



TOWN COUNCIL NOTICE & AGENDA

STUDY SESSION
TUESDAY, APRIL 9, 2024
5:00 PM

COUNCIL CHAMBERS | 202 N. STATE ROUTE 89 | CHINO VALLEY, ARIZONA 86323

AGENDA

- 1. CALL TO ORDER; ROLL CALL**
- 2. Continued discussion regarding proposed changes to Town Code Utility Connections requirements.**
- 3. ADJOURNMENT**



TOWN COUNCIL NOTICE & AGENDA

REGULAR MEETING
TUESDAY, APRIL 9, 2024
6:00 PM

COUNCIL CHAMBERS | 202 N. STATE ROUTE 89 | CHINO VALLEY, ARIZONA 86323

A majority of the Councilmembers may attend a private invocation in the Council Conference Room immediately prior to the Council meeting. No Town business will be discussed.

AGENDA

- 1. CALL TO ORDER; PLEDGE OF ALLEGIANCE; ROLL CALL**
- 2. Executive session pursuant to A.R.S. §38-431.03(A)(3) for discussion or consultation for legal advice with the attorneys for the Town regarding water rights.**
- 3. INTRODUCTIONS, PRESENTATIONS, AND PROCLAMATIONS**
 - a. Presentation and update from the Chino Valley Equestrian Association regarding their annual report.**
 - b. Presentation of Proclamation declaring April 2024 as Fair Housing Month.**
 - c. Presentation of Proclamation declaring April 15-20, 2024 "Stand With Me, Be Drug Free" Week presented by MatForce.**

4. CALL TO THE PUBLIC - Individuals requesting to speak, please complete a Speaker Comment Card and return to the Clerk.

Call to the Public is an opportunity for the public to address the Council on any issue within the jurisdiction of the Council that is not on the agenda. Public comment is at the discretion of the Council and not required by law. Individuals are limited to speak for three (3) minutes, yielding of time will not be permitted. The total time for Call to the Public may be up to 30 minutes per meeting. Council action taken as a result of public comment will be limited to directing staff to study the matter, scheduling the matter for further consideration and decision at a later date, or responding to criticism. Disrespectful behavior will not be tolerated; this includes loud outbursts, profanity, and disruptive discussions among our audience.

5. CURRENT EVENT SUMMARIES AND REPORTS

This item is for information only. The Mayor, any Councilmember, or Town Manager may present a brief summary or report of current events. If listed below, there may also be a presentation on information requested by the Mayor and Council and questions may be answered. No action will be taken.

- a. Status reports by Mayor and Council regarding current events.
- b. Status report by Town Manager Cindy Blackmore regarding Town accomplishments, and current and upcoming projects.

6. CONSENT AGENDA

All those items listed below are considered to be routine and may be enacted by one motion. Any Councilmember may request to remove an item from the Consent Agenda to be considered and discussed separately

- a. Consideration and possible action to approve the March 12, 2024, regular meeting minutes.

7. ACTION ITEMS

The Council may vote to recess the public meeting and hold an Executive Session on any item on this agenda pursuant to A.R.S. § 38-431.03(A)(3) for the purpose of discussion or consultation for legal advice with the Town Attorney. Executive sessions are not open to the public and no action may be taken in executive session.

- a. Consideration and possible action to approve the Cooperative Purchasing Agreement (CPA), Job Order No. 1 with Fann Contracting, Inc. for the East Road 4 South Sewer Extension project in the amount of \$998,265.00.

Recommended Action: Approve the Cooperative Purchasing Agreement (CPA), Job Order No. 1 with Fann Contracting, Inc. for the East Road 4 South Sewer Extension project in the amount of \$998,265.00.

- b. Consideration and possible action to award a Professional Service Agreement (PSA) for

Engineering Services to Pacific Advanced Civil Engineering, Inc. (PACE) in the amount of \$826,915 for the Water Reclamation Facility Improvements Project.

Recommended Action: Award a Professional Service Agreement (PSA) for Engineering Services to Pacific Advanced Civil Engineering, Inc. (PACE) in the amount of \$826,915 for the Water Reclamation Facility Improvements Project.

- c. Public hearing, consideration, and possible action to approve Ordinance No. 2024-943 to amend the Unified Development Ordinance, to create Section 4.32 - Metal Storage Containers.

Recommended Action: i) Hold a public hearing ii) Approve Ordinance No. 2024-943

8. ADJOURNMENT

Dated this 2nd day of April, 2024.

By: *Erin N. Deskins, Town Clerk*

The Town of Chino Valley endeavors to make all public meetings accessible to persons with disabilities. Please call 928-636-2646 (voice) or 711 (Telecommunications Arizona Relay Service) 48 hours prior to the meeting to request reasonable accommodation to participate in this meeting.

Council meetings are live-streamed on Town of Chino Valley Facebook page.

CERTIFICATION OF POSTING

The undersigned hereby certifies that a copy of this notice was duly posted at Chino Valley South Campus, Chino Valley Post Office, and Chino Valley North Campus in accordance with the statement filed by the Town Council with the Town Clerk.

Date: _____

Time: _____

By: _____

Erin N. Deskins, Town Clerk



TOWN COUNCIL AGENDA ITEM STAFF REPORT

AGENDA ITEM # 3a
MEETING DATE: 4/9/2024
CONTACT PERSON: Terri Denemy, Assistant to the Town Manager
ITEM TYPE: Presentation

AGENDA ITEM TITLE:

Presentation and update from the Chino Valley Equestrian Association regarding their annual report.

SUMMARY:

Presentation by the Chino Valley Equestrian Association regarding the status of the Chino Valley Equestrian Park located on Town property and their annual report update.

PREVIOUS ACTION:

On June 28, 2022, the Town approved a lease agreement with the Chino Valley Equestrian Association for approximately 78 acres of real property located at Old Home Manor. Section 3 of the Agreement requires the tenant to annually report to the Town Council regarding the previous year's activities, membership, facility use, events, improvements, financial status, and detail the upcoming year including schedules for improvements and events planned, anticipated attendance, and the expected impact on the Town.

STAFF RECOMMENDATION:

N/A

FISCAL IMPACT?

N/A

ATTACHMENTS:

None



PROCLAMATION

Fair Housing Month - April 2024

Whereas, The National Fair Housing Law of 1986, as amended by the Fair Housing Amendments Act of 1988 prohibits discrimination in housing and declares it a national policy to provide within constitutional limits, for fair housing in the United States; and

Whereas, the principle of Fair Housing is not only national law and national policy but a fundamental human concept and entitlement for all Americans; and

Whereas, April has traditionally been designated as Fair Housing Month in the United States;

*Now, Therefore, I, Jack W. Miller, Mayor of the Town of Chino Valley, do hereby proclaim April as **FAIR HOUSING MONTH in Chino Valley** and do hereby urge all citizens of this community to comply with the letter and spirit of the Fair Housing Law.*

In Witness Whereof, I have hereunto set my hand and caused the Seal of the Town of Chino Valley to be affixed this 9th day of April 2024.



Jack Miller, Mayor

ATTEST: Erin N. Deskins, Town Clerk





PROCLAMATION

Stand With Me, Be Drug Free Week - April 15 - 20, 2024

Whereas, MATFORCE has proclaimed April 15-20, 2024, to be Stand With me, Be Drug Free Week; and

Whereas, the Town of Chino Valley embraces a vision of a healthy, vibrant, and strong community for children, youth, families, and people of all ages, and celebrates the fact that a majority of people do not abuse drugs and alcohol; and

Whereas, the Town of Chino Valley recognizes that youth prevention is essential based on the fact that nine out of 10 people who struggle with substance use disorders began using substances as a teenager; and

Whereas, knowing that families are adversely affected by illegal drug use, including work problems, legal problems, mental health problems, physical illness, addiction, accidents, accidental death, economic loss, child abuse, destruction of families, driving while impaired, and crimes against persons and property; and

Whereas, the Town of Chino Valley would like to commend and pay tribute to all of its citizens who choose to be free of illegal drug use.

Now, Therefore, I, Jack W. Miller, Mayor of the Town of Chino Valley, do hereby proclaim April 15 - 20, 2024, to be **STAND WITH ME, BE DRUG FREE WEEK** and encourages its citizens to participate in the celebration of a drug-free, healthy community by participating in the planned events, activities, and displays.

In Witness Whereof, I have hereunto set my hand and caused the Seal of the Town of Chino Valley to be affixed this 9th day of April 2024.

Jack Miller, Mayor

ATTEST:

Erin N. Deskins, Town Clerk





TOWN COUNCIL AGENDA ITEM STAFF REPORT

AGENDA ITEM # 6a
MEETING DATE: 4/9/2024
CONTACT PERSON: Erin Deskins, Town Clerk
ITEM TYPE: Consent/Minutes

AGENDA ITEM TITLE:

Consideration and possible action to approve the March 12, 2024, regular meeting minutes.

STAFF RECOMMENDATION:

Approve the March 12, 2024, regular meeting minutes.

ATTACHMENTS:

-
-
1. March 12, 2024, Regular Meeting Minutes
-
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**MINUTES OF THE REGULAR MEETING
OF THE TOWN COUNCIL OF THE TOWN OF CHINO VALLEY
TUESDAY, MARCH 12, 2024
6:00 PM
COUNCIL CHAMBERS | 202 N. STATE ROUTE 89 | CHINO VALLEY,
ARIZONA 86323**

1. CALL TO ORDER, PLEDGE OF ALLEGIANCE, ROLL CALL

Mayor Miller called the meeting to order at 6:01 p.m. and led the Pledge of Allegiance.

Present: Mayor Jack Miller, Vice-Mayor Tom Armstrong - remote, Councilmember Annie Perkins, Councilmember Eric Granillo - remote, Councilmember John McCafferty - arrived at 6:14 p.m., Councilmember Sherri Phillips, Councilmember Robert Schacherer

Absent:

Staff Present: Town Manager Cindy Blackmore; Town Attorney Andrew McGuire; Officer Steve Sellers (Sgt. at Arms); Assistant to the Town Manager Terri Denemy; Finance Director Katie Pehl; Public Works Director/Town Engineer Frank Marbury; Town Water Consultant Mark Holmes; Audio Visual Technician Lawrence Digges; Deputy Town Clerk Sara Burchill; Town Clerk Erin N. Deskins

2. INTRODUCTIONS, PRESENTATIONS, AND PROCLAMATIONS

- a. Presentation and update from Vinny Gallegos with Central Yavapai Metropolitan Planning Organization (CYMPO) regarding updates on current projects and regional priorities.

