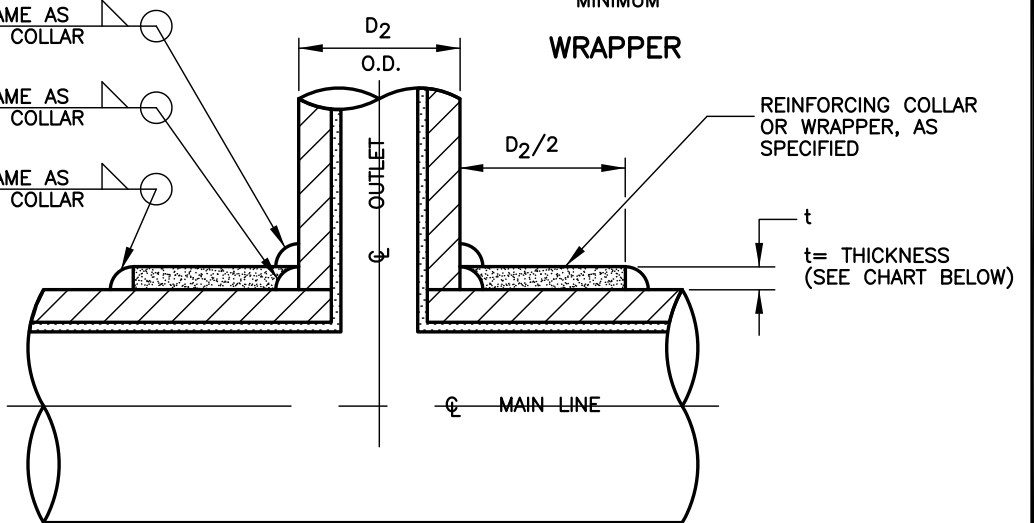
COLLAR

WRAPPER

SIZE OF WELD SHALL BE SAME AS THICKNESS OF REINFORCING COLLAR OR WRAPPER

SIZE OF WELD SHALL BE SAME AS THICKNESS OF REINFORCING COLLAR OR WRAPPER

SIZE OF WELD SHALL BE SAME AS THICKNESS OF REINFORCING COLLAR OR WRAPPER



DETAIL

REINFORCING COLLAR		
D_1 (INCHES MIN.)	D_2 (INCHES MIN.)	t (INCHES MIN.)
10	4	0.1345
12	4	0.1345
14	4-6	0.1345
16	4-6	0.1345
18	4-8	0.1345
20	4-8	0.1345
24	4-10	0.1875
30	4-14	0.2500
36	4-16	0.3125
42	4-20	0.3125

REINFORCING WRAPPER		
D_1 (INCHES MIN.)	D_2 (INCHES MIN.)	t (INCHES MIN.)
4-8	4-8	0.1345
10	6-10	0.1345
12	6-12	0.1345
14	8-14	0.1345
16	8-16	0.1345
18	10-18	0.1345
20	10-20	0.1345
24	12-24	0.1875
30	16-30	0.2500
36	18-36	0.3125
42	24-42	0.3125

SEE DWG W-20B FOR NOTES



CML/CMC STEEL OR STEEL PIPE
 TAP CONNECTION

Approved: Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-20A

INSTALLATION NOTES FOR TAPS LARGER THAN 4"

1. ALL WORK SHALL BE PERFORMED UNDER DIRECT MSWD INSPECTION.
2. NO TAPS OR CONNECTIONS SHALL BE MADE WITHIN 2' OF A BELL OR CONNECTION.
3. ALL EXISTING MORTAR COATING SHALL BE REMOVED FROM THE PIPE IN AREAS TO BE WELDED, STEEL SHALL BE FREE OF ANT DIRT, OILS, AND RUST PRIOR TO WELDING.
4. THIS METHOD CAN BE USED FOR PERFORMING HOT TAPS BY USE OF A CML/CMC FLANGED FITTING.
5. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER APPROVED FOR WORK ON PUBLIC WATER SYSTEMS.
6. AFTER COMPLETION OF ALL WELDING, PIPES AND WELDS SHALL BE CLEANED AND FREE OF ANY LOOSE SLAG, GREASE, OILS, DIRT, OR OTHER CONTAMINATION TO THE SATISFACTION OF THE INSPECTOR.
7. ALL EXPOSED STEEL SHALL THEN BE REPAIRED WITH REINFORCED MORTAR AS SPECIFIED BELOW.

INSTALLATION NOTES 1" AND 2" TAPS

1. ALL WORK SHALL BE PERFORMED UNDER DIRECT MSWD INSPECTION.
2. NO TAPS OR CONNECTIONS SHALL BE MADE WITHIN 2' OF A BELL OR CONNECTION.
3. ALL EXISTING MORTAR COATING SHALL BE REMOVED FROM THE PIPE IN AREAS TO BE WELDED, STEEL SHALL BE FREE OF ANY DIRT, OILS, AND RUST PRIOR TO WELDING.
4. STANDARD STEEL NPT THREADED HALF COUPLING SHALL BE WELDED IN THE POSITION SHOWN FOR THE APPLICABLE USE ON THE MSWD STANDARD DRAWING FOR THE SERVICE, BLOWOFF, AIR VAC, OR TCP.
5. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER APPROVED FOR WORK ON PUBLIC WATER SYSTEMS.
6. AFTER COMPLETION OF ALL WELDING, PIPES AND WELDS SHALL BE CLEANED AND FREE OF ANY LOOSE SLAG, GREASE, OILS, DIRT, OR OTHER CONTAMINATION TO THE SATISFACTION OF THE INSPECTOR.
7. ALL EXPOSED STEEL SHALL THEN BE REPAIRED WITH MORTAR AS SPECIFIED BELOW.

MORTAR COATING NOTES:

1. ALL WORK SHALL BE PERFORMED UNDER DIRECT MSWD INSPECTION.
2. REPAIR MORTAR SHALL BE COMMERCIAL GRADE, QUIKRETE FAST SET REPAIR MORTAR OR APPROVED EQUAL.
3. CONCRETE BONDING ADHESIVE, QUIKRETE OR APPROVED EQUAL SHALL BE ADDED TO THE MORTAR MIX FOR ADDED BONDING STRENGTH.
4. MORTAR SHALL BE REINFORCED WITH 1/4" x 1/4" GALVANIZED WELDED WIRE MESH. REINFORCING MAY BE OMITTED FOR SMALL AREAS WITH THE INSPECTORS APPROVAL.
5. FOR LARGE REPAIR AREAS, BONDING ADHESIVE SHALL BE BRUSHED ONTO THE PIPE IMMEDIATELY PRIOR TO MORTAR PLACEMENT.
6. ALL MORTAR SHALL BE CURED TO THE SATISFACTION OF THE INSPECTOR PRIOR TO BACKFILL.

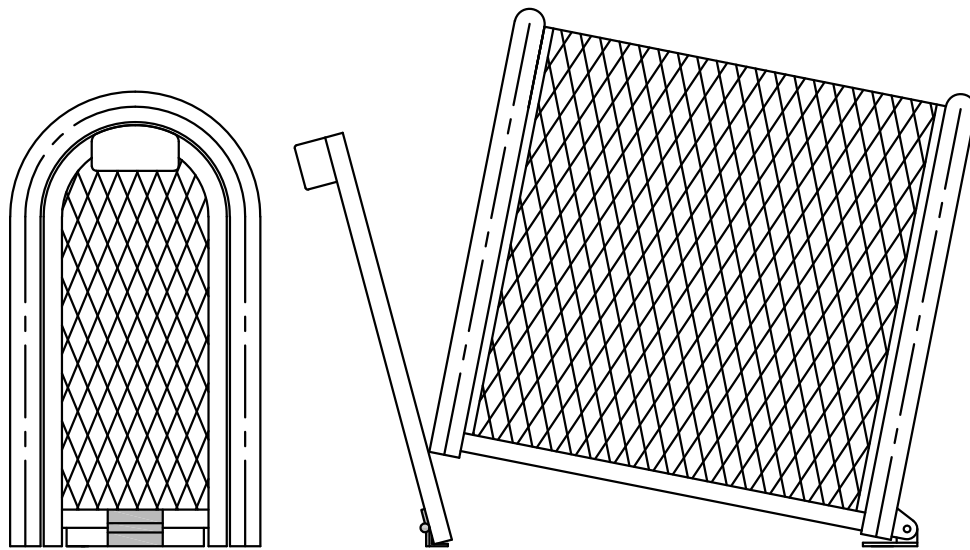


CML/CMC TAPPING NOTES

Approved: _____
 Brian Macy
 General Manager

Drawn: MP Date: 1/31/2024

DRAWING No.
 W-20B



FRONT VIEW

SIDE VIEW

INTERNAL DIMENSIONS 10" W X 24" H X 30" L

NOTES:

1. ENCLOSURE TO BE ANCHORED ON A MINIMUM OF 28" X 46" X 6" THICK CONCRETE PAD. USE 560-C-325 CONCRETE.
2. ENCLOSURE: GUARDSHACK MODEL HGS-2.
3. ALL CAGES IN GREENERY MUST BE POWDER COATED - FOREST GREEN.
4. ALL CAGES IN DESERT LANDSCAPE MUST BE POWDER COATED - WOODLANDS TAN.
5. THE USE OF ANY OTHER CAGE MUST BE APPROVED BY MSWD PRIOR TO INSTALLATION.
6. USE OF THIS IS OPTIONAL AND SHALL BE AT THE DEVELOPERS EXPENSE.
7. THE DEVELOPER SHALL VERIFY THAT THE STATED SIZE WILL ENCLOSE THE REQUIRED BACKFLOW DEVICE



OPTIONAL BACKFLOW CAGE

Approved: _____
 Brian Macy
 General Manager
 Drawn: MP Date: 1/31/2024
 DRAWING No.
 W-21

AGENDA STAFF REPORT



MEETING NAME: REGULAR BOARD MEETING
MEETING DATE(S): FEBRUARY 15 & 20, 2024
FROM: ERIC WECK – ENGINEERING MANAGER
FOR: ACTION X DIRECTION _____ INFORMATION _____

CONTRACT AMENDMENTS FOR CONSTRUCTION AND CONSTRUCTION SUPPORT AND INSPECTION SERVICES FOR THE WELL 42 PROJECT

STAFF RECOMMENDATION

Authorize the General Manager to execute contract amendments with AECOM Technical Services, Inc., EnviroLogic Resources, Inc., and TKE Engineering, Inc. for additional engineering services during construction and with Rollapart Buildings, Inc. for additional construction services during the construction of the Well 42 Project in the amount of \$113,605.00.

SUMMARY

Construction of the Well 42 Project was put on hold in September 2021 due to modifications proposed to the pumping and electrical equipment. Following the completion of well testing, MSWD identified potential operational savings by reducing the pump horsepower to better serve production capacity needs in the 1400 and 1240 pressure zones. In addition, due to ongoing changes with the State Water Board Department of Drinking Water (DDW) regulations, MSWD elected to change the well equipment lubrication system from oil to water to ensure pump longevity and reduce the potential for water quality concerns and violation with the State Water Board DDW. These changes resulted in substantial changes to the contract documents by AECOM Technical Services, Inc. (Design Engineer of Record), additional project and construction management by EnviroLogic Resources, Inc. (Project Hydrogeologist), additional project and construction management by TKE Engineering, Inc. (Construction Manager). In addition, due to the construction stoppage, Rollapart Buildings, Inc. incurred additional costs for mobilization, demobilization, and storage of the prefabricated well building.

ANALYSIS

Staff typically contracts with a construction management firm to oversee project construction and with the Engineer of Record for engineering services during construction. Due to changes to the project scope by MSWD during construction, the construction management and engineering services have exceeded their original scope. In addition, there are aspects of the design changes and resulting construction impacts that the construction management and engineering teams are required to evaluate and assist with to ensure the design intent is maintained through construction, well startup, and operation.

FISCAL IMPACT AND STRATEGIC PLAN IMPLEMENTATION

The cost for all work authorized under this contract has been included within the overall Well 42 project budget.

ATTACHMENTS

Contract Amendments for AECOM Technical Services, Inc., EnviroLogic Resources, Inc., Rollapart Buildings, Inc., and TKE Engineering, Inc.

FINANCIAL DATA	
Cost Associated with this action:	\$113,605.00
Current FY cost:	\$2.7 million
Future FY cost:	\$2.039 million
Is it covered in current year budget:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Budget adjustment needed:	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If yes, year needed:	NA
All previous contracts including dates, amounts and board approvals are attached or have been made available.	
FUNDING SOURCES	
Source of funds:	Operating
BID/Job#	11147
Current BID/Job balance	\$4.739 million
Balance remaining if approved:	\$4.739 million

**AMENDMENT TO
Agreement for Professional Services
Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240
Telephone 760-329-6448 – FAX 760-329-2482**

TO: **AECOM Technical Service, Inc.
6200 S. Quebec Street
Greenwood Village, CO 80111**

DATE: _____

FORTH AMENDMENT TO CONTRACT AGREEMENT

1. This amendment (the "Amendment") is hereby made by Mission Springs Water District and AECOM Technical Services, Inc., parties to an agreement for **Design Update Services for the Site Work and Well Fitting for the Well 42 Project** (the "Agreement"), dated July 18, 2019.
2. In exchange for the promises herein and other good and valuable consideration, the sufficiency of which both parties acknowledged, it is mutually agreed by and between the undersigned contracting parties that the Agreement is amended as follows:

This Amendment will increase the contract not to exceed budget from \$105,798.00 to \$144,416.00 (\$38,618.00 increase).
3. Except as set forth in this Amendment, the Agreement is unchanged and shall continue in full force and effect in accordance with its terms. If there is conflict between this Amendment and the Agreement the terms of this amendment will prevail.

Instructions: Sign and return. Upon acceptance a copy will be signed by its authorized representative and promptly returned to you. Insert the names of your authorized representative(s) below.

Accepted:

Mission Springs Water District

Consultant:

AECOM Technical Services, Inc.
(Business Name)

By: _____
Brian Macy

Title General Manager

By: _____
Tim Volz

Title Vice-President

Other authorized representative(s):

Eric Weck
Engineering Manager

Other authorized representative(s):

June 8, 2023

Mr. Danny Friend
Missions Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240-3711

Subject: Change Order for Construction Management Services for Well 42

Dear Danny:

Per the request of Steve Ledbetter at TKE Engineering per email dated 4/24/23; AECOM Technical Services, Inc. (AECOM) has prepared the following Change Order proposal to provide continuing engineering services during the Construction Management Services for Well 42. This includes reviewing the electrical submittals and electrical related RFIs.

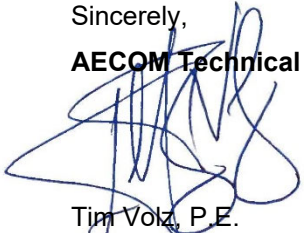
This request includes addressing Contractors Request for Information (RFI) during construction. The CM services include electrical system RFIs, and review of Process and Instrumentation and Controls (P&IDs). Also included is on-going Project Management during the CM period.

AECOM assumes this will be based on a Time and Materials (T&M) as was the original contract for Well 42 modifications. AECOM will respond to RFI and submittal review only when requested by MSWD and their representatives. As such, an accurate estimate for engineering fees during construction related services is difficult to do. AECOM will track the change order original versus, spent and remaining budgets and at about the 80% spent level, AECOM will notify MSWD if an additional Change Order will be necessary or if services completed at that time will be adequate.

We look forward to supporting Mission Springs Water District in successful completion of this task assignment. Please contact me at 303-740-3950 or tim.volz@aecom.com if you have questions or require additional information.

Sincerely,

AECOM Technical Service, Inc.



Tim Volz, P.E.
Vice-President
Authorized Representative

CC: Steve Ledbetter

1. CONSTRUCTION MANAGEMENT (CM) SERVICES

AECOM Construction Management Service includes the following:

- 1.1 Responding to Contractor Request for Information (RFI) during the construction phase.
- 1.2 Review of electrical related RFIs and submittals as noted in emails from TKE Engineering/Steve Ledbetter 1/17/23, 4/24/23, and 5/9/23.
- 1.3 Respond to follow up reviews on the electrical RFI and submittal review comments returned on May 22.

2. PROJECT MANAGEMENT

Project Management approach is to continue with the PM tasks set forth in the original contract. Included PM tasks through construction. We assume there will be no travel requirements.

3. SCHEDULE SUMMARY

Task Assignment milestones have been estimated as follows:

- For period estimated at 9 months of construction operation.

4. FEE ESTIMATE

Based on the above approach AECOM estimates the Time and Materials not to exceed fee of \$38,618.

5. ASSUMPTIONS AND BASIS OF FEE

5.1. Overall Task Assignment

1. AECOM has not included any site visits for this project.
2. RollApart Buildings Inc. and EnviroLogic are not a subconsultant to AECOM.
3. All coordination with RollApart Buildings Inc. regarding delivery and construction will be conducted between RollApart Buildings Inc., MSWD and the General Contractor.

ATTACHMENT 1
Mission Springs Well 42 Bidding and Construction Management (CM) Services
Desert Springs, CA

Prepared: SC
Approved: TV

Date: 30-May-23
Date: 30-May-23

June 8, 2023
Construction Services Estimate for Continuation

Task Number	Description	LABOR HOURS BY CLASSIFICATION										TOTAL HOURS	LABOR Budget	SUB COST	ODC COST	TOTAL COST		
		Project Assistant	Drafter	Civil Engineer	Civil Engineer	Project Manager	Civil Engineer (Drainage)	Structural Engineer	Electrical Engineer	Senior Electrical Engineer	Principal-in-Charge							
		Initials BW Billing Rate \$44 \$137	Initials DS \$30 \$95	Initials KM \$51 \$169	Initials GZ \$51 \$154	Initials SC \$86 \$258	Initials 0 \$69 \$220	Initials AN \$53 \$154	Initials BS \$69 \$210	Initials CA \$82 \$258	Initials TV \$118 \$320							
Task 1	Construction Management Services																	
1.1	Electrical RFIs - Construction (9 RFIs per e-mail 5-1-23)				6	1			2	8					17	\$3,666		\$3,666
1.2	RFI - Construction (Assume 5 RFIs)				5	1			5	10					21	\$4,658		\$4,658
1.3	Electrical Submittals (12 submittals per e-mail 5-1-23)				8	1			2	8					19	\$3,974		\$3,974
1.4	Additional Submittals (Assume 8 submittals)					10	1		8	16					35	\$7,606		\$7,606
1.5	P&IDs submittals			8			1		16	6					31	\$6,518		\$6,518
1.6	Record Drawings		40	4						6					50	\$6,024		\$6,024
1.7	Project Close out	4					2								6	\$1,064		\$1,064
	Subtotal Task 1	4	40	12	29	7	0	0	33	54	0			179	\$33,510	\$0	\$0	\$33,510
Task 2	Construction Management Services																	
2.1	Project Management and Invoicing (Assume 9 month completion)	18					9						1		28	\$5,108		\$5,108
	Subtotal Task 2	18	0	0	0	9	0	0	0	0	0	1		28	\$5,108	\$0	\$0	\$5,108
	Project Totals	22	40	12	29	16	0	0	33	54	1			207	\$38,618	\$0	\$0	\$38,618

**AMENDMENT TO
Agreement for Professional Services
Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240
Telephone 760-329-6448 – FAX 760-329-2482**

TO: **RollApart Buildings, Inc.
Rasmussen Construction Co.
2815 Cushman Road
Fallon, Nevada 89406**

DATE: February 20, 2024

PROJECT DIR#: 344411

FIFTH AMENDMENT TO CONTRACT AGREEMENT

1. This amendment (the "Amendment") is hereby made by Mission Springs Water District and RollApart Buildings, Inc., parties to an agreement for **Well 42 Building Design and Construction Project** (the "Agreement"), dated October 18, 2019.
2. In exchange for the promises herein and other good and valuable consideration, the sufficiency of which both parties acknowledged, it is mutually agreed by and between the undersigned contracting parties that the Agreement is amended as follows:

This Amendment will increase the contract not to exceed budget from \$179,138.00 to \$198,743.00 (\$19,605.00 increase) and extend the term to ninety (90) days following the completion of Project construction.

3. Except as set forth in this Amendment, the Agreement is unchanged and shall continue in full force and effect in accordance with its terms. If there is conflict between this Amendment and the Agreement the terms of this amendment will prevail.

Instructions: Sign and return originals. Upon acceptance a copy will be signed by its authorized representative and promptly returned to you. Insert the names of your authorized representative(s) below.

Accepted:

Mission Springs Water District

Consultant:

RollApart Buildings, Inc.
(Business Name)

By: Brian Macy

By: Dave Rasmussen

Title General Manager

Title President

Other authorized representative(s):

Other authorized representative(s):

Eric Weck
Engineering Manager

**AMENDMENT TO
Agreement for Professional Services
Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240
Telephone 760-329-6448 – FAX 760-329-2482**

TO: TKE Engineering, Inc.
2305 Chicago Avenue
Riverside, CA 92507

DATE: _____

THIRD AMENDMENT TO CONTRACT AGREEMENT

1. This amendment (the "Amendment") is hereby made by Mission Springs Water District and TKE Engineering, Inc., parties to an agreement for **Well 42 Project Construction Management and Inspection Services** (the "Agreement"), dated November 18, 2020.
2. In exchange for the promises herein and other good and valuable consideration, the sufficiency of which both parties acknowledged, it is mutually agreed by and between the undersigned contracting parties that the Agreement is amended as follows:

This Amendment will increase the contract not to exceed budget from \$178,300.00 to \$208,300.00 (\$30,000 increase).
3. Except as set forth in this Amendment, the Agreement is unchanged and shall continue in full force and effect in accordance with its terms. If there is conflict between this Amendment and the Agreement the terms of this amendment will prevail.

Instructions: Sign and return originals. Upon acceptance a copy will be signed by its authorized representative and promptly returned to you. Insert the names of your authorized representative(s) below.

Accepted:
Mission Springs Water District

Consultant:
TKE Engineering, Inc.

(Business Name)

By: _____
Brian Macy

By: _____
Steve Ledbetter

Title General Manager

Title Vice President

Other authorized representative(s):
Eric Weck
Engineering Manager

Other authorized representative(s):
Michael Thornton
President

Terry Renner
Senior Vice President



December 1, 2023

Mr. Eric Weck, P.E.
 Engineering Manager
Mission Springs Water District
 66575 Second Street
 Desert Hot Springs, CA 92240

Subject: Well 42 Project Construction Management and Inspection Services
 Budget Increase Request

Dear Mr. Weck:

TKE Engineering, Inc. (TKE) is providing construction management and inspection services to the District for the Well 42 Project. Following the completion of well drilling and development in late 2021, the District desired to modify the proposed pump from 600 HP to 400 HP and construction was put on-hold at that time. At this time, MSWD directed TKE to continue providing construction support services for the Well 42 project even though it was for services not covered by our original scope.

In early 2022, the District elected to convert the well from oil lubricated to water lubricated. Following field testing and additional consideration by MSWD staff through August 2022, TKE was directed to move forward with coordinating the requested changes for a water lubricated 400 HP pump. These changes required TKE to coordinate revisions to the plans and specification by AECOM, additional review and coordination with MSWD and the contractor (Layne Christian Company), and additional coordination, review, and approval of revised submittals for the pumping and electrical equipment. As of November 2023, all changes to the contract documents have been completed and the well pump, motor, and electrical system submittals have been revised and approved for construction.

Through October 2021 and November 2023, TKE had expended approximately \$38,320.00 (approximately \$1,533 per month) on out-of-scope services in support of the Well 42 project to implement the changes directed by MSWD. Said services over the 25-month period included:

- On-going coordination with MSWD, AECOM, and Layne Christensen.
- Bi-Weekly meeting with MSWD and Layne Christensen, and meetings with AECOM and equipment manufacturers (i.e., Xylem and Tesco) as-needed.
- Research, analysis and preparation of a tech memo regarding water lubrication and water flushing systems proposed for Well 42, including recommended improvements.
- Coordinate and assist MSWD with water modeling analysis of the 1240 and 1400 Pressure Zones.
- Preparation of construction bulletins for changes to the project.

- Responding to Requests for Information.
- Reviewing and processing progress payments and invoices.
- Preparation, review, and processing of change order requests.

In review of TKE's contract budget and the remaining construction schedule, we are requesting a time and materials not to exceed budget increase in the amount of \$30,000 (approximately 200 man-hours) to continue to provide construction management and inspection services, as originally proposed, through the completion of the Well 42 Project. Our requested budget increase equates to approximately 22 hours per month over the next 9-months through construction completion. Please note, TKE has and will continue to maintain our original staff billing rates from 2019 through the completion of the project. This constitutes a 20% discount in comparison with our current rates.

TKE is available to meet with District staff to discuss the requested extra work and the project budget upon your request. If you have any questions, please advise.

Sincerely,



Steven W. Ledbetter, P.E.
Vice President
TKE Engineering, Inc.

AGENDA STAFF REPORT



MEETING NAME: REGULAR BOARD MEETING
MEETING DATE(S): FEBRUARY 15 & 20, 2024
FROM: ERIC WECK – ENGINEERING MANAGER
FOR: ACTION X DIRECTION INFORMATION

PURCHASE OF UTILITY EASEMENT FOR THE REGIONAL WATER RECLAMATION FACILITY MONITORING WELL ON APN 669-110-001

STAFF RECOMMENDATION

Authorize the General Manager to take the necessary actions to negotiate, purchase, and record a permanent utility easement for a monitoring well on a portion of real property in Riverside County, APN 669-110-001.

SUMMARY

As part of the Nancy Wright Regional Water Reclamation Facility (NWRWRF) waste discharge requirements permit (Order R7-2020-0011) with the California Regional Water Quality Control Board Colorado River Basin Region, Mission Springs Water District (MSWD) is required to install a groundwater monitoring well network to monitor changes to groundwater quality. MSWD has completed construction for two of the three required monitoring wells. The third is located downgradient of the NWRWRF site on private property (APN 669-110-001). Following the completion of an appraisal and discussion with the property owner, staff desires to complete the purchase and recording of a permanent easement to allow for the access, construction, and maintenance of a monitoring well.

ANALYSIS

The requested easement is an approximately 10,700-square-foot underground utility easement on a 51.71-acre larger parcel with frontage on the south side of 20th Avenue, east of Little Morongo Road. In June 2023, following initial discussions with the underlying property owner, MSWD contracted with Capital Realty Analysts to complete an appraisal of the proposed easement to develop a fair market value estimate for the subject property easement acquisition. The final appraisal report was completed in December 2023 and identified a fair market value of \$2,000.00 for the proposed utility easement. The property owner has reviewed the appraisal report and agrees with the findings. As such, staff is requesting authorization to complete the negotiations, purchase, and recording of said utility easement on a portion of APN 669-110-001.

FISCAL IMPACT AND STRATEGIC PLAN IMPLEMENTATION

The grant of easement for APN 669-110-001 will have a fiscal impact of \$2,000.00 on the District. In addition, filing the grant of easement with the County of Riverside has nominal fee of \$10.

ATTACHMENTS

Appraisal Report, dated December 18, 2023
 Grant of Easement Deed, with Legal Description and Plat Certificate of Acceptance

FINANCIAL DATA		
Cost Associated with this action:	\$2,010.00	
Current FY cost:	\$2,010.00	
Future FY cost:	-0-	
Is it covered in current year budget:	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Budget adjustment needed:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
If yes, year needed:	NA	
All previous contracts including dates, amounts and board approvals are attached or have been made available.		
FUNDING SOURCES		
Source of funds:	Grant	
BID/Job#	11424	
Current BID/Job balance	\$51,000,000	
Balance remaining if approved:	\$51,000,000	

±10,482-ft² Underground Utility Easement

South Side of 20th Avenue, East of Little Morongo Road, Desert Hot Springs, CA

Appraisal Report

Market Value Estimate

Fee Simple Estate – As-Proposed



Prepared For:

Mr. Steven Ledbetter, P.E.
TKE Engineering Consultants
2305 Chicago Avenue
Riverside, CA 92507
sledbetter@tkeengineering.com

Date of Appraisal Report:

December 18, 2023

Date of Value:

December 6, 2023

CRA File #: 23-2490

2669 Oakcrest Lane, Santa Ynez, CA 93460

CIRIA
CAPITAL REALTY ANALYSTS

James Dingman • (805) 693-4725 • jim@realtyadvisor.com

© 2023 Capital Realty Analysts, Inc.

December 18, 2023

Mr. Steven Ledbetter, P.E.
TKE Engineering Consultants
2305 Chicago Avenue
Riverside, CA 92507
sledbetter@tkeengineering.com

RE: A Fair Market Value Estimate of Total Compensation of a ±10,482-ft² Underground Utility Easement Located on the South Side of 20th Avenue and East of Little Morongo Road, Desert Hot Springs, CA. Also Known as a Portion of Riverside County Assessor's Parcel Number 669-110-001.

Mr. Ledbetter:

With client authorization, the following is a prepared Appraisal Report presenting an opinion of the requested fair market value estimate of the total compensation amount for the subject property on the date of value of December 6, 2023. TKE Engineering Consultants, Mission Springs Water District, and the property owner are the intended users of this Appraisal Report. The applied valuation represents the subject property's market value in an as-proposed condition on the date of value. This appraisal analysis utilizes the guidelines established by the 2020/2023 Uniform Standards of Professional Appraisal Practice. The depth and scope of reporting are consistent with the intended use of the Appraisal Report.

The defined subject property is a ±10,482-ft² underground utility easement on a ±51.71-acre Larger Parcel with frontage on the south side of 20th Avenue. The proposed easement acquisition by the Mission Springs Water District is for a groundwater monitoring well site. This Appraisal Report develops a fair market value estimate for the subject property easement acquisition.

The subject property's Larger Parcel is zoned under the Residential Rural Desert (R-RD) zoning designation per the City of Desert Hot Springs. As of July 7, 2023, and December 6, 2023, site inspections, the Larger Parcel is a raw desert parcel. At the request of the client and intended users, the value of the subject property is based on the as-is condition of the subject site.

I have based this Appraisal Report on current economic conditions as of the date of value. The Appraisal Report identifies the subject property and the market area. It explains the market data and analysis, leading to my value estimates. An adequate understanding of the reported value estimates is incomplete without this report's Assumptions and Limiting Conditions section. The intended users of this report should read this section before relying on any information or analysis presented in this Appraisal Report. There are personal property items that appear in the subject photographs of this report. These items are not part of the subject or included in the final value estimates.

The following Appraisal Report was performed in conformance with acceptable principles and techniques in the valuation of real property in accordance with the State of California Code of Civil Procedure, Title 7, Chapter 4, Article 1, Section 1245.010.

This report is also subject to the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute and the Uniform Standards of Professional Appraisal Practice (USPAP).

One Hypothetical Condition is applied in this Appraisal Report: (1) The easement is acquired and designed as presented on the date of value. The subject property title is assumed to be clear and marketable, and the information provided to us, both private and public, is accurate and reliable.


Based on the available data and applied analysis, it is my opinion that the fair market value estimate of total compensation of the proposed underground utility easement on the subject property on a date of value of December 6, 2023, is as follows:

Value Estimates	DOV	Estate	Final Value
Fair Market Value As-Proposed	6-Dec-23	Perpetual Easement	\$2,000

I have no personal interest in the subject property, either past, present, or contemplated, and certify that my employment was not dependent upon producing a particular value or value within a given range. No fee received or receivable in the future for the employment of services is in any way contingent on the opinions reported herein.

If the intended users of this report have any questions concerning the conclusions or analysis presented, please contact me directly, and thank you for the opportunity to be of service.

Respectfully submitted,
Capital Realty Analysts, Inc.



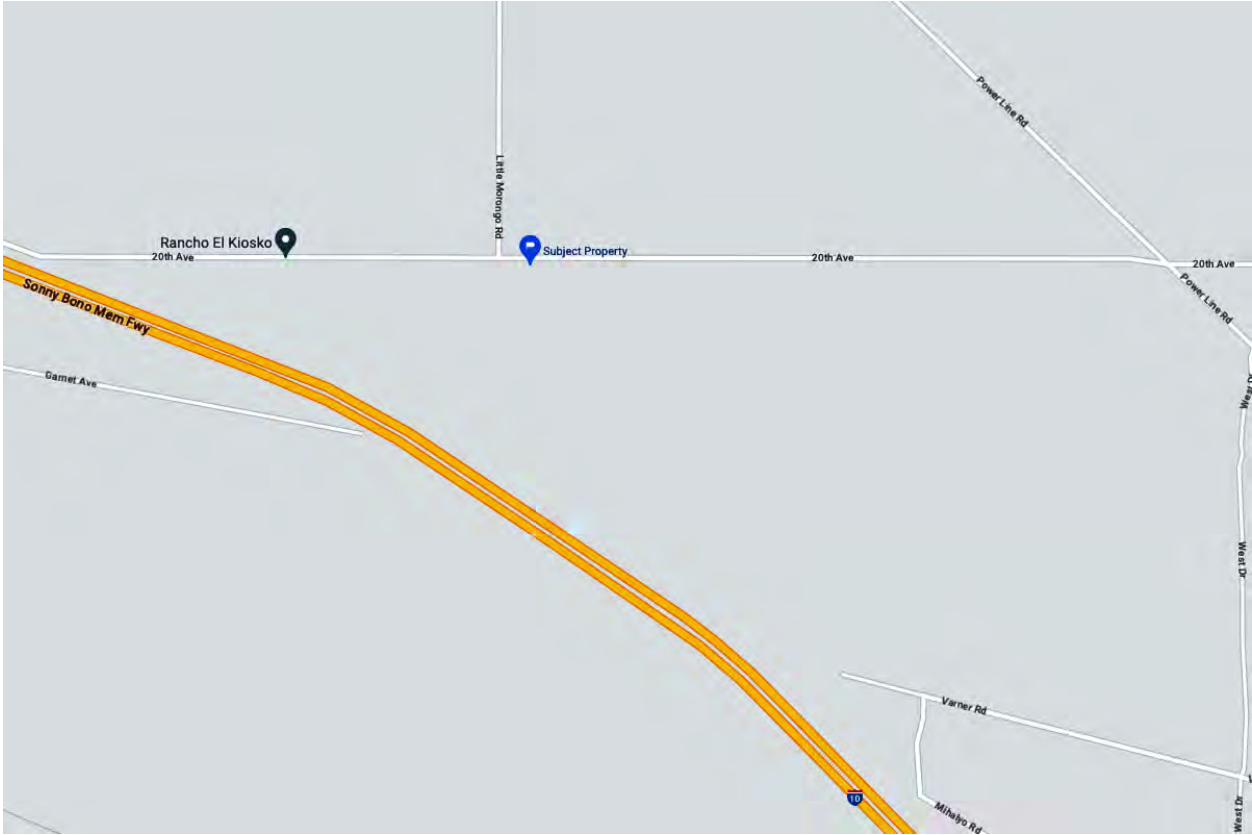
James Dingman
State Certification No.: AG025869
Expiration Date: March 2, 2025

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Summary of Important Facts and Conclusions

Client: TKE Engineering Consultants
Intended Users: Client, landowner, and Mission Springs Water District
Property Type: Vacant Residential Land
Location: Larger Parcel – Southeast corner of 20th Avenue, and Little Morongo Road, Desert Hot Springs, CA
Location Coordinates: 33°54'11.59"N 116°31'37.82"W
Larger Parcel: ±51.71 acres ±2,252,488-ft²
Easement Acquisition: ±0.24 acres ±10,482-ft²
Elevation/Flood Zone: 704' above sea level Zone X (unshaded)
APN: POR APN 669-110-001, Riverside County, CA



Census Tract: 445.24/2154
Type of Report: Appraisal Report
Purpose of the Appraisal: Market Value estimate of a ±10,482-ft² underground utility easement as-proposed
Intended Use: The intended use of this appraisal is to assist the client with an easement acquisition.

Date of Valuation	Dates of Inspection	Date of Report
December 6, 2023	July 7, 2023 / December 6, 2023	December 18, 2023
Owner of Record:	Leslie L Chou	

Summary of Important Facts and Conclusions

Ownership History:	The current owner acquired the larger parcel in December 1996 for a recorded \$1,000,000 and has held the property since that time.
Existing Improvements:	None – vacant land
Proposed Improvements:	±10,482-ft ² underground utility easement
Topography:	Undulating, raw desert terrain
Zoning:	R-RD, Residential Rural Desert, Desert Hot Springs, CA
Land Use:	Residential Rural Desert (1 du/ 5 ac)
Utilities:	All available to the site
Easements & Encumbrances:	No title report for the subject property was presented for review. This report assumes there are no atypical easements, conditions, title exceptions or encumbrances that would have an adverse impact on the marketability, functional utility, or sale of the subject site. A legal opinion could be obtained from a qualified title expert as to the actual marketability of the subject's title.
Highest and Best Use:	To hold for future development or price appreciation
Final Value Estimate:	Based on the available data and applied analysis, it is my opinion that the requested fair market value estimate and total compensation for the underground utility easement as-proposed on December 6, 2023, is as follows:

Value Estimates	DOV	Estate	Final Value
Fair Market Value As-Proposed	6-Dec-23	Perpetual Easement	\$2,000

Scope of the Appraisal

Appraisal Problem

The appraisal assignment presents my analysis and opinion of the fair market value of a planned $\pm 10,482\text{-ft}^2$ underground utility easement located on the south side of 20th Avenue, east of Little Morongo Road in Desert Hot Springs, CA, also known as a portion of Riverside County Assessor's Parcel Number POR 669-110-001.

The subject property is comprised of residentially zoned land positioned in the southern portion of Desert Hot Springs, CA. The Larger Parcel associated with the subject property is determined based on continuity, the unity of ownership and unity of use. As such, the Larger Parcel is best defined as two adjacent parcels currently with a single ownership. Both adjacent properties are owned under a common ownership listed as Leslie L Chou. These include APNs 669-110-001 & 669-120-001. The following table illustrates the sizes of the Larger Parcel, the planned easement acquisition, and the Remainder Parcel.

Well Site Acquisition	Acres	Square Feet
Larger Parcel	± 51.71 acres	$\pm 2,252,488\text{-ft}^2$
Easement Acquisition	± 0.24 acres	$\pm 10,482\text{-ft}^2$
Remainder Parcel	± 51.47 acres	$\pm 2,242,006\text{-ft}^2$

The planned acquisition is $\pm 10,482\text{-ft}^2$ in site area and will be acquired as a perpetual easement. The planned acquirer is the Mission Springs Water District.

An underground utility easement is not a common economic unit, and sales of any type are atypical in the market. The valuation process requires a value estimate of the Larger Parcel before and after the site is acquired.

The acquisition does not alter the subject's Larger Parcel's highest and best use as-vacant or as-proposed in the before or after condition. Based on my severance damages and benefits analysis, the proposed acquisition has no material or economic impact on the existing land. The planned easement acquisition by the Mission Springs Water District is for an as-proposed groundwater monitoring well site. In the as-is condition, the easement area is raw land.

I was provided with preliminary site calculations and site engineering for this analysis. No title report was provided, and the analysis assumes there are no atypical easements, conditions, title exceptions, or encumbrances that would have an adverse impact on the marketability, functional utility, or sale of the subject site. A legal opinion could be obtained from a qualified title expert as to the actual marketability of the subject's title. I conducted a physical site inspection of the subject property on July 7, 2023 and again on December 6, 2023.

I reviewed the site plans supplied by the client and inspected the subject property on the date of value. For the appraisal modeling, I have applied a sales comparison approach of the Larger Parcel in the as-is before-condition and to the Remainder Parcel in an as-is condition after the acquisition. Based on the scope of the appraisal for the Larger Parcel, cost and income valuation models are not applied. These two approaches to value do not provide any additional insight into the requested fair market value estimates or calculations of severance damages and benefits.

Scope of the Appraisal

After estimating the fair market value of the partial acquisition, the analysis considers and calculates severance damages and specific benefits associated with the planned easement acquisition. A benefits and damages calculation is applied to arrive at the net damages to the Remainder Parcel, if any.

The depth and scope of the reporting of the analysis are appropriate in relation to the significance of the appraisal problem. This Appraisal Report identifies the subject property and the market area. It explains the market data and analysis leading to my estimate of value.

It is my objective that the presented appraisal analysis, along with the opinions and conclusion, be those of a disinterested third party. All appropriate data deemed pertinent to the solution of the appraisal problem was collected, confirmed, and reported in compliance with the 2020/2023 Standards of Professional Appraisal Practice and the Code of Professional Ethics of the Appraisal Institute. In addition, this report is intended to comply with the State of California Code of Civil Procedure, Title 7, Chapter 4, Article 1, Section 1245.010.



Picture 1 – Viewing east along 20th Avenue, the Larger Parcel is seen on the right.

Scope of the Appraisal

Scope of Work

Intended Users:	Client, property owner, and Mission Springs Water District
Intended Use:	The intended use of this appraisal is to assist the client with an easement acquisition.
Inspection:	The physical inspections occurred on July 7, 2023 and December 6, 2023.
Information:	I have gathered information on land sales in the competing marketplace. I have supplemented the analysis as necessary with market-based information.
Confirmation:	I have confirmed all comparable data points used in this analysis with at least one of the parties involved in the related transaction.
Analysis:	I have analyzed the data and applied the sales comparison model to arrive at my opinion of market value for the subject property.

Special Assumptions

1. The appraiser was not provided with a soils report for the subject property. A physical inspection of the subject site was made for this analysis. The conclusions assume that no toxic or hazardous materials are present on any section of the subject property. The appraiser is not qualified to decide as to the existence or non-existence of hazardous material on the subject property.
2. A complete environmental site assessment was not made available for this analysis. I am not qualified to detect hazardous waste or toxic material. Any comments that might suggest the possibility of the presence of such substances should not be taken as confirmation of the presence of hazardous wastes for toxic material. Such determination requires investigation by a qualified expert in the field of environmental assessment.
The presence of substances such as asbestos, urea-formaldehyde foam insulation, or other potentially hazardous materials may have an impact on the market value of the property. This analysis assumes there are no environmental problems associated with the subject property that could affect its utility, marketability, or market value estimate.
3. Cultural and archaeological reports for the subject property were not made available for review. This analysis assumes there are no cultural and archaeological impacts associated with the subject property that would impact the utility, marketability, or market value estimate of the subject property.

Scope of the Appraisal

4. I reserve the right to amend my analysis based on any additional information that might have an impact on the condition and usefulness of the site.

Hypothetical Conditions: The easement is acquired and designed as presented on the date of value.

Extraordinary Assumptions: None

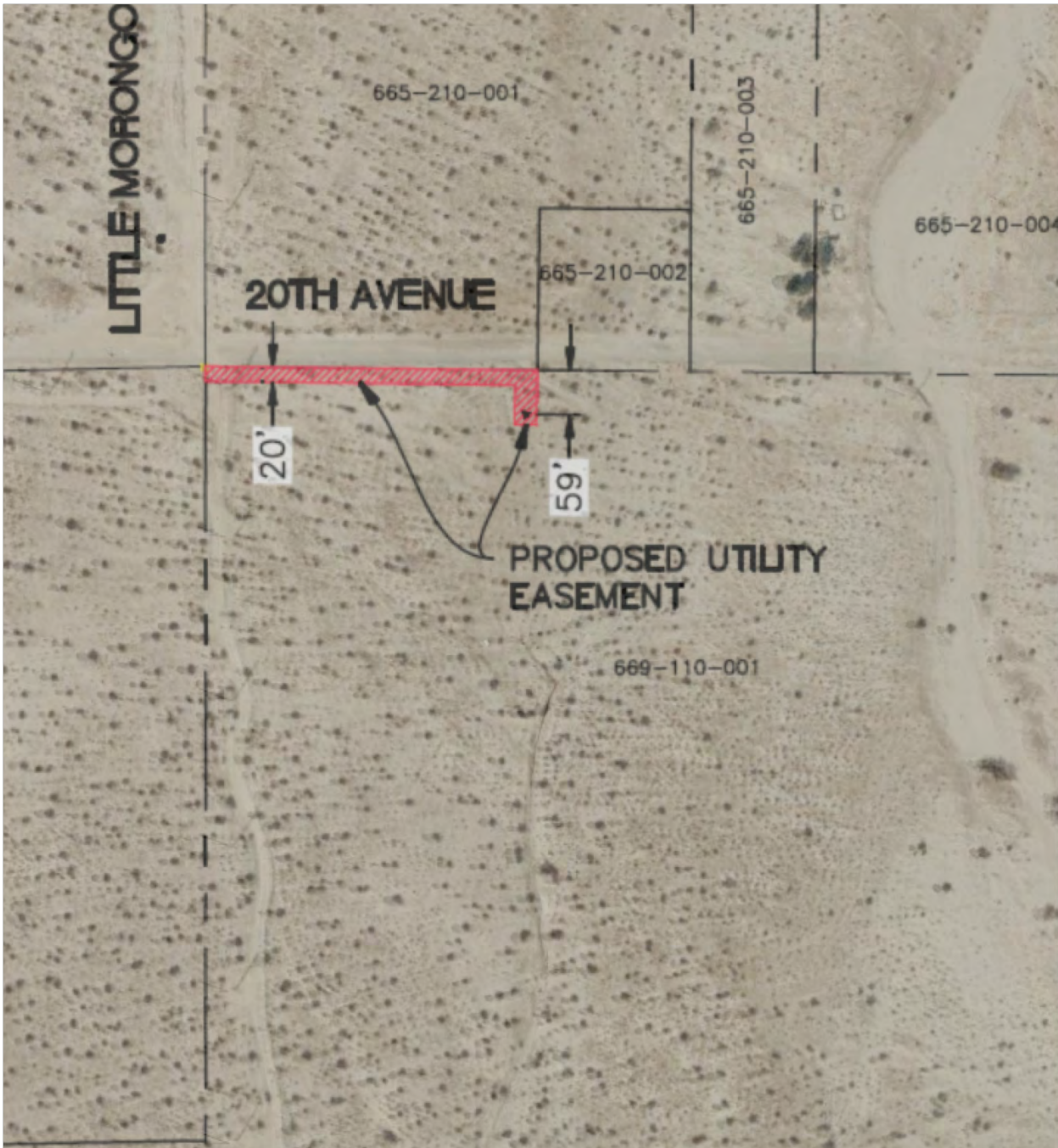


Figure 1 – Easement location

Scope of the Appraisal – Definitions

Fair Market Value

(a) The fair market value of the property taken is the highest price on the date of valuation that would be agreed to by a seller, being willing to sell but under no particular or urgent necessity for so doing, nor obliged to sell, and a buyer, being ready, willing, and able to buy but under no particular necessity for so doing, each dealing with the other with full knowledge of all the uses and purposes for which the property is reasonably adaptable and available.

(b) The fair market value of property taken for which there is no relevant, comparable market is its value on the date of valuation as determined by any method of valuation that is just and equitable.¹

Fee Simple Estate

“Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.”²

Just Compensation

For the purposes of this appraisal, just compensation is computed as the fair market value of the acquired parcel, plus any damages to the remainder parcel as a result of the acquisition and/or the cost to cure said severance damages to the remainder, if any.

Hypothetical Condition

“1. A condition that is presumed to be true when it is known to be false. 2. A condition directly related to a specific assignment, which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but is used for the purpose of analysis. Hypothetical conditions are contrary to known facts about physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of data used in an analysis.”³

Extraordinary Assumption

“An assumption, directly related to a specific assignment, as of the effective date of the assignment results, which, if found to be false, could alter the appraiser’s opinions or conclusions. Extraordinary assumptions presume as fact otherwise uncertain information about physical, legal, or economic characteristics of the subject property; or about conditions external to the property such as market conditions or trends; or about the integrity of data used in an analysis.”⁴

¹ CA Civ Pro Code § 1263.320 (2016)

² Appraisal Institute, *The Dictionary of Real Estate Appraisal*, 6th ed., (Chicago: Appraisal Institute, 2015)

³ Ibid

⁴ Ibid

Introduction – Description of the Subject Property



The defined subject property is a ± 0.24 -acre portion of a ± 51.71 -acre Larger Parcel located on the southeast corner of 20th Avenue, and Little Morongo Road in the southern portion of Desert Hot Springs, CA. The Larger Parcel associated with the subject fronts along the south side of 20th Avenue. A dry wash area runs along the eastern portion of the subject's Larger Parcel though does not impact the proposed easement area. The planned easement acquisition by the Mission Springs Water District is for an as-proposed groundwater monitoring well site. The Larger Parcel is raw, vacant residential land.

Based on public record and property owner information, the subject property Larger Parcel has not been sold within the last 3 years. The property has not been marketed for sale in the last 12 months. Based on my inspection, the subject property is considered readily marketable if offered at fair market values.

Introduction – Description of the Subject Property

Legal Description

40.00 Acres M/L In Por Nw ¼ of Sec 24 T3S R4E

Assessor's Parcel Numbers / Larger Parcel Size

Larger Parcel – APNs 669-110-001 & 669-120-001, ±51.71 acres / ±2,252,488-ft²
Riverside County, CA

Census Tract Number

445.24 / 2154

Statement of Ownership

According to public records, the title to the subject property is vested in Leslie L Chou.

Easements and Encumbrances

No title report for the subject property was presented for review. This report assumes there are no atypical easements, conditions, title exceptions or encumbrances that would have an adverse impact on the marketability, functional utility, or sale of the subject site. A legal opinion could be obtained from a qualified title expert as to the actual marketability of the subject's title.

Zoning

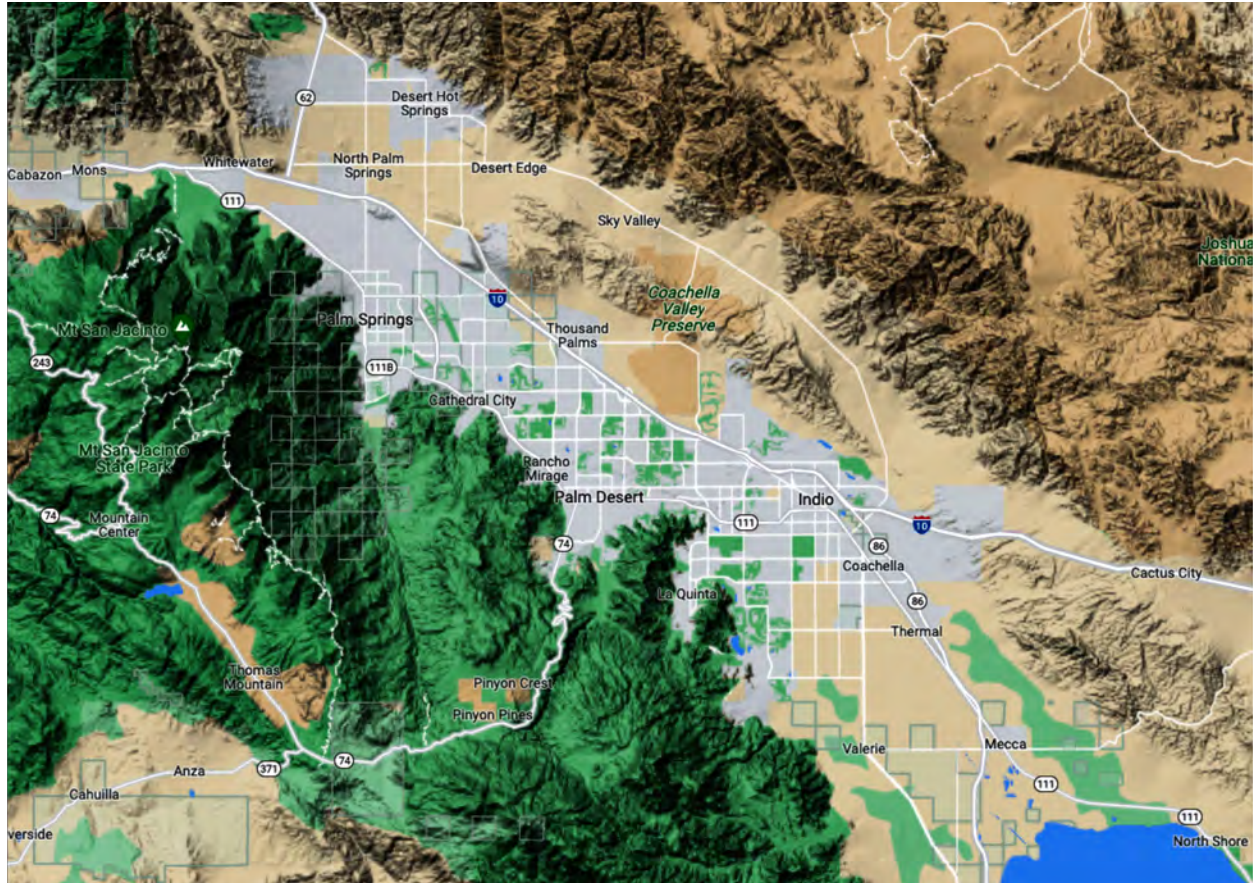
According to City of Desert Hot Springs' Planning Department, the subject is zoned R-RD, Residential Rural Desert, with a consistent land use designation.

Assessment and Taxation

Parcel Number	Assessed Land	Assessed Improvements	Assessed Personal Property	Assessed Total	2022 Taxes	Effective Tax Rate
669-110-001	\$225,862	\$0	\$0	\$225,862	\$2,941	1.30%
669-120-001	\$114,367	\$0	\$0	\$114,367	\$1,490	1.30%
Total	\$225,862	\$0	\$0	\$340,229	\$4,431	1.30%

Real property taxation in the State of California is governed by Proposition 13, which was passed by the voters in June 1978. The tax rate was limited to 1% of the assessed value plus an additional 1/4% to cover the payment of debts previously approved by voters. For a property purchased after March 1, 1975, the law requires the assessment to be based on the market value at the time of sale. All assessed values can increase no more than 2% per year for inflation. Based on the condition and utility of the subject site, the valuation used in the assessment of the subject property appears below market value, though subject to Proposition 13 rules and reassessment. The tax rate for the site is representative of comparable properties in this portion of Riverside County, CA.

Regional Analysis- Coachella Valley, California



Coachella Valley

The Coachella Valley is located in Riverside County ±110 miles east of Los Angeles, ±270 miles west of Phoenix, and ±75 miles north of the Mexican border. The Little San Bernardino Mountains to the north, the Santa Rosa's to the south, and the San Jacinto Mountains to the west shelter the Coachella Valley, which covers ±303.9 square miles. Palm Springs is the westernmost city of the region. Other desert cities include Desert Hot Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, La Quinta, Indio, and Coachella. The unincorporated areas of North Palm Springs, Thousand Palms, Sun City, Bermuda Dunes, Thermal, and Mecca are also located in the Coachella Valley.

History

For over 1,000 years, Cahuilla tribes occupied canyons on the southwestern edge of the Coachella Valley, where permanent streams flowed from the San Jacinto Mountains. The early Spanish explorers called the hot springs where the city of Palm Springs now stands Agua Caliente, later used to refer to the local Cahuilla band. In 1876, the federal government divided the valley into a checkerboard. Odd-numbered sections were granted to the Southern Pacific Railroad, while the even-numbered sections were given to the Agua Caliente as their reservation. Not until the 1940s did surveys establish the boundaries. By then, much of the Native American land had been built on.

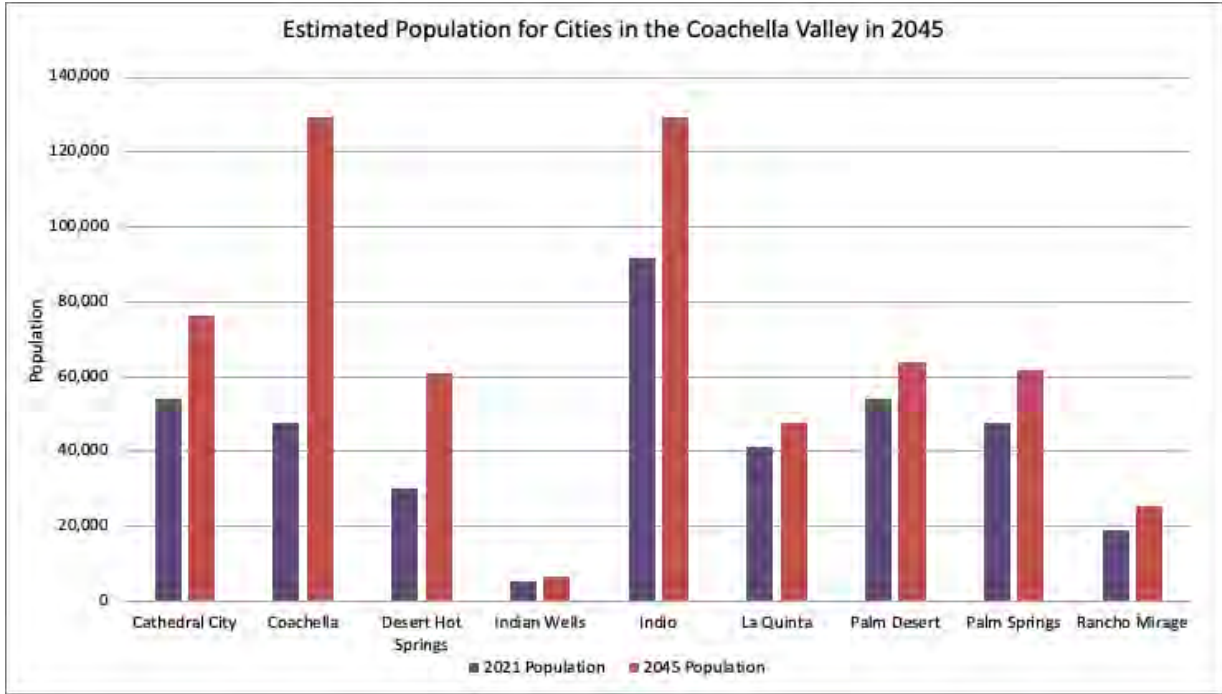
Regional Analysis- Coachella Valley, California

At the southern end of the valley, Indio began as a construction camp for the railway and its artesian water was tapped to irrigate crops. Date palms from Algeria were imported in 1890 and have become the valley’s major crop, along with citrus fruits and table grapes. The entire valley was developed first as farmland, later with health spas, hotels, and resorts. In the 1920s, Palm Springs became a winter playground for the stars in Hollywood’s golden era, many of which built mid-century modern homes in the valley during the 1940s and ‘50s.

Demographics

According to the California Department of Finance, the population of the incorporated cities of the Coachella Valley is estimated at ±371,812, a 4.21% decrease from the 2020 figure. Annual growth patterns in the area are somewhat sporadic. Since the 2010 US Census, the population of the Coachella Valley has increased 7.3%. Over the last decade, the majority of the growth has occurred in Indio, Coachella, Desert Hot Springs, and Palm Desert.

Analysts expect the pattern of growth to continue in the Valley. By 2045, the population is projected to expand to over 600,000 residents. In addition to Coachella Valley’s permanent residents, there are approximately 170,000 additional seasonal residents that call the Valley their home. The figure below illustrates the anticipated population of the cities of the Coachella Valley by 2045.



The median age in the Coachella Valley varies substantially from one city to the next. Indian Wells has the highest median age at ±67.8 years while Coachella has the lowest (±34.5 years). The median age, especially in the eastern end of the Valley, has been dropping and is projected to continue to decline over the next decade. Median household income shows the same pattern, higher in the central cities and lower in the outer cities. The cities in the eastern end of the Valley report the lowest household incomes. The American Community Survey concludes the average household size in Riverside County is ±3.28 people.

Regional Analysis- Coachella Valley, California

Economy

Tourism, retail, healthcare, construction, and agriculture are the main industries in the Coachella Valley. The construction, hotel, and entertainment sectors each account for approximately 20% of the payroll base; retail 15%; healthcare 12%; and agriculture 10%.

As of June 2023, the regional unemployment rate was reported to be 5.7%. Out of all the communities in the region, Mecca had the highest level of unemployment at 12.2%, and Thousand Palms had the lowest level of unemployment at 3.3%. The region's economy is heavily dependent upon tourism, and business closures resulting from the COVID-19 pandemic significantly increased unemployment. Most areas have reached pre-pandemic unemployment levels. The table below is an overview of Coachella Valley's labor market for June 2023.

Area Name	Labor Force	Employed	Unemployed	Unemployment Rate
Cathedral City	27,100	25,800	1,300	4.7%
Coachella	20,300	18,400	1,900	9.2%
Desert Hot Springs	12,000	11,300	700	5.6%
Indian Wells	1,700	1,700	100	3.7%
Indio	41,700	39,400	2,200	5.3%
La Quinta	19,700	18,800	1,000	4.9%
Mecca CDP	2,700	2,300	300	12.2%
Palm Desert	25,300	24,100	1,200	4.8%
Palm Springs	23,600	22,500	1,100	4.5%
Rancho Mirage	6,600	6,100	500	7.1%
Thousand Palms CDP	3,300	3,200	100	3.3%
Coachella Valley	184,000	173,600	10,400	5.7%

The adjacent table shows the major employers in Riverside County that operate in the Coachella Valley. The number of total workers in the Coachella Valley is somewhat undefinable as illegal immigrants make up a large portion of the labor market. More than 230,000 illegal workers are estimated to be participating in Riverside County's work force. In the Coachella Valley, this segment of the workforce is considered vital to the hospitality, construction, agricultural, and landscaping industries.

Business Name	City	Industry
Eisenhower Medical Center	Rancho Mirage	Healthcare
Desert Sands Unified School District	La Quinta	Education
Palm Springs USD	Palm Springs	Education
Coachella Valley Unified School District	Thermal	Education
Agua Caliente Band of Cahuilla Indians	Rancho Mirage	Tribal Govt/Casinos
JW Marriott Desert Springs Resort & Spa	Palm Springs	Hospitality
Desert Regional Medical Center	Palm Springs	Healthcare
La Quinta Resort & Club/PGA West	La Quinta	Hospitality
Universal Protection Systems	Palm Springs	Services
Fantasy Springs Resort Casino	Indio	Hospitality
Morongo Casino Resort & Spa	Cabazon	Hospitality

In 1991, the State of California Department of Commerce approved the establishment of the Coachella Valley Enterprise Zone. The intent was to diversify the Valley's economy, making it less dependent on agriculture and tourism, leading to a more balanced economy. Businesses were offered incentives such as tax credits and benefits to relocate to the Coachella Valley. The program was unsuccessful in attracting large manufacturing or distribution companies, and in December 2013, the Enterprise Zone Program was eliminated.

Regional Analysis- Coachella Valley, California

The valley's most crucial tourism sector has been the driving force in the local economy. World-class golf and tennis facilities and events, coupled with abundant sunshine attract both domestic and international visitors. Tourism was the region's number one industry in 2022, with \$7.1 billion in visitor spending and an estimated economic impact of \$8.7 billion. Visitor spending reached 120% of 2019 levels with visitor volume nearly even with pre-pandemic levels. The visitor volume represented a year-over-year increase of 10.4%, with an increase of 25.9% in year-over-year spending.

The Greater Palm Springs Convention and Visitor's Bureau (CVB) drafted a 10-year plan in 2016 with the primary goal of creating regional economic resiliency in the tourism industry. The organization works with a variety of stakeholders to increase events and tourists to the region with an aim to increase visitation to 16 million by 2026. With the onset COVID-19, the CVB shifted focus to take a leading role in promoting safety guidelines for the tourism industry. These guidelines and pledges from businesses to adhere to safety practices were used in marketing campaigns in an attempt to help tourism recover more quickly than in the last recession. Additionally, targeted marketing to international visitors helped lead to full occupancy by summer 2021, and Palm Springs International Airport has seen record numbers of travelers.

The one sector of the Coachella Valley economy that has continued growth despite the deep recession and slow recovery has been healthcare. Healthcare is an important economic driver in that much of the funding comes from insurance policies and federal programs like Medicare. In 2018, eastern Coachella Valley voters approved extending the Desert Healthcare District and Foundation boundaries to cover the entire Coachella Valley region. This expansion, coupled with an increase in retirees in the region, will continue to place demands on the healthcare network.

Agriculture, irrigated by the nearby Colorado River, has traditionally been an important component of the Valley's economy; however, farming has pushed eastward as the Valley's population expands. According to the Coachella Valley Water District 2021 Agricultural Production report, annual crop production decreased to \$575 million, down from \$596 million in 2019. Approximately 59,101 acres were planted in 2020, with the primary crop categories being grapes, dates, bell peppers, citrus, turf grass, carrots, and lettuce. According to the Riverside County Agricultural Commissioner's production report, the county ranks as the 14th largest agricultural county in the state with a gross value of \$1.32 billion. Of the four districts within the county, the Coachella Valley accounted for 58% of countywide production in 2020.

Housing

Despite the regional economic damage caused by the COVID-19 pandemic, the housing market has held up fairly well. Median home prices in the Coachella Valley reached new highs during 2021 and 2022 driven by pandemic-induced demand for housing in less populated regions, though prices have begun to come down with many reporting submarkets reporting year-over-year decreases. The median home price within the Valley only increased 0.7% year-over-year in June 2023. Within the Coachella Valley, Thermal saw the largest year-over-year decrease in median home prices in June 2023, though it is a low volume market. Indian Wells had the largest increase in year-over-year median home prices. Indio, Palm Desert, La Quinta, and Palm Springs had the largest unit volumes.

Regional Analysis- Coachella Valley, California

In Desert Hot Springs, the median home sales price in July 2023 was \$375,000, down by 6.6% from the June 2022 value. Only three Coachella Valley submarkets have experienced year-over-year gains in home prices, and several markets showed decreases of more than 5%. The market remains undersupplied, and cities within the Valley have approved 490 permits for single family housing for at the end of the 2nd quarter of 2023.

Coachella Valley Median Home Sale Prices				
Region	No. Sold	Median Price June 2022	Median Price June 2023	▲ % Y-O-Y
Coachella Valley	578	\$670,000	\$675,000	0.7
Bermuda Dunes	14	\$763,500	\$739,000	-3.2
Cathedral City	40	\$533,500	\$521,750	-2.2
Coachella	15	\$437,000	\$480,315	9.9
Desert Hot Springs	56	\$401,500	\$375,000	-6.6
Indian Wells	20	\$1,310,000	\$1,450,000	10.7
Indio	116	\$595,000	\$574,950	-3.4
La Quinta	83	\$815,000	\$849,500	4.2
Palm Desert	99	\$679,000	\$635,000	-6.5
Palm Springs	84	\$1,132,500	\$1,110,000	-2.0
Rancho Mirage	42	\$1,150,000	\$1,135,000	-1.3
Thermal	9	\$275,000	\$244,750	-11.0

Conclusion

The Coachella Valley's economy is traditionally influenced by seasonal trends, tied to the influx of tourists and part-time residents. The region is projected to continue to grow rapidly (in relation to neighboring regions) over the next few decades as the large Baby Boomer demographic is now entering retirement age. The Coachella Valley has historically attracted Baby Boomers and relatively affluent retirees, and the region continues to enhance its appeal with this demographic by configuring shopping, entertainment venues, and planned housing developments ranging from upper middle to high-end geared to this segment. With additional growth in the permanent population, the economy is likely to become less vulnerable to seasonality.

As with other less populated areas, the Coachella Valley experienced a pandemic-induced real estate boom. In the post-pandemic economy, the Coachella Valley is positioned for a modest growth forecast as stabilization of the residential and labor markets continue to take hold.

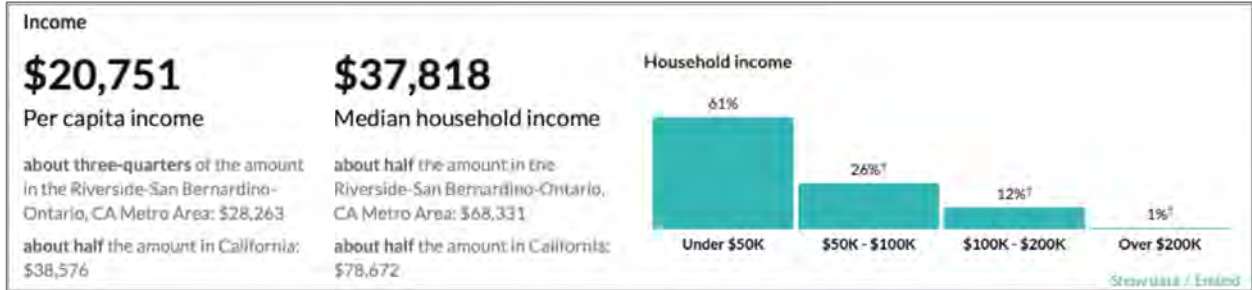
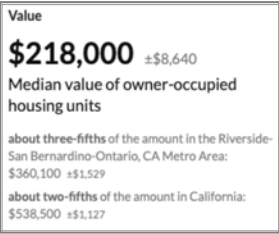
City Analysis- Desert Hot Springs, California



Desert Hot Springs, California, located in central Riverside County at the northwestern end of the Coachella Valley, is ±109 miles east of Los Angeles and ±141 miles northeast of San Diego and covers ±30 square miles. Desert Hot Springs is nestled between the San Jacinto Mountains and the foothills of the San Bernardino Mountains near the Mission Creek Preserve, a part of the



Wildlands Conservancy. Known as California’s Spa City, it is one of several places in the world with naturally occurring hot and cold mineral springs, which, unlike many hot springs with high sulfur content, are odorless.



Desert Hot Springs was the first city in Southern California to legalize marijuana which has led to an economic boom for the city. Already known as a tourism-driven economy, Desert Hot Springs is looking to capitalize on the establishment of a niche market for ‘cannatourism’.

Neighborhood – Market Analysis



Overview

The purpose of a market analysis is to give an overview of the competitive environment within which the subject property is located. The goal is to quantify the marketing and exposure periods for the subject property if offered in the market at a market value price. The first steps in this process are to delineate and describe the subject market area, identify the various components of the subject, and review the history of the submarket.

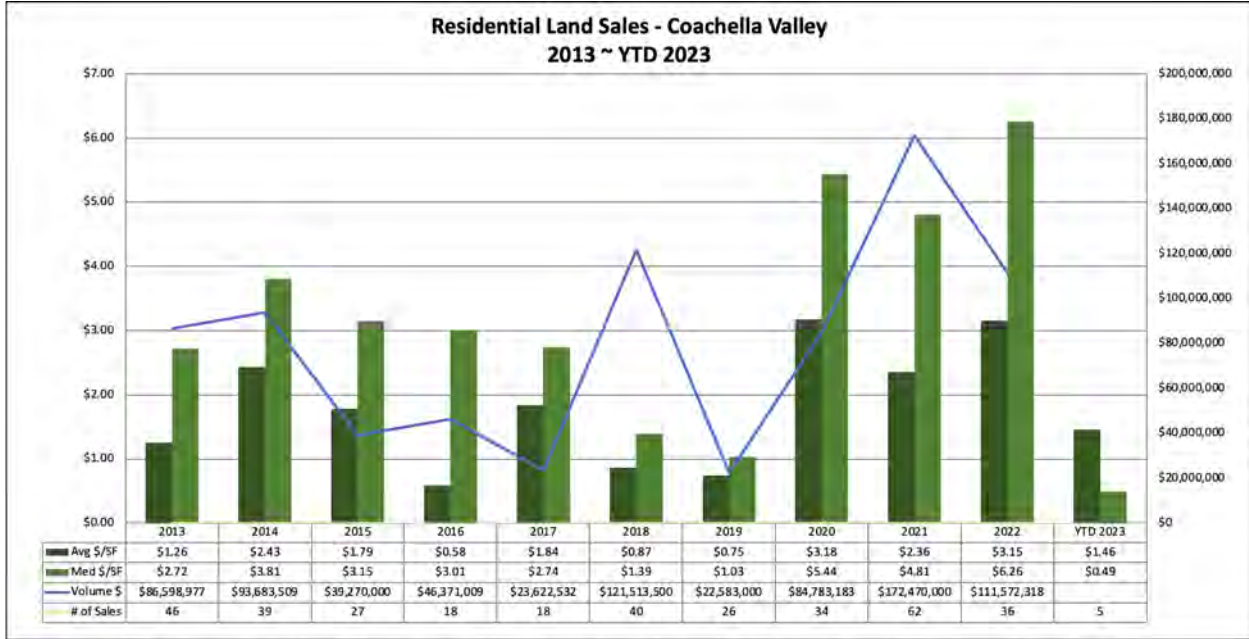
The subject property is located on the south side of 20th Avenue, east of Little Morongo Road inside the city limits of Desert Hot Springs, CA. There is a significant amount of vacant land surrounding the subject property, though development in this area is occurring. The immediately surrounding parcels are residential and open space zoned properties to the north, east, and south, with commercial zoning to the west. Further from the subject are residential neighborhoods and a few commercial uses. From an economic standpoint, the neighborhood is predominately in the growth stage as development within the city progresses further south and east from the central core.

The neighborhoods within the submarket are developed with a combination of neighborhood commercial uses and average quality single-family residential units. For the most part, residential neighborhoods in Desert Hot Springs have numerous infill parcels as demand for this area has historically been lower than other portions of the Coachella Valley. Development in the subject's area has occurred in a fragmented fashion and dates from the 1950s to the current time. Demand for residential housing has increased post-pandemic as Desert Hot Springs has some of the most affordable homes in the Coachella Valley. One recently approved development near the subject is for Green Day Village, which will include 608 residential units across 92 two-story, 6-unit buildings, mixed-commercial uses in the eastern part of the project, and six farming areas split between the northern and southern portions.

Neighborhood – Market Analysis

Residential Land Sales – Coachella Valley

For the first part of this analysis, I researched land sales from the broader Coachella Valley market area. The data provides a view of market activity since 2013. The research is based on a combination of Costar Information, the Desert Area MLS system, and private brokerage sources. While this data does not include all the market transactions, its primary purpose is to illustrate a trend in the market as it relates to the most comparable submarkets. The following figure illustrates residential land sales in the broader Coachella Valley over the past ten years.



The Coachella Valley submarket gives a broad perspective of the volume of residential land acquisitions over the past ten years. Over the past ten years, there have been 346 sales with a moving average of \$80,246,803. Generally, the data sample illustrates somewhat volatile sales activity. The early part of the sampling period demonstrated upward trending statistics which then reversed for several years. Dollar volume abruptly spiked in 2018 with a year-over-year unit increase of ±128%. Despite the onset of the COVID-19 pandemic in 2020, unit sales and volume were both up over the 2019 values with dollar volume more than triple from the previous year. Year-ending 2021 saw unit and dollar volume highs, with increases of 88% and 127%, respectively. Median per-square-foot prices passed the \$5 mark in 2020, softened a bit in 2021, and increased by 30.2% in 2022 reflecting increased residential demand. YTD 2023 statistics are on trend for the lowest volume year in the past twenty years.

As of the date of value, there are ±57 parcels for sale or under contract with an anticipated volume of ±\$103 million. The indicated average per acre land value is \$98,373, representing a ±24% increase from the moving average. The average parcel size being marketed is ±20 acres, which represents a ±46% decrease from the moving average. These combined metrics would normally be indicative of stable demand for raw residential land acquisitions; however, the drop in volume for YTD 2023 suggests a significant decrease in demand and pull back in residential construction starts.

Neighborhood – Market Analysis

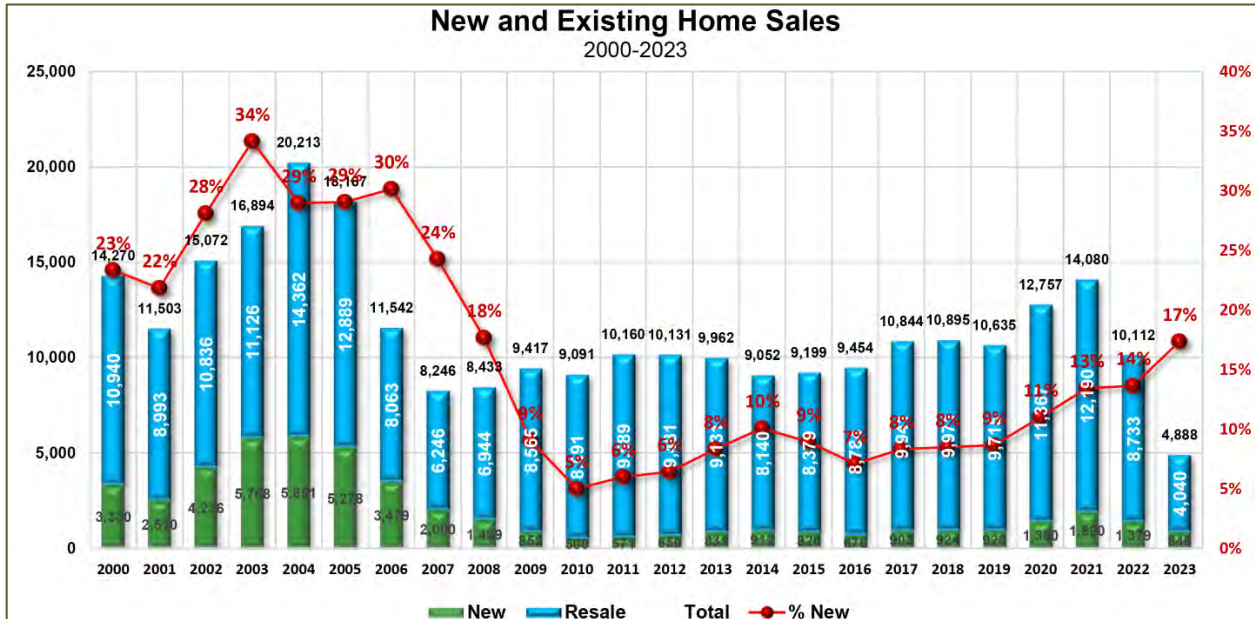
New Home Statistical Summary⁵

There were 438 new homes sold in the 2nd quarter compared to 395 in the 2nd quarter of last year, which is an increase of 11%. Total sales in the quarter were 2,857 units with 2,419 resales compared to total sales of 3,278 a year ago. There's been a large fall off this year in total sales primarily due to a lack of supply in the resale market. The percent of new home sales to total sales for the first two quarters is 17%, which is the highest it's been since 2008 as new homes increase market share.

The 2nd quarter's 438 sales bring trailing twelve-month sales total to 1,319, which is 437 units less than the twelve-month total a year ago due to the lack of supply in the lower price ranges. This is a decline of 24%. The resale market continues to contract, leaving potential buyers with new homes as their only available option.

The available supply of new homes at the end of the quarter was 327 units, which is seven less than last quarter. This shows home builders have a good sense of where the market is and aren't getting ahead of themselves. This will help keep supply and demand in balance helping produce a stable new home price environment during this very difficult period in the resale housing market.

The "months of sales" ratio for new homes is three months compared to one month a year ago. Two years ago, the ratio was 0.8 months. This increase is due primarily to higher inventory and slightly lower sales. The current ratio of three historically represents a balanced market and stable price environment. What's needed is an equal increase in both sales and inventory, which we think might very well occur as the resale market continues to freeze up for lack of inventory.

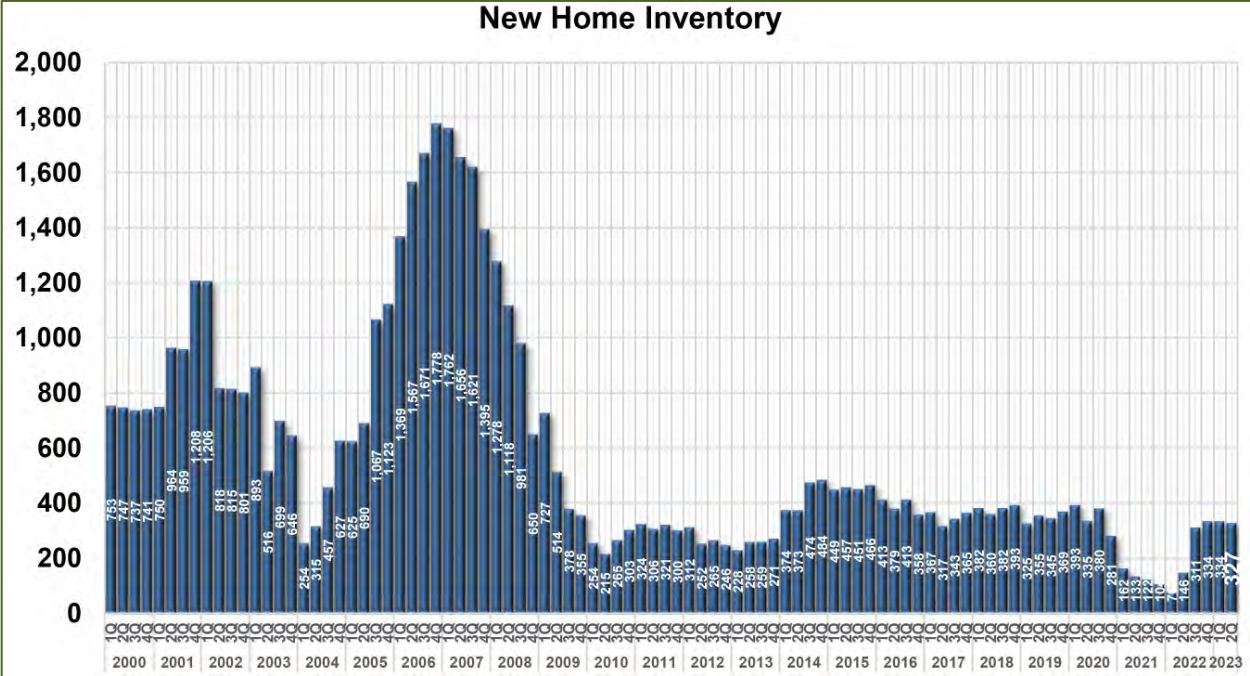


At the end of the 2nd quarter there were 57 active projects compared to 56 at the end of last year. The number of sales per project for the past 6 months was seven units.

⁵ Market Watch – July 2023

Neighborhood – Market Analysis

Building permits for sale in the 2nd quarter totaled 487 detached permits and three attached. Permits by city were: the city of Coachella – 33 permits, Cathedral City – 4 permits, Desert Hot Springs – 19 permits, Indian Wells – 13 permits, Indio – 33 permits, La Quinta – 298 permits, Palm Desert – 33 permits, Palm Springs – 2 permits and Rancho Mirage – 55 permits.



As mentioned on the previous page, there were 438 new homes sold in the 2nd quarter, which brings trailing twelve-month sales total to 1,319, which is 437 units less than the twelve-month total a year ago. This is a decline of 24%. Mortgage buydowns will also continue to give sales of new homes an added boost.

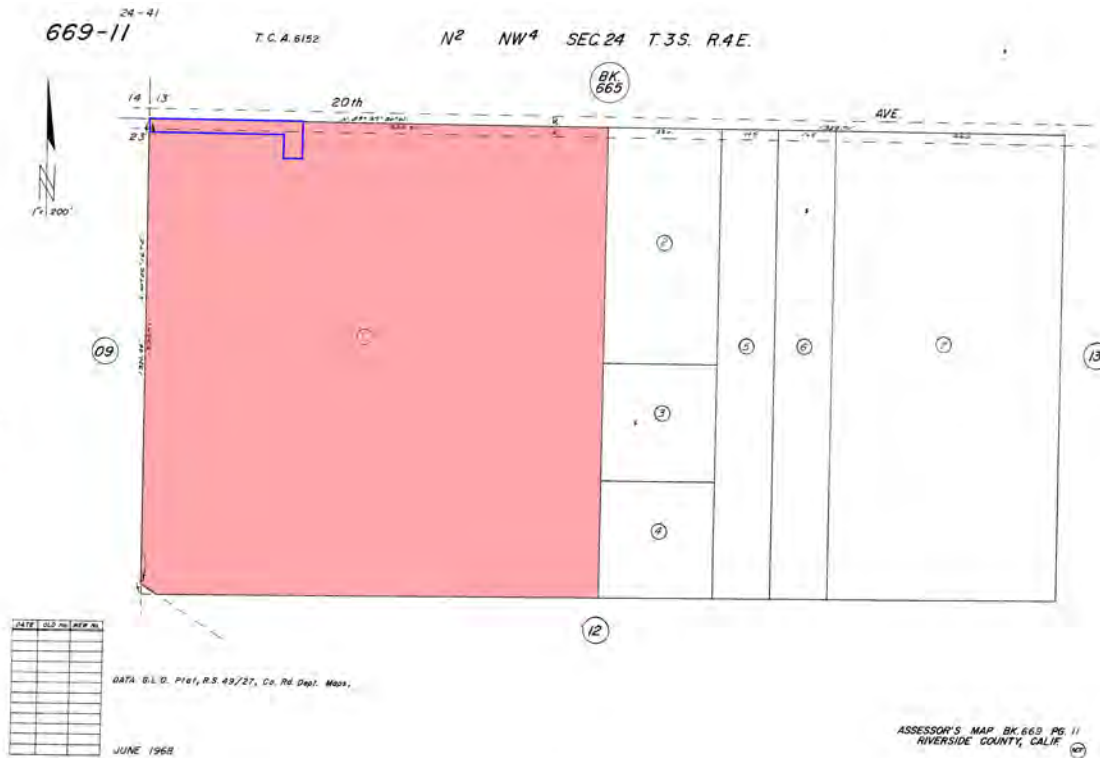
Conclusion

Up until the COVID-19 pandemic, the economic indicators were demonstrating a stabilized pattern. Since 2020, construction activity for new commercial developments has slowed although residential has increased, thus limiting demand for undeveloped commercial land and seeing more conversions of commercial land to residential uses. The residential sales are broadly spread across both detached and attached products. As the residential units continue to be constructed, and older units revitalized, the overall economic drivers of the Coachella Valley will continue to strengthen and stabilize. I expect the current trend to remain in place over the next several years, or until interest rates begin to rise.

Site Analysis

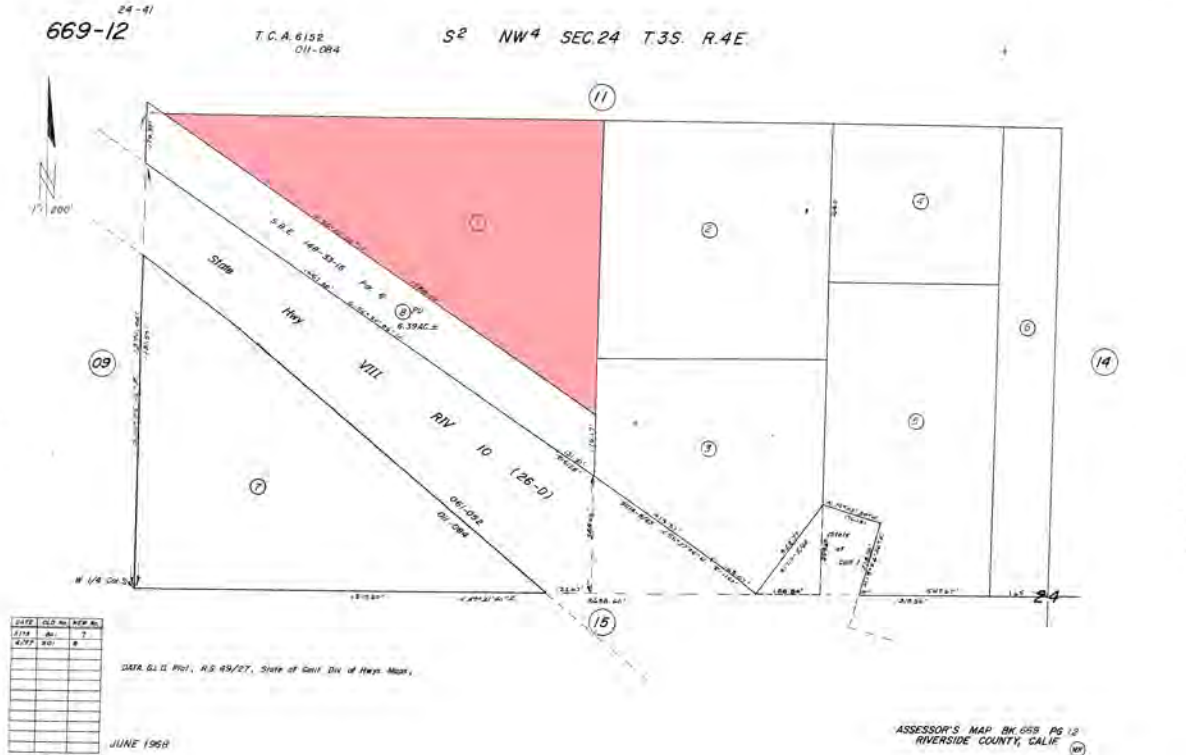


Picture 2 – Satellite view; Larger Parcel is outlined in yellow and subject easement is outlined in blue



Picture 3 – Parcel map 669-11; Larger Parcel is highlighted in red and subject easement is outlined in blue

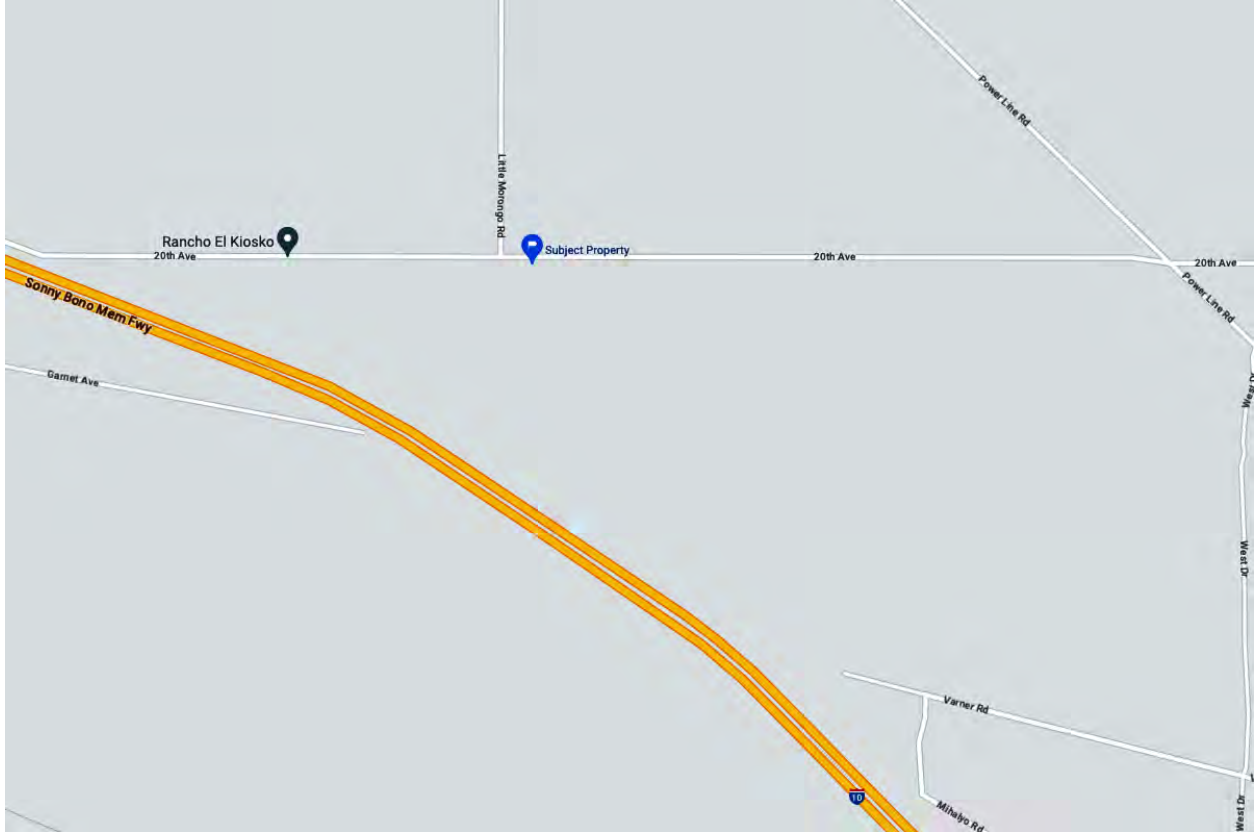
Site Analysis



Picture 4 – Parcel map 669-12; Larger Parcel is highlighted in red

- Location:** The subject property is located on the south side of 20th Avenue, east of Little Morongo Road in Desert Hot Springs, CA.
- Identification:** POR APN 669-110-001 & APN 669-120-001, Riverside County, CA
- Larger Parcel Size:** ±51.71 acres ±2,252,488-ft²
- Easement Size:** ±0.24 acres ±10,482-ft²
- Latitude / Longitude:** 33°54'11.59"N 116°31'37.82"W
- Elevation/Topography:** 704' ASL Undulating raw desert terrain
- Flood Zone:** According to the Flood Insurance Rate Map, Community Panel Number 06065C0895G, dated August 28, 2008, the subject property is located in an area determined to be Zone X (unshaded).
- Critical Habitat / Conservation Easements:** There is no final critical habitat for any federally listed endangered or threatened species on the subject property. There are no conservation easements on the subject property. The subject is located within the Willow Hole Conservation Area as part of the Coachella Valley Multiple Species Habitat Conservation Plan.
- Accessibility:** The site has unimproved access from the south side of 20th Avenue.

Site Analysis



Soils: I was not provided with a soils report for the subject property. A physical inspection of the subject site was made for this analysis. This report assumes that no toxic or hazardous materials are present on any section of the subject property. I am not qualified to make a determination as to the existence or non-existence of hazardous material on the subject property and recommend a soils engineer be consulted.

Utilities: All utilities are available at the subject property site. The following public utility companies have jurisdiction over the site:

- Water:** Coachella Valley Water District
- Sewer:** Coachella Valley Water District
- Electricity:** Southern California Edison
- Gas:** Southern California Gas
- Telephone:** Verizon
- Cable Service:** Time Warner Cable
- School District:** Palm Springs Unified School District

Topography: Undulating raw desert terrain

Off-Site Improvements: Two lane roadway, underground and overhead utilities

Frontage: 20th Avenue

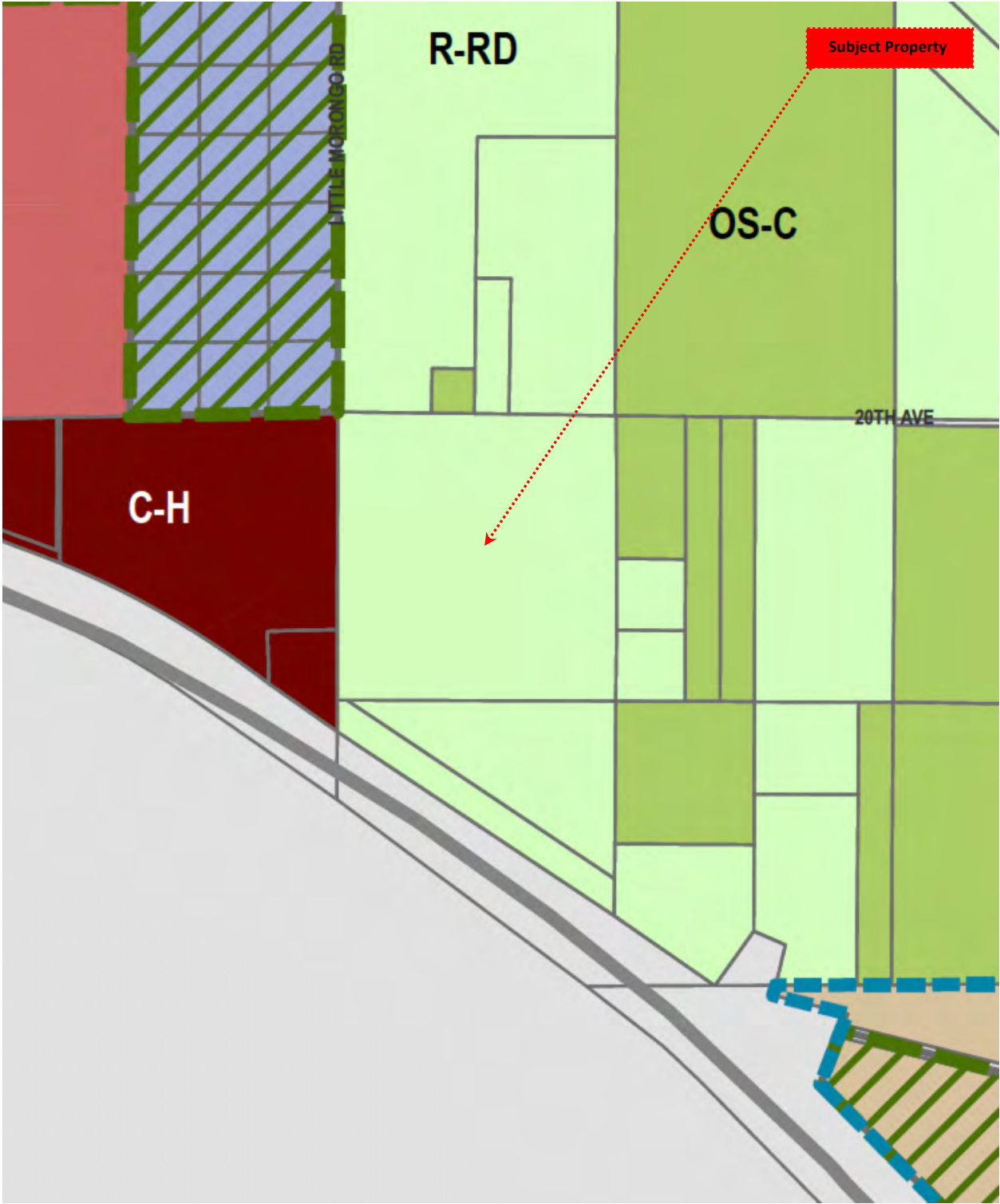
Maintenance: Public

Site Analysis

Curb and Gutter:	No								
Sidewalks:	No								
Hazards:	This analysis assumes there are no hidden or unapparent conditions to the soil or subsoil that would render the parcel more or less valuable.								
Earthquake Hazard:	The site is not currently noted for being within an Alquist-Priolo Special Studies Zone. According to the State Division of Mines & Geology, this map may not show all faults that have the potential for surface fault or rupture, either within the special studies zones or outside their boundaries.								
Improvements:	None								
Zoning:	R-RD, Residential Rural Desert, Desert Hot Springs, CA								
Land Use:	R-RD, Residential Rural Desert (1 du/5 ac)								
Unit of Comparison:	The subject property is valued as unimproved land for residential use. The marketplace typically utilizes a price per square foot when evaluating similar properties. Based on the market preference, the price per square foot is applied in this analysis.								
Functional Adequacy:	The shape and size of the site are adequate to support the uses suggested in the Highest and Best Use section of this Appraisal Report.								
Adjoining Properties:	<table> <tr> <td>North:</td> <td>Unimproved Residential/Open Space</td> </tr> <tr> <td>South:</td> <td>Unimproved Residential</td> </tr> <tr> <td>East:</td> <td>Unimproved Residential/Open Space</td> </tr> <tr> <td>West:</td> <td>Unimproved Commercial</td> </tr> </table>	North:	Unimproved Residential/Open Space	South:	Unimproved Residential	East:	Unimproved Residential/Open Space	West:	Unimproved Commercial
North:	Unimproved Residential/Open Space								
South:	Unimproved Residential								
East:	Unimproved Residential/Open Space								
West:	Unimproved Commercial								

Site Analysis

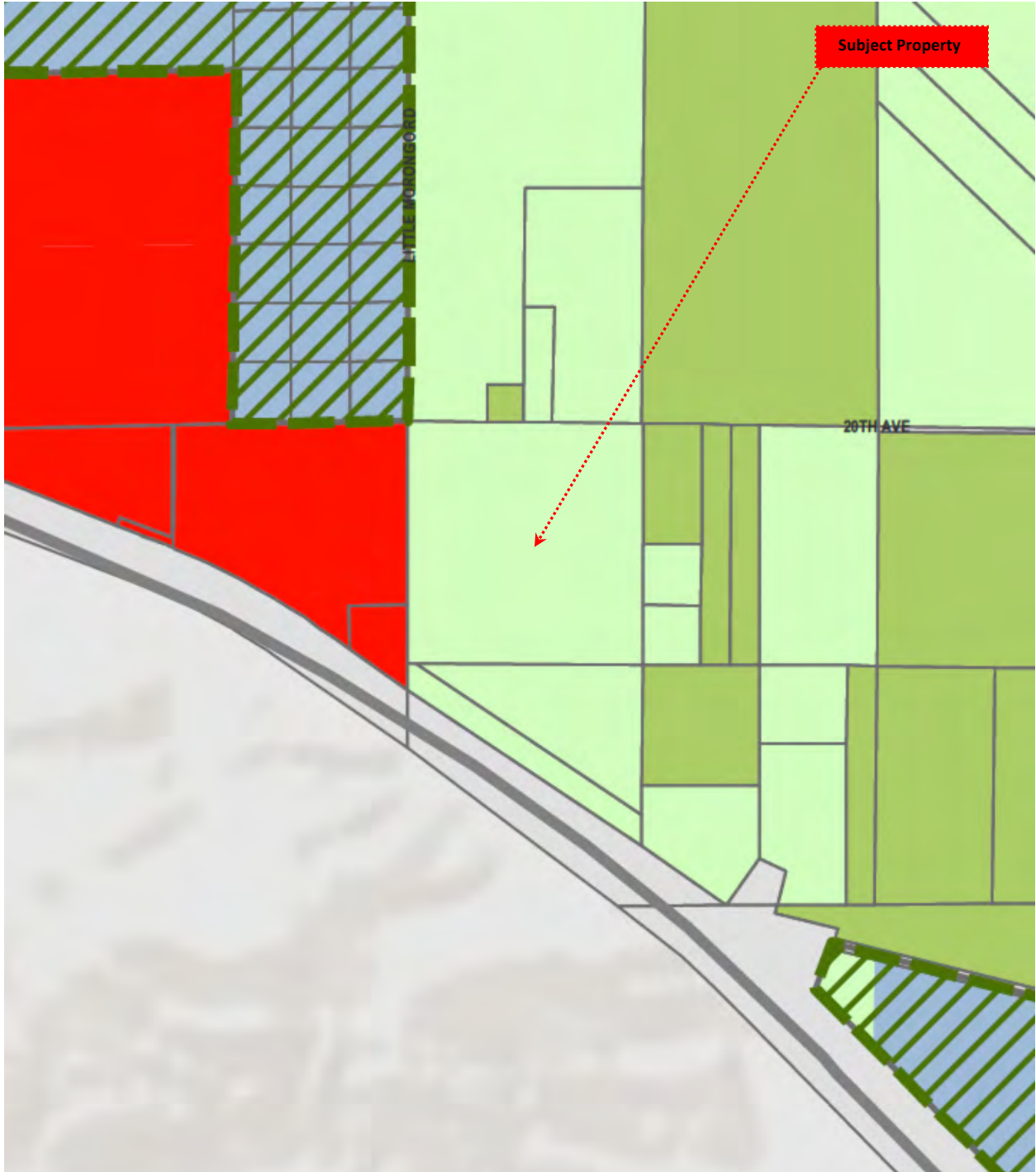
Zoning Map/Ordinance



R-RD (Residential Rural Desert). The district is intended to allow for low-density, rural residential uses at a maximum density of 1 dwelling unit per 5 acres in a manner that will eliminate or minimize impacts on the natural landscape and will encourage conservation.