Vinny Gallegos, Central Yavapai Metropolitan Planning Organization, presented the following:

- CYMPO's vision was to promote and maintain a regional coordinated transportation system for safe and efficient movement by using regional leadership to plan and promote a comprehensive, multi-modal transportation system.
- Metropolitan Planning Organizations (MPO) were federally mandated upon a population threshold, to ensure regional cooperation in transportation planning.
 - There were approximately 420 MPO's in the US, nine being in Arizona.
- Presented a map of CYMPO's planning area which included 401 square miles.
- Listed the representatives sitting on the CYMPO Executive Board of which Vice-Mayor Armstrong was a member.
- CYMPO worked with state legislators to identify projects.
 - The State was currently looking at making cuts, which might make it difficult to receive money this year. The state-wide request was for \$400 million. CYMPO requested \$33 million with \$13 million being planned for improvements on Highway 89 in Chino Valley.

Bryn Stotler, CYMPO Planner, presented the following:

- She described CYMPO's role which was to facilitate regional partnership and collaboration.
- Current roadway planning included the Sundog Connector, bike transportation, and the State Route 69 Corridor Master Plan.
- The Sundog Connector project two year planning process had been completed but was ultimately shelved due to political will not existing for the road improvement.
- CYMPO would continue to focus on the State Route 69 Corridor Master Plan which had nine segments over 17 miles, from Dewey-Humboldt to Prescott.
- CYMPO would also be focusing on their ACT-UP Active Transportation Plan increasing bicycle and pedestrian facilities, connections to transit and increasing transportation choices.
- Shared ways for the Town and public to join the conversation via email and social media.
- CYMPO was getting ready to kick off their 2025-2026 Regional Transportation Plan.

Leslie Contreras, CYMPO planner, presented the following:

- CYMPO was focusing on getting community input and feedback regarding what CYMPO was working on. Instagram and FB were CYMPO's main social media channels. They would also be utilizing flyers and newsletters for those who didn't use social media.
- Yavapai Regional Transit (YRT) was also partnering with CYMPO in their marketing efforts.

Michael Lamar, Regional Development Manager, presented the following:

- Being a regional organization, CYMPO was focused on issues that transcended jurisdictions.
- They were concentrating efforts on environmental initiatives and transit including:
 - Del Rio Springs Planning
 - Trails Plan
 - Wildlife Corridor Plans
 - Ecotourism Plan
 - There were a lot of assets in this region and working across jurisdictions to promote and market them made a lot of sense.
- CYMPO was working to link people to places and increase local ridership to improve access to jobs, education, medical facilities, shopping, etc, while reducing emissions.
 - The benefits of this included economic, quality of life, safety, reduced traffic, etc.
- Partnerships included Yavapai, YRT, and Yavapai-Apache. CYMPO was looking for more partnerships.
- CYMPO was working on building on YRT's golden and green routes and link services with Yavapai under CYMPO as the umbrella agency.

Pedro Rodriguez, Transit Manager, presented the following:

- The Yavaline (or Yav Connect) microtransit system had performed about 33,000 trips in they year and a half since it began. CYMPO forecasted that system to provide 50,000 to 60,000 trips this year.
 - There were 12 microtransit systems throughout Arizona.
- Microtransit was similar to a dial-a-ride system but was more data driven. The system provided wheelchair accessible vans that serviced short distances (approximately three miles). The service ran Monday through Friday from 6:00 a.m. to 8:00 p.m. and was \$2/ride. It was run per demand so there was no fixed route or schedule. Riders could also connect with YRT at the Courthouse Plaza.
 - The line began operation on March 4, 2024

Vinny Gallegos, presented the following:

- CYMPO would be hosting 25th annual Rural Transportation Summit October 16, through October 18, 2024 at the Prescott Resort.

Council and CYMPO staff discussed the following:

- Council inquired about weekends for the Yav Connect.
 - Staff stated they did not offer weekends at this time. The goal was for the system to evolve toward a single regional system. They wanted to be able to serve as much as possible. They recognized that YRT did not offer weekends either. The lines were largely utilized for jobs.
 - Council inquired about discounts for veterans?
 - CYMPO staff stated that veterans received a 50% discount and rides were only \$1.
 - Council inquired about any of the transit companies losing identity by going under an umbrella.
 - CYMPO stated that was not the case. It was a true regional partnership and they would be working with YRT to understand what their needs were. They were working to identify partnerships that would benefit all parties.
- b. Presentation and update from Mark Holmes, the Town's Water Resource Consultant, on the results of the Town's drinking water PFAS assessment.

Mark Holmes, Water Consultant, presented the following:

- ADEQ discovered the presence of PFAS chemicals when conducting water quality testing in August of 2023.
 - The Town then began its own PFAS water quality sampling in September of 2023.
- The EPA maximum contaminate levels were currently set at four parts per trillion (ppt) with a Health Index of one. One part per trillion was comparable to one drop in 20 volume Olympic sized pools, or one milliliter in 13.2 million gallons, or ¾ of a teaspoon in Watson Lake when it is at full capacity.
- PFAS was detected in concentrations ranging from 7.21 ppt to 8.94 ppt at the Bright Star and Country West wells, the Fill Station, and the Chino Meadows II Water

Company.

- Provided a map of where the PFAS concentrations were detected.
- Samples from the Water Reclamation Facility was showing levels of PFOA at 6.7 ppt and several others that would be put the Town above the allowed Health Index.
- The Town brought on PFAS experts who were also working with ADEQ and did an assessment of everything in the Town to determine alternative solutions for the Town to meet safe drinking water standards.
 - The consultants provided several options including:
 - Alternative 1 - Installation of PFAS treatment systems at the Town's main production wells. This would include ion exchange and granular activated carbon to treat the water.
 - Alternative 2 - Equip one of the Town's existing wells as a replacement or supplemental source for the Bright Star well.
- Showed a rendered map with potential real estate needed for installation of a wellhead treatment system (approximately a quarter acre).
- Reviewed three additional alternatives building off Alternative 2 including:
 - 2A – Pump from a newly equipped well straight into the system to supplement production from Country West.
 - 2B – Construct a fill line from a newly equipped well to the Bright Star facility for replacement of the Bright Star well.
 - 2C – Build a tank and booster for a newly equipped well to deliver directly into the water system.
 - Staff determined that 2C was the best option.
- The cost estimate for Alternative 1 was \$5.1 million and Alternative 2C was \$10.2 million.
- ADEQ had been great to partner with. They were progressive and taking on the leadership role as a state regulator over safe drinking water. They were evaluating the options with Chino Valley as a disadvantaged utility provider. The goal was to pay for the treatment completely. ADEQ had \$45 million and Chino Valley was on the top of their priority list.
- Provided a map to show what Alternative 2C would look like in execution.
- Staff was continuing to work to find solutions to alternative 2C as they are concerned about the health and safety of the Chino Meadows 2 Water Company which serviced 2,000 Chino Valley residents. If left untreated the constituents would end up in the Town's sewer system, reclamation facility, and recharged into the aquifer. It was also a concern as it was not included in the Town's Capital Improvement Plan (CIP), Integrated Water Master Plan (IWMP), or adopted rate study.
- The Water Reclamation Facility was also impacted, and staff was negotiating with a consultant to modify the plant and look at a PFAS assessment. It would be a pilot level study to optimize removal of PFAS as those chemicals were also present in consumer products being discharged into the sewer system. Staff would be looking at grants and funding for that scope of work as well.

Council and staff discussed the following:

- Council inquired if there was any chance of the EPA levels being moved up?
 - Staff stated that they had been coming down for years and would probably be set at 4ppt as the chemicals were classified as carcinogens.

- Council inquired about an Old Home Master Plan that Mr. Holmes had referred to in his presentation.
 - Mr. Holmes stated that he was referring to Phase 1 of the IWMP which had a CIP component and misstated by calling it an Old Home Manor Master Plan.
- Council inquired if there was a limitation to the amount of constituent a system would be able to filter.
 - Staff stated that higher concentrations may require more frequent replacement of the filtering media. Larger vessels were also an option.
- Council inquired if staff had evidence of PFAS in recharge fluids as a result of what might be going into the sewer system.
 - Staff stated that they had done some additional sampling, but have not yet received the results from the lab.
 - Staff shared, anecdotally, that the highest concentrations were found in areas that had experienced a violation of the Clean Water Act for nitrates where there were six to eight septic systems per acre of land. There had not been PFAS industrial complex uses in this area such as is used at the Prescott airport. Staff reiterated that this explanation was purely speculation.
- Council asked for an example of what products contains these chemicals.
 - Staff stated they were present in food containers, toilet paper, cosmetics, etc.

3. **CALL TO THE PUBLIC - Individuals requesting to speak, please complete a Speaker Comment Card and return to the Clerk.**

Call to the Public is an opportunity for the public to address the Council on any issue within the jurisdiction of the Council that is not on the agenda. Public comment is at the discretion of the Council and not required by law. Individuals are limited to speak for three (3) minutes, yielding of time will not be permitted. The total time for Call to the Public may be up to 30 minutes per meeting. Council action taken as a result of public comment will be limited to directing staff to study the matter, scheduling the matter for further consideration and decision at a later date, or responding to criticism. Disrespectful behavior will not be tolerated; this includes loud outbursts, profanity, and disruptive discussions among our audience.

Mark Bonacquist, Chino Valley resident, presented the following:

- Four years ago he had applied for a second home permit but was denied stating that UDO Code 2-1 was not in effect because the manufactured home was not 400 sq. ft.
- The matter went to court where the judge ordered the Town to measure the building. It measured larger than 400 square feet, but Mr. Bonacquist was then told that the State of Arizona Manufactured Housing Division would not permit the home as it was a “park model.”
- Further litigation ensued and discovery revealed correspondence from the Town Manager to Cody Johnson suggesting that the State would permit the home.
- Mr. Bonacquist was asking for the correspondence between the Town Manager and the State stating that fact, but had been told that it was attorney/client privileged. He was requesting that the Town Manager release the documents from the State of Arizona Manufactured Housing Division stating that they would permit the home and subsequently receive a permit for the home.

4. **CURRENT EVENT SUMMARIES AND REPORTS**

This item is for information only. The Mayor, any Councilmember, or Town Manager may present a

brief summary or report of current events. If listed below, there may also be a presentation on information requested by the Mayor and Council and questions may be answered. No action will be taken.

- a. Status reports by Mayor and Council regarding current events.
- b. Status report by Town Manager Cindy Blackmore regarding Town accomplishments, and current or upcoming projects.

Cindy Blackmore, Town Manager, presented the following:

- Staff was currently accepting applications for the 2024 Citizen's Academy. It was a great way to learn more about the Town. It would be held from 5:30 – 7:30 p.m. March 27th – May 8th.