Site Analysis

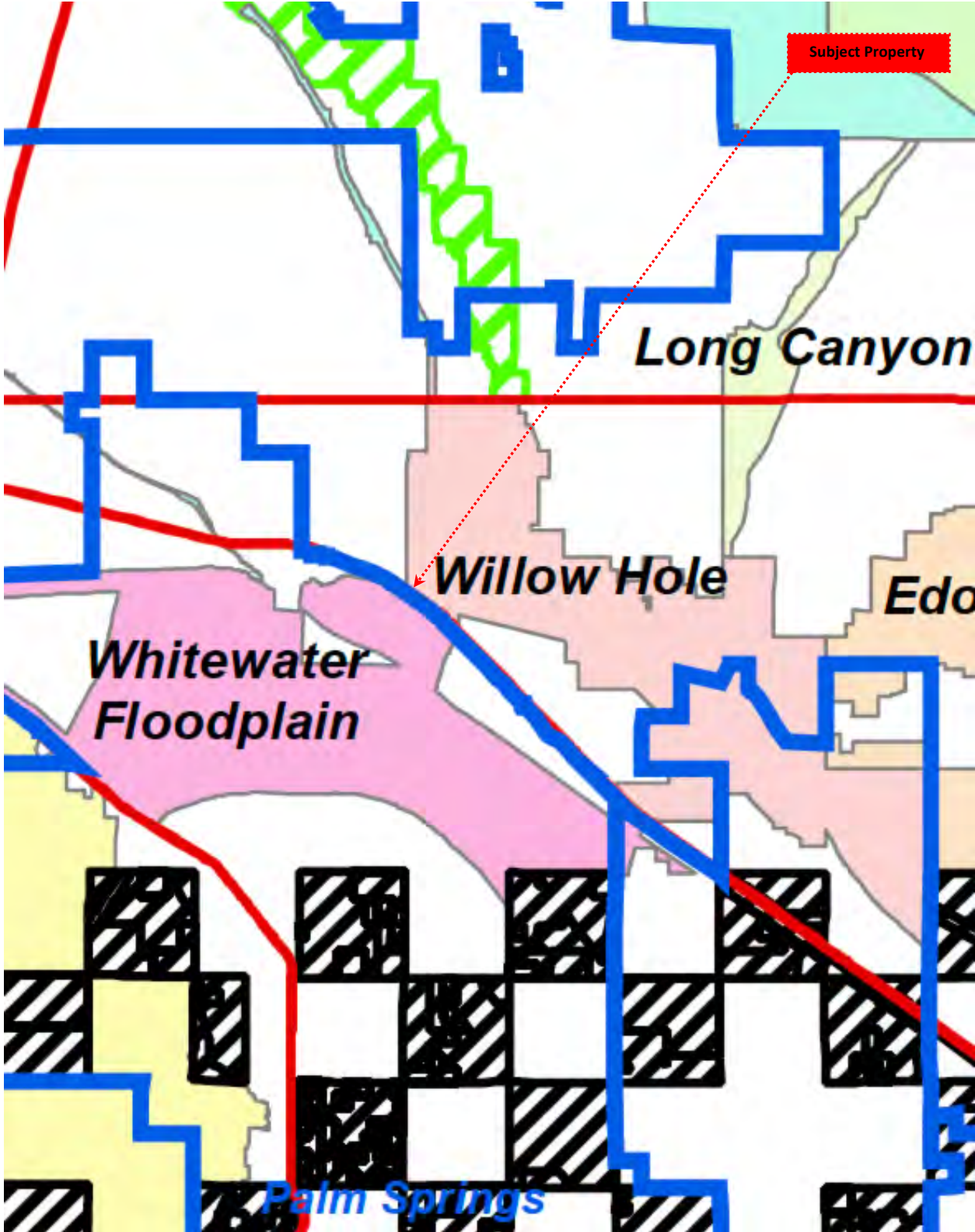
Land Use Map



Residential Rural Desert. The Residential Rural Desert (R-RD) designation allows for residential development at up to one dwelling unit per five acres. This designation is primarily located within the CVMSHCP’s identified conservation and hillside areas to provide for minimal impacts on the natural landscape and encourage conservation. Septic systems are allowed to serve existing and new developments.

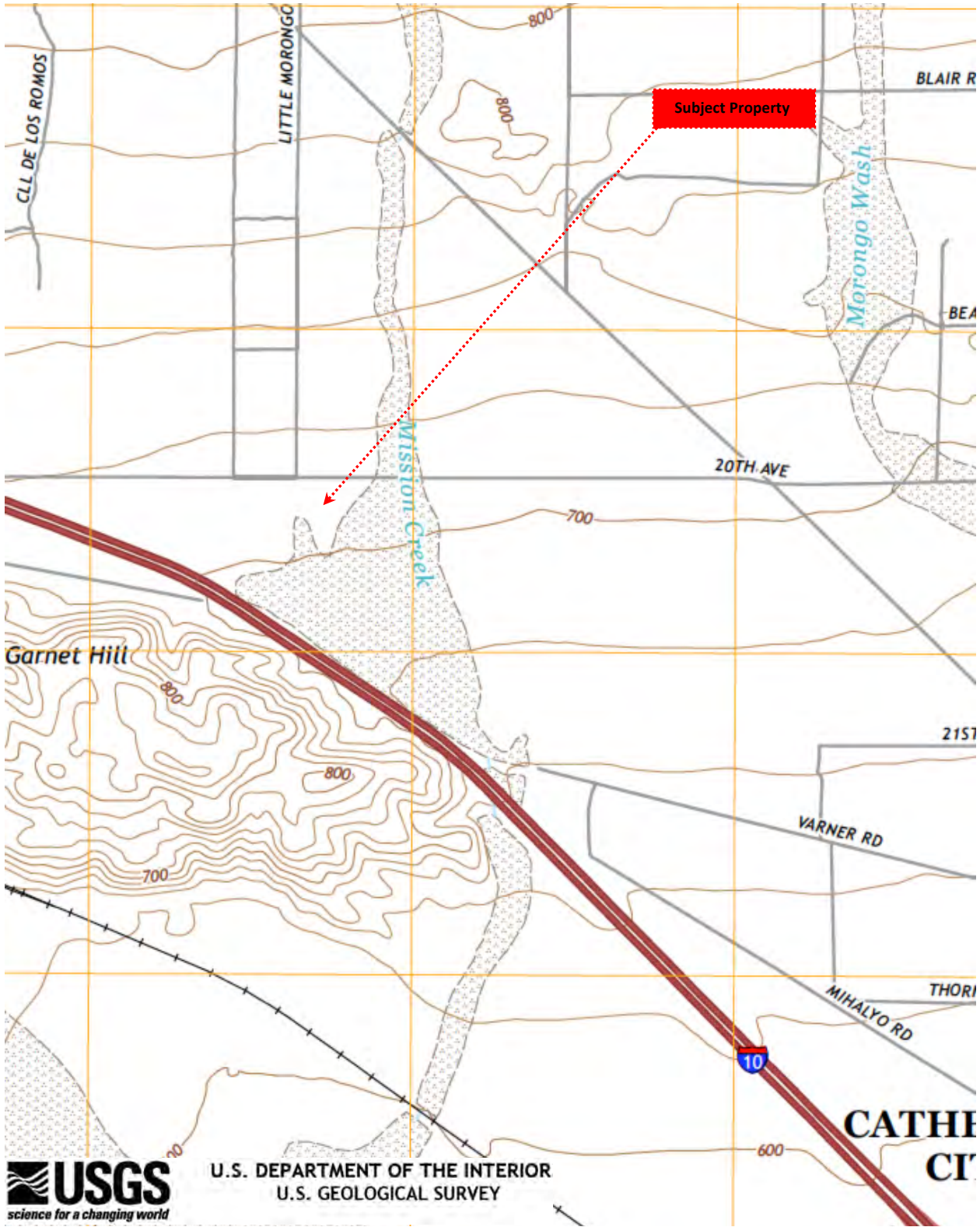
Site Analysis

Coachella Valley Multiple Species Habitat Conservation Plan Map



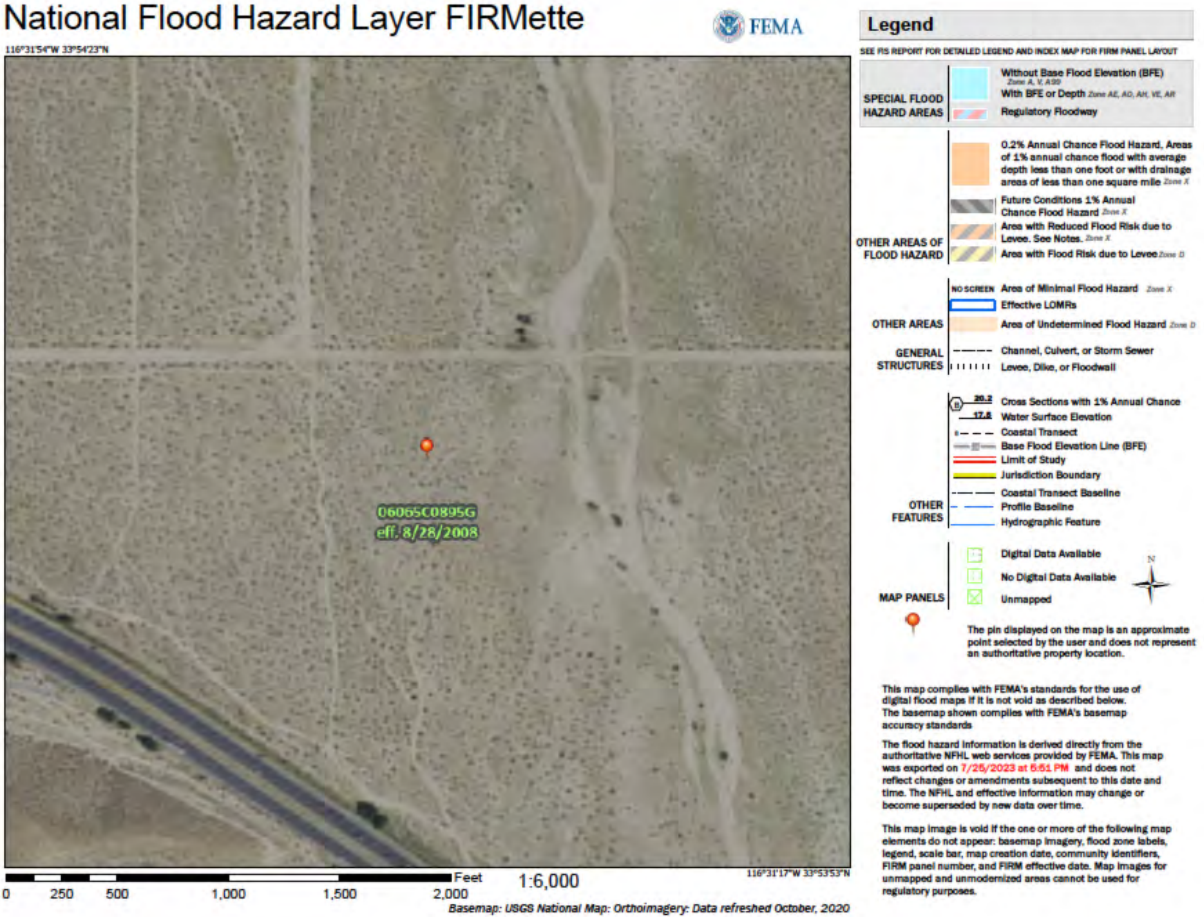
Site Analysis

Topographical Map



Site Analysis

Flood Map



According to the Flood Insurance Rate Map, Community Panel Number 06065C0895G, dated August 28, 2008, the subject property is located in an area determined to be Zone X (unshaded). Flood Zone X is defined as an area of minimal flood hazard that is determined to be outside the 100- and 500-year floodplains.

Site Analysis – Photographs



Picture 5 – Viewing south across the Larger Parcel



Picture 6 – Street scene viewing east along 20th Avenue; proposed easement site is on the right

Site Analysis – Photographs



Picture 7 – Viewing west along the proposed easement site



Picture 8 – Viewing north across the Larger Parcel

Highest and Best Use

Highest and Best Use is defined as:

“The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible and that results in the highest value.”⁶

“The analysis of relevant data to develop a market value opinion requires two important steps in the evaluation process before the applicable approaches to value are applied. Market analysis begins the process of narrowing the focus of the analysis from a broader macroeconomic view to data that is especially pertinent to the subject property. Highest and best use analysis relies on that analysis to then identify the most profitable, competitive use to which the subject property can be put.”⁷

In estimating highest and best use, there are essentially four stages of the analysis:

- | | |
|------------------------------|--|
| Legally Permissible: | What uses are permitted by zoning and deed restrictions for the subject site? |
| Physically Possible: | What are the physically possible uses for the subject site? |
| Financially Feasible: | What physically possible and legally permissible uses will produce a net return to the owner of the site? |
| Maximally Productive: | Among the financially feasible uses, which use will produce the highest net return or the highest present worth? |

The concept of highest and best use applies to land as the value of the improvements has a contributory impact on the overall property value. The theoretical emphasis of a highest and best use analysis is on the potential uses of the land as though vacant. In reality, the market reflects the contribution of the existing improvement value and recognizes the impact of any possible alteration of those improvements. Consequently, the highest and best use of a property as improved is equally important in developing an opinion of market value.

Larger Parcel

The existing subject easement is encompassed by a single Larger Parcel. Elements of consideration in deciding the Larger Parcel are contiguity, or proximity, as it bears on the highest and best use of the property, unity of ownership, and unity of highest and best use. The Larger Parcel consists of two tracts of land with unity of ownership, an integrated highest and best use, and interrelated economic dependency.

A utility easement is not a common economic unit and sales of any type are atypical in the market. The process of valuation for a utility easement requires a value estimate of the subject's Larger Parcel before and after the easement has been considered. The Highest and Best Use analysis will address the Larger Parcel in the Before and After Conditions of the allocated planned easement area.

⁶ Appraisal Institute, *The Appraisal of Real Estate Appraisal*, 15th ed., (Chicago: Appraisal Institute, 2020)

⁷ Ibid

Highest and Best Use

As Vacant

“Among all reasonable, alternative uses, the use that yields the highest present land value, after payments are made for labor, capital, and coordination. The use of a property based on the assumption that the parcel of land is vacant or can be made vacant by demolishing any improvements.”⁸

As-Vacant – Legally Permissible – Before Condition

The Larger Parcel is zoned R-RD – Residential Rural Desert, with a consistent land use designation by the City of Desert Hot Springs’ Planning Department. The district is intended to allow for low-density, rural residential uses at a maximum density of 1 dwelling unit per 5 acres in a manner that will eliminate or minimize impacts on the natural landscape and will encourage conservation. The Residential Rural Desert (R-RD) land use designation allows for residential development at up to one dwelling unit per five acres. This designation is primarily located within the CVMSHCP’s identified conservation and hillside areas to provide for minimal impacts on the natural landscape and encourage conservation. Septic systems are allowed to serve existing and new developments.

The Larger Parcel meets and exceeds the minimum lot size requirements, and the legal constraints of the subject's Larger Parcel are reasonable, appropriate, and do not impair the highest and best use development potential of the site.

As-Vacant – Physically Possible – Before Condition

The subject’s Larger Parcel is a ±51.71-acre site located on the south side of 20th Avenue, east of Little Morongo Road in Desert Hot Springs, CA. Access is available from the south side of 20th Avenue. The property’s shape, accessibility, availability of utilities and other necessary infrastructure, and the site size are all typical for this area of Desert Hot Springs. The physical characteristics of the site do not impair their ability for potential development and represent the highest and best use as-vacant. Therefore, the highest and best use of the subject is not limited by any physical restraints or conditions.

The Larger Parcel is located in an unshaded Flood Zone X designation. Flood Zone X is defined as an area of minimal flood hazard that is determined to be outside the 100- and 500-year floodplains. A qualified engineer should be consulted concerning any possible flooding hazards that might exist on the subject property.

As Vacant – Financial Feasibility – Before Condition

Typically, financial feasibility for development on vacant land is determined with a simple comparison of costs and benefits. If the present value of the benefits to be derived from a proposed project is equal to or greater than the cost of production, then the project is considered feasible; if the benefits are less than the cost to produce the project, then it is not feasible. For the Larger Parcel, there is adequate demand for development as illustrated by the market analysis. Development is occurring within the broader Desert Hot Springs market, and demand in the housing market is increasing.

⁸ Appraisal Institute, The Dictionary of Real Estate Appraisal, 6th ed., (Chicago: Appraisal Institute, 2015)

Highest and Best Use

The current residential sales available for this portion of Desert Hot Springs are inadequate to support new speculative development. Considering these factors, I conclude that financial feasibility for new development is not achievable as of the date of value.

As Vacant – Maximally Productive – Before Condition

The physically possible and legally permissible uses for the subject's Larger Parcel are present in the subject's immediate region. The current financial feasibility for development appears inadequate as of the date of value, indicating the most maximally productive use of the Larger Parcel as-is, is to hold the property for investment and price appreciation.

As-Improved – Before Condition

“The use that should be made of a property as it exists. An existing property should be renovated or retained as-is so long as it continues to contribute to the total fair market value of the property, or until the return from a new improvement would more than offset the cost of demolishing the existing building and constructing a new one.”⁹

As of the date of this analysis, the subject property Larger Parcel is a raw desert parcel.

Highest and Best Use – After Condition

In both the before and after conditions, the Larger Parcel remains as a vacant site that existed prior to the easement acquisition. The easement acquisition is for underground utilities that will not provide any additional services to the Larger Parcel. The ±10,482-ft² of the physical area allocated to the easement has no economic or physical impact on the Larger Parcel in the after condition. While not considered in this analysis, the physical improvements associated with the easement infrastructure present a general benefit to the community. Therefore, outside of the loss of physical area, the highest and best use of the Larger Parcel in the after condition is considered unchanged.

⁹ Appraisal Institute, The Dictionary of Real Estate Appraisal, 6th ed., (Chicago: Appraisal Institute, 2015)

Appraisal Process

The first step in the appraisal process is to identify the appraisal problem. Every real property is different, allowing many types of value estimates for any one property. For this appraisal assignment, I am developing an opinion of the fair market value of a ±10,482-ft² underground utility easement on the defined Larger Parcel. Based on the scope of work, the subject Larger Parcel and the easement are initially valued. The date of value is December 6, 2023.

The definition of fair market value has been described in this report's Scope of the Appraisal section. The subject's Larger Parcel and the type of value desired have been identified. Through the appraisal process, it is the intent of this analysis to present a properly supported opinion of fair market value and total compensation estimate for the subject property. The market data, analysis, and conclusions presented in the Appraisal Report should cause a reasonable person to reach similar conclusions.

A utility easement is not an economic unit, and the easement area is to establish a groundwater monitoring well site on the subject's Larger Parcel. As vacant land, there is one primary and reliable valuation method, the Sales Comparison Approach. The cost and income analysis models are not applied, as the properties are valued in an as-is vacant condition, and these model conclusions would not provide any additional insight into determining the requested final value estimate.

Using the following procedure as defined by the State of California and USPAP, the appraisal process of this report is as follows:

1. Value Larger Parcel before right-of-way acquisition
2. Value of the acquired right-of-way as part of the whole
3. Value Larger Parcel after right-of-way acquisition (remainder)
4. Value Larger Parcel after right-of-way acquisition and before benefits
5. Severance Damages
6. Benefits

Typically, residential land trades on a per-square-foot or per-acre basis. Based on the subject's size, use, and easement size, the unit of comparison applied in this appraisal model is a price per square foot.

Sales Comparison Approach

"A set of procedures in which a value indication is derived by comparing the property being appraised to similar properties that have been sold recently, then applying appropriate units of comparison and making adjustments to the sale prices of the comparables based on the elements of comparison. The sales comparison approach may be used to value improved properties, vacant land, or land being considered as though vacant; it is the most common and preferred method of land valuation when an adequate supply of comparable sales is available."¹⁰

¹⁰ Appraisal Institute, The Dictionary of Real Estate Appraisal, 6th ed., (Chicago: Appraisal Institute, 2015)

Appraisal Process

The sales comparison approach can be a strong indicator when sufficient comparable sales data exists and is generally the best technique available to estimate the fair market value of vacant land. Sufficient sales are available to estimate the value of the subject's Larger Parcel and, subsequently, the utility easement area.

Step three of the outlined analysis calculates the contributory value of the remainder as part of the whole before the taking. It is not a separate value estimate but a mathematical calculation. In step four of the analysis, the remainder property is valued separately from the easement area.

Severance Damages

Severance damages can only result from a partial taking and may be defined as: in condemnation, the loss in value to the remainder in a partial taking of a property. Generally, the difference between the value of the whole property before the taking and the value of the remainder after the taking is the measure of the value of the part taken and the severance damages to the remainder.

In theory, severance damages are usually based on the difference in the value of the property before the taking and the value of the remaining property after the taking has occurred. This test is applied to the subject's Larger Parcel.

Benefits

Unlike severance damages, benefits may be defined as either general or specific. General benefits are those that benefit the community at large and have a beneficial effect on the value of the properties that have not been taken or damaged, as well as on the value of properties which have been directly affected by the taking. General benefits may not be used as an offset against severance damages, or the value of the property taken.

Specific benefits are anything that constitutes a specific benefit directly to the subject property because of the taking. The severance damages and benefits are calculated as separate independent items and are not balanced. Like severance damages, any benefits to the remainder parcel are to be measured by the increase, if any, in the reasonable fair market value of the remainder due to the proposed improvement or taking.

Sales Comparison Approach

In the sales comparison model, the analysis addresses the Larger Parcel in the before and after condition under the defined as-is vacant condition on the date of value. In the after condition, the valuation model will exclude the easement area allocated to the Larger Parcel and any potential impact that the easement has on the remainder valuation. The table below illustrates the Larger Parcel in the before condition and the easement acquisition area:

Larger Parcel:	±51.71 acres	±2,252,489-ft ²
Easement Acquisition:	±0.24 acres	±10,482-ft ²

Based upon the principle of substitution, the sales comparison model demonstrates that the value of a property in the market tends to be set by the cost of acquiring an equally desirable substitute property. When substitute properties are unavailable in the market, the reliability of the sales comparison model may be less than that of other approaches to value.

In the Sales Comparison Approach, I compare the subject Larger Parcel to recently sold similar properties and active listings where offering information is available. I analyze the data for the comparable data points and make comparisons to demonstrate the highest probable price at which the subject property would sell if offered on the market. The Dictionary of Real Estate Appraisal defines the sales comparison approach as follows:

“The process of deriving a value indication for the subject property by comparing sales of similar properties to the property being appraised, identifying appropriate units of comparison, and making adjustments to the sale prices (or unit prices, as appropriate) of the comparable properties based on relevant, market-derived elements of comparison. The sales comparison approach may be used to value improved properties, vacant land, or land being considered as though vacant when an adequate supply of comparable sales is available.”¹¹

A field investigation and a search of public records were conducted in obtaining the most recent comparable data points. The primary selection criteria applied in the analysis are as follows: current transactions, similar locational attributes, and similar highest and best use. As described in previous sections, the subject’s Larger Parcel is valued as-is with a highest and best use of future development or to be held for price appreciation. Each of the respective data points falls into these general comparison criteria.

The comparable properties utilized are vacant land parcels from within the surrounding market area. A sales comparison model is a dependable valuation method for vacant residential land. While the number of market transactions is limited, it is sufficient to provide a reliable value estimate. To begin an analysis of the comparable data, I summarize and then detail each data point, identifying and qualifying the elements of comparison that influence value into an indicated value adjustment. Typically, the elements of comparison that affect value include the passage of time, size, physical features, and locational differences. To analyze the degree to which the elements of comparison affect value, I reduce the subject and comparable data to a common unit of comparison. As discussed earlier, I will utilize a price per square foot for the analysis of the subject property.

¹¹ Appraisal Institute, The Dictionary of Real Estate Appraisal, 6th ed., (Chicago: Appraisal Institute, 2015)

Sales Comparison Approach

The table below summarizes the data points used for this analysis.

Data #	Location	Sale Date	Sale Price	Size (Ac.)	Sale Price Per Acre	Sale Price Per Sq.Ft.
1	NEC Brunn Lane & McCarger Road Desert Hot Springs, CA	11/17/23	\$530,000	40.00	\$13,250	\$0.30
2	South Side of 14th Avenue, East of Indian Canyon Drive Desert Hot Springs, CA	3/16/23	\$300,000	23.53	\$12,750	\$0.29
3	South of Dillon Road, West of Palm Drive Desert Hot Springs, CA	10/14/22	\$60,000	5.00	\$12,000	\$0.28
4	South Side of 19th Avenue, West of Corkhill Road Desert Hot Springs, CA	3/27/23	\$130,000	10.00	\$13,000	\$0.30
5	East of Worsley Road, South of Estrada Street Desert Hot Springs, CA	1/28/22	\$510,000	41.81	\$12,198	\$0.28
6	E&W Sides of Terry Drive, North of Dillon Road Sky Valley, CA	Active	\$450,000	50.00	\$9,000	\$0.21
Subj.	Southeast Corner of 20th Avenue, and Little Morongo Road Desert Hot Springs, CA	6-Dec-23		51.71		

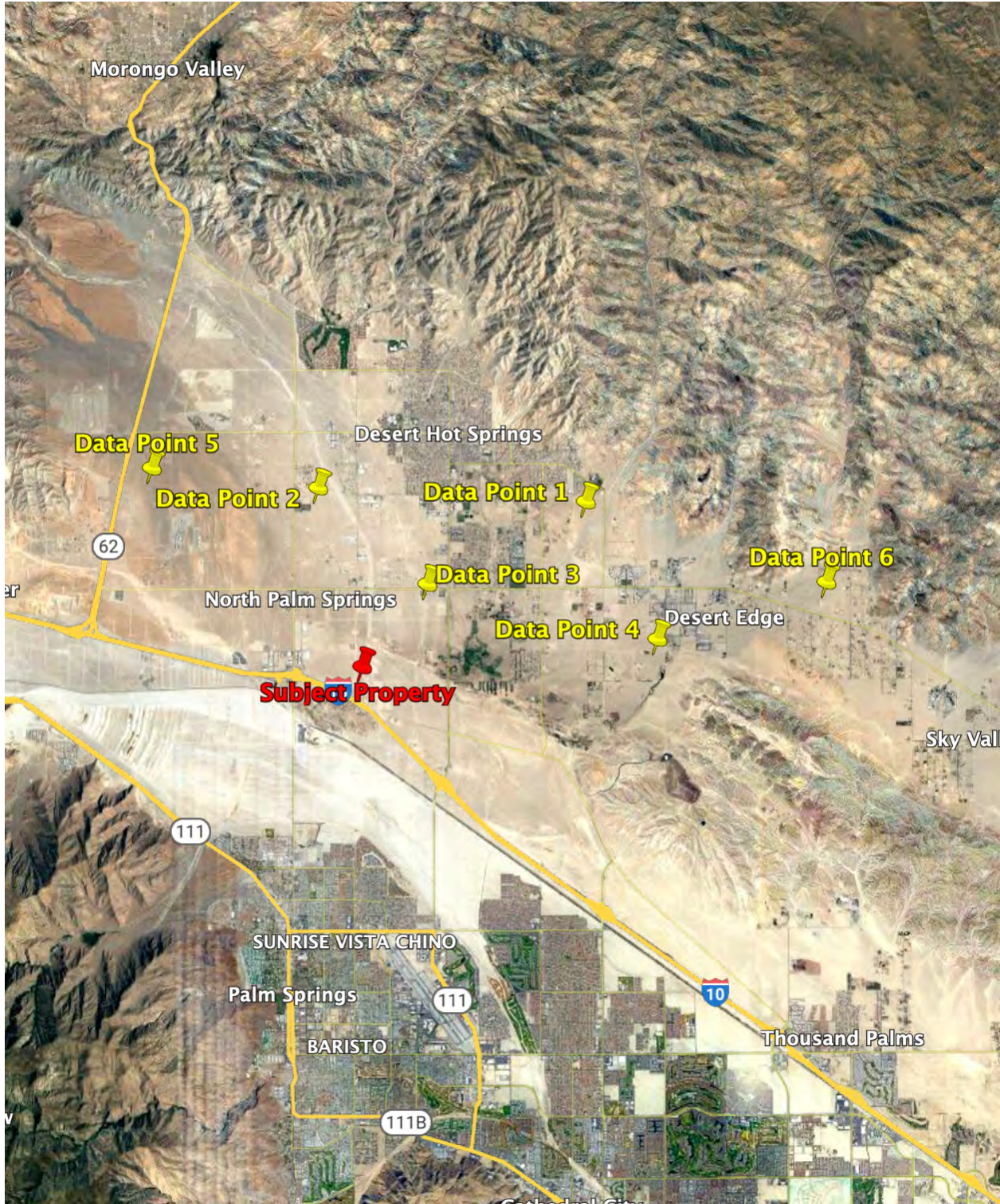
Data Overview

The selected data points include five closed sales and one active listing from the Desert Hot Springs market area. Each is a similar residential parcel. The model utilizes sales with parcel sizes ranging between ± 5.00 acres to the largest at ± 50.00 acres, which approximately brackets the subject properties ± 51.71 -acre size. As stated, the subject is located north of Interstate 10 on the south side of 20th Avenue in the Coachella Valley Multiple Species Habitat Conservation area. Three of the five data points are in superior locations, and two are considered inferior locations.

The closing dates for the data set are between January 2022 to the more recent sales that occurred in November 2023. The collected data represents the most recent confirmable sales available. While the locational attributes vary, each site offers a similar highest and best use and would attract a similar buyer. The differences in size and utility require the analysis to bracket an unadjusted value, intending to narrow this range into a reliable adjusted value indication on a per-square-foot basis.

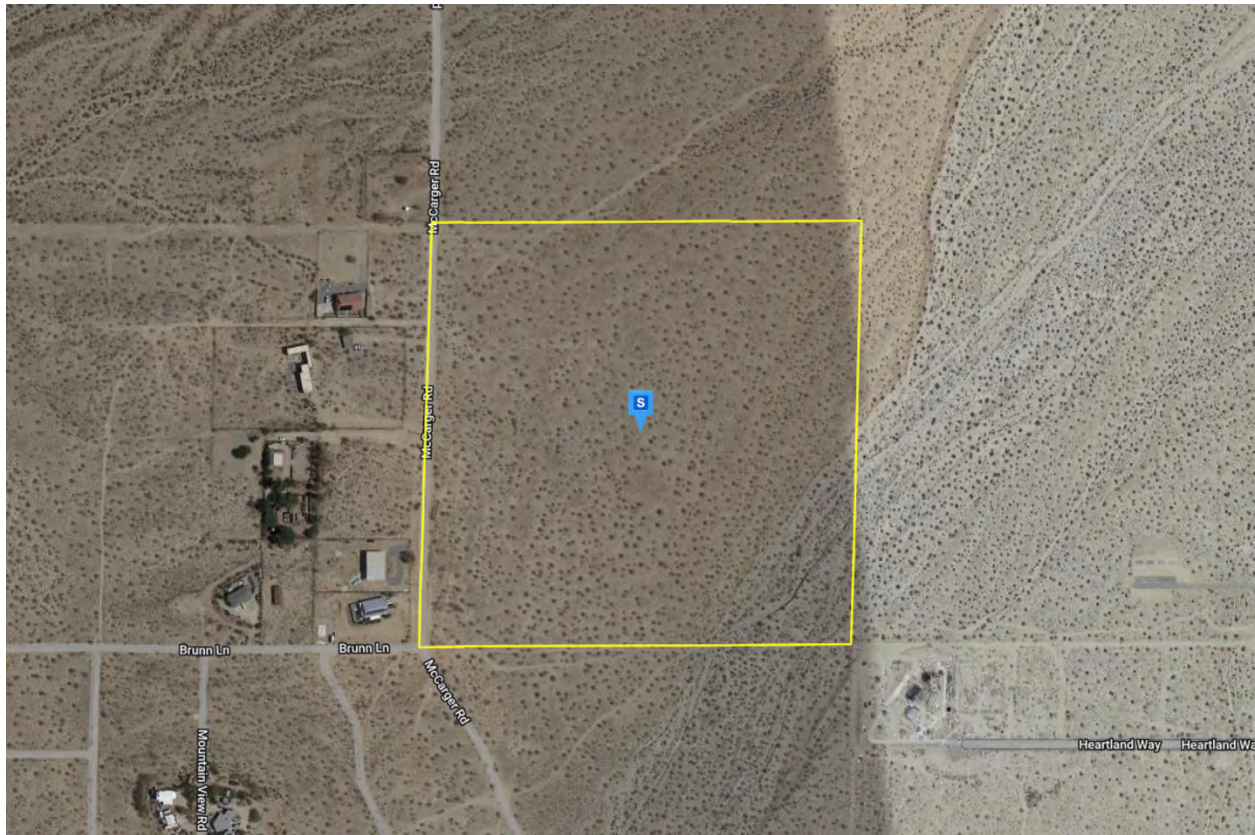
Sales Comparison Approach

Land Data Point Map



Sales Comparison Approach

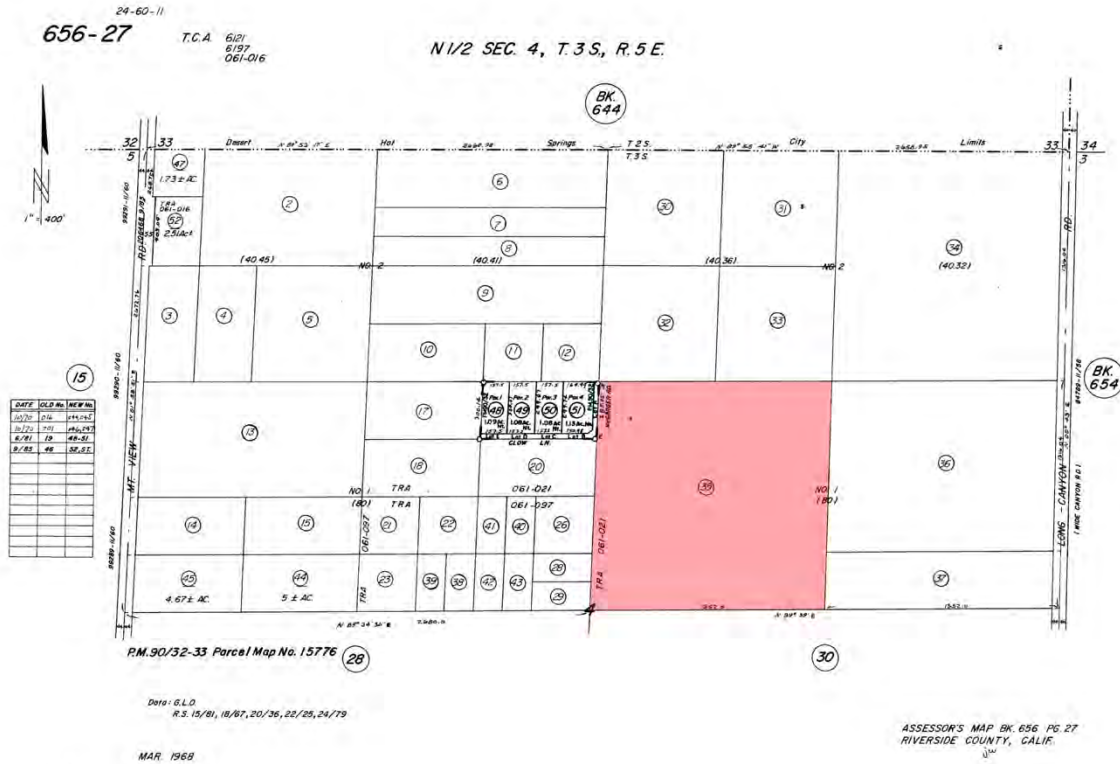
Data Point 1 – Land Sale



Location:	NEC Brunn Lane and McCarger Road, Desert Hot Springs, CA	
Identification:	APN 656-270-035, Riverside County, CA	
Date of Sale:	November 17, 2023	
Documentation:	Grant Deed # 347222, Riverside County, CA	
Grantor:	Dale E Richards / Douglas A Richards / Dean C Richards / Donald F Richards / David P Richards, Jr	
Grantee:	LJM Ventures, LLC	
Sale Price:	\$530,000	
Financing:	None	
Exchange:	No	
Cash Equivalency:	\$530,000	
Zoning:	W-2, Riverside County, CA	
Flood Zone:	Zone AO	
Site Size:	±40.0 acres / ±1,742,400-ft ²	
Utilities:	All available	
Lot Position:	Corner	
Improvements:	None	
Topography:	Mostly level	
Price Per Acre/ PSF:	\$13,250	\$0.30 PSF

Sales Comparison Approach

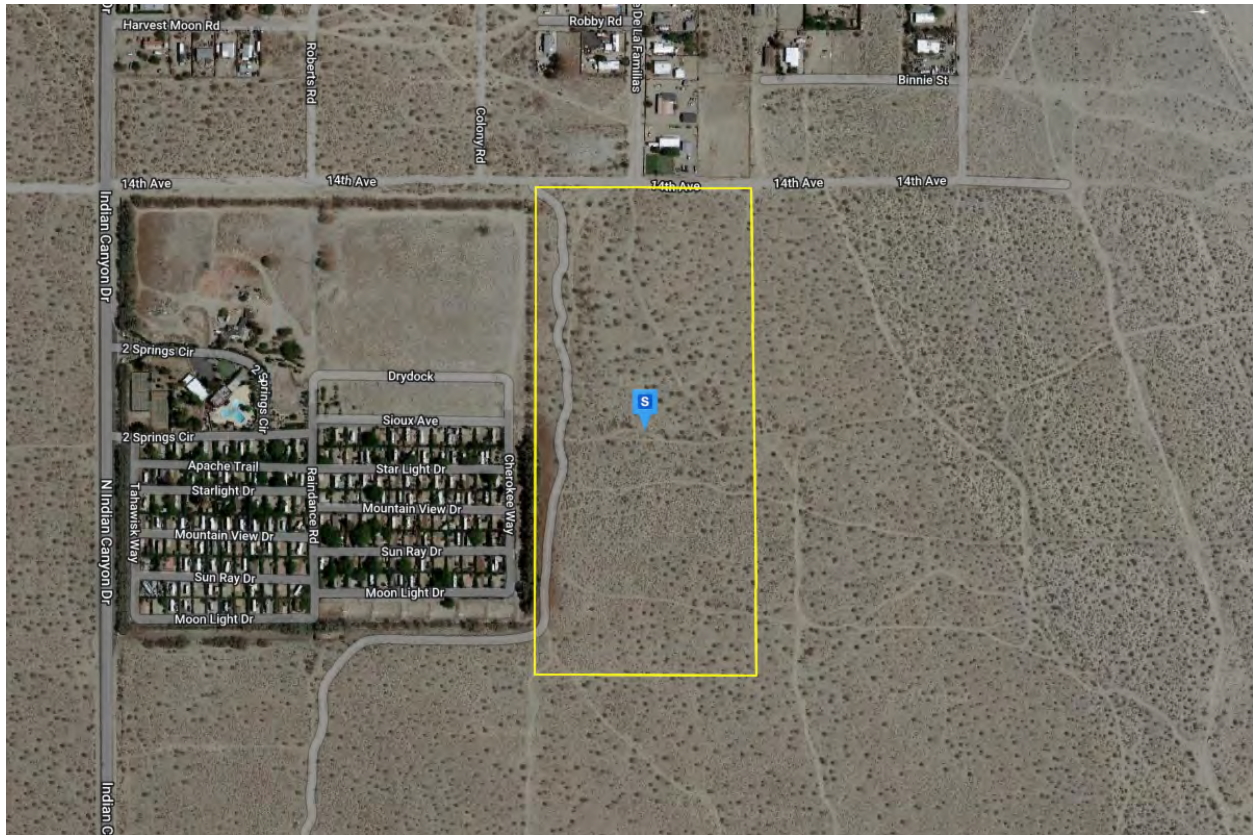
Verification/History: Buyer – The seller or a related entity held the property for more than 20 years.



Data Point 1 is the November 2023 sale of a ±40.0-acre site located on the northeast corner of Brunn Lane and McCarger Road in Desert Hot Springs, CA. The sale price of \$530,000 represents an unadjusted price per acre of \$13,250 or \$0.30 per square foot. The site is considered to be in a superior location as the subject property. The property was acquired for investment purposes. The property is considered an arm's length transaction with no atypical conditions of sale and aligns with the definition of market value utilized in this Appraisal Report.

Sales Comparison Approach

Data Point 2 – Land Sale

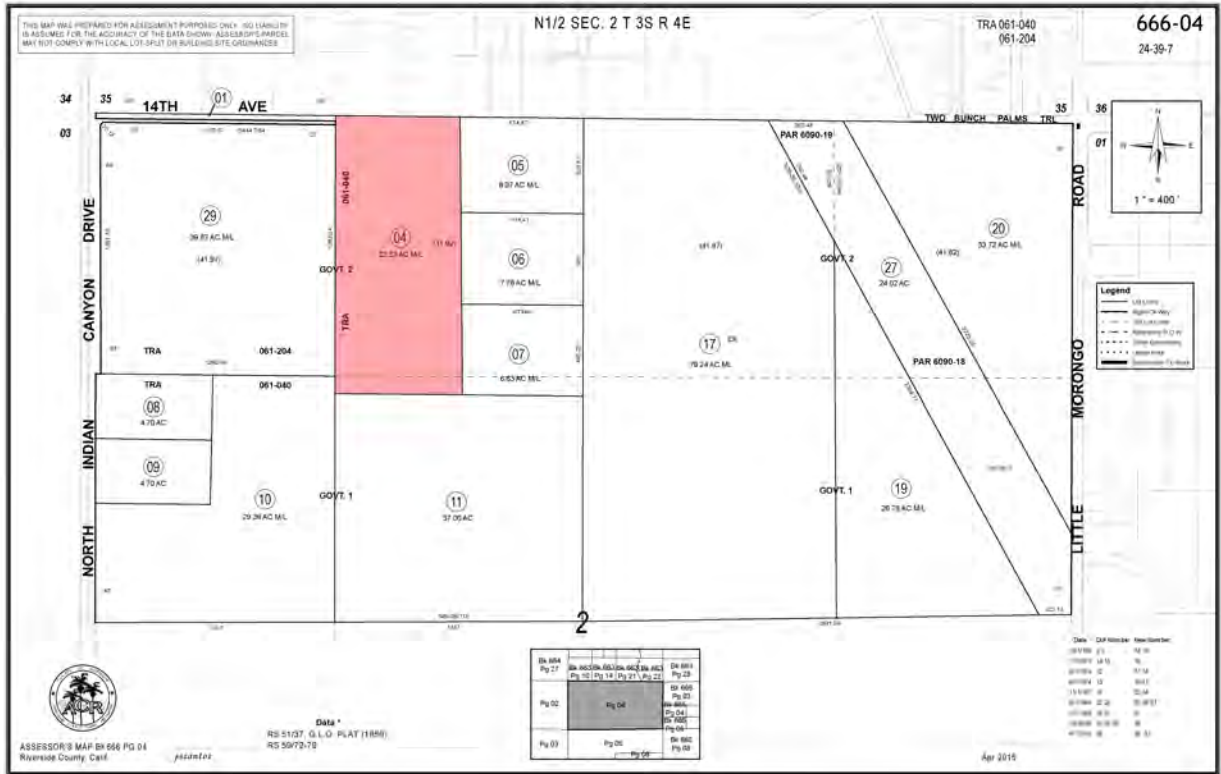


Location:	South side of 14 th Avenue, East of Indian Canyon Drive, Desert Hot Springs, CA
Identification:	APN 666-040-004, Riverside County, CA
Date of Sale:	March 16, 2023
Documentation:	Grant deed # 76747, Riverside County, CA
Grantor:	Joseph R Sitko
Grantee:	Blossom Capital QOF, LLC
Sale Price:	\$300,000
Financing:	None
Exchange:	No
Cash Equivalency:	\$300,000
Zoning:	W-2, Riverside County
Flood Zone:	Zone X
Site Size:	±23.53 acres / ±1,024,967-ft ²
Utilities:	All available
Lot Position:	Interior
Improvements:	None
Topography:	Mostly level

Sales Comparison Approach

Price Per Acre/ PSF: \$12,750 \$0.29 PSF

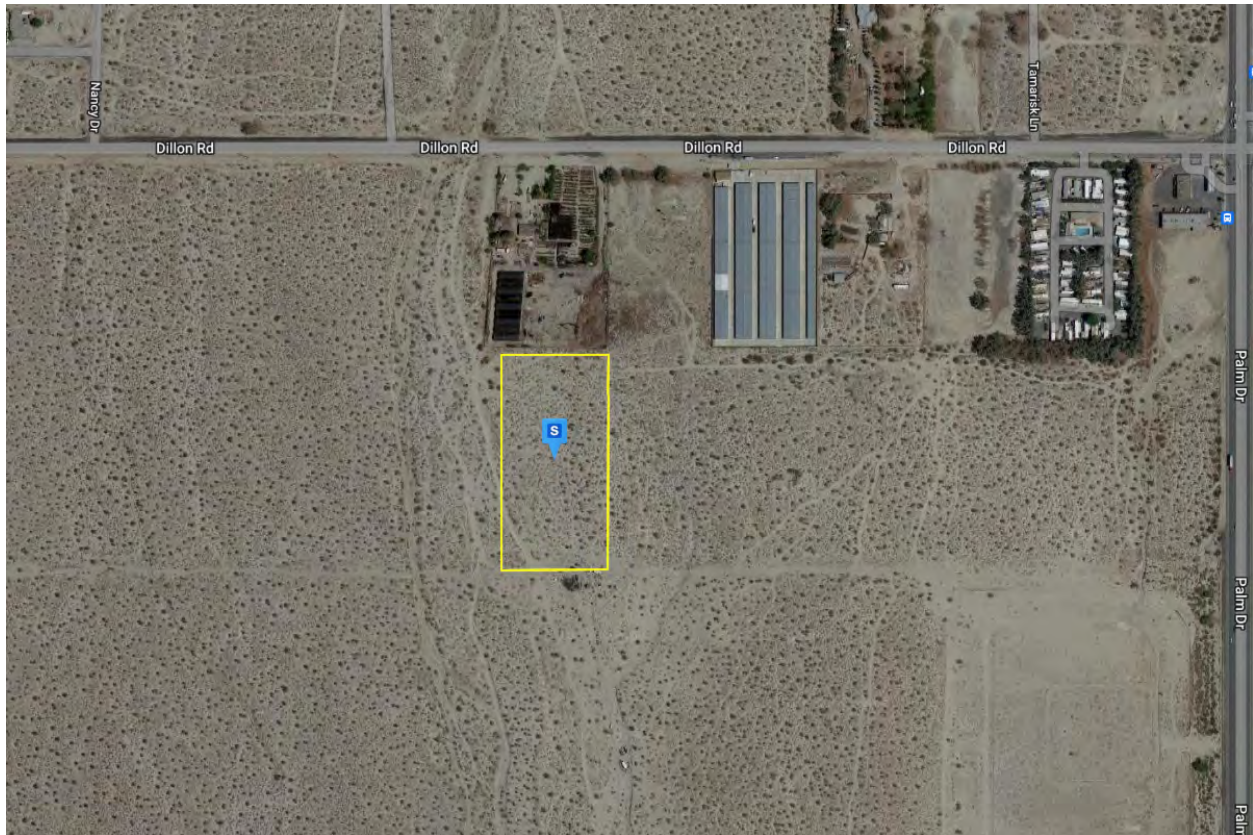
Verification/History: Listing agent - The seller acquired the property in January 2006 for a recorded \$900,000. The property was on the market for 335 days at an asking price of \$325,000.



Data Point 2 is the sale of a ±23.53-acre site located on the south side of 14th Avenue, east of North Indian Canyon Drive in the Desert Hot Springs area of Riverside County, CA. Data Point 2 transferred for \$300,000 or \$0.29 per square foot, after 335 days on the market. The property has access to utilities and legal access. The site is considered to be in a superior location and similar access. The property is considered an arm’s length transaction with no atypical conditions of sale and aligns with the definition of market value utilized in this Appraisal Report.

Sales Comparison Approach

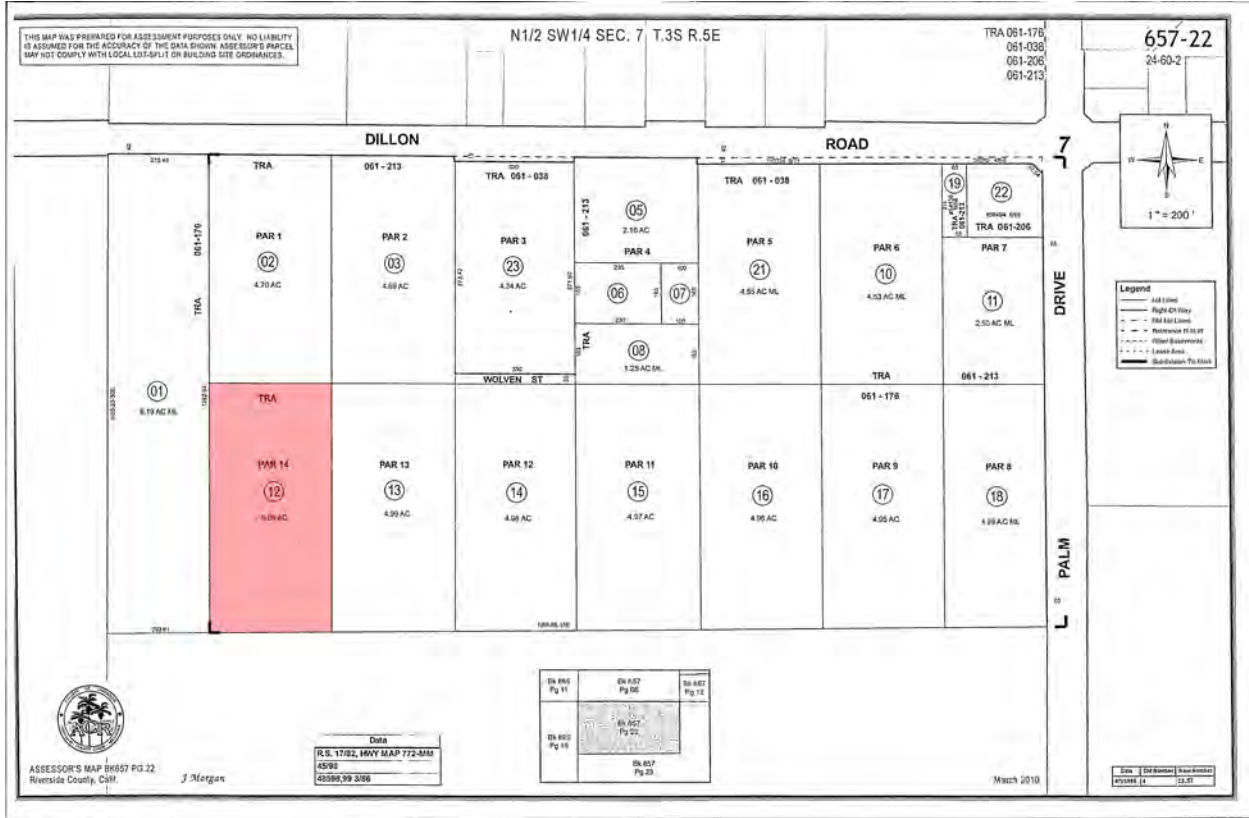
Data Point 3 – Land Sale



Location:	South of Dillon Road, West of Palm Drive, Desert Hot Springs, CA	
Identification:	APN 657-220-012, Riverside County, CA	
Date of Sale:	October 14, 2022	
Documentation:	Grant deed # 429029, Riverside County, CA	
Grantor:	Julia M Payne	
Grantee:	Luis David Morgan Gomez	
Sale Price:	\$60,000	
Financing:	None	
Exchange:	No	
Cash Equivalency:	\$60,000	
Zoning:	R-RD, Desert Hot Springs, CA	
Flood Zone:	Zone AO	
Site Size:	±5.0 acres / ±217,800-ft ²	
Utilities:	All available	
Lot Position:	Interior	
Improvements:	None	
Topography:	Mostly level	
Price Per Acre/ PSF:	\$12,000	\$0.28 PSF

Sales Comparison Approach

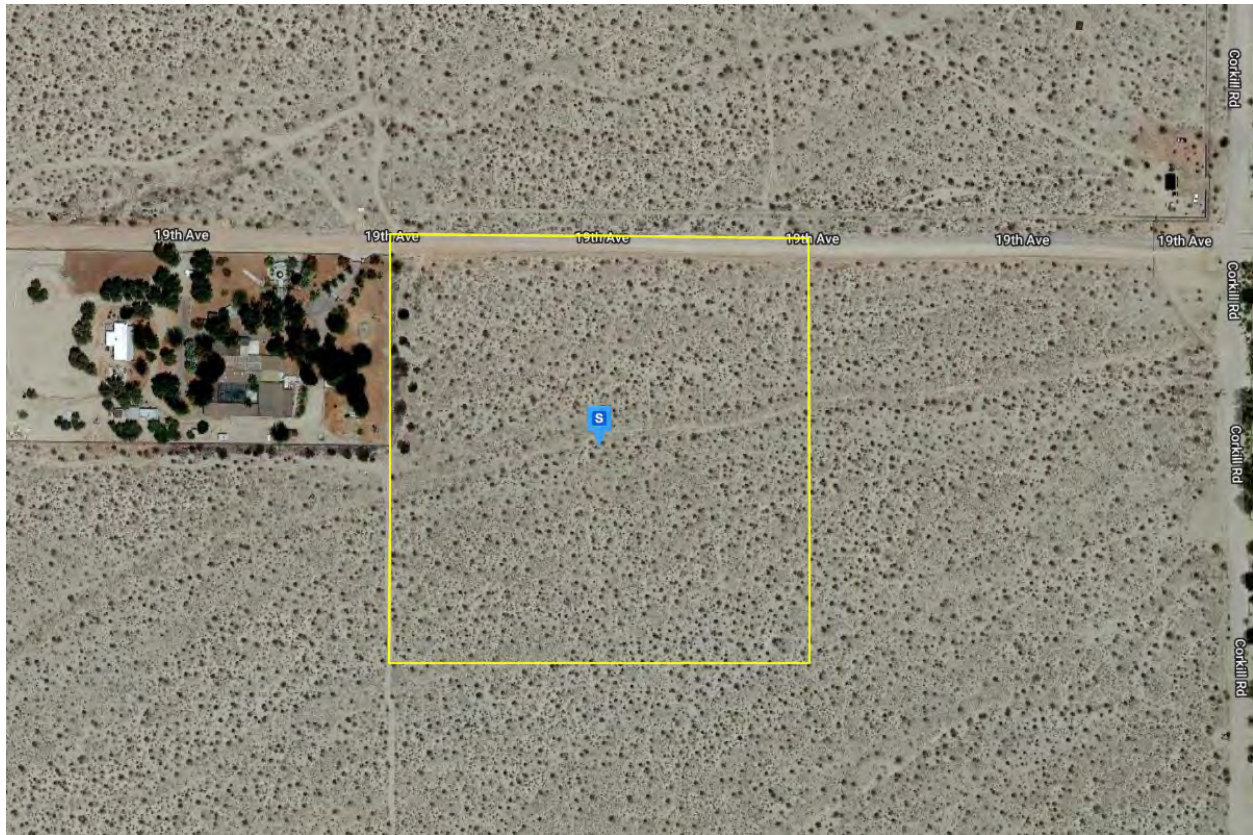
Verification/History: Buyer – public record / Ownership history for the property was unavailable.



Data Point 3 is the sale of a ±5.00-acre site located south of Dillon Road, west of Palm Drive in Desert Hot Springs, CA. Data Point 3 transferred for \$60,000 or \$0.28 per square foot. The property has access to utilities although no improved access. The site is within the Coachella Valley Multiple Species Habitat Conservation Plan and is considered to be in a similar location as the subject, although with inferior access. The property is considered an arm’s length transaction with no atypical conditions of sale and aligns with the definition of market value utilized in this Appraisal Report.

Sales Comparison Approach

Data Point 4 – Land Sale

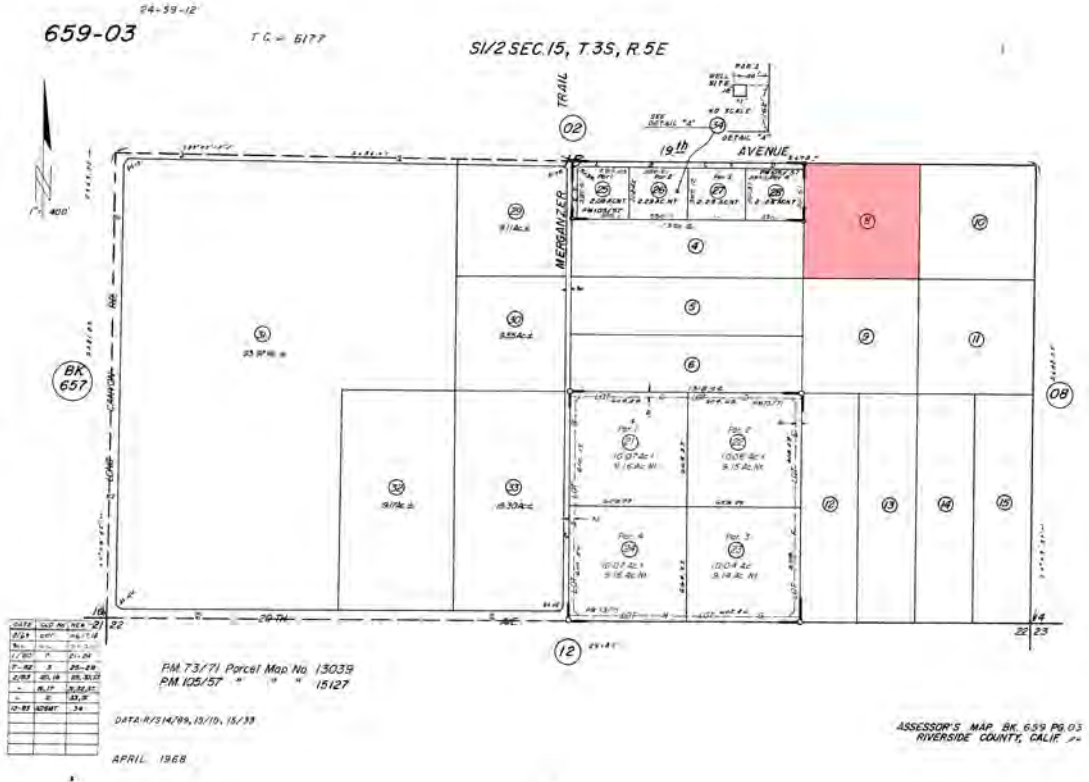


Location:	South Side of 19 th Avenue, West of Corkhill Road, Desert Hot Springs, CA
Identification:	APN 659-030-008, Riverside County, CA
Date of Sale:	March 27, 2023
Documentation:	Grant deed # 85982, Riverside County, CA
Grantor:	Paul W Haase
Grantee:	Linda Lesmana Trust
Sale Price:	\$130,000
Financing:	None
Exchange:	No
Cash Equivalency:	\$130,000
Zoning:	W-2, Riverside County, CA
Flood Zone:	Zone A
Site Size:	±10.0 acres / ±435,600-ft ²
Utilities:	All available
Lot Position:	Interior
Improvements:	None
Topography:	Mostly level

Sales Comparison Approach

Price Per Acre/ PSF: \$13,000 \$0.30 PSF

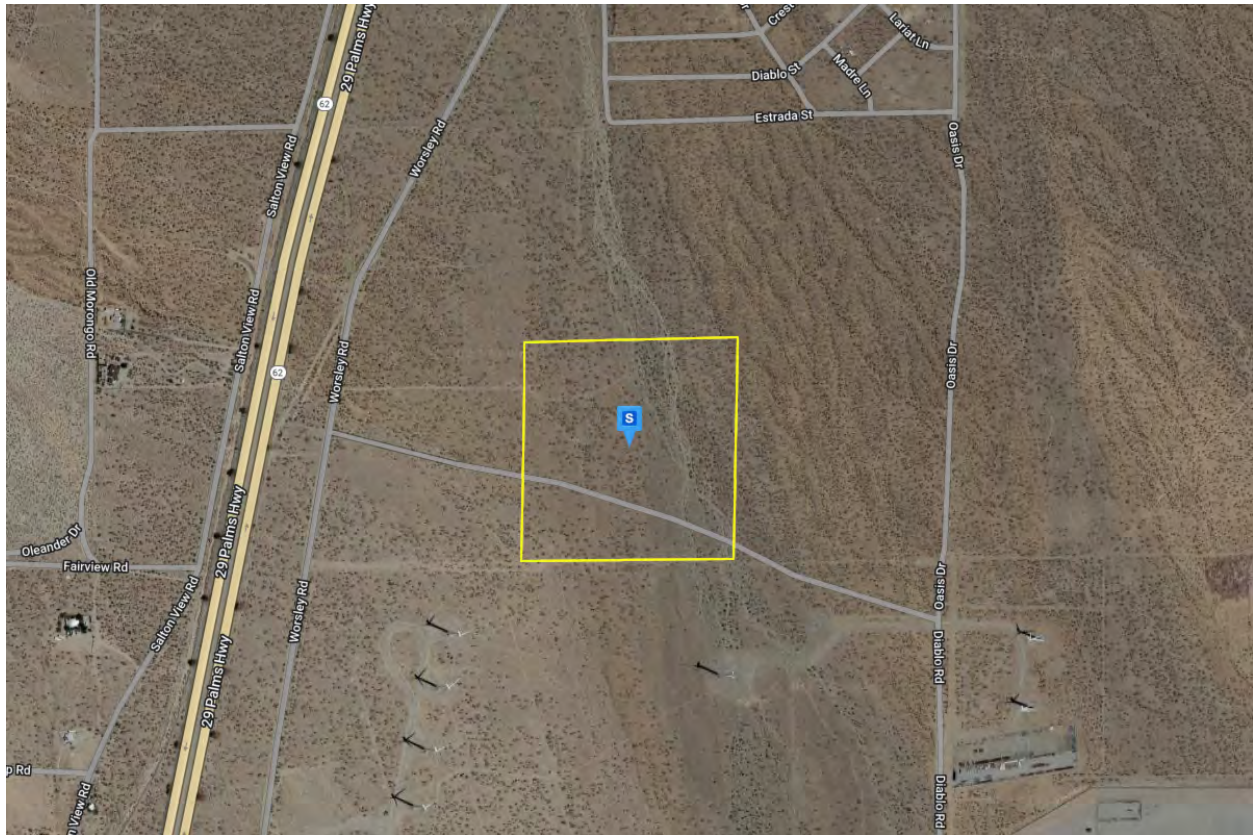
Verification/History: Listing agent - The owner or a related entity held the property for more than 20 years. The property was on the market for 147 days at an asking price of \$150,000



Data Point 4 is the sale of a ±10.00-acre site located on the south side of 19th Avenue, west of Corkhill Road in the Desert Hot Springs area of Riverside County, CA. Data Point 4 transferred for \$130,000 or \$0.30 per square foot, after 147 days on the market. The property has access to utilities and legal access. The site is considered to be in a superior location with similar access. The property is considered an arm’s length transaction with no atypical conditions of sale and aligns with the definition of market value utilized in this Appraisal Report.

Sales Comparison Approach

Data Point 5 – Land Sale



Location:	East of Worsley Road, South of Estrada Street, Desert Hot Springs, CA
Identification:	APN 667-220-029, Riverside County, CA
Date of Sale:	January 28, 2022
Documentation:	Grant deed # 47475, Riverside County, CA
Grantor:	NDHS, LLC
Grantee:	GM Gabrych Family LP
Sale Price:	\$510,000
Financing:	None
Exchange:	No
Cash Equivalency:	\$510,000
Zoning:	W-2-5, Riverside County, CA
Flood Zone:	Zone X
Site Size:	±41.81 acres / ±1,821,244-ft ²
Utilities:	All available
Lot Position:	Interior
Improvements:	None
Topography:	Mostly level

Sales Comparison Approach

Price Per Acre/ PSF: \$12,198 \$0.28 PSF

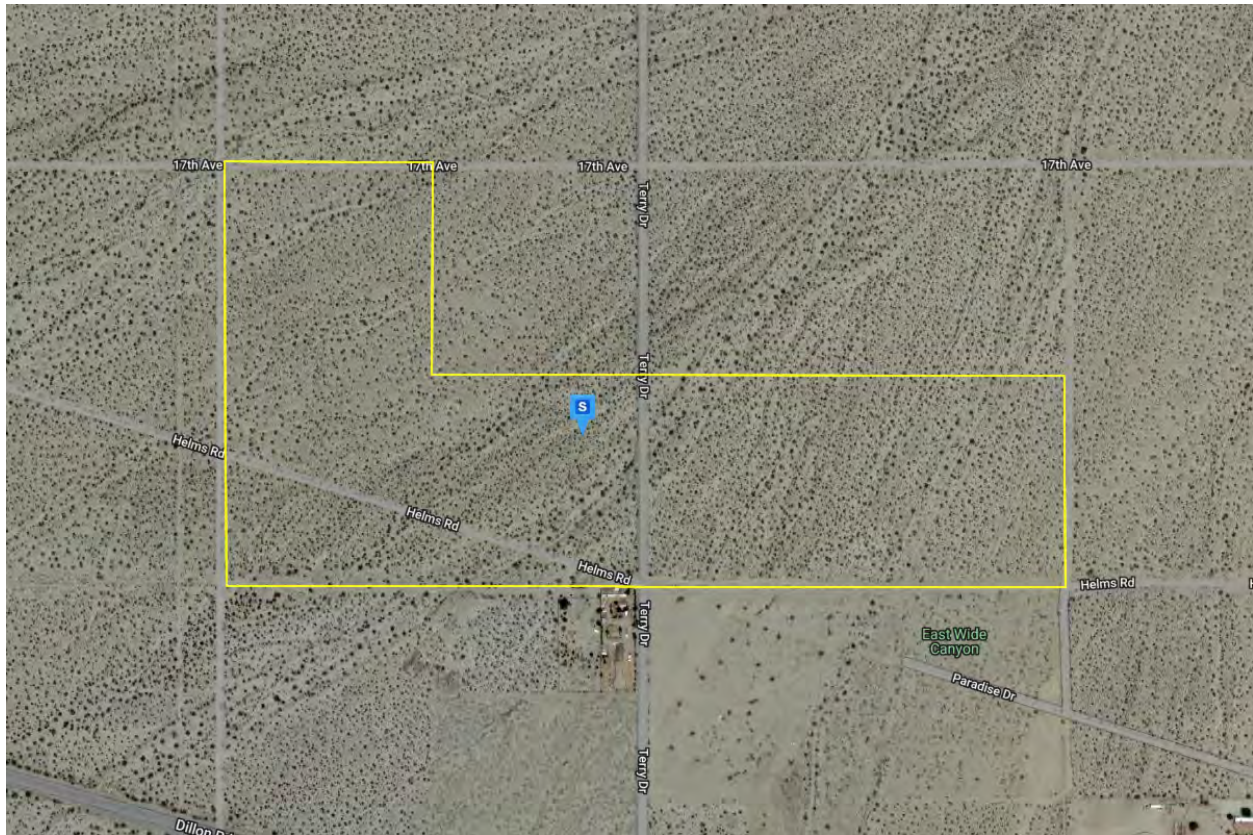
Verification/History: Listing agent - The owner or a related entity acquired the in February 2005 for a recorded \$283,000. The property was on the market for 15 days at an asking price of \$599,000.



Data Point 5 is the sale of a ±41.81-acre site located east of Worsley Road, south of Estrada Street in the Desert Hot Springs area of Riverside County, CA. Data Point 5 transferred for \$510,000 or \$0.28 per square foot, after 15 days on the market. The property has access to utilities and inferior access. The site is considered to be in a superior location. The property is considered an arm’s length transaction with no atypical conditions of sale and aligns with the definition of market value utilized in this Appraisal Report.

Sales Comparison Approach

Data Point 6 – Land Listing

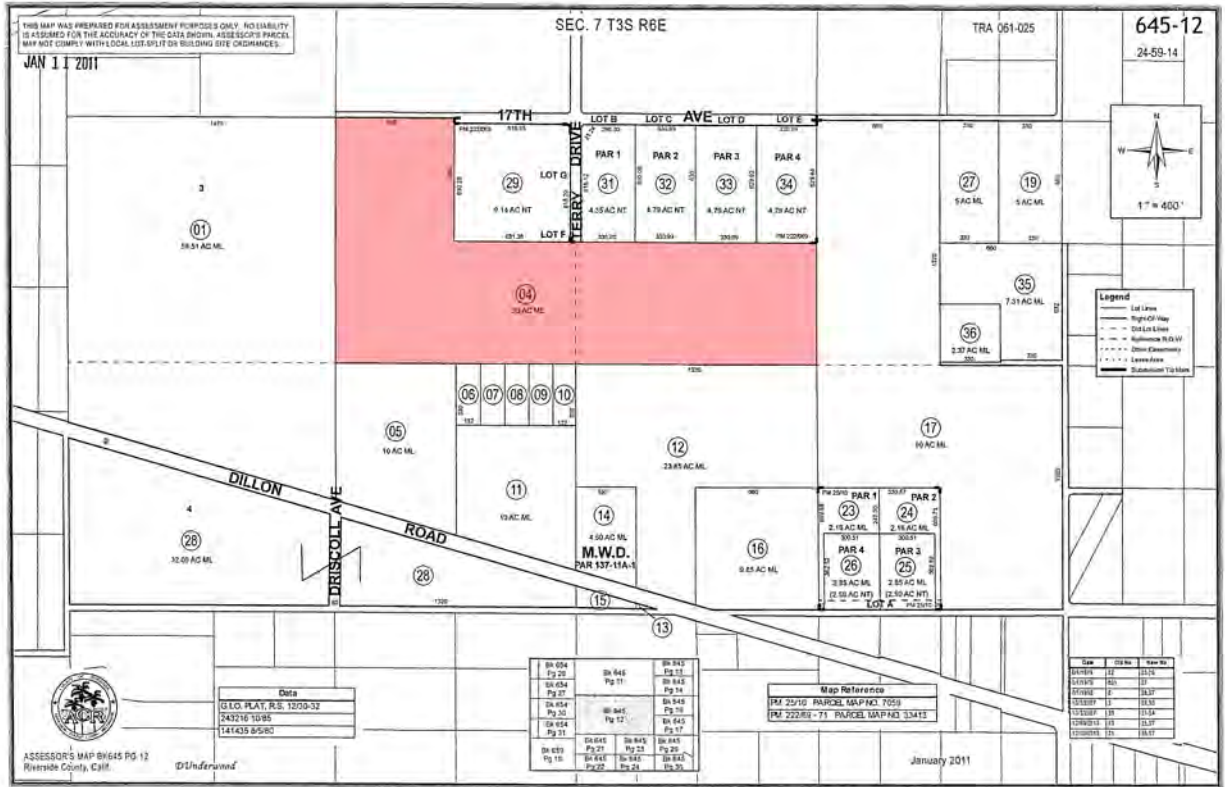


Location:	East and West Sides of Terry Drive, North of Dillon Road, Sky Valley, CA
Identification:	APN 645-120-004, Riverside County, CA
Listing Status:	Active
Listing Agent:	Salomon Urquiza, Compass Real Estate, Palm Springs, CA
Owner:	Siria Salomon
Grantee:	N/A
Asking Price:	\$450,000
Financing:	None offered
Exchange:	No
Cash Equivalency:	\$450,000
Zoning:	R-1, Riverside County, CA
Flood Zone:	Zone X
Site Size:	±50 acres / ±2,178,000-ft ²
Utilities:	All available
Lot Position:	Interior
Improvements:	None
Topography:	Mostly level

Sales Comparison Approach

Price Per Acre/ PSF: \$9,000 \$0.21 PSF

Verification/History: Listing agent -The seller acquired the property in August 2018 for a recorded \$30,000.



Data Point 6 is the active listing of a ±50.0-acre site located on the east and west sides of Terry Drive, north of Dillon Road and south of 17th Avenue, in the Sky Valley area of Riverside County, CA. The property is listed for \$450,000, or \$0.21 per square foot. The site is considered to be in a superior location with similar access.

Sales Comparison Approach

Adjustments

Adjustments to each data point are required for the significant differences in the data that affect value. The modeling adheres to a sequence of adjustments in each sales comparison model. Using this sequence, I obtain intermediate price figures and apply succeeding adjustments to each previously adjusted price. The adjustments applied to the data points reflect the property's superiority or inferiority concerning the real property rights conveyed, financing, conditions of sale, market conditions, locational and physical characteristics. A standard method of extracting adjustments among comparable sales is a technique called matched-pairs analysis. The goal of a matched-pairs analysis is to obtain market-based adjustments. The basic premise of matched pairs is to isolate an adjustment feature among two or more sales, where the difference in adjusted prices would yield the market's value perception for that feature.

The analysis follows a sequence of adjustments to isolate market-based adjustments from intermediate adjusted sale prices. In many cases, adjustment features cannot be isolated. Limited comparable data, unique property traits, or other factors may cause this problem. When adjustment features cannot be isolated, alternative adjustment techniques are utilized. These methods typically include cost-based adjustments, adjustments based on a market survey, adjustments based on published data, and quantitative adjustments. The following is a discussion of the relevant adjustment factors.

Property Rights Conveyed

All comparable data points reflect the transfer or listing of fee simple estates; therefore, no property rights adjustments appear warranted or applied.

Financing Terms

All completed data point sales transferred for cash or cash equivalency and no adjustments are necessary.

Conditions of Sale

The five completed sales confirm as arm's-length transactions and do not require adjustments for conditions of sale. Comparable Data Point 6 is an active listing and adjusted downward for the ongoing marketing programs. A downward 10% adjustment is applied and is based on the average close price asking price ratio for the broader Coachella Valley market area.

Market Conditions

Adjustments for market conditions reflect a change in prices paid for real property based on changes in markets over time. The earliest sale occurred in January of 2022 and the most recent acquisitions closed in March 2023. Based on the market analysis, residential land values in this region of Desert Hot Springs have been stable over the past several quarters. Based on the recent transfer dates of the comparable data points, I have elected not to apply a market conditions adjustment in this model.

Sales Comparison Approach

Location

The subject property's location is located within the City of Desert Hot Springs, although in an area of limited development. The site is positioned at the southeast corner of 20th Avenue and Little Morongo Road in the western portion of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), which is a comprehensive conservation plan designed to conserve and manage natural resources in the Coachella Valley region.

The main goal of the CVMSHCP is to protect, conserve, and manage natural habitats for multiple species, especially those that are threatened or endangered. It covers various habitats, from desert ecosystems to riparian woodlands. The CVMSHCP works with local government entities, developers, and landowners to guide development and land use to minimize habitat impact. It often helps streamline the process of obtaining necessary permits under the Endangered Species Act.

While the subject property is legally permissible for residential development, the process is more complex and onerous for the landowner. All six comparable data points are located outside of the CVMSHCP, providing a more streamlined path to development. A subjective downward 5% adjustment is applied to each of these comparable data points. Data Point 3 is located within the CVMSHCP, and no locational adjustment is applied.

Data Points 3 and 5 have inferior access in comparison to the subject. A subjective upward 10% adjustment is applied to these data points.

Utilities

In the as-is condition, the subject property has access to all utilities available in the area, but services are not established. All the comparable sales have similar access to utilities. No adjustments for utilities are required.

Improvements

In the model, the subject property is considered a vacant site. Each comparable data point is similarly vacant, and no adjustments are applied.

Site Size

The size of a property affects the uses it will support and the buyers it will attract. Size adjustments are generally based on the concept of "marginal utility." Marginal utility is defined as follows.

"The increment of total utility added by the last unit of a good at any given point of consumption. In general, the greater the number of items, the lower the marginal utility, i.e., a greater supply of an item or product lowers the value of each item."¹²

The concept of marginal utility holds true for vacant residential land parcels in the subject market.

¹² Appraisal Institute, The Dictionary of Real Estate Appraisal, 6th ed., (Chicago: Appraisal Institute, 2015)

Sales Comparison Approach

While larger sites can support a wider variety of uses and larger projects, the cost of development, occupancy, and management increases risk. Additionally, the available buyer pool typically decreases as the total site size increases.

With the subject property type and size in comparison to this data set, the size differentials are wide, necessitating an adjustment analysis. Using a matched-pairs analysis with each of the sales, I extrapolated an adjustment factor for each pair that presented a range of factors that was averaged at the adjustment for the model. I have used this adjustment factor based on the difference between the subject's size and the size of the comparable data points. The adjustments are considered modest and address the size differential and associated discounts.

The following table illustrates the adjustments applied to the data group and the value conclusions.

Element	Subject	DP-1	DP-2	DP-3	DP-4	DP-5	DP-6
Sale Price		\$530,000	\$300,000	\$60,000	\$130,000	\$510,000	\$450,000
Size (SF)	2,252,488	1,742,400	1,024,967	217,800	435,600	1,821,244	2,178,000
Unit of Comparison	Price/SF	Price/SF	Price/SF	Price/SF	Price/SF	Price/SF	Price/SF
Sale Price Per (SF)		\$0.30	\$0.29	\$0.28	\$0.30	\$0.28	\$0.21
Property Rights	Fee Simple	Fee Simple	Fee Simple	Fee Simple	Fee Simple	Fee Simple	Fee Simple
Adjustment		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Terms		Cash Eq.	Cash Eq.	Cash Eq.	Cash Eq.	Seller	Active
Cash Equivalency		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	(\$0.02)
Conditions of Sale		Arm's-Len.	Arm's-Len.	Arm's-Len.	Arm's-Len.	Arm's-Len.	List
Adjustment		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Date of Sale	12/6/23	11/17/23	3/16/23	10/14/22	3/27/23	1/28/22	Active
Adjustment		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Subtotal		\$0.30	\$0.29	\$0.28	\$0.30	\$0.28	\$0.19
Location		Superior	Superior	Inferior	Superior	Inferior	Superior
Adjustment		(\$0.02)	(\$0.01)	\$0.03	(\$0.01)	\$0.01	(\$0.01)
Improvements	Vacant	Similar	Similar	Similar	Similar	Similar	Similar
Adjustment		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Use	Res	Res	Res	Res	Res	Res	Res
Adjustment		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Size	2,252,488	1,742,400	1,024,967	217,800	435,600	1,821,244	2,178,000
Adjustment		(\$0.03)	(\$0.06)	(\$0.10)	(\$0.09)	(\$0.02)	(\$0.00)
Adj. Sale Price Per (SF)	%Δ	-13.38%	-25.97%	-26.93%	-35.44%	-2.70%	-16.30%
Average	\$0.22	\$0.26	\$0.22	\$0.20	\$0.19	\$0.27	\$0.17
Median	\$0.21						

Given the subject's characteristics, I have applied a weighted average analysis to the adjusted data points. The distribution is based on the similarities of each data point's characteristics. The primary influence is placed on Data Point 1 based on the date of sale; secondary influence is applied to Data Point 2, and equal tertiary influence is applied to Data Points 3, 4, and 5. No influence is applied to the active listing.

	DP-1	DP-2	DP-3	DP-4	DP-5	DP-6
Weighted Average	\$0.26	\$0.22	\$0.20	\$0.19	\$0.27	\$0.17
\$0.23	30%	25%	15%	15%	15%	0%

Sales Comparison Approach

In conclusion, it is my opinion that the fair market value of the fee simple estate of the subject property's Larger Parcel, as-is, as derived from this sales comparison model, as of December 6, 2023, is as follows:

$$\begin{aligned} & 2,252,488\text{-ft}^2 @ \$0.23 \text{ PSF} = \$518,072 \\ & \qquad \qquad \qquad \$520,000 \\ & \text{(Five Hundred Twenty Thousand Dollars)} \end{aligned}$$

Larger Parcel Valuation – After Acquisition

In the after-acquisition model, there is no change to the functional condition of the subject's Larger Parcel other than the loss of land area to the easement. Since Mission Springs Water District plans to acquire the underground utility ROW as an easement, the first step of the analysis is to determine the fee value of the easement area.

Value of the Take As Part of the Whole

An analysis is made as the value of the underground utility ROW part taken from the parcel as a component of the Larger Parcel. The value of the part taken would be of proportionally equal value to the concluded value of the larger ownership parcel of \$0.23 per square foot.

$$\pm 10,482\text{-ft}^2 @ \$0.23 \text{ PSF} = \$2,411$$

Remainder Value as Part of the Whole

Upon arriving at this value, it is a mathematical calculation to arrive at the remainder value (2,242,006-ft²) as part of the whole by subtracting the value of the groundwater monitoring well take area from the value of the Larger Parcel, or:

$$\$518,072 - \$2,411 = \$515,661$$

Value of the Remainder Parcel – Before Condition

This analysis considers the underground utility ROW area extracted from the Larger Parcel. As such, the remainder parcel in a before condition is the remainder parcel's valuation before considering the project's benefits and the project improvements that may benefit the subject's remainder parcel. Subsequent to the take area, the remainder parcel equals $\pm 2,242,006\text{-ft}^2$ ($\pm 2,252,488\text{-ft}^2 - 10,482\text{-ft}^2$). The remainder parcel before condition remains a consistent shape as the proposed underground utility ROW area is along the northern property line. Based on the highest and best use, the subject property provides equal functional utility and support of the site as it did before the right-of-way expansion. Therefore, with no effective change to the highest and best use, the indicated per-square-foot value remains the same at \$0.23 PSF.

$$\pm 2,242,006\text{-ft}^2 @ \$0.23 \text{ PSF} = \$515,661$$

Value of the Remainder Parcel – After Condition – Including Benefits

In appraising the remainder parcel after condition, including benefits, and reviewing the attached drawings, I considered how the proposed project alters the remainder site utility.

Sales Comparison Approach

As such, it appears that in the after condition the remainder parcel does not experience any significant benefits, as the access and utility remains the same. Therefore, the valuation of the subject's Larger Parcel applies, as the remainder equals \$0.23 PSF.

$$\pm 2,242,006\text{-ft}^2 @ \$0.23 \text{ PSF} = \$515,661$$

Severance Damages and Benefits

Severance damages are calculated by the difference in values between the remainder parcel before benefits and the remainder parcel including benefits. As a result of the partial taking after considering the project's impact on the remainder area, including access, frontage, site visibility, size, shape, topography, view, impact on utilities, and the marketability of the site, I conclude that there are no damages and no benefits. Please note that benefits can only offset damages and not offset the value of the part taken parcel. Therefore, the total amount of the severance damages equals \$0.

Because the Mission Springs Water District plans on acquiring the underground utility ROW in the form of an easement, the indicated fee value of the groundwater monitoring well is then adjusted based on the bundle of rights in the easement analysis section of the appraisal.

Easement Analysis

The function of this Appraisal Report is to develop an analysis for a planned underground utility easement located on the Larger Parcel. The defined Larger Parcel area involved is calculated at ± 51.71 acres, and the easement area is defined as $\pm 10,482$ -ft². The subject property is vested in Leslie L Chou, who holds the property in fee. The easement grants the use of a proposed groundwater monitoring well site along the Larger Parcel's northern boundary. The Mission Springs Water District and the broader community are the beneficiaries of the utility easement.

The definition of an easement is as follows: "An interest in real property that transfers use, but not ownership, of a portion of an owner's property. Access or right-of-way easements are acquired by private parties or public utilities. Governments may be the beneficiaries of easements placed on privately owned land that is dedicated to conservation, open space, or preservation."¹³

Easements frequently permit a specific portion of a property for access, or public right-of-way. Although surface easements are most common, other easement types include subterranean, overhead, slope, public utilities, and transportation. A property that acquires an easement is the beneficiary of additional rights; one that is subject to an easement is burdened. Easement rights can be conveyed in perpetuity or for a limited period. An easement is created by contract between private parties or by adverse possession according to state law. Public agencies, municipalities, and public utilities can also arrange it. I will define the different general easement types.

Easement Appurtenant

"An easement that is attached to, benefits, and passes with the transfer of the dominant estate; runs with the land for the benefit of the dominant estate and continues to burden the servient estate, although such an estate may be transferred to new owners."¹⁴

Easement by Prescription

"The right to use another's land, which is established by exercising this right openly, hostilely, and continuously over a statutory period of time."¹⁵

Easement in Gross

"An easement that benefits a legal person or entity (individual, corporation, partnership, LLC, government entity, etc.) and not a particular tract of land; an easement having a servient estate but no dominant estate."¹⁶

In the granting of an easement, portions of a larger bundle of ownership rights are removed. The value of this planned easement is based on the rights conveyed from the burdened property, hence meeting the definition of an easement appurtenant.

¹³ Appraisal Institute, *The Appraisal of Real Estate*, 15th ed., (Chicago: Appraisal Institute, 2020)

¹⁴ Appraisal Institute, *The Dictionary of Real Estate Appraisal*, 6th ed., (Chicago: Appraisal Institute, 2015)

¹⁵ Ibid

¹⁶ Ibid

Easement Analysis

The planned underground utility easement burdens the subject's Larger Parcel with an aggregate $\pm 10,482$ -ft² for an access easement and well site easement. The planned easement is $\pm 20'$ wide x $450'$ in length along 20th Avenue and $\pm 30'$ wide x $54'$ in length for the well site. The Larger Parcel is currently at its highest and best use. Since the highest and best use is unchanged, the only issue of burden is the Larger Parcel now shares the easement area for underground utility services with the beneficiaries. The easement is assumed to be fully transferable and is a nonexclusive area in shared control of the grantee, and the only ownership rights remaining to the Larger Parcel are the right of repossession if the easement is abandoned at some point in the future. However, no vertical improvements can be erected over the easement area, and the easement area must be available to the grantee for maintenance service and inspection.

In the easement analysis, it is assumed to include an equal right of use and maintenance between Mission Springs Water District and the property owner. The access to or along the easement areas is shared, and nothing shall unreasonably interfere with the use of the easement area by either entity. The easement areas shall remain free and clear from buildings or other structures, except asphalt pavement and no change of grade of the easement areas shall be made.

The following table illustrates the exclusive $\pm 10,482$ -ft² easement's bundle of rights and the impact of each of the five primary burdens and benefit categories.

Partition	Ownership	Control	Exclusion	Enjoyment	Disposition	Total	%
Utility Easement	90%	100%	100%	75%	50%	4.15	83%
Fee Interest	10%	0%	0%	25%	50%	0.85	17%
Totals	100%	100%	100%	100%	100%	5.00	100%

Ownership - The requested underground utility easement controls ownership in perpetuity. The property owner and Mission Springs Water District each share in ownership. However, property owner ownership is only in the form of a reversionary right if the easement were to be abandoned. Based on the planned use, the chances of abandonment are minimal. The ownership interest is effectively 90% in favor of Mission Springs Water District.

Control - For all intents and purposes, the exclusive use of the easement acquiesces control over the easement area to Mission Springs Water District. From a market perspective, the access easement accounts for 100% of the control rights.

Exclusion - The right to exclude use and access of the property is considered in control by Mission Springs Water District, or 100% of the exclusion rights.

Enjoyment - The right to use the property is effectively weighted 75% to Mission Springs Water District for use.

Disposition - Both entities maintain equal rights of disposition to the easement area.

Easement Analysis

Based on the easement analysis, I will apply 83% of the fee value for the value of the easement area. Using the value of the Larger Parcel, I can extrapolate a per-square-foot value of \$0.23 for the fee value of the underground utility easement or \$2,411. For the purposes of a perpetual easement, I will apply an 83% multiplier representing the loss of property rights associated with the underground utility easement into perpetuity.

Conclusion – Underground Utility Easement

The following valuation is based on the planned ±10,482-ft² underground utility easement area in perpetuity, on the date of value December 6, 2023:

December 6, 2023 Value Estimates	Area-ft ²	\$ per Sq. Foot	Estimate	Rounded
Easement Area - Fee Value	10,482	\$0.23	\$2,411	\$2,500
Easement Compensation		83%	\$2,001	\$2,000

Certification

I certify that, to the best of my knowledge and belief...

The statements of fact contained in this report are true and correct.

The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses, opinions, and conclusions.

I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

I have performed no services as an appraiser, or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

My engagement in this assignment was not contingent upon developing or reporting predetermined results.

My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Uniform Standards of Professional Appraisal Practice of the Appraisal Institute.

My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.

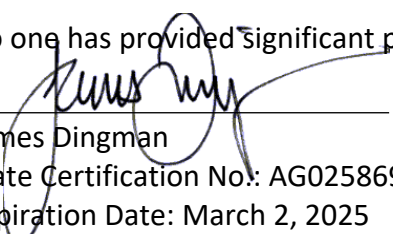
I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.

The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

As of the date of this report, I James Dingman, have completed the Standards and Ethics Education Requirements for Practicing Affiliates of the Appraisal Institute.

I have made a personal inspection of the property that is the subject of this report.

No one has provided significant professional help in the preparation of this appraisal report.



 James Dingman
 State Certification No.: AG025869
 Expiration Date: March 2, 2025

Addendum

James Dingman

General Experience

1996-Present	CEO – Capital Realty Analysts
1993-1996	Appraiser – MacKenzie and Associates
1990-1993	Director of Food & Beverage Operations – Breckenridge Ski Corp., Breckenridge Co., Mt Hutt Ski & Alpine Co., Methven, New Zealand
1988-1990	Director of Operations, The Broe Co., San Diego, CA, Denver, CO
1984-1986	General Manager – Radisson Hotel, San Jose, CA
1979-1983	General Manager – Crown Colony County Club, Lufkin, TX

Education

1975-1977	University of New Hampshire, Berlin
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Continuing Education

USPAP Update 2020/2023	Technical Inspection of Real Estate
Special Purpose Properties	Standards Part C
Advanced Sales & Cost Approaches	Expert Witness
Automated Valuation Models	Appraisal Procedures
Basic Income Capitalization	Real Estate Appraisal Principles
Standards of Professional Practice	Real Estate Economics
Real Estate Principles	California Real Estate Law
Real Estate Finance	Advanced Market Analysis / Highest and Best Use
UASFLA-Yellow Book	Advanced Applications & Case Studies
Solar Photovoltaic Valuation	

Licensing

State of California	Certified General Real Estate Appraiser License
Office of Real Estate Appraisers	Appraiser Identification No. AG025869
California Real Estate Salesperson License	Inactive

Representative List of Clients

Public Sector	Private Sector	Institutional Sector
United States of America	Canyon Development	Wells Fargo Bank
Department of the Interior	Westar Development	Union Bank
Small Business Administration	Pulte Homes	JP Morgan Chase
Bureau of Indian Affairs	UNOCAL 76	1st Bank
City of La Quinta	Prudential Real Estate	Montecito Bank & Trust
City of Rancho Mirage	Best Best & Krieger	Bank of the West
City of Palm Desert	Guralnick & Gilliland	US Bank Corp
City of Palm Springs	Towbes Group	East West Bank
Town of Yucca Valley	Hotel Resort Properties	Community West Bank
County of Riverside	Selzer, Ealy Hephill & Blasdel	Pacific Western Bank
P.S. Unified School District	Agua Caliente Band of Cahuilla Indians	

General Assumptions and Limiting Conditions

Standards Rules (“S.R.”) 2-1 of the “Standards of Professional Appraisal Practice of the Appraisal Institute” requires the appraiser to “clearly and accurately disclose any extraordinary assumption or limiting condition that directly affects the appraisal and indicate its impact on value”. While intended to be complete, inclusive, and relevant to this analysis, the report is subject to additional assumptions and conditions as presented within the body of the report where stated. The following items are essential to completely understand the analysis and conclusions presented in this report.

1. No responsibility is assumed for the legal description or for matters including legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated.
2. The property is appraised free and clear of any or all liens or encumbrances unless otherwise stated.
3. Responsible ownership and competent property management are assumed as expected by the complexity of the defined subject property.
4. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy. The appraiser reserves the right to make adjustments to the analyses, opinions, and conclusions in this report, as may be required by consideration of additional or revised data that may become available.
5. All engineering is assumed to be correct. The plot plans and illustrative material in this report are included only to assist the reader in visualizing the property.
6. If more current and complete information relevant to the subject property becomes available, the appraiser reserves the right to review such information and adjust the analysis and conclusions.
7. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for obtaining the engineering studies that may be required to discover them.
8. It is assumed that the property is in full compliance with all applicable federal, state, and local environmental regulations and laws unless noncompliance is stated, defined, and considered in the appraisal report.
9. It is assumed that the property conforms to all applicable zoning and use regulations and restrictions unless nonconformity has been identified, described, and considered in the appraisal report.
10. It is assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.

General Assumptions and Limiting Conditions

11. It is assumed that the utilization of the land and improvements is confined within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in the report.
12. Unless otherwise stated in this report, the appraiser did not observe the existence of hazardous materials, which may or may not be present on the subject property. The appraiser has no knowledge of the existence of such materials on or in the property. The appraiser, however, is not qualified to detect such substances. The presence of substances such as asbestos, urea-formaldehyde foam insulation, and other potentially hazardous materials may affect the value of the property. The value estimated is predicated on the assumption that there is no such material on or in the property that would cause a loss in value. No responsibility is assumed for such conditions or for any expertise or engineering knowledge required to discover them. The intended user is urged to retain an expert in this field, if desired.
13. Any allocation of the total value estimated in this report between the land and the improvements applies only under the stated program of utilization. The separate allocations for land and building must not be used in conjunction with any other appraisal and are invalid if so used.
14. Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed without the written consent of the appraiser, and in any event only with properly written qualification and only in its entirety.
15. The appraiser herein by reason of this appraisal is not required to give further consultation, testimony, or be in attendance in court with reference to the property in question unless arrangements have been previously made.
16. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser, or the firm with which the appraiser is connected) shall be disseminated to the public through advertising, public relations, news, sales, or other media without the prior written consent and approval of the appraiser.
17. Improved Properties – The American with Disabilities Act (ADA) became effective January 26, 1992. I (we) have not made a specific compliance survey and analysis of this property to determine whether or not it is in conformity with the various detailed requirements of the ADA. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect upon the value of the property. Since I (we) have no direct evidence relating to this issue I (we) did not consider possible non-compliance with the requirements of ADA in estimating the value of the property.
18. Existing and proposed improvements and their subsequent value estimates in this report are subject to the improvements being completed in the manner represented to the appraiser(s) and described in the Improvement Description section of this report.

General Assumptions and Limiting Conditions

19. The legal descriptions, site sizes, dimensions, and/or other surveys provided to the appraiser, including County Tax Plats, are assumed to be accurate. Should a survey prove these characteristics inaccurate it may be necessary for the appraisal to be adjusted.
20. The forecasts, projections, or operation estimates contained herein are based upon current market conditions, anticipated short-term supply and demand facts, and a continued stable economy. These forecasts are, therefore, subject to change in the future.
21. It is assumed that all entitlements required for development of this property, if applicable, have been or can be obtained within a reasonable timeframe.
22. The appraiser undertaking this assignment warrants that he is competent in properly identifying the appraisal problem and has the necessary knowledge and experience to complete the assignment.
23. Maps, diagrams, and exhibits included in this report are for illustration only to serve as an aid to visualizing matters discussed within the report. These exhibits should not be considered as surveys or relied upon for any other purpose, nor should they be removed from, reproduced, or used apart from the report.
24. No opinion is expressed as to the value of subsurface oil, gas, or mineral rights or whether the property is subject to surface entry for the exploration or removal of such materials, except as is expressly stated.
25. The property, which is the subject of the appraisal, is within a geographic area prone to earthquakes and other seismic disturbances. Except as specifically indicated in the report, no seismic or geologic studies have been provided to the appraiser concerning the geologic and/or seismic condition of the subject properties. The appraiser assumes no responsibility for the possible effect on the subject properties of seismic activity and/or earthquakes.
26. No consideration has been given in this appraisal as to the value of the property located on the premises considered by the appraiser to be personal property (unless otherwise stated), or has the appraiser given consideration to the costs of moving or relocating such personal property; only the real property has been considered in this appraisal.
27. Copyright of this material belongs exclusively to Capital Realty Analysts, Inc. This copy is intended for private use as defined in the body of the report for the designated client only. No person or entity is permitted to reproduce this material, in whole or in part, for distribution either free of charge or for "commercial purposes", unless that person or entity has a signed license agreement with Capital Realty Analysts, Inc. Reproduction for commercial purposes is reproduction for the purposes of sale, rent, trade, or distribution, or posting it on the Internet or on electronic bulletin boards.

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240

EXEMPT – GOV’T CODE 6103

The undersigned grantor declares:

Documentary transfer tax is \$ 0.00.

computed on the full value of property conveyed, or

computed on full value less value of liens and
encumbrances remaining at time of sale.

Unincorporated area: City of _____,
and County of _____.

FOR RECORDER’S USE ONLY

Affects: APN: 669-110-001

GRANT OF EASEMENT DEED

LESLIE L. CHOU, as TRUSTEE of JAMES & LESLIE CHOU TRUST, Survivor’s Trust A created February 7, 1995, (hereinafter referred to as “Grantor”), hereby GRANTS to MISSION SPRINGS WATER DISTRICT, a County Water District and public agency formed pursuant to Water Code §§ 30000 et seq., (hereinafter referred to as “Grantee”), an Easement for construction, use, operation, maintenance Public Sewer and Water Utilities in, on, over, under, across, and along that certain property in the County of Riverside, State of California, the following described land (“Easement Area”):

That portion of the West Half of the Northwest Quarter of Section 24, Township 3 South, Range 4 East, San Bernardino Meridian, in the County of Riverside, State of California, described as follows:

Beginning at the Northwest corner of said Section 24; thence South 89°29’30” East, along the North line of said Section 24, 454.39 feet to a Southeast corner of Parcel 2, as shown on Record of Survey on file in Book 26 at Page 10, Records of said County; thence South 00°05’16” East, along a line that is parallel with and 454.39 feet East of the West line of said Section 24, 74.00 feet; thence North 89°29’30” West, along a line that is parallel with and 74.00 feet South of said North line of said Section 24, 30.00 feet; thence North 00°05’16” West, along a line that is parallel with and 424.39 feet East of said West line of said Section 24, 54.00 feet; thence North 89°29’30” West, along a line that is parallel with and 20.00 South of said North line of said Section 24, 424.39 feet to the west line of said Section 24; thence North 00°05’16” East, along said West line of said Section 24, 20.00 feet to said Northwest corner of said Section 24, and the **Point of Beginning**.

SEE EXHIBIT “A” PLAT ATTACHED HERETO AND MADE A PART HEREOF

Grantor agrees for himself, his heirs and assigns, not to erect, place or maintain, nor to permit the erection, placement or maintenance of any building, planter boxes, earth fill or other structures except public

roadways, walls and fences on the above-described real property. The Grantee, and its contractors, agents and employees, shall have free access to the Easement Area and every part thereof, at all times, for the purpose of exercising the rights herein granted.

Dated this _____ day of _____, 2024

LESLIE L. CHOU, as Trustee of James & Leslie Chou Trust,
Survivor’s Trust A created February 7, 1995

By: _____
Leslie Chou

Dated this _____ day of _____, 2024

MISSION SPRING WATER DISTRICT, a County Water
District and public agency formed pursuant to Water Code §§
30000 et seq.

By: _____
Brain Macy
General Manager

NOTARY FOLLOWS

R/S 26/10

PARCEL 2

625-210-001

665-210-002

665-210-003

665-210-004

14 P.O.B.

13

S89°29'30"E 454.39'

CL 20TH STREET

N0°05'16"W 20.00'

N89°29'30"W 424.39'

S0°05'16"E 74.00'

23

N0°05'16"W 54.00'

N89°29'30"W 30.00'

SEC. 24

T3S

R4E

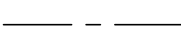
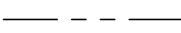


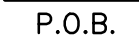
669-110-001

669-092-006

CL LITTLE MORONGO ROAD

R/S 10/37

LEGEND

-  EXISTING STREET CENTERLINE/SECTION LINE
-  EXISTING PROPERTY LINE
-  PROPOSED EASEMENT LINE
-  EASEMENT AREA (10,707 SF)
-  POINT OF BEGINNING



N.T.S.



TKE ENGINEERING, INC.
2305 CHICAGO AVENUE
RIVERSIDE, CA 92507
(951) 680-0440

Michael P. Thornton

MICHAEL P. THORNTON L.S. No. 6867
EXPIRES: 9-30-24

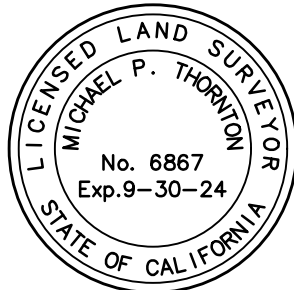


EXHIBIT 'A'

EASEMENT DEED
APN 669-110-001

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240

EXEMPT – GOV’T CODE 6103

The undersigned grantor declares:
Documentary transfer tax is \$ 0.00.
() computed on the full value of property conveyed, or
() computed on full value less value of liens and
encumbrances remaining at time of sale.
() Unincorporated area: () City of _____,
and County of _____.

FOR RECORDER’S USE ONLY

Affects APN: 669-110-001

CERTIFICATE OF ACCEPTANCE

This is to certify that the interest in real property conveyed by **LESLIE L. CHOU, as TRUSTEE of JAMES & LESLIE CHOU TRUST**, Survivor’s Trust A created February 7, 1995, (“Grantor”), on the Grant of Easement Deed dated February ____, 2024, to the **MISSION SPRING WATER DISTRICT**, a County Water District and public agency formed pursuant to Water Code §§ 30000 et seq. (“Grantee”), is hereby accepted by the undersigned officer on behalf of the Grantee and the Grantee consents to recordation thereof by its duly authorized officer.

Dated this _____ day of _____, 2024

MISSION SPRINGS WATER DISTRICT

By: _____
Brian Macy P.E, General Manager

AGENDA STAFF REPORT



MEETING NAME: REGULAR BOARD MEETINGS

MEETING DATE(S): FEBRUARY 15 & 20, 2024

FROM: ARTURO CEJA, DIRECTOR OF FINANCE

FOR: ACTION X DIRECTION ___ INFORMATION ___

AWARD OF CONTRACT AGREEMENT FOR THE COMPLETE DEPLOYMENT OF ARCGIS ENTERPRISE, UTILITY NETWORK, AND CITYWORKS TO TIMMONS GROUP

STAFF RECOMMENDATION

Authorize the General Manager to execute a contract agreement for the Complete Deployment of ArcGIS Enterprise, Utility Network, and Cityworks (the Project) in the amount of \$849,596.00, plus a 10% contingency for a total of \$934,555.60 to Timmons Group and authorize the General Manager to do all things necessary to complete the project.

SUMMARY

Staff need assistance to organize, track and complete scheduled maintenance on new and aging infrastructure such as valves, meters, pumps, motors, and tanks. In addition, as the State continues to require additional data and information to be provided, logged, and sampled with precise accuracy of locations, it is imperative that staff be able to easily collect and enter information into one system. This project requires an accumulation of current data to create the database, combined with a Geographic Information System and a cloud network that will allow staff access to the database when needed.

ANALYSIS

On October 26, 2023, staff advertised a request for proposals for the complete deployment of the Project through PlanetBids. The District received four proposals and Timmons Group was rated as the best company to provide these services. Attached is the proposal evaluation summary for all companies and the proposals from the top two rated companies.

FISCAL IMPACT

The cost for the Project services will be covered by the approved FY 2023/24 operating budget. The proposed cost is a combination of fixed and hourly fees, staff determined the total cost of \$849,596.00 with a 10% contingency of \$84,959.60 for the contract period.

ATTACHMENTS

- Proposal Evaluation Form
- Contract Agreement
- Timmons Group Proposal
- Axim Geospatial Proposal
- Timmons Group Cost Proposal

FINANCIAL DATA		
Cost Associated with this action:	\$934,555.60	
Current FY cost:	\$300,000.00	
Future FY cost:	\$634,555.60	
Is it covered in current year budget:	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Budget adjustment needed:	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
If yes, year needed:	FY 2024/25	
All previous contracts including dates, amounts and board approvals are attached or have been made available.		
FUNDING SOURCES		
Source of funds:	Operating	
BID/Job#	669	
Current BID/Job balance	\$300,000	
Balance remaining if approved:	\$300,000	

**Mission Springs Water District
Complete Deployment of ArcGIS Enterprise, Utility Network, Cityworks
RFP - Evaluation Criteria and Scoring**

Tuesday, February 6, 2024

Scored Criteria	Average Combined Score			
	Axim Geospatial	Burns & McDonnell	Cyient, Inc.	Timmons Group
Understanding of the District, its goals for the project and services required: Evaluation based on the how well the consultant's response reflects a complete understanding of the needs of the District and desired outcome for all project components. How well will the plan outlined in the RFP response result in a successful and well executed result that achieves the District's goals.	235.4	225.8	185.4	237.1
Qualifications and experience (Projects of similar size and/or scope): The quality, quantity, and complexity of Consultant's successful past performances on similar engagements will be considered as a significant indicator of the Consultant's technical competency and capability to complete this engagement. Expertise is gained by working on many different engagements and can be a major advantage to the District. Organizations with highly successful and complex engagement experiences are preferred. The evaluation of references and past engagement success will play a key role in this category.	186.3	162.0	139.0	191.0
Key personnel: Consideration will be given to the qualifications of the Consultant's personnel proposed for assignment to the engagement. The Consultant's availability of additional staff for escalation and assistance to reduce the amount of outside contractor assistance required will be a factor. Organizations who are particular in their hiring practices, and those who recruit and retain personnel with more years of experience and who concentrate on training their personnel resulting in technology certifications will score well in this category.	142.3	134.0	110.4	142.8
Approach to work: The proposal will be evaluated for the completeness, and realism of the approach to deliver the services in accordance with the requirements of this RFP.	140.8	140.0	118.0	136.3
References: Consideration will be given to the references provided by the Consultant.	106.5	99.8	61.7	112.5
Cost: This evaluation is based on the Consultant's cost model inclusive of fixed and additional service fees relative to the quality of services offered and the needs of the District. Note that a low-cost bid, in and of itself, will not be sufficient to score high in this category if the quality of services or personnel available indicate the probable need for additional consulting services for advanced technology needs in the future.	67.8	66.5	38.7	77.0
Overall Total Score:	879.1	828.2	653.2	896.6

Errors and Mistakes in Response
Timmons: Wrong month listed in RFP due date on cover
Timmons: Page 4 references ISO 55000 (asset management) at top of page, however, 3rd paragraph down references ISO 5000 (Aluminum-silicon alloy-coated steel sheet)
Timmons: Page 3 (bottom paragraph) references "...the City's technical requirements."
Cyient: Proposal (PDF pg. 29) states there is a separate attachment (KCI_Quals.pdf) with KCI's qualifications, experience, and references, however, no attachment was included or on PlanetBids.
Cyient: Exhibit D - Consultant Questionnaire, #3: Did not provide requested information about partner company, #5: Did not answer question
Cyient: Missing names in all Maximo specialists
Cyient: Formatting and style inconsistencies (bold, hyphen spacing, capitalization)
Cyient: Wrong population size of Desert Hot Springs

Reviewed By: Brian Macy - General Manager, MSWD
 Arturo Ceja - Director of Finance, MSWD
 Eric Weck - Engineering Manager, MSWD
 William Whitten - Business Analyst, MSWD
 Kurt Kettenacker - IT Manager, MSWD

Date: 2/6/24

Christian Hernandez - Asset Management Supervisor, IWA

**Agreement for Professional Services
Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240
Telephone 760-329-6448 – FAX 760-329-2482**

For your protection, make sure that you read and understand all provisions before signing. The terms on pages 2 - 7 are incorporated in this document and will constitute a part of the agreement between the parties when signed.

TO: **Timmons Group**
1001 Boulders Parkway Suite 300
Richmond, VA 23225

DATE: March 1, 2024

PROJECT DIR#: N/A

TITLE: **Complete Deployment of ArcGIS Enterprise, Utility Network, Cityworks**

The undersigned Consultant agrees to furnish the following:

All Work/Services per the attached Exhibit A – Proposal and in accordance with Exhibit B – Cost Proposal provided by Timmons Group, and per Exhibit C – Term, Early Termination & Notice

Contract price \$: Not to Exceed \$849,596.00

Term: Two (2) years & four (4) months from the effective date above

Instructions: Sign and return via email. Upon acceptance by Mission Springs Water District, (sometimes referred to herein as "District") a copy will be promptly returned to you. Insert the names of your authorized representative(s) below.

Accepted:
Mission Springs Water District

Consultant:
Timmons Group
(Business Name)

By: Brian E. Macy, PE
Title General Manager

By: 
Title Principal & Asset Management Dir.

Other authorized representative(s):
Arturo Ceja
Director of Finance

Other authorized representative(s):

Kurt Kettenacker
Innovation and Technology Manager

Consultant agrees with the Mission Springs Water District that:

- a. Consultant and District agree that District, its directors, officers, employees, and authorized volunteers should, to the extent permitted by law, be fully protected from any loss, injury, damage, claim, lawsuit, cost, expense, attorneys' fees, litigation costs, defense costs, court costs or any other costs arising out of or in any way related to the performance of this Agreement by Consultant or any subconsultant or agent of either as set forth herein. Accordingly, the provisions of this indemnity are intended by the parties to be interpreted and construed to provide the fullest protection possible under the law to District. Consultant acknowledges that District would not enter into this Agreement in the absence of the commitment of Consultant to indemnify and protect District as set forth herein.
- b. To the fullest extent permitted by law, Consultant shall defend, indemnify and hold harmless District, its employees, agents and officials, from any liability, claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses, damages or costs of any kind, whether actual, alleged or threatened, actual attorneys' fees incurred by District, court costs, interest, defense costs, including expert witness fees and any other costs or expenses of any kind whatsoever without restriction or limitation incurred in relation to, as a consequence of or arising out of, or in any way attributable actually, allegedly or impliedly, in whole or in part to the performance of this Agreement. Consultant's obligation to defend, indemnify and hold harmless shall include any and all claims, suits, and proceedings in which Consultant (and/or Consultant's agents and/or employees) is alleged to be an employee of District. All obligations under this provision are to be paid by the Consultant as they are incurred by District.
- c. Without affecting the rights of District under any provision of this Agreement or this Section, Consultant shall not be required to indemnify and hold harmless District as set forth above for liability attributable solely to the fault of District, provided such fault is determined by agreement between the parties or the findings of a court of competent jurisdiction.
- d. Consultant will file with Mission Springs Water District, before beginning professional services, a certificate of insurance satisfactory to Mission Springs Water District evidencing professional liability coverage of not less than \$1,000,000 per claim and \$2,000,000 annual aggregate, that coverage shall not be cancelled except with notice to Mission Springs Water District. Coverage is to be placed with a carrier with an A.M. Best rating of no less than A: VII, or equivalent, or as otherwise approved by Mission Springs Water District. The retroactive date (if any) is to be no later than the effective date of this agreement. The Consultant shall maintain such coverage continuously for a period of at least five (5) years after the completion of the contract work. Consultant shall purchase a five-year extended reporting period i) if the retroactive date is advanced past the effective date of this Agreement; ii) if the policy is canceled or not renewed; or iii) if the policy is replaced by another claims-made policy with a retroactive date subsequent to the effective date of this Agreement. In the event that the Consultant employs other Consultants (sub-Consultants) as part of the work covered by this agreement, it shall be the Consultant's responsibility to require and confirm that each sub-Consultant meets the minimum insurance requirements specified above.
- e. Verification of Coverage – Consultant shall furnish the District with certificates and amendatory endorsements, or copies of the applicable policy language affecting coverage required by this clause. All certificates and endorsements are to be received and approved by the District before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Consultant's obligation to provide them. The District reserves the right to require complete, certified copies of all required insurance policies, including policy Declaration pages and Endorsement pages.
- f. Consultant shall procure and maintain for the duration of the contract insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Consultant, his agents, representatives, employees, or sub-consultants. Consultant will file with Mission Springs Water District, before beginning professional services, certificates of insurance (Acord Form 25 or equivalent) satisfactory to Mission Springs Water District evidencing:

Coverage – Coverage shall be at least as broad as the following:

1. **Commercial General Liability (CGL)** - Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury, personal and advertising injury with limit of at least coverage of not less than two million (\$2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as ISO CG 25 03, or ISO CG 25 04 endorsements provided to District), or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability** - Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) or if the Consultant has no owned autos, Symbol 8 (hired) and 9 (non-owned) with limit of one million dollars (\$1,000,000) for bodily injury and property damage each accident.
3. **Workers' Compensation Insurance** - as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease. **Waiver of Subrogation:** The insurer(s) named above agree to waive all rights of subrogation against the Mission Springs Water District, its elected or appointed officers, officials, agents, authorized volunteers and employees for losses paid under the terms of this policy which arise from work performed by the Named Insured for the Agency; but this provision applies regardless of whether or not the Mission Springs Water District has received a waiver of subrogation from the insurer. Consultant is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and Consultant will comply with such provisions before commencing the performance of the professional services under this agreement. Consultant and sub-consultants will keep workers' compensation insurance for their employees in effect during all work covered by this agreement. Sole proprietors with no employees, acknowledge that they are not subject to the Workers' Compensation Act of the State of California and agree to complete a signed workers compensation exemption form.
4. **Cyber Liability Insurance** (Technology Professional Liability - Errors and Omissions), with limits of not less than \$2,000,000 per occurrence or claim, and \$2,000,000 aggregate or the full per occurrence limits of the policies available, whichever is greater. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by Consultant in this Agreement and shall include, but not be limited to, claims involving infringement of intellectual property, including but not limited to infringement of copyright, trademark, trade dress, invasion of privacy violations, information theft, damage to or destruction of electronic information, release of private information, alteration of electronic information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties as well as credit monitoring expenses with limits sufficient to respond to these obligations.

If Claims Made Policies:

1. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained, and evidence of insurance must be provided for at least five (5) years after completion of the contract of work.
3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the Consultant must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.

If the Consultant maintains broader coverage and/or higher limits than the minimums shown above, the District requires and shall be entitled to the broader coverage and/or higher limits maintained by the Consultant. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the District.

Required Provisions –

- **Additional Insured Status:** Mission Springs Water District, its directors, officers, employees, and authorized volunteers or using the language that states "as required by written contract." are to be given insured status (at least as broad as ISO Form CG 20 10 10 01), with respect to liability arising out of work or operations performed by or on behalf of the Consultant including materials, parts, or equipment furnished in connection with such work or operations.
 - **Primary Coverage:** For any claims related to this project, the consultant's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 as respects to the District, its directors, officers, employees, and authorized volunteers. Any insurance or self-insurance maintained by the District its directors, officers, employees, and authorized volunteers shall be in excess of the Consultant's insurance and shall not contribute with it.
 - Consultant shall require and verify that all sub-consultants maintain insurance meeting all requirements stated herein, and Consultant shall ensure that Mission Springs Water District its directors, officers, employees, and authorized volunteers are an additional insured on Commercial General Liability Coverage.
 - The coverage shall contain no special limitations on the scope of protection afforded to Mission Springs Water District, its directors, officers, employees, or authorized volunteers.
- g. If any of the required coverages expire during the term of this agreement, the Consultant shall deliver the renewal certificate(s) to Mission Springs Water District at least ten (10) days prior to the expiration date.
- h. Consultant shall not accept direction or orders from any person other than the General Manager or the person(s) whose name(s) is (are) inserted on Page 1 as "other Authorized Representative(s)."
- i. Payment, unless otherwise specified on Page 1, is to be within thirty (30) days after acceptance by Mission Springs Water District.
- j. Consultant hereby specifically represents and warrants to District that it possesses the qualifications and skills necessary to perform the services under this agreement in a competent and professional manner, without the advice or direction of District and that the services to be rendered pursuant to this agreement shall be performed in accordance with the standards customarily applicable to an experienced and competent professional rendering the same or similar services in the state of California. Consultant further represents and warrants that it possesses all required licenses necessary or applicable to the performance of the services under this agreement. Professional permits required by governmental authorities will be obtained at Consultant's expense, and Consultant will comply with applicable local, state, and federal regulations and statutes including but not limited to Cal/OSHA requirements.
- k. Any change in the scope of the professional services to be done, method of performance, nature of materials or price thereof, or to any other matter materially affecting the performance or nature of the professional services will not be paid for or accepted unless such change, addition or deletion is approved in advance, in writing by a supplemental agreement executed by Mission Springs Water District. Consultant's "Authorized Representative(s)" has (have) the authority to execute such written change for Consultant.
- l. Unless otherwise agreed upon in writing, all reports, documents, or other written material, including any documents, images, photographs, video files, or other media created or developed by Consultant as part of the services required hereunder ("Written Products") shall be considered to be "works made for hire", and all Written Products and any and all intellectual property rights arising from their creation, including, but not limited to, all copyrights and all other proprietary rights, shall be and remain the property of Mission Springs Water District without restriction or limitation upon their use, duplication or dissemination by Mission Springs Water District, except as otherwise provided herein. The Consultant shall not obtain or attempt to obtain copyright protection as to any of the Written Products.

- m. District shall hold all intellectual property rights to any data, materials, digital information, and Written Products stored and/or developed pursuant to this agreement. Consultant hereby assigns to Mission Springs Water District all ownership and any and all intellectual property rights to the data, materials, digital information and Written Products that are not otherwise vested in Mission Springs Water District pursuant to section above.
- n. Consultant shall not disclose, publish, or authorize others to disclose or publish, design data, drawings, specifications, reports, or other information pertaining to the projects assigned to the Consultant by the Mission Springs Water District or other information to which the Consultant has had access during the term of this Agreement without the prior written approval of an Authorized Representative during the term of this Agreement. Consultant's covenant under this section shall survive the termination of this Agreement.
- o. Consultant shall maintain complete and accurate records with respect to sales, costs, expenses, receipts, and other such information required by the Mission Springs Water District or the Authorized Representative. The Consultant shall maintain adequate records on services provided in sufficient detail to permit an evaluation of service. All such records shall be maintained in accordance with generally accepted accounting principles and shall be clearly identified and readily accessible. At all times during regular business hours, Consultant shall provide access to such books and records to the Authorized Representative or his or her designees and shall give the Authorized Representative or his or her designees the right to examine and audit such books and records and to make transcripts as necessary, and shall allow inspection of all work, data, documents, proceedings, and activities related to this Agreement.
- p. This Agreement is personal to the Consultant. Any attempt to assign or subcontract any right or obligation hereunder by the Consultant shall be void unless approved in writing in advance by the Authorized Representative. Consultant's services pursuant to this Agreement shall be provided by the representative or directly under the supervision of the representative and Consultant shall not assign another to supervise the Consultant's performance of this Agreement without the prior written approval of the Mission Springs Water District, by and through the Authorized Representative.
- q. Consultant shall not maintain, commit, or permit the maintenance or commission of any nuisance in connection with the performance of services under this Agreement.
- r. Consultant agrees to be familiar with and comply with all applicable federal, state, and local conflict of Interest laws, including, but not limited to, the Political Reform Act (California Government Code Sections 81000, et seq.) and California Government Code Section 1090. During the term of this Agreement, Consultant shall retain the right to perform similar services for other clients, but Consultant and its officers, employees, associates, and subconsultants shall not, without the prior written approval of the Authorized Representative, perform work for another person or entity for whom Consultant is not currently performing work that would require Consultant or one of its officers, employees, associates or subconsultants to abstain from a decision under this Agreement pursuant to a conflict-of-interest statute.
- s. A waiver by the Mission Springs Water District of any breach of any term, covenant, or condition contained in this Agreement shall not be deemed to be a waiver of any subsequent breach of the same or any other term, covenant, or condition contained in this Agreement whether of the same or different character.
- t. The Consultant shall commence, carry on, and complete all required tasks with all practicable dispatch, in a sound, economical, and efficient manner in accordance with all applicable laws and generally accepted industry standards.
- u. No Third-Party Beneficiaries. The Mission Springs Water District shall not be obligated or liable under this Agreement to any party other than the Consultant.
- v. In no event shall the making by the Mission Springs Water District of any payment to the Consultant constitute or be construed as a waiver by the Mission Springs Water District of any breach of covenant, or any default which may then exist, on the part of the Consultant, and the making of any such payment by

the Mission Springs Water District while any such breach or default shall exist shall in no way impair or prejudice any right or remedy available to the Mission Springs Water District with regard to such breach or default.

- w. If any legal action is necessary to enforce any provision of this Agreement or for damages by reason of an alleged breach of any provisions of this Agreement, the prevailing Party shall be entitled to receive from the losing Party all costs and expenses in such amount as the courts may determine to be reasonable. In awarding the cost of litigation, the court shall not be bound by any court fee schedule, but shall, if it is in the interest of justice to do so, award the full amount of costs, expenses, and attorneys' and experts' fees paid or incurred in good faith.
- x. In the performance of the work required by this Agreement, Consultant shall abide by and conform with and to any and all applicable laws of the United States and the State of California, and with the local County and Municipal Code, ordinances, regulations and policies.
- y. If any part, term, or provision of this Agreement shall be held illegal, unenforceable, or in conflict with any law of a federal, state, or local government having jurisdiction over this Agreement, the validity of the remaining portions or provisions shall not be affected by such holding.
- z. The terms of this Agreement shall be interpreted according to the laws of the State of California. Should litigation occur, venue shall be the Superior Court of Riverside County, California.
- aa. This Agreement represents the entire Agreement between the Mission Springs Water District and Consultant with respect to the subject matter hereto and supersedes all prior oral or written negotiations, representations, or agreements. No verbal agreement or implied covenant shall be held to vary the provisions of this Agreement. This Agreement shall bind and inure to the benefit of the parties to this Agreement and any subsequent successors and assigns. In the event of any inconsistency between the provisions of this Agreement and Consultant's proposal or Quote, and Exhibits hereto, the provisions of this Agreement shall control.
- bb. Precedence of Exhibits. All documents referenced as exhibits in this Agreement are hereby incorporated in this Agreement. In the event of any material discrepancy between the express provisions of this Agreement and the provisions of any document incorporated herein by reference, the provisions of this Agreement shall prevail.
- cc. Consultant will act hereunder as an independent consultant. This agreement shall not and is not intended to constitute Consultant as an agent, servant, or employee of the Mission Springs Water District and shall not and is not intended to create the relationship of partnership, joint venture or association between the Mission Springs Water District and Consultant.
- dd. Each of the signatories herein hereby represents that he or she has the authority to execute the Agreement on behalf of his or her contracting party.
- ee. Consultant shall be paid at the rates set forth in the Proposal and shall not increase any rate without the prior written consent of the District. Notwithstanding anything in this Agreement to the contrary, total fees and charges paid by the District to the Consultant under this Agreement shall not exceed the contract price specified on Page 1.
 - 1. Consultant shall not be compensated for any Services rendered nor reimbursed for any expenses incurred in excess of those authorized unless approved in advance by the District, in writing.
 - 2. Consultant shall submit to District, on or before the fifteenth (15th) of each month, itemized invoices for the Services rendered in the previous month. The District shall not be obligated to pay any invoice that is submitted more than sixty (60) days after the due date of such invoice. The District shall have the right to review and audit all invoices prior to or after payment to Consultant. This review and audit may include, but not be limited to District's:

- i. Determination that any hourly fee charged is consistent with this Agreement's approved hourly rate schedule;
 - ii. Determination that the multiplication of the hours billed times the approved rate schedule dollars is correct;
 - iii. Determination that each item charged is the usual, customary, and reasonable charge for the particular item. If the District determines an item charged is greater than usual, customary, or reasonable, or is duplicative, ambiguous, excessive, or inappropriate, District shall either return the bill to Consultant with a request for explanation or adjust the payment accordingly and give notice to Consultant of the adjustment.
3. If the work is satisfactorily completed, District shall pay such invoice within thirty (30) days after acceptance by Mission Springs Water District. Should the District dispute any portion of any invoice, District shall pay the undisputed portion within the time stated above, and at the same time advise Consultant in writing of the disputed portion.
- ff. In the event the Consultant performs additional or different services than those described herein without the prior written approval of the Project Manager, Consultant shall not be compensated for such services. Consultant expressly waives any right to be compensated for services and materials not covered by the scope of this Agreement or authorized by the District in writing.
- gg. Consultant shall promptly advise the Project Manager as soon as reasonably practicable upon gaining knowledge of a condition, event or accumulation of events which may affect the scope and/or cost of Services. All proposed changes, modifications, deletions and/or requests for additional services shall be reduced to writing for review and approval by the District.
- hh. Consultant shall perform all services in accordance with the terms and conditions of this agreement and the proposal. In the event that the terms of the proposal conflict with the terms of this agreement or contain additional terms that purport to bind the District, the terms of this agreement shall govern and said additional or conflicting terms shall be of no force or effect.



COMPLETE DEPLOYMENT OF ARCGIS ENTERPRISE, UTILITY NETWORK, CITYWORKS - REQUEST FOR PROPOSAL

Mission Springs Water District

Due: 5:00 PM, Thursday, January 11, 2024

Contact: Lou Garcia | Principal

1001 Boulders Parkway, Suite 300, Richmond, VA 23225

443.904.3897 | Fax: 804.560.1016 | louis.garcia@timmons.com

www.timmonsgis.com



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December 11, 2024

Kurt Kettenacker, IT Manager
Mission Springs Water District
66575 2nd Street
Desert Hot Springs, CA 92240

RE: Complete Deployment of ArcGIS Enterprise, Utility Network, Cityworks

To Kurt Kettenacker and the Selection Committee:

Mission Springs Water District is seeking a partner to configure a turn-key cloud-hosted ArcGIS Enterprise environment and migrate its GIS data into the Esri Utility Network while also implementing Trimble's Cityworks AMS.

For more than 20 years, Timmons Group has provided a wide variety of Enterprise Cloud based GIS and Asset Management solutions, including and award-winning services to local government DOTs, utilities, municipal, federal, and private clients. Our team encompasses vast experience and expertise from Timmons Group employees in all facets desired for your project to move to an Esri Utility Network based deployment of Cityworks AMS all in a cloud-based solution. We have the necessary expertise, and require no teaming partners, to meet your required certifications and successfully deploy your desired solution. Indeed, we have performed a project with nearly this exact scope of work with your neighbor, Indio Water, as well as many other similar projects across North America.

Our team will provide MSWD an unsurpassed ability to deliver sound solutions to all phases of your program through:

Key team members dedicated to your project offer an impressive level of professional experience and knowledge for delivering services to your full range of associated services. Team members have worked together on multiple successful projects and are empowered to do what it takes to make sure your projects are successful for you and your stakeholders.

Familiarity with local regulations, practices, and regional specific requirements, as the Esri Utility Network and Cityworks implementers of choice. We are a Esri Gold Partner, are Esri Utility Network Certified and a Cityworks Platinum Implementation Partner and Strategic Development Partner with intimate experience in deploying this solution set of tools. We have already moved legacy data from disparate systems to this solution set as well as integrated several of your desired integrations to Cityworks, including Granite.Net.

The leveraging of experience from implementing Esri's Utility Network with 15 clients and Cityworks with more than 135 clients that have faced the challenges you currently face, including many within your local area.

A full understanding of your program requirements and a project team committed to exceeding your highest expectations by developing sound and innovative technical solutions. We will apply our lessons learned on recently completed similar projects to your full advantage.

A dedicated Client Support Program ensuring our clients are continually capitalizing on their investment in Esri's GIS and Cityworks.

Timmons Group intends to perform the services and confirms that all elements of the RFP have been reviewed and understood.



A partnership with Timmons Group offers MSWD a significant number of benefits. From initial system planning and design activities all the way through implementation and deployment, you will have direct access to industry-leading engineering, planning, GIS, and information technology professionals CMMS enterprise asset management services. Timmons Group is confident our team represents the best overall value to MSWD. If you have any questions or require any additional information during the RFP review process, please contact Lou Garcia at 443.904.3897, as he is your primary contact and has binding authority.

Respectfully yours,



Ronald R. Butcher Jr., MBA
Principal in Charge
ron.butcher@timmons.com



Lou Garcia
Principal & Project Director
louis.garcia@timmons.com

STATEMENT OF UNDERSTANDING AND APPROACH

PROJECT UNDERSTANDING

MSWD desires to engage a consultant to configure a turn-key cloud-hosted ArcGIS Enterprise environment that adheres to Esri's best practices and security standards. After this is accomplished, the consultant will migrate MSWD's GIS data into Esri's Utility Network data model and implement Trimble's Cityworks AMS. Existing MSWD CMMS/EAM system functions will also need to be migrated into the configuration of Cityworks AMS and MSWD staff will need to be fully trained. Timmons Group will also provide on-going staff augmentation services, support, and managed services for the cloud-based environment.

Cityworks AMS can replace, integrate to, or enhance MSWD's current disparate grouping of solutions. The Cityworks solution platform is built to easily integrate to other best-of-breed solutions so that an effective enterprise system can be built. Our approach will leverage your existing investment in your GIS data, software, workflows, business rules and hardware, and other systems.

By using an iterative approach with an intuitive solution, MSWD staff will have the means to adopt best practices, streamline processes, manage costs, and promote transparent access to work activity information. This effort will support MSWD as it strives to provide an exceptional level of service to a growing population.

MSWD faces a critical turning point under the pressure of aging infrastructure, deprived maintenance routines, and financial pressures. Staff must manage its assets, collect, and analyze information, and provide long-term value to the public. Under this project you can leverage data and technology in new ways and use processes and asset analytic techniques. Beyond the immediate process efficiency gains, your Asset Management program can help affect real cultural change within the organization.

Positions once dedicated to reactive maintenance can evolve into positions focused on preventative maintenance, analytics and structuring controlled experiments in a quest for more capital investment. Truly, you have an exciting opportunity.



Establish ASSET CRITICALITY AND RISK FRAMEWORK

MSWD service goals must consistently align with its most critical assets to support infrastructure maintenance needs and track operational efficiency of services delivered to the public.

Consolidate ASSET MANAGEMENT FUNCTIONALITY IN A BUSINESS SOLUTION

Streamline your approach and leverage Cityworks AMS & Esri ArcGIS for assets thus negating legacy customization or non-integrated systems.

Identify PRIORITIZED CAPITAL IMPROVEMENT AND INVESTMENT RETURN

Identify prioritized capital needs and return on investment analysis by using data-driven AM planning through collecting the right amount of quality data to inform investment decisions.

Based on our experience in leading GIS-based Asset Management transformations and the related implementation of a cloud-based Esri GIS and Cityworks AMS, we believe you need a very specific type of partner. You need a team of advisors who are familiar with core cloud technologies, Esri technology, Cityworks AMS knowledge, and asset management processes and workflows; yet can translate business requirements into technology specifications. You need seasoned professionals with a **bias for action and pragmatism** as opposed to academic purity. You need organizational change experts who know how to connect with the front line as well as the executive suite, to ensure there is top-down support and real momentum for the journey. We suggest that you also need partners who think holistically, from maintenance operations to technology to the supporting areas of MSWD to ensure that your cloud-based Esri tools and data and Cityworks AMS are configured for long-term success.

MSWD has identified the need to implement a new cloud-based architecture for Esri's GIS, migrate existing data to Esri's Utility Network data model, and implement Cityworks AMS. Cityworks AMS can perform the District's technical requirements. However, simply purchasing and installing Cityworks does not mean you will be performing asset management to your desired level or more effectively performing the various tasks associated with the desired level of CMMS, asset

management, and citizen management. When Timmons Group works with our clients to address their Asset Management needs, we prefer to use the ISO 55000 definition which states:

*“Asset Management capabilities include **processes, resources, competences, and technologies** to enable the effective and efficient development and delivery of asset management plans and asset life activities and their continual improvement.” - as defined by ISO 55000*

Cityworks AMS meets MSWD’s technical requirements and Timmons Group will use industry standards and best practices including ISO 55000 guidelines as we develop and deliver a plan to address the related processes, resources, and competences. This plan becomes the key to how we ensure that your GIS, the Esri Utility Network and Cityworks AMS are designed and implemented to collect the necessary data to enable MSWD to report on and analyze this data for critical decision making at the operational and management levels.

Timmons Group proposes to work with MSWD to refine or create new workflows, following existing business rules and other criteria so that MSWD can leverage Cityworks to meet your requirements. A primary objective of this task is for our implementation team to review and understand how MSWD conducts business and manages its assets, how data, specifically GIS data, is used and moves through MSWD. The goal is to provide knowledge to support and enable our implementation team to properly address the technological impacts of the software deployment and MSWD to understand the technological impacts and the non-technological impacts related to business processes and workflows. It will be our intent to use these processes and to “tweak” them as necessary to include best practices, ISO 55000 guidelines, a Best Management Practice framework, Workflows and Standard Operating Procedures, ASCE, APWA, & AWWA guidelines, and to use the full capabilities of our solution software effectively.

Realizing your vision, however, can be challenging. It will require change – new behaviors and new skills. It will also require a solid foundation of well-defined business processes and solution requirements. But before any supporting IT/GIS tools can be configured, there must be clarity on the organization’s core processes: the workflows for key steps and sub-steps, and what data must be collected at which points to inform which decisions. By analyzing business processes in a structured way, one streamlines the technology and data needs and, perhaps more importantly, one can identify tangible improvement areas for quick wins.

Partnering with Timmons Group on this project will yield the results you demand. Years of lessons learned will be available to you and your stakeholders throughout the life of your program. Regarding group specific consulting, Timmons Group brings not only geospatial and information technology professionals to assist with the cloud-based implementation of the Esri’s GIS, Esri’s Utility Network and Cityworks AMS solution, but also subject matter experts in the fields of cloud-based solutions, utilities, civil engineering, planning, asset operation and maintenance in multiple asset classifications. You will have the opportunity to work with our planning, engineering, geospatial, system architects and technology subject matter experts who will share over a century of combined ideas and solutions with you in support of your greater mission. These resources will be available to the project team to assist with best practices as your GIS and Cityworks AMS are configured uniquely to each Functional Group and your GIS and Cityworks AMS are configured around each Functional Groups business processes and workflows. These subject matter experts will review the proposed configuration workflows for best practices and address the “do they make sense” questions, prior to Timmons Group submitting the proposed workflows for MSWD approval.

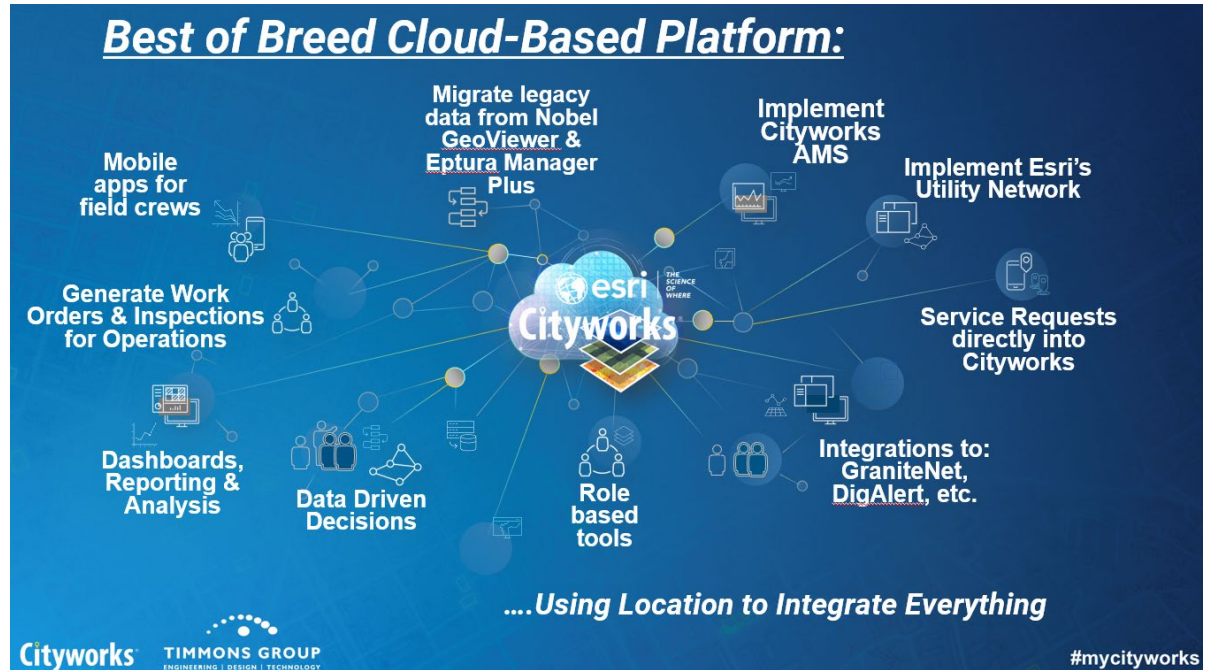
Importance of KPI and Level-of-Service Measures in Implementing a CMMS

The shortfall afflicting many Asset Management programs is the disconnect between the theory and “the act of doing” (i.e., the day-to-day application of the AM practices). In our experience, the key to bridging this gap is defining insightful Key Performance Indicators (KPIs) that are linked to key decisions. A well-designed relationship between KPIs and Service Delivery Areas (for example) can provide clarity to your CMMS and Asset Management Plan. This up-front planning informs the core data collection needs (how does the Esri Utility Network datamodel get designed and used), requirements, and implementation configuration for Cityworks AMS. Without this framework, ArcGIS and/or Cityworks AMS could be configured to collect too much “nice to have” data which burdens crews and consumes screen real estate on field tablets. As part of our consulting services, we will rationalize the GIS & Cityworks data collection requirements to better align with your defined KPIs, thus informing process efficiency and outcomes.

Timmons Group, through our well-honed implementation methodology, successfully used at multiple municipalities and utilities across the US, will provide a proven approach to reviewing existing business processes, helping to revise them to effectively exploit not only your GIS and Cityworks AMS but also your existing data and resources, all while adhering to existing business or regulatory rules and policies. The result will be an end-user-driven configuration of your GIS and Cityworks implementations. This will ensure that your staff members embrace the new technical platforms and have access to the critical data required to perform analyses, run reports, and support data-driven decisions. Additionally, we

intend leave you fully self-sufficient in the operation of, future configuration changes of, and use of the data analysis tools your GIS and Cityworks AMS provides, through our proposed role-based training and knowledge transfer throughout the project. We will also provide on-going support and staff augmentation as necessary, including managed services for your cloud hosting.

The graphic below details the software and integrations we are proposing for each requirement and their relationships. Cityworks AMS is based on Esri's ArcGIS and will therefore leverage your existing investment. Cityworks (a GIS-centric solution) will serve as the platform or "best of breed" solution for Enterprise Asset Management & Computerized Maintenance Management.



We are not just implementing Cityworks AMS. Rather we are meeting all the requirements you have outlined, and are needed, to have a toolset that allows you to manage, operate, analyze, and make informed decisions about your assets from a holistic perspective. This toolset facilitates data sharing among solutions, allowing MSWD to manage and analyze data in the native applications or in other tools such as MS Power BI, Tableau, and others. This capability empowers MSWD to make data-driven decisions across the organization, analyzing various factors such as billing, consumption, financials, asset depreciation, lifecycle costs, risk, consequence of failure, probability of failure, socio-economic factors, environmental impact, and resource requirements collectively, moving away from traditional siloed practices.

For the best outcome and to ensure its most effective use, an organization should not simply install software without the help of an experienced professional services team to help guide you through the workflows, business requirements, and day-to-day activities. Through our well-honed implementation methodology, successfully used at multiple local governments and utilities across North America, we will review existing business processes, helping to revise them to effectively exploit not only Cityworks but also your existing data and resources, all while adhering to existing business or regulatory rules and policies.

As MSWD implements new solutions, you will be well served to address change management. After all, if the system is not used to its full potential, the project will not succeed. Our approach includes change management on multiple levels, as described in our proposed scope of services. Our use of best practices and strong consulting experience ensure that the cloud-based Esri ArcGIS, Utility Network, and Cityworks AMS solution fits properly within your organization and differentiates Timmons Group from other system implementers. We are a Platinum level business partner with Cityworks and a Gold level partner with Esri, as well as Utility Network Certified and a trusted partner with Amazon Web Services, for a reason.

As you review our proposal, keep in mind the following key points that differentiate our team:

- We require no teaming partners to achieve your desired result
- We have performed what is basically this same project with other clients across North America in the recent past, including your neighbor, Indio Water
- Our team will have one project manager, Lauren Sullivan, PMP, a southern California native who is residing in Portland, OR. She and other team members will guide you through project components as they are implemented,

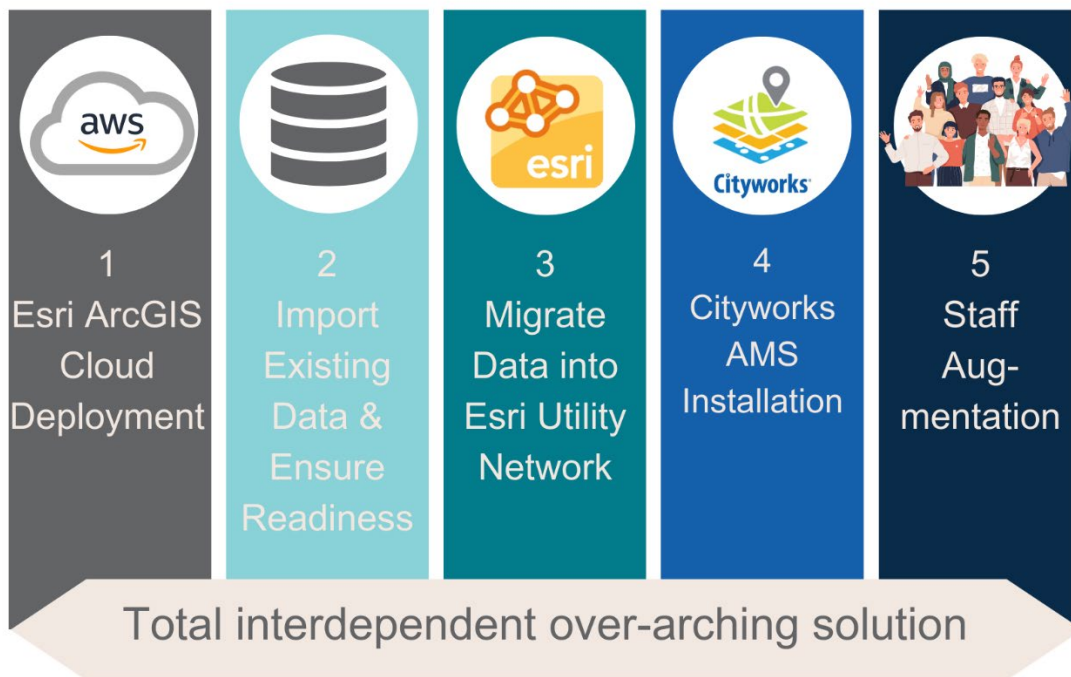
provide on-going support and staff augmentation for the cloud-based managed services, GIS deployment and maintenance expertise, and Utility Network and Cityworks AMS implementations

- Ally Reynolds and Drew Purzycki are two of only a handful of experienced GIS professionals who have been certified by Esri in the ArcGIS Utility Network
- Timmons Group is one of only a few firms that is both Esri Utility Network certified and a Trimble Cityworks Platinum level implementation partner
- Timmons Group has 135+ successful Cityworks implementation across North America
- Timmons Group has 15 Utility Network projects across North America, including Indio Water Authority
- We won a UN implementation award at the IMGIS conference in Palm Springs in 2023. This is as much an award for Timmons Group as it was for Indio Water Authority
- Timmons Group is currently hosting and providing managed services for multiple enterprise Esri ArcGIS & Cityworks deployments across North America.



2023 Infrastructure Management & GIS Conference
Utility Network Implementation Award

To ease your review and to provide organization, we have divided the project into five high-level components detailed individually. However, we will manage, design, and deploy as one project with the realization they are part of one cohesive solution to MSWD. These components are:



SCHEDULE

For planning purposes, we have included a preliminary schedule. Our initial proposed schedule is based on extensive experience with similar projects, but we will work with MSWD to adjust the schedule as necessary. A more detailed and interactive Gantt chart is available here: <https://app.smartsheet.com/b/publish?EQBCT=80a98ff143414fc9a93f6a6a79751878>.

Task Name	Durati...	Start	Finish	2025												2026			
				Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1 ArcGIS Enterprise, Cloud, Utility Network, and Cityworks Implementation	413d	02/26/24	10/22/25	[Gantt bar spanning from Feb 2024 to Oct 2025]															
2 Notice to Proceed	1d	02/26/24	02/26/24	[Gantt bar at Feb 2024]															
3 Project Initiation	26d	02/27/24	04/02/24	[Gantt bar from Feb to Apr 2024]															
9 Project Component 1: ArcGIS Enterprise Cloud Deployment	326d	03/06/24	06/30/25	[Gantt bar from Mar 2024 to Jun 2025]															
10 Discovery	19d	03/06/24	04/01/24	[Gantt bar from Mar to Apr 2024]															
16 Technical Design	19d	04/02/24	04/26/24	[Gantt bar from Apr to May 2024]															
23 Build Cloud Infrastructure	14d	04/29/24	05/16/24	[Gantt bar from May to Jun 2024]															
29 Configure Software	15d	05/17/24	06/07/24	[Gantt bar from Jun to Jul 2024]															
34 Testing and Launch ArcGIS Enterprise Environment on AWS	259d	06/10/24	06/30/25	[Gantt bar from Jun 2024 to Jun 2025]															
37 Project Component 2: Import Existing Data and Ensure Readiness	387d	04/02/24	10/22/25	[Gantt bar from Apr 2024 to Oct 2025]															
41 Project Component 3: Migrate Data into ESRI Utility Network	342d	03/12/24	07/29/25	[Gantt bar from Mar 2024 to Jul 2025]															
42 GIS Discovery	15d	03/12/24	04/01/24	[Gantt bar from Mar to Apr 2024]															
44 UN Data Model Design & Editing Tools	84d	04/02/24	07/31/24	[Gantt bar from Apr to Jul 2024]															
60 UN Migration	65d	08/01/24	11/01/24	[Gantt bar from Aug 2024 to Nov 2024]															
66 UN Testing, Training, & Go-Live	188d	10/21/24	07/29/25	[Gantt bar from Oct 2024 to Jul 2025]															
67 Testing and Training	84d	10/21/24	02/28/25	[Gantt bar from Oct 2024 to Feb 2025]															
75 UN Go-Live	11d	07/15/25	07/29/25	[Gantt bar at Jul 2025]															
82 Project Component 4: Cityworks Implementation	355d	03/12/24	08/15/25	[Gantt bar from Mar 2024 to Aug 2025]															
83 Cityworks Asset Readiness	47d	03/12/24	05/15/24	[Gantt bar from Mar to May 2024]															
91 Cityworks Environment Preparation & Setup	22d	09/20/24	10/22/24	[Gantt bar from Sep to Oct 2024]															
101 Core System Implementation	111d	10/23/24	04/10/25	[Gantt bar from Oct 2024 to Apr 2025]															
122 Cityworks Systems Integrations	91d	10/01/24	02/20/25	[Gantt bar from Oct 2024 to Feb 2025]															
143 Cityworks Data Migrations	163d	10/17/24	06/18/25	[Gantt bar from Oct 2024 to Jun 2025]															
165 Cityworks User Acceptance Testing	85d	02/20/25	06/20/25	[Gantt bar from Feb to Jun 2025]															
179 Cityworks Training	58d	04/21/25	07/14/25	[Gantt bar from Apr to Jul 2025]															
185 Cityworks Go-Live	82d	04/21/25	08/15/25	[Gantt bar from Apr to Aug 2025]															
192 Project Component 5: Staff Augmentation	0	04/02/24	04/02/24	[Gantt bar at Apr 2024]															
193 Managed Services	259d	07/01/25	06/30/26	[Gantt bar from Jul 2025 to Jun 2026]															
194 (Optional) Cityworks Support Services	260d	08/18/25	08/17/26	[Gantt bar from Aug 2025 to Aug 2026]															

APPROACH

Project Initiation & Project Management

Successful implementation of the tools required for a project of this type requires a thorough understanding of the individual processes and information management applications used throughout the organization. An appropriate level of planning and strategizing is required to ensure the end-users' needs are identified, understood, and designed for prior to implementation of any solution. Timmons Group is committed to providing MSWD with the resources needed to achieve your goals and the priority to complete each task on schedule and within budget. Our dedicated staff will provide you with consistent, responsive service. We have established a strong team, based on similar projects, client success and certification status. All Project Team members selected for this engagement have recent significant experience in the planning, design, and implementation of multiple enterprise cloud-based Esri ArcGIS, Esri Utility Network and Cityworks projects of varying depths and complexities. However, in our experience, these competencies alone do not automatically translate into successful projects. Rather, the key to project success is the proper use of available resources within the framework of a well-managed project plan that completely addresses each of the following processes:

- Initiation – project authorizations and expectations
- Planning – project definitions, objectives, deliverables, and analysis of alternatives
- Execution – coordination of resources, quality control, delivery of products and services
- Controlling – monitoring and measuring to identify variances and initiate corrective actions
- Closing – acceptance of project results and deliverables

As previously stated, the success or failure of the components required for the success of this project is most often not attributable to the technology components, but rather to managing the implementation of the cloud-based platform and software solutions and the organization's ability/inability to effectively achieve the change associated with the implementation. We will partner with MSWD in developing a strong body of users throughout the implementation process. The widespread adoption that is often anticipated by the project stakeholders during the planning and development of enterprise systems can quickly wane shortly after implementation if the change process is not effectively managed. With our Project Manager serving as the hub of our team, and the conduit of communications between our subject matter experts and the MSWD core team, we propose to use the following management tools to manage the proposed project programmatically and proactively to a successful end. The following implementation and support functions will be addressed in the project plan with designations for each implementation/deployment phase recommended:

- Project Planning/Execution
- Communications Planning/Execution
- Cloud Design, Implementation and Testing
- Business Review and GAP Analysis
- System/Application Configuration and Validation
- Data Analysis, Design and Development
- Customization/Interface Analysis, Design and Development
- Testing (System, Performance and User Acceptance Testing)
- Training and Documentation
- Implementation
- Operations, Maintenance and Support

The project components and their associated tasks detailed below are designed to meet the full requirements of the RFP from the perspective of providing the required professional services to meet the full requirements as detailed within the RFP. Project Initiation sets the stage for downstream activities and tasks. This is the time to better define the overall goal of the project and what stakeholders hope to ultimately gain from the effort. During initiation, it is important to define who will be working on the project and their respective roles, as well as who will make business decisions and establish priorities for what ends up in the application. Project initiation tasks are typically not time-intensive but are very important to the success of the project. By having clearly defined roles, the project team can minimize inefficiencies and streamline the requirements gathering and decision-making process. On notice to proceed, we will convene at an internal Timmons Group team meeting to ensure the entire project team understands the overall goals of MSWD's project and what the project schedule is. Our Project Manager will be in contact with the MSWD Project Manager to discuss the kick-off

Successful program management requires a high degree of commitment to both operational and fiscal results; an acceptance of accountability for conformance to project requirements; and the people skills to forge a synergistic chemistry between diverse stakeholders.

meeting agenda and project schedule. Timmons Group will draft a kick-off meeting agenda for MSWD to review and edit. Our Project Manager will also provide a detailed project management plan to include phases, tasks, task dependencies, and task durations prior to the kick-off meeting.

Our Approach to Project Management

Timmons Group specializes in delivering enterprise GIS & Asset Management solutions for our clients. We have accumulated years of experience and lessons-learned that have shaped our project management and implementation approach. Our project manager will be responsible for:

- Facilitating meetings between the Timmons Group team and MSWD project stakeholders
- Preparing for, and conducting, all on-site and on-line meetings
- Reporting risks and impediments to the team as issues arise and maintaining a risk registry on our web-based project portal (Teamwork)
- Maintaining the project work plan and project schedule
- Managing change
- Monitoring and reporting project performance

Project Management Plan (PMP)

The PMP integrates and consolidates all the subsidiary management plans from the planning process, including:

- Scope management plan (including the change management process)
- Schedule management plan
- Cost management plan
- Quality management plan
- Human resource plan
- Communications management plan
- Risk management plan
- Procurement management plan

Mutually agreed-on project baselines are established for schedule, cost, and scope. These baselines are combined into a performance measurement baseline against which integrated performance can be measured throughout project execution. Our Project Manager will develop and deliver a PMP outlining the tasks, schedule, deliverables/milestones, communication plan and the associated resources (internal/external) necessary for the project to be successful.

Kick-off Meeting

The Project Manager will organize the kick-off meeting, which will include participation from key project stakeholders and client staff. This meeting will focus on:

- Team Introductions
- Overall Project Goals/Objectives
- Project Roles and Responsibilities
- Status Meeting Cadence and Status Report Content
- Team Collaboration Site
- Project Work Plan and Milestones
- Change Management Process
- Invoicing Process
- Summary of Deliverables
- Action Items and Next Steps

Our Project Manager will provide the kick-off meeting summary notes to MSWD for review and comment before finalizing them. Additionally, the following will be created, modified, and then finalized:

Project Repository – Timmons Group will maintain procedures throughout the project for tracking and reporting progress. We will establish a dedicated, secure online project portal (Teamwork) that provides centralized, on-demand access to project documents and status. Our approach to project management is very “hands-on” and will support constant communication to minimize project risk, remove impediments to progress, and to ensure that we are delivering the best possible solution. Standard project management documents that will be posted to the project portal include: status reports (MS Word), current and past versions of the project work plan (Smartsheet), key project decision log, risk register and a task/action item log. Monthly we will provide MSWD with a project status report that documents the activities performed during the previous month. At a minimum the report shall address the following:

- Status of all tasks
- Deliverable status
- Configuration status
- Forecasted Deliverable status for the next reporting period
- Resource status for the project, including staff utilization
- Schedule status for the project including task status, milestones completed, phases completed, schedule trends and schedule summary

- Comparison of actual percent complete versus scheduled for the work breakdown structure
- Issues, risks, and resource constraints which are affecting or could affect progress including proposed or actual resolution
- Proposed changes to the project work plan, reasons for the changes, and approval/disapproval determination for any proposed changes
- Updated detailed project work plan with approved changes highlighted
- Key decisions (technical and administrative)
- Open action items
- Schedule update
- Financial update
- Project performance measurements

Project Management Plan – After the kick-off meeting, we will make any necessary adjustments to the project management plan. This may include the identification of new tasks, changed dependencies, or changed task durations. In addition to the formal processes, tools, and documents detailed above, Timmons Group also has several other processes and documents to manage a project, including:

- Scope Management Plan
- Communication Plan
- What is being communicated
- To whom it is to be communicated
- How it is to be communicated (e.g., in-person, email, call)
- When it is to be communicated
- Schedule Management Plan
- Risk Management
- Quality Management
- Quality Assurance Plan
- Acceptance Procedures
- Status Report Template
- Ongoing Project Management

Project Component 1: ArcGIS Enterprise Cloud Deployment

ArcGIS Enterprise Discovery and Technical Design

Timmons Group has developed a proposed approach and schedule to optimize delivery to MSWD in a cost-efficient manner. Timmons Group is flexible in the approach and schedule for MSWD's ArcGIS Enterprise cloud deployment. Our approach summarized below is a systematic process we have refined over decades of experience with ArcGIS for hundreds of clients with a broad range of requirements. We start with a Discovery to build shared understanding of detailed requirements and desired outcomes and the steps that follow Discovery are flexible based on what we learn and what MSWD needs. From a schedule perspective we started with deploying a lower development environment for ArcGIS Enterprise to support components 2-4. Starting with a single environment provides MSWD cost savings by holding off on deploying and operating the production ArcGIS Enterprise environment until the necessary capabilities and data are ready to support MSWD's day to day activities. Based on MSWD's preferences and requirements the ArcGIS Enterprise production deployment can occur at any point in the overall project duration once the development environment is validated to meet the to be defined parameters for Go-Live.

Discovery

The purpose of Discovery is to document every relevant component of the current GIS so that all capabilities and functionality are accounted for in the cloud deployment. The GIS software, including extensions and add-ins, will be documented along with the licensing currently available to MSWD. Our team will document custom processes like database triggers, geoprocessing tools, stored procedures, views, or scheduled tasks running via Python or other tools as well.

ARCHITECTURE REVIEW AND VALIDATION

Timmons Group will work with MSWD to review the current system architecture. This will include the servers currently in place and the various software configurations in place for these servers. The goal is to ensure that Timmons Group, to the best extent possible, captures the current system configuration and dependencies of MSWD's GIS prior to finalizing the technical design and implementing a new GIS infrastructure.

CATALOG EXISTING DATA AND SERVICES

The current database(s)'s properties and data, users be documented for consideration during the migration. Users, roles, and schemas will be documented along with any versioning methods, if applicable.

CATALOG GDBs AND AGS SERVICES

Timmons Group will spend time working with MSWD to review the current GIS databases supporting the GIS architecture. This will include enterprise geodatabases (SDE), non-enterprise geodatabases, and other GIS data sources necessary to support the current GIS system. The goal here is to ensure that Timmons Group to the best extent possible captures the current system configuration and dependencies of MSWD's GIS prior to finalizing the technical design and implementing a new GIS infrastructure on AWS.

COLLECT AND DOCUMENT SECURITY REQUIREMENTS

Timmons Group will facilitate a workshop with MSWD IT staff to capture and record security requirements for the new GIS environment. These requirements will focus on security controls, identity access and management, network security and security logging.

COLLECT AND DOCUMENT SYSTEM INTEGRATION REQUIREMENTS

Integrations are a critical component of a successful enterprise implementation and before integrations can be implemented, networking must be designed and configured to facilitate communication between the various systems. Timmons Group will work with MSWD to review the current desired integrations with the enterprise GIS including Cityworks/ Cityworks Online. This will include the details and dependencies of integrations with third party systems including the networking ports and protocols required. The goal here is to ensure that Timmons Group to the best extent possible captures the current system configuration and dependencies of MSWD's GIS prior to finalizing the technical design and implementing a new GIS infrastructure on AWS.

Technical Design

DESIGN ARCHITECTURE

Timmons Group will create a system architecture design document with MSWD to ensure system specifications will meet the performance and security needs of MSWD. Timmons Group intends to review system architecture design documents for the new AWS Cloud environment with MSWD to ensure system specifications will adequately meet documented technical requirements.

DESIGN USER IDENTITY AND MANAGEMENT STRATEGY

Depending on the final technical design and other MSWD IT resources, we may leverage the following components to properly authenticate and authorize ArcGIS Portal users. If available from MSWD, Enterprise logins via HTTPS/SAML or OpenID Connect will use MSWD’s Federated Identity Management platform. A typical security pattern for Timmons Group is summarized below:

Summary System Security	
Security Control	Description
Authentication	Single Sign-On (SSO) via SAML integration with Enterprise Identity Management System
User Store	Enterprise Identity Management System
Role Store	Built-in
User Provisioning	Enterprise Identity Management System
GIS Services Access	Federated security to GIS Portal groups
GIS Portal Access	Portal for ArcGIS: Domain Accounts and RBAC via group membership

DEVELOP TEST PLAN

Our team will develop a test plan to validate the new GIS environments are functioning properly. The test plan will cover high level testing to ensure capabilities, data, services and security configuration are implemented as designed.

DESIGN AND DEVELOP BACKUP AND DISASTER RECOVERY PLAN

Timmons Group will work with MSWD to follow our proven disaster recovery (DR) framework composed of two phases, preparation and recovery. Leveraging our DR framework, we will work to understand MSWD’s needs and business risks to define recovery objectives. Two components of recovery objectives are recovery time objective (RTO), defined as the time it takes after a disruption to restore a business process to its service level, and recovery point objective (RPO), which is defined as the acceptable amount of data loss measured in time. With clearly defined recovery objectives in place, we evaluate and select the best strategy; e.g. traditional backup and restore, pilot light for quick recovery, warm standby, high availability multi-region deployment. We follow our framework for preparation to design and implement the strategy using automated processes including testing, monitoring, and alerting. Following the Preparation Phase of the DR framework, we exercise the Recovery Phase frequently to provide assurances these processes operate as designed and measuring RPO and RTO to ensure these objectives are successfully met.

DEVELOP OPERATIONS PLAN

Timmons Group will develop a cloud operations plan for the new GIS environment. The operations plan will document operational roles and responsibilities, service level objectives, monitoring and alerting, incident response plan, scaling and resource management policies, security measures implemented, cost optimization, and change management processes.

REVIEW SYSTEM ARCHITECTURE

Timmons Group intends to review system architecture design documents for the new AWS Cloud environment with MSWD to ensure system specifications will adequately meet documented technical requirements.

Build Cloud Infrastructure

Timmons Group will establish a new AWS Account under the Timmons Group main AWS account to provide separation for accurate billing each month. Within the dedicated AWS account Timmons Group will deploy AWS Virtual Private Cloud (VPC), networking and security services to support and protect the environments as well as isolate MSWD’s development environment from production. The remaining steps of this stage will first be performed to deploy the development environment and once validated infrastructure for production will be deployed. Our team will provision EC2 instances to support the ArcGIS Enterprise deployment model chosen and the requirements defined in Discovery. Next our team will build the data and storage tier. The final step for infrastructure will be to implement the backup and disaster recovery plan; testing disaster recovery will happen post software installation and configuration.

Configure Software

ArcGIS Enterprise workflows and functionality are enabled by four software components. This configuration is the base ArcGIS Enterprise deployment. Each component performs critical functions that support the requirements of the ArcGIS Enterprise deployment. Components are individually installed and configured to function together. This base deployment is the foundation for the ArcGIS Enterprise implementation. Where possible, our team will leverage automation to configure the ArcGIS Enterprise components.

CONFIGURE ARCGIS PORTAL

At the heart of the new environment, ArcGIS Portal will be deployed in a base and distributed configuration. Our team will build the necessary ArcGIS Portal instance(s) required for the new environment. We will target the GIS platform 11.1.1 (or higher “.1 release,” if desired by MSWD and recommend Esri LTS versions for production workloads) and follow the System Design Architecture artifact from the design phase that includes Esri’s best practices to be followed in the implementation and configuration. Our team will follow Esri’s best practices for secure ArcGIS Portal configuration as documented here: <https://enterprise.arcgis.com/en/portal/latest/administer/windows/security-best-practices.htm>

CONFIGURE ARCGIS SERVER

Our team will build the necessary ArcGIS Server Instances required for the AWS cloud environment. ArcGIS Server instances will be federated with Portal. With federated ArcGIS Servers, the portal's security store controls all access to the ArcGIS Server instance. This provides a convenient sign-on experience but also impacts how access and administration of the federated server(s) are controlled. Our team will follow Esri’s best practices for secure ArcGIS Server configuration as documented here: <https://enterprise.arcgis.com/en/server/latest/administer/windows/best-practices-for-configuring-a-secure-environment.htm>

CONFIGURE ARCGIS DATA STORE

Our team will configure ArcGIS Data Store to support the base Enterprise deployment. Data stores can include relational data store, tile cache data store, graph data store and or object data store for the hosted GIS environment.

CONFIGURE ARCGIS WEB ADAPTOR

Our team will configure ArcGIS Web Adapter in accordance with the technical design to support the appropriate deployment scenario to provide the appropriate access and restrictions at the web tier for the GIS implementation.

DEVELOP ARCGIS ENTERPRISE ADMINISTRATOR GUIDE

Our team will develop documentation for ArcGIS Enterprise administration including user and role management.

DEVELOP USER GUIDE FOR ARCGIS ENTERPRISE

Our team will develop a user guide for ArcGIS Enterprise for GIS staff to connect and use the new ArcGIS Enterprise environment leveraging ArcPro and ArcGIS Portal for daily tasks.

Testing and Launch ArcGIS Enterprise Environment on AWS

TEST ENVIRONMENTS PER TEST PLAN

Our team will follow the test plan to review and validate the new ArcGIS Enterprise deployment is configured as designed. Our team will resolve any issues uncovered and retest until all issues are resolved and provide MSWD with documented test results.

DEPLOY AWS ENVIRONMENT AS PRODUCTION ENVIRONMENT

In this stage, the new ArcGIS Enterprise environment will be deployed and released to users and GIS staff for production use. Since MSWD doesn’t currently have an existing ArcGIS Server or Enterprise environment the sequencing and timing of this event should be flexible though does need to be completed before the UN migration and Cityworks implementation can be finalized in the following project components.

Project Component 2: Import Existing Data and Ensure Readiness

System Migration Discovery & Planning

Early in the project, we will hold holistic discovery and planning sessions to ensure that all the component projects will be implemented in a way, and on a schedule, that makes sense and reduces both downtime and any need for duplicative editing. This will ensure that data gets migrated efficiently and at the time that makes the most sense so the new AGE, UN, and Cityworks are functional. This task might result in changes to the overall and component schedules to ensure we meet MSWD's business needs.

Migrate LandBase Data

Timmons Group will migrate MSWD's Landbase and other non-utility layers to the new enterprise geodatabases in Dev and Prod. Timmons Group does not recommend migrating the utility data to the enterprise geodatabases prior to the UN implementation. This will merely result in their replacement during the next Project Component.

UN Data Readiness Assessment

Timmons Group usually includes a "UN Data Readiness Assessment" as an early phase of our UN migration projects. However, due to the lack of resourcing and current GIS management practices (mdb and shapefile), we recommend forgoing this phase for MSWD. We will deploy the UN without prior data cleaning which will result in an inability to build subnetworks (and therefore run certain kinds of traces), but data cleaning can be automated as part of our migration processes with FME. In addition, data corrections can be more efficient in ArcGIS Pro/the UN because the errors will be exposed by the UN's validation workflow. Once the data has been cleaned, post-implementation, subnetworks and tracing will be fully functional.

Data Clean-up

After the UN is deployed to Production, Timmons Group will provide GIS editors to clean the data within the UN so that subnetworks can be successfully built. This will require access to source documents like As-builts to ensure edits can be completed correctly. This task will be completed using a time & materials rate.

Project Component 3: Migrate Data into Esri Utility Network

GIS Discovery

Timmons Group will work with MSWD to review the current GIS data. This will include the GIS databases, .mdb files, shapefiles, and other GIS data sources necessary to support the current and future GIS. The goal is to ensure that Timmons Group, to the best extent possible, captures the current system configuration and dependencies of MSWD's GIS prior to finalizing the technical design and implementing a new GIS.

UN Data Model Design & Editing Tools

DATA MODEL DESIGN

Per MSWD's request, the data models provided by Esri's solution will be used. However, there are customizations that Timmons Group have already done to these "base" data models to increase compatibility with Cityworks. These customizations will be used to ensure the success of the Cityworks component of this project. Per Cityworks discovery sessions, additional fields will be added to the data models, as required by MSWD's business requirements (for example, adding a WarrantyDate field).

EDITING TOOLS

Timmons Group will configure the UN databases and editing environment to ensure the highest possible data quality and to streamline editing workflows. Our team will configure Calculation and Validation Attribute Rules (AR) to ensure data quality; for example, Attribute Rules will generate the unique IDs that Cityworks requires. We will use a list of common rules and work with MSWD to ensure it meets business needs. Group editing templates will be configured per needs discussed during the workshops. This often involves items like hydrant and meter/service connection editing templates to streamline editing. These templates will be designed and documented at this stage but not built until the UN is deployed in the DEV environment. We recommend holding off on UN Diagrams until after the UN is in use and everyone at MSWD is comfortable with it.

UN Migration

DATA MIGRATION

Timmons Group will use Safe Software's FME product to migrate the data from the current data sources to the UN database from the previous phase. We will generate a Data Migration Matrix that show how each data source will be migrated to the UN data model, down to the field level (or domain values, as available).

The migration process can enhance and enrich the data mid-migration; for example, if a feature needs an attribute created based on a feature that it intersects, that can be created by the migration tool. We can also snap features together, within reasonable tolerances (e.g., hydrant to the end of a nearby lateral), and populate UN-specific data like subnetwork controllers. This is an iterative process; MSWD will have multiple chances to provide feedback both at the Migration Matrix stage and the actual data migration stage.

MIGRATION TO DEV ENTERPRISE ENVIRONMENT

Following migration approval, Timmons Group will move the draft migrations from file geodatabase into the DEV enterprise geodatabases in MSWD's environment and enable global IDs, editor tracking, branch versioning, and replica tracking. The mxd files will be migrated to ArcGIS Pro and re-built as necessary for the UN data model.

PROVIDE DOCUMENTATION AND THIRD-PARTY SOFTWARE

Timmons Group will share the created FME Workbenches to migrate the data and an updated Data Migration Matrix with MSWD.

Systems Integration

CITYWORKS

Following the identification of the Asset Types for Cityworks, Timmons Group will publish a feature service from Dev for Cityworks' Development environment to use. This will use definition queries to provide the relevant features for each Cityworks Asset Type.

CUES GRANITENET

If needed, a Map Package will be created for offline use by GraniteNet.

UN Testing, Training, and Go-Live

TIMMONS GROUP TESTING

Timmons Group will create a comprehensive testing plan that will:

- Identify team members and their roles and testing responsibilities
- Clearly delineate what is in-scope based on business needs

- Identify test criteria, environment, assumptions, and phases
- Create test scripts to ensure relevant functionality is addressed

Testing will be conducted on the DEV environment to ensure the UN data model and ArcGIS configurations are functional. We will also ensure the infrastructure is configured for good editing and viewing performance. Timmons Group will conduct system testing and functional testing prior to user acceptance testing (UAT) to ensure the system is ready for use. Changes to the data model, the data, the ArcGIS Pro configurations, or the test scripts are all possible. Once Timmons Group has passed the agreed-on test scripts, MSWD will receive training to prepare staff members to conduct their testing.

TRAINING

Once the migration is deployed to the DEV environment and tested by Timmons Group, we will provide four days of training: two days focused on office editing, one for field/mobile editors, and one day focused on administration. These focused training days align with the Workflow Guide documents that Timmons Group will provide. Following these trainings, the MSWD team will be empowered to use the Test Scripts to ensure full functionality of the implementation in the DEV environment so that the solution can be approved for Go-Live.

MSWD TESTING

MSWD will conduct testing following the test scripts that Timmons Group provided. It is possible that MSWD will have additional tests to perform, per IT requirements. Once MSWD passes the tests, Go-live approval should proceed.

UN Go-LIVE

Following successful UAT on DEV and with go-live nearing for Cityworks, an editing freeze will occur in the current production environment. The data will be extracted from the current production database and used in the final iteration of the migration tool. We will then load the UN data to the production environment, with configurations (e.g., attribute rules, editor tracking) applied. Feature services will be published and editing maps re-sourced to the production environment. Test scripts will be followed to ensure that functionality is still present and stable in this final environment. Integrations will be updated to ensure all functionality works as expected. This Go-Live process and regression testing is expected to take about a week. Timmons Group will work through the weekends to minimize downtime.

Project Component 4: Cityworks Implementation

Timmons Group has developed a phased and collaborative project approach that will provide the best overall solution to MSWD. (The methodology description is highly summarized to respect the required page limitations of our proposal). Our approach for each major Stage and Task is centered on four major program components:

- Project Management
- Core Software Configuration
- Department (Functional Group) Specific Implementations & replacement/integration of/to various existing/future systems
- Data analysis, reporting, and dashboards

Cityworks Asset Readiness

CITYWORKS ASSET HIERARCHY DESIGN & GAP ANALYSIS

In line with the work Timmons Group is completing as part of Project Component 3, Timmons Group will work with MSWD to establish an Asset Hierarchy for the new data model. Timmons Group will first host an overview of how assets are defined and used in Cityworks, then host one or more workshop(s) to review the defined assets and GIS with stakeholders. The outcome of these workshops are twofold: the Asset Hierarchy and the GIS Gap Analysis, which will serve as the backbone of the Cityworks implementation and should include all assets MSWD wishes to maintain in Cityworks, including vertical assets.

Task Group Deliverables

- Asset Hierarchy workshops, 4 hours total duration
- Asset Hierarchy spreadsheet (database design basics)
- GIS Gap Analysis & review meeting, 2 hours total duration

Cityworks Environment Preparation & Set-up

CITYWORKS KICK-OFF

Project team members and participating MSWD staff will participate in a Cityworks Phase Kick-off held to introduce project participants, establish roles and responsibilities of project participants, validate goals and objectives, establish the lines of communication for use throughout the project, and to answer any questions the staff may have. The kick-off meeting will include a Cityworks software demonstration.

CWOL OVERVIEW & INTEGRATING SYSTEMS DISCUSSION

We will meet with the Project core team to conduct a review of current and planned system architecture to address:

- Overview of Cityworks Online, including upgrades post Go-Live
- Review of Cityworks licensing
- Review mobile options for Field users, including devices and the current MDM solution in use
- A review of existing architecture and licensing per scoped system integrations.

LEGACY DATA/SYSTEM REVIEW

Timmons Group will host a walkthrough of a typical workflow completed by the agency in the current asset management system. The agency will share an existing workflow diagram (if existing), talk through the current business process and drivers, and demonstrate steps in the existing software system(s).

STAND UP CITYWORKS ONLINE

Timmons Group will liaise with Trimble Cityworks to stand up Cityworks Online (CWOL) and set up an administrative account to begin the configuration process.

CORE SYSTEM DATA MAPPING

The implementation team will define core configuration data in Cityworks and meet with MSWD to review the data mapping spreadsheets. The Cityworks core data mapping forms a portion of the Cityworks System Design Document. With our implementation team's assistance, MSWD will provide data to populate portions of the software prior to the Configuration Workshops. Any information MSWD can deliver prior to the workshops will be used by the implementation team to design, configure and implement the initial Cityworks configuration. The Cityworks Core System Data consists of the following:

- Employees – A list of all employees with titles, email addresses, contact information, labor rates, rate types
- Materials – A list of materials/parts that are used by your organization to complete work
- Equipment – A list of vehicles and heavy equipment used by your organization to complete work
- Contractors – Details about contractors used for work activities.

- Customer Accounts – Details about customers used as a lookup for service request creation.
- System Codes – Priority, status, categories and other fields on service requests, work orders and inspections

Task Group Deliverables

- Project Kick-off presentation & meeting minutes
- CWOL Overview & Integrating Systems meeting
- Cityworks Online environment stood up
- Legacy Data/System review meeting
- Cityworks AMS Core System Data meeting
- Cityworks AMS Core System Data spreadsheet
- System Design Document draft for assets and core configuration data

Core System Implementation

CITYWORKS CONFIGURATION SPRINTS

The Timmons Group Project Manager will work with the MSWD Core Team to develop a scheduled cadence of the configuration to meet the requirements provided by the team.

- Configuration sprints will typically last three weeks
- Configuration sprints will include workshops to cover configuration workflows for each Functional Group that will cover discussion of asset categories, configuration of work order and inspection workflows, relevant interfaces, reports used, and data migration considerations.
- After configuration workshops, the MSWD Core Team completes any remaining areas in the worksheet not covered during workshops.
- Once returned, Timmons Group will use the worksheets to configure the system for the Functional Group.

Configuration sprints will culminate in a review meeting with the pertinent members of the Project team where MSWD will have the opportunity to provide feedback for any necessary remediation. Services for this task will include, but are not limited to:

- Work activity templates
- Work activity default roles and responsibilities where they exist
- Identification of data elements that are necessary to capture with any activity type
- Inventory (material) types and requirements as they exist in relation to work activity
- Equipment types and requirements as they exist in relation to work activity
- Existing datasets used or slated to be used in the proposed work activity processes
- Work activity printout forms or print templates where necessary
- Reporting or data tracking needs or requirements as they relate to work activity processes
- Identification of any touchpoint for integrated software(s) as they relate to Cityworks work activities

REPORT & DASHBOARD DEVELOPMENT

During discovery workshops and review meetings with each Functional Group, we will identify the reports and dashboards that are critical to MSWD's operations and leverage existing reports when it makes sense or create new reports and dashboards as necessary. This process of report and dashboard development will include the following:

- Catalog required reports/dashboards – The implementation team will first host a Prioritization Workshop, then work with Functional Groups to identify and catalog any existing reports that are required for continued use with Cityworks. The team will also work to identify any new reports/dashboards that Functional Groups determine helpful or necessary for their asset management needs.
- Create identified reports and dashboards – The implementation team will develop reports and dashboards and test them against the development Cityworks environment. Dashboards may be built in a variety of reporting tools, from data visualization software to dashboards in Cityworks.
- Review and remediation of reports being developed – The implementation team will meet with Functional Groups to review developed reports and make any adjustments or alterations to those files as necessary.

SYSTEM DESIGN DOCUMENT

Once all required information regarding the current work order management, service request, and inspection processes are collected and organized, our implementation team will work together to analyze and document the configuration in the System Design Document. This document serves as a reference of configuration decisions, reports, business processes and other information compiled during the implementation effort.

Task Group Deliverables

- Workflow Diagrams (To-Be)
- Configuration Worksheet
- System Design Document updates to include business requirements and business processes
- Report /Dashboard Catalog
- Development of Reports/Dashboards
- Modification and QC of Reports/Dashboards

Cityworks System Integrations

ENTERPRISE INTEGRATIONS OVERVIEW

The concept of the enterprise system is to create interface points for solutions to share appropriate information with other software systems. Our team has extensive experience both configuring software and systems leveraging Cityworks APIs that include Service Request, Work Order, Inspections and metrics, the Cityworks Software Development Kit (SDK), and existing interfaces or modules for numerous customer billing, SCADA, Financial, Fleet Management, Billing, AVL, UDF, leak detection, fuel, playground equipment, and other systems. For the integrations requested, firstly, MSWD has identified Esri ArcGIS to be integrated with Cityworks. Understand that due to the architecture of Cityworks the integration to Esri ArcGIS requires no effort, it is built into the solution proposed (Note: Cityworks leverages Esri ArcGIS for Active Directory integration; MSWD likely has the requisite licensing but may require Esri system architecture changes).

The integration with Granite.NET is identified in the response to questions posed by Cyient and released on January 8, 2024 as being unnecessary for this phase of the project. This integration is therefore an option to pursue after Go-Live of the Cityworks AMS implementation.

The second integration identified by MSWD is with DigAlert, Timmons Group will use a modified Agile methodology to write an integration between the integrating system and Cityworks. We find this methodology strikes the appropriate balance between developing an integration that is well designed, considers the best technology for achieving the implementation, and is fair regarding the level of effort to both our clients and to ourselves. For each custom integration (DigAlert), the project team will work to:

- 1) Define the functional requirements of the integration
- 2) Build the proposed workflows, business rules and identify the system of action and ownership (record) for each task identified by the workflow design
- 3) Understand the level of effort required to build the integration
- 4) Understand the level of effort required to configure Cityworks PLL to successfully use/perform the integration

INTEGRATION WORKSHOPS

Our team will kick off the integration effort by hosting a discovery & design workshop. The goal is to meet with Functional Group(s) and verify critical information relevant to how the integration should work to best meet user business needs. Discussion during workshops will include:

- Integration workflows
- Frequency of updates from integrating system
- Functional requirements of integration in the form of User Stories
- API call limitations
- Location of integration console application

INTEGRATION REQUIREMENTS REFINEMENT AND GENERATION OF ACCEPTANCE CRITERIA

The Timmons Group Solutions Architect and development team will compile the final requirements of the integration. The Timmons Group Solutions Architect will work with MSWD to define acceptance criteria for each requirement. These requirements will include which data will pass between systems, how frequently data updates will occur, and the methodology by which data will be transmitted.

FINAL INTEGRATION DESIGN DOCUMENT

Timmons Group will develop a final document during this task, the Integration Design Document. This document includes:

- 1) Functional & technical requirements for the integration, including:
 - a. Integration direction (1-way or 2-way), frequency, and triggers
 - b. Final location of integration code or application
 - c. Methodology/APIs used
 - d. Error logging practices

- 2) Out-of-Scope items
- 3) Assumptions
- 4) Questions & Responses

INTEGRATION USER ACCEPTANCE TESTING & TEST SCRIPTS

The user acceptance testing phase of the implementation project will offer staff the opportunity to review the integration and complete end-to-end testing. Timmons Group will identify the necessary steps to complete end-to-end testing, and staff will complete and confirm testing results. Feedback will be incorporated into a revision process that will guide modifications to the scripts and processes that initially drove the integration. Feedback will be submitted using the same methodology as the overall project UAT, and the integration testing acceptance will be folded into User Acceptance Testing sign-off.

INTEGRATION DEPLOYMENT

On completion of the testing process and acceptance by MSWD, the project team will prepare for final cutover, which will coincide with the release of the new systems on the Go-Live date. Timmons Group will deploy the integration in the Production environment.

Task Group Deliverables

- Integration Requirements documentation
- Integration testing and acceptance by MSWD

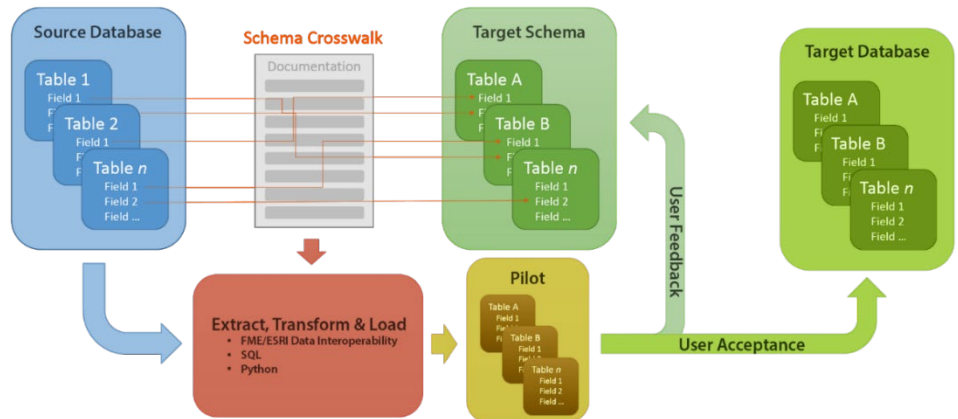
Cityworks Data Migrations

DATA MIGRATION/CONVERSION

One of the key objectives of MSWD is to migrate any desired legacy data to Cityworks from various systems. Inherent to that process is establishing a strategy to deal with the data that is being managed in what will become a legacy system. This task specifically addresses the datasets and systems that are slated for conversion into the proposed Cityworks solution. While the legacy datasets and systems targeted for conversion (ManagerPlus, Nobel Geoviewer) will span multiple database schemas, database versions and even database formats, the fundamental approach to successfully migrating data from one system to the other is, in fact, the same.

MIGRATION WORKSHOPS

The implementation team will work together to understand the data migration requirements. A series of discovery workshop meetings will be held to review current systems and their data schemas, as well as the review of requirements for the data migration effort. It will need to be understood by all team members what data needs to be moved from the legacy system to the Cityworks environment. MSWD should be prepared to determine what the state of the legacy system will be moving forward: understanding the accessibility of legacy systems may have an impact on what data is required to be migrated to the new Cityworks system. The team will also need to discuss and determine what defines ‘success criteria’ for the data migration. After reviewing and understanding the nature of the data in the existing system as well as the requirements for data to be moved to the Cityworks system, an agreed on percentage of records migrated is necessary. Timmons Group will document the outcomes of these discovery workshop meetings.



SCRIPT DEVELOPMENT

The project team will develop a series of processes to facilitate the actual migration of the source system data into Cityworks. Depending on the complexity and volume of the source data, the process may be a mix of manual and a scripted solution but will be established in a manner to ensure repeatability. The scripted solutions will be tailored to each specific data conversion effort and may range from native SQL Server scripts to third party migration tools but will ultimately follow a pattern referred to as extract, transform and load (ETL). The ETL process will be designed as a one-time process that will result in data migrated into a development Cityworks database.

DATA MIGRATION SPRINTS

Once the scripts are developed, the project team will test the converted data. This process is designed so that after the first data migration sprint (Draft) a review meeting will be held to note any issues or errors, make necessary adjustments to the scripts, and then repeat the process. A summary of the migration sprints will be provided to the client as well. This will be an opportunity to review the results versus the previously defined success criteria threshold.

DATA MIGRATION USER ACCEPTANCE TESTING

The user acceptance testing phase of the implementation project will offer staff the opportunity to review the migration data within the context of the proposed Cityworks system in contrast with the information contained in the source systems. The acceptance testing places more emphasis on the front-end testing, wherein users will interact with, interrogate and visualize data through the Cityworks interface. Feedback will be incorporated into a revision process that will guide modifications to the scripts and processes that initially drove the conversion. On completion of the testing process and acceptance by MSWD, the project team will prepare for the production conversion, which will coincide with the release of the proposed system and the retirement of the legacy solutions.

Task Group Deliverables

- Data Mapping Crosswalk
- Migration Run Summary
- Migration Acceptance

Cityworks User Acceptance Testing

DEVELOP TESTING AND ACCEPTANCE PLAN AND TEST CASES

The implementation team will work with MSWD to develop and administer a Testing and Acceptance Plan that addresses User Acceptance Testing (UAT). The Testing and Acceptance Plan will address how MSWD will test Cityworks software functionality and database configuration, including testing across the Cityworks platform (Respond and Mobile app) and tracking configuration defects for remediation. Data conversion and integration efforts will include their own discrete testing period. Timmons Group implementation team will also develop a series of testing scripts to guide testing users through the testing workflows. These scripts provide structure for testing users to follow during the execution of User Acceptance Testing. On completion of development of the Testing and Acceptance Plan, the Team shall submit said plan to MSWD for review and approval.

ACCEPTANCE TESTING

Prior to Go-Live there will be an acceptance testing period. During this period MSWD will test the Cityworks implementation to identify and resolve issues. The Testing and Acceptance Plan will frame and guide staff through the testing process, and users will follow the Test Cases to determine testing outcomes. User Acceptance Testing is kicked off by Tester Training, wherein Timmons Group implementation staff will host remote web meetings to train testers on the key components of the software. These training sessions are focused on the functions specific to testing. Timmons Group instructors will also provide support during the UAT period for users as needed. Users will follow the process outlined in the Testing and Acceptance Plan to submit defects to Timmons Group for remediation. At the end of the acceptance testing period, the client Project Manager will sign off on User Acceptance Testing to formally move the project into the Training phase.

Task Group Deliverables

- Testing and Acceptance Plan
- Testing scripts
- Tester Training
- Defect handling results and remediation.
- UAT Sign-Off

Training

TRAINING OVERVIEW

During each onsite meeting (e.g., kick-off, workshops, configuration review) our implementation team will consistently expose MSWD staff to Cityworks and basic workflows within the software. By the time the implementation project has reached Training, the focus of the task is system-wide adoption of the product and many staff will already be familiar with the Cityworks software.

TRAINING PLAN & PREPARATION

Our implementation team, in conjunction with the MSWD Project Manager and key stakeholders, will devise a training plan specific to your environment. Training is across the Cityworks platform as necessary per workflows/roles. The approach to developing this plan is detailed below. The training plan will include:

- Product training curriculum descriptions and instructors
- Training Materials
- Client responsibilities
- Schedule

This training plan will be used as a guide but may be modified when necessary to support the goals and techniques of staff resources. Additionally, Timmons Group technical staff will develop documentation and prepare the Cityworks environment for training.

CITYWORKS ONSITE TRAINING

Cityworks training is modular. Students attend those sections that are relevant to the type of work that they are performing. All courses include relevant materials and sample data. MSWD will identify who will be trained based on the criteria and needs that will have been identified during configuration workshops.

Task Group Deliverables

- Training Plan and Training Documentation
- Conduct Administrator Training
- Conduct End-user Training, classes per Training Plan

Cityworks Go-Live

CUTOVER, GO-LIVE, AND FINAL ACCEPTANCE OVERVIEW

The period between the end of Training and Go-Live Day is called Cutover. This period, typically over a weekend, follows a strict timeline to take MSWD live in Cityworks as quickly as possible after users have completed training. Preparation for Cutover begins prior to User Acceptance Testing to allow ample time to prepare the environment.

GO-LIVE CHECKLIST

Timmons Group will prepare a Go-Live Checklist to guide all key members of the project implementation team through the Cutover process. The Go-Live Checklist is a detailed task plan, including resource assignments, to support moving the Cityworks software from test to production environments over the course of the scheduled Cutover period.

GO-LIVE

Per the Go-Live Checklist, the implementation team will execute the tasks during the cutover period to take the production environment to “Live” status. Timmons Group will provide on-call or onsite Go-Live Support during the first days of Go-Live.

SYSTEM DEPLOYMENT SUPPORT & FINAL ACCEPTANCE

Timmons Group will provide support for the period between Go-Live and Final Acceptance while users begin adopting and the system stabilizes. Timmons Group will tie up loose ends, correct any new issues found, assist users in troubleshooting, host ad-hoc web meetings to aid users who need additional help after training, and guide Cityworks Administrators through the first steps administering the system.

FINAL ACCEPTANCE

Targeted around thirty days Post Go-Live, the system should be stable enough for Final Acceptance. Timmons Group will begin the transition to our Customer Success Manager, step through project closeout tasks, and host the final project meetings. MSWD will sign off on Final Acceptance.

Task Group Deliverables

- Go-Live Checklist
- On-call or Onsite Go-Live Support
- Final Acceptance Sign-Off
- Support transition meeting between project manager, support manager, and client representatives

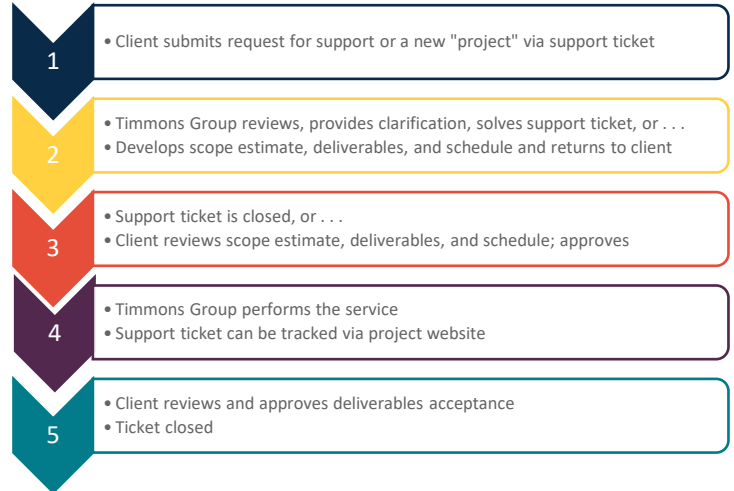
Optional Post Go-Live

OPTIONAL POST GO-LIVE SUPPORT

Once Project Closeout is complete, our team will optionally provide 40 hours of ad-hoc support to address any configuration, implementation, or software installation opportunities that may arise. The client will have one year to use the optional remote support by department or functional group for the services provided. The contract can be renewed on an



annual basis and additional hours can be added. Time will be billed on a not-to-exceed, time and materials basis. Any required travel will be billed at cost. Unique amongst Cityworks business partners, Timmons Group has a formalized Client Support program led by a dedicated Client Support Manager. Our Client Support Manager is singularly focused on ensuring our clients are capitalizing on their investment in Cityworks. The CSM will maintain regular communication with you to ensure the software and any customizations are functioning properly and your goals are being met. Once the implementation is complete, the Client Support Manager will become your primary point of contact for any support tasks that will arise. Key team members involved in implementation will also be involved ensuring the institutional knowledge gained during the implementation remains on board.



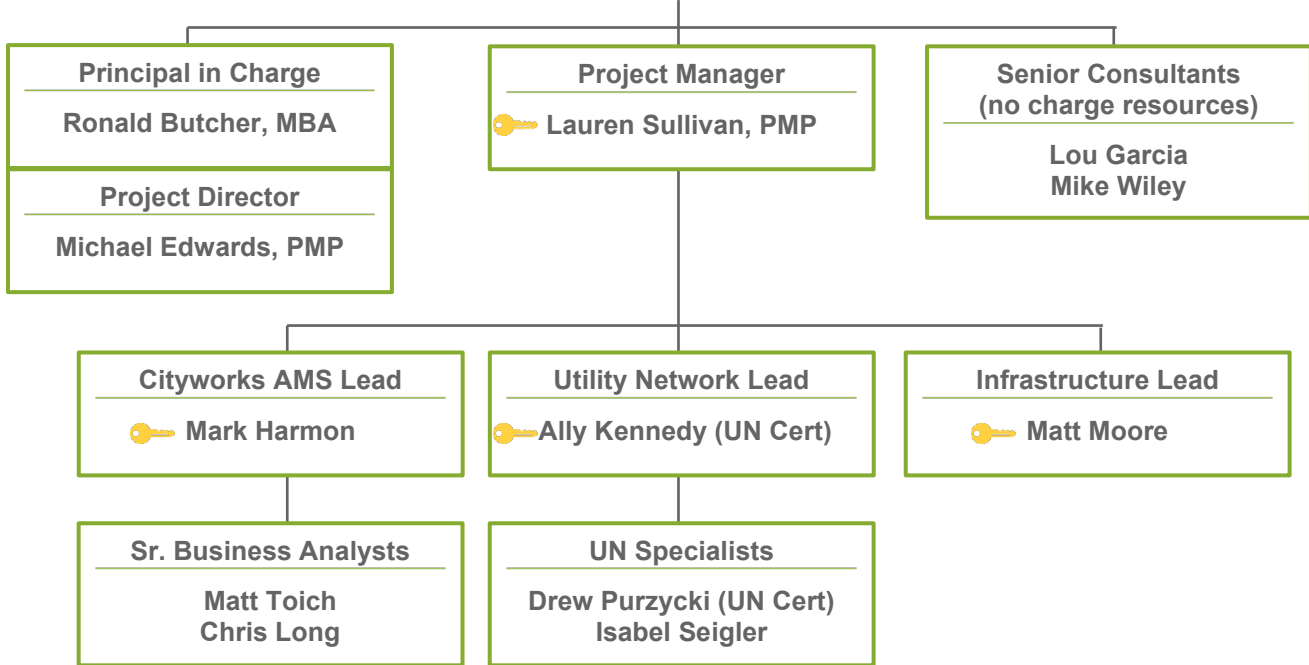
Component 4 Assumptions

- MSWD will review and comment on all documentation, plans, and requirements within 10 business days or a mutually agreed on timeframe.
- MSWD will provide data as identified in the Gap Analysis Document and Asset Hierarchy spreadsheets.
- MSWD will provide Timmons Group with a copy of the Cityworks AMS & CWOL Software license agreement
- MSWD will be present and participate in all meetings
- MSWD will provide any necessary documentation for current (As-is) business processes, including standard operating procedures, work forms, and/or reports where they exist
- MSWD will have necessary report/dashboard software licensing acquired for report file development and will give Timmons Group sufficient access to that software
- MSWD will prepare a map service for each Functional Group within the new GIS environment to support the Cityworks configuration prior to each sprint
- MSWD will identify and communicate to Timmons Group the detailed acceptance criteria for each functional requirement.
- MSWD will have necessary personnel available to review the integration during user acceptance testing
- Timmons Group will only integrate systems with Cityworks insofar as possible via Cityworks APIs. MSWD is responsible for obtaining licensing for APIs and modules used.
- MSWD will provide all necessary access to any system involved in the data migration process
- MSWD will have necessary personnel available to review data migration during user acceptance testing
- Timmons Group will not be performing data generation or data cleanup.
- MSWD is responsible for all testing of core system configuration according to the Testing Plan
- MSWD is responsible for identifying User Acceptance Testers and assigning associated testing scripts
- Class sizes will be limited to 15 students.
- MSWD will sign off on Final Acceptance on completion of services rendered

Project Component 5: Staff Augmentation

MSWD is also seeking staff augmentation services to maximize its investment in GIS technology and expand its usefulness. The vision from the RFP was that these services, since they were to be ad-hoc, would be based on hourly rates. Timmons Group has provided hourly rates for staff that could be leveraged through this type of engagement. We also wanted to make MSWD aware that we provide these types of services on a fixed-fee basis. We typically, use hourly consulting for emergency requests and we use short task-orders tasks that are desired to be on a fixed-fee basis. We will leave both options available to MSWD.

ORGANIZATION



STAFFING – MSWD SKILLS DESIRED/REQUIRED:

Staff	Enterprise GIS	Enterprise Asset Management	Cloud Services	ArcGIS Utility Netwrk	Data Conversion	Cityworks AMS	Cityworks Online (CWOL)	Granite.Net integrations	811 system integrations	Client long-term support	Staff Augmentation
Ronald Butcher	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Michael Edwards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lauren Sullivan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lou Garcia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mike Wiley	✓		✓	✓	✓					✓	✓
Mark Harmon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ally Kennedy	✓		✓	✓	✓	✓				✓	✓

Staff	Enterprise GIS	Enterprise Asset Management	Cloud Services	ArcGIS Utility Network	Data Conversion	Cityworks AMS	Cityworks Online (CWOL)	Granite.Net integrations	811 system integrations	Client long-term support	Staff Augmentation
Matt Moore	✓	✓	✓	✓	✓	✓	✓			✓	✓
Matt Toich	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Chris Long	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drew Purzycki	✓		✓	✓	✓	✓				✓	✓
Isabel Seigler	✓		✓	✓	✓	✓				✓	✓
Greg Stephenson	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

CONSULTANT INFORMATION

CONTACT PERSON INFORMATION

Lou Garcia
Principal
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
louis.garcia@timmons.com
443.904.3897

BRANCH OFFICE INFORMATION



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804.521.1065

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430 Southlake Boulevard
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Richmond, VA 23236
804.200.6500

Northern Virginia, VA

20110 Ashbrook Place
Suite 100
Ashburn, VA 20147
703.554.6700

Tri-Cities, VA

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Suite 900
Prince George, VA 23875
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Staunton, VA

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540.885.0920

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757.782.3041

Virginia Beach, VA

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Greensboro, NC 27409
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Charlotte, NC

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Charlotte, NC 28203
704.602.8600

Elizabeth City, NC

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Elizabeth City, NC 27909
252.621.5028

Dallas, TX

7501 Lone Star Drive
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Plano, TX 75024
469.810.0230

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2300 N St. NW
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Suite 200
Charlottesville, VA 22902
434.295.5624

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3300 North Ridge Road
Suite 110
Ellicott City, MD 21043
410.461.7666

Raleigh, NC
5410 Trinity Road
Suite 112
Raleigh, NC 27607
434.295.5624

Wilmington, NC
430 Eastwood Road
Suite 100
Wilmington, NC 28403
919.746.1144

TYPE OF ORGANIZATIONAL ENTITY

Timmons Group is a C Corporation.

LITIGATION, MEDIATION, ARBITRATION, AND BANKRUPTCY

Litigation History

Timmons Group is known by its peers and clients as a fair and ethical firm, and this is exemplified in our daily business activities. Fulfilling our professional and financial obligations is a priority. We acknowledge that within the last five years Timmons Group has no judgments or outstanding litigations.

Mediation

Timmons Group has no Mediation.

Arbitration

Timmons Group has no Arbitration.

Bankruptcy

Timmons Group has not filed for bankruptcy in the past 5 years.