5. **CONSENT AGENDA**

All those items listed below are considered to be routine and may be enacted by one motion. Any Councilmember may request to remove an item from the Consent Agenda to be considered and discussed separately.

MOVED by Councilmember John McCafferty, seconded by Councilmember Annie Perkins to approve Consent Agenda item 5(a) as presented.

AYE: Mayor Jack Miller, Vice-Mayor Tom Armstrong, Councilmember Annie Perkins, Councilmember Eric Granillo, Councilmember John McCafferty, Councilmember Sherri Phillips, Councilmember Robert Schacherer

NAY: None

7 - 0 Passed – Unanimously

- a. Consideration and possible action to approve a First Amendment to the Professional Services Agreement with Duke's Root Control, Inc., to study inflow and infiltration, increasing the total compensation by \$23,500, and extending the contract term from July 10, 2024, to July 10, 2025.

6. **ACTION ITEMS**

The Council may vote to recess the public meeting and hold an Executive Session on any item on this agenda pursuant to A.R.S. § 38-431.03(A)(3) for the purpose of discussion or consultation for legal advice with the Town Attorney. Executive sessions are not open to the public and no action may be taken in executive session.

- a. First public hearing regarding Resolution No. 2024-1243, proposing an extension to the Alternative Expenditure Limitation - Home Rule option.

Recommended Action: Hold first public hearing on Resolution No. 2024-1243.

Katie Pehl, Finance Director, presented the following:

- The Town presented the Home Rule Option to voters every four years.
- State law required governments to limit spending based on a formula that was calculated on factors from 1879-1980 as a baseline.
- The State acknowledged that the formula did not always allow communities to meet the needs of its constituents and required services and offered options such as Home Rule.
- This is the first Public Hearing. The second would be held on March 26, 2024. After that Council would call a Special Meeting to approve the measure being put on the ballot.
- 40 Arizona municipalities use the Home Rule option, 43 use a permanent base adjustment, and eight use the state limitation.
- If the measure were put on the ballot and failed it would result in Chino Valley using the 1980 baseline meaning a reduction in about 54% of town services bringing the budget from \$28.6 million down to \$13.2 million.
- The Home Rule Option would not give the Town the ability to spend whatever it wanted.
 - Council would continue to set the budget every year through budget hearings where they would make decisions on how to spend Town revenues.

Mayor Miller opened the Public Hearing.

There were no requests to speak.

Mayor Miller closed the Public Hearing.

- b. Consideration and possible action to award a construction contract for the Perkinsville Road Improvements - Phase 1, to Earth Resources Corporation for \$1,359,664.

Recommended Action: Award a construction contract for the Perkinsville Road Improvements - Phase 1, to Earth Resources Corporation for \$1,359,664.

Frank Marbury, Town Engineer, presented the following:

- This was part of the Town's Capital Improvement Program which had gone out to bid. This project was to get the water and sewer lines to the highway with the ultimate goal of getting them to the west of the highway towards Angus Place and the South to the dead end to service the future Hawksnest development.
- This would allow gravity feed of the sewer, and create a loop system.
- Staff received six bids with the low bid being from Earth Resources Corporation for \$1,359,664.
- The budget for the project was \$2.1 million putting the Town well under budget.

Council and staff discussed the following:

- Council inquired if the project was for water and sewer.

- Staff stated that the project was for the extension of a 12-inch water line and an 18-inch sewer line.
- Council inquired if the 12-inch line could be used in the future to expand further west.
 - Staff stated their consultant engineer group looked at the zoning in that area and the 12-inch line is what they came up with as being efficient. The sewer line was a little oversized. The current IWMP that was being developed would further answer such questions. Furthermore, the line currently in Perkinsville Road was a 12-inch line.

MOVED by Councilmember Annie Perkins, seconded by Councilmember John McCafferty to award a construction contract for the Perkinsville Road Improvements - Phase 1, to Earth Resources Corporation for \$1,359,664.

AYE: Mayor Jack Miller, Vice-Mayor Tom Armstrong, Councilmember Annie Perkins, Councilmember Eric Granillo, Councilmember John McCafferty, Councilmember Sherri Phillips, Councilmember Robert Schacherer

NAY: None

7 - 0 Passed – Unanimously

7. ADJOURNMENT

MOVED by Mayor Jack Miller, seconded by Councilmember Annie Perkins to adjourn the regular meeting at 7:14 p.m. and move into Executive Session.

AYE: Mayor Jack Miller, Vice-Mayor Tom Armstrong, Councilmember Annie Perkins, Councilmember Eric Granillo, Councilmember John McCafferty, Councilmember Sherri Phillips, Councilmember Robert Schacherer

NAY: None

7 - 0 Passed – Unanimously

8. EXECUTIVE SESSION

- a. ~~An executive session pursuant to A.R.S. § 38-431.03(A)(3) and (4) for discussion or consultation with the Town Attorney for legal advice and to consider the Town's position regarding an Arizona Department of Environmental Quality contract concerning the technical, managerial, and financial capacity of public water systems.~~
- b. *An executive session pursuant to A.R.S. § 38-431.03(A)(4) for discussion or consultation with the Town Attorney regarding the contract related to Yavapai College.*

- c. *An executive session pursuant to A.R.S. § 38-431.03(A)(1) for discussion or consideration of employment, assignment, appointment, promotion, demotion, dismissal, resignation, or salary of Cindy Blackmore, Town Manager.*

9. ADJOURNMENT

Jack W. Miller, Mayor

ATTEST:

Erin N. Deskins, Town Clerk

CERTIFICATION:

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Regular Meeting of the Town Council of the Town of Chino Valley, Arizona held on the 12th day of March, 2024. I further certify that the meeting was duly called and held and that a quorum was present.

Dated this _____ day of _____, 2024.

Erin N. Deskins, Town Clerk



TOWN COUNCIL AGENDA ITEM STAFF REPORT

AGENDA ITEM # 7a
MEETING DATE: 4/9/2024
CONTACT PERSON: Frank Marbury, Public Works Director/Town Engineer
ITEM TYPE: Action Item

AGENDA ITEM TITLE:

Consideration and possible action to approve the Cooperative Purchasing Agreement (CPA), Job Order No. 1 with Fann Contracting, Inc. for the East Road 4 South Sewer Extension project in the amount of \$998,265.00.

SUMMARY:

The East Road 4 South Sewer Extension project will construct approximately 2,100 linear feet of 18" PVC sewer main between the current southerly sewer main terminus at the intersection of South Road 1 East, then west to the intersection of East Road 3 South and Wipala Wiki Way, then south to the intersection of Wipala Wiki Way and Chiricahua Trail, then south to the intersection of Chiricahua Trail and Picacho Boulevard, then west down Picacho Boulevard to natural low point in Picacho Boulevard in order to serve the undeveloped commercial properties to the south.

The proposed costs are under the Engineer's Estimate of Probable Cost of \$1,076,687.

Procurement of construction services utilizes the Town's Cooperative Purchasing Agreement with Fann Contracting, Inc. which piggybacks off City of Prescott Job Order Contracting for Public Works / Horizontal Construction Project Contract No. 2023-210. The agreement allows a maximum dollar amount of an individual Job Order not to exceed \$1,000,000 and the combined maximum dollar amount during any fiscal year not to exceed \$3,000,000.

Fann Contracting, Inc. intends to commence construction as soon as possible, towards mid-April; construction duration is anticipated to last three months.

PREVIOUS ACTION:

9/26/23 - Council approved a Cooperative Purchasing Agreement with Fann Contracting, Inc. for job order contracting services on public works/horizontal construction projects for an amount not to exceed \$1,000,000.

STAFF RECOMMENDATION:

Approve the Cooperative Purchasing Agreement (CPA), Job Order No. 1 with Fann Contracting, Inc. for the East Road 4 South Sewer Extension project in the amount of \$998,265.00.

FISCAL IMPACT?

Available budget: Capital Improvement Fund	\$1,000,000
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Less this approval item: Contract - Fann Contracting, Inc.	<u>-998,265</u>
Remaining budget: Capital Improvement Fund - Streets	\$1,735

ATTACHMENTS:

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1. AGR - CPA - Fann Contracting - JOC Job Order No. 1 - East Road 4 South Sewer Extension
 2. 2023.09.27 Fann Contracting - JOC Services for PWHorizontal Constructio... (1)
-
-

**COOPERATIVE PURCHASING AGREEMENT
BETWEEN THE
TOWN OF CHINO VALLEY
AND
FANN CONTRACTING, INC.**

JOB ORDER NO. 1

Job Order Contracting Services for East Road 4 South Sewer Extension

THIS JOB ORDER NO. 1 (this “Job Order”) is entered into as of April 9, 2024, between the Town of Chino Valley, an Arizona municipal corporation (the “Town”), and Fann Contracting, Inc., an Arizona corporation (the “Job Order Contractor”). In accordance with the Cooperative Purchasing Agreement between the Town and the Job Order Contractor, dated September 26, 2023 (the “Agreement”), the Job Order Contractor will perform the Scope of Work detailed in Section 1 below, pursuant to the terms and conditions of the Agreement.

1. Scope of Work. The Job Order Contractor shall provide materials and services to provide job order contracting services for public works/horizontal construction projects, as described in Attachment 1 to this Job Order. Upon acceptance by the Town, this Job Order will become part of the Agreement and shall be attached thereto as part of Exhibit B.

2. Schedule of Completion of Services. The Job Order Contractor shall commence work immediately upon execution of this Job Order and complete the work required herein within 90 days of said execution.

3. Fee Breakdown. The total cost to complete the Scope of Work required under this Job Order shall not exceed \$998,265.00.

4. Subject to the Agreement. This Job Order is subject to the terms and conditions of the Agreement and the underlying Prescott Contract (No. 2023-212, dated June 13, 2023).

5. Conflict of Interest. The Town may cancel this Job Order pursuant to ARIZ. REV. STAT. § 38-511.

6. Forced Labor of Ethnic Uyghurs. To the extent applicable under ARIZ. REV. STAT. § 35-394, the Job Order Contractor warrants and certifies that it does not currently, and agrees for the duration of this Agreement that it will not use the forced labor, any goods or services produced by the forced labor, or any contractors, subcontractors, or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People’s Republic of China.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first set forth above.

“Town”

TOWN OF CHINO VALLEY,
an Arizona municipal corporation

Jack W. Miller, Mayor

ATTEST:

Erin N. Deskins, Town Clerk

APPROVED AS TO FORM:

Andrew J. McGuire, Town Attorney
Gust Rosenfeld, PLC

“Job Order Contractor”

FANN CONTRACTING, INC.,
an Arizona corporation

By:_____

Name:_____

Title:_____

ATTACHMENT 1
TO
COOPERATIVE PURCHASING AGREEMENT
BETWEEN THE
TOWN OF CHINO VALLEY
AND
FANN CONTRACTING, INC.