CONSULTANT PERSONNEL

PROFESSIONAL TEAM

Senior Consultant and Contact – Lou Garcia | 443.904.3897 | Louis.Garcia@timmons.com

Project Manager – Lauren Sullivan | 858.254.3873 | Lauren.Sullivan@timmons.com

Principal in Charge – Ronald Butcher | 804.200.6971 | Ron.Butcher@timmons.com

Senior Consultant – Mike Wiley | 917.848.6504 | Mike.Wiley@timmons.com



RESUMES

Lauren Sullivan, PMP

Project Manager

Lauren is currently a Senior Project Manager for Timmons Group. She has over a decade of experience with all facets of software integration services and enterprise system design with diverse clientele across government agencies and private industry. She specializes in aligning technologies with client needs to facilitate a smooth transition to new solutions. Her career roots in GIS systems and business process analysis allow her to effectively manage implementation teams. Her background also includes GIS-related development, geospatial product management, and asset management for utilities.

SELECT PROJECT EXPERIENCE

- Utility Network Migration, EPCOR, AZ
- Cityworks Roadmap, Rogers Water Utilities, AR
- Cityworks AMS PLL Implementation and Upgrade, Township of Upper St Clair, PA
- Cityworks AMS/PLL Implementation, City of Morro Bay, CA
- Asset Management Roadmap, City of Yakima, WA
- AMS/PLL Cityworks Implementation, Upper St Clair, PA
- GIS & Cityworks Upgrade, Skagit Public Utility District, WA
- Cityworks Assessment/Gap Analysis, Otay Water District, CA
- Cityworks AMS Implementation, Napa Sanitation District, CA
- Cityworks PLL Implementation & Citizen Engagement System Integration, City of Escondido, CA
- Cityworks AMS Implementation, City of Bellingham, WA
- Cityworks AMS Implementation, Sammamish Plateau Water & Sewer District, WA
- Cityworks PLL Implementation, City of Edmond, OK
- Cityworks Implementation, City of Bonney Lake, WA
- Cityworks Asset Reading Custom, City of Bonney Lake, WA
- Support Maintenance, City of Sammamish, WA
- Cityworks AMS Parks Implementation, City of Renton, WA
- Cityworks AMS Jumpstart, City of Yelm, WA
- Cityworks AMS, Washington County, OR
- Cityworks Implementation, Green Valley Water, AZ
- Cityworks AMS, City of Elk Grove, CA
- Cityworks Interface, San Diego County, CA
- Cityworks AMS, City of Everett, WA
- AMS Implementation, City of Centennial, CO
- PLL Implementation, City of Burien, WA
- AMS Implementation, City of Antioch, CA
- Cityworks AMS, City of Salem, OR
- AMS Implementation, Cosumnes Community Services District, CA
- Consulting Services, City of SeaTac, WA
- Cityworks AMS Implementation, Midpeninsula Regional Open Space District, Los Altos, CA
- Cityworks AMS Implementation, Lake Stevens Sewer District, WA
- GIS Process Rationalization, King County, WA
- AMS Jump Start, Carpinteria Valley Water District, CA
- Cityworks PLL Implementation, City of Auburn, AL
- Cityworks AMS Jump Start, Las Gallinas Valley Sanitary District, CA



EDUCATION

Bachelor of Arts,
Geography/Environmental
Studies, UCLA

EXPERIENCE

12 Years

CERTIFICATIONS

Project Management
Professional Certificate (PMP)

Mark Harmon

AMS Lead

Mark offers considerable experience in Cityworks consulting and enterprise system design gained through work with water utilities, State and local governments and private industry. His capabilities include: GIS systems planning and design, specification design and development, project implementation coordination, GIS training and end user support. Mark will support your efforts by ensuring our utility geodatabase design and development efforts are compatible with your existing GIS/IT architecture.

SELECT PROJECT EXPERIENCE

- Cityworks Business Process Workflows/Consulting, Indio Water, CA
- Cityworks Enterprise Asset Management System Implementation, Alpharetta, GA
- Cityworks AMS Implementation, Otay Water District, CA
- Cityworks AMS Implementation, Harrisonburg, VA
- Cityworks AMS Implementation, Madison, WI
- Cityworks Enterprise Asset Management System Implementation, Skagit County Public Utilities District, WA
- Cityworks AMS Implementation, American States Utility Services, NC
- Cityworks PLL & AMS Implementation, Winston-Salem, NC
- Cityworks Workorder Management System Implementation, MetroConnects, SC
- Cityworks Enterprise Asset Management System Master Planning, Richmond, VA
- Cityworks AMS and PLL Implementation, Fayetteville, NC
- Cityworks AMS Implementation, Weston, FL
- Cityworks AMS Implementation, Albemarle County Service Authority, VA
- Cityworks Asset Management System Implementation, Garland, TX
- Cityworks AMS Implementation, Forsyth County, GA
- Cityworks AMS Implementation, Henderson Water Utility, KY
- Fire Hydrant Inspection Program, Richmond, VA
- Cityworks Enterprise Asset Management System Implementation, Grey Forest Utilities, TX
- Cityworks AMS Implementation, Sammamish, WA
- Cityworks AMS Implementation, Douglasville-Douglas County Water and Sewer Authority, GA
- Cityworks AMS Implementation, Fayetteville, NC
- Cityworks Upgrade, Skagit County Public Utility District, WA
- Cityworks AMS Implementation, City of Bellingham, WA
- Enterprise Asset Management Consulting, Fairfax County Department of Public Works and Environmental Services, VA
- Cityworks AMS Implementation, North Miami Beach, FL
- Cityworks AMS Implementation, Naperville, IL
- Cityworks AMS/Cayenta Integration Implementation Approach, Macon Water Authority, GA
- Cityworks AMS Implementation for Sewer, Auburn, AL
- Cityworks AMS Implementation, Goochland County, VA
- Cityworks AMS Implementation, Grand Rapids, MN
- Cityworks AMS Utilities, Petersburg, VA
- CW Asset Reading Customization, Bonney Lake, WA
- Cityworks AMS Public Works, Auburn, AL
- Cityworks AMS Upgrade, Winston-Salem, NC



EDUCATION

Bachelor of Science,
Geographic Science, James
Madison University, 2003

EXPERIENCE

19 Years

Ally Kennedy

Utility Network Lead

Ally is a highly skilled GIS Analyst with expertise in various aspects of geospatial data management and analysis. With a focus on Esri's Utility Network, she has successfully led and managed multiple projects, providing valuable insights and technical guidance to clients. Ally is certified as an FME Professional and ArcGIS Desktop-certified, demonstrating her proficiency in industry-standard tools and technologies. In addition to her technical expertise, Ally is adept at managing teams and overseeing GIS professionals. She has effectively coordinated with subconsultants, facilitated discovery workshops, and provided training to clients on using and managing the Utility Network. Overall, Ally's comprehensive skillset, leadership abilities, and extensive project experience make her valuable in delivering successful GIS solutions and driving digital transformation.

KEY EXPERTISE

- ✓ Leads Timmons Group's Utility Network projects – **ArcGIS Utility Network Certified**
- ✓ **Certified FME Professional**
- ✓ Manages and consults on numerous utility mapping, addressing, Next Generation 911, and tax parcel mapping projects
- ✓ Writes Arcade script to configure Attribute Rules and pop-ups
- ✓ Manages multiple GIS professionals
- ✓ Oversees local government data maintenance projects

SELECT PROJECT EXPERIENCE

- Utility Network Migration Plan, EPCOR, Phoenix, AZ.
- ArcGIS Pro & Utility Network Implementation, EPCOR, Phoenix, AZ.
- Utility Network Implementation and Cityworks AMS Reconfiguration, Indio Water Authority, Indio, Riverside, CA.
- Schema Consolidation and Utility Network Migration Planning, Anchorage Water and Wastewater Utility (AWWU), Anchorage, AK.
- Cityworks Services and Utility Network Implementation, Rogers Water Utilities, Rogers, AR.
- Cityworks & GIS Implementation, Alderwood Water and Wastewater District (AWWD), Snohomish County, WA.
- Utility Network Data Migration, Pennichuck Water Works (PWW), NH.
- Utility Network Migration Preparation, St. Johns County (SJC), FL.
- Utility Network Migration Services, City of Lynchburg, VA.
- Utility Network Data Readiness and Migration Strategic Plan, Orange Water and Sewer Authority (OWASA), Carrboro, NC.
- Utility Network Implementation, Walt Disney Parks and Resorts US, Disneyland, CA.
- Utility Network Migration, Salt Lake City, UT.



EDUCATION

BA, Biology with Minor in Spanish, University of North Carolina, 2015

EXPERIENCE

8 Years

TECHNICAL SKILLS

ArcGIS Desktop
ArcGIS Pro
ArcGIS Online
ArcPy
Portal for ArcGIS
FME Desktop & Server
ArcGIS Utility Network
ArcGIS Data Reviewer

CERTIFICATIONS

Certified ArcGIS Desktop Associate

Esri ArcGIS Utility Network Certified

FME Certified Professional

Matt Moore

Infrastructure Lead

Matt performs tasks related to systems management/administration, web administration, database administration and development, and applications development. Matt has worked on many systems architecture design, development, and implementation projects for federal, state, and local governments throughout the US. He is well versed in implementing Enterprise systems and has worked on projects using both custom and COTS applications.

KEY EXPERTISE

- ✓ Consults clients on managed services and cloud service offerings
- ✓ Consults on numerous custom application development projects
- ✓ Delivers consulting services via project discoveries and needs assessments
- ✓ Provides GIS industry best practices for local, state, and federal governments, and NGOs.
- ✓ Provides consulting and recommendations on using technology to solve business process / workflow challenges
- ✓ Plans and manages integration of GIS with other information technology systems
- ✓ Implements technical solutions and designs for enterprise GIS systems
- ✓ Deploys and manages server infrastructure in Cloud environments
- ✓ Develops scripts as needed to automate GIS workflows
- ✓ Manages Relational Database Management Systems (SQL Server/Postgres/PaaS offerings)
- ✓ Manages Active Directory as needed for Cloud environments
- ✓ Builds and manages web servers in Apache and Microsoft IIS

SELECT PROJECT EXPERIENCE

- Schema Consolidation and Utility Network Migration Planning, Anchorage Water and Wastewater Utility (AWWU), Anchorage, AK
- Utility Network Migration Plan, EPCOR, Phoenix, AZ.
- ArcGIS Pro & UN Implementation, EPCOR, Phoenix, AZ
- Utility Network Implementation and Cityworks AMS Reconfiguration, Indio Water Authority, Riverside, CA
- Cityworks Services and Utility Network Implementation, Rogers Water Utilities, Rogers, AR
- Utility Network Data Readiness and Migration Strategic Plan, Orange Water and Sewer Authority (OWASA), Carrboro, NC
- ArcGIS Enterprise and Configuration, City of Minot, ND
- ArcGIS Enterprise Migration, Pennsylvania Game Commission (PGC), Harrisburg, PA
- UN Migration Plan, AWWU, Anchorage, AK
- GIS Managed Services and Cloud Migration, Philadelphia Gas Works (PGW), Philadelphia, PA
- Enterprise GIS Implementation and Data Management, Caltrans, Sacramento, CA
- Cityworks AMS Implementation, Napa Sanitation, Napa County, CA
- Cityworks Roadmap, City of Danville, Danville, VA



EDUCATION

Bachelor of Science,
Geography, Information
Technology focus, Old
Dominion University, 2004

EXPERIENCE

20 Years

TECHNICAL SKILLS

Esri Enterprise System Design,
AWS Services, ArcGIS Online,
Python, SQL Server / Oracle,
IIS 10x, 8.x, 7.x, 6.x, Apache
Tomcat 2.2, 2.4, PHP, HTML,
JSON, SSL & PKI Deployment,
Adobe Flex Builder, XML,
Action Script, Deployment of
.NET and JavaScript web
applications

CERTIFICATIONS

AWS Certified Cloud
Practitioner
Esri Certified Enterprise System
Design Associate
Esri Enterprise Geodata
Management Professional

QUALIFICATIONS, EXPERIENCE, AND REFERENCES

REFERENCES



Indio Water Authority (IWA) | Utility Network Implementation and Cityworks AMS Reconfiguration

Contact: Christian Hernandez | 760.391.4038 | cchernandez@indio.org

Project Dates: April 2022 – September 2023

IWA selected Timmons Group for the migration of its Water Distribution geodatabase from Geometric Network to the Esri Utility Network model. Moving to the Utility Network platform positioned IWA to effectively manage its water distribution assets into the future. In addition, we were tasked with reconfiguring IWA's Cityworks AMS solution to use Utility Network, including modifying Cityworks business processes to further create a more effective and efficient workflow.

This project also included the evaluation and update of automation scripts to ensure the continued integration of several other software solutions. This included integration to My Geo Tab, Navaline (Customer Billing), ELM, and Dig Alert, as well as scripts to automate update of an ArcGIS Online Dashboard. The Cityworks installation was also upgraded to the most recent version and updated to ensure Cityworks database, customizations, and workflows that were identified as potentially impacted by the migration to the Utility Network data model remained functional.

Pennichuck Water Works (PWW) | Utility Network Data Migration and Cityworks AMS Implementation

Contact: Dawn Lavacchia | 603.913.2342 | dawn.lavacchia@pennichuck.com

Project Dates: January 2020 - Ongoing

PWW was established in 1852 and serves the City of Nashua, NH and 10 surrounding municipalities. PWW serves more than 33,000 customers in more than 30 communities and has more than 100 employees. PWW was using Oracle Work Order and Asset Management to maintain their asset records. Timmons Group implemented Cityworks AMS (Cityworks), which includes Cityworks AMS (Office and Tablet), Mobile Native Apps, Respond, and Storeroom.

Timmons Group was selected to migrate PWW's water network data from Esri's Geometric Network data model into the new Utility Network data model to enable new data management and analysis capabilities and keep its Esri implementation current. The Utility Network implementation must support existing business workflows and applications, including work tracking with Cityworks CMMS and reading customer information from Munis.

Timmons Group designed integrations to several third-party applications, including Wex (fuel/mileage readings), Macola (inventory), and Munis (customer accounts). We are providing full implementation services, including configuration, user acceptance testing, training, and post go-live support.

Rogers Water Utilities | Cityworks Roadmap, PLL, and Utility Network Implementation

Contact: Brian Sartain | 479.640.8970 | BrianSartain@rwu.org

Project Dates: September 2021 – Ongoing

Timmons Group worked with Rogers Water to implement Cityworks AMS & PLL. As a first Phase of the project, a plan was needed that would result in a short/long-term strategic plan for the implementation as it affected system architecture as well as a multitude of other existing City systems and planned software purchases. Timmons Group developed a strategic RoadMap based around maintenance work management, asset management, and community development activities. During the development of this strategic plan, our team reviewed the existing GIS, and Rogers Water decided to rebuild its GIS data model on the new Esri Utility Network data model. Part of this included the migration of legacy data into the new utility network data model. Subsequent phases of the project are ongoing, including the deployment of the enterprise GIS and the implementation of Cityworks AMS & PLL, the integration of several third-party applications to streamline business processes, and development of public facing applications for enhanced customer service.

EXPERIENCE

Timmons Group has worked with hundreds of municipalities and utility authorities across the US. Projects have included strategic planning, Cityworks implementations, Utility Network implementations, cloud services, Esri solution configuration, and custom application development. The map below shows a subset of our municipal/utility clients, and the purple dots represent Utility Network clients.

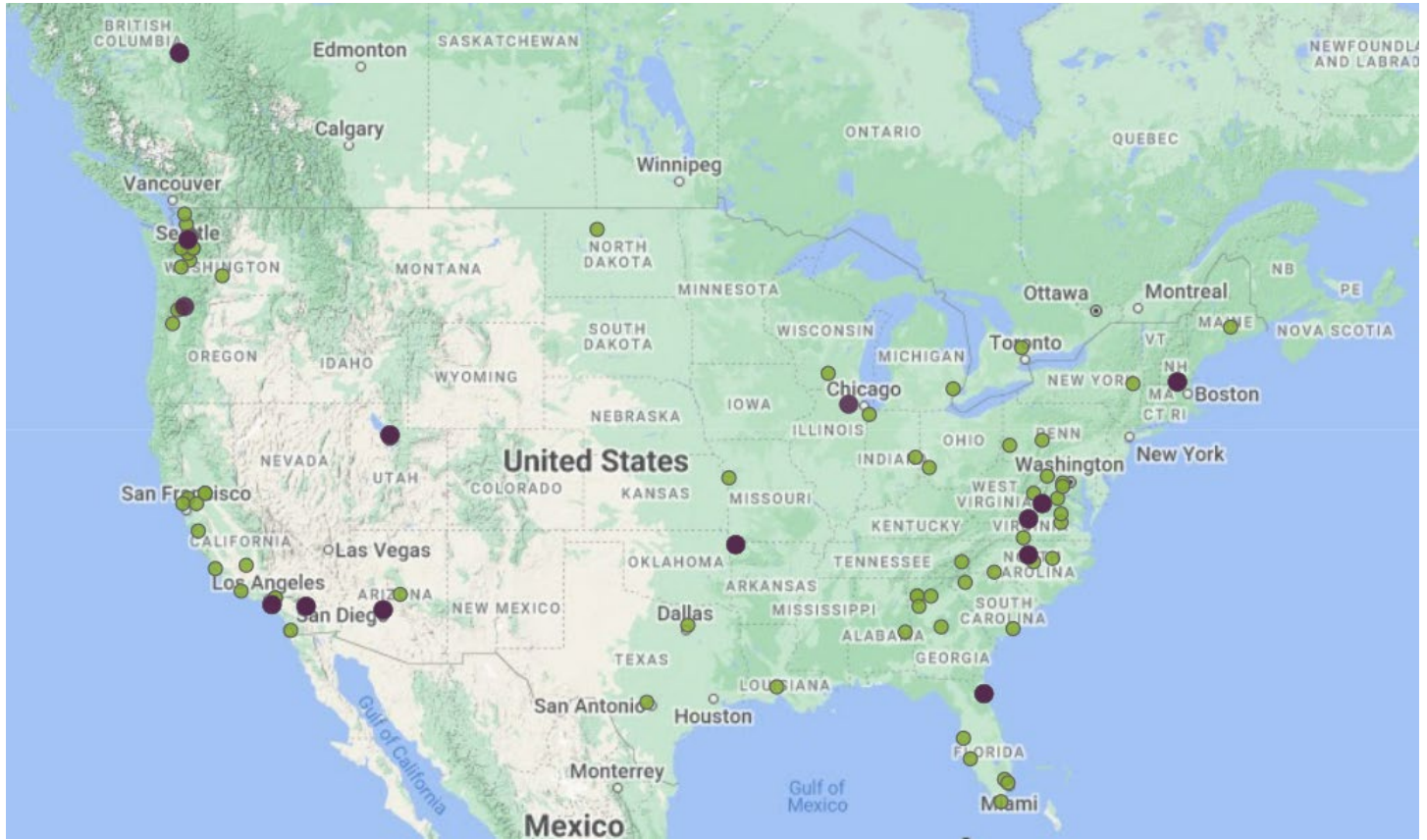


Figure 1: Timmons Group has worked with numerous Municipal Utility Clients (green) and performed multiple Utility Network Projects (purple) across North America.



- | | | | | |
|--|--|--|--|---|
| 1 Garland, TX | 28 Alcoa, TN | 54 Frederick Water, VA | 80 Douglasville/Douglass County, GA | 106 Antioch, CA |
| 2 Otay Water District, CA | 29 Goochland County, VA | 55 Montgomery County, MD | 81 Salem, VA | 107 Warren, MI |
| 3 Alpharetta, GA | 30 Petersburg, VA | 56 Manatee County, FL | 82 North Gila County Sanitation District, AZ | 108 Rogers Water/City of Rogers, AR |
| 4 Naperville, IL | 31 Henderson, KY | 57 Florida Keys Aqueduct Authority, FL | 83 Tampa, FL | 109 Burien, WA |
| 5 Fayetteville, NC | 32 SeaTac, WA | 58 St. Johns County, FL | 84 Baltimore County, MD | 110 Erie, PA |
| 6 Hamilton County, TN | 33 Sammamish, WA | 59 Madison, WI | 85 Nashville, TN | 111 Los Angeles County, CA |
| 7 Skagit County PUD #1, WA | 34 Weston, FL | 60 Bonney Lake, WA | 86 Pennichuck Water, NH | 112 Alderwood, WA |
| 8 Auburn, AL | 35 Seattle, WA | 61 Renton, WA | 87 Consumes CSD | 113 Salem, OR |
| 9 Lafayette Consolidated Govt, LA | 36 Grand Rapids, MN | 62 Forsyth County, GA | 88 Albemarle County Service Authority, VA | 114 Round Rock, TX |
| 10 Herndon, VA | 37 Upper St. Clair, PA | 63 Yelm, WA | 89 Holly Springs, NC | 115 Charlottesville, VA |
| 11 Richmond, VA | 38 Tallahassee, FL | 64 Tigard, OR | 90 Isle of Wight County, VA | 116 Bangor, ME |
| 12 Alexandria, VA | 39 Sugarland, TX | 65 Napa Sanitation District, CA | 91 O' Fallon, IL | 117 Brampton, Ontario (Canada) |
| 13 Jackson, MS | 40 Bartow County, GA | 66 Regional Municipality of York, Canada | 92 Toledo, OH | 118 Golden State Water, CA |
| 14 DDOT/EQUANS | 41 North Miami Beach, FL | 67 Escondido, CA | 93 Charlotte County, FL | 119 Indio Water Authority, CA |
| 15 Colonie, NY | 42 Grey Forest Utilities, TX | 68 Spotsylvania County, VA | 94 Minot, ND | 120 Richmond, IN |
| 16 Newport News, VA | 43 Herriman, UT | 69 Independence, MO | 95 Washington County, OR | 121 Bremerton, WA |
| 17 Montgomery County, OH | 44 Milwaukie, OR | 70 Bellingham, WA | 96 City of Centennial, CO | 122 Sandy, UT |
| 18 Waterford Charter Township, MI | 45 Harrisonburg, VA | 71 Charleston Water, SC | 97 Prince William Service Authority | 123 Woodburn, OR |
| 19 Altoona City Authority, PA | 46 Lebanon, OH | 72 Fairfax County, VA | 98 Danville, VA | 124 Gerald R Ford International Airport |
| 20 Raleigh, NC | 47 MetroConnects, SC | 73 West Valley City, UT | 99 Raytown, MO | 125 Erie Water Works, PA |
| 21 Allegheny County, PA | 48 Las Gallinas Valley Sanitary District, CA | 74 Charlotte Water, NC | 100 Hobart, IN | 126 Lowell, AR |
| 22 Chicago, IL | 49 Macon Water, GA | 75 Sammamish Plateau Water District, WA | 101 Bartow County Water, GA | 127 Santa Clara Valley Water District, |
| 23 City of Winston-Salem, NC | 50 Mid Peninsula Regional Open Space, CA | 76 Edmond, OK | 102 EPCOR, Phoenix, AZ | 128 Corvallis, OR |
| 24 Watsonville, CA | 51 American States Utility Service | 77 Lake Stevens, WA | 103 Everett, WA | 129 Gastonia, NC |
| 25 Morro Bay, CA | 52 Asheville, NC | 78 Elk Grove, CA | 104 Fairfax County, VA | 130 Henrico, VA |
| 26 Carpinteria Valley Water District, CA | 53 Brookhaven, GA | 79 Yakima, WA | 105 Wilson, NC | 131 Kileen, TX |

Figure 2: Timmons Group has worked with more than 135 clients to implement Cityworks software.

Timmons Group Utility Network Projects							
Client	Services						
	Data Readiness	UN Planning	Data Cleanup	ArcGIS Enterprise	UN Implementation	Systems Integration	Training
EPCOR	2021	2021		2022	2022-2023	2023	2023
Indio Water Authority	2022	2022		2022	2022-2023	2023	2023
Anchorage Water & Wastewater Utility	2022	2022		2023	TBD	TBD	TBD
Rogers Water Utility	2022	2022	2022	2022	2022	2022	2022
Alderwood Water & Wastewater District	2022	2022		2022	2022-2023	2022-2023	2023
Pennichuck Water Works	2022	2022		2022	2022-2023	2023	2023
St. Johns County Utility	2022	2022	2023		2023-2024	2024	2024
City of Lynchburg	2012	2022		2022	2022-2023	2023	2023
Orange Water and Sewer Authority	2022	2022		2022	2023-2024	2024	2024
Disneyland	2022	2022	2023	2022	2022-2023		2023
Salk Lake City Public Utilities		2023		2023	2023-2024	2024	2024
Albemarle County Service Authority	2023	2023	2024	TBD	TBD	TBD	TBD
Prince George, Canada	2023	2023	2024	TBD	TBD	TBD	TBD
City of St Charles, IL	2023	2023	2023/4		2024		2024
Gresham, OR	2024	2024	2024	2024	2024	2024	2024

Table 1: Timmons Group is experienced in delivering Utility Network projects at numerous other agencies. Tasks by client and completion year.



Deployment of ArcGIS Enterprise, Utility Network, and Cityworks AMS

**Mission Springs Water
District (MSWD)**

January 11th, 2024

Proposal Submitted by:

Theron Hodel

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205.725.5803

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Sun Prairie, WI 53590

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COVER LETTER

January 11, 2024

Kurt Kettenacker
IT Manager
Mission Springs Water District (MSWD)
66575 2nd Street
Desert Hot Springs, CA 92240

Dear Mr. Kettenacker:

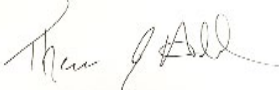
Axim Geospatial, LLC, an NV5 Company, (Axim) confirms that all elements of the RFP have been reviewed and understood and intends to perform all services for the Complete Deployment of ArcGIS Enterprise, Utility Network, Cityworks project. For over 31 years, Axim's core business has been location technology. We are the largest singular provider of end-to-end geospatial services and solutions in the U.S. serving the communities in which we live.

Brief Summary of Axim's Qualifications and Why to Select Us:

- **Most Qualified Water and Wastewater Utilities Experience** – Axim is an Esri Platinum Partner, currently serving over 40 water utilities and was the first Esri business partner with a water utility focus to earn the Utility Network Management Specialty Designation. Axim's unmatched experience in the Utility Network involves several large organizations including City of Houston, Charlotte Water, Austin Water, Eastern Municipal Water District, and several others.
- **Most qualified & Low-Risk Selection** - Axim participates in both the Esri Partner Advisory Committee (PAC) and Esri Chief Technology Officer (CTO) Council, allowing us unparalleled representation for our clients and an opportunity to influence the trajectory of the various technology stacks. And, through this partnership, we gain access to early insights that allow Axim to position our clients for advances that may not yet be formally released.
- **Breadth and Depth of Experience** – With access to over 1,300 geospatial professionals, Axim is prepared to handle all aspects of the project and minimize system disruptions and downtime to users. Axim is known for our unmatched, personalized level of service across the country and our approach allows for increased collaboration across business units allowing MSWD to continue their commitment to provide consistent practices to make better decisions and streamline business operations. Working closely together, we will turn this project into a huge success story for your team and your customers.

Axim is willing to enter into a contract under the terms and conditions prescribed by this RFP and in the Sample Agreement. We look forward to your favorable review of our proposal and to working together for the successful accomplishment of this project. Please reach out to me as the single person of contact during the RFP review process.

Sincerely,



Theron Hodel
Account Manager, Axim Geospatial
theron.hodel@aximgeo.com

STATEMENT OF UNDERSTANDING AND APPROACH

Statement of Understanding

Axim is fully committed to embracing the principles and values upheld by Mission Springs Water District (MSWD) in safeguarding and maintaining the vital resource of water. The vision of MSWD as a trailblazer and innovator in the water industry deeply resonates with Axim's core values of promoting innovation and setting high industry standards. We acknowledge the significance of employing highly qualified, innovative, and collaborative individuals who strive for excellence while working together seamlessly as a team.

Our comprehensive understanding of the project elements, specifications, and anticipated outcomes outlined in the RFP underscores our dedication to the seven fundamental values of professionalism, accountability, respect, integrity, servant attitude, excellence, and stewardship, all upheld by MSWD. We acknowledge the complexity of the proposed scope of work and emphasize the importance of meticulous planning, execution, and ongoing support to fulfill MSWD's GIS requirements and future objectives. The scope encompasses multiple project components to establish an ArcGIS environment, transition existing GIS data into the Utility Network, implement Cityworks, and provide ongoing staff augmentation services for sustained GIS management and support. MSWD can centralize its GIS operations by establishing this environment, allowing for better data integration, collaboration, and scalability. This will provide a robust framework for deploying and managing GIS applications, ensuring security, scalability, and customization tailored to MSWD's needs. Migrating existing data to the new environment and into the ArcGIS Utility Network provides advanced functionalities like traceability, network analysis, and real-time monitoring, which enhances data management and improves decision-making, leading to more efficient and effective management. Implementing Cityworks will significantly enhance MSWD's ability to adequately manage and maintain its assets. This will allow for streamlined workflows, predictive maintenance, resource optimization, and better decision-making by integrating GIS data with asset management processes. Providing staff augmentation services for ongoing GIS management and support ensures that MSWD has access to skilled GIS professionals who can provide ongoing support, troubleshoot issues, perform updates, and implement new functionalities, ensuring smooth operations and allowing internal MSWD staff to focus on core tasks. These components create a robust GIS infrastructure enabling efficient data management, streamlined workflows, enhanced decision-making, and continuous support, ultimately contributing to improved organizational efficiency. Our understanding of the project aligns with the importance of thorough planning, execution, and continual support to meet MSWD's GIS requirements and future objectives.

Approach

Mission Springs Water District noted the requested scope of work is quite complex. While acknowledging the complexities and intricacies of individual tasks, the overall project endeavor can be summarized into distinct logical subprojects or components that lay out a more generalized effort. At its simplest, MSWD looks to establish an ArcGIS Enterprise platform hosted in the Cloud and convert existing asset spatial data into the ArcGIS Utility Network (UN), upon which the District will build its Cityworks asset management system to replace the current Nobel Geoviewer and Epture ManagerPlus systems. With a limited staff, the District also seeks ad hoc geospatial support for various potential tasks, including possible additional system integrations. The outlined approach begins with establishing the technical architecture and converting existing datasets before implementing the new Cityworks asset management system. MSWD is looking for a trusted vendor to facilitate re-implementing its GIS program foundation with an eye for modernization and future integrations. Current project components include:

- Deploy and Manage ArcGIS Enterprise and AWS Cloud Architecture
- Migrate Spatial Data (landbase)
- Implement ArcGIS Utility Network (water, wastewater)
- Implement Cityworks Asset Management System
- Staff Augmentation

Esri's ArcGIS Enterprise provides a complete, modern software system for accessing, analyzing, and sharing geospatial data. The platform provides a technical foundation incorporating database, application, and web servers to serve client software and applications supporting an organization's business processes. Axim will first establish MSWD's base Esri ArcGIS Enterprise deployment within the Amazon Web Services (AWS) environment, including an enterprise geodatabase, ArcGIS Server, ArcGIS Portal, and web adaptor. We also plan to deploy and manage an additional ArcGIS Server dedicated to the ArcGIS Utility Network. Axim will provision all necessary AWS servers and configure the Esri software. As part of ongoing managed services, Axim will manage the Cloud architecture and Esri base deployment as needed to maintain security, performance, and software patches. Once the technical architecture is in place, Axim will shift our focus to preparing the data tier.

Axim will review and convert the District's spatial data from the current shapefile and personal geodatabase formats. We will prepare FME workbenches to extract, transform, and load (ETL) the exported formats into file geodatabase (FGDB) and apply quality checks to ensure data was migrated correctly. Then, the water and wastewater assets will be temporarily converted into a transitional FGDB in preparation for the ArcGIS Utility Network. At the same time, the landbase datasets will be directly converted and loaded into an enterprise geodatabase.

Implementation of the ArcGIS Utility Network must be understood as a complete product implementation, which also requires data conversion. It is not simply a data migration. To this end, Axim will review and evaluate MSWD's water and wastewater datasets to identify data that must be cleaned before full conversion. We will then map source datasets into Esri's respective UN base models and review the mappings for District approval before building ETL tools to convert source data into those models. We will perform a pilot UN implementation in a file geodatabase and provide knowledge transfer to MSWD staff for UN functional testing. MSWD staff will verify that data was correctly converted from the source datasets. Axim will also update the ArcGIS Pro templates for use with MSWD UN data. With the expectation that Esri's base UN models will suffice for District needs with no changes, limited functional testing should be required. Still, MSWD staff will want to verify network management rules and tracing perform as expected. After a review period and any revisions, Axim will deploy each UN into the enterprise environment and prepare for production release.

Once the initial design for each UN is agreed upon, Axim and the District are ready to begin planning for the Cityworks implementation. Axim understands that MSWD envisions Cityworks as the primary GIS interface for most end-users and the primary EAM and CMMS functionalities provider. We will coordinate the deliverables from other project components with current workflows and supporting business processes requirements to configure a robust and custom Cityworks AMS implementation. Leveraging feature services published from the migrated landbase and network assets, Axim will collaboratively design and develop the Cityworks AMS site in a lower-tier environment hosted in Cityworks Online (CWOL). In parallel, the Axim team will leverage FME to migrate work order and asset history data from GeoViewer into Cityworks. Once Axim understands how the District envisions integrating Cityworks with Cues GraniteNet and DigAlert, development of these third-party software integrations may also take place

during this time. Following the successful development of Cityworks AMS and internal testing, Axim will travel onsite to MSWD to provide preliminary user training, preparing District staff for acceptance testing. Once the District signs off on testing results and any revisions, Axim will prepare Cityworks for release into the production tier and facilitate five (5) days of End User and Administrative training to prepare for an immediate Go-Live after that.

The primary components of this project include establishing the ArcGIS Enterprise technical architecture, migrating the landbase datasets, implementing the ArcGIS Utility Network for water and wastewater, and configuring Cityworks AMS to provide the EAM and CMMS functions. These enterprise business systems represent a significant leap forward in the capability and complexity of the MSWD GIS program which currently lacks a full-time GIS Specialist. MSWD expects to need support for ad hoc GIS tasking in consideration of future initiatives. Axim is including our rates for time-and-materials support along with a prepaid support option. These rates are available to MSWD to request our technical expertise for various District needs that may not yet be realized. Tasking can be requested by and coordinated through the MSWD and Axim project managers.

As mentioned, the five project components outline the major milestones and offer a high-level view of the project organization, sequence, and dependencies. Our proposal follows a chronological narrative of our project approach. Each phase is essentially dependent on the successful completion of the predecessor and, as such, will be considered to occur in strict sequence unless otherwise coordinated and mutually agreed upon. Once the initial UN pilot is completed and the final database design is decided, Cityworks reconfiguration planning steps may begin. The following sections describe our overall project management approach and details of each project component.

Project Management Approach

Axim employs two interwoven tracks to help ensure success. First, we bring a proven project management approach that helps establish controls and ensure communications and delivery. Second, we bring a technical approach tailored to the scope of services through which our expertise is translated into solutions. The following sections provide an overview of our project management approach and a task-level breakdown of the technical approach.

Each project engagement with Axim is structured according to five phases that have proven adaptable and repeatable and can reliably produce successful results. In each component of the proposed project, we will leverage these five phases established to manage the overarching project and provide the structured approach necessary to guide the successful execution of each task.

- *Planning & Analysis:* The Planning & Analysis phase starts our project lifecycle and sets the broad execution parameters. It is communication-centric, beginning with the project kickoff meeting and scheduling the project reviews. In collaboration with MSWD, Axim will review the project's budget and schedule and establish project controls, including a client satisfaction survey when the project is complete. As part of each project review meeting, Axim will have a standing agenda adapted with specific content as appropriate, and will prepare a summary status report document each month that includes detailed information on the schedule and progress against milestones and deliverables. As risks are identified, the collective team will discuss mitigation strategies as proactively as possible to help streamline execution and optimize the experience. In addition to recurring meetings and ongoing monitoring, Axim will focus on responsive communication throughout the engagement, to include day-to-day correspondence and facilitation. We believe that communication is often equal to technical delivery in shaping a positive project experience

for the collective team.

- *Design:* The Design phase is the point in the project during which our team gathers information and documentation to guide the course of the effort. We will focus on establishing the background that will drive the project forward, which is a critical step before moving on to the development process. Axim will work with MSWD on relevant considerations such as functional requirements, database design, configuration requirements, system architecture, and compiling or creating all associated documentation, which will be reviewed and approved by MSWD staff. The specific approach to gather requirements will be tailored to the project to ensure the most cost effective, productive, and accurate result, which may include phone discussions, demonstrations, workshops, or onsite interviews and working sessions.
- *Development:* Although this is not a traditional *development* project, in the sense of coding or programming, we consider Development to encompass more generically the core effort of a project that centers on the primary deliverables. Development can also be considered a reference to the environment, in a way, since much of the work completed within this phase is often carried out in a lower tier from any production system to mitigate the potential for end-user disruption.
- *Testing & Acceptance:* Testing and Acceptance will imply a narrower development-centric perspective. This phase addresses all aspects of QA/QC, deliverable review, and acceptance. This includes time to orient power users to the new system for adequate testing. This phase is vital and distributed into each task, with each core deliverable undergoing an internal and external review before eventual acceptance.
- *Implementation:* Implementation is incorporated into each phase and refers to finalizing, presenting, and distributing all deliverables. Certain aspects or tasks of the Development Phase may be repeated to construct the necessary target environment. Still, much of the core deployment effort will be specific to the system or product(s) being released. A vital part of the Implementation phase may be a more formalized orientation for users to the new environment.

Approach Project Component 1: ArcGIS Enterprise Cloud Deployment

Through the requested scope of work, MSWD aspires to transition from an established but foundational GIS into a Cloud-hosted enterprise program capable of supporting the evolving business and technology requirements. The vision conveyed within the RFP is aligned with contemporary deployment patterns and represents a significant advancement in adopting location technology for the District.

Enterprise GIS programs vary widely in design, deployment, and adoption pattern, even while each may be guided by industry best practices or recommended practices. As a Platinum Esri business partner, Axim has supported local governments, Federal government agencies, and Fortune 500 companies in migrating and supporting Cloud-based enterprise GIS implementations, and, as such, we are intimate with applying and adapting best practices to organizational requirements. Further, Axim has achieved the Esri ArcGIS Cloud Services specialty designation and we have an established Select Tier Partnership with AWS along with certified AWS Cloud Practitioner staff and in 2023 received Esri’s Cloud System Implementation Award.

The following sections outline our approach to both the initial setup and migration of the host Cloud environment and the subsequent ongoing geospatial Cloud management services.

Cloud Implementation & Migration

Axim acknowledges the MSWD request for a secure, performant, and reliable system developed according to industry best practices with support for disaster recovery. Full best practices, however, are often achieved over time and according to business justification. Given the limited footprint of the current GIS

program, Axim is proposing an adaptation of best practices to serve as a robust yet incremental and practical step for MSWD.

Whereas best practices dictate a multi-tiered environment (e.g., development, staging, production) to support release management and physical separation of content, workflows, and software, we believe a single tier for the initial deployment would well support MSWD. Additional tiers can be added as adoption increases, budget affords, or business requirements demand. Likewise, optimal fault tolerance strategies often require redundancy in architectural elements (e.g., servers, functional roles) and corresponding workflows, which adds to the cost and administrative overhead.

Accordingly, Axim is proposing an approach and deployment pattern considering both MSWD requirements and industry best practices but also adapting to anticipated needs based on the current and near-term state of the program. With that said, and based on our experience with similar clients, we are also proposing an entirely scalable approach to accommodate continued growth. MSWD will be able to introduce Cloud and enterprise functionality as desired.

The following sections outline our proposed scope of work, organized according to the five-step project management framework introduced above.

Planning & Analysis

As previously described, Planning & Analysis will begin upon project award and continue through to project acceptance and closure. Beginning with project initiation and kick-off, Axim will collaborate with MSWD to introduce the teams and establish the parameters of execution and delivery, including the cadence of status meetings and associated reporting.

Deliverables

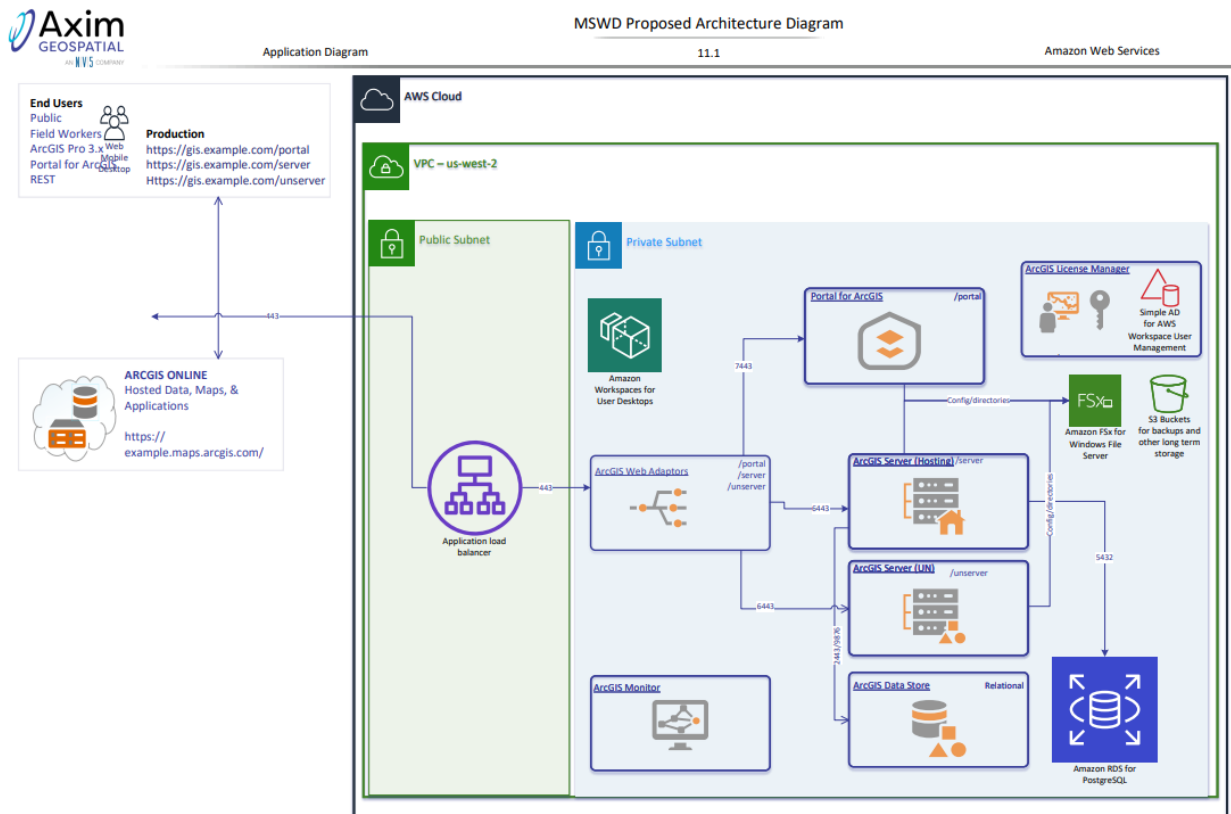
- Kick-off Agenda/Minutes
- Communication Plan
- Bi-weekly (every 14-days) Status Syncs
- Monthly Status Reports

Design

For purposes of estimation and proposal, we have identified an approach and deployment pattern tailored to MSWD based on our prior experience and anticipated near-term organizational requirements. Yet, we also understand that no two organizations are the same and that our clients may not accurately reflect the objectives of MSWD. Accordingly, we have incorporated a discovery element into the Design phase.

Axim will facilitate up to four virtual discovery sessions of up to one hour each to review requirements, orient to MSWD conventions, finalize the Cloud implementation strategy, and validate or refine our designs as appropriate. MSWD participation in the discovery sessions may vary by topic but should typically be limited to three to five people with knowledge and authority to influence the implementation.

Following the discovery, Axim will translate observations and inputs into concise summary documentation and offer a final recommendation for the architecture and deployment pattern. Should the final recommendation deviate from what was used to guide this proposal, the team will communicate the changes and the corresponding impacts to scope, budget, and schedule.



For this submission, Axim has identified a target deployment pattern based on a combination of the RFP inputs and our experience. The recommended pattern for the initial implementation is illustrated in the figure above. Note that Cityworks Online (CWOL) resides on its own AWS instances and is therefore not included in the diagram.

Axim is proposing to leverage AWS as the Cloud hosting platform. However, we have equal familiarity and proficiency with Azure should MSWD prefer (pricing may vary, though typically the difference is nominal). The target specifications associated with the architecture illustrated above are captured in the table that follows:

Service	Specifications	Software Installed
Web Server	t3.xlarge (4vCPU, 16GiB Memory, 120GB Storage)	IIS, ArcGIS WebAdaptors
Portal Server	m5.2xlarge (8vCPU, 32 GiB Memory, 120GB Storage)	Portal for ArcGIS
Hosted GIS Server	m5.2xlarge (8vCPU, 32 GiB Memory, 120GB Storage)	ArcGIS Server
UN GIS Server	rgi.2xlarge (8vCPU, 64GiB Memory, 120GB Storage)	ArcGIS Server with Utility Network
DataStore Server	m5.2xlarge (8vCPU, 32 GiB Memory, 120GB Storage)	ArcGIS DataStore (Relational)
LM Server	t3.xlarge (4vCPU, 16GiB Memory, 120GB Storage)	Esri's License Manager

Monitor Server	M5.xlarge (4vCPU, 16GiB Memory, 120GB Storage)	ArcGIS Monitor
Amazon RDS for PostgreSQL	Db.m3.xlarge (4vCPU, 15GiB Memory, 120 GB Storage)	Enterprise Geodatabase
File Server	SSD Storage, 500GB capacity and backup	Amazon FSx for Windows File Server
Desktops	PowerPro (8vCPU, 32GB Memory, 100GB Root Storage)	3 Windows OS Workspaces
Includes Application Load Balancer, Web Application Firewall, Elastic IP's, NAT Gateway, Managed AD (AWS Directory Service), and Network Load Balancer		

Deliverables

- Up to Four Virtual Discovery Sessions of Up to One Hour Each
- Concise Summary Documentation
- Final Design Recommendation
- Quantified Impacts on Budget and Schedule (if any)

Development

During the Development phase, Axim will translate the final and mutually approved system, as determined in the Design phase, into a functional, Cloud-based, enterprise GIS platform. The focus of this phase and the overarching objective of Project Component 1 is to establish the host environment, including provisioning the Cloud servers/instances, configuring the technical environment, and deploying ArcGIS Enterprise.

As depicted, we have proposed a single tier (production only) with a distributed deployment pattern. Ideally, in the future and as justified by utilization, MSWD may consider introducing lower-tier environments, which can be done without impacting the proposed environment. The distributed deployment pattern conforms to Esri's best practices to separate the elements of ArcGIS Enterprise into dedicated instances to support enhanced performance and scalability.

As part of the AWS environment build-out, Axim will perform the following tasks to create the production tier environment:

- Cloud server/service provisioning
- Cloud framework configuration – gateway, VPC, IP, storage
- Server to server configuration
- Configure instance backups
- ArcGIS Enterprise deployment (anticipated version 11.1)
 - Web Adaptor
 - Portal for ArcGIS
 - ArcGIS Server (core and UN)
 - ArcGIS Data Store
- Federation/Authentication – ArcGIS SAML & Built-in Authentication
- Configure file share – across all VMs
- Install ArcGIS Monitor
 - Configuration occurs in a later project after services/solutions have been configured
 - Time to configure will be covered at the hourly rates specified for staff augmentation
- Provision up to 2 AWS workspaces – ArcGIS Desktop and/or ArcGIS Pro Workspaces

- Install SQL Server using client provided licenses and create an empty ArcGIS Enterprise Geodatabase
- Obtain and apply SSL certificate for the web tier – Axim provisioned certificates (GoDaddy)
- Obtain and apply antivirus protection – Axim provisioned (Cylance)

Deliverables

- Functional production GIS environment within the AWS platform

Testing & Acceptance

Testing & Acceptance of the environment is a streamlined process of functional validation to demonstrate capability and accessibility. Axim will first validate the configuration internally according to a standards-based approach. Additionally, since no MSWD content will be hosted in the environment at this point, Axim will upload a small sample dataset, which will be published as a service and configured into a basic web map to confirm system function. MSWD will also have the opportunity to view and access the temporary QA/QC content and provide feedback before acceptance.

Deliverables

- Two test services
- Internal and client validation of environmental functionality

Implementation

The Implementation phase, as introduced above, centers on the delivery and release of the technical scope elements into production. Given that Project Component 1 targets the setup and configuration of a host environment (without content) and that we are proposing a single tier (production) for this phase, Implementation will primarily focus on staff orientation and knowledge transfer related to the new enterprise GIS environment. Axim will provide a one-hour virtual session to introduce designated MSWD staff to the Cloud environment and review the configuration and access processes. Following the knowledge transfer, we will make any final adjustments to the documentation to reflect the as-built system for delivery to MSWD.

Deliverables

- One-hour virtual knowledge transfer
- Final system documentation

Geospatial Cloud Services (Ongoing Managed Services)

Axim has been delivering Cloud-based, Esri-centric services for nearly 15 years, providing clients with highly varied offerings and managed services, ranging from simple, consolidated deployment patterns to robust, fault-tolerant, and highly available systems. Within the context of our managed services, all software licensing, data, and content (e.g., map services, applications) will be procured or provided by MSWD and hosted in the Cloud environment established in the previous phase.

Geospatial Cloud Services (GCS) begin as soon as the environment is initiated to ensure health, integrity, and performance throughout the implementation cycle, even before acceptance and release of the production environment. Our proposed GCS are designed to strictly support the health and availability of the Cloud hosted environment, separate and distinct from standard GIS support services, which can be covered under the staff augmentation model and associated hourly rates. All non-routine and ad hoc requests are considered outside of the scope of GCS, which are designed and proposed to support the Cloud environment as defined above. Changes to system design or architectural footprint will be considered as a change order with the corresponding impact on the budget.

The sections below outline the technical scope of the proposed Geospatial Cloud Services for the configured MSWD production environment.

- **Contract:** Fixed Price for a 12-month period of performance
 - Assumes no changes to the Cloud system architecture, including, but not limited to the addition of servers, instances, and specifications.
- **Business Support:** 8:00 am to 5:00 pm (local time), Monday through Friday.
 - Although 24/7/365 support was referenced within the RFP, Axim is proposing our standard support times for this initial scope. As adoption and utilization of the system expand or as critical systems are implemented, we can introduce extended support.
 - Axim offers extended support in collaboration with Esri India, to include after hours, weekends, and holidays.
 - A quote for extended support can be provided upon request.
- **System Uptime:** Anticipated to be 99% during business hours
 - Planned maintenance requiring downtime will be coordinated for after hours and communicated in advance
 - Unplanned system disruptions that occur after hours will be addressed starting the next business day
 - Response Time Objective: 2-hours to acknowledge an issue and assign staff to investigate.
 - Recovery Time Objective: 4-hours, however actual times may vary by root cause.
 - Offline access may be support per the dependent solutions, such as certain Esri mobile solutions and Cityworks Mobile. The extent to which offline access is current and accurate will depend on local workflows for synchronization of the specific solutions. The cloud configuration will not, independently, have offline access.
- **Geospatial Cloud Managed Services Includes:**
 - **Monthly System Checks:** Includes monthly system verification, “health grades,” and maintenance recommendations.
 - **Monthly System Maintenance:** The recommended maintenance will be executed monthly during the regularly scheduled maintenance window. The potential for system restarts and disruption during the maintenance window is expected and will be consider planned down time (excluded from uptime calculations). To minimize disruptions to day-to-day business operations, the Axim Cloud Managed Services team offers a regularly scheduled maintenance window on the third Wednesday of each month outside of local business hours (proposed maintenance window will be mutually agreed upon). Either party may request a change to the regularly scheduled maintenance window via email or phone communication.
 - **Email Support:** Axim will manage and monitor a client-specific email for MSWD (e.g., - MSWDSupport@aximgeo.com). The designated email address will be used to report issues related to the environment, such as availability, stability, or performance. For such issues, the targeted response, recognition, and resource assignment is two (2) business hours. Requests, inquiries, and standard communications should be directed to the appropriate Axim staff, as designated in the communications plan.
 - **Operating System Updates:** Checked and updated monthly.
 - **Esri ArcGIS Enterprise Patches and Security Patches:** Checked and updated monthly.

- **Back-ups:** Configured and verified monthly.
- **Track Expiries:** Axim Geospatial will track expiries and coordinate renewals for ESRI licenses, SSL certificates (for web tier servers), and Cylance Anti-Virus.
- **Cloud Provider Required Updates (Quarterly):** Axim Geospatial will apply Cloud Provider Required updates (AWS) on a quarterly basis.
- **Quarterly Client Syncs:** Axim Geospatial will schedule recurring quarterly client syncs with designated MSWD project leadership.

Approach Project Component 2: Import Existing Data and Ensure Readiness

Planning and Analysis

Axim will facilitate a project component kickoff meeting with the Axim and MSWD project teams to review the scope, establish the project schedule and communication plan, and initiate technical tasking. We will follow the phased project management approach outlined earlier throughout the project component tasking.

Design

To prepare for the ArcGIS Utility Network (UN) and Cityworks implementations, Axim must first convert MSWD's existing data into an Esri file geodatabase format and perform a readiness assessment. Existing source data is organized into water, wastewater, and landbase domains in a mix of Access personal geodatabase (PGDB, .mdb) and Esri shapefile (.SHP) formats. Axim will confirm the current source data poses no conversion issue and plans to configure FME workbenches to convert these sources into Esri file geodatabase (FGDB) format, consolidated with one FGDB for each domain. These FGDBs will serve as the basis for all UN activities described in the next project component.

Deliverables

- Source data review and confirmation: water, wastewater, landbase

Development

Axim will configure FME workbenches to convert the legacy PGDB and SHP formats into consolidated FGDBs for the respective water and wastewater sources. Axim will attempt to deconflict potentially duplicated records through spatial and attribute comparison, conflating the source datasets into a single authoritative dataset. For the PGDBs, Axim will replicate the current feature dataset, feature class, and subtype structures before processing the SHP sources.

Additionally, Axim will upload existing as-built PDFs to a file share location in the newly deployed Cloud environment. Where possible, we will update existing source links in the geographic features to the new PDF locations using relationship classes and URL fields within the FGDB. This approach will allow for the potential of a many-to-one relationship of PDFs to features.

Finally, Axim will configure a FME workbench to convert the landbase PGDB and SHP sources into a consolidated FGDB location.

Deliverables

- Configure FME workbenches to convert source PGDB and SHP to FGDB: water, wastewater
- Migrate as-built PDFs to Cloud
- Update geodatabase PDF links to new file locations
- Configure FME workbenches to convert source PGDB and SHP to FGDB: landbase

Testing

Throughout this project component, Axim will perform quality control to validate that all source records and data have been loaded and reviewed as needed. Axim will implement a mix of semi-automated tools, scripts, and manual spot checks to ensure the data quality and integrity are maintained during the conversion. Axim is including up to 8 hours to make fixes to the source data to enable loading into the file geodatabase format or to perform past load repairs to ensure data integrity and retention of all information. Any additional time needed for repairs can be performed under the Staff Augmentation component of this proposal.

Deliverables

- Quality control testing of data conversion

Implementation

As part of the final implementation phase, Axim will load the three converted FGDBs to the Cloud and make them available to MSWD staff. We will then upload the referenced MXDs and convert them into Pro projects using the newly converted FGDBs as the data source.

Assessments

Axim will evaluate the District’s water and wastewater datasets, now converted into file geodatabase (FGDB) format, using ArcGIS Data Reviewer and a Requirements Discovery meeting for our team to understand current data conditions better. We will prepare a Data Assessment Report summarizing and prioritizing errors in the source data that need to be addressed, along with a file geodatabase of all error locations. We will also evaluate the current business systems to understand GIS data dependencies and integration patterns. These assessments together will result in an MSWD-specific Implementation Plan.

The Data Assessment provides a list of prioritized data cleanup recommendations. These will be left for MSWD staff to complete. However, Axim can optionally perform updates through the Staff Augmentation component of this proposal at the request and direction of MSWD.

Deliverables

- Initial data review
- Requirements Discovery meetings: water, wastewater
- Data Assessment (Error report, recommendations, and error geodatabase): water, wastewater
- Implementation Plan
- Optional Data Cleanup through Staff Augmentation component

Approach Project Component 3: Migrate Data into Esri Utility Network

Planning and Analysis

As described earlier, Planning and Analysis begins with a kickoff meeting and continues through final acceptance of the project component. Axim will facilitate a project component kickoff meeting with the Axim and MSWD project teams to review the scope, establish the project schedule and communication plan, and initiate technical tasking. Throughout the duration of the UN implementation, the Axim PM will meet with the District’s project management bi-weekly to review tasking, upcoming milestones, or potential risks to the project schedule. We will follow the phased project management approach outlined earlier throughout the project component tasking. Project Component 3 can begin once the District has accepted the converted water and wastewater file geodatabases.

Design

Data Modelling

Axim will facilitate a 2-day (up to 16 hours) remote Data Modelling and Design Workshop to complete data mapping worksheets for converting the water and wastewater source data into the UN data schema. MSWD is not presently using Esri geodatabase structures and has indicated its expectation to adopt Esri's existing UN base models for each domain as-is without needing extensions. To this end, Axim and MSWD will map all existing District data into this model, which may necessitate the District adopting alternative terminology for current assets. Axim will first prepare initial spreadsheets to be finalized during the workshop. Axim will also review external data requirements that might be required for dependent business systems. MSWD has about twice the usual number of layers for water utilities. Only active layers will be converted into the UN. Abandoned features will be converted and stored in a separate geodatabase similar to the landuse layers. Should the modelling workshops reveal a requirement to extend Esri's base models to support external business systems, Axim and MSWD will determine appropriate adjustments to the project scope. Once the database design is approved, the Cityworks AMS planning processes in Project Component 4 may begin in parallel.

As MSWD plans to use Esri's unaltered base models, Axim will reference Esri's online base design documentation and data dictionary rather than create separate design documentation, as would be necessary when extending the model.

Deliverables

- Data Mapping Crosswalk spreadsheets: water, wastewater
- Data Modelling and Design Workshops: water, wastewater

Development

Data Conversion

After completing the design, Axim will build the respective UNs in file geodatabase (FGDB) format. We will localize Esri's base model for each system to the correct coordinate system and configure the FME/Data Interoperability extract, transform, and load (ETL) tool to convert and load the previously converted spatial data into the FGDB UN. We will review the configuration with MSWD to confirm the ETL configuration matches the data mapping and make any necessary revisions before performing pilot implementations.

Pilot Implementation

Axim will configure a QAQC workbench to validate the data conversion results. We will then run the ETL tools in an FGDB for each system, converting all source data into the destination, and perform our first UN build. This will produce a build error report of additional source data conditions that must be addressed before full implementation. Axim will clean converted data within a small test area (e.g., a single pressure plane) limited to testing associations, subnetworks, and network trace results. Finally, we will prepare Esri's ArcGIS Pro project templates for the MSWD review of the UN.

Knowledge Transfer

Axim will prepare Best Practices Documentation outlining FGDB editing workflows and UN functionality. We will facilitate up to 12 hours of remote knowledge transfer sessions for GIS editors to acquaint them with the MSWD UN implementation. Our knowledge transfer is intended to build upon rather than replace Esri's ArcGIS Pro and ArcGIS Utility Network offerings.

Client Review

Axim will prepare a test plan outlining the tasks MSWD staff will need to test to validate the data design,

conversion, and UN functionality. MSWD will have five days (or as agreed upon) to test and provide feedback to Axim. We will track all feedback in our Jira system and make any approved revisions. After making any approved revisions, Axim will deliver an updated FGDB for MSWD review and approve before enterprise deployment in the Cloud environment.

Enterprise Deployment

Axim will prepare a Deployment Plan to guide the publishing of the UN to the MSWD enterprise environment. Working within the Cloud environment, Axim will prepare the converted database, configure Portal test users, and perform the necessary tasks to publish the UN in the MSWD enterprise environment. These tasks include enabling the UN, localizing ArcGIS Pro templates, publishing services, and setting branch versioning. Axim expects to publish up to 3 services for each utility domain – editing, simple features (read-only), and Cityworks support (based on the editing service). We will also provide up to 4 hours of additional knowledge transfer to power users on enterprise-specific workflows and 12 hours to administrative users, including Administrative Documentation on managing the system.

Deliverables

- Localize FGDB UN base model: water, wastewater
- Configure FME/Data Interoperability conversion tool: water, wastewater
- QAQC workbench: water, wastewater
- Complete FGDB Pilot data conversion with a cleaned test area: water, wastewater
- Build Error Report: water, wastewater
- Pilot FGDB UN configuration testing (complete source migration, cleaned test area, subnetwork configuration, named trace configuration): water, wastewater
- ArcGIS Pro project template updates: water, wastewater
- Editing Best Practices Documentation: water, wastewater
- Remote knowledge transfer sessions for core GIS staff/editors (up to 12 hours)
- Test Plan
- City review, feedback, and revisions (database, ETL, and UN configuration)
- Written City approval of Database Design, data migration, and UN configuration: water, wastewater
- Deployment Plan documentation
- ArcGIS Enterprise preparation (Portal users, versioning, Pro templates, map services): water, wastewater
- Updated Best Practices Workflow Documentation: water, wastewater
- Administrative Documentation: water, wastewater
- Remote knowledge transfer for editors and administrators

Testing

Once the UN is deployed to the enterprise environment, Axim will provide an updated test plan and facilitate user acceptance testing, beginning with a client testing handoff meeting. MSWD should expect five days to thoroughly test the UN functionality within the enterprise environment and provide feedback. Advanced functionality, including tracing, is expected to function only within the designated pilot area fully. We will support testing with ad hoc conference calls when needed, track all feedback in our Jira issue tracking system, and determine appropriate action. Axim will make necessary environmental adjustments.

Deliverables

- Test Plan document

- Client testing
- Testing support (calls, Jira)
- Environment adjustments (ArcGIS Enterprise, ArcGIS Portal users/groups, services)

Implementation

Once testing is complete for each system, Axim will coordinate with MSWD to declare an editing freeze on the current production database. We will then perform a final complete conversion of all source data, including QAQC, and deploy it to the new MSWD enterprise production database in the Cloud. We will finalize enabling the UN, versioning, and configuring map services. Immediately after deployment, we will provide a two-day onsite Go-Live support trip to aid MSWD’s transition to the production water and wastewater UNs. Axim will track any production issues in Jira and resolve them as appropriate. After Go-Live, we will deliver updated and finalized Best Practices and Administrative documentation.

Deliverables

- Prepare ArcGIS Utility Network in production enterprise environment
- Final complete database migration into ArcGIS Utility Network
- Production database deployment
- Onsite Go-Live support for release of ArcGIS Utility Network
- Production issue tracking and resolution
- Final Best Practices and Administrative documentation

Approach Project Component 4: Cityworks Implementation

Planning and Analysis

Similar to the approach described in previous project components, the Planning & Analysis phase begins with the kickoff of the Cityworks tasking and continues through final acceptance. Axim will initiate a kickoff meeting to introduce respective team members, establish a communication plan for coordinating activities, review the scope, and establish the timing and frequency of recurring meetings with MSWD project management. Axim will then build a detailed project schedule before initiating work with input from participating MSWD staff regarding availability, capacity, and conflicts. Throughout the Cityworks implementation, the Axim PM will meet with the District’s project management bi-weekly to review tasking, upcoming milestones, or potential risks to the project schedule.

Design

Configuration Requirements Gathering & Documentation

The initial configuration requirements gathering workshop will be a four (4) day onsite effort facilitated by Axim staff. Through conversations, interviews, and brainstorming sessions, we will help identify or consolidate each participating department’s maintenance practices, core work activities, data entry and reporting needs to support the development of Cityworks AMS and its supporting applications. The District has already provided a detailed description of functionalities and business processes currently provided to users by existing systems, and this crucial step will allow both MSWD and Axim to translate the stated requirements into a Cityworks implementation that is custom-fit to each participating department. The workshop will be organized into sessions with MSWD staff participation (typically limited to 3-5 people). Before the onsite work, Axim will collaborate with MSWD to develop an agenda. MSWD will coordinate the necessary facilities and participant schedules to ensure key stakeholders are present.

The information compiled during the working sessions will be documented by Axim staff and provided to MSWD for review, finalization, and official approval before initiating system configuration. Axim will provide MSWD with formatted spreadsheets to populate with organizational information to facilitate

translation into the Cityworks configuration. These workshops' document(s) will guide the subsequent configuration stages.

Deliverables

- Onsite Discovery Workshop (4 days)
- Configuration Plan

Development

Host Environment Preparation

Axim proposes implementing Cityworks Online (CWOL) as a Software-as-a-Service (SaaS) platform to host the enterprise asset management system for MSWD. CWOL is a multi-tenant deployment within an Amazon Web Services (AWS) environment, fully managed by Cityworks (including the hosting environment, application updates, and database backups), and offering the same core application functionality as an on-premises deployed Cityworks solution.

Axim will coordinate with Cityworks to establish the foundational host framework and instance to support the Cityworks implementation. We will use the information gathered during the Discovery workshops to make recommendations to ensure support and consistency with the CWOL environment. As proposed, the CWOL environment will provide a two-tier deployment pattern comprised of sandbox and production tiers. Each environmental tier will have a corresponding database replica to support external reporting and integration.

GIS

Cityworks leverages the Esri enterprise GIS geodatabase, achieved by dynamically consuming GIS services (map, geocode, etc.) delivered through ArcGIS Enterprise, either directly or through Portal or ArcGIS Online. Axim will help MSWD identify the required data needs and provide guidance on the structure and content of those services, including access to supporting PDF documents or other supported file types. Axim will leverage the feature services published from the migrated network assets from the UN feature service design and associated relationships, however MSWD staff will be responsible for designing the specific cartographic presentation and behavior of the maps and publishing any other services themselves. Alternatively, Axim can optionally assist in publishing the GIS services for consumption by Cityworks through the Staff Augmentation component of this proposal at the request and direction of MSWD.

Cityworks supports a Single Sign-on (SSO) approach to facilitate simultaneous authorized access to not only the Cityworks application but also the data services and web maps containing the asset repositories within the enterprise GIS. Single Sign-on also enables additional map tools and app switching between the Cityworks Mobile Native apps and Esri apps such as Field Maps and Navigator. Axim recommends that MSWD deploys SSO to align their Cityworks user accounts with those in ArcGIS Portal to seamlessly pass credentials to authorized content within each application without needing resource proxies. This approach, however, requires all Cityworks users to have an ArcGIS Enterprise (Portal) account, which is then configured as a username in Cityworks. Axim will work with the District to properly deploy SSO authentication between the two platforms, if required or desired.

Note: if using Cityworks' Mobile Native Apps for either iOS or Android with GIS services that are secured (requiring username and password to access), SSO is required for map functionality within the mobile app.

Cityworks Core Configuration

Among the first core configuration activities will be loading the organizational information that will serve as a baseline for implementation into the Cityworks Respond application. This will include employee

information, equipment, materials, contractors, and project information. Axim will also set up user accounts (up to 50 users) and associated functional/operational groups with permissions to control access to appropriate content and workflows within Cityworks.

For the core work activity configuration, we will leverage the documentation and information gathered in the onsite workshops and finalized during the Design phase to drive functional configuration. Given the granularity of the configuration, we will also work with MSWD staff throughout the implementation to ensure we have understood and are accurately reflecting processes within Cityworks. We have assumed up to 100 service requests, 300 work orders, and 10 inspection templates to accommodate the scope as described in Exhibit G. Although we recognize that MSWD is estimating 217 service request templates, Axim is proposing 100 based on our experience with other clients who have used the Cityworks implementation as an opportunity to clean up, aggregate, or streamline various aspects of legacy systems and workflows. Furthermore, the proposed service request templates described by the District share many characteristics that are commonly addressed as work orders in Cityworks, and therefore we are accounting for 300 work order templates as opposed to the 265 estimated by MSWD.

With that said, these assumed number of work activities are not intended to be a strict limitation or organizational constraint but rather the foundation for estimation and proposal. Within any project of this magnitude, the team will collectively identify processes, workflows, or general information that may influence the direction of development processes and communicate with MSWD project management if there are significant deviations from the abovementioned quantities.

Reporting & Dashboard Configuration

A core function within Cityworks AMS is the ability to perform flexible and powerful ad-hoc searches (or queries) and develop reports containing work and asset management information that can be reviewed, visualized, exported, or shared. These queries can also be saved and translated into Cityworks dashboards, offering a convenient, dynamic glimpse into long-term or real-time system activity. The content and format of shared dashboards will be based on the functional requirements described in the RFP with input from District staff.

In our experience implementing Cityworks, we have discovered that the robust capabilities of native Cityworks dashboards will often replace the need for a more formal, form-based legacy report template. In cases where a more formal and print-friendly report template is necessary, Axim will leverage the embedded reporting engine, Active Reports, to develop and format report templates based on existing templates provided to Axim by MSWD. Predefined report files (*.rdlx) will be developed in the native Active Reports interface leveraging the Cityworks data model diagrams, formatted as desired, and then loaded through the Cityworks web interface. Additionally, Cityworks hosts a library of reports developed by users and communities nationwide that MSWD can access to review and optionally deploy.

The content and formatting of any dashboards or custom reports will be based on input from MSWD staff. They may represent reports already existing within the business process or new reports not feasible within the previous system. Axim got a sense of the reporting requirements based on the existing functionality described in Exhibit G. However, given the breadth and the high variability in complexity for any given report or dashboard, we are proposing an explicit block of hours (up to 64 hours) rather than a designated number of reports or dashboards. Axim will coordinate with MSWD to identify and prioritize these reporting functions and continuously communicate progress as these outputs are developed. Axim will also cover end-user creation of custom queries and dashboards and generating Active Report templates during training, empowering users to leverage dashboards or reporting further for individual needs. To supplement these efforts, Axim can optionally assist in further dashboard or report development through

a separate and supplemental support contract.

Materials & Inventory Management

As described in Exhibit A, MSWD will rely on Cityworks to provide inventory management concerning performed maintenance, as well as the ability to manage purchase orders, vendors, and transaction data. With the Cityworks Storeroom module, users can track transactions of materials with additional functions like security, costing options, vendor and material information, and material transaction reporting. Storeroom is a product designed to track incoming and outgoing materials from multiple storage areas, as well as manage stock, material cost, suppliers, and requisitions. Axim proposes deploying up to four (4) storerooms, or functional warehouses, within the Storeroom module. These storerooms can be fixed storage locations such as buildings and warehouses or even mobile service vehicles. Each storeroom will contain warehouse-specific materials, which may be department-specific, but they can be mixed.

During the discovery workshop, Axim will discuss the organizational strategy of the storeroom allocations and effective management of material transactions and guide configuration best practices. Additionally, Axim will configure the necessary dashboards within the Storeroom app to support the core Storeroom transactions and associated workflows. Further guidance on configuring individualized Storeroom dashboards and report templates will be provided during end-user training before the configured Cityworks site is released to production. To support the Storeroom implementation, the District will provide Axim with a list of materials and associated vendors in a Storeroom-based format (provided by Axim), with each material type associated with one or more storerooms.

Mobile Configuration

Cityworks is designed with multiple interfaces to provide end-users with a tailored experience, whether in the office or the field. Cityworks Respond enables mobile work activities via a browser-based interface optimized for tablets and other mobile devices. At the same time, Cityworks Mobile is a native app (iOS and Android) designed to support the completion of field activities (e.g., Service Requests, Work Orders, and Inspections). While Respond requires a constant network connection, the Mobile app is downloaded via the compatible app store. It can be used without an internet connection and synchronized once connectivity is restored. Axim will work with MSWD staff to determine which platform is the best fit for mobile use by MSWD field staff and provide guidance on configuration best practices during the discovery workshops. Finally, Axim will work with the District to configure the mobile platform for access on the devices procured by the District.

Enterprise System Integrations

The District has expressed a desire to integrate with several enterprise systems long-term, with an immediate need to integrate with t4 Spatial and DigAlert. While integration with GIS is inherent and part of all implementations, Cityworks also offers a rich and mature suite of application programming interfaces (APIs) that allow the platform to integrate with virtually all third-party systems. The Cityworks APIs offer comprehensive functionality that compliment an equally open, nicely structured, and well-documented database schema supplemented by robust documentation. Axim has a reputation founded on the strength of our ability to develop custom solutions and integrations, and our team of developers maintains deep familiarity with industry best practices for both process and architecture.

The Axim approach to designing and developing integrations is both collaborative and synergistic. Similar to our requirements gathering process described earlier, Axim will facilitate a remotely held Discovery Workshop of up to eight (8) hours over multiple sessions to gather the functional requirements necessary with each integration. We will coordinate with MSWD for access to and engagement with the respective developers and vendors, whether local staff or a commercial entity. In doing so, we can frequently validate

and optimize our technical vision to guide stable, long-lived integrations. We assume that the District has or will procure (separate from this proposal) any licensing associated with t4 Spatial and DigAlert and that the APIs will accommodate the desired functionality for the integrations.

Axim understands that MSWD is seeking the ability for users to view CCTV video inspections and related inspection data stored in t4 Spatial directly from Cityworks. With the understanding the MSWD has a long-term goal to integrate with Cues GraniteNet not included in the current scope of work, Axim is proposing a custom one-way integration with t4 Spatial to provide Cityworks users access to CCTV video inspections and available inspection data hosted in t4 Spatial related to the asset in GIS or associated work activities. Based on the information provided in the RFP and Q&A, Axim envisions the stored inspection videos to be available as a hyperlink embedded within the Cityworks interface, as well as included as an attribute of the GIS feature, and therefore readily available either in Cityworks or any other Esri-based application that consumes the targeted feature class.

Similarly, MSWD intends for integration of Cityworks with DigAlert for receiving, responding to, and closing tickets, a need that aligns with the strengths of the Cityworks platform and the available APIs. The envisioned workflow is such that request submissions are entered into DigAlert and will automatically flow into Cityworks as a Service Request using the DigAlert API. MSWD staff will have the ability to view ticket information within the request and take the appropriate actions, logging activity and results against the Service Request, which upon completion will be returned to DigAlert with corresponding data changes. The integration can then notify the person who submitted the request that the ticket has been closed. The workflow defined dictates a bi-directional integration between Cityworks and DigAlert. Axim is proposing to leverage the respective APIs to achieve the desired functionality and we will collaborate with technical staff supporting the DigAlert application to design and verify the optimal approach. The exact technical specification and methods employed for the integration will be determined following the integration workshop described earlier.

In conjunction with the third-party inputs, Axim will develop concise summary documentation to provide the business and functional context that underlies our design recommendations. Axim will then review the designs with appropriate MSWD project management and stakeholders. Axim will develop, deploy, and/or configure the proposed integrations either in the Axim environment or in a lower tier environment during the Development Phase to establish the broader system capability as the project heads into the testing and acceptance phase. Note that Axim will rely on the availability of third-party environments provided by MSWD or the software vendor to accommodate testing without impact to production users.

Following acceptance, Axim will finalize documentation with a focus on the deployment pattern and administrative requirements. We will also deploy the integration to the production tier and update any configuration (as necessary) to ready the system for release.

Data Migration

Within the SOW described in Exhibit A and Q&A responses, the District indicates the desire to migrate legacy data from Nobel Geoviewer and Eptura ManagerPlus into Cityworks. Legacy data can be a powerful asset to organizations. At the same time, some legacy data may lack integrity or quality controls, which could effectively translate into operational noise in the newly implemented system. To accommodate this, Axim is proposing to leverage another Discovery Workshop with the District; this time, it will focus on collaboratively exploring the legacy data of interest and evaluating the value of migration into Cityworks together. The proposed workshop will be facilitated remotely, with multiple sessions totaling up to eight (8) hours.

The data migration effort will be performed similarly to the earlier ETL processes. Axim first obtains access to the source data repository to facilitate a schema crosswalk, in which we identify and map the tables, fields, and values involved in the migration. We will review the crosswalk with MSWD staff for feedback and approval, after which the team will begin developing the ETL automation processes using the most effective platform for the task (e.g., FME, SQL, Python). The migration scripts will be executed against the source data to accommodate MSWD review, feedback, and approval through an iterative cycle. With acceptance and as part of the final implementation process (a late-stage task within the project), Axim will perform the data migration into the production environment. It should be noted that certain datapoints intended for migration denoted in the Q&A responses (e.g. employee labor rates, inventory items, equipment rates) may already be incorporated in the Cityworks implementation as part of the core configuration activities.

Our approach to estimating the effort involved with legacy data migration is not based on the number of existing records, but rather on the number of legacy database tables (and associated fields) for translation into the Cityworks database schema. Based on our review of legacy data information provided in Addendum 2, we are proposing a data migration of up to twenty three (23) source tables from Geoviewer and ManagerPlus to Cityworks. This estimate is informed by prior experience with our portfolio of clients and guided by a repeatable process established by the countless data migrations Axim has performed.

Additionally, the proposed approach allows and requires the District to provide exported and flattened data from Geoviewer and ManagerPlus in a format with standard data structure (e.g., clearly identifiable tables, intuitive/readable field names, with content filtered as desired). Anomalies, deviations, or quality issues that interfere with a scripted migration will require attention and resolution by District staff.

Deliverables:

- Cityworks software configuration
- Work Activity template setup
- 100 Service Requests
- 300 Work Orders
- 10 Inspections
- Custom Report & Dashboard Development (up to 64 hours)
- Storeroom – Inventory, Vendor, & PO Management
- Mobile App configuration
- Data Migration Workshop (8 hours)
- Data Migration from Nobel Geoviewer to Cityworks
- Enterprise System Integration Workshop (8 hours)
- Integration with t4 Spatial and DigAlert

Testing

Axim introduces our first training opportunity during the testing phase, in preliminary training. The preliminary training structure is proposed as three (3) days of onsite training sessions, targeting a subset of power users from each department participating in the testing and acceptance process. The format is designed to provide an orientation of the system at the end-user level (administrative training will occur during the final training) with the intent of providing enough familiarity to facilitate testers comfortably evaluating the configured workflows against those that were described to Axim in the requirements documentation stage and subsequently approved by MSWD.

The testing process is designed to span twenty (20) business days following the last day of the preliminary

training sessions. In turn, Axim will refine the configuration, as appropriate, to match the accepted requirements based on the feedback received. Axim will accept one consolidated set of feedback per week of testing (for four total submissions). The team will review, qualify, and address each item accordingly. Axim assumes that MSWD will allocate sufficient resources to adequately test the application and provide feedback for each phase of release. Any input traced back to the system or software design can be submitted to Cityworks for inclusion in their list of defects pending resolution or consideration in future development cycles.

Deliverables

- Preliminary Training (3 days, onsite)
- Testing Support
- Feedback Tracking
- Iterative Configuration Adjustments
- Final Configuration

Implementation

Production Release & Go-Live

Following acceptance of the Cityworks configuration performed within the lower-tier testing application, the next step is configuring the production environment in preparation for the release of the production system. Axim strongly recommends that MSWD release the system to users immediately following their final training event(s) to ensure the information and experience they gleaned is fresh and will translate effectively into operational utilization. Axim will work with Cityworks to replicate and ready the application and site configuration for the initial production release. All data entered as part of testing will be purged to create a clean system.

The final steps of the production implementation should require minimal system downtime, primarily the time necessary to run final legacy data migration scripts and update integration configuration to point to production systems. Axim will work with the District to identify a window of time for the final implementation that will minimize disruption to end-users.

End-user & Admin Training

Effective training is crucial in successfully adopting any enterprise system, and Cityworks is no exception. We are proposing a train-the-trainer method that has proven effective for several reasons, including establishing a deeper understanding of institutional knowledge and the ability to articulate system functionality and capabilities with greater context. A train-the-trainer approach is comprised of sessions that include five (5) to ten (10) core staff per business unit, creating a more contained and interactive environment conducive to deeper immersion and at a pace catered to the attendees. While the specific curriculum is yet to be defined, the generalized content of the final training event will ultimately cover the primary thematic areas listed below:

- **End-user Training (4 days onsite)**
 - Creation of service requests, work orders, inspections, etc. through both web and Mobile applications; map interaction; dashboard and query management; and more.
- **Administrative Training (1 day onsite)**
 - Review the deployment process and structural components and requirements of the application, administration of the application and associated ArcGIS Enterprise services, configuration of service requests, work orders, inspections, etc., database schema review, ActiveReports, maintenance processes, and more.

The reference material associated with the training sessions is intentionally centered on the existing Cityworks Help documentation. Still, it will be delivered through hands-on experience, creating additional value as users can refer back to the materials readily available directly through the application.

Deliverables:

- Testing data purged from the Cityworks database
- Final Legacy Data Migration
- Integrations migrated to Production Endpoints
- Completed Production tier Application
- Final Curriculum and Training Agenda
- End-User and Administrative Training (5 days, Onsite)

Approach Project Component 5: Staff Augmentation

Perhaps the greatest strength of Axim, and the foundation of our reputation in the industry, is the depth and breadth of our team. Axim team members are known for our unmatched, personalized level of service nationwide and have served local government agencies in all 50 states. We take an adaptive approach and understand the importance of your objectives. Our unique position in the market, based on our company size and singular focus on location technology, means that we have the technical resources to address any GIS challenge. Our experience across Federal, State, and local governments has allowed the team to add domain experience to complement the technical expertise. For MSWD, this translates into stability and capability that is not always feasible through hiring a single person at the District. Our experience has shaped a proven and repeatable pattern of support for providing a single individual or a core team that centers on the assignment of a Project Manager (PM) to provide overarching project leadership, management (scope, budget, schedule, etc.), quality control, and technical direction. This core team will provide the requisite technical leadership and oversight to ensure proper adherence to best practices as well as quality of delivery. As appropriate, the team will leverage the broader pool of Axim Solutions Engineers and Geospatial Analysts. In each case, we will assign the most appropriate staff concerning thematic alignment and experience to ensure value to MSWD. Axim's Project Manager will identify the support tasks and establish a communication plan for coordinating the activities of the task as well as status reporting. Milestones and completion dates will be established for the Planning and Analysis, Design, Development, Testing and Installation/Implementation and Client Review phases of a large task or project within the staff augmentation. Axim has adequate capacity and technical expertise to accommodate anticipated project work for MSWD. Axim performs extensive resource planning monthly, quarterly, and annually to analyze capacity and skillsets required to ensure client commitments are met. We have procedures, tools, and metrics in place for resource planning. Staff augmentation offered by Axim brings together a diverse set of skills, experiences, structured planning, and technical expertise necessary for effective GIS management and successful project execution. Axim's staff augmentation provides stability, depth and comprehensive support to support MSWD's GIS management and initiatives

CONSULTANT INFORMATION

Company Information

Axim's mission is to use our geospatial expertise to provide clarity and solutions to help our customers solve the world's national security, infrastructure, and environmental problems. We are the largest singular provider of end-to-end geospatial services and solutions in the U.S serving the communities in which we live.

Axim's core competencies include: big data services, geomatics, business solutions, Cloud services,

infrastructure security, analytics and professional services. Customers include national, state, and local government, defense and intelligence, infrastructure, utilities, energy, commercial and environmental customers.

Axim was launched in January of 2022 as a rebranding effort of parent company Continental Mapping Consultants, LLC and its two subsidiaries; GISinc and TSG Solutions, inc. Although a new entity by name, Axim brings over 31 years of corporate experience given that the previous companies were founded in 1991, 1999 and 2001 respectively. Axim has access to over 1300 US-based staff and has completed over 10,000 geospatial projects including mapping projects on all seven continents and in over 180 countries.

In February 2023, we announced NV5 Global, Inc’s acquisition of Axim as a wholly owned subsidiary. This acquisition pairs Axim’s intimate knowledge of Esri ArcGIS technology and Cityworks operations and planning with a team of geospatial and engineering professionals. NV5, headquartered in Hollywood, Florida, has over 85 California offices throughout the U.S., 23 of which are located within the State of California, and 9 additional offices in Asia. While we are submitting this response as Axim, we are now supported internally by over 4,500 A/E and geospatial professionals in North America and Asia and have office locations within close proximity to MSWD. The result is a world-class firm ready to provide a unique and robust offering across engineering, design, architecture, geospatial, survey, computer programming, and other related disciplines.

Axim has provided the following additional information as required by the RFP:

Consultant Name: Axim Geospatial, LLC		Consultant Contact Person for all Offices: Theron Hodel, Account Manager	
Organization Type: Corporation		Theron.hodel@aximgeo.com 205.725.5803	
Headquarters and Branch Office(s) Information:			
<u>Headquarters – Sun Prairie, WI</u>	<u>Branch Office – St. Louis, MO</u>	<u>Branch Office – Birmingham, AL</u>	<u>Branch Office – Carlsbad, CA</u>
100 QBE Way Suite 1225 Sun Prairie, WI 53590 877.294.6434 info@aximgeo.com	727 N 1 st St Suite 410 St. Louis, MO 63102 877.294.6434 info@aximgeo.com	2100 Riverchase Center Suite 105 Birmingham, AL 35244 877.294.6434 info@aximgeo.com	2701 Loker Ave W #230 Carlsbad, CA 92010 877.294.6434 info@aximgeo.com

Litigation Statements

In the past five (5) years, Axim has not been involved in any litigation, mediation, or arbitration, regarding the performance of any services similar to the services. The services do not require a license or certification, and Axim has not had any claims or disciplinary action taken against the firm or any key personnel within the past five years. Axim has not filed bankruptcy over the past five (5) years.

Consultant/Vendor Requirements

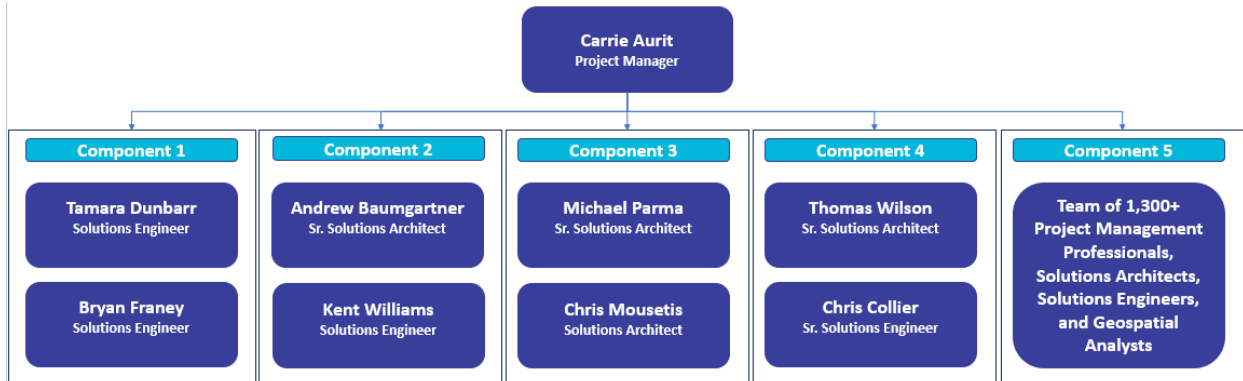
As evidenced throughout this response, Axim has met the following requirements of this RFP:

1. Axim is an Esri Platinum Partner
2. Axim holds an Esri ArcGIS Utility Network Certification
3. Axim is a partner of and maintain staff with certifications in AWS (the cloud service provider being proposed) including Certified Cloud Practitioner.
4. Axim has provided references in this response as well as in the required questionnaire to showcase experience in performing this service for comparable agencies to MSWD.
5. Axim meets the insurance requirements outlined in Section D and E of Exhibit F, the sample

- Professional Services Contract.
6. Axim has a minimum of three (3) most recent years of experience performing similar services as those detailed in the scope of work (Exhibit A) of this RFP.
 7. Axim has completed Consultant Questionnaire (Exhibit D).
 8. Axim has completed the Disclosure Questionnaire (Exhibit E).

CONSULTANT PERSONNEL

Axim has assigned the following key personnel detailed in the organizational chart below to this contract. Resumes, including contact phone numbers, for these key personnel are provided in **Appendix A**.



QUALIFICATIONS, EXPERIENCE, AND REFERENCES

As previously stated, Axim was launched in January of 2022 as a rebranding effort of parent company Continental Mapping Consultants, LLC and its two subsidiaries; GISinc and TSG Solutions, inc. Although a new entity by name, Axim brings over 31 years of corporate experience given that the previous companies were founded in 1991, 1999 and 2001 respectively. Under these legally registered business names, Axim has far more than 3 years of experience, within the past 5 years, providing services of a similar type and scope as described in the Scope of Work. Axim has not filed for bankruptcy under any of these business names over the past 5 years. Axim has completed a response to all **Exhibit D** items and uploaded the file with the response submission.

Axim has been leading the way on enterprise implementations centered on location technology. Along the way, we have been fortunate to see our efforts yield a success rate that vastly exceeds industry averages and as a result, have earned a reputation that has persisted even while the technology has changed dramatically. Our legacy strength was founded on a core development capability that remains central to our services today, but we have since broadened our focus to include diverse services that span every facet of a GIS program lifecycle. Our experience and partnerships that set us apart in industry are described below:

Industry Partnerships

Esri Platinum Partnership

Axim is one of only 17 Esri Platinum Partner firms. Less than 1% of Esri partners worldwide have achieved this highest tier of distinction. We have been an Esri Business Partner for 31 years and a Platinum partner since 2010 when Esri first came out with the designation. In addition, Axim has achieved Esri specialty status for several solutions and Esri product areas:





ArcGIS System Ready. Awarded to partners that adopt the latest Esri technology, migrate offerings in a repeatable practice, and have a well-trained staff to support the latest Esri software releases.



ArcGIS Cloud Services. With the maturity of business systems comes a need for flexible and agile Cloud environments and hybrid environments for business continuity and resiliency.



ArcGIS HUB. A community engagement platform that organizes people, data, and tools through information driven initiatives.



ArcGIS Indoors. An indoor mapping system connecting workspaces with employees and visitors.



ArcGIS Network Management Specialty. GIS based network management for utilities, provides more functionality, added flexibility and advanced access to data. Axim is the first Esri partner to receive the Network Management Specialty designation for water utilities.



Esri State and Local Government Specialty. This specialty is awarded to partners that specialize in, and have a substantial track record of success with, development and configuration of ready-to-use solutions for local and state government clients.

Our Esri Platinum Partnership provides significant benefits for our clients, including enhanced professional services and industry knowledge. Axim participates in both the Esri Partner Advisory Committee (PAC) and Esri Chief Technology Officer (CTO) Council, allowing us unparalleled representation for our clients and an opportunity to influence the trajectory of the various technology stacks. And, through this partnership, we gain access to early insights that allow Axim to position our clients for advances that may not yet be formally released.

Cityworks Platinum Partnership

Axim is a Cityworks Platinum Partner, providing a GIS-centric approach to enterprise asset management implementations. Axim has been working with Cityworks since before the first release of Cityworks Server – which represents the contemporary version of the software and the platform against which Cityworks has directed the bulk of recent development efforts. Axim has been an official Cityworks Implementation Business Partner since February 1, 2013, however, our experience providing Cityworks related implementation services dates back to 2008. And, in July 2017, just four years after establishing our partnership with Cityworks, Axim reached the highest tier available, becoming the **only firm to hold a Platinum status with both Cityworks and Esri.**

AWS Select Tier Partner

Axim is an Amazon AWS Select Partner, we have a dedicated team skilled in architecting, migrating, securing, and deploying ArcGIS Enterprise in the AWS Cloud. Our experience includes successfully completing over a hundred ArcGIS Enterprise deployments across AWS and other cloud platform providers. We have handled a variety of projects, ranging from simple single-tier environments to complex, multi-tiered, multi-zone deployments, integrating native cloud services and solutions alongside ArcGIS Enterprise.



Safe Software Partner

Axim is also a Safe Software business partner. FME (by Safe Software) is the premier integration platform for both Esri and Cityworks. Using our technical expertise in FME products and as a certified FME consultant, we help our clients translate and transform data between systems to streamline workflows and system integrations. Safe Software offers industry-leading tools that read and write data in hundreds of spatial and tabular formats, including GIS, raster, database, 3D, XML, LiDAR, and others. The FME platform enables the automation of data routines, giving you time to focus on your mission.



VertiGIS Partnership

Axim has a long-standing relationship with VertiGIS and a long history of working with their VertiGIS Networks product. Axim is the only implementation partner for VertiGIS and VertiGIS Networks is the only suite of products that offer web and/or mobile editing of UN data today.

Our most recent deployment of VertiGIS was for a company called Conflict Armament Research who focuses on the tracking and tracing of weapons supplies in active armed conflicts and mapping weapon flows. VertiGIS underlies their global weapon reporting and visualization system.

Client Partnerships & Experience

In addition to the industry partnerships introduced above, Axim also seeks to establish partnerships with our clients. Partnering with clients is a philosophy that is distinguished from the traditional contract and project-based perspective, by introducing dynamic and bi-directional engagement. We aspire to establish long-lasting partnerships that bring value and synergy to both client and Axim alike. In doing so, we have seen enhanced operational efficiency, increased communication and interaction, and robust client experience. In the end, the client experience is central among distinguishing characteristics. A truly positive experience is shaped by the combination of collective interactions between project teams and the quality of technical delivery. By creating true partnerships and focusing on the experience, Axim helps support and drive successful enterprise programs, from deployment to adoption.

Cityworks Experience

In the Partnerships section above, we outline our journey to becoming a Platinum Implementation Partner with Cityworks. That journey is founded upon our technical experience and expertise with the full range of the software platform. The Axim Cityworks implementation team offers a unique profile to our clients. Not only is each team member a proficient technologist, but all of them come from local governments where they were Cityworks users and administrators. This background results in a perspective that is empathetic to client and user requirements, understanding of workflows, and supported by deep technical knowledge.

In the decade since we became a Cityworks Partner, Axim has supported nearly 70 clients across the country with Cityworks services. Our services have ranged from discovery workshops and readiness assessments to full scale implementations, expansions, integrations, and core administrative support. Through these engagements, we have configured and delivered nearly every functional element and module available through the Cityworks platform, spanning both AMS and PLL. While new implementations are central to our services, we also frequently support clients seeking to expand the deployment footprint of existing implementations, which includes introducing new departments/groups, expanding functional adoption, integrating with additional enterprise systems, and more.

Integrations are a key element to empowering Cityworks as a truly enterprise system. Axim has developed custom integrations with 40 distinct systems, ranging from internally developed solutions to regional

offerings through to commercial enterprise packages. Similarly, our experience spans enterprise resource planning/management (ERP/ERM), finance and employee management, document management, citizen engagement (311), utility locates (811), document management, payment facilitation, fleet and fuel management, AVL, CCTV, pavement management, aviation and FAA integrations, and more.

A recent example of a successful project is a full Cityworks AMS implementation at the Atlanta Airport (City of Atlanta Department of Aviation) the busiest Airport in the world, where our team of Cityworks experts worked hand in hand with Atlanta Airport staff for a smooth transition from their legacy CMMS to Cityworks with minimal disruptions to daily operations. With extensive training and continued post-implementation support, we are assisting in the adoption of the new technology for mobile users and administrators alike to help them leverage the capabilities Cityworks to run their operations as efficiently as possible and to get access to critical information to maintain their expansive infrastructure.

The Axim approach to Cityworks services is structured, repeatable, and adaptable. We collaborate with our clients to ensure our efforts are aligned with priority requirements to target effective operationalization and adoption.

ArcGIS Experience

In the Partnerships section above, we outline the multiple GIS Specialty Designations we have earned over the past 30 years, this is a good representation of our capabilities but here is a further listing of some of our specific expertise. This is just a sample listing of the extensive services our team can design and deploy.

Recent Awards for Excellence in ArcGIS:

- Utility Network Implementation Award - IMGIS 2023
- Cloud Migration and Managed Services Award - Esri Business Partner Conference 2023

Axim ArcGIS Services Experience:

- Cloud Migration
- On-Premises and Cloud Managed Services
- Enterprise Portal Upgrades and Data Migrations
- Architecture Review and Design
- Geodatabase Design and Configuration
- Custom Application Design
- Integrations with third party business systems
- ArcGIS Experience Builder website design and creation
- ArcGIS Dashboard design and creation
- Geospatial data collection and data conversion
- ArcGIS Implementations – GeoEvent, Velocity, ArcGIS Hub, ArcGIS Monitor, etc.
- ArcGIS Indoors configuration and data collection

Water Utility and Utility Network Experience

As mentioned earlier Axim is focused specifically on the Water Utility industry which allows us a unique perspective to service our customers. Over the past 30 years we have worked with our water utility customers for multiple GIS solutions such as their lead and copper programs, Enterprise GIS upgrades, custom applications, real-time public facing dashboards for water boil notices, Inflow and Infiltration dashboards, Implementing ArcGIS Hub and GeoEvent Servers, Billing System Improvements, Meter reading services and most recently the Utility Network.

The Esri ArcGIS Utility Network (UN) has emerged as the next-generation technology paradigm to support

evolving industry requirements and operational efficiencies. Unlike schema/model transitions of the past, adopting the UN is far more than a data migration facilitated by ETL (extract, transform, load) processing. Fortunately, Axim has been closely engaged with Esri to through the generations of industry foundational models. This pattern continued through the release of the UN, through which we participated in the beta program for the development of the UN framework (Water Domain). Thereafter, Axim was not only the first to implement a water client into the UN, but we also became the Esri Partner with a water utility focus to earn the Network Management Specialty Designation.

Since then, Axim has facilitated the largest water implementations in the country, including Austin Water, Charlotte Water, Houston Water, and Kansas City Water. In fact, we have now supported more than 45 clients and 75 systems (e.g., water, wastewater, stormwater, reclaimed) in the transition and adoption of the UN. Our experience has allowed us to understand the complexities and nuances of implementation and the corresponding impacts the transition can have on client organizations. We apply these lessons to our portfolio of client projects and continually update our approach.

Through this process, we have shaped our service offerings to accommodate the spectrum of client requirements and constraints. Not only have we facilitated the largest implementations in the country, as referenced above, but we also have helped many smaller clients and utilities, such as Hastings, NE, Village of Niles, IL, and Mercer Island, WA, Aqua Water Supply, and Opelika Utilities, among others. While we frequently perform full UN migration services, we also conduct independent UN readiness assessments (e.g., data, organizational, functional/systemic).

Additionally, we have developed an innovative workshare approach to support clients with budgetary constraints or capacity and capability to implement with technical partnership and guidance. In short, the approach is driven by how much direct involvement the organization desires. Within a workshare, Axim serves a “technical coach”, guiding our clients through the steps. We conduct virtual work sessions throughout the project demonstrate the implementation process and serve as a guide, yet client staff complete much of the work in their system. Axim works collaboratively with clients to validate the work and provide feedback before advancing to the next steps in the implementation path. This flexible and collaborative approach allows our client to take on most project activities while having the confidence of access to expert guidance throughout.

Our experience and effort were recognized at the Esri 2023 Infrastructure Management & GIS (IMGIS) Conference, at which Axim received a Utility Network Implementation Partner Award. The award specifically recognized our work with Charlotte Water, SC – the first large water utility to adopt the UN in production, including updating their Cityworks asset management system to consume the UN.

Custom Solution Development

Axim strongly advocates for a configuration first approach to enterprise GIS solution management, but the need for custom development remains when configurable solutions cannot meet the need or when system integrations are required. Fortunately, Axim has a legacy strength in custom development and our team of Geospatial Developers have worked with every available Esri application programming interface (API) and software development kit along with interfaces from our partners and third-party platforms. We have developed solutions targeting desktop, web, and mobile users. Our team is intimate with coding best practices and a range of development languages and patterns, which allows us to accommodate clients.

Full Spectrum Services

Axim is uniquely positioned within the industry as a services provider capable of not only supporting the full spectrum of geospatial services, but beyond, extending into engineering services. We have access to

more than 1,300 professionals focused on delivering geospatial services that span the lifecycle of an GIS program, from collection, acquisition, and extraction (e.g., aerial, lidar, topobathy) to enterprise design, implementation, operationalization, and sustainment. To leverage the breadth and depth of the experience across the company, we have an internal “Big Brain” resource through which anyone in the company can reach out with questions and dynamically receive inputs that span business unit verticals, technology areas, and thematic domains. Further, by supporting geospatial services with core engineering capabilities, Axim becomes a single vendor through which clients can procure an extended range of services, which streamlines process and enhances relationships by establishing continuity.

References:

Axim has provided three references of clients below for whom services have been performed, within the last 5 years, that are comparable in quality and scope to that specified in this RFP.

Aqua Water Supply – Utility Network and Cityworks Implementation

Axim has accomplished a variety of location technology solutions for the Aqua Water Supply Corporation, including an ArcGIS for Water (AG4W) data conversion and web/mobile template implementation. Project tasks involved on-site services, and implementation of Esri’s data management, web, and mobile templates for water utilities. Currently, we are working on an ongoing project to implement the Esri Utility Network at Aqua Water.

Most recently, Axim worked with Aqua Water to implement the ArcGIS Utility Network management framework, migrating from the AG4W solutions. After a full upgrade of the ArcGIS Enterprise to version 10.9.1, the data was deployed to the client database and published through Portal. Axim then guided Aqua through their last data cleanup processes to finalize the migration. The system went into operational production in the summer of 2019.

Following the Utility Network implementation, Axim helped Aqua deploy Cityworks AMS (in Cityworks Online) to support their Operations and Maintenance efforts. With this, Aqua was one of the first organizations to take advantage of Cityworks’ native support for Esri’s Utility Network. With the success of Cityworks AMS, Aqua chose to expand their use of the technology in support of their permitting efforts with Cityworks PLL. Axim is currently wrapping up the implementation of PLL to include the Public Access portal which will facilitate online applications and payments.

CLIENT NAME/ADDRESS:

Aqua Water Supply Corporation
 415 Old Austin Highway,
 Drawer P
 Bastrop, TX 78602

CLIENT CONTACT:

Jason Kennedy, IT/GIS Manager
 512.303.3943
jkennedy@aquawsc.com

KEY FEATURES:

- Utility Network Migration
- Needs Assessment
- ArcGIS Enterprise Implementation
- Data Migration
- Cityworks AMS

DATES OF SERVICE:

2012-Ongoing

Charlotte Water – Utility Network Implementation and Cityworks Preparation

Charlotte Water is the largest public water and wastewater utility in the Carolinas, serving more than a million customers in the City of Charlotte and greater Mecklenburg County. In 2019, Axim was selected to evaluate the current state of Charlotte Water’s GIS program and readiness and help define the pathway for adoption of the Esri Utility Network for the Water and Wastewater systems.

An Axim Solutions Engineer facilitated an onsite Discovery Workshop to review the current system architecture and identify the functional and structural requirements. A detailed Implementation Plan identified the operational drivers for transitioning to the UN, including guidance on the sequence of events and tasks required to adopt the model with minimal technical disruption.

Axim then began the full implementation of Charlotte Water’s system into the UN. Axim completed our database design for the water and wastewater systems, configured specialized SSP Sync migration tools, and deployed to the development environments. After completing their integrations work, and Axim providing an intermediate system upgrade, the Utility successfully transitioned to production use of the UN and decommissioned SSP Sync. With this milestone, Charlotte Water became the first large utility in the country with a production UN.

CLIENT NAME/ADDRESS:

Charlotte Water
5100 Brookshire Blvd
Charlotte, NC 28216

CLIENT CONTACT:

Shannon Martel, GIS Manager
704.432.1373
shannon.martel@charlottenc.gov

KEY FEATURES:

- Utility Network Implementation
- Discovery Workshop
- Implementation Planning

DATES OF SERVICE:

Aug 2019-July 2021

City of Ontario – ArcGIS Cloud Deployment

Axim performed data migration, configuration, and integration services in order to migrate the City’s Park and Maintenance Department data from a legacy system (AppOrder) into the Cityworks Asset Management System. Work involved integration support with the City’s Citizen Engagement mobile application and ongoing configuration support and maintenance services.

Recent services provided by Axim include a parallel dual high-availability ArcGIS enterprise upgrade and content migration project. This involved upgrade of two parallel deployments, (one internally accessible, one publicly facing) of Portal, ArcGIS Server, and ArcGIS Data Store.

In addition, Axim provided support for the SQL Server migration to support a geodatabase upgrade to the most current version. Work on this project included migration of services, maps, and apps from existing to new sites; establishing permissions; bulk cloning of content items; republishing services; and quality assurance of results.

CLIENT NAME/ADDRESS:

City of Ontario
303 East “B” Street
Ontario, CA 91764

CLIENT CONTACT:

Choon Vu Lam, Principal IT Analyst
909.395.2092
clam@ontarioca.gov

KEY FEATURES:

- Discovery Workshop
- ArcGIS Enterprise Upgrade
- Cityworks Support
- Ongoing Support Services

DATES OF SERVICE:

2019-Ongoing

DISCLOSURES

Axim has included a response to the Disclosure Questionnaire utilizing the form in **Exhibit E**. Axim has not identified any potential conflicts of interest with the performance of this work.

PRICING

Axim has included a response to all pricing items utilizing the form in **Exhibit B**.

APPENDIX A – RESUMES

Carrie Aurit, GISP

Project Manager, Phone: 877.294.6434

Carrie is Geospatial Project Manager with a proven background in GIS technology, automation tools development, data collection and visualization in support of Emergency Management, Utility, Land Records, Planning, Environmental, Cultural Resource, Transportation, and Asset Mapping projects. Below is a sample listing of projects that she has supported.

Axim Geospatial, Dec 2021 - Present

Florida Governmental Utility Authority (FGUA), Cloud Implementation and Managed Services

- Provides Cloud implementation services including Cloud configuration, Esri environment implementation for ArcGIS server, data loading, and file migrations

City of Oregon, OH, Cloud Support

- Supports the City's ArcGIS enterprise running in Amazon Web Services (AWS)
- Provides professional services to assist with Cloud hosting as it relates specifically to GIS
- Supports as needed Amazon EC2 Cloud support

Bowman, Cloud Managed Services

- Supports management of Cloud infrastructure
- Provides Cloud deployment and managed services

City of Oceanside, ArcGIS Upgrades, Oceanside, CA (12/21 to Present)

- Project Manager for the ArcGIS Enterprise upgrades to include installation of ArcGIS Server, Portal, Web Adaptor and Data Store
- Project involves content migration, publishing services and user training

City of Coral Gables, GIS Support Services, Coral Gables, FL (12/21 to Present)

- Project Manager providing oversight on the development of a Python application to facilitate data analysis pipeline

Work History

Employer	Position title	Position Dates
Axim Geospatial	Project Manager	12/2021-Present
ECT, Inc.	GIS Manager	01/2020 – 12/2021
SCS Engineers	Regional GIS Manager	08/2017-12/2019
AECOM	GIS Manage/Operations Manager	02/2005 – 08/2017
PBS&J	Assistant Regional Coordinator	05/2001 – 02/2005
Progress Energy	GIS Analyst	09/2000 – 05/2001
L. Robert Kimball & Associates	GIS Specialist	05/1999 – 09/2000

Experience

- 22 years

Technical Expertise

- Esri ArcGIS Desktop
- ArcPro, ArcGIS Online
- Mobile Applications
- Project Management
- Operations Management
- Renewable energy
- Emergency Planning & Management
- Asset Mapping
- Infrastructure
- Transportation
- Utilities
- Stormwater Management
- Water Supply

Education

- BA, Geography, University of Pittsburgh

Certification

- Certified Geographic Information Systems Professional (GISP)
- Certified Floodplain Manager

Tamara Dunbarr

Solutions Engineer, Phone: 877.294.6434

Tamara is a Geospatial Solutions Engineer and provides GIS solutions and database maintenance and management support utilizing Esri ArcGIS software and tools. She specializes in Amazon Web Services (AWS) cloud, ArcGIS Enterprise, and database management, deployment, and configuration, as well as providing managed services and other software and server installs and maintenance for state and local government agencies and commercial clients.

Axim Geospatial, May 2022 – Present

Conflict Armament Research, GIS System Upgrades, London UK

- Performed Upgrades of ArcGIS Server environment from Linux Ubuntu 18.04 to 20.04 on four servers across both the production and development environments.
- Installed and configured VertiGIS server and software for client use.
- Configured Amazon Web Services (AWS) services to load-balance various incoming traffic to allow for external access to ArcGIS Enterprise environments (production and development) and VertiGIS applications.

Holly Energy Partners, ArcGIS Enterprise Environment Upgrade, Dallas Texas

- Identified issues with current Windows Servers in the production environment.
- Created a migration plan to optimize and move ArcGIS Server and ArcGIS Datastore to new servers with less than six hours downtime.
- Optimized Datastore and Amazon Web Services (AWS) relational databases to work with new servers.
- Successfully migrated combined ArcGIS Server/Datastore server to new separate Server and Datastore instances in AWS with JoinSite operation.
- Performed security hardening measures to secure production ArcGIS Enterprise environment with ongoing security audits to maintain high security.
- Created and implemented AWS backup plans and procedure for all instances in the environment to prevent data loss or corruption.
- Audited all resources in AWS and removed unused resources and provided additional efficiency recommendations to provide cost-savings to the client.

Experience

- 7+ years

Technical Expertise

- Esri ArcGIS Enterprise
- ArcGIS Desktop/Pro
- ArcGIS Online
- Survey123
- Collector
- Cityworks
- Crystal Reports
- Python
- SQL Databases
- Field Maps

Education

- MS (in progress), Geography, University of Nebraska
- BS, Geography, Arizona State University

Certification

- AWS Certified Cloud Practitioner
- AWS Partner Accreditation: Technical

Work History

Employer	Position title	Position Dates
Axim Geospatial	Geospatial Analyst	Mar 2023 – Present
Axim Geospatial	Geospatial Analyst	May 2022 – Mar 2023
City of Omaha	GIS Technician II	July 2019 – May 2022
City of Omaha	GIS Intern	Mar 2019 – July 2019
University of Nebraska	Graduate Teaching Assistant	Aug 2018 – June 2019
NASA DEVELOP	Project Lead/Assistant Center Lead	June 2016 – May 2017
Various	Information Technology	1997 – 2014

Bryan Franey

Solutions Engineer, Phone: 877.294.6434

Bryan is a Solutions Engineer with 18 years of GIS experience. He has extensive experience with ArcGIS, software development, and production of geospatial products for commercial, state, local, and government clients.

Axim Geospatial, 2021 - Present

Tampa Bay Water, GIS Support Services

- Designed planned, and implemented an ArcGIS Enterprise upgrade from 10.7 to 10.9.1
- Migrated all the GIS content (geospatial services, Portal for ArcGIS, and web applications) to the new environment
- Perform GIS technical support and customer service for all GIS Help Desk support issues
- Provide client with technical guidance, expertise, and direction

McHenry County, IL, GIS Support Services

- Designed planned, and implemented an ArcGIS Enterprise upgrade from 10.5 to 10.9.1
- Migrated all the GIS content (geospatial services, Portal for ArcGIS, and web applications) to the new environment
- Provide client with technical guidance, expertise, and direction

North Central Texas Emergency Communications District (NCT9-1-1), Geospatial Cloud Services

- Designed, planned, and implemented ArcGIS Monitor 2023
- Provide monthly ArcGIS Enterprise maintenance
- Updated real-time ArcGIS GeoEvent services for Waze traffic data and stream gauge data

Walworth County, WI, GIS Support Services

- Designed planned, and implemented an ArcGIS Enterprise upgrade from 10.7.1 to 10.9.1
- Migrated all the GIS content (geospatial services, Portal for ArcGIS, and web applications) to the new environment

Pape-Dawson Engineers, Inc, Geospatial Cloud Services

- Designed and planned ArcGIS Enterprise upgrade from 10.8 to 10.9.1
- Designed and planned Migrated all the GIS content (geospatial services, Portal for ArcGIS, and web applications) to the new environment

Work History

Employer	Position title	Position Dates
Axim Geospatial	Solutions Engineer	2021-Present
Sanborn Map Company	Geospatial Data Administrator	2016-2021
Parallel Inc.	Data Administrator	2016
Esri	Solutions Engineer	2008-2014
Front Range Community College	Adjunct Professor	2013-2014
Esri	Account Manager	2006-2008

Experience

- 18+ years

Technical Expertise

- Esri ArcGIS Suite
- Production Mapping
- Data Review
- WebApp Builder
- ArcSDE Enterprise Geodatabases

Education

- BS, Geographic Information Science

Certification

- ArcGIS Desktop Associate
- ArcGIS Web Application Developer Associate
- ArcGIS Enterprise Administration Associate

Andrew Baumgartner

Solutions Architect, Phone: 877.294.6434

Andrew is a Solutions Architect with 20 years of GIS experience providing complex geospatial solution delivery, technical management, research and development, and process innovation. He specializes in process automation, GIS system integrations, and quality control. Below is a sample listing of projects that he has supported.

Axim Geospatial, Oct 2021 - Present

Hartsfield Jackson Atlanta International Airport, GIS Support, Atlanta, GA

- Leading the technical oversight and integration of various, airport operations and maintenance data, equipment location information with GIS data, applications dashboards and Cityworks

Metropolitan Airports Commission, QA/QC Viewer Dataset, Minneapolis, MN

- Solutions Architect leading the technical oversight and integration of GIS Data quality control automation; added additional datasets to the QA/QC Viewer and automated processing workflows

Metropolitan Airports Commission, QA/QC Viewer and FME Server

- Objectives included updating and modernizing the automated quality control process for ingesting and staging inspection data, installing FME server, updating manual review application and upload of validated data

Port of New Orleans, Cloud Migration and Managed Services

- Technical vision and oversight, implementation sequencing, and senior-level Esri expertise for the Port's Cloud Migration and Managed Services project; provides technical progress updates and facilitates technical discussions with the customer

Boston Water and Sewer Commission, SQL Migration and Upgrade

- Upgrade of the Esri Enterprise environment and Oracle SQL to Microsoft SQL migration project; provides technical guidance and oversight to client and staff resources along with procedure walk throughs and documentation
- Facilitates technical exchange between client, Axim staff and subcontractors

Med-Project, Data Migration and Staff Augmentation

- Coordination, scheduling, and technical oversight and guidance to staff resources
- Provided client with technical guidance, expertise and direction

Work History

Employer	Position title	Position Dates
Axim Geospatial	Solutions Architect	Oct 2021 - Present
BAE	Lead Sr Developer	Jun 2006 – Sept 2021
Colliers Lanard & Axilbund	GIS Coordinator	Oct 2005 – June 2006
General Dynamics Network Systems	GIS Analyst	Nov 2001 – Sept 2005
Passaic River Coalition	GIS Specialist	Aug 2000 – Oct 2001
United States Bureau of the Census	Geographic Clerk	Feb 2000 – April 2000

Experience

- 20+ years

Technical Expertise

- Esri ArcGIS Suite
- Production Mapping
- Defense Mapping
- Data Review
- Workflow Manager
- JavaScript API
- WebApp Builder
- Arcpy
- Python
- Jupyter Notebooks
- Safe Software FME
- FME Server
- QGIS
- Mapbox GL JS API
- Turf JS
- ESA SNAP Toolbox

Education

- BA, Geography, Rowan University

Certification

- Esri Certified Desktop Professional
- FME Certified Professional

Kent Williams

Solutions Engineer, Phone: 877.294.6434

Kent is a Solutions Engineer with over 18 years of experience in GIS. He holds an M.S. and B.S. in spatial information technology and specializes in implementation of GIS, automation of processes through Python, Extract/Translate/Load (ETL) operations, and system administration. He has delivered projects for private business, local government, and large Federal government contracts. Additionally, he has several years of experience in working with interior space GIS solutions, including floorplan data collection and existing floorplan data migration.

Axim Geospatial, May 2012 – Present

Opelika Utilities, Story Map Production and Script Updating

- Produced an ArcGIS Online story map in the City’s ArcGIS Online Organization for planned, active, and completed water projects
- Updated existing Python scripts to add new functionality

Roanoke County, ArcGIS Online Data Retrieval

- Wrote a Python script for retrieving data from several items in an ArcGIS Online Organization and extracting to a specific location

Walworth County, Geodatabase Migration

- Created several Python scripts to automate procedures such as synchronizing replicas and performing database maintenance
- Automated the process of exporting map series PDF files from ArcGIS Pro projects using a Python script
- Updated existing Python scripts that create ArcSDE feature classes and publishes them as open data items

City of Sheboygan, Enterprise Upgrade

- Assisted in design of Tree workorder management migration from custom application to ArcGIS Collector and ArcGIS Online
- Created scripting, performed testing, and troubleshooting

Work History

Employer	Position title	Dates
Axim Geospatial	Solutions Engineer	2012-Present
PenBay Solutions, LLC	Senior GIS Analyst / Technical Lead	2006 - 2012
Commons of Geographic Data, University of Maine	Project Manager / GIS Technical Expert	2006
Maine Image Analysis Laboratory, University of Maine	Work Study Assistant / Research Assistant	2003 - 2005

Experience

- 18 years

Technical Expertise

- Esri/ArcGIS Desktop and Pro, including all standard extensions.
- Installation, configuration and administration of ArcGIS Enterprise systems (ArcGIS Server, Portal)
- Python Geoprocessing script tool development, including custom toolboxes, Python Add-Ins, Python Geoprocessing services, Jupyter notebooks, and standalone scripts
- ArcGIS API for Python script creation for interacting with ArcGIS Online and Enterprise Portals
- ArcGIS Online feature service, web map and web mapping application creation

Education

- MS Forest Management, University of Maine (2005)
- BS Spatial Information Engineering, University of Maine (2004)

Certifications

- Security+ Certification, CompTIA

C. Michael Parma, GISP

Senior Solutions Architect, Phone: 877.294.6434

Michael Parma provides technical oversight and vision for the project. He is a Certified GIS Professional (GISP) with over ten years of experience in GIS for public utilities. As Senior Solutions Architect, Mr. Parma leads Axim’s ArcGIS Utility Network initiative, and brings extensive experience having managed Utility Network transition and planning projects for Austin Water, Opelika, and Aqua Water Supply Corporation. Further examples of his project experience are shown below.

Axim Geospatial, March 2012 – Present

Aqua Water Supply Corporation (Bastrop, TX)

- GIS HealthCheck for enterprise organization
- Upgrade and manage ArcGIS Enterprise platform
- Implement Esri Utility Network Management framework
- Implement Cityworks Asset Management System and integrations

Charlotte Water (Charlotte, NCI)

- Development of a detailed implementation plan
- Geodatabase design for implementation of Esri’s Utility Network Management System for water and wastewater
- Facilitate technical and business requirements workshops
- SSP Sync implementation for water, wastewater systems

San Antonio Water System (San Antonio, Texas)

- ArcGIS Utility Network Readiness Assessment for water, stormwater, and reclaimed water systems
- Implementation of ArcGIS Enterprise and migration of production environment; EOC Dashboards (Infor IPS workorders); Portal for ArcGIS and Insights for ArcGIS; GeoTab/GoFleet AVL and GeoEvent Server
- Automation of key data to support workflows

City of Houston, Utility Network Implementation (Houston, TX)

- Implementation of Esri Utility Network for Water, Wastewater, and Stormwater
- Sr Solutions Architect responsible for technical vision and data assessment for ArcGIS Utility Network; consulted on industry best practices

San Francisco Public Utilities Commission (San Francisco, CA)

- Led technical and business requirements workshops
- Supported GIS integration for Maximo upgrade
- Review data input and editing processes
- Manage onsite support staff

Experience

- 21 years

Technical Expertise

- *Esri/ArcGIS:* ArcGIS for Desktop, ArcGIS Pro, ArcGIS for Server, ArcGIS Online, ArcGIS for Water (AG4W), ArcGIS for Local Government (AG4LG), ArcGIS Extensions (Utility Network Management, Data Interoperability, Network Analyst, Spatial Analyst, 3D Analyst), ModelBuilder
- *Database:* ArcSDE, SQL Server, Geodatabase Design, Extract Translate and Load (ETL), Replication
- *Internet/Server:* ArcGIS for Server Advanced Enterprise, Portal for ArcGIS, GeoEvent Server, ArcGIS for Server Image Extension, ArcGIS Web API’s (JavaScript/HTML5, WebADF) Cityworks Asset Management, Cityworks PLL, Accela Automation, Windows Server

Education

- M.S. Forestry, Northern Arizona University (2000)
- B.S. Parks & Rec. Mgmt, Northern Arizona University (1997)

Certifications

- Certified GIS Professional
- Esri Certified ArcGIS Desktop Professional
- Esri Certified Enterprise Associate Geodatabase Mgmt

Membership

- American Water Works Assoc.

Employer	Position title	Position Dates
Axim Geospatial	Sr. Solutions Architect	11/2020 - Present
Axim Geospatial (formerly GISinc)	Technical Architect	03/2012 – 11/2020
City of New Braunfels, TX	GIS Coordinator	12/2006 - 03/2012
City of San Antonio, TX	Sr. GIS Programmer / Analyst	08/2001 - 12/2006

Chris Moussetis

Solutions Architect, Phone: 877.294.6434

Chris has 17 years of GIS experience in the utilities and facilities industry spans a variety of different roles, from field data collection technician to project manager. A vast majority of his career has involved working on-site in support of various clients. As a result, he has developed strong interpersonal skills to complement his technical skills.

Experience

- 17 years

Technical Expertise

- GIS Software
- ArcGIS Desktop
- Data Interoperability Extension
- GIS for utility distribution systems
- Data Management

Education

- BA Environmental Science, UVA (2002)

Certifications

- CompTIA Security+

Axim Geospatial, July 2012 – Present

Veolia Water North America (Nationwide)

- Technical team lead responsible for ensuring a successful Utility Network data readiness assessment and development of recommendations
- Responsible for ensuring accurate feature class, attribute, and domain level crosswalk efforts to support a Utility Network implementation
- Facilitated working sessions with client

Eastern Municipal Water District (California)

- Performed analysis of current Data Reviewer checks and developed recommendations for additional Utility Network focused checks
- Coached team to develop and provided top level review of the additional Utility Network focused checks

Austin Water (Austin, Texas)

- Developed strategy and documentation for realigning existing water and wastewater data to GPS locations

City of Galveston, TX, Utility Network Readiness Assessment (Galveston, Texas)

- Performed Utility Network data and system readiness assessment and recommendations
- Developed Utility Network Implementation Road Map

City of St. Charles Utility Network (St. Charles, Illinois)

- Performed Utility Network data and system readiness assessment and recommendations

Aqua Water Supply Corporation, GIS Support Services (Bastrop, Texas)

- Performed editing of new water distribution linear assets, post-Utility Network Implementation

Western Municipal Water District Utility Network Data Assessment (California)

- Provided Utility Network data readiness assessment and recommendations

Work History

Employer	Position title	Position Dates
Axim Geospatial	Solutions Architect	2021 - Current
Axim Geospatial	Project Manager	2012 - 2021
Alutiiq LLC	GIS Program Manager	2008 - 2011
Eyak Technology	GIS Program Manager	2008
EDM International, Inc.	On-site Project Liaison and GIS Analyst	2006 - 2007
GeoDecisions	GIS Analyst	2005 - 2006

Thomas Wilson, GISP

Cityworks Architect, Phone: 877.294.6434

Thomas is a Certified GIS Professional (GISP) with a primary focus on the implementation of Cityworks Server Asset Management Systems (AMS) and Permits, Licensing, and Land (PLL). He serves as a technical lead, responsible for planning, translating client requirements into an implementation plan, hardware/software configuration, training and support. As Axim’s Cityworks Architect, Thomas facilitates the conversion of legacy data into Cityworks, leads the Cityworks implementations, and produces database scripts for the management of Cityworks and non-Cityworks data.

Axim Geospatial, Nov 2014 - Present

City of Westminster, Cityworks AMS Implementation

- Cityworks Architect responsible for implementation of the Cityworks AMS, testing, and end-user training
- Custom integrations of Cityworks AMS with the City’s financial, fleet, pavement management, utility locates, and SCADA systems

City of Springfield, Cityworks AMS Implementation

- Implementation of the Cityworks Local Government Templates (LGTs)
- Created custom inspections to align with the City’s work processes
- Developed SQL scripts for data import

City of Billings, Cityworks AMS Implementation

- Implementation of the Cityworks LGTs
- Developed SQL scripts for legacy data conversion from in-house work management system
- Migrated inspection data from GPS collection devices into Cityworks, created inspection history using SQL scripts

Atlanta International Airport, Cityworks Implementation

- Cityworks implementation to support and streamline business operations to include logistics, personnel and asset management.

Work History

Employer	Position title	Position Dates
Axim Geospatial (formerly GISinc)	Solutions Engineer	Nov 2014 - Current
Comal County, TX	GIS Coordinator	2008 - 2014
Brazos County Appraisal District	GIS Director	2004 - 2008
Guadalupe County, TX	GIS Analyst	2004

Experience

- 18 years

Technical Expertise

- Server: Esri ArcGIS Server 9.x-10.x including ArcSDE, Oracle 10g, Microsoft SQL Server 2000-2014, SQL Server Integration Services, Microsoft Business Intelligence Development Studio
- Web: Esri ArcGIS Server, ArcGIS Online, Esri ArcIMS, Manifold IMS, Microsoft Visual Studio, Adobe CSx, Macromedia MX
- Mobile: Trimble Pathfinder, TerraSync
- Programming: VBScript, Python, ArcObjects, HTML, JavaScript, Visual Basic, ASP, PHP, .NET, CSS, Flex
- Desktop: Esri ArcGIS Desktop (ArcInfo Workstation, Spatial Analyst, Network Analyst, 3D Analyst, Data Interoperability, Spatial ETL, Publisher, Model Builder), Intergraph GeoMedia Professional, Manifold GIS, Cityworks AMS, Cartograph AMS/ VERSAview, Datawise Data Acquisition Software, Crystal Reports, AutoCAD 14, Windows and Linux Operating Systems

Education

- MS, Geospatial Information Technologies (Delta State University) (2014)
- BS, GIS / Cartography; Minor in Mathematics (Texas State University – San Marcos) (2004)

Certifications

- Certified Geographic Information Systems Professional (GISP)
- Cityworks Server AMS Administrator Training
- Cityworks Server PLL Administrator Training

Chris Collier, GISP

Sr. Solutions Engineer, Phone: 877.294.6434

Chris is a Sr. Solutions Engineer with over 34 years of experience in GIS and enterprise systems development, implementation, and support. He has extensive experience managing professional personnel and information technology teams utilizing the latest Esri and Cityworks technologies. Below is a sample listing of projects he has supported.

Axim Geospatial, Sept 2018 – Present

Roanoke County, VA, Cityworks PLL Implementation

- Lead Solutions Engineer for Cityworks PLL Implementation for the Building and Planning and Zoning Divisions
- Configured system including workflows, permits, inspections, fees, and notifications, and led the development of reports

City of Carmel, IN, Cityworks PLL Implementation & Integrations

- Lead Solutions Engineer for Cityworks PLL Implementation that covered the Planning and Zoning, Building and Code Services, and Code Enforcement Divisions
- Developed workflows and supported a complete system configuration to include Public Access, Mobile, and reporting, and data migration from the legacy system
- Integrations with ProjectDox, and Laserfiche
- Provided in-person PLL and Cityworks administration training and post implementation support

Aqua Water Supply Corporation, Bastrop, TX, AMS Implementation

- Lead Solutions Engineer for Cityworks AMS implementation, performed discovery and configuration of all distribution related assets to include Facilities, Fleet and Production assets and work activities

City of New Braunfels, TX, Cityworks PLL Implementation

- Configured and implemented Cityworks PLL and assisted the City in migrating from Accela to Cityworks
- Implementation included full PLL configuration and Cityworks Mobile for inspectors and Public Access for contractor and citizen engagement
- Provided on-site post implementation support

Work History

Employer	Position title	Position Dates
Solutions Architect	Axim Geospatial	2018-Present
City of Round Rock, TX	IT Manager – Geospatial Applications	2002-2018
Dewberry and Davis	Sr. Project Manager	2002
GIS/Trans, Ltd	Texas Regional Manager and Unit Supervisor	1999-2002
TxDOT	Engineering Technology Services Branch Manager	1995-1999
NGA	Systems Manager	1988-1995

Experience

- 34 years

Technical Expertise

- Esri ArcGIS – Desktop, SDE, and ArcGIS Online
- SQL Server
- Microsoft Access, Project, and Visio
- TRAKiT-Land Development Tracking and Permitting software
- Cityworks AMS and PLL
- ITPipes
- Transact-SQL
- Crystal Reports

Education

- BS, Applied Geography, Texas State University

Certifications

- Certified Geographic Information System Professional (GISP)

Exhibit B: Schedule of Charges

Project Component 1: ArcGIS Enterprise Cloud Deployment

For Project Component 1, Axim is proposing a fixed price engagement according to the price summary table that follows with monthly invoices based on percent complete.

Item Description	Frequency of Charge	Amount
Required licensing*	Annual	\$ 1,150
Initial setup of ArcGIS Enterprise	One-Time	\$ 62,200
Hosting Fees**	Annual	\$ 43,100
Managed Services***	Annual	\$ 47,250
TOTAL		\$ 153,700

* The required licensing covers only the SSL certificate and virus protection (Cylance), all other software licensing will be procured/provided by MSWD and deployed to the cloud environment as appropriate.

** Hosting fees (AWS) and managed services (Axim) are proposed as fixed price based on an annual period to ensure optimal pricing and economy of scale. A deviation from that time frame will require re-estimation and revision to the proposed price.

*** Managed services (Axim) are proposed as fixed price based on an annual period to ensure optimal pricing and economy of scale. A deviation from that time frame will require re-estimation and revision to the proposed price.

Project Component 2: Import Existing Data and Ensure Readiness

For Project Component 2, Axim is proposing a fixed price engagement for **\$ 56,300** with monthly invoices based on percent complete.

Project Component 3: Migrate Data into ESRI Utility Network

For Project Component 3, Axim is proposing a fixed price engagement for **\$ 225,800** with monthly invoices based on percent complete.

Project Component 4: Cityworks Implementation

For Project Component 4, Axim is proposing a fixed price engagement for with monthly invoices based on percent complete.

Item Description	Frequency of Charge	Amount
Cityworks Implementation Services (Axim)	One-Time	\$ 406,150.00
AMS ELA Cityworks Online Premium* – Year 1 (Trimble)	Annual	\$ 46,887.50**
TOTAL		\$ 453,037.50

* The proposed AMS ELA software is for Cityworks Online for up to 40 named logins to include Respond, Mobile Native Apps (iOS/Android), and Office (Admin and Reporting only) with the following add-ons: Storeroom, Equipment Checkout, Contracts, Cityworks for Excel, Cityworks Analytics AMS, eURL, Operational Insights, Workload, OpX (Project, Contracts, Budgets), a Sandbox, and Cityworks AMS APIs.

** Trimble is offering a discounted software price for the AMS ELA that incrementally increases to \$49,281.25 in Year 2 and then \$51,875.00 in year 3.

Project Component 5: Staff Augmentation

Axim offers a variety of procurement models for staff augmentation and ad hoc support to our clients, with options for volume-based discounting.

Prepaid Support Block Option:

Axim offers a contract vehicle we refer to as a support block which provides a *prepaid* option that offers clients a blended rate based on volume (number of hours) procured over a designated period (expiration in 12-months). An invoice will be issued for the approved amount immediately following an executed contract.

The following table presents hierarchical, blended hourly rates under the prepaid support block option based on the total volume of hours purchased:

Hours	Hourly Rate
115 to 161	\$217.00
165.5 to 283.5	\$211.50
292+	\$205.50

Time & Materials Support Block Option:

Alternatively, given that the Axim team is comprised of highly varied technical skills (labor categories) and seniorities (e.g., staff, senior), we also offer support blocks with variable hourly rates (presented in the table below. Through these “pay as you go” contracts, clients have access to Axim technical resources as necessary and for however much time is desired according to an approved budget.

MSWD will be invoiced monthly for all labor based on the hours worked and associated expenses incurred (if any) in the previous month. Supporting details will be provided in the monthly status reports to detail hours, rates, and deliverable(s) performed during the preceding month.

Labor Category	Staff	Senior	Consultant
Geospatial Developer	\$223.46	\$268.15	
Geospatial Project Manager	\$241.48	\$298.53	
Project Coordinator	\$124.63	\$145.52	
Solutions Architect	\$241.48	\$298.53	
Solutions Engineer	\$223.46	\$268.15	
Application Architect	\$268.15	\$298.53	
Enterprise Architect			\$ 270.38
Geospatial Analyst	\$150.19	\$179.53	
Management Consultant			\$ 281.19
Subject Matter Expert		\$305.91	\$ 319.04

Assumptions

- General
 - The scope of work requested encompasses interdependent project components that span multiple enterprise strategies, technologies, and platforms. The approach proposed by Axim addresses all scope areas with corresponding technical approach and pricing. Given the interdependencies between the project components, the overarching proposal cannot be considered à la carte. If MSWD opts to award or implement a subset of the components, the proposed pricing and respective scopes may need to be revisited and resubmitted.
 - All work will be performed remotely unless explicitly stated otherwise.
 - If/as necessary, access to the MSWD systems will be facilitated through VPN or comparable solution with similar security and performance. This project assumes that MSWD will provide the Axim team access in a timely and efficient manner.
 - All software licensing (Esri, RDBMS, SQL, Cityworks, other third-party, etc.) and associated/required APIs must be provided by MSWD.
 - MSWD will provide timely responses and input as requested or required throughout the engagement to maintain project momentum and schedule.
 - MSWD has and will provide facilities capable of supporting the workshops and training events (onsite or remote), including room, projector, workstations, internet access, etc.
 - Any changes to the scope identified during the respective design phase, which are subject to a change management processes, to include impact to schedule, budget, and project risk.
- Project Component 1: ArcGIS Enterprise Cloud Deployment
 - Changes or additions to the Cloud environment configuration or footprint (e.g., servers, instances, workstations) will trigger an evaluation and may require a change order to support.
 - Pricing requires a 12-month contractual commitment.
 - As proposed, Axim will procure the Cloud environment/infrastructure from the Cloud provider (AWS), which will include a 10% fee that can be eliminated if MSWD procures the infrastructure directly.
 - Cloud fees are based on estimates and are subject to review/change upon renewal.
 - Axim will obtain and apply SSL certification (GoDaddy) and Anti-virus (Cylance) on behalf of MSWD for the AWS Cloud environment. The associated fees are included in the initial setup and annual renewal.
 - Axim Cloud services are designed to facilitate the health and availability of the host environment only and does not include ad hoc or request driven support for broader GIS tasking, administration, or technical support, which may be requested under the supplemental support block projects.
 - The performance or responsiveness of the proposed Cloud infrastructure may be influenced by the bandwidth/capacity of the network through which the infrastructure is accessed, which is beyond the control of Axim and considered to be out of scope.
 - Axim is not responsible for Cloud infrastructure availability, which falls to the respective infrastructure provider.
 - Software version upgrades are not included in the standard managed services, but supplemental services are available upon request.
 - The software version will be upgraded to ArcGIS Enterprise 11.1. Any change to the target upgrade version throughout this project will require mutual agreement and may trigger a change order.
 - Within the scope of Project Component 1, Axim is not proposing to migrate content, including data, services, or solutions into the newly established Cloud environment. Content migration will occur in subsequent project components as indicated.
- Project Component 2: Importing Existing Data and Ensure Readiness
 - Axim is not responsible for any data creation, generation, cleansing, or transformation not otherwise specified.
 - The proposed services do not include scripted or automated synchronization or reconciliation of GIS data between multiple data sources not otherwise specified.

- Editing and maintenance of Cloud hosted geospatial data will be facilitated via ArcGIS Map/Pro through feature services and is the responsibility of MSWD.
- MSWD will coordinate a migration window as part of the final production transition, during which data editing will be disrupted. The duration of this period will be minimized to the extent supported by the source structure.
- Project Component 3: Migrate Data into Esri Utility Network
 - MSWD has or will acquire adequate licensing for ArcGIS Enterprise, ArcGIS Utility Network, Microsoft SQL Server, and FME/ArcGIS Data Interoperability software.
 - Axim will implement the official Esri Network Management Release of the ArcGIS Utility Network available at the time of implementation, presently ArcGIS Enterprise 11.1 and ArcGIS Pro 3.1.
 - Software versions related to the implementation of the UN (e.g., Esri, SQL Server) will remain static from the point of project kickoff through final acceptance unless mutually agreed upon.
 - MSWD stakeholders have suitable familiarity with business and functional requirements to provide input that can accurately shape the design of the geodatabase.
 - MSWD GIS technical architecture will meet or exceed the minimum technical specifications required for ArcGIS Enterprise and ArcGIS Utility Network before implementation.
 - MSWD will be responsible for any data aggregation, cleanup, or reconciliation before providing input or reference data to Axim. Additional support may be requested through Staff Augmentation.
 - While Axim will make every effort to review the data during our initial pilot testing processes, MSWD staff will confirm that all source features were migrated into the proper UN asset type and that the attribution has completely migrated as expected.
 - At the final transition point, MSWD will facilitate a data freeze to exclude editing for a mutually agreed-upon time window during which final migration will occur.
 - MSWD will be responsible for communicating business system dependencies based on local knowledge. Dependencies not shared or known by MSWD will not be addressed as part of this scope.
 - Design and development related to specific business system integrations are not within the proposed project scope. Instead, general requirements to support those integrations will be noted while avoiding the specific technical implementation needs.
 - MSWD will address business system integrations after the production release of the UN.
 - FME/ArcGIS Data Interoperability software will be used for the data migration. However, if MSWD decides to use another approach during the project, adjustments to the project scope may be required. Corresponding budget/schedule impacts will be communicated for review and approval.
 - Axim is not responsible for resolving issues determined to result from Esri or other third-party solutions, product or platform-related defects, or similar.
 - Training and knowledge transfer are meant to provide contextual knowledge on the Client environment rather than replace formal Esri training on ArcGIS Pro and the ArcGIS Utility Network.
- Project Component 4: Cityworks Implementation
 - MSWD stakeholders participating in the requirements workshops will have the knowledge and authority to articulate workflows and functional objectives to be accommodated by Cityworks and the proposed set of integrations.
 - Functional requirements that emerge or evolve throughout the period of implementation (items not explicitly referenced in the proposal and requirements documentation) may require a change order or may be noted for development/configuration in a subsequent phase or project.
 - MSWD will be responsible for publishing GIS services, including any desired cartographic presentation, with input from Axim regarding the content necessary to support Cityworks.
 - The software versions being deployed, as mutually agreed upon, as well as any source or dependent system versions will not be altered or upgraded during the implementation without written notice to and agreement from

Axim.

- Axim will report any issues identified with the Cityworks software directly to Trimble for confirmation, consideration, resolution, but Axim is not responsible for any tasks that require alteration of the software base code.
- Defects, bugs, or issues identified within the project and attributed to a third-party software are beyond the proposed scope given that Axim is unable to alter the corresponding source code. The defect will simply be reported to the vendor.
- Axim is responsible for resolving configuration issues that reflect a deviation from the initial requirements documentation, however, changes or alterations from those initial requirements will be considered out of scope and may require a change order.
- Testing and acceptance will be performed in contrast with requirements documentation and prepared and approved as part of the initial workshops.

Integrations

- MSWD will provide the Axim Team any required access to lower tier instances for each system we are interfacing with.
- MSWD will be responsible for configuring Cues GraniteNet, DigAlert, etc., or coordinating with the vendor, to support the APIs and other access required for integration development, testing and deployment, including procurement and validation of licensing for API access to these systems.
- Integrations will be developed using published APIs. Where APIs are insufficient or not available, an alternate approach to integration may be required which could require a change to project schedule, budget or risk.
- The proposed approach and proposal do not include any customizations, if required, of the third-party platform (e.g., DigAlert), and assumes that all functional requirements can be achieved through their available APIs.
- All requested integration functionality must be supported by Cityworks and third-party software APIs.
- **Project Component 5: Staff Augmentation**
 - Rates and contract vehicle will be established in collaboration with MSWD based on preferred contract vehicle and volume of hours procured.

Exhibit D: Consultant Questionnaire

1. How many years of experience does your organization have in the setup, administration, and maintenance of virtual ArcGIS Enterprise server environments?
 - a. Axim has 10+ years of experience and has been involved in the setup, administration and maintenance of virtual ArcGIS Enterprise server environments since the creation of ArcGIS Enterprise in 2013/2014.
2. How many years of experience does your organization have in the implementation, integration, and management of Cityworks?
 - a. Official Cityworks Implementation Business Partner since February 1, 2013, however, our experience providing Cityworks related implementation services dates back to 2008
3. Will your organization be performing all projects listed in the scope of work of this RFP? If not, please list the other organizations involved, what they will be responsible for completing, what certifications they hold that show they are qualified to perform the work and who will be responsible for managing them in your organization.
 - a. Yes – Axim will complete all of the work.
4. If MSWD desired to assume full management of the environment and cease business with your organization, describe the turnover process. This includes what is required for MSWD to have full ownership of the environment (i.e., the cloud tenant) and the hosting costs.
 - a. Axim plans to establish the cloud tenant in MSWD's name and prefers to have the hosting costs be billed directly to MSWD. In this case MSWD is the owner and Axim is the administrator. At any point MSWD can cease business with our organization and MSWD will have full ownership.
5. Will anyone within your organization, or organizations you will utilize, have access to our data that are not located within the USA?
 - a. No – only people within the USA will have access to the data
6. Describe how unauthorized access to our data will be prevented and monitored.
 - a. For data transfers Axim uses a combination of USGCB guidance and CIS Benchmarks for development of all base operating systems, configuration scripts, and configuration files deployed within the system. These baselines help to ensure that only essential functions, ports, protocols, and services are enabled for each system component role. Data that moves outside of organizational boundaries is protected via encryption using secure protocols.
 - b. Security protocols are put in place at the Enterprise level with authentication measures at the database level and at the client level. Security measures are put in place at the Cloud level with identity management security and service level security. This forms a fundamental layer of security ensuring that only authorized personnel can access information which mitigates the risks of unauthorized access and potential data breaches.
7. Have you performed background screening on all administrators within your organization that will have access to our data?
 - a. Yes, all employees go through a background screening that includes the following:
 - i. County; Multi-State; and for last 7 years
 - ii. SSN Trace
 - iii. DOJ Sex Offender (2 states don't permit this screen)
 - iv. ED Verification; Employment Verification; Fed last 7 years; and OFAC is done for Project Screenings when client contract requires such as Federal/DOD
 - v. Drug Screening--9 or 10 panel is done for pre-employment (9 in NY based on state law)

vi. MVR is for any new hire based on the state DL is issued.

*Any employment action based on the background or drug screening is done in accordance with FCRA Adverse Action procedures.

8. Please provide a network diagram of your proposed network design for the ArcGIS Enterprise, Utility Network, and Cityworks implementation. *Network diagram can be included as a separate document that is referenced here.*
 - a. See attached document
9. Please provide the recommended CPU, RAM, and storage for each virtual machine in the environment. *Information can be included as a separate document that is referenced here.*
 - a. Operating system (Windows), License (Included), Bundle type (PowerPro (8 vCPU, 32GB RAM)), Root volume (80 GB), User volume (100 GB)
10. Will you be setting up the ArcGIS Enterprise cloud environment manually, or will you use an automated deployment template? If using a template, where did you acquire the template?
 - a. We will be setting up the cloud environment manually
11. Please describe your recommended VDI (Virtual Desktop Infrastructure) solution for our ArcGIS Pro user(s).
 - a. Operating System
 - i. 64-bit Windows 10-11, Pro or Enterprise
 - b. Hardware
 - i. CPU: 2x Hyperthreaded Hexa Quad Core
 - ii. RAM: 16GB
 - iii. Storage: SSD 10GB free space
 - iv. Video: DirectX 11 feature level 11.0; Shader Model 5.0; OpenGL 4.5; 2 GB RAM; and the EXT_texture_filter_anisotropic, EXT_texture_compression_s3tc, EXT_swap_control, and ARB_shader_draw_parameters extensions.*
 - c. Microsoft .NET Framework 4.6.1 or later must be installed before installing ArcGIS Pro 2.0.
 - d. Microsoft Internet Explorer 11 must be installed before installing ArcGIS Pro.
 - e. vGPU
12. Upon signing the contract and approval to proceed, please provide a rough initial estimate of the time required to complete each of the projects below, as described in Exhibit A – Scope of Work
 - a. Project Component 1: ArcGIS Enterprise Cloud Deployment
 - i. 3 month project
 - b. Project Component 2: Import Existing Data and Ensure Readiness
 - i. 6 month project
 - c. Project Component 3: Migrate Data into ESRI Utility Network
 - i. 6 month project
 - d. Project Component 4: Cityworks Implementation
 - i. 9 month project
13. Please list at least 3 clients comparable to MSWD for whom you have done similar projects and can be used as references.
 - a. Aqua Water Supply Corporation
 - i. Jason Kennedy, 512.303.3943, jkennedy@awuawsc.com
 - b. Charlotte Water
 - i. Shannon Martel, 704.432.1373, shannon.martel@charlottenc.gov
 - c. City of Ontario
 - i. Choon Vu Lam, 909.395.2092, clam@ontarioca.gov

14. Please provide a list of relevant active certifications/licenses held by your organization.

- a. Esri Specialty Designations
 - i. ArcGIS Cloud Services
 - ii. ArcGIS System Ready
 - iii. Indoor GIS
 - iv. ArcGIS Hub
 - v. Utility Network Management
 - vi. State and Local Government
- b. AWS Select Tier Services Partner
- c. Safe Software Business Partner
 - i. Certified FME Consultant

End Users
Public
Field Workers
ArcGIS Pro 3.x
Portal for ArcGIS
REST

Production
<https://gis.example.com/portal>
<https://gis.example.com/server>
<https://gis.example.com/unserver>

Web
Mobile
Desktop

ARC GIS ONLINE
Hosted Data, Maps, & Applications
<https://example.maps.arcgis.com/>

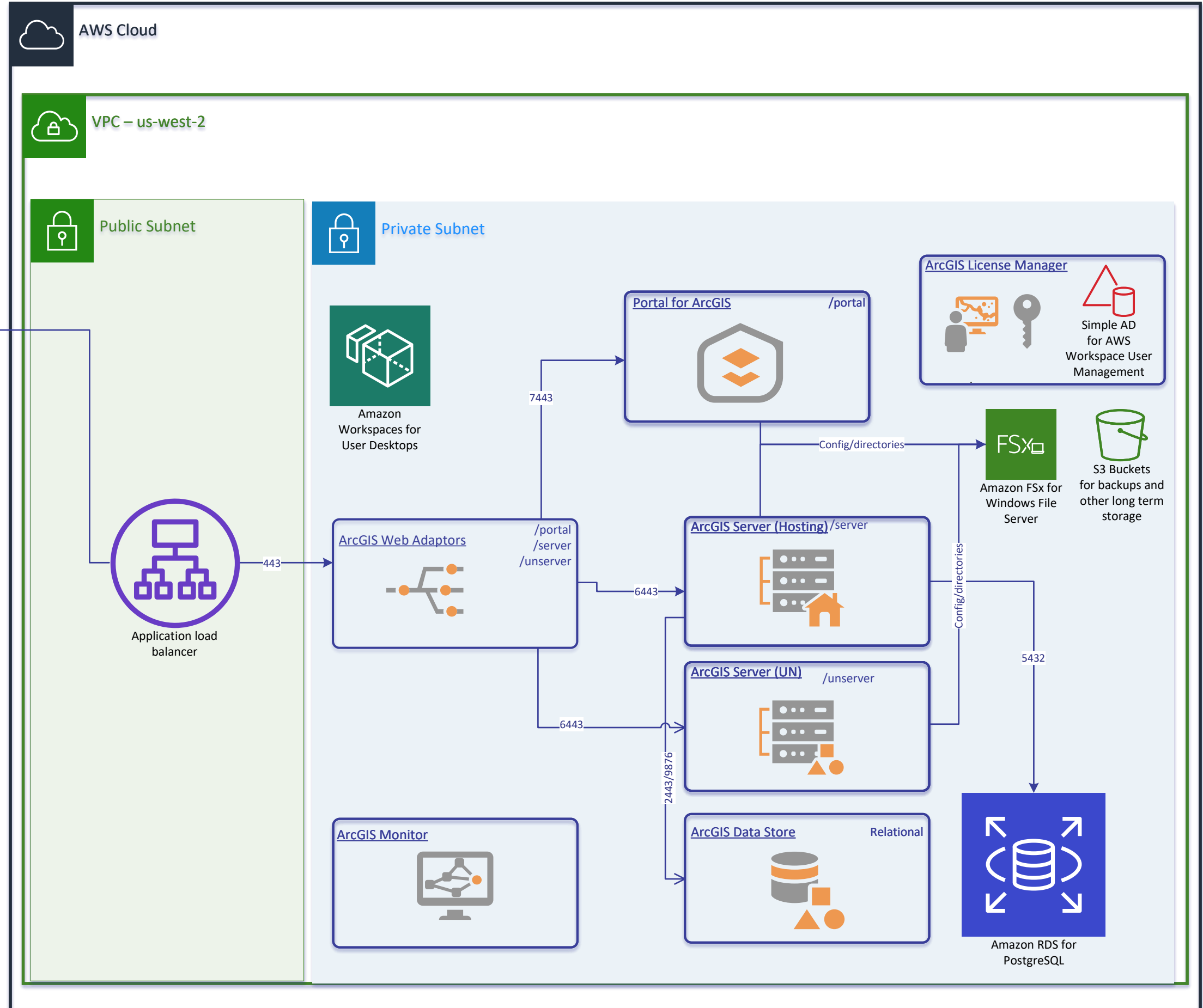


Exhibit E: Disclosure Questionnaire & Qualification Statement

Consultant Name: Axim Geospatial, LLC

1. ORGANIZATION

1.1. How many years has your organization been in business as a Consultant?

Axim has been in business as a consultant for over 31 years.

1.2. How many years has your organization been in business under its present name?

Axim has been in business under its present name for 2 years.

1.2.1. Under what other names has your organization operated?

Axim has operated under the following names:

- **Continental Mapping Consultants, LLC**
- **Continental Mapping Consultants, Inc.**
- **Geographic Information Systems, Inc.**
- **TSG Solutions, Inc.**

1.3. If your organization is a corporation, answer the following:

1.3.1. Date of incorporation: **01/06/2022**

1.3.2. State of incorporation: **Delaware**

1.3.3. Corporate ID number: **84-4764173**

1.3.4. President's name: **Dan Levine**

1.3.5. Agent for Service of Process: **CT Corporation**

1.4. If your organization is a partnership, answer the following:

1.4.1. Date of organization: **N/A**

1.4.2. Type of partnership (if applicable): **N/A**

1.4.3. Name(s) of general partner(s): **N/A**

1.5. If your organization is individually owned, answer the following:

1.5.1. Date of organization: **N/A**

1.5.2. Name of owner: **N/A**

1.6. If the form of your organization is other than those listed above, describe it and name the principals: **N/A**

2. LICENSING

2.1. List jurisdictions and trade categories in which your organization is legally qualified to do business and indicate registration or license numbers, if applicable.

Special licensing is not required to perform this work. Axim is registered with the CA secretary of state to legally conduct business. Axim operates under the following NAICS codes:

541370	Surveying and Mapping (Except Geophysical) Services (Primary, per SAM.gov)
541330	Engineering Services
541340	Drafting Services
541360	Geophysical Surveying and Mapping Services
541511	Custom Computer Programming Services
541512	Computer Systems Design Services
541519	Other Computer Related Services
541715	Research & Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)
541990	All Other Professional, Scientific, and Technical Services

2.2. List any other certifications held by your organization, and the name under which they are held.

Special certification is not required to perform this work. Axim is registered with the CA secretary of state to legally conduct business. Axim staff hold the following certifications:

Professional Certs	Professional Licensed Surveyors	1
	GISPs	23
	PMPs	8
	Certified Scrum Master (CSM)	2
	Certified Photogrammetrists (CPs)	2
	AWS Partner Accreditation: Technical	2
	AWS Certified Cloud Practitioners	3
	AWS Sales Accreditation: Business	1
	MS Azure Certification	2
	UAS FAA Part 107 Certification	2
Esri Certs	Esri ArcGIS Desktop Associate (EADA)	2
	Esri ArcGIS Desktop Professional (EADP)	4
	Esri Enterprise Administration Associate (EEAA)	2
	Esri Enterprise Administration Professional (EAEP)	1
	Esri Web Application Developer Associate (EWDA)	3
	Esri Enterprise Geodatabase Management Professional (EGMP)	2
	Esri System Design Associate (ESDA)	1
Other	GeoINT Professional	1
	Certified FME Professional	1
	Security +	34

3. EXPERIENCE

3.1. List the categories of work that your organization normally performs with its own forces.

Axim normally performs, with its own forces, work under the following categories:

- Geographic Information Services

- **Surveying and Mapping Services**
- **Engineering Services**
- **Drafting Services**
- **Research & Development in the Physical, Engineering, and Life Sciences**
- **Custom Computer Programming Services**
- **Computer Systems Design Services**
- **Other Computer Related Services**
- **Other Professional, Scientific, and Technical Services**

3.2. Has your organization, under its current name or any previous names, ever failed to complete any work/contract awarded to it? (If Yes, please explain)

Axim has never failed to complete any work/contract awarded to it.

4. CLAIMS AND LAWSUITS

4.1. Are there any judgments, lawsuits, administrative proceedings, claims, arbitration proceedings, suits pending or outstanding, or other exposures against your organization or any its officers? (If Yes, please describe)

Axim does not have any judgements, lawsuits, administrative proceedings, claims, arbitration proceedings, suits pending or outstanding, or other exposures against the organization or any of its officers.

4.2. Has your organization filed any lawsuits or requested arbitration with regard to any of its contracts within the last five (5) years? (If Yes, please explain)

Axim has not filed any lawsuits or requested arbitration with regard to any of its contracts within the last five (5) years.

4.3. Has the Consultant, any officer of the Consultant, or any employee of the Consultant who has proprietary interest in the Consultant, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or safety regulation? (If Yes, please explain).

Axim, any officer of Axim, or any employee of Axim who has proprietary interest in Axim, has never been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of violation of law or safety regulation.

5. CONFLICTS OF INTEREST

5.1. Please disclose any and all past or current business and personal relationships with any current District elected official, appointed official, or family member of any current District elected official, or District employee. Any past or current business relationship may not disqualify the firm from consideration.

Axim does not have any past or current business or personal relationships with any current District elected official, appointed official, or family member of any District elected official, or District employee.

5.2. Provide a statement disclosing any past, ongoing, or potential conflicts of interest that your firm, proposed staff, or any subcontractors may have as a result of performing this work.

Axim, Axim proposed staff, and Axim proposed subcontractors do not have any past, ongoing, or potential conflicts of interest as a result of performing this work.

- 5.3. If there is a real or perceived conflict of interest that exists with the submission of a proposal or would exist if the Proposer entered into an Agreement with the District in this proposal, full details should be provided in this section. Detail a plan to manage the conflict of interest.

N/A

- 5.4. If there is no conflict of interest, then provide such statement in this section.

There is no conflict of interest.



**COMPLETE DEPLOYMENT OF ARCGIS
ENTERPRISE, UTILITY NETWORK, CITYWORKS -
COST PROPOSAL**

Mission Springs Water District

Due: 5:00 PM, Thursday, January 11, 2024

Contact: Lou Garcia | Principal

1001 Boulders Parkway, Suite 300, Richmond, VA 23225

443.904.3897 | Fax: 804.560.1016 | louis.garcia@timmons.com

www.timmonsgis.com

PRICING

Timmons Group will bill for the services and components required to deliver the total outlined solution of the 5 components of this project on a monthly percent complete basis or a time and materials basis as noted in the charts below. Invoicing is based on Fixed Fee project cost as broken out in the tables below. This is subject to approval as to the percent complete of project deliverables by the MSWD project manager. Please note that the Cityworks AMS license fees are provided here for informational purposes only and are not to be considered as part of the Timmons Group Fixed Fee bid. MSWD will be billed separately by Trimble for the Cityworks AMS software license costs, this includes the Cityworks Online (CWOL) environment for Cityworks AMS software.

PROJECT COMPONENT 1: ARCGIS ENTERPRISE CLOUD DEVELOPMENT

Item Description	Suggested Invoicing	Amount
Cloud & ArcGIS Enterprise services required	Monthly; on a % complete basis	\$ 32,920
*Hosting Fees during implementation (12 months)		Estimated \$ 7,226
Project Component 1 total not-to-exceed cost		\$ 40,146

*These fees are estimated. Invoices to MSWD will reflect actual AWS costs to TG or AWS costs can be directly billed to MSWD.

Note: per other projects, the projected AWS costs for ongoing hosting after Go-Live are estimated to be \$1,500 per month.

PROJECT COMPONENT 2: IMPORT EXISTING DATA AND ENSURE READINESS

Item Description	Suggested Invoicing	Amount
Discovery	Monthly; on a % complete basis	\$ 3,600
Landbase Migration		\$ 5,000
Data Cleanup	Monthly, T&M	\$ 110/hour
Project Component 2 total not-to-exceed cost		\$ 8,600

PROJECT COMPONENT 3: MIGRATE DATA INTO ESRI UTILITY NETWORK

Item Description	Suggested Invoicing	Amount
Esri Utility Network Implementation	Monthly; on a % complete basis	\$ 135,980
Task 1: Phase Initiation		\$1,380
Task 2: Data Readiness Assessment		\$0
Task 3: Data Model Design/Editing Tools		\$15,000
Task 4: Data Migration		\$74,750
Task 5: Adjustments and Integrations		\$0
Task 6: Testing, Training and Go-Live		\$44,850
Project Component 3 total not-to-exceed cost		\$ 135,980

PROJECT COMPONENT 4: CITYWORKS IMPLEMENTATION

Item Description	Suggested Invoicing	Amount
<i>Cityworks AMS licensing – see Cityworks quote # Q-37747-1 for full details. License consists of: AMS ELA Cityworks Online Premium</i>	<i>Annually</i>	<i>\$ 46,687.50 – Year #1 \$ 49,281.25 – Year #2 \$ 51,875.00 – Year #3</i>
Cityworks AMS Implementation	Monthly; on a % complete basis	\$ 266,735
Legacy work order data migrated into Cityworks (2 sources: Nobel Geoviewer & ManagerPlus)	Monthly; on a % complete basis	\$ 57,020
DigAlert integration	Monthly; on a % complete basis	\$ 18,340
Project Component 4 total not-to-exceed cost		\$ 342,095
Optional 24 hours of Post Go-Live support		\$ 5,080
Estimated travel to be billed at cost		\$15, 475

PROJECT COMPONENT 5: STAFF AUGMENTATION

Item/Quantity	Suggested Invoicing	Annual Total
Cloud Managed Services	\$3000 / Month	\$ 36,000
Project Manager (PMP certified)	\$200 / hour	\$ tbd
Client Support Manager	\$170 / hour	\$ tbd
GIS Specialist – mid level	\$140 / hour	\$ tbd
GIS Specialist – senior level	\$170 / hour	\$ tbd
Sr. Solutions Architect	\$220 / hour	\$ tbd
Solutions Architect	\$185 / hour	\$ tbd
Sr. Business Analyst	\$165 / hour	\$ tbd
Business Analyst	\$155 / hour	\$ tbd
Sr. Software Engineer	\$170 / hour	\$ tbd
Software Developer	\$160 / hour	\$ tbd
System Analyst	\$155 / hour	\$ tbd



Azteca Systems, LLC - Cityworks
 11075 S State St, Suite 24 | Sandy, UT 84070
 801-523-2751 | Fax # 801-523-3734

Quote Number Q-37747-1
 Created Date 12/5/2023
 Expiration Date 2/20/2024

Contact Information

Contact Name:	Lee Boyer	Prepared By Name:	Jarrold Gerbaud
Customer:	Mission Springs Water Distict, CA	Prepared By Phone:	(801) 523-2751
Contact Address:	66575 2nd Street Desert Hot Springs, CA 92240		

Quote Lines

Product Name	Quantity/ Population	Net Unit Price
AMS ELA Cityworks Online Premium	1.00	USD 46,687.50
TOTAL:		USD 46,687.50

Notes

Year 1 Dollar Value	USD 46,687.50	Year 1 Date Range	02/01/2024 - 01/31/2025
Year 2 Dollar Value	USD 49,281.25	Year 2 Date Range	02/01/2025 - 01/31/2026
Year 3 Dollar Value	USD 51,875.00	Year 3 Date Range	02/01/2026 - 01/31/2027

Notes:

Server AMS Premium Cityworks Online Enterprise License Agreement (ELA), Includes the Identified Products for up to 40 Named Logins:
 Respond
 Mobile Native Apps (for iOS/Android)
 Office (limited use for Admin and Reporting only)

--Includes the following Add-ons:

- Storeroom
- Equipment Checkout
- Contracts
- Cityworks for Excel
- Cityworks Analytics AMS
- eURL (Enterprise URL)
- Operational Insights
- Workload
- Web Hooks
- OpX Projects
- OpX Contracts
- OpX Budgets
- 1 Sandbox

Use of Cityworks AMS Application Programming Interfaces (APIs) with commercially available Cityworks-centric applications that are licensed and maintained by authorized Cityworks partners

Use of Cityworks AMS Application Programming Interfaces (APIs) with third party system integrations

Annual fee herein is based on 15,001 - 25,000 population range

Cityworks Online (CWOL) – is a Cityworks Online hosted services subscription for the right to access and use the Online Services for the products identified hereinabove. CWOL is a highly scalable hosted services product offering. It is hosted on Azteca Systems' servers and completely scaled, managed, updated, backed up, and maintained by Azteca Systems. Because Azteca Systems controls the update schedule, users are not responsible for upgrading, managing, or patching the system themselves.

Discounts As Follows:
Year 1: 10% Discount
Year 2: 5% Discount

Terms and Conditions

Payment Terms
Payment due within 30 days

IF YOUR ORGANIZATION REQUIRES A PURCHASE ORDER, PLEASE CONTACT YOUR FINANCE DEPARTMENT TO BEGIN THE APPROVAL PROCESS TO AVOID PAYMENT DELAYS.

All quotations are valid for ninety-days (90) from the date above, unless otherwise stated in this quotation form. All prices quoted are in USD, unless specifically provided otherwise, above. These prices and terms are valid only for items purchased for use and delivery for the Customers listed above.

Unless otherwise referenced, this quotation is for the Cityworks software products referenced above only. Pricing for implementation services (installation, configuration, training, etc.), or other software applications is provided separately and upon request.

The procurement, installation and administration of the Esri software or any other third-party software utilized in conjunction with Cityworks will be the responsibility of the Customer.

For "on-prem" installations, the procurement, installation and administration of the RDBMS utilized in conjunction with Cityworks will be the responsibility of the Customer. Currently, Cityworks supports Oracle and SQL Server. The procurement, installation and administration of the infrastructure (hardware and networking) utilized in conjunction with Cityworks will be the responsibility of the Customer.

This quotation and the pricing information herein is confidential and proprietary and may not be copied or released other than for the express purpose of the current system Software and Product selection and purchase. This information may not be given to outside parties or used for any other purpose without written consent from Azteca Systems, LLC or unless otherwise specifically permitted by law. If a "public access" or similar request is made, Customer, shall notify Azteca Systems, prior to any disclosure.

Software Licensing

All Azteca Systems software offered in this quotation are commercial off-the-shelf (COTS) software developed at private expense, and is subject to the terms and conditions of the signed "Cityworks Software License and Maintenance Agreement" ("Agreement") and any and all addendums or amendments thereto. A fully executed copy of the Agreement and any addendum(s) is required before delivery and installation and usage of the software is subject to the terms of the current license agreement.

The terms and conditions of the executed Cityworks Software License Agreement apply to this Quote unless otherwise specifically stated herein. Any additional or conflicting terms set forth in any purchase orders, invoices, or other standard form documents exchanged during the ordering process, other than product descriptions, quantities, pricing, and dates are void and of no effect.

Delivery method is by way of download through Azteca Systems, LLC. customer support web portal.

Taxes

Prices quoted do not include any applicable state, sales, local, or use taxes unless so stated. In preparing your budget and/or Purchase Order, please allow for any applicable taxes, including, sales, state, local or use taxes as necessary. Azteca Systems reserves the right to collect any applicable sales, use or other taxes tax assessed by or as required by law. Azteca Systems reserves the right to add any applicable tax to the invoice, unless proof with the order is shown that your organization or entity is tax exempt or if it pays any applicable tax directly.

International Customers

These items are controlled by the U.S. government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. government or as otherwise authorized by U.S. law and regulations.



BOARD OF DIRECTORS SPECIAL MEETING (WORKSHOP) MINUTES

Tuesday, January 09, 2024 at 9:00 AM

66575 Second St, Desert Hot Springs, CA AND/OR Via Teleconference

CALL TO ORDER

President Sewell called the meeting to order at 9:00 AM.

ROLL CALL

BOARD MEMBERS PRESENT: President Ivan Sewell, Vice President Robert Griffith, Director Russ Martin, Director Amber Duff, Director Ted Mayrhofen

STAFF MEMBERS PRESENT: Brian Macy, Marion Champion, Arturo Ceja, Kurt Kettenacker, Oriana Hoffert, Danny Friend, April Scott, Jeff Nutter, Amanda Lucas, Dori Petee, Arthur Cabrera

PUBLIC INPUT

No public input

ITEMS FOR DISCUSSION

MID-YEAR BUDGET REVIEW FY 2023/24

Arturo Ceja presented the mid-year budget changes which increased our net income to \$73,115,064, included a three million dollar increase in non-operating revenue, a \$1,106,799, increase in operating expenses, and an increase in payroll expenses for half a year for a new position (Contract Analyst). Additionally, Capital Improvement of \$150, 554, 271 increased expenses in FY2024 to \$77,280, 688. Mr. Ceja reviewed the list of items, projects, and studies that are increasing the budget. Mr. Ceja reviewed the Departmental Budget Comparison. Lastly, Mr. Ceja reviewed the revised Capital Budget and Continuing Appropriations and Cash/Reserves.

DRAFT STRATEGIC PLAN DISCUSSION

Staff gave a quick overview of the draft Strategic Plan. Today's focus is on the projects, themes, and goals and whether this is what the Board wishes to see. Mr. Macy went through the draft. Staff have asked for input from by Board by the end of February.

MSWD BOARD HANDBOOK DISCUSSION

Mr. Macy asked for any feedback the Board may have to the current Board Handbook. He noted that many policies and procedures are being updated so this would be a good time to make any additional changes they wish to see. There was a brief discussion amongst the Board, and they all expressed concerns over the current handbook. Board members will send all concerns to the General Manager or Board President and bring this back to a workshop in March.

COMMENTS

GENERAL MANAGER'S COMMENTS

No comments at this time but thanked the Board for a productive meeting.

DIRECTORS' COMMENTS

Director Mayrhofen noted this was a very productive meeting.

Director Duff thanked the staff for all the work that goes into preparing for these meetings.

President Sewell noted the Board has homework and directed everyone to review the Strategic Plan and Board Handbook.

ADJOURN

With no further business, President Sewell adjourned the meeting at 10:00 AM.

Respectfully submitted,

Dori Petee
Executive Assistant



BOARD OF DIRECTORS REGULAR MEETING STUDY SESSION MINUTES

Thursday, January 11, 2024 at 3:00 PM

66575 Second St, Desert Hot Springs, CA AND/OR Via Teleconference

CALL TO ORDER

President Sewell called the meeting to order at 3:00 PM

ROLL CALL

BOARD MEMBERS PRESENT: President Ivan Sewell, Vice President Robert Griffith, Director Russ Martin, Director Amber Duff, Director Ted Mayrhofen

STAFF MEMBERS PRESENT: Brian Macy, Marion Champion, Arturo Ceja, Danny Friend, William Whitten, Oriana Hoffert, Amanda Lucas, Dori Petee

RULES OF PROCEDURE

Rules of Procedure were read by General Counsel, John Pinkney.

All noticed meetings are conducted using Rosenberg's Rules of Order as a procedural guideline. Directors should refrain from responding directly to public comments at meetings of the Board. The Board President will refer matters raised during public comment to the General Manager for follow-up when appropriate. Occasionally, a prompt response may be offered when an obvious answer resolution is available provided this is done in compliance with the Brown Act. Directors should refrain from debating or making decisions in response to public comments. The President of the Board presides at all meetings and decides all points of order and procedure during meetings. The President is responsible for maintenance and decorum at all Board meetings. No person shall be allowed to speak who is not first been recognized by the President. All questions and remarks should be addressed to the President as the presiding officer. No member of the Board should speak more than once about any one subject until every other member on the Board wishing to speak on the subject shall have been given the opportunity to speak. No Board member shall interfere with the orderly progress of a Board meeting. In order to ensure the orderly progress of Board meetings the Board President regulates the amount of time to be dedicated to a particular agenda item."

PUBLIC INPUT

No public input

EMPLOYEE RECOGNITION

HUMAN RESOURCES REPORT

This item will be acknowledged on Tuesday.

ACTION ITEMS

FEDERAL ADVOCACY SERVICES – CARPI & CLAY, INC.

It is recommended to authorize the Interim General Manager to execute an Agreement for Services with Carpi & Clay Government Relations in the amount of \$5000/month for the term February 1, 2024, to January 31, 2025.

Marion Champion introduced Laura Morgan-Kessler of Carpi and Clay who presented a legislative update to the Board. Ms. Champion noted that during Laura's tenure representing MSWD, she has garnered significant contributions toward the Groundwater Quality Protection Program and noteworthy federal funding.

Laura's monthly fee has not changed in the 12 years she has been representing the District but due to the changing economy and inflation, it is time. The monthly fee is going up by \$1000 per month.

ACKNOWLEDGE MSWD LEGISLATIVE PLATFORM FOR 2024-2025

It is recommended to receive and file the MSWD 2024-25 Legislative Platform.

Marion Champion presented an overview of the 2024-25 Legislative Platform. The platform is broken down into ten core areas. Ms. Champion briefly reviewed those items.

RESOLUTIONS 2024-01, 2024-04 AND 2024-05 REVISED 2023-2024 OPERATING AND CAPITAL BUDGET, APPROPRIATIONS LIMIT AND CLASSIFICATION PLAN

It is recommended to adopt Resolutions 2021-01, 2024-04, AND 2024-05 related to the fiscal year ending June 30, 2024, revised operating, and capital budgets.

Arturo Ceja presented a summarized version of the information presented at the Budget Workshop on Thursday, January 9, 2024. He reviewed the contributing factors to the mid-year changes.

RESOLUTION 2024-02 ~ AMENDING RESOLUTION 2023-16 REVISIONS TO MISSION SPRINGS WATER DISTRICT PERSONNEL RULES AND REGULATIONS

It is recommended to adopt Resolution 2024-02 providing for the revisions to Mission Springs Water District Personnel Rules and Regulations.

Oriana Hoffert reviewed the updates to the employee handbook that are based on recent changes to the law. Federal, State, and/or local laws frequently change which further impacts the District Personnel Rules and Regulations. Presented are two changes to the sick leave usage policy.

RESOLUTION 2024-03 RESCINDING AND REPLACING RESOLUTION 2009-02 EXPENSE REIMBURSEMENT POLICY

It is recommended to adopt Resolution 2024-03 rescinding and replacing Resolution 2009-02 Reimbursement Policy.

District Counsel presented this item. The current policy was passed in 2009 so it was timely this was updated. Counsel summarized the changes from the previous document. Monthly compensation was updated and language that Directors cannot claim double reimbursement or double payment for meetings attended. Websites related to travel or travel reimbursement were updated.

AUTHORIZE GENERAL MANAGER EMPLOYMENT AGREEMENT

It is recommended to authorize the Board President to execute a General Manager Employment Agreement between Mission Springs Water District and Brian Macy.

Mr. Macy recused himself from this item's discussion. District Counsel presented this item. The contract would go into effect on February 8, 2024, for three years. He briefly reviewed the agreement in question.

THIRD AMENDMENT TO CONTRACT WITH RUHNAU CLARKE ARCHITECTS FOR THE DESIGN OF THE CRITICAL SERVICES CENTER/ADMINISTRATION BUILDING

It is recommended to authorize the General manager to amend the professional services contract with Ruhnau Clarke Architects for the design of the Critical Services Center/Administration Building at the District Corp Yard. The amendment would increase the contract amount of \$393,200 from \$1,860,964 to a not-to-exceed amount of \$2,254,164 and authorize the General Manager to do all things necessary to complete the project.

In July 1, 2021, MSWD agreed with Ruhnau Clarke Architects (RCA) to design a 15,000-square-foot administration building at a potential property purchase location or the current Corporate Yard. On July 18, 2022, it was decided to build and design the Critical Services Center/Administration Building campus (CSC) on MSWD property off Two Bunch Palms Trail which included an administration building, a new maintenance facility with 3 vehicle bays, parking areas, solar canopies, walkways, and conservation garden. After a thorough environmental review of the Two Bunch Palms property during the design phase and additional Board discussions, the District is considering moving the CSC to the Corporate Yard which would include redesign services for the campus. On December 13, 2022, the District extended the contract duration by three years as the contract scope includes services through construction. This contract amendment will allow Ruhnau Clarke to amend the current design to fit the Corp Yard location.

APPOINTMENTS TO BOARD STANDING COMMITTEES

President Sewell may appoint members to the District's standing committees.

President Sewell noted he is doing his best to equally distribute everyone to committees. The list will be presented on Tuesday for approval.

AFFILIATION LISTING

It is recommended to review, update if necessary, and approve the current Board Affiliation Listing.

This item will be fully acknowledged on Tuesday for review and approval. Director Duff asked for organizations that are wastewater-specific to be presented for possible addition to this list.

DISCUSSION ITEMS

NANCY WRIGHT REGIONAL WATER RECLAMATION FACILITY UPDATE

Terry Rener, Construction Manager for TKE presented a construction, funding and permitting update to the Board.

CRITICAL SERVICES CENTER AND ADMINISTRATIVE BUILDING UPDATE

Nothing further to add that was not covered in the third amendment contract item.

MSWD STRATEGIC PLANNING UPDATE

No update

CONSENT AGENDA

Director Duff pulled the Register of Demands for discussion and clarification.

Eric Weck, Engineering Manager reviewed the Public Water and Sewer Systems Construction agreement.

APPROVAL OF MINUTES

It is recommended to approve the minutes as follows:

December 5, 2023 - Strategic Planning Workshop #4

December 14, 2023 - Study Session

December 18, 2023 - Board Meeting

REGISTER OF DEMANDS

The register of demands totaling \$3,033,826.41

PUBLIC WATER AND SEWER SYSTEMS CONSTRUCTION AGREEMENTS AND WATER AND SEWER BONDING AGREEMENT MAP FOR TRACT NO. 38200 - RANCHO DESCANSO

It is recommended to authorize the Interim General Manager to execute the Public Water and Sewer Systems Construction Agreements and Water and Sewer Bonding Agreement for the Rancho Descanso - Tract No. 38200 residential development project and to do all things necessary to complete the agreements.

REPORTS

DIRECTOR'S REPORTS

GENERAL MANAGER'S REPORT

Included in this report are the following oral reports:

- A. Finance Report
- B. Public Affairs Report

The finance report was given during the mid-year budget item. The Public Affairs Report will be given on Tuesday.

COMMENTS

DISTRICT COUNSEL COMMENTS

No closed session today.

DIRECTOR COMMENTS

Director Martin commented on the agenda packet and noted the amount of work that goes into preparing this document.

Director Mayrhofen congratulated Mr. Macy, although his contract won't go up for approval until Tuesday.

Director Duff also commented on the packet and noted she is grateful these items are being addressed.

Vice President Griffith noted the work on this packet and commented he is hopeful for what will be accomplished this year.

President Sewell echoed all the comments made today.

ADJOURN

With no further business, President Sewell adjourned the meeting at 4:47 PM

Respectfully submitted,

Dori Petee
Executive Assistant



BOARD OF DIRECTORS REGULAR MEETING MINUTES

Tuesday, January 16, 2024 at 3:00 PM

66575 Second St, Desert Hot Springs, CA AND/OR Via Teleconference

CALL TO ORDER

President Sewell called the meeting to order at 3:00 PM

ROLL CALL

BOARD MEMBERS PRESENT: President Ivan Sewell, Vice President Robert Griffith, Director Russ Martin, Director Amber Duff, Director Ted Mayrhofen

STAFF MEMBERS PRESENT: Brian Macy, Marion Champion, Arturo Ceja, Danny Friend, Kurt Kettenacker, Oriana Hoffert, April Scott, William Whitten, Jeff Nutter, Eric Weck, Andrea Varella (?), Dori Petee, Amanda Lucas

PLEDGE OF ALLEGIANCE

Led by Director Martin

RULES OF PROCEDURE

Rules of Procedure were read by General Counsel, John Pinkney.

All noticed meetings are conducted using Rosenberg's Rules of Order as a procedural guideline. Directors should refrain from responding directly to public comments at meetings of the Board. The Board President will refer matters raised during public comment to the General Manager for follow-up when appropriate. Occasionally, a prompt response may be offered when an obvious answer resolution is available provided this is done in compliance with the Brown Act. Directors should refrain from debating or making decisions in response to public comments. The President of the Board presides at all meetings and decides all points of order and procedure during meetings. The President is responsible for maintenance and decorum at all Board meetings. No person shall be allowed to speak who is not first been recognized by the President. All questions and remarks should be addressed to the President as the presiding officer. No member of the Board should speak more than once about any one subject until every other member on the Board wishing to speak on the subject shall have been given the opportunity to speak. No Board member shall interfere with the orderly progress of a Board meeting. In order to ensure the orderly progress of Board meetings the Board President regulates the amount of time to be dedicated to a particular agenda item."

PUBLIC INPUT

No public comment

EMPLOYEE RECOGNITION

HUMAN RESOURCES REPORT

The Board acknowledged the following employees:

ANNIVERSARIES

Grant Fournier	Collections System Operator II	1 Year
Fernando Ruelas III	Field Operations Technician I	1 Year

Lorenzo Soto	Field Operations Technician I	6 Years
Arturo Ceja	Director of Finance and Accounting	12 Years

ACTION ITEMS

FEDERAL ADVOCACY SERVICES – CARPI & CLAY, INC.

The Board authorized the Interim General Manager to execute an Agreement for Services with Carpi & Clay Government Relations in the amount of \$5000/month for the term February 1, 2024, to January 31, 2025.

Pamela Edmonson gave public comment on this item. She noted how important it is for the District to have this kind of representation.

Motion made by Director Martin, Seconded by Director Mayrhofen.

Voting Yea: President Sewell, Vice President Griffith, Director Martin, Director Duff, Director Mayrhofen

ACKNOWLEDGE MSWD LEGISLATIVE PLATFORM FOR 2024-2025

The Board received and filed the MSWD 2024-25 Legislative Platform.

Motion made by Director Duff, Seconded by Director Martin.

Voting Yea: President Sewell, Vice President Griffith, Director Martin, Director Duff, Director Mayrhofen

RESOLUTIONS 2024-01, 2024-04 AND 2024-05 ~ REVISED FY 2023/24 OPERATING AND CAPITAL BUDGET APPROPRIATIONS LIMIT AND CLASSIFICATION PLAN

The Board adopted Resolutions 2021-01, 2024-04 AND 2024-05 related to the fiscal year ending June 30, 2024, revised operating and capital budgets.

Motion made by Vice President Griffith, Seconded by Director Duff.

Voting Yea: President Sewell, Vice President Griffith, Director Martin, Director Duff, Director Mayrhofen

RESOLUTION 2024-02 ~ AMENDING RESOLUTION 2023-16 REVISIONS TO MISSION SPRINGS WATER DISTRICT PERSONNEL RULES AND REGULATIONS

The Board adopted Resolution 2024-02 providing for the revisions to Mission Springs Water District Personnel Rules and Regulations.

Motion made by Director Martin, Seconded by Director Mayrhofen.

Voting Yea: President Sewell, Vice President Griffith, Director Martin, Director Duff, Director Mayrhofen

RESOLUTION 2024-03 RESCINDING AND REPLACING RESOLUTION 2009-02 EXPENSE REIMBURSEMENT POLICY

The Board adopted Resolution 2024-03 rescinding and replacing Resolution 2009-02 Reimbursement Policy.

Motion made by Director Mayrhofen, Seconded by Vice President Griffith.

Voting Yea: President Sewell, Vice President Griffith, Director Martin, Director Duff, Director Mayrhofen

AUTHORIZE GENERAL MANAGER EMPLOYMENT AGREEMENT

The Board authorized the Board President to execute a General Manager Employment Agreement between Mission Springs Water District and Brian Macy.

Motion made by Vice President Griffith, Seconded by Director Martin.

Voting Yea: President Sewell, Vice President Griffith, Director Martin, Director Duff, Director Mayrhofen

THIRD AMENDMENT TO CONTRACT WITH RUHNAU CLARKE ARCHITECTS FOR THE DESIGN OF THE CRITICAL SERVICES CENTER/ADMINISTRATION BUILDING

The Board authorized the General manager to amend the professional services contract with Ruhnau Clarke Architects for the design of the Critical Services Center/Administration Building at the District Corp Yard. The amendment would increase the contract amount \$393,200 from \$1,860,964 to a not to exceed amount of \$2,254,164 and authorize the General Manager to do all things necessary to complete the project.

Motion made by Vice President Griffith, Seconded by Director Martin.

Voting Yea: President Sewell, Vice President Griffith, Director Martin, Director Duff

Voting Nay: Director Mayrhofen

APPOINTMENTS TO BOARD STANDING COMMITTEES

President Sewell made the following appoints to the District's standing committees:

	2024 Committees	
	Chairperson	Member
Executive	Sewell	Griffith
Engineering	Mayrhofen	Martin
Finance	Duff	Mayrhofen
Human Relations	Martin	Duff
Public Affairs	Griffith	Sewell

AFFILIATION LISTING

The Board reviewed and updated the Board Affiliation Listing.

Board of Directors 2024 Affiliate List	
Amended and Approved on 1/16/2024	
Conferences, Workshops, Meetings & Tours	<p>All Directors are pre-approved to attend these functions</p>
ACWA and ACWA/JPIA	
California Association of Sanitation Agencies (CASA)	
California Special Districts Association	
Coachella Valley Economic Partnership	
CORBS Annual Awards Dinner	
Desert Hot Springs State of the City	
GCVCC - All Valley Mayors & Tribal Luncheon	
Palm Springs State of the City	
Riverside County Board of Supervisors	
UWI - Urban Water Institute	
WEF - Water Education Foundation	

2024 designees

Assigned Meetings, Workshops (compensable)	Primary	Alternate
Building Industry Association (BIA)	Mayrhofen	Martin
CVWD Regular Board Meetings	Duff	Griffith
DWA Regular Board Meetings	Griffith	Duff
DHS City Council	Martin	Sewell
DHS Planning Commission	Mayrhofen	Sewell
DHS Hoteliers' Association	Griffith	Mayrhofen
Desert Valley Builders Association (DVBA)	Martin	Mayrhofen
County Wide Oversight Board	Martin	
Coahella Valley Cannabis Alliance Network (CVCAN)	Sewell	Mayrhofen
Greater Coachella Valley Chamber of Commerce (GCVCC)	Sewell	Martin
Legislative Representation: Washington D.C. AND California	Griffith	Sewell
Riverside County Flood Control & Water Conservation	Sewell	
San Geronio Pass Regional Water Alliance	Duff	Griffith

Voting Delegates	Primary	Alternate
ACWA Region 9	President	VP
ACWA Conferences	President	VP
ACWA/JPIA	Griffith	Duff
CV Conservation Commission (CVAG)	Duff	Martin
Energy/Environmental Resources Committee (CVAG)	Duff	Martin
Special District Association of Riverside County	President	VP

Motion made by Director Martin, Seconded by Director Duff.

Voting Yea: President Sewell, Vice President Griffith, Director Martin, Director Duff

Voting Nay: Director Mayrhofen

DISCUSSION ITEMS

NANCY WRIGHT REGIONAL WATER RECLAMATION FACILITY UPDATE

General Manager Macy confirmed the State has received everything needed for the 2nd disbursement request.

CRITICAL SERVICES CENTER AND ADMINISTRATIVE BUILDING UPDATE

Nothing further to add.

MSWD STRATEGIC PLANNING UPDATE

Nothing further to add. Comments from the Board are anticipated.

CONSENT AGENDA

Motion made by Vice President Griffith, Seconded by Director Duff.

Voting Yea: President Sewell, Vice President Griffith, Director Martin, Director Duff, Director Mayrhofen

APPROVAL OF MINUTES

It is recommended to approve the minutes as follows:

December 5, 2023 - Strategic Planning Workshop #4

December 14, 2023 - Study Session

December 18, 2023 - Board Meeting

REGISTER OF DEMANDS

The register of demands totaling \$3,033,826.41

PUBLIC WATER AND SEWER SYSTEMS CONSTRUCTION AGREEMENTS AND WATER AND SEWER BONDING AGREEMENT MAP FOR TRACT NO. 38200 - RANCHO DESCANSO

It is recommended to authorize the Interim General Manager to execute the Public Water and Sewer Systems Construction Agreements and Water and Sewer Bonding Agreement for the Rancho Descanso - Tract No. 38200 residential development project and to do all things necessary to complete the agreements.

REPORTS

DIRECTOR'S REPORTS

Director Martin reported he attended the following events: 12/11 DVBA Board Meeting, 12/12 RivCo Board of Supervisors Meeting, 12/12 Tribal Water Authority Meeting, 12/21 Urban Water Institute Strategic Planning Session

Director Mayrhofen reported he attended the following events: 12/7 DVBA Holiday Luncheon

Director Duff reported she attended the following events: 12/12 DHS Planning Commission, 12/19 CVCAN Monthly Meeting and Holiday Celebration.

Vice President Griffith reported he attended the following events: 12/12 CVWD Board Meeting, 12/19 DWA Board Meeting.

President Sewell reported he attended the following events: 12/13 GCVCC Lunch Meeting

GENERAL MANAGER'S REPORT

Included in this report are the following oral reports:

- A. Finance Report
- B. Public Affairs Report

Marion Champion presented a Public Affairs update.

COMMENTS

DISTRICT COUNSEL COMMENTS

No closed session today

DIRECTOR COMMENTS

Director Martin complimented staff on the preparation of this meeting packet and President Sewell on a successful meeting.

Director Duff complimented the staff as well.

Vice President Griffith echoed the previous statements and congratulated President Sewell on a great meeting.

President Sewell thanked the Board for working together and noted he is open to hearing from everyone.

ADJOURN

With no further business, President Sewell adjourned the meeting at 4:09 PM.

Respectfully submitted,

Dori Petee
Executive Assistant

CHECK NUMBER	CHECK DATE	PAID TO VENDOR	DISBURSEMENT DESCRIPTION	INVOICE			TOTAL
				AMOUNT	OPERATING	CAPITAL	
1002070	01-04-24	ACWA-JPIA HEALTH BENEFITS AUTH.	FEB 2024 PREPAID INSURANCE	106,619.05	106,619.05		106,619.05
1002168	01-04-24	ACWA/JOINT POWERS INSUR AUTH	ACWA WORKERS COMP. QTR 4	40,957.92	40,957.92		40,957.92
1002119	01-04-24	ACWA/JOINT POWERS INSURANCE AUTHORITY	CLAIM # 10-1650	1,200.00	1,200.00		1,200.00
			QTR ENDED 12-31-23 RESTITUTION PAYMENT				
1002200	01-04-24	ADT COMMERCIAL LLC	SECURITY ALARM	270.94	270.94		270.94
1002071	01-04-24	AECOM TECHNICAL SERVICES INC.	MSWD CONSTRUCTION SERVICES AUG-SEP 2023	76,345.88	0.00	76,345.88	76,345.88
99105840	01-22-24	AFLAC	DEC 2023 AFLAC DEDUCTIONS	4,161.69	4,161.69		4,161.69
1002120	01-04-24	ALL AMERICAN FIRST AID	FIRST AID SUPPLY RESTOCK	238.77	238.77		238.77
1002201	01-04-24	ALL VALLEY CRANE, INC.	PULL PUMP & SET NEW	850.00	850.00		850.00
1002121	01-04-24	AM CONSERVATION GROUP INC.	WATER WISE PROGRAM - PHMS	1,336.33	1,336.33		1,336.33
1002225	01-04-24	AMANDA TRUJILLO	ACCOUNT REFUND 9758 AVE DELORES	50.93	50.93		50.93
1002122	01-04-24	AMBER DUFF	A. DUFF MILEAGE REIMB.	107.42	107.42		107.42
1002226	01-04-24	AMERICAN CONSTRUCTION SERVICES	ACCOUNT REFUND DIABLO RD @ DEVERS SUBSTATION	206.54	206.54		206.54
1002103	01-04-24	ANA GRANT	ACCOUNT REFUND 66123 ESTRELLA AVE	579.51	579.51		579.51
1002227	01-04-24	ANNA LONGORIA	ACCOUNT REFUND 11777 SKYLARK ST	24.18	24.18		24.18
1002123	01-04-24	ARAMARK UNIFORM SERVICES, LLC		265.27	265.27		265.27
1002169	01-04-24	ARAMARK UNIFORM SERVICES, LLC	UNIFORM SERVICES	265.27	795.81		795.81
			UNIFORM SERVICES	265.27			
			UNIFORM SERVICES	265.27			
1002202	01-04-24	ARAMARK UNIFORM SERVICES, LLC	UNIFORM SERVICES	336.19	594.38		594.38
			UNIFORM SERVICES	258.19			
1002228	01-04-24	ASA MOORE	ACCOUNT REFUND 66011 ESTRELLA AVE	226.17	226.17		226.17
1002058	01-04-24	ATP GENERAL ENGINEERING CONTRACTORS	ACCOUNT REFUND WORSELY RD @ RESERVIOR	766.95	766.95		766.95
1002058	01-08-24	ATP GENERAL ENGINEERING CONTRACTORS	ACCOUNT REFUND WORSELY RD @ RESERVIOR	-766.95	-766.95		-766.95
1002104	01-04-24	ATP GENERAL ENGINEERING CONTRACTORS	ACCOUNT REFUND WORSELY RD @ RESERVIOR	766.95	766.95		766.95
1002072	01-04-24	AUTO ZONE STORES LLC	TUBLESS TIRE VALVE #401	4.30	4.30		4.30
1002124	01-04-24	BABCOCK LABORATORIES, INC.	SAMPLING FOR COACHILLIN	510.77	510.77		510.77
1002073	01-04-24	BECK OIL, INC.	UNLEADED GASOLINE	2,359.69	4,915.32		4,915.32
			DIESEL FUEL	2,555.63			
99105703	01-02-24	BERKADIA COMMERCIAL MORTGAGE	AD#7 LOAN - INT. EXPENSE	580.00	580.00		580.00
1002125	01-04-24	BEST SIGNS, INC	MSWD VINYL LOGO RESTOCK - DISTRICT VEHICLES	688.28	688.28		688.28
1002229	01-04-24	BRENDEN NGUYEN	ACCOUNT REFUND 13259 RAMONA DR	50.93	50.93		50.93
1002126	01-04-24	BRIAN MACY	TUITION REIMBURSEMENT	5,001.00	5,001.00		5,001.00
			PER INTERIM GM EMPLOYMENT CONTRACT SECTION IX B				
			iii				
1002239	01-31-24	BRINKS INCORPORATED	DECEMBER MONTHLY SERVICE	73.35	375.88		375.88
			JANUARY MONTHLY SERVICE FEE	302.53			
1002127	01-04-24	CALCHAMBER	CALCHAMBER YEARLY MEMBERSHIP	799.00	799.00		799.00
99105742	01-11-24	CALIF PUBLIC EMPLOYEES RETIREMENT SYSTEM	PERS PEE 12.22.2023	35,621.61	35,621.61		35,621.61
99105756	01-16-24	CALIF PUBLIC EMPLOYEES RETIREMENT SYSTEM	PERS RETRO PPE 03.04.22	172.51	172.51		172.51
99105920	01-25-24	CALIF PUBLIC EMPLOYEES RETIREMENT SYSTEM	PERS PPE 01.05.2024	36,464.62	36,464.62		36,464.62
1002128	01-04-24	CALIFORNIA GROUNDWATER COALITION	2024 MEMBERSHIP DUES	8,250.00	8,250.00		8,250.00
1002170	01-04-24	CALIFORNIA MUNICIPAL STATISTICS, INC.	DIRECT & OVERLAPPING DEBT STATEMENT	550.00	550.00		550.00
1002059	01-04-24	CARMEN CASALLAS	ACCOUNT REFUND 66635 EL DORADO PL	83.66	83.66		83.66
1002059	01-08-24	CARMEN CASALLAS	ACCOUNT REFUND 66635 EL DORADO PL	-83.66	-83.66		-83.66
1002105	01-04-24	CARMEN CASALLAS	ACCOUNT REFUND 66635 EL DORADO PL	83.66	83.66		83.66
1002074	01-04-24	CARPI & CLAY, INC	DEC. 2023 FEDERAL ADVOCACY	4,000.00	4,000.00		4,000.00
1002171	01-04-24	CASAMAR GROUP, LLC	LABOR COMPLIANCE CONSULTANT SERVICES	85.71	847.37	85.71	933.08
			LABOR COMPLIANCE CONSULTANT SERVICES	211.84			
			LABOR COMPLIANCE CONSULTANT SERVICES	128.56			
			LABOR COMPLIANCE CONSULTANT SERVICES	168.99			

CHECK NUMBER	CHECK DATE	PAID TO VENDOR	DISBURSEMENT DESCRIPTION	INVOICE			TOTAL
				AMOUNT	OPERATING	CAPITAL	
			LABOR COMPLIANCE CONSULTANT SERVICES	168.99			
			LABOR COMPLIANCE CONSULTANT SERVICES	168.99			
1002203	01-04-24	CASAMAR GROUP, LLC	LABOR COMPLIANCE - WELL 34 REHAB	42.85	0.00	42.85	42.85
1002075	01-04-24	CASEY DOLAN	DIGITAL AD MGMT	650.00	650.00		650.00
1002076	01-04-24	CECILIA A. MONDRAGON	TOILET REBATE - MONDRAGON	200.00	200.00		200.00
1002060	01-04-24	CELIA GARCIA	ACCOUNT REFUND 66615 GRANADA AVE	36.43	36.43		36.43
1002060	01-08-24	CELIA GARCIA	ACCOUNT REFUND 66615 GRANADA AVE	-36.43	-36.43		-36.43
1002107	01-04-24	CELIA GARCIA	ACCOUNT REFUND 66615 GRANADA AVE	36.43	36.43		36.43
1002106	01-04-24	CELIA SADLOU	ACCOUNT REFUND 15300 PALM DR #95	800.00	800.00		800.00
1002230	01-04-24	CHRISTOPHER GUTIERREZ	ACCOUNT REFUND 12680 AGUA CAYENDO RD	41.51	41.51		41.51
1002129	01-04-24	CITY OF DESERT HOT SPRINGS	UUT NOVEMBER 2023	38,913.57	38,913.57	694.80	39,608.37
			ENC-23-104 ENCROACHMENT PERMIT	694.80			
1002172	01-04-24	CLINICAL LABORATORY OF SAN BERNARDINO	LAB SERVICES	2,305.00	4,328.00		4,328.00
			LAB SERVICES	270.00			
			LAB SERVICES	270.00			
			LAB SERVICES	1,483.00			
1002077	01-04-24	CORE & MAIN LP	R/W GATE VALVE	786.58	7,048.89		7,048.89
			HYMAX FLEX COUPL.	2,084.51			
			4"X25" FULL CIRCLE REPAIR CLAMP	437.47			
			INVENTORY	3,740.33			
1002130	01-04-24	CORE & MAIN LP	O RING/HOSE CAP/MTR. BUSH JONES	5,806.07	6,592.65		6,592.65
			R/W GATE VALVE	786.58			
1002204	01-04-24	CORE & MAIN LP	TEST PLATES	246.32	2,487.31		2,487.31
			INVENTORY	1,446.01			
			INVENTORY	794.98			
1002241	01-31-24	CORE & MAIN LP	COMBINED PENDING CREDITS FIELD SUPPLIES	-278.06	5,190.26		5,190.26
			COPPER TUBING	5,468.32			
1002240	01-31-24	CORONA ENVIRONMENTAL CONSULTING, LLC	PROGRESS PMT #2	2,330.00	0.00	2,330.00	2,330.00
1002131	01-04-24	COUNTY OF RIVERSIDE	BACKFLOW DEVICE TESTER APPLICATION FOR JOE H.	151.00	151.00		151.00
			PI0000310 CERT NO. 16376				
1002173	01-04-24	COUNTY OF RIVERSIDE	WATER TALKS ROOM FEE	25.00	25.00		25.00
1002205	01-04-24	COUNTY OF RIVERSIDE	COUNTY ENC PERMITS	3,620.00	3,620.00		3,620.00
1001893	01-03-24	CV STRATEGIES	BILLBOARD - PROTECT YOUR PIPES	-1,042.50	-7,092.50		-7,092.50
			VIDEO SERVICES - UNDERSTANDING YOUR BILL	-4,063.75			
			MSWD 2024 CALENDAR	-1,986.25			
1002078	01-04-24	CV STRATEGIES	BILLBOARD - PROTECT YOUR PIPES	1,042.50	3,028.75		3,028.75
			MSWD 2024 CALENDAR	1,986.25			
1002079	01-04-24	CV STRATEGIES	VIDEO SERVICES - UNDERSTANDING YOUR BILL	4,063.75	4,063.75		4,063.75
1002206	01-04-24	CWEA/CORBS	CORBS DINNER RSVP	1,035.00	1,125.00		1,125.00
			CORBS DINNER EXTRA RSVP	90.00			
1002174	01-04-24	CYPRESS DENTAL ADMINISTRATORS	FEBRUARY 2024 PREPAID DENTAL	5,132.35	5,132.35		5,132.35
1002080	01-04-24	DANGELO COMPANY	FLEX COUPL.	1,948.57	1,948.57		1,948.57
1002207	01-04-24	DAVID PENA	WATER TREATMENT CLASS REIMBURSEMENT	211.25	211.25		211.25
1002132	01-04-24	DESERT ELECTRIC SUPPLY	ORBT-1-BC DEVICE MOUNT & COVER - PRODUCTION	10.91	231.77		231.77
			10FT & 140FT CONDUIT - PRODUCTION	220.86			
1002176	01-04-24	DESERT HOT SPRINGS WOMENS CLUB	DHS WOMENS CLUB AD SPONSORSHIP	150.00	150.00		150.00
1002175	01-04-24	DESERT RECYCLING INC.	DUMP FEES	30.00	30.00		30.00
1002081	01-04-24	DESERT TIRE AND AUTO REPAIR	REPLACEMENT TIRES #429	1,155.02	1,155.02		1,155.02
1002134	01-04-24	DESERT TIRE AND AUTO REPAIR	REPLACEMENT TIRES - UNIT #404	1,198.78	1,198.78		1,198.78
1002208	01-04-24	DESERT TIRE AND AUTO REPAIR	REPLACEMENT TIRES UNIT 418	1,336.72	1,336.72		1,336.72
1002209	01-04-24	DESERT URGENT CARE	DOT PHYSICAL	175.00	375.00		375.00