JOB ORDER NO. 1

Job Order Contracting Services for East Road 4 South Sewer Extension

[Scope of Work]

See following pages.

JOC East Road 4 South Sewer Extension



Fann Contracting, Inc.

P.O. Box 4356

Prescott, AZ 86302

Contact: Jason Fann

Phone: (928) 778-0170

Email: jfann@fanncontracting.com

Quote To: Town of Chino Valley
Public Works Department

Job Name: Job Order Contract
East Road 4 South Sewer Extension

Attn: Bruce Cooper
Phone: 928.636.3403
Email: bcooper@chinoaz.net

Date of Plans: 1-15-24
Plans Rev: 0
Proposal Rev: 0
Proposal Date: March 19, 2024

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
10	Mobilization	1.00	LS	18,230.00	18,230.00
20	Job GCs, Superv, PM, Water, Yard	1.00	LS	100,775.00	100,775.00
30	Survey	1.00	LS	15,070.00	15,070.00
40	Contractor QC	1.00	LS	16,060.00	16,060.00
50	Pothole Utilities	1.00	LS	7,010.00	7,010.00
60	Traffic Control - Signs/Devices/Setup/Remv/Maint	1.00	LS	28,290.00	28,290.00
70	TC - Message Boards	60.00	EADY	65.00	3,900.00
80	TC - Flaggers	240.00	MH	39.00	9,360.00
90	SWPPP - Plan/Permit & Maint	1.00	LS	17,970.00	17,970.00
100	SWPPP - Construction Entrance	2.00	EA	2,560.00	5,120.00
110	SWPPP - 9" Wattles	2,200.00	LF	3.10	6,820.00
115	Clear & Grub	2.00	AC	2,385.00	4,770.00
120	18" SDR35 Sewer Main	2,010.00	LF	228.00	458,280.00
130	18" DIP Sewer Main	88.00	LF	550.00	48,400.00
140	4" SDR35 Sewer Service	780.00	LF	89.00	69,420.00
150	6" SDR35 Sewer Service	54.00	LF	130.00	7,020.00
160	2-Way Cleanouts	33.00	EA	600.00	19,800.00
170	8" SDR35 Sewer Stubout	3.00	EA	1,690.00	5,070.00
180	12" SDR35 Sewer Stubout	1.00	EA	2,370.00	2,370.00
190	18" SDR35 Sewer Stubout	2.00	EA	2,360.00	4,720.00
200	5' dia. Manhole	6.00	EA	9,900.00	59,400.00
210	6' dia Manhole	2.00	EA	14,390.00	28,780.00
220	Remove 8" Sewer Stub	1.00	EA	1,680.00	1,680.00
230	Manhole Connection	1.00	EA	3,580.00	3,580.00
240	Sewer Access Rd (20'w),Dtl 612P "A" (*NIC-by TOCV)	4,470.00	SY		NIC
250	Remove Exist 4"AC/6" ABC	100.00	SY	43.00	4,300.00
260	Replace 4"AC/6"ABC	100.00	SY	199.00	19,900.00
270	Remove & Reinstall Exist BW Fence (+-40 LF)	1.00	LS	1,830.00	1,830.00

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
280	Extra Protection - Water/Sewer (*NIC-DIP Above)	35.00	LF		NIC
290	Protect In-Place (T-Post & Ribbon)	200.00	LF	6.70	1,340.00
300	Final Seed	2.00	AC	4,500.00	9,000.00
900	Contingency	1.00	ALLW	20,000.00	20,000.00

GRAND TOTAL

\$998,265.00

NOTES:

GENERAL INCLUSIONS & CLARIFICATIONS:

Includes scope items and quantities shown in the above schedule of values. All contract items shall be measured and paid at the contract unit price identified on the schedule.

Includes 1 ea mob/demob for all work.

Includes construction survey and 3rd-party quality control sampling/testing.

Temporary Construction SWPPP includes 1EA installation of 9" wattles and 2 EA Construction Entrances (20'w x 50'L x +- 6"d). SWPPP Maintenance includes minor maintenance of installed BMPs only. Fann will prepare and submit the SWPPP plan for permit on behalf of the Contractor.

Includes minor traffic control for intersection work for up to 30 calendar days only. Assumes flagger set-up at intersection to negotiate traffic around work area. It's possible East Road 3 South may need to be closed to thru-traffic with vehicles detoured around if traffic is unable to get by during trenching and backfill operations. Message Boards and Flaggers will be tracked and paid at the unit price per MH or EADY.

Includes clear & grub for site. Any brush or trees will be stockpiled onsite for onsite burning (no haul-off or disposal).

Includes installation of new sewer facilities per plan.

Assumes existing pavement is 4"AC/8"ABC. Trench patch shall be 4"AC/8"ABC.

Assumes DIP design under roadway services as extra protection (does not include any other protection, treatment, slurry/concrete, etc).

All contract items are to be measured and paid at the contract unit price. Progress payments shall be 100% paid. No retention withheld on JOC work. Includes Tax and Bond

ADD ALTERNATE #1 - Sewer Access Road, 20' wide, 4" Crushed Aggregate = \$59,000

GENERAL EXCLUSIONS:

Permits or fees, design/engineering, Buy America, Davis-Bacon Wages or certified payroll, import/export, utility conflicts or relocations, sewer bypassing, manhole modifications, utility company permits or fees, landscape/irrigation, electrical/lighting, signs, striping, or any other project scope not listed in the above schedule of values.



MAYOR:

JACK W. MILLER

VICE-MAYOR:

TOM ARMSTRONG

TOWN COUNCIL:

ANNIE PERKINS

ERIC GRANILLO

JOHN McCAFFERTY

SHERRI PHILLIPS

BOB SCHACHERER

TOWN MANAGER:

CINDY BLACKMORE

OWNER:

TOWN OF CHINO VALLEY

1982 VOSS DRIVE

CHINO VALLEY AZ, 86323

PUBLIC WORKS DIRECTOR

ATTN: FRANK MARBURY, P.E.

CIVIL ENGINEER/SURVEYOR:

CIVILTEC ENGINEERING, INC.

2054 N. WILLOW CREEK ROAD

PRESCOTT, AZ 86301

ATTN: RICHARD ALDRIDGE, P.E., MBA

NOTES

- EXISTING TREE LOCATIONS WERE NOT SURVEYED, AND ARE APPROXIMATE.
- PROPERTY LINES AND RIGHTS-OF-WAY ARE APPROXIMATE AND WERE PROVIDED BY YAVAPAI COUNTY GIS.
- UNDERGROUND UTILITIES WERE LOCATED BY BLUESTAKE SURVEY (WHERE AVAILABLE) AND RECORD DRAWING INFORMATION.
- ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP (FIRM) NUMBER 04025C1680G REVISED SEPTEMBER 3, 2010, THIS PROJECT IS LOCATED IN ZONE X. ZONE X IS DESCRIBED AS AREA OF MINIMAL FLOOD HAZARD.