CHECK NUMBER	CHECK DATE	PAID TO VENDOR	DISBURSEMENT DESCRIPTION	INVOICE	OPERATING	CAPITAL	TOTAL
				AMOUNT			
			PRE EMPLOYMENT PHYSICAL	200.00			
1002133	01-04-24	DESERT VALLEY DISPOSAL, INC.	DECEMBER SERVICES - ADMIN BLDG	544.89	1,338.79		1,338.79
			DECEMBER SERVICES - CORP YARD	793.90			
1000807	01-02-24	DOUG WABISZEWSKI	ACCOUNT REFUND 67455 MONTEREY RD	-163.21	-163.21		-163.21
1002082	01-04-24	DOUG WABISZEWSKI	ACCOUNT REFUND 67455 MONTEREY RD	163.21	163.21		163.21
1002242	01-31-24	DOWNING CONSTRUCTION, INC.	PROGRESS PAYMENT #10	373,103.02	0.00	373,103.02	373,103.02
1002135	01-04-24	ECOLOGY AUTO PARTS	SLUDGE HAULING	2,835.16	2,621.26		2,621.26
			CREDIT FOR INV. #1383-INCORRECT CHARGES	-2,835.16			
			SLUDGE HAULING	2,621.26			
1002177	01-04-24	ECOLOGY AUTO PARTS	SLUDGE DISPOSAL	1,377.15	41,964.80		41,964.80
			SLUDGE DISPOSAL	3,000.00			
			SLUDGE DISPOSAL	2,000.00			
			SLUDGE DISPOSAL	5,217.24			
			SLUDGE DISPOSAL	5,374.20			
			SLUDGE DISPOSAL	2,176.48			
			SLUDGE DISPOSAL	2,091.42			
			SLUDGE DISPOSAL	3,893.20			
			SLUDGE DISPOSAL	7,959.28			
			SLUDGE DISPOSAL	2,000.00			
			SLUDGE DISPOSAL	3,000.00			
			SLUDGE DISPOSAL	1,573.95			
			SLUDGE DISPOSAL	2,301.88			
1002083	01-04-24	EDOM HILL TRANSFER STATION	SITE CLEAN UP DUMP FEE	19.00	19.00		19.00
99105745	01-12-24	EFTPS-IRS PAYROLL TAX REMITTANCE	FED TAX DEP PPE 01.05.2024	56,266.67	56,266.67		56,266.67
99105881	01-23-24	EFTPS-IRS PAYROLL TAX REMITTANCE	IRS REFUND WAS PAID BACK FOR Q3-2023	59,112.11	59,112.11		59,112.11
99105931	01-26-24	EFTPS-IRS PAYROLL TAX REMITTANCE	FED TAX DEP PPE 01.19.24	61,605.49	61,605.49		61,605.49
PR011224	01-12-24	EMPLOYEES		795.64	795.64		795.64
PR012624	01-26-24	EMPLOYEES		489.77	489.77		489.77
1002210	01-04-24	ENTERPRISE FM TRUST	MONTHLY FLEET LEASE	19,810.79	19,810.79		19,810.79
1002084	01-04-24	ENVIROGEN TECHNOLOGIES INC	WELL 26A URANIUM TREATMENT - 11/2023	4,120.87	4,120.87		4,120.87
1002243	01-31-24	ENVIROGEN TECHNOLOGIES INC	WELL 26A URANIUM TREATMENT	4,120.87	4,120.87		4,120.87
1002085	01-04-24	EXECUTIVE FACILITIES SERVICES, INC.	DISINFECTION SERVICES - 12/2023	1,830.00	3,660.00		3,660.00
			JANITORIAL SERVICES - 12/2023	1,830.00			
1002211	01-04-24	FARMER BROS. CO	COFFEE ORDER	596.74	596.74		596.74
1002136	01-04-24	FEDEX	OVERNIGHT FEE	47.76	47.76		47.76
1002178	01-04-24	FEDEX	WELLS FARGO OVERNIGHT FEE	51.49	51.49		51.49
1002212	01-04-24	FEDEX	WELLS FARGO OVERNIGHT FEE	51.27	51.27		51.27
1002086	01-04-24	FERGUSON WATERWORKS #1083	MACH METER	7,356.09	0.00	7,356.09	7,356.09
1002137	01-04-24	FERGUSON WATERWORKS #1083	4" MACH 10 METERS	30,154.92	0.00	44,300.34	44,300.34
			MACH METERS	14,145.42			
1002179	01-04-24	FORSHOCK	SCADA MONITORING SERVICE 01/2024	220.00	220.00		220.00
1002061	01-04-24	FRANCES WEAVER	ACCOUNT REFUND 65565 ACOMA AVE #48	60.82	60.82		60.82
1002061	01-08-24	FRANCES WEAVER	ACCOUNT REFUND 65565 ACOMA AVE #48	-60.82	-60.82		-60.82
1002108	01-04-24	FRANCES WEAVER	ACCOUNT REFUND 65565 ACOMA AVE #48	60.82	60.82		60.82
1002087	01-04-24	FRANCHISE TAX BOARD	GARNISHMENT PPE 12.22.23 PMT#9	150.00	150.00		150.00
1002180	01-04-24	FRANCHISE TAX BOARD	GARNISHMENT PMT 10 PPE 01.05.24	150.00	150.00		150.00
1002062	01-04-24	GLORIA VEGA	ACCOUNT REFUND 13340 DEL RAY LN	79.45	79.45		79.45
1002062	01-08-24	GLORIA VEGA	ACCOUNT REFUND 13340 DEL RAY LN	-79.45	-79.45		-79.45
1002109	01-04-24	GLORIA VEGA	ACCOUNT REFUND 13340 DEL RAY LN	79.45	79.45		79.45
1002088	01-04-24	GRAINGER	JAW COUPLING FOR HORTON PLANT	26.10	26.10		26.10
1002063	01-04-24	HABITAT OF HUMANITY OF THE COACELLA VALL	ACCOUNT REFUND 66353 FLORA AVE	1.09	1.09		1.09

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		EY					
1002063	01-08-24	HABITAT OF HUMANITY OF THE COACELLA VALL	ACCOUNT REFUND 66353 FLORA AVE	-1.09	-1.09		-1.09
		EY					
1002110	01-04-24	HABITAT OF HUMANITY OF THE COACELLA VALL	ACCOUNT REFUND 66353 FLORA AVE	1.09	1.09		1.09
		EY					
1002181	01-04-24	HI-DESERT STAR/THE DESERT TRAIL/DESERT E	DESERT MOBILE PARK SPECIAL AD	250.00	250.00		250.00
		NTERTAINER					
1002182	01-04-24	HOME DEPOT CREDIT SERVICES	HOME DEPOT CREDIT CARD	1,294.51	1,294.51		1,294.51
1002138	01-04-24	HORNE LLP	LIHWAP SUPPLEMENTAL PAYMENT CREDIT FUNDS	4,588.84	4,588.84		4,588.84
1002139	01-04-24	INDIO WATER AUTHORITY	CV WATER COUNTS MSWD PORTION	17,500.00	17,500.00		17,500.00
1002089	01-04-24	INFOSEND INC	NOV. 2023 NEWSLETTER INSERT	1,310.15	1,310.15		1,310.15
1002244	01-31-24	INFOSEND INC	MONTHLY BILLING SERVICE	4,592.02	4,592.02		4,592.02
1002183	01-04-24	J.F. SHEA CONSTRUCTION, INC.	CONSTRUCTION PROGRESS PMT #20	1,475,942.90	0.00	1,475,942.90	1,475,942.90
1002245	01-31-24	J.F. SHEA CONSTRUCTION, INC.	PROGRESS PAYMENT #21	907,667.53	0.00	907,667.53	907,667.53
99105845	01-22-24	J.F. SHEA CONSTRUCTION, INC.	RETENTION WIRE FOR PROGRESS PMT #20	77,681.20	0.00	77,681.20	77,681.20
1002140	01-04-24	JAMESON WALKER	ENGINEER RELEASE OF DEPOSIT - JOB #11792	1,401.48	1,401.48		1,401.48
1002141	01-04-24	JASON WEEKLEY	WORK BOOTS REIMBURSEMENT	300.00	300.00		300.00
1002213	01-04-24	JOHNSON CONTROLS SECURITY SOLUTIONS LLC	SECURITY - HORTON PLANT	1,209.38	1,209.38		1,209.38
1002111	01-04-24	KAY ELLIS	ACCOUNT REFUND 15300 PALM DR #28	52.08	52.08		52.08
1002064	01-04-24	KULVIR KAUR	ACCOUNT REFUND 10774 OCOTILLO RD	50.48	50.48		50.48
1002064	01-08-24	KULVIR KAUR	ACCOUNT REFUND 10774 OCOTILLO RD	-50.48	-50.48		-50.48
1002112	01-04-24	KULVIR KAUR	ACCOUNT REFUND 10774 OCOTILLO RD	50.48	50.48		50.48
1002065	01-04-24	LARRY WHITING	ACCOUNT REFUND 66960 YUCCA DR	50.58	50.58		50.58
1002065	01-08-24	LARRY WHITING	ACCOUNT REFUND 66960 YUCCA DR	-50.58	-50.58		-50.58
1002113	01-04-24	LARRY WHITING	ACCOUNT REFUND 66960 YUCCA DR	50.58	50.58		50.58
1002090	01-04-24	LAURA A. GANNOTTI	TOILET REBATE - GANNOTTI	100.00	100.00		100.00
1002214	01-04-24	LEGEND PUMP & WELL SERVICE, INC.	SNMP SAMPLING AT WELL SITES	68,089.00	68,089.00		68,089.00
1002246	01-31-24	LEGEND PUMP & WELL SERVICE, INC.	PROGRESS PMT #2	55,052.50	0.00	101,737.40	101,737.40
			PROGRESS PMT #1	46,684.90			
99105746	01-12-24	LINCOLN NATIONAL LIFE INS CO	DEF COMP PPE 01.05.2024	21,201.42	21,201.42		21,201.42
99105933	01-26-24	LINCOLN NATIONAL LIFE INS CO	DEF COMP PPE 01.19.24	21,879.92	21,879.92		21,879.92
1002142	01-04-24	MANPOWER US INC.	WATER RES. ASSOC. NUSSER, M	3,534.38	12,584.71		12,584.71
			BUSINESS ANALYST WHITTEN, W	2,447.03			
			WASTER RES. ASSOC. NUSSER, M	2,450.50			
			BUSINESS ANALYST WHITTEN,W	2,482.40			
			METER READER TEMP ALEX M.	1,670.40			
1002215	01-04-24	MANPOWER US INC.	STAFFING SERVICES - GM REPORT/GRANTS	3,016.00	16,619.15		16,619.15
			STAFFING SERVICES - GM REPORT/GRANT	2,921.75			
			STAFFING SERVICES - GM REPORT/GRANT	3,298.75			
			STAFFING SERVICES - ADMIN	2,431.04			
			STAFFING SERVICES - ADMIN	2,482.40			
			STAFFING SERVICES - ADMIN	2,469.21			
1002066	01-04-24	MANUEL GUERRA	ACCOUNT REFUND 64370 BRAEBURN AVE	35.09	35.09		35.09
1002066	01-08-24	MANUEL GUERRA	ACCOUNT REFUND 64370 BRAEBURN AVE	-35.09	-35.09		-35.09
1002114	01-04-24	MANUEL GUERRA	ACCOUNT REFUND 64370 BRAEBURN AVE	35.09	35.09		35.09
1002067	01-04-24	MARCUS L RELIFORD	ACCOUNT REFUND 67580 SAN ANTONIO ST	44.94	44.94		44.94
1002067	01-08-24	MARCUS L RELIFORD	ACCOUNT REFUND 67580 SAN ANTONIO ST	-44.94	-44.94		-44.94
1002115	01-04-24	MARCUS L RELIFORD	ACCOUNT REFUND 67580 SAN ANTONIO ST	44.94	44.94		44.94
1002231	01-04-24	MARQUITIA SALTER	ACCOUNT REFUND 13640 EL RIO LN	0.74	0.74		0.74
1002143	01-04-24	MCCROMETER INC	R/R 12" MCCROMETER TOP PLATE ASSEMBLY	2,942.39	2,942.39		2,942.39
1002184	01-04-24	MCCROMETER INC	ULTRA MAG METER	9,328.68	9,328.68		9,328.68

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1002247	01-31-24	MCDONALD ELECTRIC, INC	SERVICE CALL - BOOSTER 4B	412.50	1,135.00		1,135.00
			BOOSTER #4 REPAIRS	722.50			
1001644	01-23-24	MICHAEL PLASSE	ACCOUNT REFUND 66247 AVE SUENOS	-111.84	-111.84		-111.84
1002216	01-04-24	MICHAEL PLASSE	ACCOUNT REFUND 66247 AVE SUENOS	111.84	111.84		111.84
1002248	01-31-24	MISSION LAKES COUNTRY CLUB, INC.	SPONSORSHIP-MLCC MENS GOLF TOURNAMENT	1,000.00	1,000.00		1,000.00
1002068	01-04-24	NOEMI CERVANTES	ACCOUNT REFUND 66678 HACIENDA AVE	129.55	129.55		129.55
1002068	01-08-24	NOEMI CERVANTES	ACCOUNT REFUND 66678 HACIENDA AVE	-129.55	-129.55		-129.55
1002116	01-04-24	NOEMI CERVANTES	ACCOUNT REFUND 66678 HACIENDA AVE	129.55	129.55		129.55
1002091	01-04-24	O'REILLY AUTOMOTIVE INC.	OIL CHANGE UNIT #410	54.03	522.56		522.56
			OIL CHANGE UNIT #414	149.48			
			OIL FILTER CHANGE UNIT #405	50.30			
			REPLACEMENT HEADLIGHT UNIT #402	36.62			
			OIL CHANGE #398	76.44			
			OIL CHANGE #435	53.09			
			OIL CHANGE #412	54.03			
			OIL CHANGE #429	48.57			
1002217	01-04-24	O'REILLY AUTOMOTIVE INC.	FLOORMATS/FREIGHT UNIT 437	148.85	708.07		708.07
			REPLACEMENT BATTERY UNIT 20	51.64			
			REPLACEMENT BATTERY	154.97			
			OIL BUCKETS FOR HORTON PLANT	161.60			
			OIL/FILTER CHANGE UNIT 421	79.72			
			HEATER HOSE UNIT 414	9.56			
			OIL & FILTER CHANGE UNIT 418	43.93			
			CAR RESTOCK	27.19			
			CAR RESTOCK	27.98			
			FUEL HOSE	2.63			
1002144	01-04-24	PALM SPRINGS MOTORS INC	WIRE ASY - UNIT #402	58.21	58.21		58.21
1002185	01-04-24	PALM SPRINGS PEST CONTROL, INC.	PEST CONTROL	45.00	300.00		300.00
			PEST SERVICES	40.00			
			PEST SERVICES	90.00			
			PEST SERVICES	60.00			
			PEST CONTROL SERVICES	65.00			
1002092	01-04-24	PARKERS BUILDING SUPPLY	PVC PIPE	30.65	480.69		480.69
			RETURN PALLET CHARGE CREDIT REQ #121043	-39.87			
			INVENTORY	370.05			
			INVENTORY	56.01			
			INVENTORY	16.46			
			INVENTORY	47.39			
1002145	01-04-24	PARKERS BUILDING SUPPLY	MISC. ITEMS - PRODUCTION	30.13	30.13		30.13
1002186	01-04-24	PARKERS BUILDING SUPPLY	MISC ITEMS FOR PRODUCTION	25.84	59.76		59.76
			MISC ITEMS FOR PRODUCTION	33.92			
1002218	01-04-24	PARKERS BUILDING SUPPLY	REPAIR PARTS FOR LIFT STATION VALVE	62.50	233.14		233.14
			INVENTORY	33.35			
			STEEL ROD - VAC TRAILER	27.99			
			DRILL BIT - FLEET MAINT.	28.00			
			ADMIN BUILDING REPAIR PARTS	16.09			
			ADMIN BUILDING REPAIR PARTS	36.35			
			TANK BUG SPRAYER - ADMIN BUILDING	20.46			
			PAINT FOR ADMIN BUILDING	8.40			
1002146	01-04-24	PATTON DOOR & GATE	MAIN GATE REPAIR - CORP YARD	300.00	550.00		550.00
			GARAGE DOOR REPAIR - ADMIN BLDG	250.00			

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99105986	01-17-24	PAYMENTUS CORPORATION	DEC CREDIT CARD FEES	4,034.70	4,034.70		4,034.70
99105715	01-08-24	PAYNEARME MT, INC.	DEC. 2023 PAYNEARME FEES	8,019.24	8,019.24		8,019.24
1002249	01-31-24	PLANETBIDS, INC.	ANNUAL SUBSCRIPTION 2023-2024	6,612.36	6,612.36		6,612.36
1002250	01-31-24	PLANIT REPROGRAPHICS	BOND PRINTS OF APPROVED PLANS	75.69	75.69		75.69
1002219	01-04-24	POLLARDWATER	HYDRANT LOCK	140.08	140.08		140.08
1002187	01-04-24	POLYDYNE,INC.	POLYMER SLUDGE WASTING	8,464.71	8,464.71		8,464.71
1002147	01-04-24	POWERPLAN OIB	REPAIR PARTS - UNIT #400, UNIT #401	470.00	470.00		470.00
1002251	01-31-24	PROFORMA	MISC ADJUSTMENT FORMS	478.62	478.62		478.62
1002232	01-04-24	RALPH ORTEGA	ACCOUNT REFUND 69331 CRESTVIEW DR	67.92	67.92		67.92
1002148	01-04-24	RAY LOPEZ ASSOCIATES	SKYBORNE VILLAGE II, REGIONAL WASTEWATER FACILITY	3,497.50	2,537.50	960.00	3,497.50
			DHS FIRE STATION NO. 98				
1002149	01-11-24	RITA M. HUBER	PETTY CASH REPLENISHMENT	105.16	105.16		105.16
99105747	01-12-24	RIVERSIDE COUNTY DCSS - MAIN OFFICE	MONTHLY IWO - PPE 01.05.2024	176.25	176.25		176.25
1002093	01-04-24	ROBERT G MODRICH	DEC 2023 UNIDATA MAINTENANCE	6,385.20	6,385.20		6,385.20
1002150	01-04-24	ROTARY CLUB OF DESERT HOT SPRINGS	2023-2024 MEMBERSHIP DUES	100.00	100.00		100.00
1000978	01-29-24	RUSS MARTIN	R. MARTIN - MILEAGE REIMB.	-167.02	-167.02		-167.02
1002151	01-04-24	RUSS MARTIN	R. MARTIN MILEAGE REIMB.	224.01	224.01		224.01
1002252	01-31-24	RUSS MARTIN	R. MARTIN - MILEAGE REIMB.	167.02	167.02		167.02
1002094	01-04-24	SA RECYCLING LLC	GREENWASTE FROM DISTRICT SITES	104.65	406.25		406.25
			GREENWASTE FROM DISTRICT SITES	189.80			
			GREENWASTE FROM DISTRICT SITES	111.80			
1002152	01-04-24	SA RECYCLING LLC	VALVE REPLACEMENT GREENWASTE	30.00	30.00		30.00
1002069	01-04-24	SALOMON CAVAZOS	ACCOUNT REFUND 11535 W STARCROSS DR	24.18	24.18		24.18
1002069	01-08-24	SALOMON CAVAZOS	ACCOUNT REFUND 11535 W STARCROSS DR	-24.18	-24.18		-24.18
1002117	01-04-24	SALOMON CAVAZOS	ACCOUNT REFUND 11535 W STARCROSS DR	24.18	24.18		24.18
1002233	01-04-24	SARA SHOWKATIAN	ACCOUNT REFUND 66796 GRANADA AVE	29.75	29.75		29.75
1002234	01-04-24	SEAN TORRES	ACCOUNT REFUND 9331 VISTA DEL VALLE	185.31	185.31		185.31
1002235	01-04-24	SERGIO MORALES	ACCOUNT REFUND 68180 CALLE AZTECA	5.91	5.91		5.91
1002095	01-04-24	SHERWIN-WILLIAMS	RESTOCK TAN, SAFETY YELLOW GAL PAINT	534.31	534.31		534.31
1002118	01-04-24	SIGNPOST HOMES INC	ACCOUNT REFUND 64028 ALPINE ST	7.68	7.68		7.68
1002188	01-04-24	SLOVAK BARON EMPEY MURPHY & PINKNEY LLP	LEGAL SERVICES OVER RETAINER	4,948.20	11,525.20		11,525.20
			LEGAL SERVICES RETAINER	6,500.00			
			LEGAL SERVICES CLASS ACTION DEFENSE	77.00			
1002153	01-04-24	SO CAL GAS	GAS BILL 12/01/23 - 01/03/24	82.45	82.45		82.45
1002154	01-04-24	SOUTH COAST AIR QUALITY	FACILITY ID 195050	160.35	4,282.20		4,282.20
			FACILITY ID 195050	4,121.85			
			ICE & SEWAGE TREATMENT PERMIT - NWRWRF				
1002189	01-04-24	SOUTHERN CALIFORNIA EDISON COMPANY	ELECTRIC BILL	240,408.75	277,290.94		277,290.94
			ELECTRIC BILL	34,180.99			
			ELECTRIC BILL	2,701.20			
1002096	01-04-24	STARLITE RECLAMATION	ABS PIPE DISPOSAL/REMOVAL AT CORP YARD	1,697.32	2,444.82		2,444.82
			WASTE OIL REMOVAL - CORP YARD	747.50			
99105744	01-12-24	STATE OF CA EDD	STATE TAX PPE 01.05.2024	11,379.81	11,379.81		11,379.81
99105932	01-26-24	STATE OF CA EDD	STATE TAX PPE 01.19.24	12,612.38	12,612.38		12,612.38
1002190	01-04-24	STATE WATER RES CONTRL BRD	ANNUAL PERMIT FEES	1,068.00	44,729.68	1,068.00	45,797.68
			WATER SYSTEM ANNUAL FEES	44,729.68			
1002220	01-25-24	STATE WATER RES CONTRL BRD	WATER SYSTEM ANNUAL FEES	842.08	1,403.60		1,403.60
			WATER SYSTEM ANNUAL FEES INVOICE	561.52			
1002221	01-04-24	STATE WATER RES CONTRL BRD	LAB CERTIFICATE REFUND CORRECTION	429.66	429.66		429.66
99105921	01-31-24	STATE WATER RES CONTRL BRD	SWRCB - CW-4250-310	302,509.91	302,509.91		302,509.91
1002236	01-04-24	STATION ELECTRIC LLC	ACCOUNT REFUND DIABLO RD AT DEVERS	770.13	770.13		770.13

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1002155	01-04-24	SWRCB ACCOUNTING OFFICE	WATER DISTRIBUTION RENEWAL - ALEX .	80.00	80.00		80.00
1002222	01-04-24	T4 SPATIAL, LLC	CCTV STORAGE - JANUARY 2024	1,250.00	1,250.00		1,250.00
1002156	01-04-24	THE LAMAR COMPANIES	BILLBOARD	950.00	950.00		950.00
1002193	01-04-24	THE LAMAR COMPANIES	BILLBOARD RENEWAL	125.00	125.00		125.00
1002253	01-31-24	THE LAMAR COMPANIES	ADVERTISING	950.00	950.00		950.00
1002192	01-04-24	THE LINCOLN NATL. LIFE INS. CO.	FEBRUARY 2024 PREPAID INSURANCE	4,057.92	4,057.92		4,057.92
1002097	01-04-24	THE UPS STORE #5062	DECORATION FOR XMAS FLOAT	153.55	153.55		153.55
1002191	01-18-24	THE UPS STORE #5062	ENVELOPES & BOD BUSINESS CARDS	486.87	486.87		486.87
1002194	01-04-24	THERESA MURPHY	HOLIDAY EVENT GIFTS REIMBURSEMENT	92.46	92.46		92.46
1002195	01-04-24	TILLEY CRANE INSPECTION	ANNUAL INSPECTION OF CRANE @ HWWTP	450.00	450.00		450.00
1002157	01-04-24	TKE ENGINEERING, INC	CONSULTANT DESIGN SVCS SEP-OCT 2023	1,335.00	0.00	1,335.00	1,335.00
1002254	01-31-24	TKE ENGINEERING, INC	PROGRESS PMT #22 FOR C&M INSPECTION	128,125.61	12,438.78	259,370.54	271,809.32
			PROGRESS PMT #23 FOR C&M INSPECTION	117,549.93			
			DISTRICT ENGINEERING SERVICES	21,927.50			
			CM & INSPECTION FOR DEC 2023	1,362.50			
			CONSULTANT SERVICES	145.00			
			LS & FM PLAN CHECK	2,698.78			
1002255	01-31-24	TKE ENGINEERING, INC	ENGINEERING SERVICES	16,407.50	16,197.50	210.00	16,407.50
1002098	01-04-24	TOPS N BARRICADES, INC	SAFETY STROBE LIGHTS	271.88	1,263.52		1,263.52
			YELLOW SAFETY JACKETS	176.01			
			SAFETY STROBE LIGHTS	815.63			
1002196	01-04-24	TRAVEL BERKELEY SPRINGS	BERKELEY SPRINGS CONTEST FEE	45.00	45.00		45.00
1002158	01-04-24	UMETECH, INC.	IT HELPDESK, MNGD SERV, SPAM - DEC 2023/5	14,304.95	14,304.95		14,304.95
1002197	01-04-24	UNDERGROUND SERVICE ALERT	UNDERGROUND SERVICE ALERT	244.50	244.50		244.50
1002159	01-04-24	UNITED RENTALS NORTHWEST, INC.	WALKBEHIND TRENCHER - PRODUCTION	443.50	443.50		443.50
1002160	01-04-24	US BANK	AD #13 ADMIN FEES - 12.2023 TO 11.2024	3,025.00	3,025.00		3,025.00
1001782	01-25-24	USA BLUEBOOK	WELL WATER - SONIC WATER LEVEL MONITOR	-2,754.84	-3,542.09		-3,542.09
			PRESSURE GAUGES - WATER PRODUCTION	-273.94			
			PRESSURE GAUGES	-513.31			
1002099	01-04-24	USA BLUEBOOK	MISC. LAB MATERIAL - HORTON PLANT	656.86	2,509.44		2,509.44
			PACKING CORD - PRODUCTION	155.11			
			RTV SILICONE - PRODUCTION	249.51			
			MATERIAL - PRODUCTION	833.16			
			ITEMS FOR PRODUCTION	614.80			
1002162	01-04-24	USA BLUEBOOK	48 GPD GRUNDFOS PUMP - PRODUCTION	3,383.46	3,504.78		3,504.78
			SITE SIGNAGE - PRODUCTION	81.34			
			FULL DISCLOSURE SIGN - PRODUCTION	39.98			
1002223	01-04-24	USA BLUEBOOK	LAB SUPPLIES - HORTON PLANT	269.58	1,966.27		1,966.27
			ITEMS FOR WATER PRODUCTION	1,303.62			
			ITEMS FOR WATER PRODUCTION	336.07			
			ITEMS FOR WATER PRODUCTION	57.00			
1002256	01-31-24	USA BLUEBOOK	WELL WATER - SONIC WATER LEVEL MONITOR	2,754.84	3,542.09		3,542.09
			PRESSURE GAUGES - WATER PRODUCTION	273.94			
			PRESSURE GAUGES	513.31			
1002161	01-04-24	USA-FACT INC	BACKGROUND CHECK	90.38	90.38		90.38
1002198	01-04-24	VERIZON CONNECT FLEET USA LLC	GPS TRACKING SUBSCRIPTION	587.45	587.45		587.45
1002237	01-04-24	VSPPI, INC.	ACCOUNT REFUND PIERSON BLVD	649.14	649.14		649.14
1002100	01-04-24	WATERLINE TECHNOLOGIES INC.	6 DRUMS REFILLED #5661784	1,467.56	5,870.23		5,870.23
			7 DRUMS REFILLED #5665831	1,712.15			
			7 DRUMS REFILLED	1,712.15			
			4 DRUMS REFILLED	978.37			

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1002163	01-04-24	WATERLINE TECHNOLOGIES INC.	4 DRUMS REFILLED	978.37	2,201.33		2,201.33
			5 DRUMS REFILLED	1,222.96			
1002224	01-04-24	WATERLINE TECHNOLOGIES INC.	DRUM REFILL	2,445.93	2,445.93		2,445.93
1002199	01-04-24	WATERSMART SOFTWARE,INC.	ANNUAL FEE FOR PAPERLESS BILL INTEGRATION	6,180.00	6,180.00		6,180.00
99105764	01-02-24	WELLS FARGO - WELLSONE	DECEMBER 2023 CC PAYMENT	47,323.80	47,323.80		47,323.80
99105702	01-02-24	WELLS FARGO BANK	DEC 2023 LOC INTEREST EXPENSE	49,875.00	51,537.50		51,537.50
			JAN 1, 2024 LOC INTEREST EXPENSE	1,662.50			
99105743	01-05-24	WELLS FARGO BANK	AUTO DEP PPE 01.05.2024	134,248.19	134,248.19		134,248.19
99105930	01-26-24	WELLS FARGO BANK	AUTO DEP PPE 01.26.24	144,978.63	144,978.63		144,978.63
1002164	01-04-24	WEST COAST SAND AND GRAVEL INC.	RESTOCK 26 TONS BASE MATERIAL	552.43	552.43		552.43
1002165	01-04-24	WESTAIR GASES & EQUIPMENT, INC.	REFILL CO2 TANK FOR SOUNDINGS - PRODUCTION	71.71	234.41		234.41
			C02 TANKS FOR PARADE FLOAT	162.70			
1002101	01-04-24	WESTERN WATER WORKS	NON-INVENTORY FULL CIRCLE REPAIR CLAMPS	1,173.72	1,173.72		1,173.72
1002166	01-04-24	WIENHOFF DRUG TESTING	DOT YEARLY MONITORING, PROGRAM ENROLLMENT	185.00	185.00		185.00
1002238	01-04-24	WOLFGANG SCHMIDT	ACCOUNT REFUND 8580 ANNANDALE AVE	41.62	41.62		41.62
1002257	01-31-24	WORD OF LIFE FELLOWSHIP TEMPLE	BRIDGE TO BETTER HOMELESS PROJECT DONATION	500.00	500.00		500.00
1002102	01-04-24	XEROX CORPORATION	XEROX LEASE - ENG - DEC 2023	172.39	172.39		172.39
1002167	01-04-24	XEROX CORPORATION	XEROX LEASE - ADMIN - DEC-JAN 2024	343.73	343.73		343.73
1002258	01-31-24	XEROX CORPORATION	XEROX LEASE	172.39	172.39		172.39
			CURRENT CHECK TOTAL	5,291,973.8	1,961,742.5	3,330,231.2	5,291,973.8
TOTAL				5,291,973.82	1,961,742.56	3,330,231.26	5,291,973.82
241 records listed							

CHECK NUMBER	CHECK DATE	PAID TO VENDOR	DISBURSEMENT DESCRIPTION	INVOICE			TOTAL
				AMOUNT	OPERATING	CAPITAL	
1000807	01-02-24	DOUG WABISZEWSKI	ACCOUNT REFUND 67455 MONTEREY RD	-163.21	-163.21		-163.21
1000978	01-29-24	RUSS MARTIN	R. MARTIN - MILEAGE REIMB.	-167.02	-167.02		-167.02
1001644	01-23-24	MICHAEL PLASSE	ACCOUNT REFUND 66247 AVE SUENOS	-111.84	-111.84		-111.84
1001782	01-25-24	USA BLUEBOOK	WELL WATER - SONIC WATER LEVEL MONITOR	-2,754.84	-3,542.09		-3,542.09
			PRESSURE GAUGES - WATER PRODUCTION	-273.94			
			PRESSURE GAUGES	-513.31			
1001893	01-03-24	CV STRATEGIES	BILLBOARD - PROTECT YOUR PIPES	-1,042.50	-7,092.50		-7,092.50
			VIDEO SERVICES - UNDERSTANDING YOUR BILL	-4,063.75			
			MSWD 2024 CALENDAR	-1,986.25			
1002058	01-04-24	ATP GENERAL ENGINEERING CONTRACTORS	ACCOUNT REFUND WORSELY RD @ RESERVIOR	766.95	766.95		766.95
1002058	01-08-24	ATP GENERAL ENGINEERING CONTRACTORS	ACCOUNT REFUND WORSELY RD @ RESERVIOR	-766.95	-766.95		-766.95
1002059	01-04-24	CARMEN CASALLAS	ACCOUNT REFUND 66635 EL DORADO PL	83.66	83.66		83.66
1002059	01-08-24	CARMEN CASALLAS	ACCOUNT REFUND 66635 EL DORADO PL	-83.66	-83.66		-83.66
1002060	01-04-24	CELIA GARCIA	ACCOUNT REFUND 66615 GRANADA AVE	36.43	36.43		36.43
1002060	01-08-24	CELIA GARCIA	ACCOUNT REFUND 66615 GRANADA AVE	-36.43	-36.43		-36.43
1002061	01-04-24	FRANCES WEAVER	ACCOUNT REFUND 65565 ACOMA AVE #48	60.82	60.82		60.82
1002061	01-08-24	FRANCES WEAVER	ACCOUNT REFUND 65565 ACOMA AVE #48	-60.82	-60.82		-60.82
1002062	01-04-24	GLORIA VEGA	ACCOUNT REFUND 13340 DEL RAY LN	79.45	79.45		79.45
1002062	01-08-24	GLORIA VEGA	ACCOUNT REFUND 13340 DEL RAY LN	-79.45	-79.45		-79.45
1002063	01-04-24	HABITAT OF HUMANITY OF THE COACELLA VALL	ACCOUNT REFUND 66353 FLORA AVE	1.09	1.09		1.09
		EY					
1002063	01-08-24	HABITAT OF HUMANITY OF THE COACELLA VALL	ACCOUNT REFUND 66353 FLORA AVE	-1.09	-1.09		-1.09
		EY					
1002064	01-04-24	KULVIR KAUR	ACCOUNT REFUND 10774 OCOTILLO RD	50.48	50.48		50.48
1002064	01-08-24	KULVIR KAUR	ACCOUNT REFUND 10774 OCOTILLO RD	-50.48	-50.48		-50.48
1002065	01-04-24	LARRY WHITING	ACCOUNT REFUND 66960 YUCCA DR	50.58	50.58		50.58
1002065	01-08-24	LARRY WHITING	ACCOUNT REFUND 66960 YUCCA DR	-50.58	-50.58		-50.58
1002066	01-04-24	MANUEL GUERRA	ACCOUNT REFUND 64370 BRAEBURN AVE	35.09	35.09		35.09
1002066	01-08-24	MANUEL GUERRA	ACCOUNT REFUND 64370 BRAEBURN AVE	-35.09	-35.09		-35.09
1002067	01-04-24	MARCUS L RELIFORD	ACCOUNT REFUND 67580 SAN ANTONIO ST	44.94	44.94		44.94
1002067	01-08-24	MARCUS L RELIFORD	ACCOUNT REFUND 67580 SAN ANTONIO ST	-44.94	-44.94		-44.94
1002068	01-04-24	NOEMI CERVANTES	ACCOUNT REFUND 66678 HACIENDA AVE	129.55	129.55		129.55
1002068	01-08-24	NOEMI CERVANTES	ACCOUNT REFUND 66678 HACIENDA AVE	-129.55	-129.55		-129.55
1002069	01-04-24	SALOMON CAVAZOS	ACCOUNT REFUND 11535 W STARCROSS DR	24.18	24.18		24.18
1002069	01-08-24	SALOMON CAVAZOS	ACCOUNT REFUND 11535 W STARCROSS DR	-24.18	-24.18		-24.18
1002070	01-04-24	ACWA-JPIA HEALTH BENEFITS AUTH.	FEB 2024 PREPAID INSURANCE	106,619.05	106,619.05		106,619.05
1002071	01-04-24	AECOM TECHNICAL SERVICES INC.	MSWD CONSTRUCTION SERVICES AUG-SEP 2023	76,345.88	0.00	76,345.88	76,345.88
1002072	01-04-24	AUTO ZONE STORES LLC	TUBLESS TIRE VALVE #401	4.30	4.30		4.30
1002073	01-04-24	BECK OIL, INC.	UNLEADED GASOLINE	2,359.69	4,915.32		4,915.32
			DIESEL FUEL	2,555.63			
1002074	01-04-24	CARPI & CLAY. INC	DEC. 2023 FEDERAL ADVOCACY	4,000.00	4,000.00		4,000.00
1002075	01-04-24	CASEY DOLAN	DIGITAL AD MGMT	650.00	650.00		650.00
1002076	01-04-24	CECILIA A. MONDRAGON	TOILET REBATE - MONDRAGON	200.00	200.00		200.00
1002077	01-04-24	CORE & MAIN LP	R/W GATE VALVE	786.58	7,048.89		7,048.89
			HYMAX FLEX COUPL.	2,084.51			
			4"X25" FULL CIRCLE REPAIR CLAMP	437.47			
			INVENTORY	3,740.33			
1002078	01-04-24	CV STRATEGIES	BILLBOARD - PROTECT YOUR PIPES	1,042.50	3,028.75		3,028.75
			MSWD 2024 CALENDAR	1,986.25			
1002079	01-04-24	CV STRATEGIES	VIDEO SERVICES - UNDERSTANDING YOUR BILL	4,063.75	4,063.75		4,063.75
1002080	01-04-24	DANGELO COMPANY	FLEX COUPL.	1,948.57	1,948.57		1,948.57

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				AMOUNT	OPERATING	CAPITAL	
1002081	01-04-24	DESERT TIRE AND AUTO REPAIR	REPLACEMENT TIRES #429	1,155.02	1,155.02		1,155.02
1002082	01-04-24	DOUG WABISZEWSKI	ACCOUNT REFUND 67455 MONTEREY RD	163.21	163.21		163.21
1002083	01-04-24	EDOM HILL TRANSFER STATION	SITE CLEAN UP DUMP FEE	19.00	19.00		19.00
1002084	01-04-24	ENVIROGEN TECHNOLOGIES INC	WELL 26A URANIUM TREATMENT - 11/2023	4,120.87	4,120.87		4,120.87
1002085	01-04-24	EXECUTIVE FACILITIES SERVICES, INC.	DISINFECTION SERVICES - 12/2023	1,830.00	3,660.00		3,660.00
			JANITORIAL SERVICES - 12/2023	1,830.00			
1002086	01-04-24	FERGUSON WATERWORKS #1083	MACH METER	7,356.09	0.00	7,356.09	7,356.09
1002087	01-04-24	FRANCHISE TAX BOARD	GARNISHMENT PPE 12.22.23 PMT#9	150.00	150.00		150.00
1002088	01-04-24	GRAINGER	JAW COUPLING FOR HORTON PLANT	26.10	26.10		26.10
1002089	01-04-24	INFOSEND INC	NOV. 2023 NEWSLETTER INSERT	1,310.15	1,310.15		1,310.15
1002090	01-04-24	LAURA A. GANNOTTI	TOILET REBATE - GANNOTTI	100.00	100.00		100.00
1002091	01-04-24	O'REILLY AUTOMOTIVE INC.	OIL CHANGE UNIT #410	54.03	522.56		522.56
			OIL CHANGE UNIT #414	149.48			
			OIL FILTER CHANGE UNIT #405	50.30			
			REPLACEMENT HEADLIGHT UNIT #402	36.62			
			OIL CHANGE #398	76.44			
			OIL CHANGE #435	53.09			
			OIL CHANGE #412	54.03			
			OIL CHANGE #429	48.57			
1002092	01-04-24	PARKERS BUILDING SUPPLY	PVC PIPE	30.65	480.69		480.69
			RETURN PALLET CHARGE CREDIT REQ #121043	-39.87			
			INVENTORY	370.05			
			INVENTORY	56.01			
			INVENTORY	16.46			
			INVENTORY	47.39			
1002093	01-04-24	ROBERT G MODRICH	DEC 2023 UNIDATA MAINTENANCE	6,385.20	6,385.20		6,385.20
1002094	01-04-24	SA RECYCLING LLC	GREENWASTE FROM DISTRICT SITES	104.65	406.25		406.25
			GREENWASTE FROM DISTRICT SITES	189.80			
			GREENWASTE FROM DISTRICT SITES	111.80			
1002095	01-04-24	SHERWIN-WILLIAMS	RESTOCK TAN, SAFETY YELLOW GAL PAINT	534.31	534.31		534.31
1002096	01-04-24	STARLITE RECLAMATION	ABS PIPE DISPOSAL/REMOVAL AT CORP YARD	1,697.32	2,444.82		2,444.82
			WASTE OIL REMOVAL - CORP YARD	747.50			
1002097	01-04-24	THE UPS STORE #5062	DECORATION FOR XMAS FLOAT	153.55	153.55		153.55
1002098	01-04-24	TOPS N BARRICADES, INC	SAFETY STROBE LIGHTS	271.88	1,263.52		1,263.52
			YELLOW SAFETY JACKETS	176.01			
			SAFETY STROBE LIGHTS	815.63			
1002099	01-04-24	USA BLUEBOOK	MISC. LAB MATERIAL - HORTON PLANT	656.86	2,509.44		2,509.44
			PACKING CORD - PRODUCTION	155.11			
			RTV SILICONE - PRODUCTION	249.51			
			MATERIAL - PRODUCTION	833.16			
			ITEMS FOR PRODUCTION	614.80			
1002100	01-04-24	WATERLINE TECHNOLOGIES INC.	6 DRUMS REFILLED #5661784	1,467.56	5,870.23		5,870.23
			7 DRUMS REFILLED #5665831	1,712.15			
			7 DRUMS REFILLED	1,712.15			
			4 DRUMS REFILLED	978.37			
1002101	01-04-24	WESTERN WATER WORKS	NON-INVENTORY FULL CIRCLE REPAIR CLAMPS	1,173.72	1,173.72		1,173.72
1002102	01-04-24	XEROX CORPORATION	XEROX LEASE - ENG - DEC 2023	172.39	172.39		172.39
1002103	01-04-24	ANA GRANT	ACCOUNT REFUND 66123 ESTRELLA AVE	579.51	579.51		579.51
1002104	01-04-24	ATP GENERAL ENGINEERING CONTRACTORS	ACCOUNT REFUND WORSELY RD @ RESERVIOR	766.95	766.95		766.95
1002105	01-04-24	CARMEN CASALLAS	ACCOUNT REFUND 66635 EL DORADO PL	83.66	83.66		83.66
1002106	01-04-24	CELIA SADLOU	ACCOUNT REFUND 15300 PALM DR #95	800.00	800.00		800.00

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				AMOUNT	OPERATING	CAPITAL	
1002107	01-04-24	CELIA GARCIA	ACCOUNT REFUND 66615 GRANADA AVE	36.43	36.43		36.43
1002108	01-04-24	FRANCES WEAVER	ACCOUNT REFUND 65565 ACOMA AVE #48	60.82	60.82		60.82
1002109	01-04-24	GLORIA VEGA	ACCOUNT REFUND 13340 DEL RAY LN	79.45	79.45		79.45
1002110	01-04-24	HABITAT OF HUMANITY OF THE COACELLA VALL EY	ACCOUNT REFUND 66353 FLORA AVE	1.09	1.09		1.09
1002111	01-04-24	KAY ELLIS	ACCOUNT REFUND 15300 PALM DR #28	52.08	52.08		52.08
1002112	01-04-24	KULVIR KAUR	ACCOUNT REFUND 10774 OCOTILLO RD	50.48	50.48		50.48
1002113	01-04-24	LARRY WHITING	ACCOUNT REFUND 66960 YUCCA DR	50.58	50.58		50.58
1002114	01-04-24	MANUEL GUERRA	ACCOUNT REFUND 64370 BRAEBURN AVE	35.09	35.09		35.09
1002115	01-04-24	MARCUS L RELIFORD	ACCOUNT REFUND 67580 SAN ANTONIO ST	44.94	44.94		44.94
1002116	01-04-24	NOEMI CERVANTES	ACCOUNT REFUND 66678 HACIENDA AVE	129.55	129.55		129.55
1002117	01-04-24	SALOMON CAVAZOS	ACCOUNT REFUND 11535 W STARCROSS DR	24.18	24.18		24.18
1002118	01-04-24	SIGNPOST HOMES INC	ACCOUNT REFUND 64028 ALPINE ST	7.68	7.68		7.68
1002119	01-04-24	ACWA/JOINT POWERS INSURANCE AUTHORITY	CLAIM # 10-1650 QTR ENDED 12-31-23 RESTITUTION PAYMENT	1,200.00	1,200.00		1,200.00
1002120	01-04-24	ALL AMERICAN FIRST AID	FIRST AID SUPPLY RESTOCK	238.77	238.77		238.77
1002121	01-04-24	AM CONSERVATION GROUP INC.	WATER WISE PROGRAM - PHMS	1,336.33	1,336.33		1,336.33
1002122	01-04-24	AMBER DUFF	A. DUFF MILEAGE REIMB.	107.42	107.42		107.42
1002123	01-04-24	ARAMARK UNIFORM SERVICES, LLC		265.27	265.27		265.27
1002124	01-04-24	BABCOCK LABORATORIES, INC.	SAMPLING FOR COACHILLIN	510.77	510.77		510.77
1002125	01-04-24	BEST SIGNS, INC	MSWD VINYL LOGO RESTOCK - DISTRICT VEHICLES	688.28	688.28		688.28
1002126	01-04-24	BRIAN MACY	TUITION REIMBURSEMENT PER INTERIM GM EMPLOYMENT CONTRACT SECTION IX B iii	5,001.00	5,001.00		5,001.00
1002127	01-04-24	CALCHAMBER	CALCHAMBER YEARLY MEMBERSHIP	799.00	799.00		799.00
1002128	01-04-24	CALIFORNIA GROUNDWATER COALITION	2024 MEMBERSHIP DUES	8,250.00	8,250.00		8,250.00
1002129	01-04-24	CITY OF DESERT HOT SPRINGS	UUT NOVEMBER 2023	38,913.57	38,913.57	694.80	39,608.37
1002130	01-04-24	CORE & MAIN LP	ENC-23-104 ENCROACHMENT PERMIT O RING/HOSE CAP/MTR. BUSH JONES	694.80 5,806.07	6,592.65		6,592.65
1002131	01-04-24	COUNTY OF RIVERSIDE	R/W GATE VALVE BACKFLOW DEVICE TESTER APPLICATION FOR JOE H. PI0000310 CERT NO. 16376	786.58 151.00	151.00		151.00
1002132	01-04-24	DESERT ELECTRIC SUPPLY	ORBT-1-BC DEVICE MOUNT & COVER - PRODUCTION 10FT & 140FT CONDUIT - PRODUCTION	10.91 220.86	231.77		231.77
1002133	01-04-24	DESERT VALLEY DISPOSAL, INC.	DECEMBER SERVICES - ADMIN BLDG DECEMBER SERVICES - CORP YARD	544.89 793.90	1,338.79		1,338.79
1002134	01-04-24	DESERT TIRE AND AUTO REPAIR	REPLACEMENT TIRES - UNIT #404	1,198.78	1,198.78		1,198.78
1002135	01-04-24	ECOLOGY AUTO PARTS	SLUDGE HAULING CREDIT FOR INV. #1383-INCORRECT CHARGES SLUDGE HAULING	2,835.16 -2,835.16 2,621.26	2,621.26		2,621.26
1002136	01-04-24	FEDEX	OVERNIGHT FEE	47.76	47.76		47.76
1002137	01-04-24	FERGUSON WATERWORKS #1083	4" MACH 10 METERS MACH METERS	30,154.92 14,145.42	0.00	44,300.34	44,300.34
1002138	01-04-24	HORNE LLP	LIHWAP SUPPLEMENTAL PAYMENT CREDIT FUNDS	4,588.84	4,588.84		4,588.84
1002139	01-04-24	INDIO WATER AUTHORITY	CV WATER COUNTS MSWD PORTION	17,500.00	17,500.00		17,500.00
1002140	01-04-24	JAMESON WALKER	ENGINEER RELEASE OF DEPOSIT - JOB #11792	1,401.48	1,401.48		1,401.48
1002141	01-04-24	JASON WEEKLEY	WORK BOOTS REIMBURSEMENT	300.00	300.00		300.00
1002142	01-04-24	MANPOWER US INC.	WATER RES. ASSOC. NUSSER, M BUSINESS ANALYST WHITTEN, W WASTER RES. ASSOC. NUSSER, M BUSINESS ANALYST WHITTEN,W	3,534.38 2,447.03 2,450.50 2,482.40	12,584.71		12,584.71

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				AMOUNT	OPERATING	CAPITAL	TOTAL
			METER READER TEMP ALEX M.	1,670.40			
1002143	01-04-24	MCCROMETER INC	R/R 12" MCCROMETER TOP PLATE ASSEMBLY	2,942.39	2,942.39		2,942.39
1002144	01-04-24	PALM SPRINGS MOTORS INC	WIRE ASY - UNIT #402	58.21	58.21		58.21
1002145	01-04-24	PARKERS BUILDING SUPPLY	MISC. ITEMS - PRODUCTION	30.13	30.13		30.13
1002146	01-04-24	PATTON DOOR & GATE	MAIN GATE REPAIR - CORP YARD	300.00	550.00		550.00
			GARAGE DOOR REPAIR - ADMIN BLDG	250.00			
1002147	01-04-24	POWERPLAN OIB	REPAIR PARTS - UNIT #400, UNIT #401	470.00	470.00		470.00
1002148	01-04-24	RAY LOPEZ ASSOCIATES	SKYBORNE VILLAGE II, REGIONAL WASTEWATER FACILITY	3,497.50	2,537.50	960.00	3,497.50
			DHS FIRE STATION NO. 98				
1002149	01-11-24	RITA M. HUBER	PETTY CASH REPLENISHMENT	105.16	105.16		105.16
1002150	01-04-24	ROTARY CLUB OF DESERT HOT SPRINGS	2023-2024 MEMBERSHIP DUES	100.00	100.00		100.00
1002151	01-04-24	RUSS MARTIN	R. MARTIN MILEAGE REIMB.	224.01	224.01		224.01
1002152	01-04-24	SA RECYCLING LLC	VALVE REPLACEMENT GREENWASTE	30.00	30.00		30.00
1002153	01-04-24	SO CAL GAS	GAS BILL 12/01/23 - 01/03/24	82.45	82.45		82.45
1002154	01-04-24	SOUTH COAST AIR QUALITY	FACILITY ID 195050	160.35	4,282.20		4,282.20
			FACILITY ID 195050	4,121.85			
			ICE & SEWAGE TREATMENT PERMIT - NWRWRF				
1002155	01-04-24	SWRCB ACCOUNTING OFFICE	WATER DISTRIBUTION RENEWAL - ALEX .	80.00	80.00		80.00
1002156	01-04-24	THE LAMAR COMPANIES	BILLBOARD	950.00	950.00		950.00
1002157	01-04-24	TKE ENGINEERING, INC	CONSULTANT DESIGN SVCS SEP-OCT 2023	1,335.00	0.00	1,335.00	1,335.00
1002158	01-04-24	UMETECH, INC.	IT HELPDESK, MNGD SERV, SPAM - DEC 2023/5	14,304.95	14,304.95		14,304.95
1002159	01-04-24	UNITED RENTALS NORTHWEST, INC.	WALKBEHIND TRENCHER - PRODUCTION	443.50	443.50		443.50
1002160	01-04-24	US BANK	AD #13 ADMIN FEES - 12.2023 TO 11.2024	3,025.00	3,025.00		3,025.00
1002161	01-04-24	USA-FACT INC	BACKGROUND CHECK	90.38	90.38		90.38
1002162	01-04-24	USA BLUEBOOK	48 GPD GRUNDFOS PUMP - PRODUCTION	3,383.46	3,504.78		3,504.78
			SITE SIGNAGE - PRODUCTION	81.34			
			FULL DISCLOSURE SIGN - PRODUCTION	39.98			
1002163	01-04-24	WATERLINE TECHNOLOGIES INC.	4 DRUMS REFILLED	978.37	2,201.33		2,201.33
			5 DRUMS REFILLED	1,222.96			
1002164	01-04-24	WEST COAST SAND AND GRAVEL INC.	RESTOCK 26 TONS BASE MATERIAL	552.43	552.43		552.43
1002165	01-04-24	WESTAIR GASES & EQUIPMENT, INC.	REFILL CO2 TANK FOR SOUNDINGS - PRODUCTION	71.71	234.41		234.41
			CO2 TANKS FOR PARADE FLOAT	162.70			
1002166	01-04-24	WIENHOFF DRUG TESTING	DOT YEARLY MONITORING, PROGRAM ENROLLMENT	185.00	185.00		185.00
1002167	01-04-24	XEROX CORPORATION	XEROX LEASE - ADMIN - DEC-JAN 2024	343.73	343.73		343.73
1002168	01-04-24	ACWA/JOINT POWERS INSUR AUTH	ACWA WORKERS COMP. QTR 4	40,957.92	40,957.92		40,957.92
1002169	01-04-24	ARAMARK UNIFORM SERVICES, LLC	UNIFORM SERVICES	265.27	795.81		795.81
			UNIFORM SERVICES	265.27			
			UNIFORM SERVICES	265.27			
1002170	01-04-24	CALIFORNIA MUNICIPAL STATISTICS, INC.	DIRECT & OVERLAPPING DEBT STATEMENT	550.00	550.00		550.00
1002171	01-04-24	CASAMAR GROUP, LLC	LABOR COMPLIANCE CONSULTANT SERVICES	85.71	847.37	85.71	933.08
			LABOR COMPLIANCE CONSULTANT SERVICES	211.84			
			LABOR COMPLIANCE CONSULTANT SERVICES	128.56			
			LABOR COMPLIANCE CONSULTANT SERVICES	168.99			
			LABOR COMPLIANCE CONSULTANT SERVICES	168.99			
			LABOR COMPLIANCE CONSULTANT SERVICES	168.99			
1002172	01-04-24	CLINICAL LABORATORY OF SAN BERNARDINO	LAB SERVICES	2,305.00	4,328.00		4,328.00
			LAB SERVICES	270.00			
			LAB SERVICES	270.00			
			LAB SERVICES	1,483.00			
1002173	01-04-24	COUNTY OF RIVERSIDE	WATER TALKS ROOM FEE	25.00	25.00		25.00
1002174	01-04-24	CYPRESS DENTAL ADMINISTRATORS	FEBRUARY 2024 PREPAID DENTAL	5,132.35	5,132.35		5,132.35

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				AMOUNT	OPERATING	CAPITAL	
1002175	01-04-24	DESERT RECYCLING INC.	DUMP FEES	30.00	30.00		30.00
1002176	01-04-24	DESERT HOT SPRINGS WOMENS CLUB	DHS WOMENS CLUB AD SPONSORSHIP	150.00	150.00		150.00
1002177	01-04-24	ECOLOGY AUTO PARTS	SLUDGE DISPOSAL	1,377.15	41,964.80		41,964.80
			SLUDGE DISPOSAL	3,000.00			
			SLUDGE DISPOSAL	2,000.00			
			SLUDGE DISPOSAL	5,217.24			
			SLUDGE DISPOSAL	5,374.20			
			SLUDGE DISPOSAL	2,176.48			
			SLUDGE DISPOSAL	2,091.42			
			SLUDGE DISPOSAL	3,893.20			
			SLUDGE DISPOSAL	7,959.28			
			SLUDGE DISPOSAL	2,000.00			
			SLUDGE DISPOSAL	3,000.00			
			SLUDGE DISPOSAL	1,573.95			
			SLUDGE DISPOSAL	2,301.88			
1002178	01-04-24	FEDEX	WELLS FARGO OVERNIGHT FEE	51.49	51.49		51.49
1002179	01-04-24	FORSHOCK	SCADA MONITORING SERVICE 01/2024	220.00	220.00		220.00
1002180	01-04-24	FRANCHISE TAX BOARD	GARNISHMENT PMT 10 PPE 01.05.24	150.00	150.00		150.00
1002181	01-04-24	HI-DESERT STAR/THE DESERT TRAIL/DESERT ENTERTAINER	DESERT MOBILE PARK SPECIAL AD	250.00	250.00		250.00
1002182	01-04-24	HOME DEPOT CREDIT SERVICES	HOME DEPOT CREDIT CARD	1,294.51	1,294.51		1,294.51
1002183	01-04-24	J.F. SHEA CONSTRUCTION, INC.	CONSTRUCTION PROGRESS PMT #20	1,475,942.90	0.00	1,475,942.90	1,475,942.90
1002184	01-04-24	MCCROMETER INC	ULTRA MAG METER	9,328.68	9,328.68		9,328.68
1002185	01-04-24	PALM SPRINGS PEST CONTROL, INC.	PEST CONTROL	45.00	300.00		300.00
			PEST SERVICES	40.00			
			PEST SERVICES	90.00			
			PEST SERVICES	60.00			
			PEST CONTROL SERVICES	65.00			
1002186	01-04-24	PARKERS BUILDING SUPPLY	MISC ITEMS FOR PRODUCTION	25.84	59.76		59.76
			MISC ITEMS FOR PRODUCTION	33.92			
1002187	01-04-24	POLYDYNE, INC.	POLYMER SLUDGE WASTING	8,464.71	8,464.71		8,464.71
1002188	01-04-24	SLOVAK BARON EMPEY MURPHY & PINKNEY LLP	LEGAL SERVICES OVER RETAINER	4,948.20	11,525.20		11,525.20
			LEGAL SERVICES RETAINER	6,500.00			
			LEGAL SERVICES CLASS ACTION DEFENSE	77.00			
1002189	01-04-24	SOUTHERN CALIFORNIA EDISON COMPANY	ELECTRIC BILL	240,408.75	277,290.94		277,290.94
			ELECTRIC BILL	34,180.99			
			ELECTRIC BILL	2,701.20			
1002190	01-04-24	STATE WATER RES CONTRL BRD	ANNUAL PERMIT FEES	1,068.00	44,729.68	1,068.00	45,797.68
			WATER SYSTEM ANNUAL FEES	44,729.68			
1002191	01-18-24	THE UPS STORE #5062	ENVELOPES & BOD BUSINESS CARDS	486.87	486.87		486.87
1002192	01-04-24	THE LINCOLN NATL. LIFE INS. CO.	FEBRUARY 2024 PREPAID INSURANCE	4,057.92	4,057.92		4,057.92
1002193	01-04-24	THE LAMAR COMPANIES	BILLBOARD RENEWAL	125.00	125.00		125.00
1002194	01-04-24	THERESA MURPHY	HOLIDAY EVENT GIFTS REIMBURSEMENT	92.46	92.46		92.46
1002195	01-04-24	TILLEY CRANE INSPECTION	ANNUAL INSPECTION OF CRANE @ HWWTP	450.00	450.00		450.00
1002196	01-04-24	TRAVEL BERKELEY SPRINGS	BERKELEY SPRINGS CONTEST FEE	45.00	45.00		45.00
1002197	01-04-24	UNDERGROUND SERVICE ALERT	UNDERGROUND SERVICE ALERT	244.50	244.50		244.50
1002198	01-04-24	VERIZON CONNECT FLEET USA LLC	GPS TRACKING SUBSCRIPTION	587.45	587.45		587.45
1002199	01-04-24	WATERSMART SOFTWARE, INC.	ANNUAL FEE FOR PAPERLESS BILL INTEGRATION	6,180.00	6,180.00		6,180.00
1002200	01-04-24	ADT COMMERCIAL LLC	SECURITY ALARM	270.94	270.94		270.94
1002201	01-04-24	ALL VALLEY CRANE, INC.	PULL PUMP & SET NEW	850.00	850.00		850.00
1002202	01-04-24	ARAMARK UNIFORM SERVICES, LLC	UNIFORM SERVICES	336.19	594.38		594.38

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				AMOUNT	OPERATING	CAPITAL	
			UNIFORM SERVICES	258.19			
1002203	01-04-24	CASAMAR GROUP, LLC	LABOR COMPLIANCE - WELL 34 REHAB	42.85	0.00	42.85	42.85
1002204	01-04-24	CORE & MAIN LP	TEST PLATES	246.32	2,487.31		2,487.31
			INVENTORY	1,446.01			
			INVENTORY	794.98			
1002205	01-04-24	COUNTY OF RIVERSIDE	COUNTY ENC PERMITS	3,620.00	3,620.00		3,620.00
1002206	01-04-24	CWEA/CORBS	CORBS DINNER RSVP	1,035.00	1,125.00		1,125.00
			CORBS DINNER EXTRA RSVP	90.00			
1002207	01-04-24	DAVID PENA	WATER TREATMENT CLASS REIMBURSEMENT	211.25	211.25		211.25
1002208	01-04-24	DESERT TIRE AND AUTO REPAIR	REPLACEMENT TIRES UNIT 418	1,336.72	1,336.72		1,336.72
1002209	01-04-24	DESERT URGENT CARE	DOT PHYSICAL	175.00	375.00		375.00
			PRE EMPLOYMENT PHYSICAL	200.00			
1002210	01-04-24	ENTERPRISE FM TRUST	MONTHLY FLEET LEASE	19,810.79	19,810.79		19,810.79
1002211	01-04-24	FARMER BROS. CO	COFFEE ORDER	596.74	596.74		596.74
1002212	01-04-24	FEDEX	WELLS FARGO OVERNIGHT FEE	51.27	51.27		51.27
1002213	01-04-24	JOHNSON CONTROLS SECURITY SOLUTIONS LLC	SECURITY - HORTON PLANT	1,209.38	1,209.38		1,209.38
1002214	01-04-24	LEGEND PUMP & WELL SERVICE, INC.	SNMP SAMPLING AT WELL SITES	68,089.00	68,089.00		68,089.00
1002215	01-04-24	MANPOWER US INC.	STAFFING SERVICES - GM REPORT/GRANTS	3,016.00	16,619.15		16,619.15
			STAFFING SERVICES - GM REPORT/GRANT	2,921.75			
			STAFFING SERVICES - GM REPORT/GRANT	3,298.75			
			STAFFING SERVICES - ADMIN	2,431.04			
			STAFFING SERVICES - ADMIN	2,482.40			
			STAFFING SERVICES - ADMIN	2,469.21			
1002216	01-04-24	MICHAEL PLASSE	ACCOUNT REFUND 66247 AVE SUENOS	111.84	111.84		111.84
1002217	01-04-24	O'REILLY AUTOMOTIVE INC.	FLOORMATS/FREIGHT UNIT 437	148.85	708.07		708.07
			REPLACEMENT BATTERY UNIT 20	51.64			
			REPLACEMENT BATTERY	154.97			
			OIL BUCKETS FOR HORTON PLANT	161.60			
			OIL/FILTER CHANGE UNIT 421	79.72			
			HEATER HOSE UNIT 414	9.56			
			OIL & FILTER CHANGE UNIT 418	43.93			
			CAR RESTOCK	27.19			
			CAR RESTOCK	27.98			
			FUEL HOSE	2.63			
1002218	01-04-24	PARKERS BUILDING SUPPLY	REPAIR PARTS FOR LIFT STATION VALVE	62.50	233.14		233.14
			INVENTORY	33.35			
			STEEL ROD - VAC TRAILER	27.99			
			DRILL BIT - FLEET MAINT.	28.00			
			ADMIN BUILDING REPAIR PARTS	16.09			
			ADMIN BUILDING REPAIR PARTS	36.35			
			TANK BUG SPRAYER - ADMIN BUILDING	20.46			
			PAINT FOR ADMIN BUILDING	8.40			
1002219	01-04-24	POLLARDWATER	HYDRANT LOCK	140.08	140.08		140.08
1002220	01-25-24	STATE WATER RES CONTRL BRD	WATER SYSTEM ANNUAL FEES	842.08	1,403.60		1,403.60
			WATER SYSTEM ANNUAL FEES INVOICE	561.52			
1002221	01-04-24	STATE WATER RES CONTRL BRD	LAB CERTIFICATE REFUND CORRECTION	429.66	429.66		429.66
1002222	01-04-24	T4 SPATIAL, LLC	CCTV STORAGE - JANUARY 2024	1,250.00	1,250.00		1,250.00
1002223	01-04-24	USA BLUEBOOK	LAB SUPPLIES - HORTON PLANT	269.58	1,966.27		1,966.27
			ITEMS FOR WATER PRODUCTION	1,303.62			
			ITEMS FOR WATER PRODUCTION	336.07			
			ITEMS FOR WATER PRODUCTION	57.00			

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				AMOUNT	OPERATING	CAPITAL	
1002224	01-04-24	WATERLINE TECHNOLOGIES INC.	DRUM REFILL	2,445.93	2,445.93		2,445.93
1002225	01-04-24	AMANDA TRUJILLO	ACCOUNT REFUND 9758 AVE DELORES	50.93	50.93		50.93
1002226	01-04-24	AMERICAN CONSTRUCTION SERVICES	ACCOUNT REFUND DIABLO RD @ DEVERS SUBSTATION	206.54	206.54		206.54
1002227	01-04-24	ANNA LONGORIA	ACCOUNT REFUND 11777 SKYLARK ST	24.18	24.18		24.18
1002228	01-04-24	ASA MOORE	ACCOUNT REFUND 66011 ESTRELLA AVE	226.17	226.17		226.17
1002229	01-04-24	BRENDEN NGUYEN	ACCOUNT REFUND 13259 RAMONA DR	50.93	50.93		50.93
1002230	01-04-24	CHRISTOPHER GUTIERREZ	ACCOUNT REFUND 12680 AGUA CAYENDO RD	41.51	41.51		41.51
1002231	01-04-24	MARQUITIA SALTER	ACCOUNT REFUND 13640 EL RIO LN	0.74	0.74		0.74
1002232	01-04-24	RALPH ORTEGA	ACCOUNT REFUND 69331 CRESTVIEW DR	67.92	67.92		67.92
1002233	01-04-24	SARA SHOWKATIAN	ACCOUNT REFUND 66796 GRANADA AVE	29.75	29.75		29.75
1002234	01-04-24	SEAN TORRES	ACCOUNT REFUND 9331 VISTA DEL VALLE	185.31	185.31		185.31
1002235	01-04-24	SERGIO MORALES	ACCOUNT REFUND 68180 CALLE AZTECA	5.91	5.91		5.91
1002236	01-04-24	STATION ELECTRIC LLC	ACCOUNT REFUND DIABLO RD AT DEVERS	770.13	770.13		770.13
1002237	01-04-24	VSPPI, INC.	ACCOUNT REFUND PIERSON BLVD	649.14	649.14		649.14
1002238	01-04-24	WOLFGANG SCHMIDT	ACCOUNT REFUND 8580 ANNANDALE AVE	41.62	41.62		41.62
1002239	01-31-24	BRINKS INCORPORATED	DECEMBER MONTHLY SERVICE	73.35	375.88		375.88
			JANUARY MONTHLY SERVICE FEE	302.53			
1002240	01-31-24	CORONA ENVIRONMENTAL CONSULTING, LLC	PROGRESS PMT #2	2,330.00	0.00	2,330.00	2,330.00
1002241	01-31-24	CORE & MAIN LP	COMBINED PENDING CREDITS FIELD SUPPLIES	-278.06	5,190.26		5,190.26
			COPPER TUBING	5,468.32			
1002242	01-31-24	DOWNING CONSTRUCTION, INC.	PROGRESS PAYMENT #10	373,103.02	0.00	373,103.02	373,103.02
1002243	01-31-24	ENVIROGEN TECHNOLOGIES INC	WELL 26A URANIUM TREATMENT	4,120.87	4,120.87		4,120.87
1002244	01-31-24	INFOSEND INC	MONTHLY BILLING SERVICE	4,592.02	4,592.02		4,592.02
1002245	01-31-24	J.F. SHEA CONSTRUCTION, INC.	PROGRESS PAYMENT #21	907,667.53	0.00	907,667.53	907,667.53
1002246	01-31-24	LEGEND PUMP & WELL SERVICE, INC.	PROGRESS PMT #2	55,052.50	0.00	101,737.40	101,737.40
			PROGRESS PMT #1	46,684.90			
1002247	01-31-24	MCDONALD ELECTRIC, INC	SERVICE CALL - BOOSTER 4B	412.50	1,135.00		1,135.00
			BOOSTER #4 REPAIRS	722.50			
1002248	01-31-24	MISSION LAKES COUNTRY CLUB, INC.	SPONSORSHIP-MLCC MENS GOLF TOURNAMENT	1,000.00	1,000.00		1,000.00
1002249	01-31-24	PLANETBIDS, INC.	ANNUAL SUBSCRIPTION 2023-2024	6,612.36	6,612.36		6,612.36
1002250	01-31-24	PLANIT REPROGRAPHICS	BOND PRINTS OF APPROVED PLANS	75.69	75.69		75.69
1002251	01-31-24	PROFORMA	MISC ADJUSTMENT FORMS	478.62	478.62		478.62
1002252	01-31-24	RUSS MARTIN	R. MARTIN - MILEAGE REIMB.	167.02	167.02		167.02
1002253	01-31-24	THE LAMAR COMPANIES	ADVERTISING	950.00	950.00		950.00
1002254	01-31-24	TKE ENGINEERING, INC	PROGRESS PMT #22 FOR C&M INSPECTION	128,125.61	12,438.78	259,370.54	271,809.32
			PROGRESS PMT #23 FOR C&M INSPECTION	117,549.93			
			DISTRICT ENGINEERING SERVICES	21,927.50			
			CM & INSPECTION FOR DEC 2023	1,362.50			
			CONSULTANT SERVICES	145.00			
			LS & FM PLAN CHECK	2,698.78			
1002255	01-31-24	TKE ENGINEERING, INC	ENGINEERING SERVICES	16,407.50	16,197.50	210.00	16,407.50
1002256	01-31-24	USA BLUEBOOK	WELL WATER - SONIC WATER LEVEL MONITOR	2,754.84	3,542.09		3,542.09
			PRESSURE GAUGES - WATER PRODUCTION	273.94			
			PRESSURE GAUGES	513.31			
1002257	01-31-24	WORD OF LIFE FELLOWSHIP TEMPLE	BRIDGE TO BETTER HOMELESS PROJECT DONATION	500.00	500.00		500.00
1002258	01-31-24	XEROX CORPORATION	XEROX LEASE	172.39	172.39		172.39
99105702	01-02-24	WELLS FARGO BANK	DEC 2023 LOC INTEREST EXPENSE	49,875.00	51,537.50		51,537.50
			JAN 1, 2024 LOC INTEREST EXPENSE	1,662.50			
99105703	01-02-24	BERKADIA COMMERCIAL MORTGAGE	AD#7 LOAN - INT. EXPENSE	580.00	580.00		580.00
99105715	01-08-24	PAYNEARME MT, INC.	DEC. 2023 PAYNEARME FEES	8,019.24	8,019.24		8,019.24
99105742	01-11-24	CALIF PUBLIC EMPLOYEES RETIREMENT SYSTEM	PERS PEE 12.22.2023	35,621.61	35,621.61		35,621.61

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				AMOUNT	OPERATING	CAPITAL	
99105743	01-05-24	WELLS FARGO BANK	AUTO DEP PPE 01.05.2024	134,248.19	134,248.19		134,248.19
99105744	01-12-24	STATE OF CA EDD	STATE TAX PPE 01.05.2024	11,379.81	11,379.81		11,379.81
99105745	01-12-24	EFTPS-IRS PAYROLL TAX REMITTANCE	FED TAX DEP PPE 01.05.2024	56,266.67	56,266.67		56,266.67
99105746	01-12-24	LINCOLN NATIONAL LIFE INS CO	DEF COMP PPE 01.05.2024	21,201.42	21,201.42		21,201.42
99105747	01-12-24	RIVERSIDE COUNTY DCSS - MAIN OFFICE	MONTHLY IWO - PPE 01.05.2024	176.25	176.25		176.25
99105756	01-16-24	CALIF PUBLIC EMPLOYEES RETIREMENT SYSTEM	PERS RETRO PPE 03.04.22	172.51	172.51		172.51
99105764	01-02-24	WELLS FARGO - WELLSONE	DECEMBER 2023 CC PAYMENT	47,323.80	47,323.80		47,323.80
99105840	01-22-24	AFLAC	DEC 2023 AFLAC DEDUCTIONS	4,161.69	4,161.69		4,161.69
99105845	01-22-24	J.F. SHEA CONSTRUCTION, INC.	RETENTION WIRE FOR PROGRESS PMT #20	77,681.20	0.00	77,681.20	77,681.20
99105881	01-23-24	EFTPS-IRS PAYROLL TAX REMITTANCE	IRS REFUND WAS PAID BACK FOR Q3-2023	59,112.11	59,112.11		59,112.11
99105920	01-25-24	CALIF PUBLIC EMPLOYEES RETIREMENT SYSTEM	PERS PPE 01.05.2024	36,464.62	36,464.62		36,464.62
99105921	01-31-24	STATE WATER RES CONTRL BRD	SWRCB - CW-4250-310	302,509.91	302,509.91		302,509.91
99105930	01-26-24	WELLS FARGO BANK	AUTO DEP PPE 01.26.24	144,978.63	144,978.63		144,978.63
99105931	01-26-24	EFTPS-IRS PAYROLL TAX REMITTANCE	FED TAX DEP PPE 01.19.24	61,605.49	61,605.49		61,605.49
99105932	01-26-24	STATE OF CA EDD	STATE TAX PPE 01.19.24	12,612.38	12,612.38		12,612.38
99105933	01-26-24	LINCOLN NATIONAL LIFE INS CO	DEF COMP PPE 01.19.24	21,879.92	21,879.92		21,879.92
99105986	01-17-24	PAYMENTUS CORPORATION	DEC CREDIT CARD FEES	4,034.70	4,034.70		4,034.70
PR011224	01-12-24	EMPLOYEES		795.64	795.64		795.64
PR012624	01-26-24	EMPLOYEES		489.77	489.77		489.77
			CURRENT CHECK TOTAL	5,291,973.8	1,961,742.5	3,330,231.2	5,291,973.8
TOTAL				5,291,973.82	1,961,742.56	3,330,231.26	5,291,973.82
241 records listed							

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				AMOUNT	OPERATING	CAPITAL	TOTAL
1002183	01-04-24	J.F. SHEA CONSTRUCTION, INC.	CONSTRUCTION PROGRESS PMT #20	1,475,942.90	0.00	1,475,942.90	1,475,942.90
1002245	01-31-24	J.F. SHEA CONSTRUCTION, INC.	PROGRESS PAYMENT #21	907,667.53	0.00	907,667.53	907,667.53
1002242	01-31-24	DOWNING CONSTRUCTION, INC.	PROGRESS PAYMENT #10	373,103.02	0.00	373,103.02	373,103.02
99105921	01-31-24	STATE WATER RES CONTRL BRD	SWRCB - CW-4250-310	302,509.91	302,509.91		302,509.91
1002189	01-04-24	SOUTHERN CALIFORNIA EDISON COMPANY	ELECTRIC BILL	240,408.75	277,290.94		277,290.94
			ELECTRIC BILL	34,180.99			
			ELECTRIC BILL	2,701.20			
1002254	01-31-24	TKE ENGINEERING, INC	PROGRESS PMT #22 FOR C&M INSPECTION	128,125.61	12,438.78	259,370.54	271,809.32
			PROGRESS PMT #23 FOR C&M INSPECTION	117,549.93			
			DISTRICT ENGINEERING SERVICES	21,927.50			
			CM & INSPECTION FOR DEC 2023	1,362.50			
			CONSULTANT SERVICES	145.00			
			LS & FM PLAN CHECK	2,698.78			
99105930	01-26-24	WELLS FARGO BANK	AUTO DEP PPE 01.26.24	144,978.63	144,978.63		144,978.63
99105743	01-05-24	WELLS FARGO BANK	AUTO DEP PPE 01.05.2024	134,248.19	134,248.19		134,248.19
1002070	01-04-24	ACWA-JPIA HEALTH BENEFITS AUTH.	FEB 2024 PREPAID INSURANCE	106,619.05	106,619.05		106,619.05
1002246	01-31-24	LEGEND PUMP & WELL SERVICE, INC.	PROGRESS PMT #2	55,052.50	0.00	101,737.40	101,737.40
			PROGRESS PMT #1	46,684.90			
99105845	01-22-24	J.F. SHEA CONSTRUCTION, INC.	RETENTION WIRE FOR PROGRESS PMT #20	77,681.20	0.00	77,681.20	77,681.20
1002071	01-04-24	AECOM TECHNICAL SERVICES INC.	MSWD CONSTRUCTION SERVICES AUG-SEP 2023	76,345.88	0.00	76,345.88	76,345.88
1002214	01-04-24	LEGEND PUMP & WELL SERVICE, INC.	SNMP SAMPLING AT WELL SITES	68,089.00	68,089.00		68,089.00
99105931	01-26-24	EFTPS-IRS PAYROLL TAX REMITTANCE	FED TAX DEP PPE 01.19.24	61,605.49	61,605.49		61,605.49
99105881	01-23-24	EFTPS-IRS PAYROLL TAX REMITTANCE	IRS REFUND WAS PAID BACK FOR Q3-2023	59,112.11	59,112.11		59,112.11
99105745	01-12-24	EFTPS-IRS PAYROLL TAX REMITTANCE	FED TAX DEP PPE 01.05.2024	56,266.67	56,266.67		56,266.67
99105702	01-02-24	WELLS FARGO BANK	DEC 2023 LOC INTEREST EXPENSE	49,875.00	51,537.50		51,537.50
			JAN 1, 2024 LOC INTEREST EXPENSE	1,662.50			
99105764	01-02-24	WELLS FARGO - WELLSONE	DECEMBER 2023 CC PAYMENT	47,323.80	47,323.80		47,323.80
1002190	01-04-24	STATE WATER RES CONTRL BRD	ANNUAL PERMIT FEES	1,068.00	44,729.68	1,068.00	45,797.68
			WATER SYSTEM ANNUAL FEES	44,729.68			
1002137	01-04-24	FERGUSON WATERWORKS #1083	4" MACH 10 METERS	30,154.92	0.00	44,300.34	44,300.34
			MACH METERS	14,145.42			
1002177	01-04-24	ECOLOGY AUTO PARTS	SLUDGE DISPOSAL	1,377.15	41,964.80		41,964.80
			SLUDGE DISPOSAL	3,000.00			
			SLUDGE DISPOSAL	2,000.00			
			SLUDGE DISPOSAL	5,217.24			
			SLUDGE DISPOSAL	5,374.20			
			SLUDGE DISPOSAL	2,176.48			
			SLUDGE DISPOSAL	2,091.42			
			SLUDGE DISPOSAL	3,893.20			
			SLUDGE DISPOSAL	7,959.28			
			SLUDGE DISPOSAL	2,000.00			
			SLUDGE DISPOSAL	3,000.00			
			SLUDGE DISPOSAL	1,573.95			
			SLUDGE DISPOSAL	2,301.88			
1002168	01-04-24	ACWA/JOINT POWERS INSUR AUTH	ACWA WORKERS COMP. QTR 4	40,957.92	40,957.92		40,957.92
1002129	01-04-24	CITY OF DESERT HOT SPRINGS	UUT NOVEMBER 2023	38,913.57	38,913.57	694.80	39,608.37
			ENC-23-104 ENCROACHMENT PERMIT	694.80			
99105920	01-25-24	CALIF PUBLIC EMPLOYEES RETIREMENT SYSTEM	PERS PPE 01.05.2024	36,464.62	36,464.62		36,464.62
99105742	01-11-24	CALIF PUBLIC EMPLOYEES RETIREMENT SYSTEM	PERS PEE 12.22.2023	35,621.61	35,621.61		35,621.61
99105933	01-26-24	LINCOLN NATIONAL LIFE INS CO	DEF COMP PPE 01.19.24	21,879.92	21,879.92		21,879.92
99105746	01-12-24	LINCOLN NATIONAL LIFE INS CO	DEF COMP PPE 01.05.2024	21,201.42	21,201.42		21,201.42

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				AMOUNT	OPERATING	CAPITAL	
1002210	01-04-24	ENTERPRISE FM TRUST	MONTHLY FLEET LEASE	19,810.79	19,810.79		19,810.79
1002139	01-04-24	INDIO WATER AUTHORITY	CV WATER COUNTS MSWD PORTION	17,500.00	17,500.00		17,500.00
1002215	01-04-24	MANPOWER US INC.	STAFFING SERVICES - GM REPORT/GRANTS	3,016.00	16,619.15		16,619.15
			STAFFING SERVICES - GM REPORT/GRANT	2,921.75			
			STAFFING SERVICES - GM REPORT/GRANT	3,298.75			
			STAFFING SERVICES - ADMIN	2,431.04			
			STAFFING SERVICES - ADMIN	2,482.40			
			STAFFING SERVICES - ADMIN	2,469.21			
1002255	01-31-24	TKE ENGINEERING, INC	ENGINEERING SERVICES	16,407.50	16,197.50	210.00	16,407.50
1002158	01-04-24	UMETECH, INC.	IT HELPDESK, MNGD SERV, SPAM - DEC 2023/5	14,304.95	14,304.95		14,304.95
99105932	01-26-24	STATE OF CA EDD	STATE TAX PPE 01.19.24	12,612.38	12,612.38		12,612.38
1002142	01-04-24	MANPOWER US INC.	WATER RES. ASSOC. NUSSER, M	3,534.38	12,584.71		12,584.71
			BUSINESS ANALYST WHITTEN, W	2,447.03			
			WASTER RES. ASSOC. NUSSER, M	2,450.50			
			BUSINESS ANALYST WHITTEN,W	2,482.40			
			METER READER TEMP ALEX M.	1,670.40			
1002188	01-04-24	SLOVAK BARON EMPEY MURPHY & PINKNEY LLP	LEGAL SERVICES OVER RETAINER	4,948.20	11,525.20		11,525.20
			LEGAL SERVICES RETAINER	6,500.00			
			LEGAL SERVICES CLASS ACTION DEFENSE	77.00			
99105744	01-12-24	STATE OF CA EDD	STATE TAX PPE 01.05.2024	11,379.81	11,379.81		11,379.81
1002184	01-04-24	MCCROMETER INC	ULTRA MAG METER	9,328.68	9,328.68		9,328.68
1002187	01-04-24	POLYDYNE, INC.	POLYMER SLUDGE WASTING	8,464.71	8,464.71		8,464.71
1002128	01-04-24	CALIFORNIA GROUNDWATER COALITION	2024 MEMBERSHIP DUES	8,250.00	8,250.00		8,250.00
99105715	01-08-24	PAYNEARME MT, INC.	DEC. 2023 PAYNEARME FEES	8,019.24	8,019.24		8,019.24
1002086	01-04-24	FERGUSON WATERWORKS #1083	MACH METER	7,356.09	0.00	7,356.09	7,356.09
1001893	01-03-24	CV STRATEGIES	BILLBOARD - PROTECT YOUR PIPES	-1,042.50	-7,092.50		-7,092.50
			VIDEO SERVICES - UNDERSTANDING YOUR BILL	-4,063.75			
			MSWD 2024 CALENDAR	-1,986.25			
1002077	01-04-24	CORE & MAIN LP	R/W GATE VALVE	786.58	7,048.89		7,048.89
			HYMAX FLEX COUPL.	2,084.51			
			4"X25" FULL CIRCLE REPAIR CLAMP	437.47			
			INVENTORY	3,740.33			
1002249	01-31-24	PLANETBIDS, INC.	ANNUAL SUBSCRIPTION 2023-2024	6,612.36	6,612.36		6,612.36
1002130	01-04-24	CORE & MAIN LP	O RING/HOSE CAP/MTR. BUSH JONES	5,806.07	6,592.65		6,592.65
			R/W GATE VALVE	786.58			
1002093	01-04-24	ROBERT G MODRICH	DEC 2023 UNIDATA MAINTENANCE	6,385.20	6,385.20		6,385.20
1002199	01-04-24	WATERSMART SOFTWARE, INC.	ANNUAL FEE FOR PAPERLESS BILL INTEGRATION	6,180.00	6,180.00		6,180.00
1002100	01-04-24	WATERLINE TECHNOLOGIES INC.	6 DRUMS REFILLED #5661784	1,467.56	5,870.23		5,870.23
			7 DRUMS REFILLED #5665831	1,712.15			
			7 DRUMS REFILLED	1,712.15			
			4 DRUMS REFILLED	978.37			
1002241	01-31-24	CORE & MAIN LP	COMBINED PENDING CREDITS FIELD SUPPLIES	-278.06	5,190.26		5,190.26
			COPPER TUBING	5,468.32			
1002174	01-04-24	CYPRESS DENTAL ADMINISTRATORS	FEBRUARY 2024 PREPAID DENTAL	5,132.35	5,132.35		5,132.35
1002126	01-04-24	BRIAN MACY	TUITION REIMBURSEMENT	5,001.00	5,001.00		5,001.00
			PER INTERIM GM EMPLOYMENT CONTRACT SECTION IX B				
			iii				
1002073	01-04-24	BECK OIL, INC.	UNLEADED GASOLINE	2,359.69	4,915.32		4,915.32
			DIESEL FUEL	2,555.63			
1002244	01-31-24	INFOSEND INC	MONTHLY BILLING SERVICE	4,592.02	4,592.02		4,592.02
1002138	01-04-24	HORNE LLP	LIHWAP SUPPLEMENTAL PAYMENT CREDIT FUNDS	4,588.84	4,588.84		4,588.84

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				AMOUNT	OPERATING	CAPITAL	
1002172	01-04-24	CLINICAL LABORATORY OF SAN BERNARDINO	LAB SERVICES	2,305.00	4,328.00		4,328.00
			LAB SERVICES	270.00			
			LAB SERVICES	270.00			
			LAB SERVICES	1,483.00			
1002154	01-04-24	SOUTH COAST AIR QUALITY	FACILITY ID 195050	160.35	4,282.20		4,282.20
			FACILITY ID 195050	4,121.85			
			ICE & SEWAGE TREATMENT PERMIT - NWRWRF				
99105840	01-22-24	AFLAC	DEC 2023 AFLAC DEDUCTIONS	4,161.69	4,161.69		4,161.69
1002084	01-04-24	ENVIROGEN TECHNOLOGIES INC	WELL 26A URANIUM TREATMENT - 11/2023	4,120.87	4,120.87		4,120.87
1002243	01-31-24	ENVIROGEN TECHNOLOGIES INC	WELL 26A URANIUM TREATMENT	4,120.87	4,120.87		4,120.87
1002079	01-04-24	CV STRATEGIES	VIDEO SERVICES - UNDERSTANDING YOUR BILL	4,063.75	4,063.75		4,063.75
1002192	01-04-24	THE LINCOLN NATL. LIFE INS. CO.	FEBRUARY 2024 PREPAID INSURANCE	4,057.92	4,057.92		4,057.92
99105986	01-17-24	PAYMENTUS CORPORATION	DEC CREDIT CARD FEES	4,034.70	4,034.70		4,034.70
1002074	01-04-24	CARPI & CLAY, INC	DEC. 2023 FEDERAL ADVOCACY	4,000.00	4,000.00		4,000.00
1002085	01-04-24	EXECUTIVE FACILITIES SERVICES, INC.	DISINFECTION SERVICES - 12/2023	1,830.00	3,660.00		3,660.00
			JANITORIAL SERVICES - 12/2023	1,830.00			
1002205	01-04-24	COUNTY OF RIVERSIDE	COUNTY ENC PERMITS	3,620.00	3,620.00		3,620.00
1001782	01-25-24	USA BLUEBOOK	WELL WATER - SONIC WATER LEVEL MONITOR	-2,754.84	-3,542.09		-3,542.09
			PRESSURE GAUGES - WATER PRODUCTION	-273.94			
			PRESSURE GAUGES	-513.31			
1002256	01-31-24	USA BLUEBOOK	WELL WATER - SONIC WATER LEVEL MONITOR	2,754.84	3,542.09		3,542.09
			PRESSURE GAUGES - WATER PRODUCTION	273.94			
			PRESSURE GAUGES	513.31			
1002162	01-04-24	USA BLUEBOOK	48 GPD GRUNDFOS PUMP - PRODUCTION	3,383.46	3,504.78		3,504.78
			SITE SIGNAGE - PRODUCTION	81.34			
			FULL DISCLOSURE SIGN - PRODUCTION	39.98			
1002148	01-04-24	RAY LOPEZ ASSOCIATES	SKYBORNE VILLAGE II, REGIONAL WASTEWATER FACILITY	3,497.50	2,537.50	960.00	3,497.50
			DHS FIRE STATION NO. 98				
1002078	01-04-24	CV STRATEGIES	BILLBOARD - PROTECT YOUR PIPES	1,042.50	3,028.75		3,028.75
			MSWD 2024 CALENDAR	1,986.25			
1002160	01-04-24	US BANK	AD #13 ADMIN FEES - 12.2023 TO 11.2024	3,025.00	3,025.00		3,025.00
1002143	01-04-24	MCCROMETER INC	R/R 12" MCCROMETER TOP PLATE ASSEMBLY	2,942.39	2,942.39		2,942.39
1002135	01-04-24	ECOLOGY AUTO PARTS	SLUDGE HAULING	2,835.16	2,621.26		2,621.26
			CREDIT FOR INV. #1383-INCORRECT CHARGES	-2,835.16			
			SLUDGE HAULING	2,621.26			
1002099	01-04-24	USA BLUEBOOK	MISC. LAB MATERIAL - HORTON PLANT	656.86	2,509.44		2,509.44
			PACKING CORD - PRODUCTION	155.11			
			RTV SILICONE - PRODUCTION	249.51			
			MATERIAL - PRODUCTION	833.16			
			ITEMS FOR PRODUCTION	614.80			
1002204	01-04-24	CORE & MAIN LP	TEST PLATES	246.32	2,487.31		2,487.31
			INVENTORY	1,446.01			
			INVENTORY	794.98			
1002224	01-04-24	WATERLINE TECHNOLOGIES INC.	DRUM REFILL	2,445.93	2,445.93		2,445.93
1002096	01-04-24	STARLITE RECLAMATION	ABS PIPE DISPOSAL/REMOVAL AT CORP YARD	1,697.32	2,444.82		2,444.82
			WASTE OIL REMOVAL - CORP YARD	747.50			
1002240	01-31-24	CORONA ENVIRONMENTAL CONSULTING, LLC	PROGRESS PMT #2	2,330.00	0.00	2,330.00	2,330.00
1002163	01-04-24	WATERLINE TECHNOLOGIES INC.	4 DRUMS REFILLED	978.37	2,201.33		2,201.33
			5 DRUMS REFILLED	1,222.96			
1002223	01-04-24	USA BLUEBOOK	LAB SUPPLIES - HORTON PLANT	269.58	1,966.27		1,966.27
			ITEMS FOR WATER PRODUCTION	1,303.62			

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				AMOUNT	OPERATING	CAPITAL	
			ITEMS FOR WATER PRODUCTION	336.07			
			ITEMS FOR WATER PRODUCTION	57.00			
1002080	01-04-24	DANGELO COMPANY	FLEX COUPL.	1,948.57	1,948.57		1,948.57
1002220	01-25-24	STATE WATER RES CONTRL BRD	WATER SYSTEM ANNUAL FEES	842.08	1,403.60		1,403.60
			WATER SYSTEM ANNUAL FEES INVOICE	561.52			
1002140	01-04-24	JAMESON WALKER	ENGINEER RELEASE OF DEPOSIT - JOB #11792	1,401.48	1,401.48		1,401.48
1002133	01-04-24	DESERT VALLEY DISPOSAL, INC.	DECEMBER SERVICES - ADMIN BLDG	544.89	1,338.79		1,338.79
			DECEMBER SERVICES - CORP YARD	793.90			
1002208	01-04-24	DESERT TIRE AND AUTO REPAIR	REPLACEMENT TIRES UNIT 418	1,336.72	1,336.72		1,336.72
1002121	01-04-24	AM CONSERVATION GROUP INC.	WATER WISE PROGRAM - PHMS	1,336.33	1,336.33		1,336.33
1002157	01-04-24	TKE ENGINEERING, INC	CONSULTANT DESIGN SVCS SEP-OCT 2023	1,335.00	0.00	1,335.00	1,335.00
1002089	01-04-24	INFOSEND INC	NOV. 2023 NEWSLETTER INSERT	1,310.15	1,310.15		1,310.15
1002182	01-04-24	HOME DEPOT CREDIT SERVICES	HOME DEPOT CREDIT CARD	1,294.51	1,294.51		1,294.51
1002098	01-04-24	TOPS N BARRICADES, INC	SAFETY STROBE LIGHTS	271.88	1,263.52		1,263.52
			YELLOW SAFETY JACKETS	176.01			
			SAFETY STROBE LIGHTS	815.63			
1002222	01-04-24	T4 SPATIAL, LLC	CCTV STORAGE - JANUARY 2024	1,250.00	1,250.00		1,250.00
1002213	01-04-24	JOHNSON CONTROLS SECURITY SOLUTIONS LLC	SECURITY - HORTON PLANT	1,209.38	1,209.38		1,209.38
1002119	01-04-24	ACWA/JOINT POWERS INSURANCE AUTHORITY	CLAIM # 10-1650	1,200.00	1,200.00		1,200.00
			QTR ENDED 12-31-23 RESTITUTION PAYMENT				
1002134	01-04-24	DESERT TIRE AND AUTO REPAIR	REPLACEMENT TIRES - UNIT #404	1,198.78	1,198.78		1,198.78
1002101	01-04-24	WESTERN WATER WORKS	NON-INVENTORY FULL CIRCLE REPAIR CLAMPS	1,173.72	1,173.72		1,173.72
1002081	01-04-24	DESERT TIRE AND AUTO REPAIR	REPLACEMENT TIRES #429	1,155.02	1,155.02		1,155.02
1002247	01-31-24	MCDONALD ELECTRIC, INC	SERVICE CALL - BOOSTER 4B	412.50	1,135.00		1,135.00
			BOOSTER #4 REPAIRS	722.50			
1002206	01-04-24	CWEA/CORBS	CORBS DINNER RSVP	1,035.00	1,125.00		1,125.00
			CORBS DINNER EXTRA RSVP	90.00			
1002248	01-31-24	MISSION LAKES COUNTRY CLUB, INC.	SPONSORSHIP-MLCC MENS GOLF TOURNAMENT	1,000.00	1,000.00		1,000.00
1002156	01-04-24	THE LAMAR COMPANIES	BILLBOARD	950.00	950.00		950.00
1002253	01-31-24	THE LAMAR COMPANIES	ADVERTISING	950.00	950.00		950.00
1002171	01-04-24	CASAMAR GROUP, LLC	LABOR COMPLIANCE CONSULTANT SERVICES	85.71	847.37	85.71	933.08
			LABOR COMPLIANCE CONSULTANT SERVICES	211.84			
			LABOR COMPLIANCE CONSULTANT SERVICES	128.56			
			LABOR COMPLIANCE CONSULTANT SERVICES	168.99			
			LABOR COMPLIANCE CONSULTANT SERVICES	168.99			
			LABOR COMPLIANCE CONSULTANT SERVICES	168.99			
1002201	01-04-24	ALL VALLEY CRANE,INC.	PULL PUMP & SET NEW	850.00	850.00		850.00
1002106	01-04-24	CELIA SADLOU	ACCOUNT REFUND 15300 PALM DR #95	800.00	800.00		800.00
1002127	01-04-24	CALCHAMBER	CALCHAMBER YEARLY MEMBERSHIP	799.00	799.00		799.00
1002169	01-04-24	ARAMARK UNIFORM SERVICES, LLC	UNIFORM SERVICES	265.27	795.81		795.81
			UNIFORM SERVICES	265.27			
			UNIFORM SERVICES	265.27			
PR011224	01-12-24	EMPLOYEES		795.64	795.64		795.64
1002236	01-04-24	STATION ELECTRIC LLC	ACCOUNT REFUND DIABLO RD AT DEVERS	770.13	770.13		770.13
1002058	01-04-24	ATP GENERAL ENGINEERING CONTRACTORS	ACCOUNT REFUND WORSELY RD @ RESERVIOR	766.95	766.95		766.95
1002058	01-08-24	ATP GENERAL ENGINEERING CONTRACTORS	ACCOUNT REFUND WORSELY RD @ RESERVIOR	-766.95	-766.95		-766.95
1002104	01-04-24	ATP GENERAL ENGINEERING CONTRACTORS	ACCOUNT REFUND WORSELY RD @ RESERVIOR	766.95	766.95		766.95
1002217	01-04-24	O'REILLY AUTOMOTIVE INC.	FLOORMATS/FREIGHT UNIT 437	148.85	708.07		708.07
			REPLACEMENT BATTERY UNIT 20	51.64			
			REPLACEMENT BATTERY	154.97			
			OIL BUCKETS FOR HORTON PLANT	161.60			

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			OIL/FILTER CHANGE UNIT 421	79.72			
			HEATER HOSE UNIT 414	9.56			
			OIL & FILTER CHANGE UNIT 418	43.93			
			CAR RESTOCK	27.19			
			CAR RESTOCK	27.98			
			FUEL HOSE	2.63			
1002125	01-04-24	BEST SIGNS, INC	MSWD VINYL LOGO RESTOCK - DISTRICT VEHICLES	688.28	688.28		688.28
1002075	01-04-24	CASEY DOLAN	DIGITAL AD MGMT	650.00	650.00		650.00
1002237	01-04-24	VSPP1, INC.	ACCOUNT REFUND PIERSON BLVD	649.14	649.14		649.14
1002211	01-04-24	FARMER BROS. CO	COFFEE ORDER	596.74	596.74		596.74
1002202	01-04-24	ARAMARK UNIFORM SERVICES, LLC	UNIFORM SERVICES	336.19	594.38		594.38
			UNIFORM SERVICES	258.19			
1002198	01-04-24	VERIZON CONNECT FLEET USA LLC	GPS TRACKING SUBSCRIPTION	587.45	587.45		587.45
99105703	01-02-24	BERKADIA COMMERCIAL MORTGAGE	AD#7 LOAN - INT. EXPENSE	580.00	580.00		580.00
1002103	01-04-24	ANA GRANT	ACCOUNT REFUND 66123 ESTRELLA AVE	579.51	579.51		579.51
1002164	01-04-24	WEST COAST SAND AND GRAVEL INC.	RESTOCK 26 TONS BASE MATERIAL	552.43	552.43		552.43
1002146	01-04-24	PATTON DOOR & GATE	MAIN GATE REPAIR - CORP YARD	300.00	550.00		550.00
			GARAGE DOOR REPAIR - ADMIN BLDG	250.00			
1002170	01-04-24	CALIFORNIA MUNICIPAL STATISTICS, INC.	DIRECT & OVERLAPPING DEBT STATEMENT	550.00	550.00		550.00
1002095	01-04-24	SHERWIN-WILLIAMS	RESTOCK TAN, SAFETY YELLOW GAL PAINT	534.31	534.31		534.31
1002091	01-04-24	O'REILLY AUTOMOTIVE INC.	OIL CHANGE UNIT #410	54.03	522.56		522.56
			OIL CHANGE UNIT #414	149.48			
			OIL FILTER CHANGE UNIT #405	50.30			
			REPLACEMENT HEADLIGHT UNIT #402	36.62			
			OIL CHANGE #398	76.44			
			OIL CHANGE #435	53.09			
			OIL CHANGE #412	54.03			
			OIL CHANGE #429	48.57			
1002124	01-04-24	BABCOCK LABORATORIES, INC.	SAMPLING FOR COACHILLIN	510.77	510.77		510.77
1002257	01-31-24	WORD OF LIFE FELLOWSHIP TEMPLE	BRIDGE TO BETTER HOMELESS PROJECT DONATION	500.00	500.00		500.00
PR012624	01-26-24	EMPLOYEES		489.77	489.77		489.77
1002191	01-18-24	THE UPS STORE #5062	ENVELOPES & BOD BUSINESS CARDS	486.87	486.87		486.87
1002092	01-04-24	PARKERS BUILDING SUPPLY	PVC PIPE	30.65	480.69		480.69
			RETURN PALLET CHARGE CREDIT REQ #121043	-39.87			
			INVENTORY	370.05			
			INVENTORY	56.01			
			INVENTORY	16.46			
			INVENTORY	47.39			
1002251	01-31-24	PROFORMA	MISC ADJUSTMENT FORMS	478.62	478.62		478.62
1002147	01-04-24	POWERPLAN OIB	REPAIR PARTS - UNIT #400, UNIT #401	470.00	470.00		470.00
1002195	01-04-24	TILLEY CRANE INSPECTION	ANNUAL INSPECTION OF CRANE @ HWWTP	450.00	450.00		450.00
1002159	01-04-24	UNITED RENTALS NORTHWEST, INC.	WALKBEHIND TRENCHER - PRODUCTION	443.50	443.50		443.50
1002221	01-04-24	STATE WATER RES CONTRL BRD	LAB CERTIFICATE REFUND CORRECTION	429.66	429.66		429.66
1002094	01-04-24	SA RECYCLING LLC	GREENWASTE FROM DISTRICT SITES	104.65	406.25		406.25
			GREENWASTE FROM DISTRICT SITES	189.80			
			GREENWASTE FROM DISTRICT SITES	111.80			
1002239	01-31-24	BRINKS INCORPORATED	DECEMBER MONTHLY SERVICE	73.35	375.88		375.88
			JANUARY MONTHLY SERVICE FEE	302.53			
1002209	01-04-24	DESERT URGENT CARE	DOT PHYSICAL	175.00	375.00		375.00
			PRE EMPLOYMENT PHYSICAL	200.00			
1002167	01-04-24	XEROX CORPORATION	XEROX LEASE - ADMIN - DEC-JAN 2024	343.73	343.73		343.73