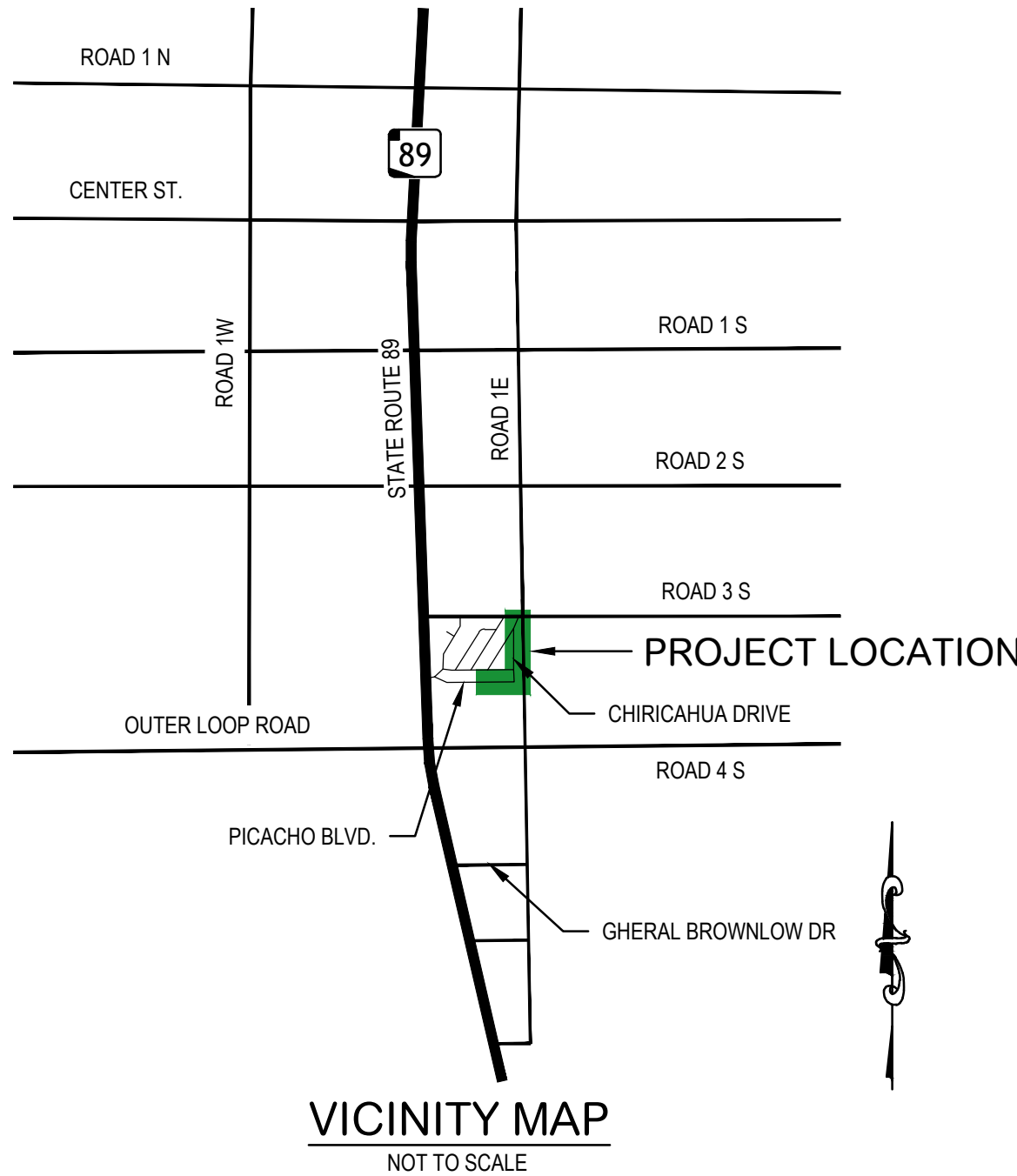
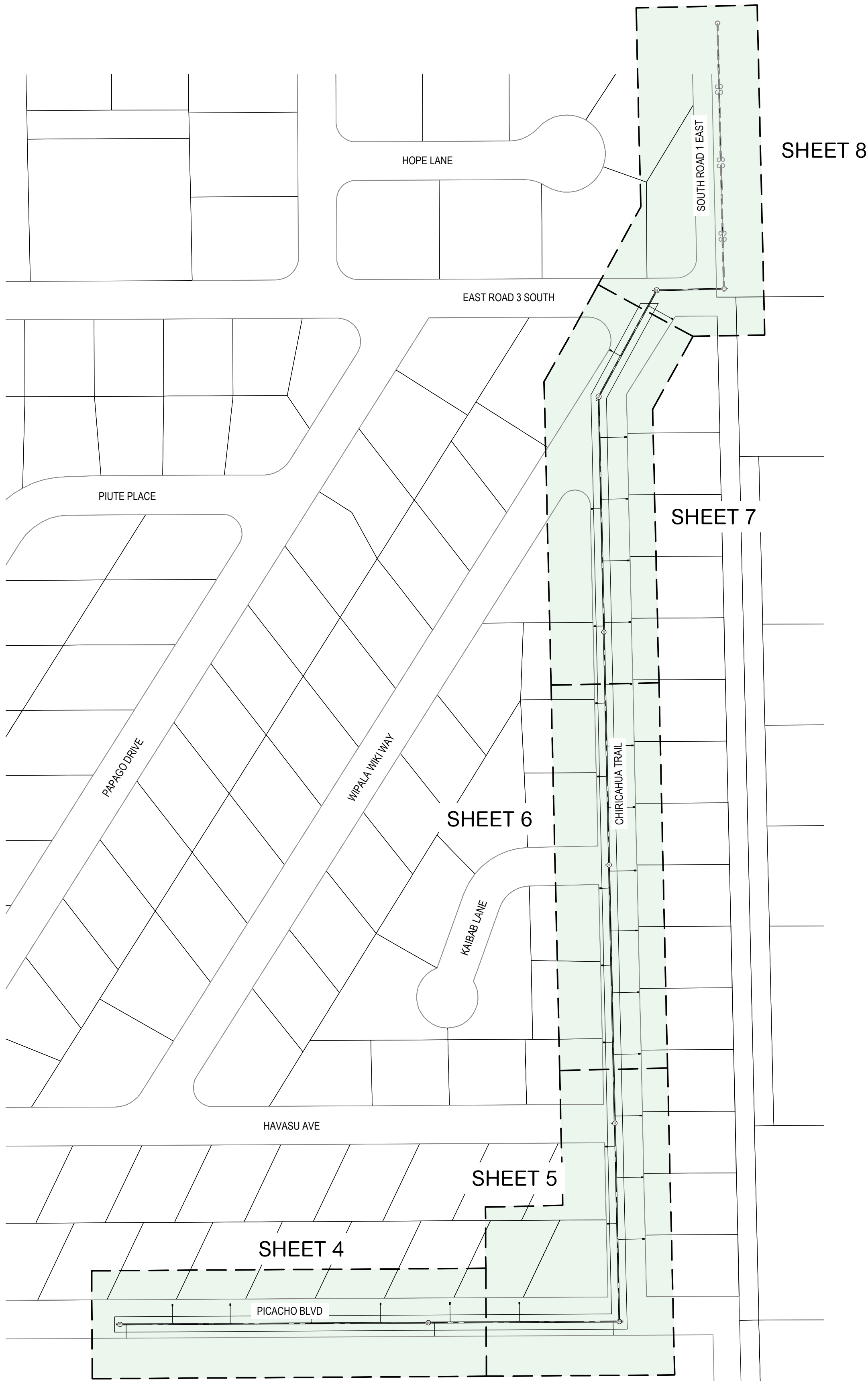
PROJECT QUANTITIES

No	ITEM	UNIT	TOTAL
7	SURFACE REPLACEMENT - PAVED ROADS	SY	86
8	UTILITY EASEMENT ACCESS ROAD, COP 612P	SY	4428
9	18" PVC, ASTM D3034, DR-35 SEWER MAIN	LF	2005
10	18" DIP GRAVITY SEWER MAIN WITH PROTECTO COAT 401 EPOXY LINING	LF	87
11	COP DET 440P-1, 4" SEWER SERVICES	EA	31
12	COP DET 440P-1, 6" SEWER SERVICES	EA	3
13	60" SEWER MANHOLES	EA	6
14	72" SEWER MANHOLES	EA	2

PROJECT CONSULTANTS

SERVICE	COMPANY / ORGANIZATION	CONTACT	PHONE	EMAIL
CIVIL ENGINEER	CIVILTEC ENGINEERING	RICHARD ALDRIDGE	928-771-2376	RALDRIDGE@CIVILTEC.COM
WATER AND SEWER	TOWN OF CHINO VALLEY	FRANK MARBURY	928-636-2646	FMARBURY@CHINOAZ.NET
SEWER, STORM DRAIN	TOWN OF CHINO VALLEY	FRANK MARBURY	928-636-2646	FMARBURY@CHINOAZ.NET
WATER	CHINO MEADOWS II WATER			
WATER (DISTRIBUTION MAIN)	CITY OF PRESCOTT	RANDY PERHAM	928-777-1130	RANDY.PERHAM@PRESCOTT-AZ.GOV
IRRIGATION	CHINO VALLEY IRRIGATION DIST.	SARA PENa	928-717-2616	CVIRRIGATION@CABLEONE.NET
POWER	APS	SHERYL MCCrackEN	928-443-6621	SHERYL.MCCrackEN@APS.COM
TELEPHONE	LUMEN (FORMERLY CENTURY LINK)	DAVID LYNCH KEVIN WAGNER	928-515-6775 815-245-9640	DAVID.LYNCH@CENTURYLINK.COM KWAGNER@TERRATECHLLC.NET
CABLE TELEVISION	SPARKLIGHT	MATT ZURCHER	928-910-3096	MATTHEW.ZURCHER@SPARKLIGHT.BIZ
NATURAL GAS	UNISOURCE	DIANE SWIGART	928-771-7229	DSWIGART@UESAZ.COM
FIBER OPTIC	WANRACK, LLC	STEVE WILSON	816-916-7937	STEVE.WILSON@WANRACK.COM
VARIOUS UTILS	COUNTRY WEST MOBILE HOME PARK	VELMA STIPANOVICH	928-636-2000	N/A

EAST ROAD 4 SOUTH SEWER EXTENSION (CHIRICAHUA SEWER PROJECT) SANITARY SEWER IMPROVEMENT PLANS



SHEET INDEX

SHEET No.	TITLE
1	COVER SHEET
2	NOTES LEGEND & SYMBOLS
3	SURVEY CONTROL PLAN
4	PLAN & PROFILE
5	PLAN & PROFILE
6	PLAN & PROFILE
7	PLAN & PROFILE
8	PLAN & PROFILE
9	DETAILS
10	DETAILS

3

2

1

No. DATE: REVISION: APP.

NOTICE TO CONTRACTORS:
THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "BLUE STAKE" AT 1-800-STAKE-IT (1-800-782-5348) TWO WORKING DAYS PRIOR TO ANY EXCAVATION OR CONSTRUCTION.

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING ITEMS ARE NOT TO SCALE

Call at least two full working days before you begin excavation.

ARIZONA
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
Maricopa County (602) 659-7500

REGISTERED PROFESSIONAL ENGINEER

45668

BENJAMIN W. TOWNSEND

State signed 1-1-24

ARIZONA, U.S.A.

CIVILTEC
engineering inc.

Civil, Water, Wastewater, Drainage, and Transportation Engineering
Construction Management • Surveying
California • Arizona

2054 N. Willow Creek Rd.
Prescott, AZ 86301
Phone: 928.771.2376
Fax: 928.771.2377
Web: www.civiltec.com

TOWN OF CHINO VALLEY, ARIZONA
EAST ROAD 4 SOUTH SEWER EXTENSION
SANITARY SEWER IMPROVEMENT PLANS
COVER SHEET

DE: MM DR: MM CH: BT JN: 2023747.00 SHEET 1 OF 10

Page 24 of 273

GENERAL CONSTRUCTION NOTES (TOWN OF CHINO VALLEY):

- 103.1 **STANDARD DOCUMENTS -**
ALL WORK TO COMPLETE THE CONSTRUCTION COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION AND SUPPLEMENTS TO:
- THE TOWN DESIGN AND CONSTRUCTION STANDARDS (TDCS)
 - SPECIFIC DEVELOPMENT AGREEMENTS
 - TOWN CODE
 - MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) STANDARDS AND
- 103.2 **LAWS & LICENSES -**
THE CONTRACTOR MUST:
- COMPLY WITH ALL LOCAL, COUNTY, STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THESE PLANS AND POSSESS A CURRENT TOWN OF CHINO VALLEY BUSINESS LICENSE.
- 103.3 **ENVIRONMENTAL CONTROLS**
THE FOLLOWING ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) REQUIREMENTS SHALL BE COMPLIED WITH:
- A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED UNDER THE ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (AZPDES) FOR ALL PROJECTS THAT INVOLVE DISTURBANCE OF AN AREA THAT IS MORE THAN 1 ACRE AND SHALL BE SUBMITTED TO THE TOWN FOR REVIEW. THIS SHOULD INCLUDE A LIST OF BEST MANAGEMENT PRACTICES (BMPs) AND SHOULD BE IN BOOKBINDER FORM.
 - A NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO ADEQ THAT REFERENCES THE SWPPP.
 - A NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO ADEQ ONCE 70% OF DISTURBED LAND HAS BEEN SUCCESSFULLY RE-VEGETATED FOLLOWING PROJECT COMPLETION.
- THE TOWN SHALL RECEIVE NOTIFICATION AND COPIES WHEN THE NOI AND NOT HAVE BEEN SUBMITTED TO ADEQ.
- 103.4 **SWPPP -**
THE SWPPP REQUIRED PER **SECTION 209** OF THE TDCS SHALL BE SUBMITTED BY THE OPERATOR OF THE CONSTRUCTION SITE ACCORDING TO GUIDELINES SET FORTH BY ADEQ. THE OPERATOR CAN BE THE OWNER, DEVELOPER, GENERAL CONTRACTOR OR INDIVIDUAL CONTRACTOR RESPONSIBLE FOR OPERATIONAL CONTROL.
- 103.5 **PERMITS -**
THE OWNER IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THESE PLANS. A SEPARATE PERMIT WILL BE REQUIRED FOR ANY CONSTRUCTION EXTENDING BEYOND THE CONSTRUCTION SITE PROPERTY BOUNDARY. A COUNTY RIGHT-OF-WAY (ROW) PERMIT WILL BE REQUIRED FOR ALL CONSTRUCTION WITHIN PUBLIC ROW.
- 103.6 **QUANTITIES -**
ANY QUANTITIES SHOWN ON PLANS ARE NOT VERIFIED BY THE TOWN.
- 103.7 **PLAN REVISIONS -**
ALL REVISIONS TO ORIGINAL PLANS MUST BE APPROVED BY THE ENGINEER OF RECORD (EOR) AND THE TOWN PRIOR TO CONSTRUCTION. DECISIONS REGARDING CHANGES WHICH CAN BE MADE IN THE FIELD OR AT THE DISCRETION OF THE EOR IN CONSULTATION WITH THE TOWN VERSUS THOSE WHICH REQUIRE FORMAL APPROVAL BY TOWN ENGINEERING STAFF SHALL BE DISCUSSED DURING THE PRE-CONSTRUCTION CONFERENCE. ANY WORK NOT BASED ON APPROVED REVISIONS IS SUBJECT TO REMOVAL AND/OR REPLACEMENT AT NO EXPENSE TO THE TOWN.
- 103.8 **TRAFFIC CONTROL PLAN -**
CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A TRAFFIC CONTROL PLAN TO THE TOWN AS NEEDED TO PERFORM CONSTRUCTION ACTIVITIES. SUBMITTAL SHALL BE MADE AT LEAST FIVE COUNTY WORKING DAYS (EXCLUDING HOLIDAYS) PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONSTRUCTION CANNOT BEGIN UNTIL TOWN APPROVAL OF THE PLAN IS GRANTED. THE DYNAMIC NATURE OF TRAFFIC RELATED ACTIVITIES MAY REQUIRE MODIFICATION OF AN APPROVED PLAN BASED ON TOWN ANALYSIS. IF SO, THE CONTRACTOR WILL MODIFY THE TRAFFIC CONTROL PLAN AT NO EXPENSE TO THE TOWN.
- 103.9 **DUST CONTROL -**
THE CONTRACTOR SHALL KEEP SUITABLE EQUIPMENT ON HAND AT THE JOB SITE FOR MAINTENANCE AND DUST CONTROL, AND SHALL CONTROL DUST AS DIRECTED BY THE APPROPRIATE AGENCIES, INCLUDING THE TOWN AT NO EXPENSE TO THE TOWN.
- 103.10 **SITE CLEANLINESS -**
THE CONTRACTOR SHALL KEEP ALL ROADWAY PAVEMENT, CURB AND GUTTER PAVEMENT, AND SIDEWALK PAVEMENT SURFACES FREE OF DEBRIS, CONSTRUCTION MATERIALS, ETC DURING CONSTRUCTION AND AT COMPLETION OF CONSTRUCTION.
- 103.11 **SITE SAFETY -**
THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT CONSTRUCTION TRENCHES, HOLES, DEPRESSIONS, ETC. ARE NOT LEFT EXPOSED AT THE END OF A WORK SHIFT. TRAFFIC PLATES, OR OTHER SECURITY MEASURES, MUST BE UTILIZED TO ENSURE SAFE PASSAGE OVER OR AROUND ALL HAZARDS. THE CONTRACTOR SHALL BARRICADE THE CONSTRUCTION SITE WHEN THE SITE IS UNATTENDED.
- 103.12 **EXCESS MATERIALS -**
CONTRACTOR IS RESPONSIBLE FOR ALL PROJECT GENERATED EXCESS. THIS INCLUDES, BUT IS NOT LIMITED TO:
- THE REMOVAL, TRANSPORT, PERMITTING, DISPOSAL, ETC. OF ANY EXCESS VEGETATION, SPOILS, MATERIALS, DEBRIS, ETC. GENERATED BY A PROJECT AND ANY ASSOCIATED COSTS.
 - SPOILS MUST ALSO BE CLEARED FROM ROADWAYS, PATHWAYS, OPEN GROUND, ETC. AT THE END OF A WORK SHIFT IF THEY INHIBIT CONVEYANCE OR IF SAFETY WITHIN THE PROJECT LIMITS WOULD BE COMPROMISED.
 - EXPENSES RELATED TO EXCAVATION AND SPOIL SERVICES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- 103.13 **UTILITY CONFLICTS -**
CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL UTILITIES AND UNDERGROUND CONFLICTS IN ACCORDANCE WITH ARIZONA ADMINISTRATIVE CODE (AAC) REGULATIONS. THIS INCLUDES:
- EXCAVATION OF EXISTING INFRASTRUCTURE TO ENSURE LOCATION, SIZE, FITTINGS, DEPTH, ALIGNMENT, ETC.
 - EXCAVATION OF AREAS FOR NEW INFRASTRUCTURE TO ENSURE LOCATION, SIZE, FITTINGS, DEPTH, ALIGNMENT, ETC.
 - EXCAVATION OF AREAS TO DETERMINE CONFLICTS WITH OTHER UTILITIES OR INFRASTRUCTURE, ETC.
- 103.14 **BLUE STAKE -**
BLUE STAKE LOCATING SERVICES MUST BE PERFORMED IN ADVANCE OF ANY CONSTRUCTION AND CONTRACTOR SHALL OBSERVE ALL POSSIBLE PRECAUTIONS TO AVOID ANY DAMAGE TO SUCH. THE CONTRACTOR SHALL CONTACT ARIZONA BLUE STAKE TWO WORKING DAYS (48 HOURS) PRIOR TO COMMENCEMENT OF CONSTRUCTION. CALL 1-800-STAKE-IT (1-800-782-5348). THE EOR AND/OR OWNER WILL NOT GUARANTEE ANY LOCATIONS AS SHOWN ON THESE PLANS OR THOSE OMITTED FROM SAME. SHOULD ANY LOCATION OR ELEVATION DIFFER FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT FOR COORDINATION.
- 103.15 **UTILITY ABANDONMENT -**
ABANDONMENT IN PLACE OF PUBLIC UTILITY LINES SHALL BE AT THE DISCRETION OF THE TOWN AND SHALL BE IN ACCORDANCE PER APPLICABLE PVSD FOR ABANDONED UTILITIES.
- 103.16 **ASBESTOS CEMENT PIPE -**
MAINTENANCE, REPAIR OR REPLACEMENT OF EXISTING ASBESTOS CEMENT PIPE SHALL BE IN ACCORDANCE PER APPLICABLE PVSD.
- 103.17 **SEWER INSPECTIONS -**
FOR ANY CONSTRUCTION ADJACENT TO OR CROSSING EXISTING SEWER LINES, THE CONTRACTOR SHALL COMPLETE A PRE AND POST DVD VIDEO INSPECTION. ADJACENT IN THIS SECTION IS DEFINED AS LESS THAN A 2 FOOT HORIZONTAL SEPARATION FROM NEW CONSTRUCTION. THE VIDEO INSPECTION SHALL OCCUR FROM THE NEXT ADJACENT UPSTREAM AND DOWNSTREAM MANHOLES BEYOND ALL CONSTRUCTION ACTIVITY. IF EVIDENCE OF DEBRIS OR DAMAGE IS FOUND, THE CONTRACTOR SHALL MAKE ALL NECESSARY REPAIRS AND ADDITIONAL VIDEO INSPECTION, AS DETERMINED BY THE TOWN, SHALL BE COMPLETED.
- 103.18 **UTILITY REPAIRS -**
THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING DAMAGE TO EXISTING UTILITIES AND/OR FACILITIES INCURRED DURING ANY CONSTRUCTION OPERATIONS.
- 103.19 **INSPECTIONS -**
THE CONTRACTOR SHALL NOTIFY THE EOR AND TOWN PUBLIC WORKS DEPARTMENT AT LEAST TWO WORKING DAYS (48 HOURS) IN ADVANCE OF CONSTRUCTION FOR INSPECTION.
- 103.20 **UTILITY TESTING -**
WATER, GRAVITY SEWER, FORCED SEWER, RECLAIMED WATER AND STORM LINE TESTING SHALL NOT BE ACCEPTED UNLESS TESTING OCCURS AFTER ALL UNDERGROUND DISTURBANCES AND CONSTRUCTION IS COMPLETE. PRE-COMPLETION TESTS ARE ALLOWED, IF THE CONTRACTOR DESIRES SUCH ACTIVITY, BUT THE TOWN WILL NOT RECOGNIZE THE VALIDITY OF SAID TESTS.
- 103.21 **UTILITY ADJUSTMENTS -**
ALL FRAMES, COVERS, VALVE BOXES, AND MANHOLES INSIDE THE PAVED SURFACE SHALL BE ADJUSTED TO FINISHED GRADE UPON COMPLETION OF PAVING OR RELATED CONSTRUCTION. ALL FRAMES, COVERS, AND VALVE BOXES OUTSIDE A PAVED SURFACE SHALL BE ADJUSTED BETWEEN 6 AND 8 INCHES ABOVE FINISHED GRADE UPON COMPLETION OF RELATED CONSTRUCTION.
- 103.22 **DEFECTIVE MATERIALS -**
ALL WORK AND MATERIALS WHICH DO NOT CONFORM TO THE REQUIRED STANDARDS, CODES AND AGREEMENTS ARE SUBJECT TO REMOVAL AND REPLACEMENT AT NO EXPENSE TO THE TOWN.
- 103.23 **INSPECTIONS -**
INSPECTION SHALL BE PERFORMED BY A QUALIFIED REPRESENTATIVE OF AN ENGINEER LICENSED IN THE STATE OF ARIZONA. THE DEGREE OF INSPECTION WILL BE DETERMINED AT THE PRE-CONSTRUCTION CONFERENCE. INSPECTION MUST MEET ALL REQUIREMENTS SET FORTH BY ADEQ, THE STATE OF ARIZONA, ASLD, THE TOWN AND SHALL BE CERTIFIED BY THE EOR. THE TOWN WILL COMPLETE OVERSIGHT INSPECTION ONLY. THE EOR SHALL PROVIDE ALL CERTIFICATIONS AND OTHER DOCUMENTATION TO THE TOWN PRIOR TO ACCEPTANCE BY THE TOWN.