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1002141	01-04-24	JASON WEEKLEY	WORK BOOTS REIMBURSEMENT	300.00	300.00		300.00
1002185	01-04-24	PALM SPRINGS PEST CONTROL, INC.	PEST CONTROL	45.00	300.00		300.00
			PEST SERVICES	40.00			
			PEST SERVICES	90.00			
			PEST SERVICES	60.00			
			PEST CONTROL SERVICES	65.00			
1002200	01-04-24	ADT COMMERCIAL LLC	SECURITY ALARM	270.94	270.94		270.94
1002123	01-04-24	ARAMARK UNIFORM SERVICES, LLC		265.27	265.27		265.27
1002181	01-04-24	HI-DESERT STAR/THE DESERT TRAIL/DESERT ENTERTAINER	DESERT MOBILE PARK SPECIAL AD	250.00	250.00		250.00
1002197	01-04-24	UNDERGROUND SERVICE ALERT	UNDERGROUND SERVICE ALERT	244.50	244.50		244.50
1002120	01-04-24	ALL AMERICAN FIRST AID	FIRST AID SUPPLY RESTOCK	238.77	238.77		238.77
1002165	01-04-24	WESTAIR GASES & EQUIPMENT, INC.	REFILL CO2 TANK FOR SOUNDINGS - PRODUCTION	71.71	234.41		234.41
			CO2 TANKS FOR PARADE FLOAT	162.70			
1002218	01-04-24	PARKERS BUILDING SUPPLY	REPAIR PARTS FOR LIFT STATION VALVE	62.50	233.14		233.14
			INVENTORY	33.35			
			STEEL ROD - VAC TRAILER	27.99			
			DRILL BIT - FLEET MAINT.	28.00			
			ADMIN BUILDING REPAIR PARTS	16.09			
			ADMIN BUILDING REPAIR PARTS	36.35			
			TANK BUG SPRAYER - ADMIN BUILDING	20.46			
			PAINT FOR ADMIN BUILDING	8.40			
1002132	01-04-24	DESERT ELECTRIC SUPPLY	ORBT-1-BC DEVICE MOUNT & COVER - PRODUCTION	10.91	231.77		231.77
			10FT & 140FT CONDUIT - PRODUCTION	220.86			
1002228	01-04-24	ASA MOORE	ACCOUNT REFUND 66011 ESTRELLA AVE	226.17	226.17		226.17
1002151	01-04-24	RUSS MARTIN	R. MARTIN MILEAGE REIMB.	224.01	224.01		224.01
1002179	01-04-24	FORSHOCK	SCADA MONITORING SERVICE 01/2024	220.00	220.00		220.00
1002207	01-04-24	DAVID PENA	WATER TREATMENT CLASS REIMBURSEMENT	211.25	211.25		211.25
1002226	01-04-24	AMERICAN CONSTRUCTION SERVICES	ACCOUNT REFUND DIABLO RD @ DEVERS SUBSTATION	206.54	206.54		206.54
1002076	01-04-24	CECILIA A. MONDRAGON	TOILET REBATE - MONDRAGON	200.00	200.00		200.00
1002234	01-04-24	SEAN TORRES	ACCOUNT REFUND 9331 VISTA DEL VALLE	185.31	185.31		185.31
1002166	01-04-24	WIENHOFF DRUG TESTING	DOT YEARLY MONITORING, PROGRAM ENROLLMENT	185.00	185.00		185.00
99105747	01-12-24	RIVERSIDE COUNTY DCSS - MAIN OFFICE	MONTHLY IWO - PPE 01.05.2024	176.25	176.25		176.25
99105756	01-16-24	CALIF PUBLIC EMPLOYEES RETIREMENT SYSTEM	PERS RETRO PPE 03.04.22	172.51	172.51		172.51
1002102	01-04-24	XEROX CORPORATION	XEROX LEASE - ENG - DEC 2023	172.39	172.39		172.39
1002258	01-31-24	XEROX CORPORATION	XEROX LEASE	172.39	172.39		172.39
1000978	01-29-24	RUSS MARTIN	R. MARTIN - MILEAGE REIMB.	-167.02	-167.02		-167.02
1002252	01-31-24	RUSS MARTIN	R. MARTIN - MILEAGE REIMB.	167.02	167.02		167.02
1000807	01-02-24	DOUG WABISZEWSKI	ACCOUNT REFUND 67455 MONTEREY RD	-163.21	-163.21		-163.21
1002082	01-04-24	DOUG WABISZEWSKI	ACCOUNT REFUND 67455 MONTEREY RD	163.21	163.21		163.21
1002097	01-04-24	THE UPS STORE #5062	DECORATION FOR XMAS FLOAT	153.55	153.55		153.55
1002131	01-04-24	COUNTY OF RIVERSIDE	BACKFLOW DEVICE TESTER APPLICATION FOR JOE H.	151.00	151.00		151.00
			PI0000310 CERT NO. 16376				
1002087	01-04-24	FRANCHISE TAX BOARD	GARNISHMENT PPE 12.22.23 PMT#9	150.00	150.00		150.00
1002176	01-04-24	DESERT HOT SPRINGS WOMENS CLUB	DHS WOMENS CLUB AD SPONSORSHIP	150.00	150.00		150.00
1002180	01-04-24	FRANCHISE TAX BOARD	GARNISHMENT PMT 10 PPE 01.05.24	150.00	150.00		150.00
1002219	01-04-24	POLLARDWATER	HYDRANT LOCK	140.08	140.08		140.08
1002068	01-04-24	NOEMI CERVANTES	ACCOUNT REFUND 66678 HACIENDA AVE	129.55	129.55		129.55
1002068	01-08-24	NOEMI CERVANTES	ACCOUNT REFUND 66678 HACIENDA AVE	-129.55	-129.55		-129.55
1002116	01-04-24	NOEMI CERVANTES	ACCOUNT REFUND 66678 HACIENDA AVE	129.55	129.55		129.55
1002193	01-04-24	THE LAMAR COMPANIES	BILLBOARD RENEWAL	125.00	125.00		125.00

CHECK NUMBER	CHECK DATE	PAID TO VENDOR	DISBURSEMENT DESCRIPTION	INVOICE			TOTAL
				AMOUNT	OPERATING	CAPITAL	
1001644	01-23-24	MICHAEL PLASSE	ACCOUNT REFUND 66247 AVE SUENOS	-111.84	-111.84		-111.84
1002216	01-04-24	MICHAEL PLASSE	ACCOUNT REFUND 66247 AVE SUENOS	111.84	111.84		111.84
1002122	01-04-24	AMBER DUFF	A. DUFF MILEAGE REIMB.	107.42	107.42		107.42
1002149	01-11-24	RITA M. HUBER	PETTY CASH REPLENISHMENT	105.16	105.16		105.16
1002090	01-04-24	LAURA A. GANNOTTI	TOILET REBATE - GANNOTTI	100.00	100.00		100.00
1002150	01-04-24	ROTARY CLUB OF DESERT HOT SPRINGS	2023-2024 MEMBERSHIP DUES	100.00	100.00		100.00
1002194	01-04-24	THERESA MURPHY	HOLIDAY EVENT GIFTS REIMBURSEMENT	92.46	92.46		92.46
1002161	01-04-24	USA-FACT INC	BACKGROUND CHECK	90.38	90.38		90.38
1002059	01-04-24	CARMEN CASALLAS	ACCOUNT REFUND 66635 EL DORADO PL	83.66	83.66		83.66
1002059	01-08-24	CARMEN CASALLAS	ACCOUNT REFUND 66635 EL DORADO PL	-83.66	-83.66		-83.66
1002105	01-04-24	CARMEN CASALLAS	ACCOUNT REFUND 66635 EL DORADO PL	83.66	83.66		83.66
1002153	01-04-24	SO CAL GAS	GAS BILL 12/01/23 - 01/03/24	82.45	82.45		82.45
1002155	01-04-24	SWRCB ACCOUNTING OFFICE	WATER DISTRIBUTION RENEWAL - ALEX .	80.00	80.00		80.00
1002062	01-04-24	GLORIA VEGA	ACCOUNT REFUND 13340 DEL RAY LN	79.45	79.45		79.45
1002062	01-08-24	GLORIA VEGA	ACCOUNT REFUND 13340 DEL RAY LN	-79.45	-79.45		-79.45
1002109	01-04-24	GLORIA VEGA	ACCOUNT REFUND 13340 DEL RAY LN	79.45	79.45		79.45
1002250	01-31-24	PLANIT REPROGRAPHICS	BOND PRINTS OF APPROVED PLANS	75.69	75.69		75.69
1002232	01-04-24	RALPH ORTEGA	ACCOUNT REFUND 69331 CRESTVIEW DR	67.92	67.92		67.92
1002061	01-04-24	FRANCES WEAVER	ACCOUNT REFUND 65565 ACOMA AVE #48	60.82	60.82		60.82
1002061	01-08-24	FRANCES WEAVER	ACCOUNT REFUND 65565 ACOMA AVE #48	-60.82	-60.82		-60.82
1002108	01-04-24	FRANCES WEAVER	ACCOUNT REFUND 65565 ACOMA AVE #48	60.82	60.82		60.82
1002186	01-04-24	PARKERS BUILDING SUPPLY	MISC ITEMS FOR PRODUCTION	25.84	59.76		59.76
			MISC ITEMS FOR PRODUCTION	33.92			
1002144	01-04-24	PALM SPRINGS MOTORS INC	WIRE ASY - UNIT #402	58.21	58.21		58.21
1002111	01-04-24	KAY ELLIS	ACCOUNT REFUND 15300 PALM DR #28	52.08	52.08		52.08
1002178	01-04-24	FEDEX	WELLS FARGO OVERNIGHT FEE	51.49	51.49		51.49
1002212	01-04-24	FEDEX	WELLS FARGO OVERNIGHT FEE	51.27	51.27		51.27
1002225	01-04-24	AMANDA TRUJILLO	ACCOUNT REFUND 9758 AVE DELORES	50.93	50.93		50.93
1002229	01-04-24	BRENDEN NGUYEN	ACCOUNT REFUND 13259 RAMONA DR	50.93	50.93		50.93
1002065	01-04-24	LARRY WHITING	ACCOUNT REFUND 66960 YUCCA DR	50.58	50.58		50.58
1002065	01-08-24	LARRY WHITING	ACCOUNT REFUND 66960 YUCCA DR	-50.58	-50.58		-50.58
1002113	01-04-24	LARRY WHITING	ACCOUNT REFUND 66960 YUCCA DR	50.58	50.58		50.58
1002064	01-04-24	KULVIR KAUR	ACCOUNT REFUND 10774 OCOTILLO RD	50.48	50.48		50.48
1002064	01-08-24	KULVIR KAUR	ACCOUNT REFUND 10774 OCOTILLO RD	-50.48	-50.48		-50.48
1002112	01-04-24	KULVIR KAUR	ACCOUNT REFUND 10774 OCOTILLO RD	50.48	50.48		50.48
1002136	01-04-24	FEDEX	OVERNIGHT FEE	47.76	47.76		47.76
1002196	01-04-24	TRAVEL BERKELEY SPRINGS	BERKELEY SPRINGS CONTEST FEE	45.00	45.00		45.00
1002067	01-04-24	MARCUS L RELIFORD	ACCOUNT REFUND 67580 SAN ANTONIO ST	44.94	44.94		44.94
1002067	01-08-24	MARCUS L RELIFORD	ACCOUNT REFUND 67580 SAN ANTONIO ST	-44.94	-44.94		-44.94
1002115	01-04-24	MARCUS L RELIFORD	ACCOUNT REFUND 67580 SAN ANTONIO ST	44.94	44.94		44.94
1002203	01-04-24	CASAMAR GROUP, LLC	LABOR COMPLIANCE - WELL 34 REHAB	42.85	0.00	42.85	42.85
1002238	01-04-24	WOLFGANG SCHMIDT	ACCOUNT REFUND 8580 ANNANDALE AVE	41.62	41.62		41.62
1002230	01-04-24	CHRISTOPHER GUTIERREZ	ACCOUNT REFUND 12680 AGUA CAYENDO RD	41.51	41.51		41.51
1002060	01-04-24	CELIA GARCIA	ACCOUNT REFUND 66615 GRANADA AVE	36.43	36.43		36.43
1002060	01-08-24	CELIA GARCIA	ACCOUNT REFUND 66615 GRANADA AVE	-36.43	-36.43		-36.43
1002107	01-04-24	CELIA GARCIA	ACCOUNT REFUND 66615 GRANADA AVE	36.43	36.43		36.43
1002066	01-04-24	MANUEL GUERRA	ACCOUNT REFUND 64370 BRAEBURN AVE	35.09	35.09		35.09
1002066	01-08-24	MANUEL GUERRA	ACCOUNT REFUND 64370 BRAEBURN AVE	-35.09	-35.09		-35.09
1002114	01-04-24	MANUEL GUERRA	ACCOUNT REFUND 64370 BRAEBURN AVE	35.09	35.09		35.09
1002145	01-04-24	PARKERS BUILDING SUPPLY	MISC. ITEMS - PRODUCTION	30.13	30.13		30.13
1002152	01-04-24	SA RECYCLING LLC	VALVE REPLACEMENT GREENWASTE	30.00	30.00		30.00

CHECK NUMBER	CHECK DATE	PAID TO VENDOR	DISBURSEMENT DESCRIPTION	INVOICE			TOTAL
				AMOUNT	OPERATING	CAPITAL	
1002175	01-04-24	DESERT RECYCLING INC.	DUMP FEES	30.00	30.00		30.00
1002233	01-04-24	SARA SHOWKATIAN	ACCOUNT REFUND 66796 GRANADA AVE	29.75	29.75		29.75
1002088	01-04-24	GRAINGER	JAW COUPLING FOR HORTON PLANT	26.10	26.10		26.10
1002173	01-04-24	COUNTY OF RIVERSIDE	WATER TALKS ROOM FEE	25.00	25.00		25.00
1002069	01-04-24	SALOMON CAVAZOS	ACCOUNT REFUND 11535 W STARCROSS DR	24.18	24.18		24.18
1002069	01-08-24	SALOMON CAVAZOS	ACCOUNT REFUND 11535 W STARCROSS DR	-24.18	-24.18		-24.18
1002117	01-04-24	SALOMON CAVAZOS	ACCOUNT REFUND 11535 W STARCROSS DR	24.18	24.18		24.18
1002227	01-04-24	ANNA LONGORIA	ACCOUNT REFUND 11777 SKYLARK ST	24.18	24.18		24.18
1002083	01-04-24	EDOM HILL TRANSFER STATION	SITE CLEAN UP DUMP FEE	19.00	19.00		19.00
1002118	01-04-24	SIGNPOST HOMES INC	ACCOUNT REFUND 64028 ALPINE ST	7.68	7.68		7.68
1002235	01-04-24	SERGIO MORALES	ACCOUNT REFUND 68180 CALLE AZTECA	5.91	5.91		5.91
1002072	01-04-24	AUTO ZONE STORES LLC	TUBLESS TIRE VALVE #401	4.30	4.30		4.30
1002063	01-04-24	HABITAT OF HUMANITY OF THE COACELLA VALL	ACCOUNT REFUND 66353 FLORA AVE	1.09	1.09		1.09
		EY					
1002063	01-08-24	HABITAT OF HUMANITY OF THE COACELLA VALL	ACCOUNT REFUND 66353 FLORA AVE	-1.09	-1.09		-1.09
		EY					
1002110	01-04-24	HABITAT OF HUMANITY OF THE COACELLA VALL	ACCOUNT REFUND 66353 FLORA AVE	1.09	1.09		1.09
		EY					
1002231	01-04-24	MARQUITIA SALTER	ACCOUNT REFUND 13640 EL RIO LN	0.74	0.74		0.74
			CURRENT CHECK TOTAL	5,291,973.8	1,961,742.5	3,330,231.2	5,291,973.8
TOTAL				5,291,973.82	1,961,742.56	3,330,231.26	5,291,973.82
241 records listed							

AGENDA REPORT

REGULAR BOARD MEETING FEBRUARY 15 & 20, 2024

DIRECTOR REPORTS

DIRECTOR REPORTS

(Per GC 53232.3(d) brief reports on meetings attended for which a daily stipend was claimed)

Date	Event	Attendees
1/2/2024	DWA BOARD MEETING	GRIFFITH
1/4/2024	DVBA LEGISLATIVE MEETING	MARTIN, MAYRHOFEN
1/12/2024	DVBA GENERAL MEMBERSHIP LUNCHEON	MARTIN, MAYRHOFEN
1/16/2024	DHS CITY COUNCIL MEETING	MARTIN
1/18/2024	DVBA NETWORKING NIGHT	MARTIN, MAYRHOFEN
1/22/2024	DVBA BOARD MEETING	MARTIN
1/23/2024	CVWD BOARD MEETING	DUFF
1/23/2024	RIVCO BOARD OF SUPERVISORS MEETING	MARTIN
1/24/2024	SAN GORGONIO PASS REGIONAL WATER ALLIANCE BOARD MEETING	DUFF
1/27/2024	CORBS AWARDS DINNER	MARTIN, GRIFFITH, DUFF, MAYRHOFEN
1/30/2024	ACWA REGION 9 BOARD MEETING & SNOW CREEK TOUR	MARTIN

(OTHER) MEETINGS ATTENDED *(*no daily stipend was claimed)*

Date	Event	Attendees
1/20/2024	DHS HISTORICAL SOCIETY ROCK HOUSE GRAND OPENING	DUFF

FEBURARY 2024

Item 19.



GENERAL MANAGER'S REPORT

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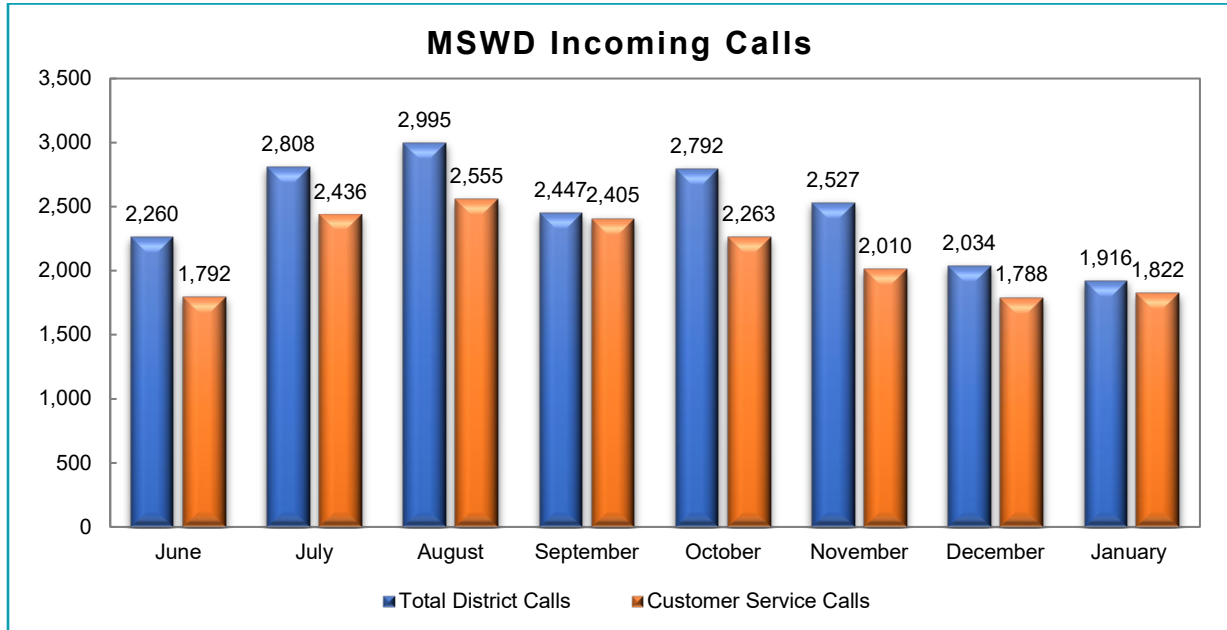
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ADMINISTRATION

Customer Service

Calls into the Customer Service Department

After the District had seen a steady increase in the number of calls earlier in the year, there has been a very slight decline in the number of calls over the last four months. The chart below represents total MSWD incoming calls and those received by the Customer Service staff.

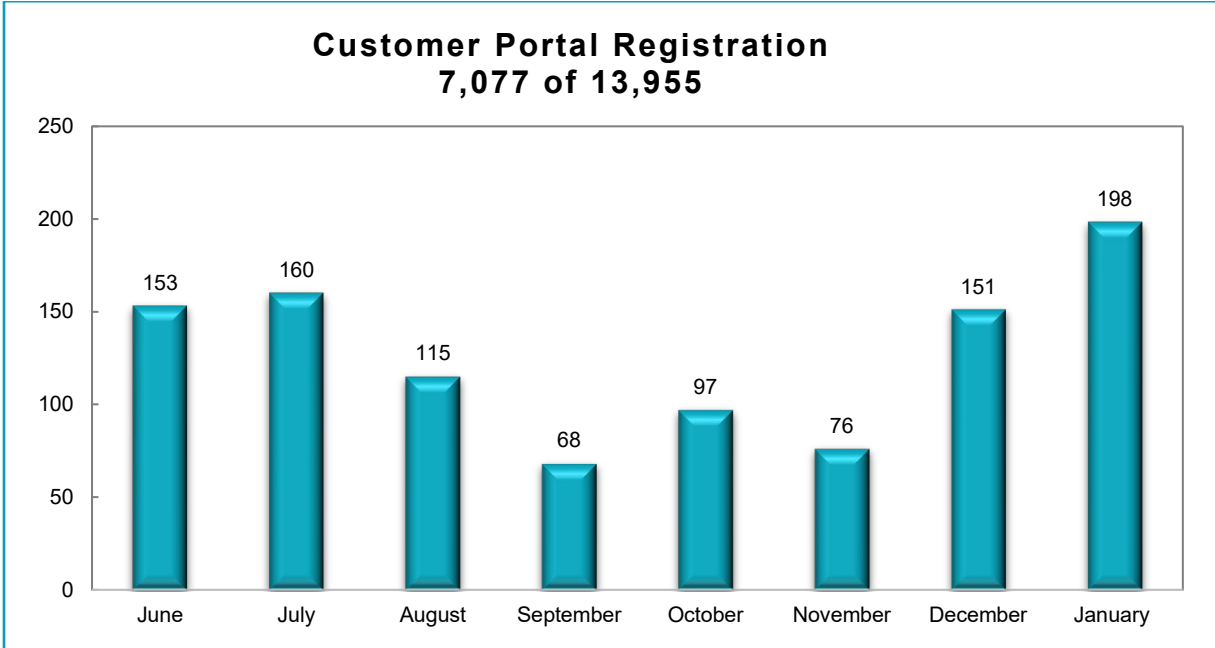


Most calls are related to payment plans, bill assistance information, demand/lien release requests, new property start/stop service, and account balance requests. The table below provides a summary of the number of calls by category received by the Customer Service staff.

Customer Request	Total for January 2024	Monthly Average for FY 2024	Total for FY 2024
Water Waste	0	1.29	9
High Bill Calls / Service Line Leaks	3	7.57	53
No Water	12	9.28	65
Disconnections by Request & Non-Pay	121	115.71	810
Reconnections by Request & Non-Pay	81	75.43	528
Service Transfers	113	97.14	680
High/Low Pressure	3	7.71	54
Water Quality	5	2.71	19
Other / Miscellaneous	138	97.14	680

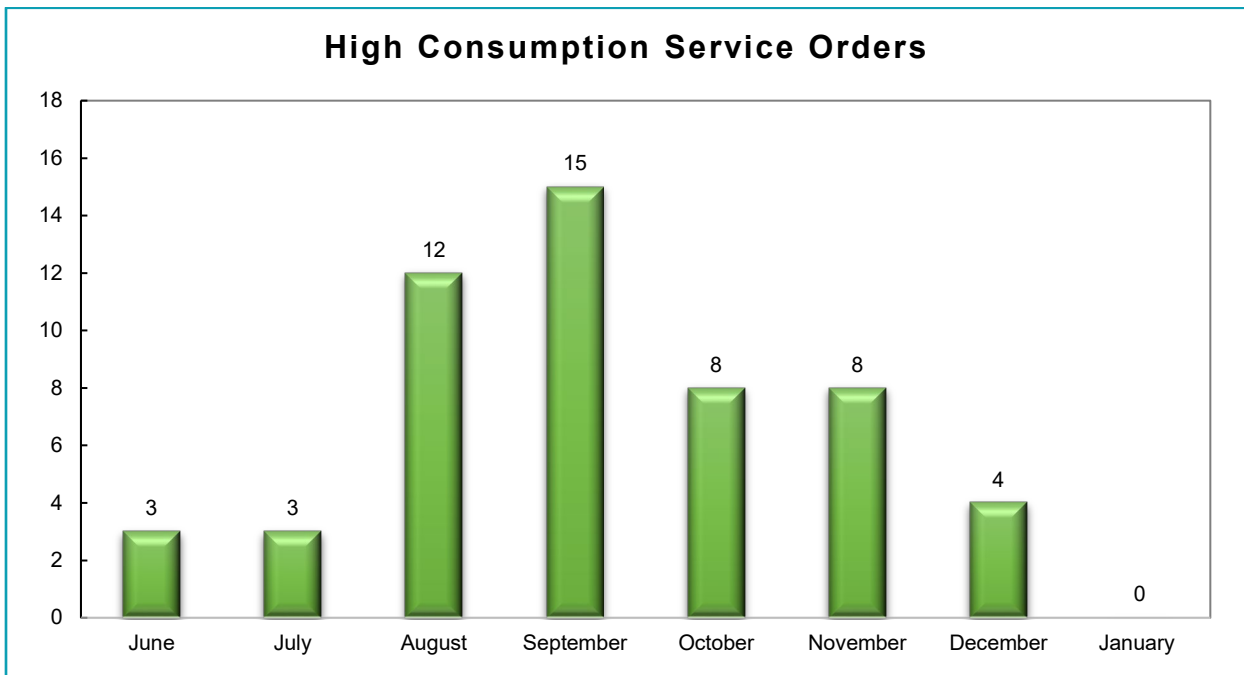
Customer Portal

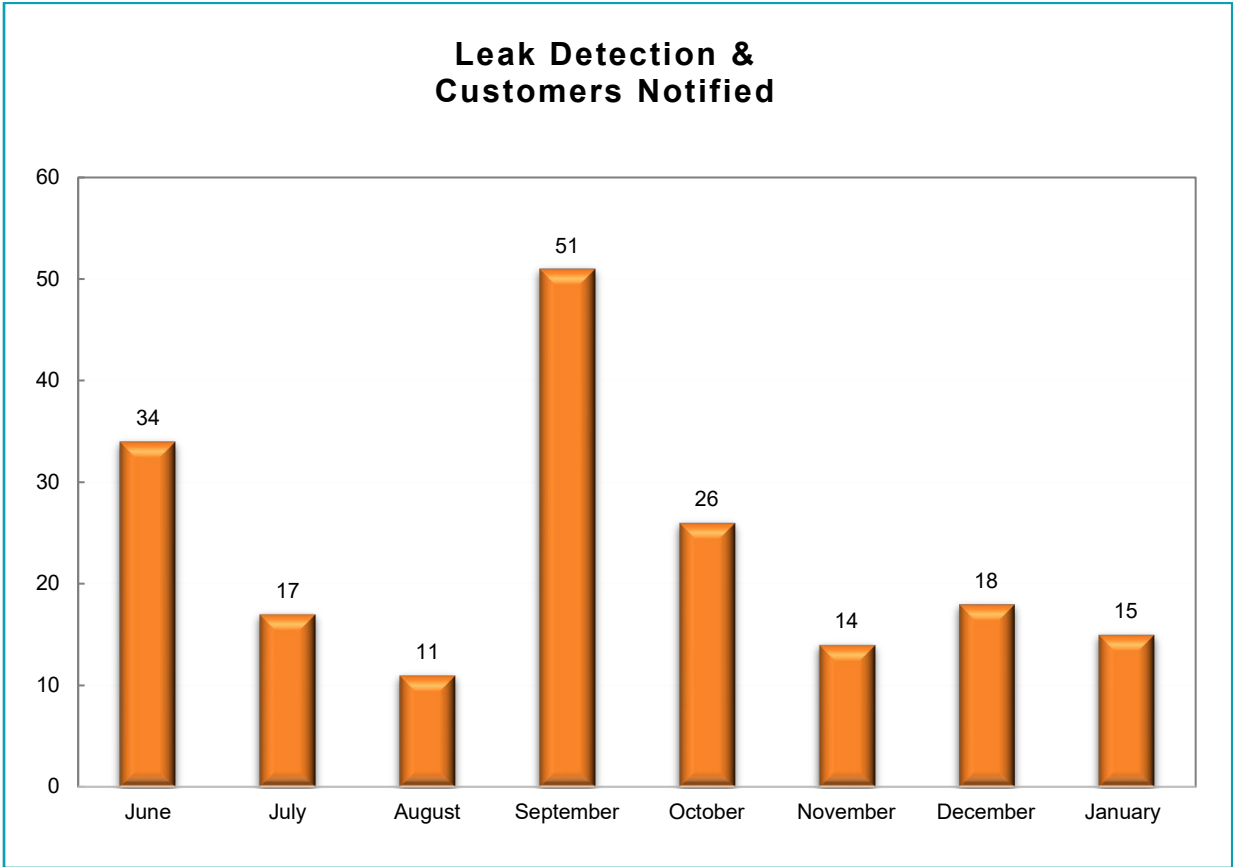
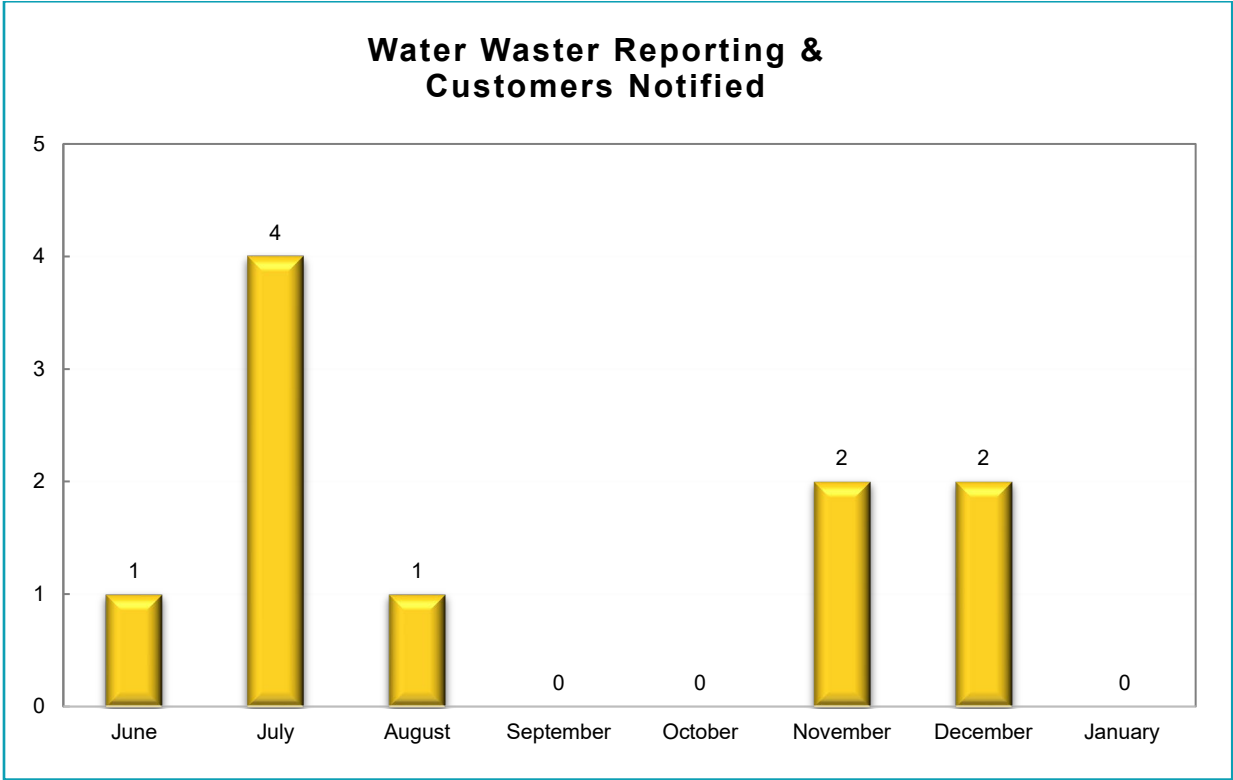
The District has implemented an AMI infrastructure and Neptune 360 portal. All customers are encouraged to sign up for the Customer Portal to access bills and leak alerts. Since launching the portal, customer adoption has reached 51%, or 7,077 customers registered so far.



Monitoring of Customer Accounts

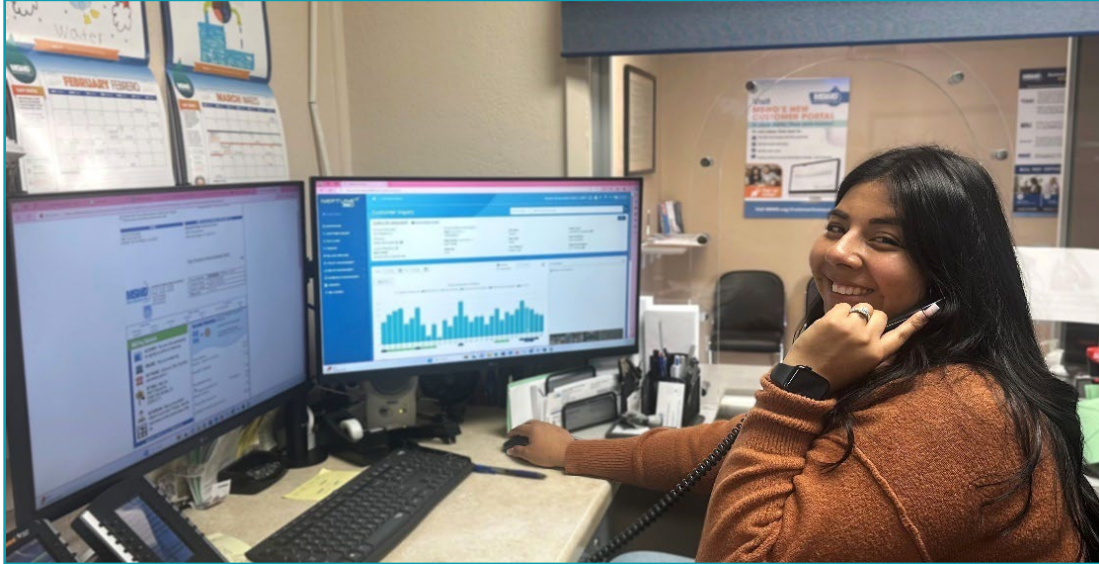
The District continues to leverage the new AMI infrastructure and Neptune 360 portal to investigate high consumption, identify water wasters, and detect leaks. The following charts represent the monitoring results for 13,955 customer accounts by the Customer Service staff.





Customer Experience Enhancement Program

The Customer Service Department continues the Customer Experience Enhancement Program. This program provides an Online Booking Calendar for in-person one-on-one account assistance and review, in addition to phone screening and on-the-spot feedback/coaching with a Customer Service representative.



The Customer Service team continues to host “Coffee Talk Wednesdays” providing mini-training and discussions. Weekly training topics include:

- What does Customer Service mean to You?
- Greeting Customers: the importance of and how to
- Diffusing an Interaction: what can we do to find a solution
- Tone of Your Voice: you can hear a smile through the phone
- Importance of customer inquiry follow-up
- Active Listening: verbal and non-verbal
- Customer Experience versus Customer Service
- Going the Extra Mile: inform, assist, and impress
- The Internal and External Customer
- Communication between departments
- Documentation of communications



Delinquency Service Disconnections

Staff continued to reach out to customers with delinquent accounts to provide information for assistance and repayment options to avoid disconnection. The table below summarizes the activities of Customer Service staff regarding delinquent accounts.

Fiscal Year	Auto-Dialer Calls to Customers	Door Hangers to Property	Customer Contact to Make Payment Plan	Service Disconnections
2023 – 2024 (Year to Date)	2,996	381	592	340
2022 – 2023	5,107	759	1,171	656
2021 – 2022 (3/24/2022 – 6/30/2022 COVID Moratorium Ended)	1,937	494	378	286
2020 – 2021 (COVID Moratorium)	0	0	0	0
2019 – 2020 (7/1/2019 – 3/9/2020 COVID Moratorium Started)	7,182	1,760	814	667

Customer Bill Pay Options

MSWD Customer Service continues to provide customers with multiple options for bill payment.

- Payment Portal on MSWD.org/Customer Connect.
- Customers can pay at 7-11 in Desert Hot Springs, Palm Springs, Cathedral City, and Yucca Valley; CVS or Walmart in Palm Springs; and Family Dollar in Yucca Valley. Customers must have their bills present.
- Customers can drop payments (check or money order) in the drop box or pay in the lobby.
- Customers can call in and pay through the IVR system, or with Customer Service Representative assistance.
- Pay Near Me is promoting inclusive payment options including: Cash App Pay (New), PayPal, Google Pay, Apple Pay, and the QR code on the back of the bill. Customers can pay directly from their smartphone.



Customer Bill Assistance Programs

The District continues to facilitate bill assistance programs for the benefit of its customers.

- The United Way Customer Bill Assistance Program continues to be utilized by those customers who need assistance for one billing period annually, paying \$100 per approved customer.
- Riverside County's Low Income Household Water Assistance Program (LIHWAP) Care Program provides customers with a one-time payment towards their water and/or sewer bill of up to \$5,000. The U.S. Department of Health and Human Services has permitted the extension of the LIHWAP program through March 31, 2024. Please note that the last to apply for assistance is March 15, 2024.
- Beginning March 13, 2023, LIHWAP will now be able to assist customers even if their account does not have an arrearage. When a customer is not past due on their bill, they will receive a base payment ranging between \$200 - \$371. The amount the customer receives will depend on their household size and income.



The table below summarizes the results of the customer bill assistance programs administered by the Customer Service staff.

Assistance Program	Customers Assisted in January 2024	Total Assistance in January 2024	Total Assistance in FY 2024
United Way of the Desert	7	\$700.00	\$5,900.00
LIHWAP / CAP Riverside	9	\$5,112.70	\$55,407.32
MSWD Payment Plans Last Month	Previous Month Remaining to be Billed	MSWD Current Customer Payment Plans	Current Balance Remaining to be Collected
147	\$54,157.64	164	\$59,489.60



Finance and Accounting Department

The Finance and Accounting Department continues to work with its vendors to complete the yearly and necessary tasks to meet State and Federal reporting requirements and the strategic goals established by the MSWD Board of Directors. Below are project highlights and summaries for January 2024.

Audit

Staff completed the 10-year statistical schedules as required for the preparation for the ACFR. The auditors continue to compile the draft report.

Payroll

The following procedures have been completed in the month of January 2024:

- 2024 Federal Tax Rates have been updated in the accounting system.
- 2024 State Tax Rates have been updated in the accounting system.
- 2024 457 Max Contributions have been updated in the accounting system.
- Employee 457 District match has been reset to begin again January 1, 2024.
- Group Term Life Insurance benefit taxable rates have been updated in the accounting system.
- Employee Medical Insurance 5% match have been updated in Unidata due to the new rates being effective January 1, 2024.

The following quarterly procedures have been completed in the month of January 2024:

- Worker's Comp Insurance Payments were calculated for the 4th quarter of 2023 and processed with ACWA – for a total of \$40,957.92.
- Form 941 Employer's Quarterly Federal Tax Return was filed.
- Form DE 9 CA Quarterly Contribution Return and Report of Wages was filed.

The following annual procedures have been completed in the month of January:

- Forms 2023 W-2 were compiled, submitted electronically to SSA, and distributed to 66 active and separated employees.
- Compensation Statements detailing employee wages and benefits were compiled for all active employees.
- Letters were submitted to employees with excess vacation balances and sick leave balances as part of the annual vacation and sick leave sell back policy.

The following new features were also implemented into the payroll software module:

- New supplemental federal and state tax rate calculations were added to be used with supplemental wage payments, such as vacation buy backs.
- New linked pay and deductions codes were created to track the Employer Matching contribution for the 457(b) plan.

Additionally, the accounting team completed the 457(b) tax treatment clean-up project, which entailed filing a total of 126 corrected W-2s for tax years 2020-2022 and 80 letters of explanation. Corrected form 941 for the tax years 2020, 2021, and 2022 were also filed.

Budget

The Mid-Year Budget amendments were adopted in January 2024 and the following updates were made to the budget program software during January 2024:

Budget Amendments to Operations:

BUDGET ID NO	DEPT	G/L NUMBER	DESCRIPTION OF EXPENDITURE	ORIGINAL BUDGET	TRANSFERS	AMENDMENT	AMENDED BUDGET
539	5460	201-5460-53601-000	HOT MIX ASPHALT	200,000		50,000	250,000
585	5640	301-5640-56011-000	OUTSIDE SERVICES	75,000		52,000	127,000
602	5620	301-5620-56011-000	COLLECTION SYSTEM EMERGENC	40,000		23,000	63,000
702	5120	101-5120-56011-000	GENERAL CONSULTING	128,000	(57,500)	40,000	110,500
703	5120	101-5120-56011-000	ADMINISTRATIVE SUPPORT - T	40,000	57,500	165,000	262,500
812	5080	101-5080-56011-000	"STUDIES, PLANS AND UPDATE	145,020		734,000	879,020
870	5620	301-5620-56011-000	SUPPLEMENTAL ENVIRONMENTAL	300,000		250,000	550,000
479	4060	201-4060-19552-000	LOCAL GRANT REVENUE	-		(3,000,000)	(3,000,000)

Budget Amendments to Capital Projects:

JOB NO	DESCRIPTION OF CAPITAL PROJECT	ORIGINAL BUDGET	AMENDMENT	AMENDED BUDGET
11147	WELL #42 (NEAR TO EXISTING WELL # 22)	4,600,000	139,000	4,739,000
11788	MUFFIN MONSTER 6" INLINE GRINDER	15,100	2,000	17,100
11776	ENERGY CONSERVATION AND EFFICIENCY SVCS PLAN	20,000	50,000	70,000
11809	13TH AVE DAMAGE: TSTORM HILARY	-	100,000	100,000
11810	THOMAS DR DAMAGE: TSTORM HILARY	-	105,000	105,000
11811	INDIAN CANYON DAMAGE: TSTORM HILARY	-	230,000	230,000
11812	LITTLE MORONGO DAMAGE: TSTORM HILARY	-	30,000	30,000
11813	MISSION LAKES DAMAGE: TSTORM HILARY	-	650,000	650,000

Budget transfers for January 2024 totaled \$29,400:

BID	DESCRIPTION OF EXPENDITURE	G/L NUMBER	TRANSFER DATE	TRANSFER AMOUNT	TO BID	TRANSFER TO DESCRIPTION	TRANS TO GL NUMBER
702	GENERAL CONSULTING	101-5120-56011-000	01-03-2024	11,000.00	703	ADMINISTRATIVE SUPPORT - TEMP HELP	101-5120-56011-000
861	PRODUCTION FACILITIES IMPROVEMENTS	201-5440-53005-000	01-11-2024	1,900.00	842	HEALTH DEPARTMENT MONITORING	201-5440-53701-000
702	GENERAL CONSULTING	101-5120-56011-000	01-24-2024	16,500.00	703	ADMINISTRATIVE SUPPORT - TEMP HELP	101-5120-56011-000

Accounts Payable

During January 2024, there were thirty-nine 10990-NECs and fourteen 1099-MISC informational forms compiled, electronically filed, and distributed by the filing deadline.

Current Work Priorities

The Accounting Department continues to support other departments as needed.

- Engineering
 - Two reimbursable jobs were created to track expenses related to new development projects, for:
 - ATP 4 Hacienda Ave. street improvement
 - DUO by SRD Vacation Easement duplex construction
- Operations
 - A reimbursable job was created to track expenses related to the hit hydrant at 9665 Valaraiso Dr.

Cash

Total cash receipts for the month of January 2024 amounted to \$6,453,886. County receipts for property taxes and sewer collections totaled \$4,899,789 and the remainder was primarily from water and sewer customer account payments.

Cash disbursements for the month of January 2024 amounted to \$5,291,974 with the largest payments going to:

- JF Shea Construction - \$2,461,292
- Downing Construction - \$373,103
- State Water Resources Control Board - \$350,141
- TKE Engineering - \$289,552
- Net Payroll - \$279,227
- Southern California Edison - \$277,291
- EFTPS-IRS Payroll Tax Remittance - \$176,984
- Legend Pump & Well Service - \$169,826
- ACWA-JPIA Health Benefits Authority - \$106,619

Financial Statement

A year-to-date summary of the District's financial position for Fiscal Year 2023-2024, in addition to a comparison to the previous fiscal year, can be found in Appendix A.

Capital Improvement Program

The District maintains a 5-year Capital Improvement Program that includes water and sewer infrastructure, facilities, equipment, and fleet. A year-to-date summary of the District's Capital Improvement Program for Fiscal Year 2023-2024 can be found in Appendix A.



Innovation and Technology Department

The Innovation and Technology (IT) Department continues to work with staff and vendors to achieve technological enhancement and meet innovation goals established by the MSWD Board of Directors. Below are project highlights and summaries for January 2024.

Department Updates

- Intelesys, the District's new IT support firm, was fully onboarded in January 2024 and took over network/server maintenance and helpdesk on February 1, 2024.
- Staff were provided a new method for requesting IT support, taking advantage of a new ticketing system.
- IT has facilitated the RFP process for the District's GIS implementation and integration with an asset management and computerized maintenance and management system. The review panel completed the scoring of the submitted proposals which the Board will see in the associated staff report.

Technology Improvements

- Intelesys created a list of technology and security improvement projects of which work has already begun, including changes to security policies, environmental monitoring in the server room, and backup management.
- IT updated the Microsoft login page for the District, offering a more professional look and security improvements.
- The District's webserver migration was completed, and the old server decommissioned.
- Cybersecurity improvements continue to be made to improve District security.
- Desktop computers and laptop upgrades continue as needed.

On-Going Cyber Security Training

IT continues the monthly anti-phishing training scenarios with staff and Board members. Staff has been diligent in reporting suspicious emails or contacting the IT Manager for review of suspicious emails before acting.

Cyber Security News Roundup

The IT Department tracks trends in cyber security to note new opportunities for security and new concerns to defend against. The news below is a brief selection of news intended for informational purposes and provides no insight to the District's cyber security controls.

- The FBI, Cybersecurity and Infrastructure Security Agency (CISA) and the EPA partnered to release 27-page Incident Response Guide for the Water and Wastewater Sector. The guide provides a simplified plan for identifying, reporting, responding to, and defending against cyber threats. It provides recommendations and links to resources to improve cybersecurity. ([CISA](#))
- U.S Government disrupted a Chinese botnet that was used to conceal hacking of critical infrastructure. Hackers installed malware on vulnerable unpatched small office and home routers. The FBI managed to remove the malware and prevent reinfection, so long as the routers are not restarted, which will put them back in a state vulnerable to reinfection if the mitigation is not reapplied. "U.S. Attorney Alamdor S. Hamdani for the Southern District of Texas stated, "This case

demonstrates my office's ongoing commitment to defending our critical infrastructure from PRC initiated cyber-attacks." ([U.S. Department of Justice, Office of Public Affairs](#))

- 26 billion records of personal information were discovered online in what is being called "The mother of all breaches." The data came from Leak-Lookup, a search engine for personal data, which had a firewall misconfiguration, allowing access since early December. ([Malwarebytes](#))

Purchasing Department

Staff continues to source sanitization supplies to ensure wipes, hand sanitizer, and disinfectants are available to all District buildings and vehicles for the safety of the staff.

Price increases and supply chain issues continue to surface within our industry. Specifically, PVC pipe and fittings, ductile iron pipe and service brass fittings, restraints, hydrants, and valves, as well as many other products, are experiencing significant shortages that could lead to extended lead times. Along with these supply chain problems, pricing continues to escalate. These problems exist with both domestic and import materials. Staff will continue to monitor the situation and perform due diligence in getting all the material that is needed to maintain the water systems.

Total inventory purchases were \$48,630.64, and the total issued for use by field crews totaled \$35,105.04, for January 2024.



ENGINEERING AND OPERATIONS

Engineering Department

Below is a list of Capital Projects and status updates for January 2024.

Well 42 Project

The contractor is in the process of procuring the well motor, pump assembly, and the MCC equipment from the manufacturer. Construction will likely be on-hold for several more weeks while the equipment is ordered, fabricated, and delivered to the site for construction and installation. Staff is currently securing contract change order costs and anticipates presenting a project update at the February 2024 Board of Directors meeting.

AD-18 – GQPP Sewer Project Areas “H” & “I”

Staff has identified a new alternative alignment for the sewer at the south end of Hildago Street crossing private property. Staff will be reviewing the new alternative with the property owner in the coming weeks to discuss viability and easement requirements.

Well 22 Rehabilitation

Staff posted the project for bids on the PlanetBids website. The bid opening has been rescheduled to February 8, 2024, at 2:00pm. Following the completion of the bidding process, bids will be evaluated, and the lowest responsible and responsive bid will be brought to the Board for award.

Water and Wastewater System Comprehensive Master Plan Updates

Staff and consultants continued progress on evaluating the future demands and system needs, as well as finalizing the master plans and capital improvement programs. Staff anticipates completing the plans and presenting them to the Board in the coming weeks.

AD-18 – GQPP Sewer Project Area “D3”

Staff is coordinating with the engineer of record, AECOM, to provide a proposal to complete the necessary design and CEQA updates to the existing documents.

AD-18 – GQPP Sewer Project Areas “A” & “G”

Staff has completed a plan check of the 90% design package and provided comments back to the consultant, Genterra. The consultant is expected to complete the final design package in the coming weeks.

Backup Generators for Well Sites 27-32 and 37 Projects

Staff received the contract extension from the consultant extending the contract term for one year. Staff have the plans signed and ready for bidding. Staff will review the specifications and prepare the contract documents for bidding purposes to solicit construction bids in the first quarter of 2024.

Supplemental Environmental Project

The contractor, RE Chaffee, completed connection and abatement of the 21 properties on December 8, 2023. Issuance and approval of the Notice of Completion is anticipated for March 2024, pending the approval of labor compliance and billing.

Well 34 Rehabilitation

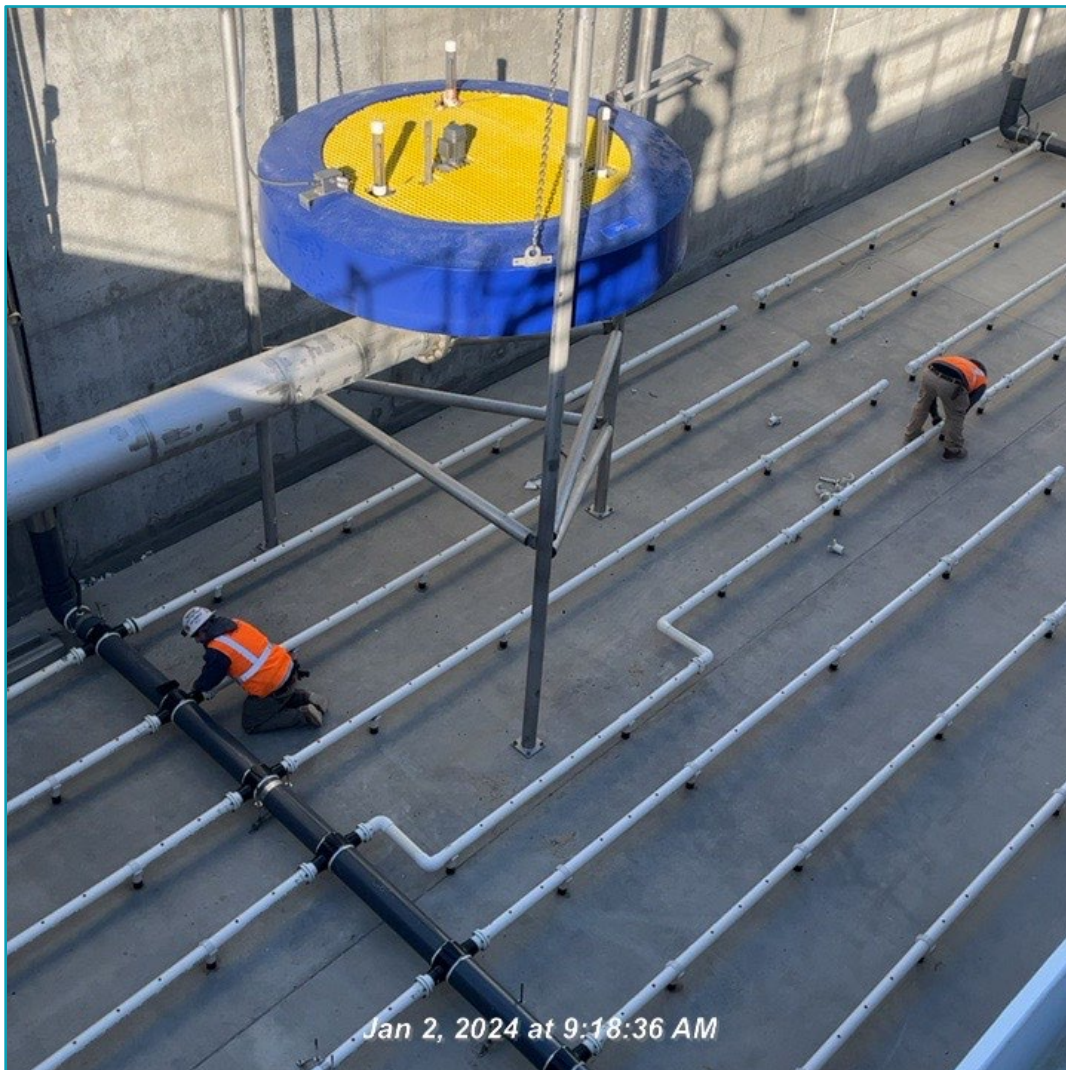
Construction is scheduled to be completed in March 2024. Through January 2024, the contractor, Legend, completed the focused intake pumping, chemical injection and pumping, as well as swabbing and air lifting. Within the next several days, the contractor will start test pumping and video logs, followed by the installation of new pumping equipment, well disinfection, and start-up.

Regional Water Reclamation Facility

The Project Team continued processing submittals, responding to RFIs, and processing change orders and payment requests submitted by the contractor, JF Shea Construction.

The contractor continued construction on the Regional Water Reclamation Facility (RWRF). Through the month of January 2024, JF Shea Construction:

- Continued outfitting the operations building including insulation, conduits, fire suppression system, cable trays, air ducting, drywall, etc.
- Continued equipping the Headworks area and SBR and AST tanks with ALP piping, fine and course air bubble diffusers, wiring and electrical, valves, lighting, etc.
- Continued excavation and grading of the infiltration pond area.





The Project Team and Staff prepared the easement documents to acquire permanent easements along 20th Avenue to construct the third required monitoring well. These will be brought to the Board for approval in February 2024.

The Project Team and Staff received verbal approval to access a private well near Palm Drive and Interstate 10 required for annual sampling and reporting to the RWQCB. The Project Team and Staff are preparing a site access agreement for execution to formalize the access requirements.

The Project Team continues to coordinate with the State Water Board on the SRF/Grant funding agreement and reimbursement requests.

- Staff coordinated with the State regarding RFIs on Reimbursement Request No. 2
- Staff continued preparing Reimbursement Request No. 3 covering Q3 2023.
- Staff received RFIs and requests for additional documents for the Conveyance Line FBA.
- Staff began preparing the grant agreement amendment to revise the construction start date to capture the first month of construction costs (i.e., April 2022)

RWRF Conveyance Line

The Project Team continued processing submittals, responding to RFIs, and processing change orders and payment requests submitted by the contractor, Downing Construction, Inc.

The contractor completed construction of the force main along Dillon Road, including modifications to the Mission Creek crossing area to provide better protection against future flood impacts. The contractor continues construction of the gravity sewer along Little Morongo Road between 18th Avenue and Dillon Road.

Staff continues to coordinate with SCE to resolve the easement issue along Little Morongo Road south of 18th Avenue.

Area M2 Sewer Collection System (AD-15)

Staff has completed checking the draft design package and will be returning it to the design consultant, AECOM, to finalize in the coming weeks.

The Project Team is working with the consultant to incorporate water service replacements throughout the project area.

RWRF Roadway Design (19th Avenue, Little Morongo Road, and 20th Avenue)

The design consultant, TKE Engineering, completed the 60% design. Staff is completing a plan check of the design.



Operations & Maintenance

Construction & Maintenance

Water Line Locations

Staff completed approximately 389 water line location requests using iPads and the GeoViewer Mobile app to streamline and manage line locations.



Water System Repairs/Replacement

Staff continued to repair and replace components of the water distribution system keeping it in optimum working order and properly functioning without any interruption. Below is a summary of the repairs and replacements completed in January 2024.

- 15 water service lines were replaced with copper.
- 15 service line leaks were repaired.
- Five mainline leaks were repaired.
- Two fire hydrants were replaced.



Water System Maintenance

Staff continued to implement preventative maintenance and inspection programs keeping the water distribution system in optimum working order and properly functioning without any interruption. Below is a summary of the maintenance completed in January 2024.

- 160 ground valves were exercised.
- 63 fire hydrants were flushed, maintained, and painted.
- 22 air-release valves were inspected and/or rebuilt.
- 65 blow-offs were flushed.



Street/Asphalt Repair (City/County)

The District's contractor, B-81 Paving Inc., is back to making asphalt and concrete repairs throughout the District.

CMMS Workorder Program

A total of 62 work orders were processed in January 2024 using the CMMS program.

New Water Meter Service Installation

Staff installed seven new water service lines in January 2024.

Fire Flow Testing

Staff continued performing field fire flow tests for the Engineering Department. Nine fire flow tests were conducted in January 2024.

Fleet & Facility Maintenance

Janitorial Services

The janitorial contractor, Executive Facilities, continues to clean and disinfect all District buildings. Routine disinfection is performed four times per week Tuesday through Friday. Additionally, routine janitorial services are provided twice per week on Wednesdays and Fridays.

Building Maintenance

Staff completed the following building maintenance during the month of January 2024:

- Repaired broken sprinkler head at the Administration Building.
- Began clean-up of pallet of old paint at the Corporate Yard.
- Reinstalled mouse pad platform for Rita Huber.
- Flushed drain in the upstairs men's restroom due to odor issue.
- Made three hydrant stem lockouts.
- Replaced four lightbulbs in the water room at Old Stores.
- Blew out old stores and sprayed pesticide.
- Made irrigation repairs at Well 25, Well 27/31, Terrace Reservoir, and Two Bunch Reservoir.
- Applied sealant to AC vents on roof of Annex Building.
- Installed padding on lift in shop to protect doors while servicing.
- Added thread locker to all J-hook toilet paper holders to prevent backing out of set screw.

Standby Generator Monthly Maintenance Program

Our team conducts monthly testing to ensure that all generators are in good working order and ready for use when needed. There were no issues with the generators this month. Three new Cummins portable generators were delivered this month (two 275KW and one 200kKW). Staff performed initial testing at the Terrace Reservoir Boosters and the new generators performed above our expectations.

Fleet Maintenance/Repairs

- Unit 402 had headlight bulbs replaced.
- Unit 414 had the vacuum suction tube replaced and the onboard valve machine serviced.
- Unit 360 had the battery replaced.
- Unit 433 had a dealer recall performed at Palm Springs Motors.
- Unit 385 had the suction tube holder, water pump, and unloader valve replaced, replaced valve was a faulty unit and was then replaced by RDO a second time.
- Unit 439 had MSWD decals applied, license plates installed, four corner emergency strobes installed, and the bed coated by Line-X.
- Unit 415 had the excess water drained from the fuel filter.
- Unit 394 had the trailer jack replaced.
- Unit 390 had the auxiliary diesel fuel tank installed in the bed.
- Unit 410 had a brake inspection performed and had the RF rotor and all brake pads replaced.
- Unit 424 had a reported coolant leak tightened.
- Unit 438 had all fluids topped off and MSWD decals installed.
- Unit 418 had the PM service performed, tires replaced by Desert Tire, and rear shocks replaced.
- Unit 413 had the PM service completed and cabin filter installed.
- Units 440 and #441 had MSWD decals installed, and fluids topped off.

Wastewater Collections

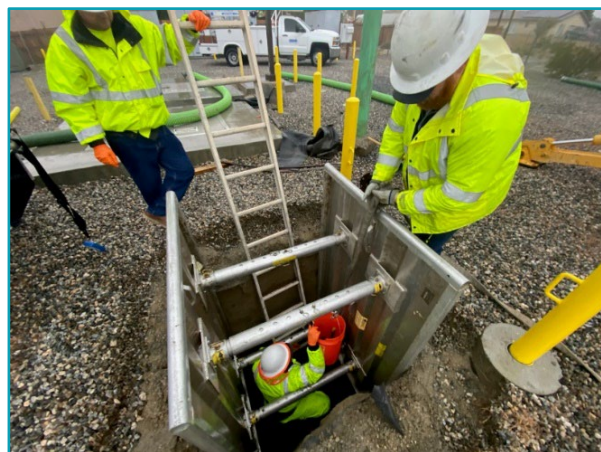
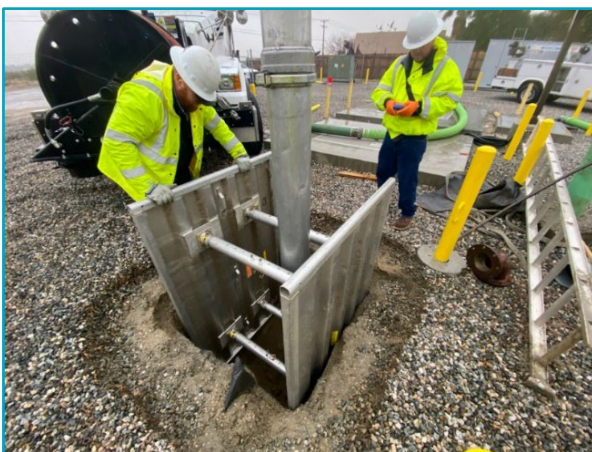
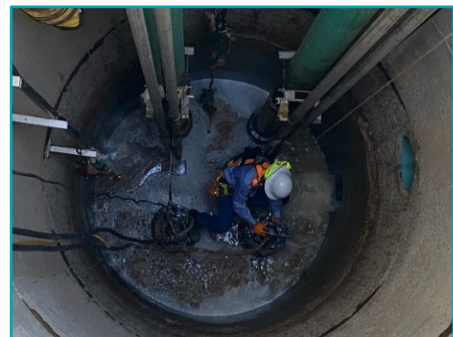
Sanitary Sewer Overflows (SSOs)

There were no Sanitary Sewer Overflows (SSOs) in the collection system during January 2024.

Dos Palmas Lift Station

Operators conducted daily site visits to ensure proper pump operation, SCADA system functionality, and site security.

- Pump 1 has been repaired and is now back in normal operation.
- The Xylem pump was returned on January 19, 2024.
- Staff used the GapVax to hydro excavate a valve that had a damaged 2-inch nut. The valve is back in normal operation.



Sewer Line Locations

Staff completed 403 sewer line location requests using iPads and the GeoViewer mobile application to streamline and manage line locations.

Sewer Line/Collections Maintenance

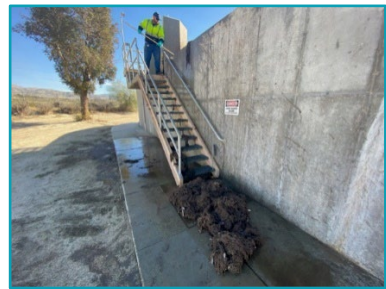
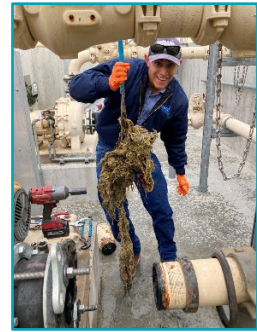
- Staff completed 25 CCTV inspections, totaling 7,390 feet in January 2024.
- Zero miles of sewer mainline was cleaned in January 2024.

Wastewater Treatment

Plant Maintenance

Staff spent 626.5-man hours performing routine plant maintenance, equipment maintenance, and plant operations at the Horton and Desert Crest Wastewater Treatment Plants (WWTPs). Also, during this timeframe staff spent 141.2-man hours operating the sludge belt filter press, including filling and removing 18 trailers of sludge from the Horton and Desert Crest WWTPs.

Staff removed rags from the headworks auger, aeration tanks, grit pumps, etc.

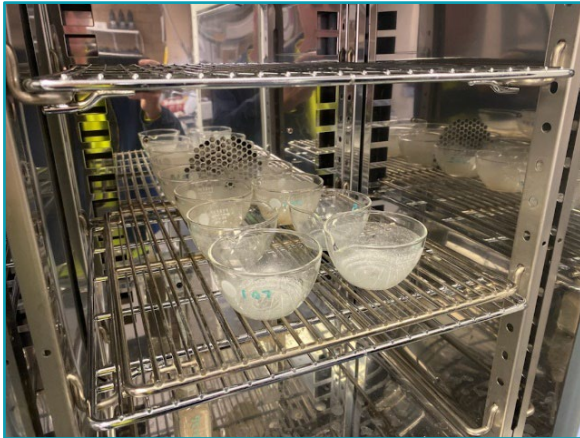


Staff replaced the rubber sweep on Clarifier 4. An additional sweep has been ordered for Clarifier 5 and will be replaced when it arrives on site.



Sampling and Laboratory

Staff collected 50 samples and spent 100-man hours performing laboratory duties and analysis for process control and regulatory reporting purposes. Both WWTPs are producing an effluent that meets the District's permit discharge requirement.



Pond Maintenance

Ponds 1, 3, 4, 6, and 8 were cleaned and rehabilitated during January 2024.



Weekly Wastewater Training

The training courses aim to provide all operators with consistent knowledge and a better understanding of processes, including operating equipment more proficiently. This training helps keep operators safe while completing maintenance. A summary of this month's training includes:

- Influent Pump Cycling
- Aeration Tank Water Level Adjustment
- Lift Station Layout
- Plant Lockup Procedures

Wastewater Report

Through continued development in the Desert Hot Springs area, and at the request of new consumers, sanitary services are always being added to the collection system. Below is a summary of new sanitary service connections by month.

New Sanitary Service Connections to Collection System					
Fiscal Year	2023/24	2022/23	2021/22	2020/21	2019/20
July	4	4	18	8	7
August	12	26	20	4	1
September	17	20	20	5	2
October	3	13	36	9	4
November	7	8	29	50	10
December	21	8	12	9	3
January	2	35	14	21	7
February		4	7	23	5
March		24	17	48	1
April		16	7	18	3
May		9	16	17	11
June		4	2	21	7
TOTAL	66	171	198	233	61

Additional sanitary service connection information is provided in Appendix B.

The following table shows the average daily flow and peak daily flow for the Horton and Desert Crest WWTPs.

Wastewater Flow (MGD)				
Fiscal Year 2023/24	Horton WWTP		Desert Crest WWTP	
	Average Daily Flow	Peak 24 Hour Flow	Average Daily Flow	Peak 24 Hour Flow
July	1.922043	2.149212	0.050983	0.071200
August	1.929369	2.592078	0.047453	0.067540
September	2.037218	2.182773	0.046081	0.055570
October	2.050049	2.173503	0.040804	0.051000
November	2.065661	2.265582	0.046158	0.059550
December	2.037725	2.208722	0.045566	0.057730
January	2.014687	2.152567	0.045226	0.049620
February				
March				
April				
May				
June				

Additional wastewater flow information is provided in Appendix B.

Water Production

Water Pumped/Produced

During the month of January 2024, the District's three public water systems produced the following quantity of water:

- MSWD (CA3310008) – 541.26 Acre Feet (176.40 MG)
- Palm Springs Crest (CA3310081) – 9.22 Acre Feet (3.00 MG)
- West Palm Springs Village (CA3310078) – 6.09 Acre Feet (1.98 MG)

Water Sampling/Testing

- Bacteriological Sampling – Staff collected 50 routine samples in the MSWD system, four routine samples in the ID-E area (WPSV and PSC systems), seven well samples in MSWD, and four well samples in ID-E.
- Staff also collected 16 general physical samples in MSWD and two general physical samples in ID-E.
- Well 26A Uranium Treatment (IXP) Sampling – The quarterly uranium sampling was completed on January 4, 2024.
- Monthly Reporting – The District's Monthly Coliform Monitoring Report for January 2024 for all three water systems was sent to the SWRCB on February 3, 2024.

Chlorination System Updates

- Chlorination Pumps – Staff conducted routine maintenance and inspections on all chlorine pumps and related equipment at well sites. Staff made necessary adjustments, repairing and/or rebuilding to ensure proper operation. Most chlorinator pumps continue to function properly, with only typical preventative maintenance required (i.e., repair of cracked chlorination suction/feed tubing).
- Chlorinator Pump Cleaning – Staff began cleaning all chlorinators two times per month with a vinegar-based solution to reduce chlorinator issues. All the chlorine pumps were cleaned during the month of January 2024.
- Sodium Hypochlorite (Chlorine) Usage – During the month of January 2024, a total of 1,219 gallons of chlorine (12.5% solution strength) was used to disinfect the distribution system and our production facilities. (Reflects usage in the MSWD and ID-E water systems.)
- Chlorine Residuals at Production Well Sites – In January 2024, the Production staff checked and documented the chlorine residuals at all wells in use 230 times. The average chlorine residual of these readings was 0.99 ppm. (This data reflects the MSWD and ID-E water systems.)
- Distribution System Chlorine Residuals – During the month of January 2024, the Production staff checked and documented the chlorine residuals throughout the distribution system a total of 110 times. The average chlorine residual of these readings is 0.88 ppm. (This data reflects the MSWD and ID-E water systems.)

Well Soundings

Staff continued to sound the groundwater levels for 13 production wells and nine monitoring wells.

Production Facility Updates

Staff oversees all water production sites, making necessary adjustments. They conduct monthly overflow maintenance as needed by climbing reservoirs. Staff also inspect reservoir roofs using a drone.

- Well 22 Rehabilitation – The contractor, L.O. Lynch, gave a target completion date by the end of 2023. Please see the following updates:
 - Both the mechanical and chemical rehabilitation methods have been completed.
 - The larger test pump was installed and we achieved a max flow rate of approximately 1,500 gpm. This was less than expected, but we were told by Kyle Groundwater that they hope to see our design flow rate to be set at approximately 1,800 gpm. The constant rate test pumping was performed during the week of June 19th, 2023.
 - As of October 31, 2023, L.O. Lynch installed all of the downhole equipment. The only items remaining is the pump discharge head and the installation of the motor. Once these items are installed (first part of November) we will disinfect, pump to waste, and collect BacT samples. Once passed, we will put the well into service.
 - As of November 30, 2023, L.O. Lynch is waiting for a component to be delivered to complete the water lube system for the well. Once received, the final work will be completed to startup this well and perform a BacT test.
 - As of December 31, 2023, we are still waiting for the water flush system components to be delivered and installed. We anticipate this well to be operational before the end of January 2024.
 - Tri-Star Construction repaired the leaking header at Well 22 to prepare for this well to be run into the water system once we receive a passing Bacteriological test.
 - As of January 31, 2024, the only remaining item left is to connect the motor's water cooling line to the motor and pump the well to waste, disinfect, pump to waste, and tank a Bacteriological test. During the month of January 2024, the following was completed: Production Meter replaced, water lube valve installed, electrical for water meter and water lube valve installed, and an on-delay timer was installed in the MCC for the purpose of allowing the water lubed bearings to be wetted prior to motor start.



- Gateway Fire Pump Monthly Testing – Staff performed the monthly fire pump testing on January 3, 2024. All systems functioned properly. Water loss data was captured and entered onto our water loss tracking worksheet.
- Little Morongo Automatic Control Valves – The Cla-Val for Booster 3 at Little Morongo was serviced. A Cla-Val parts kit was ordered for Booster 1 at Little Morongo. This valve will be serviced during February 2024.
- Two Bunch Palms Booster Station Header – Staff painted the header at Two Bunch Palms Booster Station on January 2, 2024.
- Terrace Booster Station Header – Staff painted a portion of the header at Terrace Booster Station on January 12, 2024.
- Well 25 Production Meter – Staff replaced the Production Meter at Well 25 on January 18, 2024. This meter is a MAG-meter and supports greater data communication into our SCADA system for more accurate logging.
- Portable Water Quality Meters – Staff made repairs to their field water-quality meters to restore their accuracy.
- Generator Training and Testing – Staff participated in a generator training and testing event at Terrace Booster station on January 25, 2024. This proved to be a valuable exercise as we were trained in the operation and connection of these new generators to our water production facilities.



- Well 22 and Gateway Fence Repairs - Quotes for these two fence repair projects have been received and approved, but we are waiting for all the necessary labor compliance documentation to be completed before work commences. UPDATE: The labor compliance portion has been completed, and now we are waiting for the contractors to perform the work.
- Well 33 Solar Site – Staff continues to monitor the performance of the solar system. The January 2024 Monthly Performance Report showed that the system produced 113,245 kilowatt hours, which is within 98.8% of expected energy output.

Water Report

Through continued development in the Desert Hot Springs area and at the request of new customers, water services are always being added. Below is a summary of new water services added each month.

New Service Connections to the Water System					
Fiscal Year	2023/24	2022/23	2021/22	2020/21	2019/20
July	5	6	18	7	4
August	14	28	19	6	10
September	19	22	23	18	2
October	4	16	33	13	3
November	9	10	27	10	16
December	5	9	9	2	17
January	5	26	14	15	6
February		14	8	13	8
March		29	19	16	2
April		24	6	11	1
May		16	19	15	12
June		5	1	24	11
TOTAL	61	205	196	150	92

Additional water service connection information is provided in Appendix B.

As expected, the new water services increase the amount of water needed to be pumped; however, the weather and water conservation continue to be the primary factor in MSWD water production. The following table summarizes the MSWD water production by month.

Monthly Water Production (AF)							
	FY 2023/24	Variance from Prior Year		FY 2022/23	FY 2021/22	FY 2020/21	FY 2019/20
		AF	%				
July	789.99	38.20	5.08	751.79	796.57	857.77	853.23
August	737.74	-112.45	-13.23	850.19	839.93	885.31	795.18
September	675.06	-40.97	-5.72	716.03	738.65	784.80	757.08
October	709.23	17.25	2.49	691.98	665.18	755.84	709.39
November	629.05	29.66	4.95	599.39	679.85	690.13	619.87
December	529.99	-24.28	-4.38	554.27	565.48	588.32	537.23
January	556.57	26.18	4.94	530.39	580.28	537.96	553.20
February				490.41	527.34	495.61	520.85
March				500.37	601.44	625.80	557.73
April				552.34	624.07	649.34	573.02
May				726.25	745.36	723.62	698.99
June				682.09	730.02	761.63	806.02
TOTAL	4,627.63	-66.41	-1.41	7,645.50	8,094.17	8,356.13	7,981.79

Additional water production information is provided in Appendix B.

Water Resources

Below is a list of water resources related actives for January 2024:

Integrated Regional Water Management Planning

The Coachella Valley Regional Water Management Group (CVRWWMG) met to discuss on-going grant funded projects and upcoming grant opportunities. The CVRWWMG implements the Integrated Regional Water Management (IRWM) Plan for the Coachella Valley IRWM Region.

In particular, the CVRWWMG has elected to pursue grant funding under the US Bureau of Reclamation WaterSMART: Water and Energy Efficiency Grant (WEEG) program. MSWD is seeking up to \$600,000 in grant funding for water conservation efforts.

Mission Creek Subbasin Sustainable Groundwater Management Act Compliance

The consultant (WSP) completed the draft SGMA Annual Report for Water Year 2022-23. Subsequently, staff completed its review of the draft report and provided comments to the consultant. Staff expects the final draft for review in February 2024.

The 2022 Alternative Plan Update for the Mission Creek Subbasin is still with the California Department of Water Resources (DWR) for review, however, DWR doesn't anticipate completing reviews of alternative plans until sometime in 2024.

San Gorgonio Pass Subbasin Sustainable Groundwater Management Act Compliance

Staff completed that data request for the SGMA Annual Report for Water Year 2022-23. Staff expects to receive the draft report from the consultant (Provost & Pritchard) for review and comment in February 2024.

Indio Subbasin Sustainable Groundwater Management Act Compliance

The 2022 Alternative Plan Update for the Indio Subbasin is still with the DWR for review, however, DWR doesn't anticipate completing reviews of alternative plans until sometime in 2024.

Salt and Nutrient Management Planning

Staff attended the monthly steering committee meeting to review the Task 2 TM Characterize Groundwater Quality that is in progress. Staff anticipates receiving the draft TM in February 2024 from the consultant (West Yost) for review by both the steering committee and technical advisory committee.



PUBLIC AFFAIRS

Past & Upcoming Sponsorships / Events

Leadership Coachella Valley Presentation: January 19, 2024

MSWD presented information related to water, MSWD, and the Coachella Valley during an informative session on Leadership Coachella Valley held at the VFW Hall in Desert Hot Springs.



Desert Hot Springs Rock House Grand Opening & Open House: January 20, 2024

As a sponsor and supporter of the Desert Hot Springs Historical Society, MSWD proudly witnessed the grand re-opening of the historical Desert Hot Springs Rock House. Despite a bit of rain, guests turned out in droves and enjoyed MSWD's water and all that the Rock House and community of Desert Hot Springs had to offer.



Cabot Yerxa Elementary – Public Safety Day: January 22, 2024

Team MSWD was on hand for the Cabot Yerxa Public Safety Day. Students learned about MSWD and the critical role we play in the community. Wastewater staff brought the Vac Truck, and the students got an up-close look at our team's equipment.



CORBS Awards Ceremony: January 27, 2024

MSWD took home three awards, including Small Plant of the Year, Collection System Person of the Year, and Community Engagement & Outreach Project of the Year, during a special awards ceremony hosted by the California Water Environment Association and its Colorado River Basin Section.

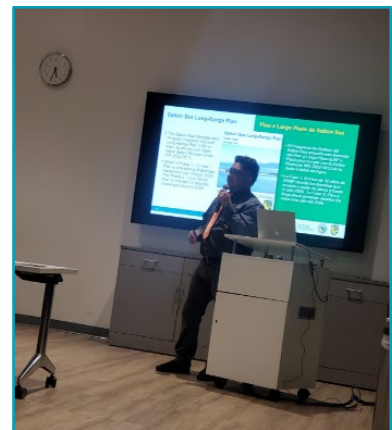


Collection Operator II Joseph (Joey) McElrone was named 2023 Collection System Person of the Year, while the District also took home top honors for plant operations at the Alan L. Horton Wastewater Treatment Plant (small plant category) and the Community Engagement & Outreach Project of the Year (small plant category) for its Water 101 educational series.

Founded in 1928, CWEA unites wastewater professionals from throughout the state. Together, they address real-time issues, develop and deliver cutting-edge training, raise awareness of the profession, and shape the future of wastewater.

MSWD Water Talks: January 31, 2024

MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future of our Valley and State. Our January 31, 2024, MSWD Water Talks featured Miguel Hernández from the California Natural Resources Agency, who discussed current and future projects at the Salton Sea.



Palm Springs Air Museum Fundraising Dinner: February 10, 2024



This year's Palm Springs Air Museum Fundraising Dinner will honor the pioneers of modern tech aviation while raising funds to support local educational programs.

MSWD Water Talks: February 21, 2024, 5:00-6:00pm

MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future of our Valley and State. Our February 2024 meeting will spotlight the future of electric vehicles in public agency fleets. ACWA's Nick Blair, who has been selected to serve on the newly formed California Air Resources Board Truck Regulation Implementation Group, provides ACWA an opportunity to inform CARB about any challenges public water agencies face while implementing Clean Fleets regulations.



CV Water Counts Academy: February 6, 13, 20, and March 2, 2024

CV Water Counts is proud to host its Water Counts Academy once again. Designed for current and emerging leaders in the Coachella Valley who want to learn about water resources, the course covers the history, use, and management of water in the Coachella Valley. MSWD is the session host on February 13, 2024, providing refreshments and introductions. This year's sessions will be in-person at UC Riverside and include an MSWD Nancy Wright Water Reclamation Facility tour on March 2, 2024.

**MSWD Blood Drives: 2024**

Recognizing the continued need in our community, MSWD will continue to partner with LifeStream to host employee/community blood drives in 2024. We have scheduled five events for next year:



- Wednesday, February 28, 2024
- Wednesday, May 15, 2024
- Wednesday, July 10, 2024
- Wednesday, September 11, 2024
- Wednesday, November 13, 2024

For more information or to schedule an appointment, please visit www.lifestream.org/MSWD.

If any other events occur throughout the month, they will be communicated either from the Public Affairs team or Dori Petee.

Public & Media Outreach**Outreach Related to Article VI Updates**

To better serve our current industrial wastewater users and expand services to those currently without, MSWD is working to amend Article VI of our wastewater discharge ordinance. The proposed modifications will be discussed during a public hearing at our March 2024 Board of Directors Meeting. To keep all stakeholders informed and engaged, we are providing a redline version of the proposed changes to Article VI on our website. We have also mailed copies asking for input from all current industrial users. We have also contacted



CVCAN and the City of Desert Hot Springs to engage current Cannabis growers in our area. Notice of the public hearing is being published in the Desert Sun, and we will be continuing to encourage public participation through social media in the coming month.

Customer Newsletter

California's temporary Low Income Household Water Assistance Program (LIHWAP) is closing and will not accept applications past March 15, 2024. Through LIHWAP, eligible low-income households can receive one-time financial help to pay current or past due water or sewer bills, as much as \$5,000. Hundreds of MSWD customers have already taken advantage of the one-time, temporary program; however, we are actively promoting the program and encouraging customers to apply before the March 15, 2024 cutoff. Promotional efforts include auto-dialer calls to delinquent customers, Customer Connect Portal messaging, flyers, newsletter stories, website announcements, and social media.



Customer Newsletter

Our January 2024 Water Matters newsletter featured information about our leadership changes, upcoming Water Talks, and payment assistance.

A copy of the newsletter is included in Appendix D.



MSWD In the News

The Public Affairs distributed several news releases and stories in the past month, including New Board Leadership, GM Appointment, Beware of Imposters, and CWEA Awards. These stories garnered social media attention and media pick-up in several publications, including Desert Local News, City News, ACWA News Updates, El Informador, and the Uken Report.



Legislative Update

Federal: Congress Passes Continuing Resolution

Still unable to finalize the Fiscal Year 2024 (FY24), Congress passed another short-term Continuing Resolution (CR) to avoid a federal government shutdown. Before Thanksgiving, Congress passed a laddered CR that extended current funding levels for some federal agencies. This new CR keeps with the laddered approach with the following deadlines for the various appropriations bills:

- Extends the agencies funded under the below bills through March 1, 2024:
 - Agriculture-FDA
 - Energy and Water
 - Military Construction-Veterans Affairs
 - Transportation-Housing and Urban Development
- Extends agencies funded under the below bills through March 8, 2024:
 - Commerce-Justice-Science
 - Labor-HHS-Education
 - Defense
 - Financial Services
 - Homeland Security
 - Interior-Environment
 - Legislative Branch
 - State-Foreign Operations

This new CR will give Congress more time to try and finalize the FY24 appropriations bills. Speaker of the House Mike Johnson (R-LA) and Senate Majority Leader Chuck Schumer (D-NY) have agreed on an overall funding level for FY24. Additionally, just this week, the leadership of the House and Senate Appropriations Committee announced that they have reached a deal on the top-line funding levels of the twelve FY24 appropriations bills. With the top-line funding levels for the bills in place, the respective subcommittees can now work on putting together the final FY24 appropriations bills.

A complete federal update is located in Appendix C.

Federal: EPA's Proposed Copper & Lead Regulations

The Association of California Water Agencies and the California Municipal Utilities Association recently commented on the Environmental Protection Agency's National Primary Drinking Water Regulations for Lead and Copper Environmental Protection Agency's National Primary Drinking Water Regulations for Lead and Copper. A copy of the joint letter is included in Appendix D.

Federal: Establishment of Federal LIHWAP

Senator Padilla is seeking support for the Low-Income Household Water Assistance Program (LIHWAP) Establishment Act, which authorizes a revised LIHWAP program. Initially created in the American Rescue Plan Act, the current program is administered by the Department of Health and Human Services Administration for Children and Families. The bill would make LIHWAP permanent and transfer the program to the Environmental Protection Agency. A copy of MSWD's support letter is in Appendix D.

California: Taxpayer Protection and Government Accountability Update

With the state's February 16, 2024, deadline for introducing new bills, MSWD is actively monitoring new bill activity. In addition, we are carefully monitoring efforts by a joint coalition of eleven local government associations (including ACWA, CSDA, and CMUA) and others that filed an amicus brief in support of the Legislature and Governor's legal challenge to the California Business Roundtable (CBRT) ballot measure. The purported "Taxpayers Protection and Government Accountability Act" is slated to be on the November 2024 ballot and would impose draconian new restrictions on all local revenues, from special taxes to fines and water rates.

Last fall, Governor Newsom, joined by the State Legislature and former State Senate President Pro Tem John Burton, filed an emergency petition to the California Supreme Court for a pre-election challenge to the ballot measure, arguing that the measure is unlawful because it improperly revises the state constitution via initiative, and would impair essential government services. CSDA and others promptly joined a coalition to file a letter to the Supreme Court in favor of granting pre-election review, given the anticipated adverse impact on special districts' finances if the measure passes.

On November 29, 2024, the California Supreme Court issued an order to show cause why the measure should not be removed from the ballot and established a schedule for briefing the court. The amicus brief filed January 31, 2024, argues that the measure is an unlawful revision of the state constitution because of the ways the measure would redistribute power between state and local governments, the measure would undermine essential functions of local governments, and because the ballot measure is so poorly drafted that it raises many interpretive issues that will not be simply resolved without requiring extensive litigation after passage. The brief urges the Court to act before the measure is placed on the ballot for the November election because planning impacts are being felt now and could impair essential government services.

The California Supreme Court will likely rule on the pre-election challenge before the end of June, when the Secretary of State is anticipated to qualify the measure for the November 2024 ballot formally.

Staff will continue to monitor this evolving topic and update the Board as more information becomes available.

MSWD Digital Advertising










The District featured four Google and Facebook/Instagram ads promoting various MSWD programs.

The Google campaign garnered almost 302,000 impressions and 268 link clicks. Our Facebook ads garnered more than 134,000 impressions and 1,022 link clicks. A full report is included in Appendix D.



Social Media

A copy of the Jan 2024 social media report can be found in Appendix D. This report highlights activities and posts on the District's social media platforms. Some of our most engaging posts included MSWD's new leadership changes and the grand re-opening of the Rock House.

3 Most Engaging Posts	3 Highest Reach Posts	3 Most Shared Posts
 Join us tomorrow as we help celebrate the Grand Opening o... 15.38%	 Welcome to MSWD Please join us in welcoming Josiah Perez, who is joining... 581	 Welcome to MSWD Water Talks. Tonight we will learn about ... 3
 News Release: GM Appointment News Release: Mission Springs Water District is pleased t... 14.17%	 Welcome to MSWD Water Talks. Tonight we will learn about ... 364	 Welcome to MSWD Please join us in welcoming Josiah Perez, who is joining... 1
 News Release: New Board President & VP News Release: MSWD Seats New Board President & Vice Presi... 12.68%	 News Release: CWEA Awards News Release: Mission Springs Water District took home... 256	 Cv Water Counts Cv Water Counts is gearing up for the eighth course of ... 1

CV Water Counts

Traffic increased on the website from 2,703 in December 2023 to 3,827 users in January 2024. The top pages were the Academy Page, Conservation Tips, and the Academy Application Page. More than 419,00 total Ad impressions were seen across Facebook, Instagram, and Google Ads (websites, apps, and YouTube). Also notable is that the post about Plant of the Month: Elephant's Food from July 2023 was the 5th most viewed page, with nearly 200 pageviews.

A full report is in Appendix D.



Rebates & Conservation

The Public Affairs team continued to promote rebates and conservation throughout our service territory during January 2024.

Toilet Rebates

The District did not receive any toilet rebate applications in January 2024.

Turf Rebates

The District did not receive any new turf applications in January 2024, but there are still two pending applications totaling \$4,670.

Conservation Kits

There was a lot of interest in conservation kits this month. The District received 53 requests for conservation kits in January 2024.

Bottled Water Tracking Report

Date Supplied	Requested By	Event or Purpose	Cases Requested
1/10/2024	First Baptist Community Church	MLK Event	5
1/11/2024	Living Word in the Desert	MLK Walk & Festival	5
1/19/2024	Leadership CV	Meeting	2
1/20/2024	Rock House	Grand Opening	5
1/23/2024	DHS High School	Parent's Night	5
1/24/2024	Miracle Springs	Women's Wellness Retreat	5
1/30/2024	DHS First 5 Family Resource Center	Community Events & Homeless	5
1/31/2024	MSWD	Water Talks	2
TOTAL			34



APPENDIX A – Finance & Accounting Information

MISSION SPRINGS WATER DISTRICT
 COMBINED FUNDS
 DISTRICT SUMMARY
 JULY 1, 2023 TO JANUARY 31, 2024

Item 19.

YEAR TO DATE				JULY 1, 2022 TO JANUARY 31, 2023			
ACTUAL	BUDGET	FAVORABLE	FAVORABLE	ACTUAL	BUDGET	FAVORABLE	FAVORABLE
		(UNFAVORABLE)	(UNFAVORABLE)			(UNFAVORABLE)	(UNFAVORABLE)
		VARIANCE	VARIANCE			VARIANCE	VARIANCE
		AMOUNT	PERCENT			AMOUNT	PERCENT
11,863,195	12,406,093	(542,898)	-4%	12,552,919	12,125,414	427,505	4%
11,944,679	13,824,465	1,879,787	14%	9,235,658	9,530,049	294,391	3%
<u>(81,484)</u>	<u>(1,418,372)</u>	<u>1,336,889</u>	<u>94%</u>	<u>3,317,262</u>	<u>2,595,365</u>	<u>721,897</u>	<u>-28%</u>
5,248,968	5,754,772	(505,804)	-9%	2,355,041	2,044,760	310,281	15%
587,163	620,599	33,436	5%	384,520	436,366	51,846	12%
<u>4,661,805</u>	<u>5,134,173</u>	<u>(472,368)</u>	<u>-9%</u>	<u>1,970,521</u>	<u>1,608,394</u>	<u>362,127</u>	<u>23%</u>
<u>4,580,321</u>	<u>3,715,801</u>	<u>864,521</u>	<u>23%</u>	<u>5,287,783</u>	<u>4,203,759</u>	<u>1,084,023</u>	<u>26%</u>

OPERATING REVENUE:
OPERATING EXPENSE:
NET OPERATING INCOME

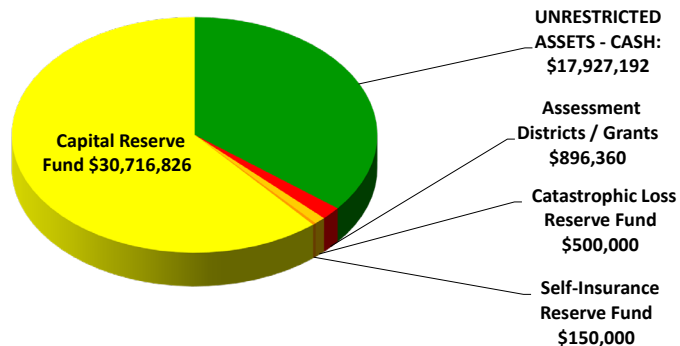
ADD NON-OPERATING REVENUE
LESS NON-OPERATING EXPENSE
NET NON-OPERATING INCOME

NET INCOME

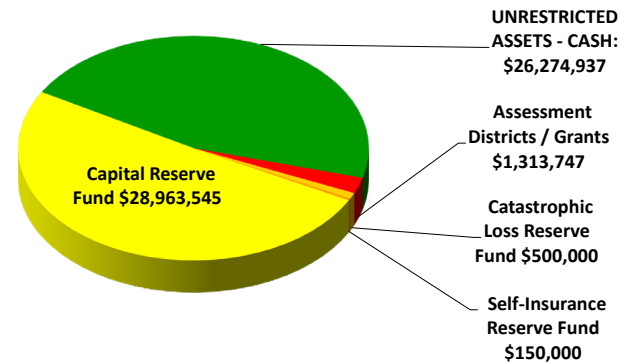
OTHER INFORMATION

	12.50	DEBT SERVICE RATIO	13.12
	0.74%	INVESTMENT RETURN	0.03%
EARNED \$	29,366	WELLS FARGO LOAN INTEREST	\$ 53,200 PAID
	\$ 42,784,058	CASH - JULY 1	\$ 47,763,075
	\$ 7,406,320	INCREASE/(DECREASE) IN CASH	\$ 9,439,153
	<u>\$ 50,190,378</u>	CASH - END OF PERIOD	<u>\$ 57,202,229</u>
WELLS FARGO	\$ 17,927,192	UNRESTRICTED CASH	\$ 26,274,937
WELLS FARGO	\$ 400,154	RESTRICTED - ASSESSMENT DISTRICTS	\$ 480,185
CALTRUST	\$ 6,884,508	RESTRICTED - SHORT TERM FUND	\$ 6,496,217
CALTRUST	\$ 22,240,628	RESTRICTED - MEDIUM TERM FUND	\$ 21,350,834
CALTRUST	\$ 2,737,896	RESTRICTED - LIQUIDITY FUND	\$ 2,600,056
	<u>\$ 50,190,378</u>	RESTRICTED TOTAL CASH	<u>\$ 57,202,229</u>

Total Cash In Custody of MSWD 2024



Total Cash In Custody of MSWD 2023



JOBNO	PROJECT TITLE	BEG BAL 07-01-2023	CURRENT MONTH	YEAR TO DATE 01-31-24	2024 BUDGET	FY 2024 BUDGET TO ACTUAL	TOTAL COST	ADOPTED BUDGET	BALANCE OF BUDGET	STATUS
10371	SEWER LINE ENCASUREMENT I-10 CROSSING @ INDIAN	251,972.22		0.00	0.00	0.00	251,972.22	251,972.00	-0.22	COMPLETED
10693	WELL SITE-WORSLEY RD NORTH-27 ACRES	39,326.00		0.00	0.00	0.00	39,326.00	39,326.00	0.00	COMPLETED
10702	WELL SITE WORSLEY-ENV/ENG	2,404.50		0.00	0.00	0.00	2,404.50	2,405.00	0.50	COMPLETED
10969	PRELIM DESIGN/ENG HORTON WWTP EXP# 5	171,702.93		0.00	0.00	0.00	171,702.93	171,703.00	0.07	COMPLETED
11032	FINAL DESIGN HORTON WWTP EXP #5	940,340.32		0.00	0.00	0.00	940,340.32	940,340.00	-0.32	COMPLETED
11076	WELL #38 DESIGN & ENVIRONMENTAL	366,443.48		0.00	0.00	0.00	366,443.48	375,000.00	8,556.52	COMPLETED
11087	HORTON WWTP EXPANSION #5	152,615.52		0.00	0.00	0.00	152,615.52	13,404,000.00	13,251,384.48	PAUSED
11088	EIR HORTON WWTP EXPANSION #5	71,415.62		0.00	0.00	0.00	71,415.62	71,416.00	0.38	COMPLETED
11147	WELL #42 (NEAR TO EXISTING WELL # 22)	2,414,627.28	7,434.89	270,101.42	2,210,777.00	1,940,675.58	2,684,728.70	4,600,000.00	1,915,271.30	ONGOING
11159	1530 ZONE REDBUD TANK #2 LAND AND CONSTR	70,708.46		0.00	9,292.00	9,292.00	70,708.46	80,000.00	9,291.54	PAUSED
11205	I-10 & INDIAN SEWER COLLECTION SYSTEM	594,668.44		0.00	57,332.00	57,332.00	594,668.44	652,000.00	57,331.56	PAUSED
11282	MISSION CREEK - 80 ACRES	325,077.18		0.00	0.00	0.00	325,077.18	328,000.00	2,922.82	PAUSED
11392	WELL & BOOSTER SCADA ENHANCEMENT	29,207.20		0.00	0.00	0.00	29,207.20	30,000.00	792.80	COMPLETED
11424	REGIONAL WASTEWATER TREATMENT PLANT	35,657,188.93	50,351.45	11,494,484.71	20,001,215.00	8,506,730.29	47,151,673.64	51,000,000.00	3,848,326.36	ONGOING
11425	AREA M-2 (AD #15)	634,711.19		10,605.00	10,819,868.00	10,809,263.00	645,316.19	11,450,000.00	10,804,683.81	ONGOING
11426	CONVEYANCE LINE FROM LS TO RWWTP	1,886,431.81	357.17	2,826,931.96	7,257,876.00	4,430,944.04	4,713,363.77	8,300,000.00	3,586,636.23	ONGOING
11451	CHROMIUM 6 COMPLIANCE STUDY	14,489.48		4,150.00	185,511.00	181,361.00	18,639.48	200,000.00	181,360.52	PAUSED
11456	HWWTP INFL. PUMP STATION ODOR CONTROL	647,827.69	0.00	142.14	82,745.00	82,602.86	647,969.83	730,000.00	82,030.17	ONGOING
11460	WELL 29 CHROMIUM 6 TREATMENT DESIGN	0.00		0.00	200,000.00	200,000.00	0.00	200,000.00	200,000.00	NOT STARTED
11472	AREA J-2	293,853.72		0.00	6,146.00	6,146.00	293,853.72	300,000.00	6,146.28	PAUSED
11498	HWWTP PERCOLATION POND REHAB	28,181.34		0.00	0.00	0.00	28,181.34	42,000.00	13,818.66	PAUSED
11556	HWWTP ASU DEMOLITION	45,077.20		0.00	122,198.00	122,198.00	45,077.20	167,275.00	122,197.80	PAUSED
11557	HWWTP PERCOLATION PONDS (2)	350,213.58		0.00	29,786.00	29,786.00	350,213.58	380,000.00	29,786.42	PAUSED
11566	DESIGN & ENGINEERING AREAS H & I	332,182.49	111.83	2,921.23	129,775.00	126,853.77	335,103.72	460,000.00	124,896.28	ONGOING
11598	BLOCK WALL AT CORP YARD & WASTEWATER FACILITY	1,451.86		0.00	153,548.00	153,548.00	1,451.86	155,000.00	153,548.14	PAUSED
11599	BLOCK WALL/FENCE AT TERRACE RESERVOIR	25,947.91		0.00	200,340.00	200,340.00	25,947.91	226,288.00	200,340.09	PAUSED
11600	BOOSTER PUMP REHAB PROGRAM	119,375.93		0.00	80,515.00	80,515.00	119,375.93	150,000.00	30,624.07	PAUSED
11601	MODULAR ENCL FOR CHLORINE EQUIP AT WELL SITES	88,417.25		0.00	38,018.00	38,018.00	88,417.25	124,180.00	35,762.75	PAUSED
11602	ELECTRICAL PANEL/MOTOR REHAB (3 SITES)	699,854.57		418.06	0.00	-418.06	700,272.63	741,404.00	41,131.37	ONGOING
11604	PAVEMENT REPAIRS - CORP YARD	43,757.39		0.00	301,818.00	301,818.00	43,757.39	345,575.00	301,817.61	PAUSED
11607	TERRACE RESERVOIR NO. 1	30,667.76		0.00	723,675.00	723,675.00	30,667.76	754,343.00	723,675.24	PAUSED
11608	TERRACE RESERVOIR NO. 2	32,374.80		0.00	782,086.00	782,086.00	32,374.80	814,461.00	782,086.20	PAUSED
11609	TERRACE RESERVOIR NO. 3	30,882.54		0.00	330,480.00	330,480.00	30,882.54	361,363.00	330,480.46	PAUSED
11610	VISTA RESERVOIR NO. 2	125,979.40		786.29	849,448.00	848,661.71	126,765.69	975,427.00	848,661.31	PAUSED
11611	WELL REHABILITATION PROGRAM - WELL 22	315,712.46	2,894.51	213,626.56	1,328,219.00	1,114,592.44	529,339.02	1,560,000.00	1,030,660.98	ONGOING
11613	HWWTP ABOVE GROUND PIPING & APPURTENANCE REHAB	343.68		0.00	149,656.00	149,656.00	343.68	150,000.00	149,656.32	PAUSED
11617	HWWTP SCADA UPGRADES	40,080.36		0.00	94,006.00	94,006.00	40,080.36	129,008.00	88,927.64	PAUSED
11618	DESIGN & ENGINEERING FOR AREAS A & G	526,554.15	6,264.82	31,309.21	1,099,118.00	1,067,808.79	557,863.36	1,600,000.00	1,042,136.64	ONGOING
11621	ADMIN BUILDING	1,523,556.61		8,488.79	16,802,667.00	16,794,178.21	1,532,045.40	33,300,000.00	31,767,954.60	ONGOING
11622	2020 WATER CIP PIPELINE REPLACEMENT	275,188.54		0.00	1,989,786.00	1,989,786.00	275,188.54	2,264,975.00	1,989,786.46	PAUSED
11657	SEWER SYSTEM COLLECTIONS	560,651.81		214.27	192,873.00	192,658.73	560,866.08	750,000.00	189,133.92	ONGOING
11665	WELL AND RESERVOIR SITES SECURITY CAMERAS	2,366.86		0.00	222,708.00	222,708.00	2,366.86	225,075.00	222,708.14	PAUSED
11666	EMERGENCY BACKUP GENERATOR WELL 27/31	18,098.29		3,761.21	395,166.00	391,404.79	21,859.50	411,002.00	389,142.50	ONGOING
11667	EMERGENCY BACKUP GENERATOR WELL 32	18,008.94		3,758.00	284,230.00	280,472.00	21,766.94	300,331.00	278,564.06	ONGOING
11668	EMERGENCY BACKUP GENERATOR WELL 37	18,043.56		3,759.94	284,200.00	280,440.06	21,803.50	300,331.00	278,527.50	ONGOING
11689	FILTRATION FOR HWWTP	108,952.07		0.00	1,391,082.00	1,391,082.00	108,952.07	1,500,000.00	1,391,047.93	PAUSED
11691	MUNICODE WEBSITE	9,021.78		0.00	0.00	0.00	9,021.78	31,000.00	21,978.22	PAUSED
11692	MUNICODE AGENDA	7,214.25		0.00	0.00	0.00	7,214.25	20,000.00	12,785.75	PAUSED
11693	GQPP AREA D3-1 SEWER DESIGN	8,840.75		0.00	147,159.00	147,159.00	8,840.75	156,000.00	147,159.25	PAUSED
11716	PORTABLE BOOSTER/TRANSFER PUMP	0.00		148,226.35	180,000.00	31,773.65	148,226.35	180,000.00	31,773.65	ONGOING
11717	TRAILER MOUNTED PORTABLE GENERATORS	0.00	134,412.94	134,412.94	537,375.00	402,962.06	134,412.94	537,375.00	402,962.06	NOT STARTED
11719	RESERVOIR REHAB PROGRAM DESIGN - 2022 FY	0.00		0.00	120,000.00	120,000.00	0.00	120,000.00	120,000.00	NOT STARTED
11720	WELL REHAB PROGRAM DESIGN - 2022 FY	53,528.31		2,047.50	66,472.00	64,424.50	55,575.81	120,000.00	64,424.19	PAUSED
11733	ADMINISTRATION OFFICE REPAIRS DRYWLL/PAINT	35,339.27		0.00	99,661.00	99,661.00	35,339.27	135,000.00	99,660.73	PAUSED
11737	PIERSON BLVD SLURRY SEAL PROJECT	0.00		0.00	183,000.00	183,000.00	0.00	183,000.00	183,000.00	NOT STARTED
11738	RIVERSIDE CTY MOUNTAIN VIEW RESURFACING PROJ	0.00		0.00	33,000.00	33,000.00	0.00	33,000.00	33,000.00	NOT STARTED

APPENDIX B – Wastewater & Water Production Tables

WATER REPORT

WATER CONNECTION SUMMARY													
	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14	2012/13	2011/12
July	5	6	18	7	4	5	7	2	0	0	1	0	0
August	14	28	19	6	10	5	3	2	2	0	1	0	0
September	19	22	23	18	2	14	4	13	3	0	2	2	0
October	4	16	33	13	3	21	8	3	20	0	5	1	1
November	9	10	27	10	16	4	0	7	3	0	1	0	1
December	5	9	9	2	17	3	3	2	0	0	2	0	0
January	5	26	14	15	6	3	20	1	1	2	2	0	0
February		14	8	13	8	5	11	1	0	1	0	1	0
March		29	19	16	2	3	6	5	0	12	0	0	4
April		24	6	11	1	3	7	11	2	7	0	1	4
May		16	19	15	12	5	11	9	8	2	0	1	2
June		5	1	24	11	2	8	2	10	1	0	0	0
Annual	61	205	196	150	92	73	88	58	49	25	14	6	12
Avg./ Mo.	5.08	17.08	16.33	12.50	7.67	6.08	7.33	4.83	4.08	2.08	1.17	0.50	1.00

Connections to Water System:
 As of June 30, 2023 13,542
 Plus YTD 61
Total Water Connections = 13,603

WATER PRODUCTION SUMMARY													
	FY 2023/24	Variance from prior year		FY 2022/23	FY 2021/22	FY 2020/21	FY 2019/20	FY 2018/19	FY 2017/18	FY 2016/17	FY 2015/16	FY 2014/15	FY 2013/14
	AF	AF	%	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF
July	789.99	38.20	5.08%	751.79	796.57	857.77	853.23	857.20	835.87	714.50	659.11	859.00	942.82
August	737.74	-112.45	-13.23%	850.19	839.93	885.31	795.18	806.47	829.93	808.54	706.62	730.71	828.60
September	675.06	-40.97	-5.72%	716.03	738.65	784.80	757.08	689.47	712.40	679.54	657.37	800.67	813.20
October	709.23	17.25	2.49%	691.98	665.18	755.84	709.39	709.81	733.86	678.33	575.86	716.30	716.09
November	629.05	29.66	4.95%	599.39	679.85	690.13	619.87	631.75	642.41	601.89	582.22	533.69	557.05
December	529.99	-24.28	-4.38%	554.27	565.48	588.32	537.23	502.16	584.24	520.63	503.10	590.83	633.09
January	556.57	26.18	4.94%	530.39	580.28	537.96	553.20	570.20	599.52	465.10	431.38	526.86	582.86
February		-	0.00%	490.41	527.34	495.61	520.85	415.49	512.79	453.39	483.92	506.49	522.87
March		-	0.00%	500.37	601.44	625.80	557.73	490.92	536.09	549.50	514.05	614.94	603.89
April		-	0.00%	552.34	624.07	649.34	573.02	635.08	644.06	540.56	502.36	622.58	664.05
May		-	0.00%	726.25	745.36	723.62	698.99	598.36	697.15	731.81	601.83	590.28	708.18
June		-	0.00%	682.09	730.02	761.63	806.02	710.39	688.74	732.68	685.93	706.34	812.96
TOTAL	4,627.63	-66.41	-1.41%	7,645.50	8,094.17	8,356.13	7,981.79	7,617.30	8,017.06	7,476.47	6,903.75	7,798.69	8,385.66

WASTEWATER REPORT

SEWER CONNECTION SUMMARY													
	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14	2012/13	2011/12
July	4	4	18	8	7	9	51	2	1	139	2	0	0
August	12	26	20	4	1	8	53	2	4	214	4	0	2
September	17	20	20	5	2	12	8	11	2	90	2	1	0
October	3	13	36	9	4	8	12	4	21	65	8	2	1
November	7	8	29	50	10	9	7	7	1	52	18	7	3
December	21	8	12	9	3	3	64	1	0	86	22	11	2
January	2	35	14	21	7	1	16	8	3	27	3	11	1
February		4	7	23	5	1	42	0	3	5	46	6	1
March		24	17	48	1	0	23	5	0	31	16	2	1
April		16	7	18	3	3	15	30	0	8	95	14	3
May		9	16	17	11	3	20	45	7	13	98	3	2
June		4	2	21	7	3	6	70	4	4	72	2	0
Annual	66	171	198	233	61	60	317	185	46	734	386	59	16

Connections to Sewer Collection System:
 As of June 30, 2023 8,836
 Plus YTD 66
Total Sewer Connections = 8,902

WASTEWATER FLOW MGD				
2023/24	HORTON PLANT		DESERT CREST	
	Avg. Daily Flow	Peak 24 hr. Flow	Avg. Daily Flow	Peak 24 hr. Flow
July	1.922043	2.149212	0.050983	0.071200
August	1.929369	2.592078	0.047453	0.067540
September	2.037218	2.182773	0.046081	0.055570
October	2.050049	2.173503	0.040804	0.051000
November	2.065661	2.265582	0.046158	0.059550
December	2.037725	2.208722	0.045566	0.057730
January	2.014687	2.152567	0.045226	0.049620
February				
March				
April				
May				
June				

WASTEWATER FLOW MGD				
2022/23	HORTON PLANT		DESERT CREST	
	Avg. Daily Flow	Peak 24 hr. Flow	Avg. Daily Flow	Peak 24 hr. Flow
July	1.980020	2.086591	0.038856	0.045610
August	2.007484	2.156507	0.043378	0.051750
September	2.085598	2.243680	0.042339	0.047130
October	1.980283	2.266199	0.045616	0.052230
November	1.966075	2.124845	0.045861	0.050330
December	1.963779	2.145901	0.041817	0.050300
January	1.954007	2.142796	0.043181	0.048220
February	1.917610	2.093768	0.041724	0.056170
March	1.977725	2.134190	0.042863	0.047530
April	2.047194	2.217048	0.037373	0.047160
May	1.977976	2.188987	0.040162	0.059330
June	1.938862	2.058816	0.049741	0.067470

APPENDIX C – Federal Update from Carpi & Clay

Mission Springs Water District Federal Update

February 1, 2024

Congress Passes CR

Still unable to finalize the Fiscal Year 2024 (FY24), Congress passed another short-term Continuing Resolution (CR) to avoid a federal government shutdown. Prior to Thanksgiving, Congress passed a laddered CR that extended current funding levels for a portion of federal agencies until January 19th, and the remainder of federal agencies until February 2nd. This new CR keeps with the laddered approach with the following deadlines for the various appropriations bills:

Extends the agencies funded under the below bills through **March 1st**:

- Agriculture-FDA
- Energy and Water
- Military Construction-Veterans Affairs
- Transportation-Housing and Urban Development

Extends agencies funded under the below bills through **March 8th**:

- Commerce-Justice-Science
- Labor-HHS-Education
- Defense
- Financial Services
- Homeland Security
- Interior-Environment
- Legislative Branch
- State-Foreign Operations

This new CR will provide Congress with more time to try and finalize the FY24 appropriations bills. Speaker of the House Mike Johnson (R-LA) and Senate Majority Leader Chuck Schumer (D-NY) have agreed on an overall funding level for FY24. Additionally, just this week the leadership of the House and Senate Appropriations Committee announced that they have reached a deal on the top-line funding levels of the twelve FY24 appropriations bills. With the top-line funding levels for the bills in place, the respective subcommittees can now get to work on putting together the final FY24 appropriations bills.