- 103.24 **PLAN EXPIRATION -**
ALL PLANS SIGNED/APPROVED BY THE TOWN ARE NULL AND VOID ONE YEAR FROM DATE OF SIGNATURE IF CONSTRUCTION HAS NOT STARTED UNLESS OTHERWISE APPROVED BY THE TOWN.
- 103.25 **CONSTRUCTION STAKING -**
THE CONTRACTOR SHALL MAKE NO CLAIM AGAINST THE OWNER, THE EOR OR SURVEYOR REGARDING THE INACCURACY OF CONSTRUCTION STAKES SET FORTH BY THE EOR OR SURVEYOR, UNLESS ALL SURVEY STAKES SET BY THE EOR OR SURVEYOR ARE MAINTAINED INTACT AND CAN BE VERIFIED AS TO THEIR ORIGIN. IF, IN THE OPINION OF THE EOR, THE STAKES ARE NOT MAINTAINED INTACT AND CANNOT BE VERIFIED AS TO THEIR ORIGIN, ANY REMEDIAL WORK REQUIRED TO CORRECT ANY ITEM SHALL BE PERFORMED AT THE SOLE EXPENSE OF THE RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR.
- 103.26 **WARRANTY -**
THE CONTRACTOR AND/OR DEVELOPER SHALL PROVIDE A WARRANTY FOR ANY PUBLIC PROJECT OR ANY PROJECT THAT WILL BE GIVEN TO THE PUBLIC PER AGREEMENT(S). THE TOWN'S DEFINITION OF A WARRANTY INCLUDES ANY WORKMANSHIP, LABOR, MATERIALS, EQUIPMENT, SALES TAX, ETC. REQUIRED TO RESTORE A PROJECT TO ACCEPTANCE CRITERIA AS DEFINED BY THE PLAN. THE WARRANTY PERIOD LASTS FOR A MINIMUM OF TWO (2) YEARS FROM THE DATE OF TOWN ACCEPTANCE OF PROJECT COMPLETION. ALL WARRANTY WORK SHALL ALSO CONFORM TO ALL PORTIONS OF THE APPLICABLE TDCS.
- 103.27 **PROJECT QUANTITIES -**
QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND MAY BE SUBJECT TO ERRORS AND OMISSIONS. CONTRACTORS SHALL SATISFY THEMSELVES AS TO ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THESE PLANS. IF ANY DISCREPANCIES IN QUANTITIES OR SITE CONDITIONS ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE EOR. THE TOWN DOES NOT WARRANT ANY QUANTITIES SHOWN ON THE PLANS.
- 103.28 **NOTIFICATIONS -**
CONTRACTOR SHALL NOTIFY THE EOR AND/OR SURVEYOR TWO WORKING DAYS (48 HOURS) IN ADVANCE OF ANY CONSTRUCTION TO SCHEDULE STAKING.
- 103.29 **CONSTRUCTION SCHEDULE -**
THE CONTRACTOR SHALL PROVIDE SUFFICIENT PERSONNEL AND EQUIPMENT ON THE JOB AT ALL TIMES DURING CONSTRUCTION TO COMPLY WITH THE CONSTRUCTION SCHEDULE AND SPECIFICATIONS TO COMPLETE WORK.
- 103.30 **CONSTRUCTION CONTRACT -**
NOTHING CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS SHALL CREATE, NOR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE EOR AND THE CONTRACTOR OR ANY SUBCONTRACTOR.
- 103.31 **MEANS AND METHODS -**
NEITHER THE TOWN NOR THE EOR WILL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK. NEITHER THE TOWN NOR THE EOR WILL BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- 103.32 **TRAFFIC CONTROL PLAN -**
THE EOR WILL NOT GUARANTEE ANY ELEVATIONS OR LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THESE PLANS. FIELD VERIFICATION BY THE CONTRACTOR WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE VERIFIED AS DEEMED NECESSARY BY THE CONTRACTOR. DAMAGE RESULTING FROM FAILURE TO ADEQUATELY LOCATE UTILITIES, AND TAKE NECESSARY PRECAUTIONS TO PROTECT THEM, WILL BE THE CONTRACTOR'S RESPONSIBILITY TO CORRECT AT NO EXPENSE TO THE TOWN OF CHINO VALLEY.
- 103.33 **DEFICIENCIES OR DISCREPANCIES -**
FAILURE OF THE TOWN TO DETECT DEFICIENCIES OR DISCREPANCIES IN THE DESIGN OR CONSTRUCTION OF THESE PLANS SHALL IN NO WAY RELIEVE THE DEVELOPER, EOR OR THE CONTRACTOR FROM THEIR RESPONSIBILITY TO CONFORM TO ALL TOWN REQUIREMENTS.
- 103.34 **PRIOR TO BIDDING THE WORK, THE CONTRACTOR SHALL THOROUGHLY SATISFY HIMSELF AS TO THE ACTUAL CONDITIONS, EARTHWORK QUANTITIES, REQUIREMENTS OF WORK AND DEFICIENCIES IN EARTHWORK QUANTITIES SHOULD THEY EXIST. NO CLAIM SHALL BE MADE AGAINST THE TOWN OR EOR FOR ANY EXCESS OR DEFICIENCY THEREIN, ACTUAL OR RELATIVE.**
- 103.35 **THESE PLANS ARE SUBJECT TO INTERPRETATION OF INTENT BY THE EOR. ALL QUESTIONS REGARDING THESE PLANS SHALL BE PRESENTED TO THE EOR FOR CLARIFICATION IN CONCORDANCE WITH THE TDCS.**
- 103.36 **CONSTRUCTION WATER -**
THE CONTRACTOR MUST REQUEST A HYDRANT METER FROM THE TOWN FOR SITE CONSTRUCTION, FILLING AND TESTING OF WATERLINES. THE METER SHOULD BE ORDERED 2 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. THE UNLAWFUL REMOVAL OF WATER FROM A FIRE HYDRANT OR ANY OTHER SOURCE IS A VIOLATION OF THE MUNICIPAL CODE, PUNISHABLE BY FINE AND/OR IMPRISONMENT.
- 103.37 **AS-BUILTS -**
THE CONTRACTOR IS REQUIRED TO HAVE A COPY OF THE APPROVED CONSTRUCTION PLANS ON SITE AT ALL TIMES DURING THE CONSTRUCTION PROJECT. ANY AND ALL CHANGES SHALL BE NOTED ON THE PLANS AND PROVIDED TO THE EOR AND TOWN AT THE END OF CONSTRUCTION FOR PREPARATION OF THE AS-BUILT PLANS. AS-BUILT DRAWINGS, CERTIFIED BY THE EOR, SHALL BE SUBMITTED AND APPROVED PRIOR TO ISSUANCE OF A BUILDING "CERTIFICATE OF OCCUPANCY".
- 103.38 **LANDSCAPE -**
ALL EXISTING LANDSCAPE INCLUDING TREES, SHRUBS AND IRRIGATION SYSTEMS THAT ARE DESIGNATED TO REMAIN OR ARE NOT PART OF THIS PROJECT, AND ARE DAMAGED DURING CONSTRUCTION, WILL BE REPLACED IN LIKE KIND AT THE EXPENSE OF THE CONTRACTOR.
- 103.39 **SWPPP -**
THE PLANS SHALL BE AMENDED AS NECESSARY DURING THE COURSE OF CONSTRUCTION TO RESOLVE ANY PROBLEM AREAS, WHICH BECOME EVIDENT DURING CONSTRUCTION, ROUTINE INSPECTIONS, AND/OR PERIODS OF RAINFALL. IF IT IS DETERMINED THAT CURRENT CONTROLS ARE NOT EFFECTIVE AT MINIMIZING POLLUTANT DISCHARGES FROM THE SITE, IMMEDIATE EFFORTS SHALL BE MADE TO CORRECT THE PROBLEM WITHIN 72 HOURS AND/OR PRIOR TO THE NEXT RAIN EVENT. THE AMENDED PLAN SHALL BE MAINTAINED ON-SITE.
- 103.40 **PORTABLE TOILETS -**
NO CONSTRUCTION MATERIAL, INCLUDING PORTABLE TOILETS SHALL BE STORED ON ANY PORTION OF ANY STREET, SIDEWALK, RIGHT-OF-WAY OR EASEMENT; OR WITHIN 50' OF ANY DRAINAGE WAY.
- 103.41 **TRASH AND DEBRIS -**
THE SITE SHALL AT ALL TIMES REMAIN FREE OF LOOSE TRASH AND DEBRIS. APPROPRIATELY SIZED COVERED WASTE RECEPTACLES SHALL BE PROVIDED ONSITE AND STORED A MINIMUM OF 50' FROM ANY DRAINAGE WAY OR DRAINAGE INLET.

GENERAL NOTES (CIVILTEC ENGINEERING):