House Subcommittee Holds Hearing on Cybersecurity for Water Sector

On January 31st, the House Energy and Commerce Committee Environment, Manufacturing, and Critical Materials Subcommittee held a hearing entitled “Ensuring the Cybersecurity of America's Drinking Water Systems.” This hearing is the second hearing the Committee has held on the subject of protecting the nation’s infrastructure from cybersecurity threats this Congress (last May, the Subcommittee on Oversight and Investigations held a hearing entitled “Protecting Critical Infrastructure from Cyberattacks: Examining Expertise of Sector Specific Agencies”). As a part of their opening statements, Members on both sides of the aisle raised concerns about the growing cybersecurity threats in the water sector, as well as acknowledging the challenges that water and wastewater systems are facing related to cybersecurity.

During the hearing, the Subcommittee heard testimony from the following witnesses:

- Cathy Tucker-Vogel, Kansas Department of Health and Environment on behalf of the Association of State Drinking Water Administrators;
- Scott Dewhirst, P.E., Tacoma Water on behalf of the Association of Metropolitan Water Agencies;
- Rick Jeffares, Georgia Rural Water Association on behalf of the National Rural Water Association; and,
- Kevin Morley, Ph.D., American Water Work Association

In their testimonies, as well as the questions from the Members, the witnesses highlighted some of the specific challenges that water agencies face in their ability to protect their systems from cybersecurity attacks. Additionally, the witnesses provided their recommendations for tools and support needed from the federal government to better support their efforts including:

- Federal funding to support costs associated with cybersecurity upgrades and improvements
- Training and technical assistance
- Improved communication from federal agencies to water and wastewater systems, especially small and rural systems
- Better information sharing among water utilities from trusted partners

State of the Union Scheduled for March 7th

Speaker of the House Mike Johnson invited President Biden to give the State of the Union address on March 7th. It is the second time in the last two decades that the State of the Union has been scheduled in March and is the latest date for the address in the last century.

Senator Padilla Leads Colleagues Urging Restoration of LIHWAP

Senator Alex Padilla (D-CA) led 24 colleagues in a [letter](#) to the Senate Appropriations Committee urging the restoration of funding for the Low-Income Household Water Assistance Program (LIHWAP) for FY24. The program was created in the American Rescue Plan Act to establish a temporary low-income water assistance program to assist in paying water and wastewater bills during the COVID-19 pandemic. The program's funding expired last fiscal year, and as a result the letter urges the Appropriations Committee to provide funding for the program in FY24.

Additional Members Announce Departure

In January, more Members of the House announced their intent to resign or retire at the end of the 118th Congress. Rep. Bill Johnson (R-OH) resigned on January 21st to become President of Youngstown State University. Rep. Brian Higgins (D-NY) announced his intent to resign on February 2nd, citing frustration with the institution. Reps. John Curtis (R-UT), Blaine Luetkemeyer (R-MO), Doug Lamborn (R-CO), Larry Bucshon (R-IN), Greg Pence (R-IN), Jeff Duncan (R-SC), and Kelly Armstrong (R-ND) announced they will not be running for reelection. Additionally, Majority Leader Steve Scalise (R-LA) announced he is undergoing a stem-cell transplant to treat cancer and will be away from Washington until February. As a result, Republicans currently have a 219-213 majority in the House. Finally, California Governor Gavin Newsom scheduled a special election to fill former Speaker of the House Kevin McCarthy's House seat on March 19th. A runoff, if required, would be held on May 21st.

Federal Funding Opportunities & Announcements

EPA Announces \$3 Million Centers of Excellence for Stormwater Infrastructure Technologies NOFO. EPA announced a \$3 million [NOFO](#) for the Centers of Excellence for Stormwater Control Infrastructure Technologies Grant Program. The program will fund the establishment and maintenance of regional Centers of Excellence for new and emerging stormwater control infrastructure technologies, with the goal of improving the effectiveness, cost efficiency, and protection of public safety and water quality. EPA is also accepting applications to create and maintain a national electronic clearinghouse to centrally manage data from the Centers of Excellence. Applications are due March 18th.

Federal Agency Personnel/Regulatory Announcements

White House Infrastructure Coordinator Departs. The Administration has announced that White House Infrastructure Coordinator Mitch Landrieu left his position on January 12th to join the President's campaign. A new infrastructure coordinator has not yet been named.

White House Releases National Emerging Contaminants Research Initiative Implementation Plan. The White House Office of Science and Technology Policy's National Emerging Contaminants Research Institute released the [National Emerging Contaminants Research Initiative Implementation Plan](#). The implementation plan will help federal agencies identify and prepare for newly discovered water contaminants that

may be harmful for human health, including plastics, disinfectants, industrial solvents, and other manufactured chemicals. The plan includes steps to coordinate research, monitor emerging contaminants, identify mitigation technologies, and communicate risks to the public.

CEQ Extends Comment Deadline for EJ Scorecard RFI. The Council on Environmental Quality (CEQ) [announced](#) an extension to its November 20th Request for Information (RFI) on its Environmental Justice (EJ) Scorecard. The new deadline for comments is February 22nd.

DHS Inspector General Criticizes CISA for Handling of Water/Wastewater Cybersecurity Issues. The Department of Homeland Security (DHS) Inspector General issued a [report](#) entitled “CISA Needs to Improve Collaboration to Enhance Resiliency in the Water and Wastewater Sector.” The report criticizes the Cybersecurity and Infrastructure Security Agency (CISA) for a failure to “consistently collaborate” with both EPA and water and wastewater utilities to address cybersecurity threats. Additionally, the report highlights CISA’s difficulty with communicating available tools and resources to assist water and wastewater utilities, particularly for smaller agencies.

campaigns, and technologies that can help stop these heinous crimes. The award is open to individuals and entities, including non-governmental organizations, transportation industry associations, research institutions, and state and local government organizations. Entrants compete for a cash award of up to \$50,000 to be awarded to the individual(s) or entity selected for creating the most impactful counter-trafficking initiative or technology. Nominations are due by March 11th.

EPA Assistant Administrator Announces Departure. Assistant EPA Administrator Radhika Fox announced her intention to leave her role at the end of February. EPA has not yet announced who will assume her role following her departure.

EPA Announces Appointments to Local Government Advisory Committee. EPA [announced](#) 16 new members will join 13 current members on the Local Government Advisory Committee (LGAC). In 2024, LGAC will provide input to the EPA Administrator on the proposed Lead and Copper Rule Improvements, the draft Strategy for Reducing Plastic Pollution, the development of a cumulative impact framework, and improving community-level communication and engagement.

EPA Announces Required TRI Reporting for Seven Additional PFAS. EPA announced that seven additional per- and polyfluoroalkyl substances (PFAS) were automatically added to the [list of chemicals](#) covered by the Toxics Release Inventory (TRI), requiring their reporting. For TRI Reporting Year 2024, reporting is required for these seven additional PFAS, bringing the total PFAS subject to TRI reporting to 196.

EPA Finalizes Significant New Use Rule for Inactive PFAS. EPA issued a [final significant new use rule](#) (SNUR) for 329 PFAS that are designated as inactive on the Toxic Substances Control Act Chemical Substance Inventory. Entities subject to the SNUR will be required to notify EPA at least 90 days before manufacturing, importing, or

processing any of the listed chemicals for a new significant use. EPA must review and make an affirmative determination on the notification before the covered entity can begin manufacturing, importing, or processing listed PFAS. The SNUR is effective March 11th.

EPA Releases Amendments to LMWC NSPS and Emissions Guidelines. EPA released a [proposed rule](#) to amend new source performance standards (NSPS) and emissions guidelines for large municipal waste combustion (LMWC) units. The proposed rule would update standards for nine pollutants, including sulfur dioxide and nitrogen oxides, reducing emissions by approximately 14,000 tons per year. The proposed standards would apply to 57 facilities with 152 units that have the capacity to combust more than 250 tons per day of municipal solid waste. Comments on the proposed rule are due March 25th.

EPA Updates Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. EPA released [updated guidelines](#) for screening sites and facilities with residential lead exposures under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation Recovery Act (RCRA) corrective action authorities. EPA updated the screening level for lead in soil at residential properties from 400 parts per million (ppm) to 200 ppm. At residential properties with multiple sources of lead exposure, EPA will use 100 ppm as the screening level. The guidance is effective immediately, but EPA is accepting feedback on the updated guidelines until March 17th.

EPA, HUD, and DOE Send Joint Letter to Utilities Requesting Energy and Water Usage Data for Multifamily Properties. EPA, HUD, and DOE sent a [letter](#) to utility regulators requesting that energy and water data be made available to owners of multifamily properties. The letter mentions that utility companies fail to share this data with multifamily property owners which will hinder implementation of Inflation Reduction Act programs like HUD's Green and Resilient Retrofit Program and DOE's Home Efficiency Rebate Program.

EPA, CISA, and FBI Release Cybersecurity Guidance for Water & Wastewater. EPA, CISA, and the Federal Bureau of Investigation (FBI) released joint [guidance](#) to water and wastewater utilities on how to prepare for, detect, contain, and evaluate cybersecurity incidents. The guidance was drafted with input from water utilities, trade associations and state agencies. According to CISA, the goal of the guidance is to help with the following:

- Establishing clear guidance for reporting cyber incidents,
- Connecting utilities with available cybersecurity resources, services, and no-cost trainings,
- Empowering utilities to build a strong cybersecurity baseline to improve cyber resilience and cyber hygiene, and
- Encouraging utilities to integrate into their local cyber communities.

FEMA Seeks Members for FY23 BRIC Qualitative National Review Panel. FEMA is seeking current government employee volunteers from state, local, tribal, and territorial

governments, and other federal agencies to participate on the [FY23 Building Resilient Infrastructure and Communities \(BRIC\) National Review Panel](#). Panelists will review BRIC applications to ensure program criteria are met. Virtual panels will occur from April 8th to May 3rd.

USACE Publishes Updated Planning Assistance to States Program Memo. The U.S. Army Corps of Engineers (USACE) published an [updated memo](#) for the Planning Assistance to States Program. The updates waive the cost share requirement for economically disadvantaged communities, as directed by Section 8119 of the Water Resources Development Act of 2022. The updated memo supersedes the May 2023 memo on the Planning Assistance to States Program.

##

APPENDIX D – Public Affairs Information

January 2024

MSWD LEADERSHIP UPDATE

As we entered 2024, MSWD made leadership changes to ensure the continued delivery of our award-winning water and reliable wastewater services.

Starting in January, Director Ivan Sewell will fill the role of Board President, and Director Robert Griffith will serve as Vice President of the Board of Directors. Both offer a wealth of experience and are committed to sustainable water practices and continued community engagement.

In addition, the MSWD Board of Directors announced the official appointment of Brian Macy as General Manager. Macy has served as the interim general

manager since August 2023. During that time, he focused on improving district transparency and oversaw several notable projects, including the District's new strategic plan, financial master plan, and new wastewater pre-treatment guidelines, all currently under development.



Macy has also been instrumental in the continued construction of the Nancy Wright Regional Water Reclamation Facility and the accompanying Conveyance Line Project, one of the largest endeavors ever undertaken by the District.

PAYMENT HELP IS AVAILABLE

If you're struggling to catch up on payments, MSWD offers flexible payment plans tailored to each customer's needs. These plans can be extended for up to 12 months, and enrollment is open to all customers with a past-due balance, regardless of income level.

To further support customers facing financial challenges, MSWD has established partnerships with several community agencies.

Help2Others (United Way of the Desert):

This fund is specifically designed to aid low-income customers pay their water bills. Income-qualified customers can qualify annually for \$100 towards past due or future water bills.

Community Action Partnership CARES Program:

Administering the federally funded Low-Income Home Energy Assistance Program (LIHEAP), this program offers utility payment assistance and weatherization services to low-income customers in Riverside County.

For more details on these programs or to access additional resources, please visit our website or get in touch with our office directly at 760-329-6448.

MONTHLY WATER TALKS

MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future of our Valley and State. Join us for an insightful exploration into issues affecting water resources and learn about sustainability, conservation, and innovative solutions impacting the well-being of our community.

Sessions are being held at the Desert Hot Springs Library between 5-6 p.m.

Mark your calendars and join us!

- January 31
- February 21
- March 27
- May 29
- June 26
- July 24
- August 28
- September 25
- October 30
- November 20



Space is limited. For more information or to register, visit www.mswd.org/watertalks.



February 2, 2024

The Honorable Michael S. Regan, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460

Re: U.S. Environmental Protection Agency National Primary Drinking Water Regulations for Lead and Copper: Improvements – Docket ID No. EPA-HQ-OW-2022-0801

Dear Administrator Regan:

The Association of California Water Agencies (ACWA) and the California Municipal Utilities Association (CMUA) appreciate the opportunity to provide comments on the Environmental Protection Agency’s (EPA’s) National Primary Drinking Water Regulations for Lead and Copper: Improvements (88 Fed. Reg. 84,878 (Dec. 6, 2023)). ACWA’s more than 470 public water agency members supply over 90 percent of the water delivered to cities, farms, and businesses in California. CMUA’s over 60 public water agency members deliver water to over 75 percent of Californians.

I. Introduction

ACWA and CMUA appreciate and value EPA’s efforts to reduce exposure to lead and copper and protect public health. Reducing lead in drinking water requires a collaborative effort by federal and state regulators, water systems, consumers, and many others. However, as is often the case with a national rule, a ‘one-size fits all’ approach seldom addresses the subtle but significant differences that may exist among the affected parties.

There is no question that lead contamination in drinking water is a significant threat to public health. Exposure to this extremely toxic heavy metal can be harmful even at low levels. Infants and young children are at particularly high risk because the harmful effects of lead exposure occur at lower levels in children compared to adults.¹

California has taken significant actions to reduce exposure to lead.² California’s requirements to test for lead in drinking water at schools, inventory utility-owned service lines and replace lead service lines are robust progressive efforts.³ Through these efforts, community water systems (CWS) confirmed the limited to no presence of lead service lines (LSL) within their systems.

ACWA and CMUA strongly support the removal of LSLs; however, based on California’s experience, **we urge EPA to make additional changes to the LCRI to improve CWS’ ability to implement the rule.**

¹ EPA Office of Ground Water and Drinking Water, *Basic Information about Lead in Drinking Water* (last updated Jan. 5, 2024), click [here](#).

² See California Department of Public Health, *Statutes and Regulations* (last updated Sept. 15, 2023), click [here](#).

³ See California State Water Resources Control Board, *Lead Service Line Inventory Requirement for Public Water Systems* (last updated Dec. 8, 2023), click [here](#)

II. Comments

A. Replacement

ACWA and CMUA agree with EPA that removing LSLs is paramount to protecting public health. Our members strongly support voluntary programs and outreach to help and encourage customers to replace their lead pipes and fixtures. However, we maintain serious concerns with the proposed LSL replacement requirements. In particular, the associated CWS liability with replacing a customer-owned LSL.

COMMENT 1 – LIABILITY CONCERNS – ACWA and CMUA are greatly concerned with the liability placed on CWS in extending the replacement requirements to the customer-owned portion of the service line.

EPA is proposing mandatory full service line replacement of LSLs and “galvanized requiring replacement” (GRR) service lines “under the control of” the water system within 10 years or less, regardless of the lead level.⁴ “Under the control of” the water system would be defined as “wherever a water system has adequate access (e.g. legal access, physical access) to conduct full service line replacement.”⁵ CWS would have to make a “reasonable attempt” to reach the property owner about service line replacement.⁶

ACWA and CMUA appreciate EPA’s acknowledgement of the legal hurdles and complications regarding customer-owned service line replacement and the agency’s goal to find a workable solution to operating on the customer-owned side of the service line. However, expanding mandatory replacement programs to include the customer side is not possible for CWS in California.

Existing law prevents CWS from accessing or paying for work on private property. CWS cannot be liable for replacing, fixing, or maintaining privately owned plumbing. Requesting consent for access to thousands of people’s properties would be difficult, present legal hurdles, and would increase CWS liability substantially. While a CWS may make reasonable attempts to *inform* customers of the presence of lead service lines on their property, it ultimately should be the responsibility of the customer to hire a qualified and properly insured contractor to perform any replacement work on private property. CWS would potentially be required to carry additional insurance to complete work on private property. Completing work on a customer’s property could leave CWS vulnerable to additional liability related to that work.

Customer lines are typically installed before driveways, sidewalks and landscaping. Replacing these lines will likely require replacement and repair of the private property damaged in the process. If a water district that provides only drinking water is required to disturb the infrastructure owned/maintained by another entity, who is responsible for replacing the damaged property?

Most public agencies are focused on contracting related to the infrastructure required for the production and transmission of drinking water, not home restoration, and would incur additional costs to engage outside contracting services to restore private property to pre-existing conditions. Public

⁴ 88 Fed. Reg. at 84967 (Dec. 6, 2023).

⁵ 88 Fed. Reg. at 84920 (Dec. 6, 2023).

⁶ 88 Fed. Reg. at 84921 (Dec. 6, 2023).

water agencies are local governments, not for-profit entities. As such, placing the financial burden of customer LSL replacement on CWS is untenable.

Moreover, the proposed LCRI requirements do not exist in a vacuum. Water systems are currently bracing for EPA to finalize both a drinking water standard for several PFAS as well as a rule to regulate two PFAS as “hazardous substances.” These requirements, when taken as a whole, will likely further exacerbate the water affordability issues already facing water systems and their customers. For the reasons stated above, ACWA and CMUA urge EPA to remove the private line replacement requirements from the rule.

COMMENT 2 – GRR OFFRAMP – Should the replacement requirements remain in the LCRI, ACWA and CMUA urge EPA to consider an offramp for GRRs that are demonstrated to present no significant lead exposure.

If the private line requirements remain in the rule, ACWA and CMUA urge EPA to revise the requirements to acknowledge that after a certain amount of time, or upon completion of a demonstration, some galvanized lines do not present public health concerns and, therefore, are not in need of replacement.

Galvanized lines that were downstream of an LSL are, for some time, a public health risk and can impart lead into the water. However, after a period of time, those risks diminish. A testing and demonstration framework, such as that described in Edwards et al (2022)⁷ report “Evaluating Key Factors that Affect Lead Accumulation and Release of Lead from Galvanized Pipes” should be included in the LCRI. Such testing may include a review of historical corrosion control treatment, sequential tap sampling, measurement of co-occurring metals, measurement of particulate versus dissolved lead, analysis of scale in excavated pipes, or other tools that may become available.

We suggest that EPA create a regulatory mechanism whereby a GRR can come off the inventory/replacement lists if a study is performed that demonstrates that the GRR is no longer a source for lead. Repeated annual notifications of these GRR-served customers with alarming language about lead’s health effects, while water samples indicate that no lead is present, will result in confusion and mistrust of the safety of the water.

We encourage EPA, where possible, to promote a collaborative process that recognizes the many variables that come into play that affect the feasibility of replacement projects.

COMMENT 3 – PARTIAL LSL REPLACEMENT – ACWA and CMUA support allowing partial LSL replacements during planned infrastructure projects or emergency work.

EPA requested feedback on whether stakeholders agree with allowing partial LSL replacements during planning infrastructure projects and emergency work.⁸ Our members agree with allowing partial LSL replacements in these cases because the requirement to do full LSL replacement (i.e., customer consent, scheduling work, payment aspects) would delay necessary infrastructure work. Delaying planned and emergency infrastructure work would impact water agencies’ ability to provide water to customers.

⁷ Edwards, M, Mohsin, Parks, Masters, Arnold, Roenfeldt. Evaluating Key Factors that Affect Lead Accumulation and Release of Lead from Galvanized Pipes, Water Research Foundation, 2022.

⁸ 88 Fed. Reg. at 85067.

COMMENT 4 – CUSTOMER OUTREACH – ACWA and CMUA suggest that EPA modify the customer outreach requirements for LSL replacement to be more functional for CWS.

While we do not support the proposal to require CWS to offer LSL replacement, ACWA and CMUA appreciate EPA’s acknowledgement that some customers will not be receptive to CWS outreach or able or willing to replace their LSLs.⁹ EPA is proposing that “where customer consent is required by State or local law or water tariff agreement, the system would be required to make a reasonable effort to obtain property owner consent.”¹⁰ As proposed, reasonable effort would include at least four customer outreach attempts using at least two different communication methods.

Requiring four outreach attempts by CWS would increase the burden without added public health benefit. Therefore, ACWA and CMUA suggest the outreach attempt requirement be reduced to two, mirroring LCRR requirements. One of those attempts would be written, such as a door hanger, email, mail, or text with a copy of the document kept in CWS records, and the second attempt can be written or verbal, again documented by the CWS in writing.

Additionally, EPA is soliciting feedback on how to handle lines on properties where the customer has objected to their LSL being replaced. Previous stakeholders emphasized the safety concerns for utility staff in dealing with this potentially hostile situation.¹¹ If the replacement requirements proceed as proposed, we suggest that the lines on properties where customers object to their replacement be deemed as not “under the control of” the water system and forego replacement of the lines, to be updated on an as-needed basis.

COMMENT 5 – LSL REPLACEMENT FUNDING – EPA’s focus should be on providing sufficient funding directly to customers who voluntarily choose to replace LSL replacement without shifting the burden to CWS.

To successfully eliminate exposure to lead in drinking water, the impetus should be on providing the necessary funding for voluntary customer LSL replacement programs without putting the added financial burden on CWS. This can be achieved through low-income property owner grant programs and additional federal funding streams.

EPA estimates that there are between 6.3 and 9.3 million LSLs nationwide and replacing all of these lines would cost between \$25 billion and \$56 billion.¹² To support eliminating lead service lines, EPA points to funding in the Bipartisan Infrastructure Law that included \$15 billion for LSL replacement projects as well as \$11.7 billion in general funding through the Drinking Water State Revolving Fund, which can also be utilized for lead removal projects.¹³

We are supportive of the unprecedented federal funding that has already been dedicated to replacing LSLs.

⁹See 88 Fed. Reg. at 84922 (Dec. 6, 2023).

¹⁰ 88 Fed. Reg. at 84923 (Dec. 6, 2023).

¹¹ 88 Fed. Reg. at 84923 (Dec. 6, 2023).

¹² 86 Fed. Reg. at 14064 (Mar. 12, 2021).

¹³ EPA, *Proposed Lead and Copper Rule Improvements Informational Webinar* (Dec. 6, 2023), click [here](#).

COMMENT 6 – STATE FUNDING CONFLICTS – Constitutional provisions in California prohibit CWS from using public funds for individual customers.

California constitutional provisions place limits on CWS that would be in conflict with the customer-owned replacement provisions of the LCRI. Under the California Constitution, the gift of public funds to any individual, corporation, or another government agency is prohibited.¹⁴ The Constitutional exemptions to the restriction are not inclusive of any of the scenarios envisioned by the LCRI. While the LCRI does not specify how the costs of replacing customer-owned lines will be covered, the LCRI points to available federal funding revenues. The inference is that a CWS would apply for federal funding to then utilize for the benefit of several individual customers. Use of federal funding in this manner for customer-owned LSL replacements would be in direct violation of the California Constitution.

There are additional complications with the California Constitution. Proposition 218 governs “property-related” fees or charges. CWS retail water rates are a property-related fee or charge, and Proposition 218 effectively limits how CWS sets retail water rates. It requires that the rates be set proportionally, be no higher than what it costs to provide the service, be for a service immediately available to the customer, and not be for any general governmental service. Proposition 218 further complicates covering the cost of replacing customer-owned LSLs.

We request that EPA provide additional guidance on how the use of federal funding would not violate California Constitutional mandates.

B. Inventory

COMMENT 7 – LSL INVENTORY – ACWA and CMUA urge EPA not to mandate inclusion of lead connectors in the LCRI inventory.

The LCRR requires CWS to create a publicly accessible service line inventory that includes the customer-owned portion of the service line by October 16, 2024.¹⁵ All water systems must develop an updated initial inventory, known as the “baseline inventory,” by the final LCRI compliance date, which builds on the LCRR requirements of the initial inventory.¹⁶ Notably, the proposed LCRI inventory must include lead connectors (i.e. goosenecks, pigtails) in the baseline inventory by the compliance date and replace them whenever encountered.¹⁷ Lead connectors are not included under the LCRR inventory requirements.¹⁸

In this proposal, EPA acknowledged that it “does not expect those projected improvements from the LCRR to be realized if EPA promulgates yet another new regulatory framework for controlling lead just as compliance with the LCRR is required.”¹⁹ ACWA and CMUA agree with EPA. Mandating inclusion of lead connectors, records of which often are extremely limited or non-existent, would create an unnecessary additional burden on water systems with limited public health benefits.

¹⁴ Calif. Const. Art. 16, section 6.

¹⁵ 86 Fed. Reg. at 4290-91 (Jan. 15, 2021); *see also* 86 Fed. Reg. 71574 (Dec. 17, 2021).

¹⁶ 88 Fed. Reg. at 84933 (Dec. 6, 2023).

¹⁷ 88 Fed. Reg. at 84882 (Dec. 6, 2023).

¹⁸ 86 Fed. Reg. at 4213 (Jan. 15, 2021).

¹⁹ 88 Fed. Reg. at 84903 (Dec. 6, 2023).

In reaching its determination that the final LCRR should not require lead connectors to be included in the inventory, EPA recognized the issues in dealing with lead connectors. Namely that, “unlike an inventory of service lines, whose material can be visually inspected often without excavation from inside the home or in the meter box, a complete and accurate inventory of connectors would require excavation that disturbs road pavement and repaving post-inspection—an undertaking that EPA expects would not be feasible or practical for most systems.”²⁰ Instead, CWS are encouraged to *voluntarily* include information about lead connectors in the inventory if possible and must replace system-owned lead connectors as they are encountered by the water system.²¹

The process of visually inspecting or otherwise identifying lead connectors has not changed from the time the LCRR was promulgated until now. The undertaking would still not be feasible or practical for most systems. It is unclear why the LCRI proposes these additional inventory requirements for the baseline inventory considering these practical challenges. Including lead connectors in the LSL inventory would create unnecessary inconsistencies between the initial LCRR inventory already underway and the baseline LCRI inventory.

As a result, we ask that EPA not mandate lead connectors be included in the LCRI baseline inventory. We support the existing practice that CWS may voluntarily include information about lead connectors in the baseline service line inventory. We also support that CWS replace system-owned connectors as they are encountered, except during emergency infrastructure work.

COMMENT 8 – LSL DEFINITION – ACWA and CMUA request that EPA modify the definition of galvanized service line that is considered an LSL.

ACWA and CMUA continue to have concerns with the galvanized pipe language in the definition of an LSL. Under the LCRR, “a galvanized service line is considered a lead service line if it *ever was* or is currently downstream of any lead service line or service line of unknown material.”²² The inclusion of “*ever was*” is problematic as a CWS may not have specific records for service lines that go back to the initial installation due to various reason such as historical annexation of private water systems or merging several water systems over the decades. In these cases, utilities may be unable to definitively prove or disprove what material may have been upstream of the galvanized line throughout the life of the service line. The terminology is overly expansive and needs to be narrowed for CWS to meet inventory requirements of the LCRR and LCRI within the established compliance periods.

ACWA and CMUA urge EPA to remove the “*ever was*” standard from the definition. Instead, we recommend that a galvanized service line be considered a lead service line only if it is currently, or is known in the past to have been, downstream of a lead service line or service line of currently unknown material.

COMMENT 9 – GUIDANCE – ACWA and CMUA appreciate EPA’s responsiveness in issuing guidance for developing and maintaining a service line inventory under LCRR requirements.

ACWA and CMUA previously asked EPA to include an ability to make a certification of no LSL on the customer-owned portion of the service line without visual inspection in the LCRR inventory guidance. It

²⁰ 86 Fed. Reg. at 4213 (Jan. 15, 2021).

²¹ 86 Fed. Reg. at 4213 (Jan. 15, 2021).

²² 86 Fed. Reg. at 4281 (Jan. 15, 2021).

is important to note that California has few LSLs statewide.²³ Moreover, the best evidence to date shows that many, if not most, LCRR-regulated water systems in California have no customer-owned LSLs.²⁴ Although there were thousands of LSLs installed during the 1940s, these have all been removed.

For an LCRR-regulated water system with no LSLs, using the techniques described in the LCRR would be challenging and expensive. Many CWS in California would have to expend significant capital and staff hours merely to prove a negative while opening the door for added liability. This is not health-protective for customers or a productive use of CWS resources.

EPA recognized this situation and included the section “Requirements and Recommendations for Systems with Only Non-Lead Service Lines” in the final LCRR guidance. ACWA and CMUA appreciate the inclusion of this provision in the guidance document and look forward to working with EPA on implementation of the inventory requirements.

C. Schools and Childcare Facilities

COMMENT 10 – WAIVER – ACWA and CMUA believe that California’s existing program for lead testing in schools and childcare facilities should be granted a waiver from duplicative federal requirements.

Through Assembly Bill 746 (2017) and Assembly Bill 2370 (2018), California created separate requirements for testing of licensed childcare facilities and K-12 Schools, which differ from the LCRR.²⁵ AB 746 mandated one-time lead testing of schoolsites of a local education agency²⁶ constructed before January 1, 2010.²⁷ The proposed LCRI allows for state waivers for programs that meet the same requirements as the LCRI if schools were sampled between January 1, 2021 and three years after the effective date of the final rule. The California sampling efforts concluded at the end of 2019. Requiring California school sampling of the same facilities mere years after the AB 746 mandate would provide little public health benefit.

The testing that CWS completed to comply with the California requirements should be considered adequate to comply with the provisions of the LCRI. Additionally, the requirement to inventory system-owned service lines tasked CWS in California with replacement actions through permits which are annually amended. Those permits and the amendments from 2017 include testing requirements for schools and childcare facilities. ACWA and CMUA believe that EPA should recognize the importance of these efforts in California and not invalidate or duplicate the state’s ongoing programs to address lead in schools and childcare facilities.

Given the recent and expansive testing of schools and childcare facilities in California, ACWA and CMUA recommend that EPA expand the waiver window to account for prior sampling. Namely, for school sampling conducted between 2017 to three years after the effective date of the LCRI. Additional sampling would then occur every five years pursuant to the LCRI.

²³ California State Water Resources Control Board, *Lead Service Line Inventory Requirement for Public Water Systems* (last updated Dec. 8, 2023), click [here](#)

²⁴ See Water Practice and Technology, *A study of lead service lines in California* (Sept. 2022), click [here](#).

²⁵ AB 2370 mandated the drinking water sampling of childcare facilities constructed before January 1, 2010 beginning by January 1, 2020. This program should qualify for a waiver from LCRI initial sampling requirements for childcare facilities.

²⁶ Defined as “school district, county office of education, or charter school located in a public facility.”

²⁷ The lead action level in the bill was 15 parts per billion.

D. Tap Sampling

COMMENT 11 – TAP SAMPLING TIMELINE – ACWA and CMUA urge EPA to modify the customer notification timeline for tap sampling results with no exceedances.

The LCRI tap sampling requirement would require that water systems notify customers no later than three calendar days after sampling results are obtained, regardless of whether or not those results show exceedances.²⁸ Our members are concerned with this proposed timeline. We recommend that water agencies be allowed to provide results to customers within seven calendar days, when no exceedance occurs.

E. Compliance Deadline

COMMENT 12 – COMPLIANCE DEADLINE – ACWA and CMUA support the extended LCRI compliance dates.

EPA is proposing that CWS will have three years after the final LCRI is promulgated to comply with its requirements. In tandem, EPA plans to extend the compliance deadline for the majority of the requirements in the 2021 Lead and Copper Rule Revisions (LCRR) past the original compliance date of October 16, 2024. Water systems would continue to implement 2021 LCRR requirements and the LCRR inventory requirements until the LCRI compliance date.²⁹

Extending the LCRR compliance date past October 16, 2024 would allow additional time for CWS to better prepare to implement the numerous requirements of the LCRR and LCRI., ACWA and CMUA support EPA’s proposal for a three-year compliance deadline for the LCRI as well as extending the time allowed for the majority of LCRR requirements.

III. Conclusion

ACWA and CMUA appreciate the opportunity to comment on EPA’s proposed LCRI and urge EPA to implement the recommended changes that are necessary to provide clarity and assurances for CWS. If you have any questions regarding these comments, please contact Madeline Voitier, ACWA’s Federal Relations Representative at madelinev@acwa.com or Andrea Abergel, CMUA’s Manager of Water Policy at aabergel@cmua.org.

Sincerely,

Madeline Voitier

Madeline Voitier
Federal Relations Representative
Association of California Water Agencies

Andrea Abergel
Manager of Water Policy
California Municipal Utilities Association

²⁸ 88 Fed. Reg. at 85071 (Dec. 6, 2023).

²⁹ 88 Fed. Reg. at 84967 (Dec. 6, 2023).



January 26, 2024

The Honorable Alex Padilla
 United States Senate
 112 Hart Senate Office Building
 Washington, DC 20510

RE: Support for the *LIHWAP Establishment Act*

Dear Senator Padilla:

On behalf of Mission Springs Water District, I am writing to express support for the *Low-Income Household Water Assistance Program (LIHWAP) Establishment Act*. Thank you for introducing this critical legislation to provide much-needed funding assistance to low-income households that will help them pay their utility bills.

Mission Springs Water District serves a community facing severe disadvantages, characterized by a considerable portion of low-income, linguistically isolated, and undocumented residents. With a median income of only \$37,924, assistance programs like LIHWAP are indispensable for many of our residents. Since the launch of the program in 2022, hundreds of families within MSWD boundaries have benefited from it, enabling them to maintain their water service, thanks to this vital initiative.

The LIHWAP Act will ensure that this critical program remains available for low-income households for years to come. Additionally, Mission Springs Water District is pleased to see that the legislation would transfer the management of the program to the Environmental Protection Agency moving forward.

Authorizing the LIHWAP program will help ensure that low-income families can continue to have the support they need while ensuring that water utilities can continue to provide customers with essential services. Thank you for your leadership on this critical issue.

Sincerely,

A handwritten signature in blue ink that reads 'Brian E. Macy'.

Brian E. Macy, PE
 General Manager
 Mission Springs Water District



MSWD Digital Marketing & Website Report

Website, Social, and Marketing Performance

January, 2024

Casey Dolan

Casey Dolan Consulting

Google Ads Campaigns

Impressions
MSWD
301,944

Clicks
MSWD
268

CTR
MSWD
0.09%

GOOGLE ADS CAMPAIGN PERFORMANCE
MSWD

Ad group	Impr.	Clicks	CTR
MSWD Calendar Pickup	87,989	73	0.08%
MSWD Conservation Kits	86,070	79	0.09%
MSWD Water Talks 1.31	71,503	74	0.1%
MSWD Bill Assist	56,382	42	0.07%
	301,944	268	0.09%



Item 19.

Meta Campaign Performance

Includes Facebook and Instagram campaigns

Campaign performance

MSWD

Campaign	Link Clicks	Impr.	Reach	Page Likes
MSWD Bill Assistance Video - Jan 2024	280	14,143	4,681	0
Conservation Kits Jan 2024	265	36,935	8,403	0
MSWD Calendar Pickup - Jan 2024	262	41,840	10,172	0
Water Taks 1.31	215	41,720	9,922	0
	1,022	134,638	18,745	0

Item 19.

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 #WaterConservation #SustainableSolutions #CommunityMatters

JANUARY TOPIC: FUTURE OF THE SALTON SEA

WATER TALKS WITH MSWD

JOIN MSWD FOR A FREE MONTHLY TALK ABOUT ALL THINGS WATER!

DATE: JANUARY 31, 2024
LOCATION: DHS LIBRARY
14380 PALM DR
DESERT HOT SPRINGS
TIME: 5-6 PM

mswd.org
Water Talks with MSWD
 News Release Date 01-17-24 [Learn more](#)

24 likes 5 shares

Instagram

missionspringswaterdistrict Sponsored

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Pick up your FREE MSWD Calendar!

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missionspringswaterdistrict The 2024 MSWD Conservation and Groundwater Protection Cale... more

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At Mission Springs Water District, Value is Our Mission. Click to learn more about how your household can receive a free conservation kit to help save water and lower your water bill.

mswd.org
Free Conservation Kits Available
[Learn more](#)

20 likes 6 comments 8 shares

MSWD Mission Springs Water District Sponsored

Click to learn more about the various resources that may be able to help you pay your water and other utility bills and expenses.

mswd.org
MSWD Bill Assistance Programs
[Learn more](#)

5 likes

Item 19.

Website Information

Users
WWW.MSWD.ORG - HTTP://...

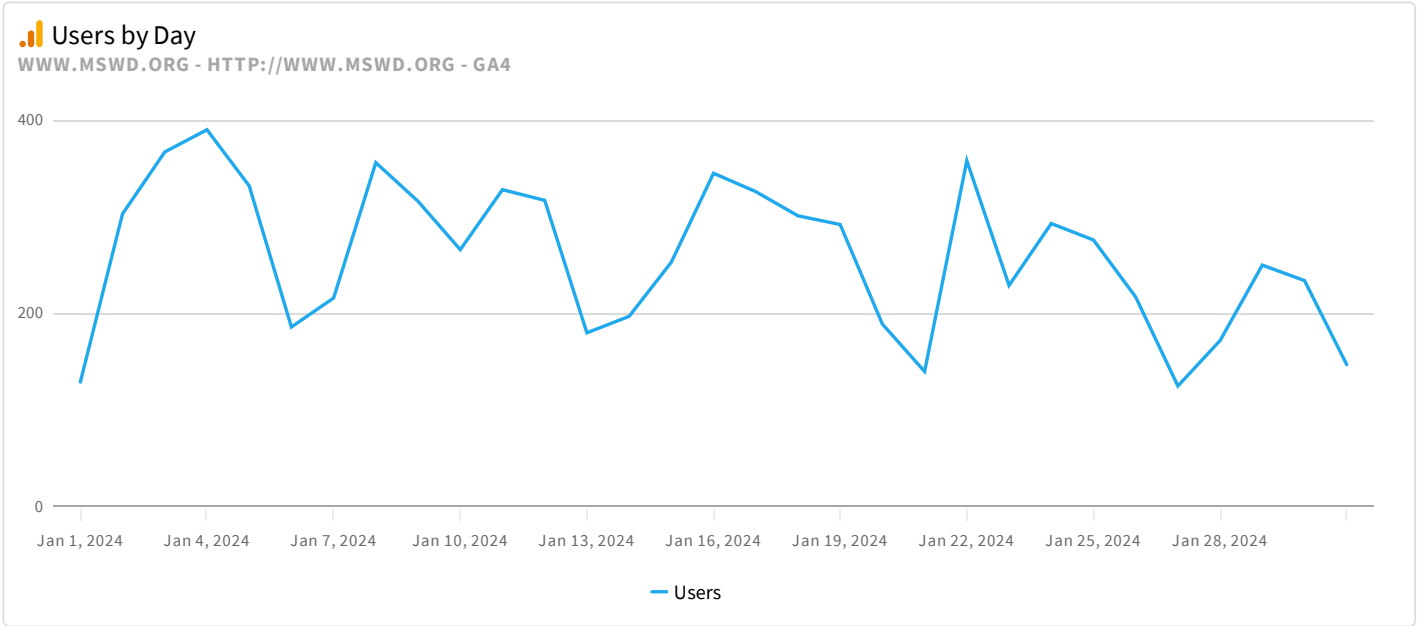
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Views
WWW.MSWD.ORG - HTTP://...

22,396

Engaged sessions
WWW.MSWD.ORG - HTTP://...

6,535



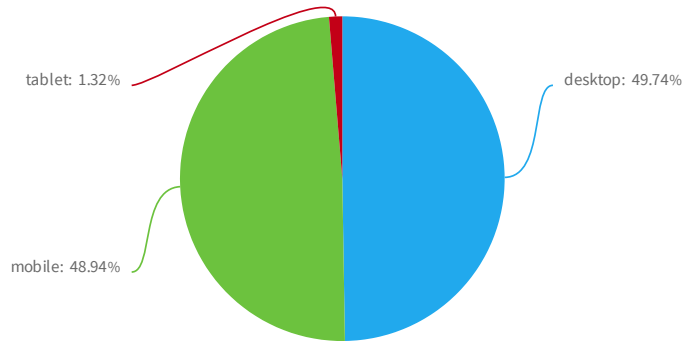
Page Title performance
WWW.MSWD.ORG - HTTP://WWW.MSWD.ORG - GA4

Page Title	Views	Views per user	Users	Engaged sessions	Sessions per User	Average engagement time
Home Page Mission Springs, CA Water District	5,150	1.59	3,223	4,075	1.41	17s
New Customer Portal Mission Springs, CA Water District	4,624	1.69	2,724	3,423	1.43	18s
Online Payment System Mission Springs, CA Water District	1,865	1.96	949	914	1.22	38s
Bill Pay Options Mission Springs, CA Water District	1,207	1.58	760	742	1.24	28s
Job Opportunities Mission Springs, CA Water District	1,171	2.51	465	580	1.5	22s
FREE Conservation Kit Mission Springs, CA Water District	652	1.32	477	169	1.33	7s
Careers Mission Springs, CA Water District	558	1.78	311	429	1.54	27s
Bill Assistance and Resources Mission Springs, CA Water District	340	1.33	242	104	1.19	9s
Upcoming Meetings Mission Springs, CA Water District	334	2.72	123	234	2.21	35s
Search Mission Springs, CA Water District	328	1.95	168	187	1.16	39s
	21,787	3.35	6,435	6,360	1.51	56s

Item 19.

Engaged sessions by Device category

WWW.MSWD.ORG - HTTP://WWW.MSWD.ORG - GA4



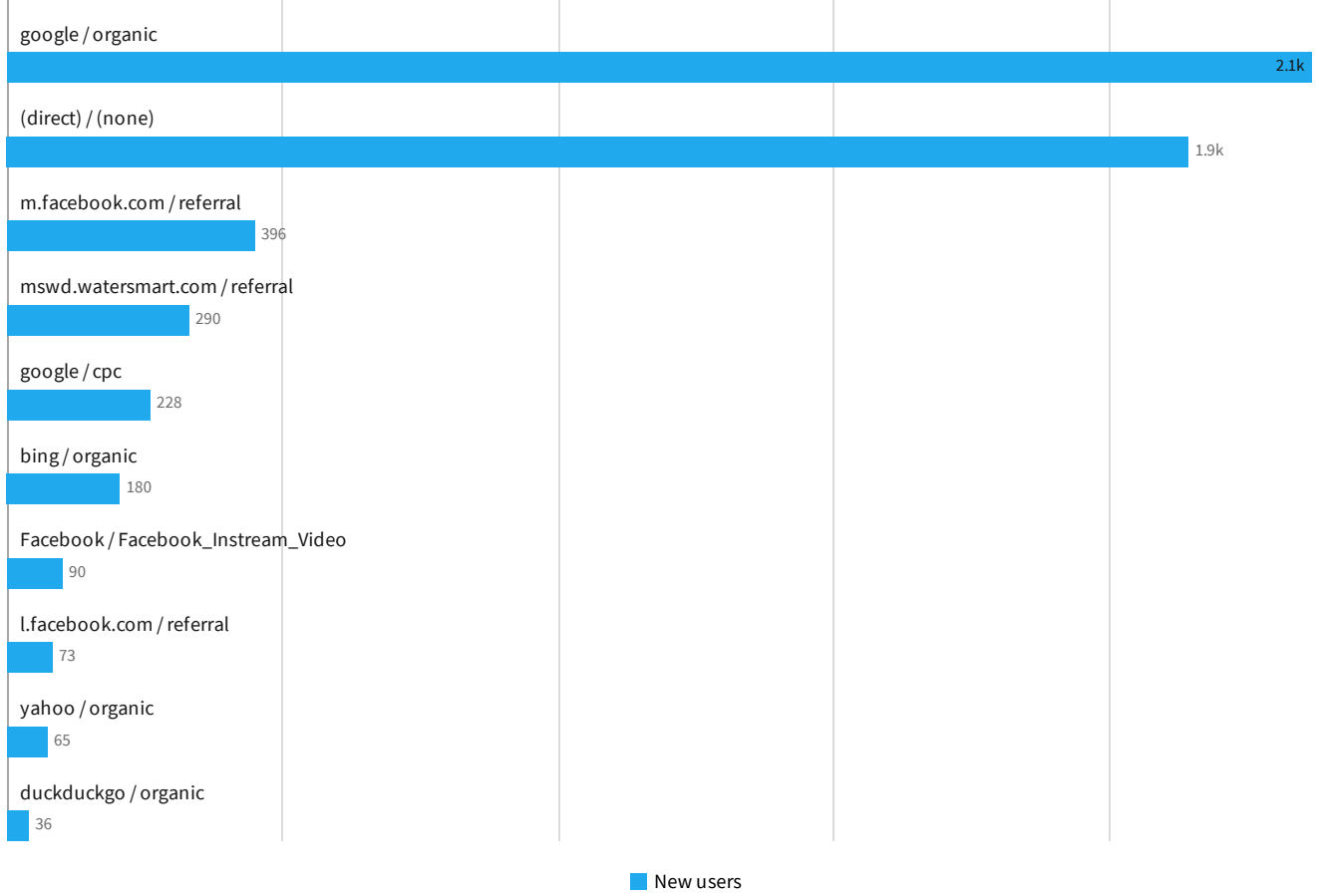
Users by City

WWW.MSWD.ORG - HTTP://WWW.MSWD.ORG - GA4

City	Users
Desert Hot Springs	1,538
Los Angeles	1,291
(not set)	586
Indio	280
San Diego	211
La Quinta	173
Palm Springs	165
Palm Desert	94
Cathedral City	84
Ashburn	73
	6,504

New users by First user source / medium

WWW.MSWD.ORG - HTTP://WWW.MSWD.ORG - GA4



Facebook Account Overview (January 1 - 31, 2024)

Posts Published <h1 style="margin: 0;">10</h1>	Total Likes <h1 style="margin: 0;">1,229</h1> <p style="font-size: small; color: green;">+4 0.3%</p>	New Likes <h1 style="margin: 0;">4</h1> <p style="font-size: small; color: green;">+4</p>	Unlikes <h1 style="margin: 0;">0</h1>	Engaged People <h1 style="margin: 0;">1,270</h1> <p style="font-size: small; color: green;">+576 83.0%</p>
Total Reach <h1 style="margin: 0;">89,379</h1> <p style="font-size: small; color: green;">+22,708 34.1%</p>	Organic Reach <h1 style="margin: 0;">2,472</h1> <p style="font-size: small; color: green;">+207 9.1%</p>	Paid Reach <h1 style="margin: 0;">87,424</h1> <p style="font-size: small; color: green;">+22,566 34.8%</p>	Impressions <h1 style="margin: 0;">118,806</h1> <p style="font-size: small; color: green;">+36,934 45.1%</p>	Video Views <h1 style="margin: 0;">4,705</h1> <p style="font-size: small; color: green;">+4,641 7251.6%</p>

3 Most Engaging Posts	3 Highest Reach Posts	3 Most Shared Posts
<div style="display: flex; align-items: flex-start;"> <div style="flex-grow: 1;"> <p>Join us tomorrow as we help celebrate the Grand Opening o...</p> <p style="text-align: right; font-weight: bold;">15.38%</p> </div> </div>	<div style="display: flex; align-items: flex-start;"> <div style="flex-grow: 1;"> <p>Welcome to MSWD Please join us in welcoming Josiah Perez, who is joining...</p> <p style="text-align: right; font-weight: bold;">581</p> </div> </div>	<div style="display: flex; align-items: flex-start;"> <div style="flex-grow: 1;"> <p>Welcome to MSWD Water Talks. Tonight we will learn about ...</p> <p style="text-align: right; font-weight: bold;">3</p> </div> </div>
<div style="display: flex; align-items: flex-start;"> <div style="flex-grow: 1;"> <p>News Release: GM Appointment News Release: Mission Springs Water District is pleased t...</p> <p style="text-align: right; font-weight: bold;">14.17%</p> </div> </div>	<div style="display: flex; align-items: flex-start;"> <div style="flex-grow: 1;"> <p>Welcome to MSWD Water Talks. Tonight we will learn about ...</p> <p style="text-align: right; font-weight: bold;">364</p> </div> </div>	<div style="display: flex; align-items: flex-start;"> <div style="flex-grow: 1;"> <p>Welcome to MSWD Please join us in welcoming Josiah Perez, who is joining...</p> <p style="text-align: right; font-weight: bold;">1</p> </div> </div>
<div style="display: flex; align-items: flex-start;"> <div style="flex-grow: 1;"> <p>News Release: New Board President & VP News Release: MSWD Seats New Board President & Vice Presi...</p> <p style="text-align: right; font-weight: bold;">12.68%</p> </div> </div>	<div style="display: flex; align-items: flex-start;"> <div style="flex-grow: 1;"> <p>News Release: CWEA Awards News Release: Mission Springs Water District took home...</p> <p style="text-align: right; font-weight: bold;">256</p> </div> </div>	<div style="display: flex; align-items: flex-start;"> <div style="flex-grow: 1;"> <p>Cv Water Counts CV Water Counts is gearing up for the eighth course of ...</p> <p style="text-align: right; font-weight: bold;">1</p> </div> </div>

3 Least Engaging Posts

	Welcome to MSWD Please join us in welcoming Josiah Perez, who is joining...	4.48%
	Watch for imposters 🧑‍🎓 🗺️ Earlier this week, San Diego County residents were ...	4.76%
	CV Water Counts 💧 💧 CV Water Counts is gearing up for the eighth course of ...	5.3%

3 Lowest Reach Posts

	News Release: New Board President & VP News Release: MSWD Seats New Board President & Vice Presi...	71
	MLK Day 📣 Reminder: In honor of Martin Luther King Jr. Day, our o...	87
	Join us tomorrow as we help celebrate the Grand Opening o...	91

3 Least Shared Posts

Item 19.

	Join us tomorrow as we help celebrate the Grand Opening o...	0
	News Release: GM Appointment News Release: Mission Springs Water District is pleased t...	0
	News Release: New Board President & VP News Release: MSWD Seats New Board President & Vice Presi...	0

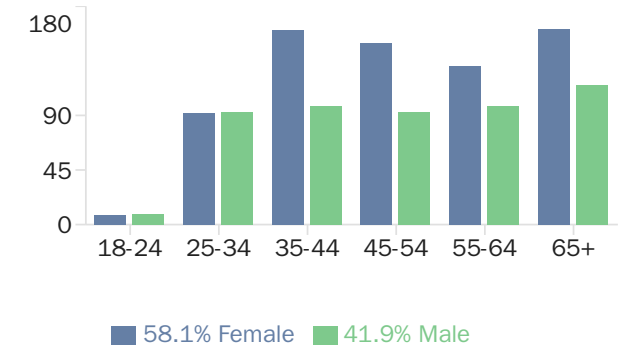
Likes By Country

1. United States of America (1,198 likes)
2. Mexico (12 likes)
3. France (4 likes)
4. Canada (2 likes)
5. Sierra Leone (1 like)

Likes By City

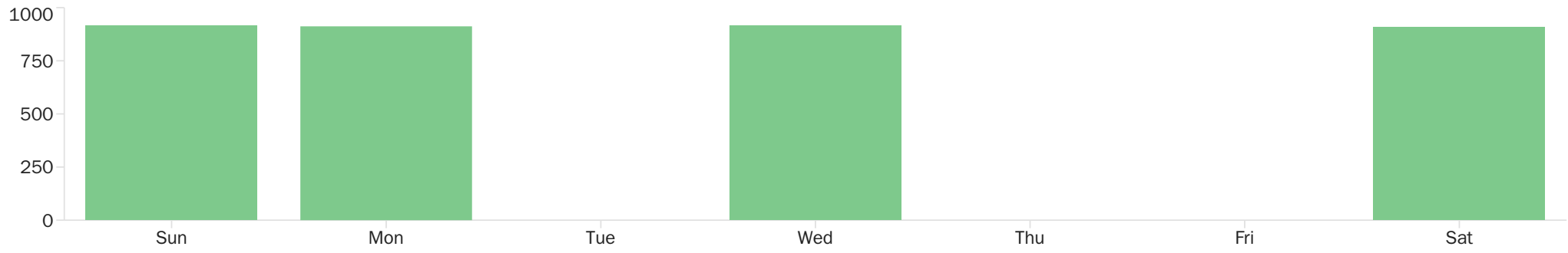
1. Desert Hot Springs, CA (569 likes)
2. Indio, CA (66 likes)
3. Cathedral City, CA (49 likes)
4. La Quinta, CA (48 likes)
5. Palm Springs, CA (44 likes)

Likes by age & gender
















Days your fans are online







Item 19.





Facebook Post Metrics (January 1 - 31, 2024)

Date	Format	Post	Labels	Reach	Engaged Users	Engagement Rate	Reactions	Comments	Shares	Clicks	Video Views
January 31, 2024 5:06 PM PST	 Video	 Welcome to MSWD Water Talks. Tonight we will learn about the Salton Sea!		364	24	6.59%	12	1	3	26	271
January 29, 2024 1:03 PM PST	 Image	 News Release: CWEA Awards  News Release: Mission Springs Water District took home three awards, including Small Plant of the Year, Collection System Person of the Year, and Community Engagement & Outreach Project of the Y...		256	19	7.42%	16	0	1	5	0
January 25, 2024 1:13 PM PST	 Image	 Water Talks - Jan  MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future of our Valley and State. Join us for an insightful exploration into issues affec...		190	11	5.79%	9	0	1	2	0

Date	Format	Post	Labels	Reach	Engaged Users	Engagement Rate	Reactions	Comments	Shares	Clicks	Item 19.
January 19, 2024 2:02 PM PST	Simple Status	 <p>Join us tomorrow as we help celebrate the Grand Opening of the Historic Rock House!</p>		91	14	15.38%	10	0	0	6	0
January 18, 2024 10:56 AM PST	Image	 <p>Watch for imposters 🙋🏻👮🏻 Earlier this week, San Diego County residents were warned to be vigilant for imposter water agency "workers" knocking on doors and requesting entry to homes to test water quality or making sa...</p>	Customer Service	168	8	4.76%	8	0	1	0	0
January 17, 2024 5:14 PM PST	Image	 <p>News Release: GM Appointment News Release: Mission Springs Water District is pleased to announce the official appointment of Brian Macy as General Manager after the unanimous approval of his contract (5-0) by the Board of Dire...</p>	News Releases	127	18	14.17%	11	3	0	13	0

Date	Format	Post	Labels	Reach	Engaged Users	Engagement Rate	Reactions	Comments	Shares	Clicks	Item 19.
January 16, 2024 5:29 PM PST	 Image	 <p>News Release: New Board President & VP News Release: MSWD Seats New Board President & Vice President - Honors Former President Russ Martin During its regularly scheduled Study Session and Board of Directors Meeting this month, Direct...</p>	News Releases	71	9	12.68%	6	2	0	4	0
January 15, 2024 10:45 AM PST	 Image	 <p>MLK Day 📣 Reminder: In honor of Martin Luther King Jr. Day, our offices are closed. However, we're here for you! 🧡 If you have an emergency, please call us at 760-329-6448. Your safety and well-being are o...</p>	Event	87	7	8.05%	8	0	0	0	0
January 11, 2024 7:42 AM PST	 Image	 <p>Cv Water Counts 💙💧 CV Water Counts is gearing up for the eighth course of the Water Counts Academy, designed for community leaders in the Coachella Valley who want to learn about local water resources. The program...</p>	Event	132	7	5.3%	7	0	1	1	0




Date	Format	Post	Labels	Reach	Engaged Users	Engagement Rate	Reactions	Comments	Shares	Clicks	Item 19.
January 02, 2024 4:30 PM PST	 Image	 <p>Welcome to MSWD Please join us in welcoming Josiah Perez, who is joining #TeamMSWD in our Construction and Maintenance Department as a Field Operations Technician I. In this role, he will perform various work rel...</p>	New Hire / Jobs	581	26	4.48%	15	1	1	26	0
Total				2,067	143		102	7	8	83	271
Average				206.7	14.3	6.92%	10.2	0.7	0.8	8.3	27.1

Twitter Account Overview (January 1 - 31, 2024)




Item 19.

Tweets Published	Total Likes	Total Retweets	Total Followers	Following
6	0	0	101	99
-2 -25.0%				

3 Most Retweeted Posts

- 
Cv Water Counts
 CV Water Counts is gearing up for the eighth course of the Water Counts Academy, designed for community leaders who... 0
- 
MLK Day
 Reminder: In honor of Martin Luther King Jr. Day, our offices are closed. However, we're here for you! 🙌 If you hav... 0
- 
News Release: New Board President & VP
 News Release: MSWD Seats Board President & VP During its regularly scheduled Study Session and Board of Director... 0


3 Most Liked Posts

- 
Cv Water Counts
 CV Water Counts is gearing up for the eighth course of the Water Counts Academy, designed for community leaders who... 0
- 
MLK Day
 Reminder: In honor of Martin Luther King Jr. Day, our offices are closed. However, we're here for you! 🙌 If you hav... 0
- 
News Release: New Board President & VP
 News Release: MSWD Seats Board President & VP During its regularly scheduled Study Session and Board of Director... 0

3 Least Retweeted Posts



News Release: CWEA Awards


 News Release: MSWD took home 3 awards, including Small Plant, Collection System Person, and Community Engagement

0

&...



Water Talks - Jan

 MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping our future....

0



News Release: GM Appointment

News Release: Mission Springs Water District is pleased to announce the official appointment of Brian Macy as Genera...


0

3 Least Liked Posts

Item 19.



News Release: CWEA Awards


 News Release: MSWD took home 3 awards, including Small Plant, Collection System Person, and Community Engagement

0

&...



Water Talks - Jan

 MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping our future....

0




















News Release: GM Appointment




News Release: Mission Springs Water District is pleased to announce the official appointment of Brian Macy as Genera...

0

Twitter Post Metrics (January 1 - 31, 2024)

Date	Format	Post	Labels	Retweets	Likes
<p>January 29, 2024 1:04 PM PST</p>	<p> Image</p>	<p> News Release: CWEA Awards  News Release: MSWD took home 3 awards, including Small Plant, Collection System Person, and Community Engagement & Outreach Project of the Year, during an awards ceremony Saturday hosted by ...</p>	<p></p>	<p>0</p>	<p>0</p>
<p>January 25, 2024 1:13 PM PST</p>	<p> Image</p>	<p> Water Talks - Jan  MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping our future. Our Jan. 31 talk features Miguel Hernández from the CA Natural Resources Agency...</p>	<p></p>	<p>0</p>	<p>0</p>

Date	Format	Post	Labels	Retweets	Item 19.
January 17, 2024 5:14 PM PST	 Image	 <p>News Release: GM Appointment News Release: Mission Springs Water District is pleased to announce the official appointment of Brian Macy as General Manager after the unanimous approval of his contract (5-0) by the Board of Dir...</p>		0	0
January 16, 2024 5:29 PM PST	 Image	 <p>News Release: New Board President & VP News Release: MSWD Seats Board President & VP During its regularly scheduled Study Session and Board of Directors Meeting, Director Ivan Sewell assumed the role of Board President, and Directo...</p>		0	0
January 15, 2024 10:45 AM PST	 Image	 <p>MLK Day 📣 Reminder: In honor of Martin Luther King Jr. Day, our offices are closed. However, we're here for you! 🤝 If you have an emergency, please call us at 760-329-6448. Your safety and well-being are o...</p>		0	0

Date	Format	Post	Labels	Retweets	Item 19.
January 11, 2024 7:42 AM PST	 Image	 <p>CV Water Counts CV Water Counts is gearing up for the eighth course of the Water Counts Academy, designed for community leaders who want to learn about local water resources. Application deadline: January 12. L...</p>		0	0
Total				0	0
Average				0.0	0.0

Instagram Account Overview (January 1 - 31, 2024)

Item 19.

Posts Published	Total Followers	New Followers	Impressions	Reach	Profile Views
8	319	8	7,739	6,040	70
-2 -20.0%	+6 1.9%		-34,277 -81.6%	-32,283 -84.2%	

3 Most Liked Posts

- 

News Release: GM Appointment
 News Release: MSWD is pleased to announce the official appointment of Brian Macy as General Manager after the unanimo...

13
- 

Welcome to MSWD
 Please join us in welcoming Josiah Perez, who is joining #TeamMSWD in our Construction and Maintenance Department as...

10
- 

News Release: CWEA Awards

 News Release: Mission Springs Water District took home three awards, including Small Plant of the Year, Collection...

10

3 Most Commented Posts

- 

News Release: GM Appointment
 News Release: MSWD is pleased to announce the official appointment of Brian Macy as General Manager after the unanimo...

2
- 


News Release: New Board President & VP
 News Release: During its regularly scheduled Study Session and Board of Directors Meeting this month, Director Ivan S...


1
- 


Welcome to MSWD
 Please join us in welcoming Josiah Perez, who is joining #TeamMSWD in our Construction and Maintenance Department as...

0

3 Least Liked Posts


 MLK Day
 🗨️ Reminder: In honor of Martin Luther King Jr. Day, our offices are closed. However, we're here for you! 🧡 If you hav... 2


 Cv Water Counts
 ❤️💧 CV Water Counts is gearing up for the eighth course of the Water Counts Academy, designed for community leaders in ... 3


 Water Talks - Jan
 💧 MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future ... 5

3 Least Commented Posts

Item 19.

 News Release: CWEA Awards
 📄💧 News Release: Mission Springs Water District took home three awards, including Small Plant of the Year, Collection... 0

 Water Talks - Jan
 💧 MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future ... 0

 Watch for imposters
 🧑🚒 Earlier this week, San Diego County residents were warned to be vigilant for imposter water agency "workers" kn... 0










Instagram Story Metrics (January 1 - 31, 2024)







Item 19.






Date	Story	Labels	Exits	Impressions	Reach	Replies	Taps Forward	Taps Back
------	-------	--------	-------	-------------	-------	---------	--------------	-----------

No stories found within the selected date range.

Instagram Post Metrics (January 1 - 31, 2024)

Date	Format	Post	Labels	Likes	Comments	Impressions	Reach	Engagements	Engagement Rate	Saves	Video Views
January 29, 2024 1:04 PM PST	 Image	 <p>News Release: CWEA Awards</p>  <p>News Release: Mission Springs Water District took home three awards, including Small Plant of the Year, Collection System Person of the Year, and Community Engagement & Outreach Project of the Y...</p>	News Releases	10	0	53	49	10	20.41%	0	
January 25, 2024 1:13 PM PST	 Image	 <p>Water Talks - Jan</p>  <p>MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future of our Valley and State. Join us for an insightful exploration into issues affec...</p>	Event	5	0	59	53	5	9.43%	0	
January 18, 2024 10:56 AM PST	 Image	 <p>Watch for imposters</p>  <p>Earlier this week, San Diego County residents were warned to be vigilant for imposter water agency "workers" knocking on doors and requesting entry to homes to test water quality or making sa...</p>	Customer Service	5	0	61	52	6	11.54%	1	

Date	Format	Post	Labels	Likes	Comments	Impressions	Reach	Engagements	Engagement Rate	Saves	Item 19. s
January 17, 2024 5:15 PM PST	 Image	 <p>News Release: GM Appointment News Release: MSWD is pleased to announce the official appointment of Brian Macy as General Manager after the unanimous approval of his contract (5-0) by the Board of Directors. "The decision to ...</p>	News Releases	13	2	98	88	15	17.05%	0	
January 16, 2024 5:29 PM PST	 Image	 <p>News Release: New Board President & VP News Release: During its regularly scheduled Study Session and Board of Directors Meeting this month, Director Ivan Sewell assumed the role of Board President, and Director Robert Griffith assumed ...</p>	News Releases	9	1	77	69	10	14.49%	0	
January 15, 2024 10:45 AM PST	 Image	 <p>MLK Day 📣 Reminder: In honor of Martin Luther King Jr. Day, our offices are closed. However, we're here for you! 🤝 If you have an emergency, please call us at 760-329-6448. Your safety and well-being are o...</p>	Event	2	0	33	28	2	7.14%	0	


Date	Format	Post	Labels	Likes	Comments	Impressions	Reach	Engagements	Engagement Rate	Saves	Item 19. s
January 11, 2024 7:42 AM PST	 Image	 <p>Cv Water Counts  CV Water Counts is gearing up for the eighth course of the Water Counts Academy, designed for community leaders in the Coachella Valley who want to learn about local water resources. The program...</p>	Event	3	0	60	50	3	6.0%	0	
January 02, 2024 4:31 PM PST	 Image	 <p>Welcome to MSWD Please join us in welcoming Josiah Perez, who is joining #TeamMSWD in our Construction and Maintenance Department as a Field Operations Technician I. In this role, he will perform various work rel...</p>	New Hire / Jobs	10	0	93	71	10	14.08%	0	
Total				57	3	534	460	61		1	
Average				7.1	0.4	66.8	57.5	7.6	13.26%	0.1	


LinkedIn Account Overview (January 1 - 31, 2024)


Item 19.

<p>Posts Published</p> <p>5</p>	<p>Likes</p> <p>149</p> <p>+134 893.3%</p>	<p>Views</p> <p>95</p> <p>+56 143.6%</p>	<p>Followers</p> <p>289</p> <p>+21 7.8%</p>
<p>Comments</p> <p>29</p> <p>+29</p>	<p>Impressions</p> <p>4,999</p> <p>+4,310 625.5%</p>	<p>Clicks</p> <p>145</p> <p>+124 590.5%</p>	<p>Engagement Rate</p> <p>7.22%</p> <p>-0.0 -7.3%</p>

3 Most Engaging Posts


- 


Water Talks - Jan
 💧 MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future ...
 12.02%
- 


Welcome to MSWD
 Please join us in welcoming Josiah Perez, who is joining #TeamMSWD in our Construction and Maintenance Department
 as...
 8.55%
- 

News Release: CWEA Awards
 📰💧 News Release: Mission Springs Water District took home three awards, including Small Plant of the Year, Collection...
 8.02%

3 Most Shared Posts

- 

Water Talks - Jan
 💧 MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future ...
 2
- 

Welcome to MSWD
 Please join us in welcoming Josiah Perez, who is joining #TeamMSWD in our Construction and Maintenance Department
 as...
 1
- 

News Release: New Board President & VP
 News Release: MSWD Seats New Board President & Vice President & Honors Former President Russ Martin
 During its regu...
 0

3 Least Engaging Posts

	<p>News Release: New Board President & VP News Release: MSWD Seats New Board President & Vice President & Honors Former President Russ Martin</p>	5.35%
During its regu...		
	<p>News Release: GM Appointment News Release: Mission Springs Water District is pleased to announce the official appointment of Brian Macy as General...</p>	6.41%
	<p>News Release: CWEA Awards News Release: Mission Springs Water District took home three awards, including Small Plant of the Year, Collection...</p>	8.02%









3 Least Shared Posts







Item 19.

	<p>News Release: CWEA Awards News Release: Mission Springs Water District took home three awards, including Small Plant of the Year, Collection...</p>	0
	<p>News Release: GM Appointment News Release: Mission Springs Water District is pleased to announce the official appointment of Brian Macy as General...</p>	0
	<p>News Release: New Board President & VP News Release: MSWD Seats New Board President & Vice President & Honors Former President Russ Martin</p>	0
During its regu...		

LinkedIn Post Metrics (January 1 - 31, 2024)

Item 19.

Date	Format	Post	Labels	Shares	Clicks	Engagement Rate	Reactions	Impressions	Comments
January 29, 2024 1:04 PM PST	 Link	 <p>News Release: CWEA Awards</p>  <p>News Release: Mission Springs Water District took home three awards, including Small Plant of the Year, Collection System Person of the Year, and Community Engagement & Outreach Project of the Y...</p>		0	6	8.02%	11	212	0
January 25, 2024 1:13 PM PST	 Image	 <p>Water Talks - Jan</p>  <p>MSWD is hosting a series of monthly water talks that will explore critical water topics that are shaping the future of our Valley and State. Join us for an insightful exploration into issues affec...</p>		2	9	12.02%	17	233	0

Date	Format	Post	Labels	Shares	Clicks	Engagement Rate	Reactions	Impressions	Item 19.
January 17, 2024 5:14 PM PST	 Image	 <p>News Release: GM Appointment News Release: Mission Springs Water District is pleased to announce the official appointment of Brian Macy as General Manager after the unanimous approval of his contract (5-0) by the Board of Dire...</p>	News Releases	0	112	6.41%	92	3,589	26
January 16, 2024 5:29 PM PST	 Image	 <p>News Release: New Board President & VP News Release: MSWD Seats New Board President & Vice President & Honors Former President Russ Martin During its regularly scheduled Study Session and Board of Directors Meeting this month, Directo...</p>	News Releases	0	6	5.35%	22	579	3
January 02, 2024 4:31 PM PST	 Image	 <p>Welcome to MSWD Please join us in welcoming Josiah Perez, who is joining #TeamMSWD in our Construction and Maintenance Department as a Field Operations Technician I. In this role, he will perform various work rel...</p>	New Hire / Jobs	1	9	8.55%	10	234	0

Date	Format	Post	Labels	Shares	Clicks	Engagement Rate	Reactions	Impressions	Item 19.
Total				3	142		152	4,847	29
Average				0.6	28.4	8.07%	30.4	969.4	5.8



CVWC Digital Marketing Report

Website, Social, and Marketing Performance

January, 2024

by Hunter | Johnsen

Google Ads Campaigns

 DISPLAY AD IMPRESS...
CV WATER COUNTS

242,868

 SEARCH AD IMPRESSI...
CV WATER COUNTS

2,960

 VIDEO IMPRESSIONS
CV WATER COUNTS

38,104

 Clicks
CV WATER COUNTS

2,654

GOOGLE PROGRAMMATIC DISPLAY AD CAMPAIGN PERFORMANCE CV WATER COUNTS

Campaign name	Clicks	Impr.
CVWC Academy Jan 2024	1,836	184,675
CV Water Counts January 2024 Spanish	361	36,959
CV Water Counts January 2024	247	21,234
	2,444	242,868



GOOGLE YOUTUBE VIDEO AD CAMPAIGN PERFORMANCE CV WATER COUNTS

Account name	Impr.	Engagements	Video views	Clicks
CV Water Counts	38,104	16,900	9,177	88
CVWC Water Saving Tips English YouTube Jan 2024	20,928	9,419	4,661	71
CVWC Water Saving Tips YouTube Spanish Jan 2024	17,176	7,481	4,516	17
	38,104	16,900	9,177	88

Item 19.



GOOGLE ADS PAID SEARCH CAMPAIGN PERFORMANCE
CV WATER COUNTS

Campaign	Clicks	Impr.
CVWC Search Campaigns	117	2,703
CVWC search	5	257
	122	2,960

Facebook Ad Campaigns

FACEBOOK AD PERFORMANCE

HUNTER JOHNSEN

Ad preview

Link Clicks Impr. Reach Frequency Page engagement



791 110,706 34,051 3.25 811

CVWC - Academy - Jan 2024

www.instagram.com

CV Water Counts is gearing up for the eighth course of the Water Counts Academy, designed for community leaders in the Coachella Valley who want to learn about local water resources.

This comprehensive course covers the different services and uses of water in the Coachella Valley. Students will also learn how local water agencies carefully manage this precious resource.

The program will begin in late January 2024, and will include up to five in-person classes. The application deadline is Friday, January 12.

Learn more:

<https://cvwatercounts.com/apply-today-for-the-2024-water-counts-academy/>



330 64,037 28,975 2.21 333

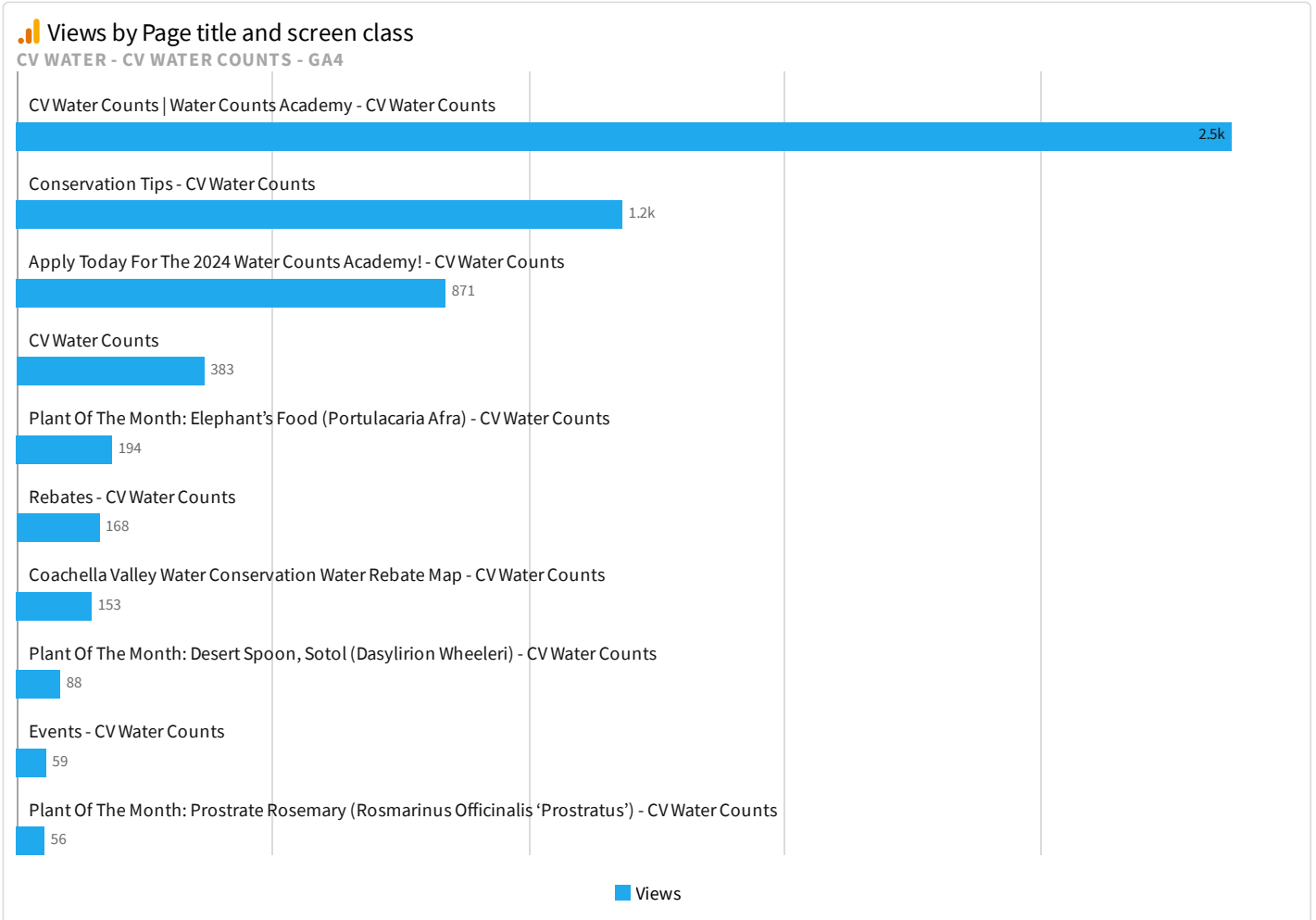
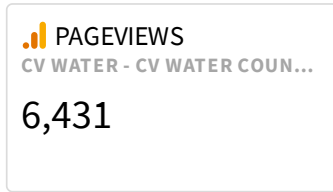
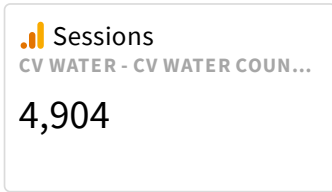
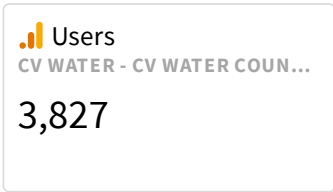
CVWC - January 2024

www.instagram.com

Most water used in the Coachella Valley is outdoors. Make sure that you're doing what you can in the yard to stop water waste.

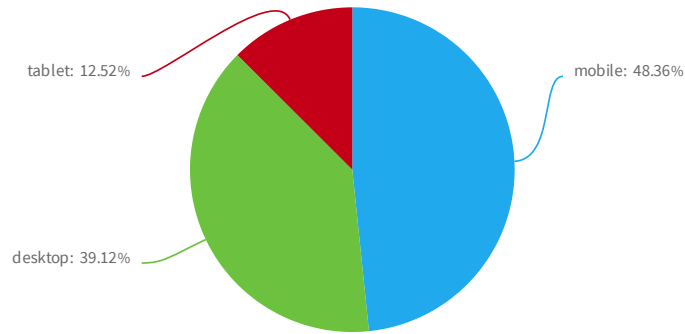
1,121 174,743 52,401 3.33 1,144

Website Information



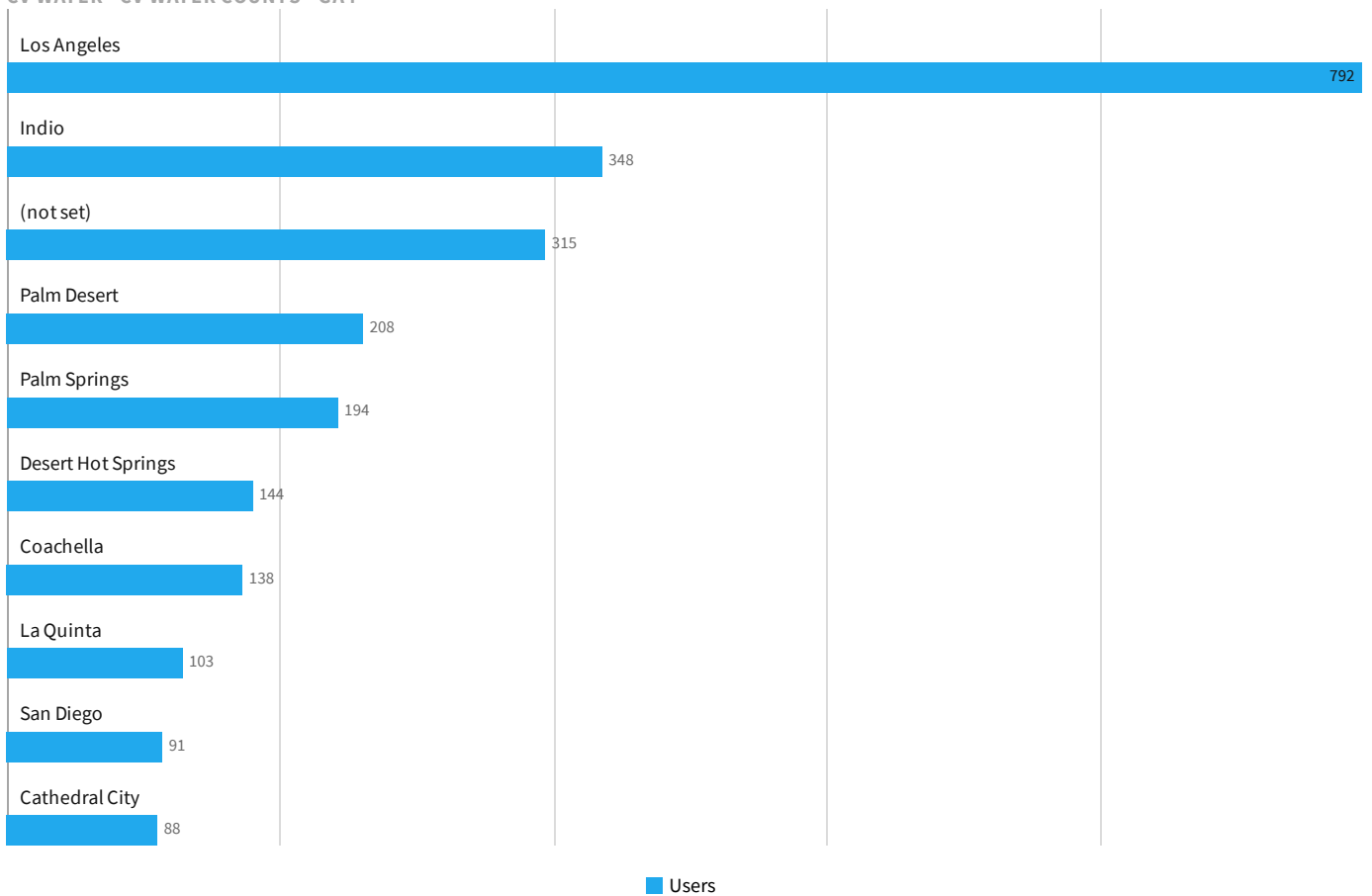
Engaged sessions by Device category

CV WATER - CV WATER COUNTS - GA4



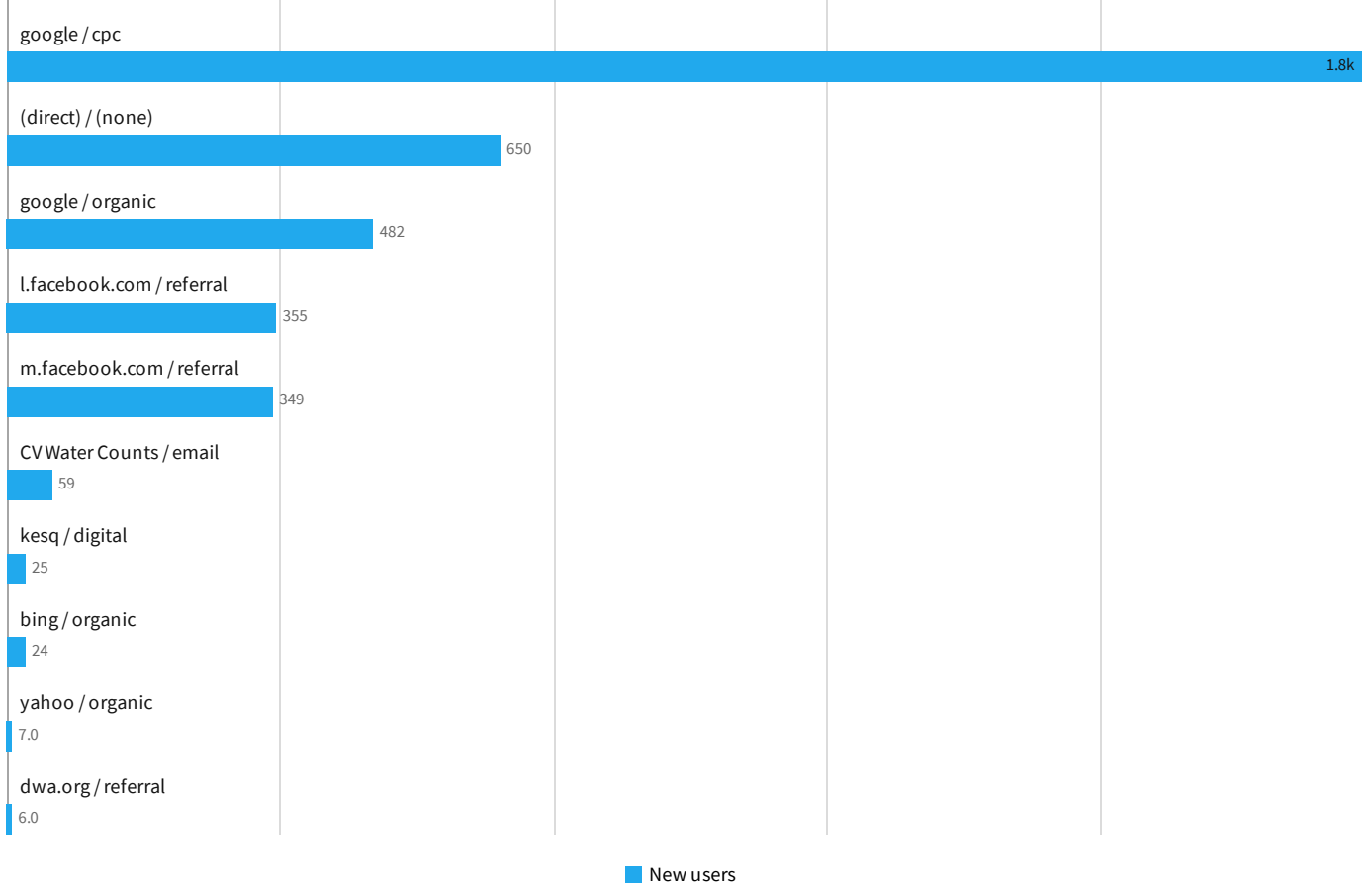
Users by City

CV WATER - CV WATER COUNTS - GA4



New users by First user source / medium

CV WATER - CV WATER COUNTS - GA4



Month performance

PAST 6 MONTHS: CV WATER - CV WATER COUNTS - GA4

Month	New users	Engaged sessions	Engagement rate	Sessions per User	Average engagement time
January 2024	3,782	1,223	24.9%	1.28	19s
December 2023	2,626	909	24.6%	1.37	15s
November 2023	2,046	674	23.0%	1.4	14s
September 2023	1,806	814	28.2%	1.56	16s
October 2023	1,751	562	24.8%	1.26	15s
August 2023	1,711	611	24.6%	1.43	17s
	13,722	4,888	25.5%	1.38	16s

Organic Search

Query performance

CVWATERCOUNTS.COM/

Query	Impr.	Clicks	CTR	Avg. position
portulacaria afra	4,681	9	0.19%	2.63
indio water authority	1,691	0	0%	8.85
sotol plant	1,117	20	1.79%	2.31
lake cahuilla	1,078	1	0.09%	8.1
elephant food	1,047	5	0.48%	5.21
agave geminiflora	990	11	1.11%	1.71
phoenix dactylifera	955	3	0.31%	4.39
water pledge	634	0	0%	7.47
artichoke agave	624	2	0.32%	2.61
prostrate rosemary	613	21	3.43%	3.75
	13,430	72	0.54%	4.7







Page performance











CVWATERCOUNTS.COM/

Page	Impr.	Clicks	CTR	Avg. position
https://cvwatercounts.com/plant-of-the-month-elephants-food-portulacaria-afra/	7,091	22	0.31%	3.6
https://cvwatercounts.com/plant-of-the-month-desert-spoon-sotol-dasyllirion-wheeleri/	2,728	49	1.8%	4.2
https://cvwatercounts.com/lake-cahuilla-recreation-and-reliability/	1,973	10	0.51%	10.63
https://cvwatercounts.com/plant-of-the-month-date-palm-phoenix-dactylifera/	1,873	13	0.69%	7.43
https://cvwatercounts.com/plant-of-the-month-artichoke-agave-agave-parryi-v-truncata/	1,705	11	0.65%	5.4
https://cvwatercounts.com/plant-of-the-month-prostrate-rosemary-rosmarinus-officinalis-prostratus/	1,628	31	1.9%	10.15
https://cvwatercounts.com/plant-of-the-month-trailing-lantana-lantana-montevidensis/	1,590	6	0.38%	16.43
https://cvwatercounts.com/plant-of-the-month-twin-flowered-agave-agave-geminiflora/	1,340	15	1.12%	3.45
https://cvwatercounts.com/where-does-the-coachella-valley-water-come-from/	1,309	9	0.69%	7.65
https://cvwatercounts.com/save-water-pledge/	1,304	2	0.15%	6.39
	22,541	168	0.75%	7.53








Item 19.

Facebook Information


 Impr. CV WATER COUNTS 106,030	 Reach CV WATER COUNTS 42,027	 New page likes CV WATER COUNTS 1	 Engaged user CV WATER COUNTS 675
 Total page views CV WATER COUNTS 242	 Page likes CV WATER COUNTS 3,991		

 Post performance CV WATER COUNTS					
Post		Created at	Post reach	Post engaged users	Likes
	https://www.facebook.com/photo.php?fbid=687516486872640&set=a.395351946089097&type	January 29, 2024	0	2	2
	Consider rinsing produce in a strainer with a pot underneath and, when you're done, use the captured water on an outdoor plant. For more water-saving tips, visit CVWaterCounts.com/conservation-tips....	January 25, 2024	0	2	2
	The Indio Water Authority (IWA) was formed as a Joint Powers Authority in 2000 with the mission to provide customers with a sustainable water supply through fiscal and operational stewardship. IWA's service are...	January 23, 2024	0	6	4
	Now that winter is here, our temperatures are cooler, and that means we can gradually reduce watering times to avoid wasting water. Plants and grass do not need much water during the late fall, winter, and ea...	January 22, 2024	0	2	2
	Are you heading out for the golf and concerts this weekend?	January 19, 2024	0	3	2
	Install water-saving aerators on all of your faucets. For more water-saving tips, visit CVWaterCounts.com/conservation-tips. #WaterWiseWednesday	January 18, 2024	0	3	2
	Today we honor the life of Martin Luther King Jr.	January 15, 2024	0	2	2
	If you or someone you know is in need of water bill assistance during this difficult time, applications are being accepted now for the Help2Others Assistance Program online. Click here for details and to fill out ...	January 11, 2024	0	3	2
	Install a drip irrigation system, and save up to 50% each time you water. For more water-saving tips, visit CVWaterCounts.com/conservation-tips. #WaterWiseWednesday	January 11, 2024	0	2	2
			0	372	53


Item 19.

Post	Created at	Post reach	Post engaged users	Likes
 <p>The desert spoon, sotol is an outstanding accent plant that grows slowly, eventually developing a trunk. At maturity, it reaches 4 to 6 feet high, and spreads up to 5 feet wide, with a canopy coverage o...</p>	January 8, 2024	0	1	3
 <p>During the month of January in our desert, the best times to water your plants are during non-daylight hours, when it's cooler. If you have a spray system, watering for 3 minutes a day, 5 days a week is...</p>	January 5, 2024	0	3	4
 <p>Climate shifts are creating changes in our weather, temperatures, and our water supply. It's important for us to save water wherever we can – and to make water conservation a way of life. Learn More:</p>	January 4, 2024	0	2	2
 <p>Convert your front or back yard to drought friendly landscaping and save on average 230 gallons per day.</p>	January 4, 2024	0	2	2
 <p>CV Water Counts is gearing up for the eighth course of the Water Counts Academy, designed for community leaders in the Coachella Valley who want to learn about local water resources. This comprehensive...</p>	January 2, 2024	0	335	16
 <p>CV Water Counts updated their cover photo. https://www.facebook.com/cvwatercounts</p>	January 2, 2024	0	0	2
 <p>Happy New Year!</p>	January 1, 2024	0	4	4
		0	372	53


Instagram Information

 Impressions
CV WATER COUNTS


1,266








 Likes
CV WATER COUNTS

10

 Followers (lifetime)
CV WATER COUNTS

240

 Post performance
CV WATER COUNTS

Post	Impr.	Engagement	Reach	Saved	Video views
 <p>If you or someone you know is in need of water bill assistance during this difficult time, applications are being accepted now for the Help2Others Assistance Program online. For details and to fill out an online...</p>	16	1	13	0	0
 <p>Today we honor the life of Martin Luther King Jr.</p>	15	1	13	0	0
 <p>Are you heading out for the golf and concerts this weekend?</p>	14	1	12	0	0
 <p>Happy New Year!</p>	14	2	10	0	0
 <p>Consider rinsing produce in a strainer with a pot underneath and, when you're done, use the captured water on an outdoor plant. For more water-saving tips, visit CVWaterCounts.com/conservation-tips....</p>	10	2	9	0	0
 <p>https://www.instagram.com/p/C2sLhnsrpb/</p>	8	1	7	0	0
 <p>Convert your front or back yard to drought friendly landscaping and save on average 230 gallons per day.</p>	0	2	20	0	26
	77	10	84	0	26

E-Blast Information

Campaign performance

CV WATER COUNTS

Campaign	Send Time	Emails Sent	Total Opens	Open Rate	Industry Open Rate	Total Clicks	Click Rate	Industry Click Rate	Hard Bounces	Unsubscribe Count
CV Water Counts Academy: Apply by This Friday	Tuesday, January 9, 2024 10:03 PM	278	351	54.68%	17.73%	34	4.35%	0.87%	0	1
CV Water Counts January 2024	Wednesday, January 3, 2024 6:00 PM	736	750	58.42%	17.73%	71	6.28%	0.87%	0	5
		1,014	1,101	57.4%	17.73%	105	5.32%	0.87%	0	6