1. PROJECT SPECIFICATIONS: ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING STANDARDS AND SPECIFICATIONS, AND ANY SPECIAL PROVISIONS PREPARED FOR THE PROJECT. THE TERM "CURRENT" MEANS THE DATE OF THE SPECIFICATIONS IN EFFECT AS OF THE DATE OF THE ENGINEERS SEAL ON THESE PLANS.
2. IN ADDITION TO THE STANDARD DOCUMENTS NOTED IN THE TOWN OF CHINO VALLEY'S GENERAL CONSTRUCTION NOTE 103.1, THE FOLLOWING SPECIFICATIONS SHALL APPLY TO THIS PROJECT. (A.D.E.Q.) ENGINEERING BULLETINS NO. 8 AND 10 (WATER SYSTEMS), DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AMERICAN WATER WORKS ASSOCIATION STANDARDS, ARIZONA ADMINISTRATIVE CODE, UNIFORM PLUMBING CODE (UPC), UNIFORM BUILDING CODE (UBC).
3. QUANTITY ESTIMATE: IF ANY MATERIAL QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE TO BE CONSIDERED AS APPROXIMATE ONLY.
4. UTILITY COORDINATION: EXISTING UTILITIES HAVE BEEN SHOWN ON THE PLANS IN THEIR APPROXIMATE LOCATIONS BASED ON FIELD OBSERVATIONS AND ANY FURNISHED RECORD INFORMATION, BUT THERE IS NO GUARANTEE THAT ALL UTILITY CONFLICTS HAVE BEEN IDENTIFIED. AT THE TIME OF CONSTRUCTION, THE EXACT SIZES, TYPES, AND LOCATIONS OF EXISTING UNDERGROUND IMPROVEMENTS SHALL BE DETERMINED IN THE FIELD AND THE MATERIALS NECESSARY TO CONSTRUCT THE REQUIRED CONNECTIONS SHALL BE PROVIDED.
5. ALL FRAMES, COVERS AND VALVE BOXES IN THE CONSTRUCTION AREA SHALL BE ADJUSTED TO FINAL FINISH GRADES, WHETHER INDICATED ON THE PLANS OR NOT.
6. THE APPROPRIATE UTILITY COMPANIES SHALL BE NOTIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION. "BLUE STAKE" NUMBER IS 1-800-STAKE-IT. ALLOW TWO WORKING DAYS AFTER "BLUE STAKE" IS NOTIFIED, BEFORE COMMENCING ANY EXCAVATION WORK IN PROXIMITY OF BURIED UTILITIES.
6. THE LOCATION OF ALL WATER VALVES MUST AT ALL TIMES DURING CONSTRUCTION BE REFERENCED AND MADE AVAILABLE TO THE GOVERNING WATER COMPANY/DEPARTMENT.
7. EARTHWORK: NO ESTIMATE OF EARTHWORK IS PROVIDED FOR THIS PROJECT.
8. ROUGH GRADING MUST BE COMPLETED PRIOR TO INSTALLATION OF UNDERGROUND UTILITIES.
9. MINIMUM COMPACTION DENSITIES, FOR ALL EARTHWORK EMBANKMENTS AND UTILITY TRENCHES, SHALL BE 95%, UNLESS A MODIFICATION IS SPECIFICALLY AUTHORIZED BY THE TOWN OF CHINO VALLEY IN WRITING.
10. RIGHT-OF-WAY AND TRAFFIC CONTROL: ALL TRAFFIC AFFECTED BY THE CONSTRUCTION WILL BE REGULATED IN ACCORDANCE WITH THE U.S. DEPARTMENT OF TRANSPORTATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). SUFFICIENT AND ADEQUATE DEVICES AND MEASURES, TO CONTROL BOTH VEHICLE AND PEDESTRIAN TRAFFIC IN AND AROUND THE JOB SITE, SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH THE ADOT TRAFFIC CONTROL MANUAL. DEVICES MAY INCLUDE BARRICADES, STEEL TRAFFIC RATED TRENCH PLATES, FLAGGING AND/OR WARNING SIGNS, FLAGMEN, FENCES, SIGNS, PILOT CARS, LIGHTS, ETC, AS NECESSARY.
11. GEOTECHNICAL REPORT: NO SUBSURFACE INVESTIGATIONS OR BORINGS FOR THIS PROJECT HAVE BEEN MADE OR ARE AVAILABLE.
12. MISCELLANEOUS: THE CONTRACTOR WILL PROVIDE CONSTRUCTION STAKING SERVICES FOR THIS PROJECT PER M.A.G. SPECIFICATIONS.
13. AS-BUILT DRAWINGS: A COMPLETE SET OF ALL APPROVED SHOP DRAWINGS AND AN ACCURATE, CURRENT, AS-BUILT SET OF PLANS SHALL BE MAINTAINED ON SITE FOR REFERENCE AT ALL TIMES. THE CONTRACTOR'S AS-BUILTS SHALL BE PROVIDED TO THE ENGINEER AT THE END OF THE PROJECT FOR PREPARATION OF THE AS-BUILT DRAWINGS.
14. MATERIALS: WHERE NO OTHER REFERENCES ARE MADE IN THE PLANS OR SPECIFICATIONS/SPECIAL PROVISIONS, THE FOLLOWING GENERAL MATERIALS STANDARDS SHALL APPLY. WATER AND SEWER CONSTRUCTION SHALL BE TESTED IN ACCORDANCE WITH AWWA AND ADEQ MINIMUM STANDARDS. ALL MATERIALS/MIX DESIGNS INCORPORATED INTO THE WORK MUST BE SUBMITTED FOR APPROVAL TO THE OWNER PRIOR TO CONSTRUCTION.
15. ALL PLASTIC PIPING COMPONENTS AND RELATED MATERIALS SHALL CONFORM TO NATIONAL SANITATION FOUNDATION (NSF) SPECIFICATIONS (STANDARD NO. 14) AND BEAR THE APPROPRIATE MARKING.
16. ALL DUCTILE IRON WATER/SEWER PIPE SHALL BE PRESSURE CLASS 350, CEMENT MORTAR LINED.
17. ALL PVC WATER PIPE SHALL BE AWWA, C-900 OR C-905, CLASS 200.
18. ALL VALVES SHALL BE OPERATED BY THE TOWN OF CHINO VALLEY STAFF. THE CONTRACTOR WILL COORDINATE THE OPERATION OF SUCH VALVES FOR TESTING AND WATER AND PROVIDE A MINIMUM OF 24 HOURS TO TOWN STAFF AND THE EOR.
19. ALL CONCRETE SHALL BE A MINIMUM OF CLASS A, 4000 PSI, PORTLAND CEMENT CONCRETE CONFORMING TO THE APPLICABLE REQUIREMENTS OF MAG SECTION 725. AN AIR-ENTRAINING ADMIXTURE SHALL BE USED IN ALL CONCRETE USED ON THIS PROJECT. THE AMOUNT USED SHALL BE BETWEEN 5% AND 7% BY VOLUME.
20. NO MATERIALS SHALL BE USED ON THE PROJECT UNTIL PROPER SUBMITTALS HAVE BEEN APPROVED BY THE TOWN AND THE EOR. SUBMITTALS SHALL BE PROVIDED IN PDF FORMAT, LEGIBLE, HIGHLIGHT SIZE. MATERIALS TO BE USED FOR THE PROJECT, ETC. ANY MATERIALS USED OR SENT TO THE PROJECT THAT HAVE NOT BEEN APPROVED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND HIS RISK IF REJECTED, INCLUDING ANY ASSOCIATED FEES FOR RESTOCKING, ETC. ALL SUBMITTALS WILL BE PROVIDED WITH A COVER LETTER BY THE GENERAL CONTRACTOR WITH A STATEMENT BY THE ACKNOWLEDGING THAT THE SUBMITTAL HAS BEEN REVIEWED AND MEETS THE PLANS AND SPECIFICATIONS. ANY MATERIAL PROVIDED AS A SUBSTITUTE OR "AS EQUAL" SHALL BE CLEARLY NOTED ON THE COVER SHEET. ANY SUBMITTALS THAT ARE ILLEGIBLE, COPIES OF COPY'S OR MISSING ANY ITEMS WILL BE REJECTED. THE TOWN AND/OR EOR ARE NOT RESPONSIBLE FOR DELAYS IN SCHEDULE FOR REJECTED SUBMITTALS THAT DON'T MEET THE MINIMUM PLANS AND SPECIFICATIONS.
21. WATER-SEWER SEPARATION SHALL BE PURSUANT TO AAC R-18-5-502C, LATEST REVISION.
22. SEWER LINE LOW PRESSURE AIR TESTS SHALL BE DONE ON 100% OF ALL LINES AFTER PLACEMENT OF BACKFILL TO PAVEMENT SUBGRADE. TEST EACH SEGMENT OF THE SEWER LINE FOR LEAKAGE USING THE APPLICABLE METHOD BELOW AND RECORD THE RESULTS:
- 22A. "STANDARD TEST METHOD FOR INSTALLATION OF ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR, F1417-92(1998)" PUBLISHED BY THE AMERICAN SOCIETY FOR TESTING AND MATERIALS.
23. SEWER MANHOLES EXFILTRATION TESTS SHALL BE DONE ON 100% OF ALL MANHOLES. VACUUM TESTING IN ACCORDANCE WITH CITY STANDARDS MAY BE USED IN LIEU OF EXFILTRATION TEST. THE CONTRACTOR SHALL TEST EACH MANHOLE USING ONE OF THE FOLLOWING TEST PROTOCOLS:
- 23A. WATERTIGHTNESS TESTING BY FILLING THE MANHOLE WITH WATER. THE CONTRACTOR SHALL ENSURE THAT THE DROP IN WATER LEVEL FOLLOWING PRESOAKING DOES NOT EXCEED 0.00034 OF THE TOTAL MANHOLE VOLUME PER HOUR.
- 23B. NEGATIVE AIR PRESSURE TESTING USING THE "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE" (VACUUM) TEST, C1244-02e1(2002), PUBLISHED BY THE AMERICAN SOCIETY FOR TESTING AND MATERIALS. THIS MATERIAL IS INCORPORATED BY REFERENCE & DOES NOT INCLUDE ANY LATER AMENDMENTS OR EDITIONS OF THE INCORPORATED MATERIAL, & MAY BE VIEWED AT THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY, 1110 W. WASHINGTON, PHOENIX, AZ. 85007, OR OBTAINED FROM THE AMERICAN SOCIETY FOR TESTING & MATERIALS INTERNATIONAL, 100 BAR HARBOR DRIVE, WEST CONSHOHOCKEN, PA.19428-2959.
24. SEWER LINE DEFLECTION TESTS WITH AN APPROPRIATELY SIZED MANDREL SHALL BE DONE ON 100% OF ALL NON-RIGID PIPE LINES.
25. PVC SEWER LINES SHALL BE INSTALLED ACCORDING TO ASTM STANDARD SPECIFICATION D2321 (LATEST REVISION).

ABBREVIATIONS:

ABAND	ABANDON OR ABANDONED
"AB"	AS-BUILT
ABC	AGGREGATE BASE COURSE
AC	ASPHALTIC CONCRETE
ACP	ASBESTOS CEMENT PIPE
ALT	ALTERNATE
APPROX	APPROXIMATE
ARV	AIR RELEASE VALVE
BC	BRASS CAP
BLOG	BUILDING
BM	BENCH MARK
BNDY	BOUNDARY
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CY	CUBIC YARD
DIA	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DR	DRIVE
DWG	DRAWING
EA	EACH
EL	ELEVATION
ESMT	EASEMENT
EX	EXISTING
FH	FIRE HYDRANT
FL	FLOW LINE
GA	GAUGE
GW	GUY WIRE
HDPE	HIGH-DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HYD	HYDRANT
INV	INVERT
LAT	LATERAL
LF	LINEAR FEET
LS	LUMP SUM
L	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
N	NORTH OR NORTHING
NO	NUMBER
NPI	NON-PAYMENT ITEM
NTS	NOT TO SCALE
O.A.E.	OR APPROVED EQUAL
OC	ON CENTER
PCC	PORTLAND CEMENT CONCRETE
PP	POWER POLE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RD	ROAD
ROW	RIGHT-OF-WAY
R	RIGHT
SD	STORM DRAIN
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SS	SANITARY SEWER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SY	SQUARE YARD
SRV	SERVICE
SWR	SEWER
T	TELEPHONE
TC	TOP OF CURB
TOCV	TOWN OF CHINO VALLEY
TYP	TYPICAL
UNK	UNKNOWN
WAT	WATER
WM	WATER METER
WV	WATER VALVE

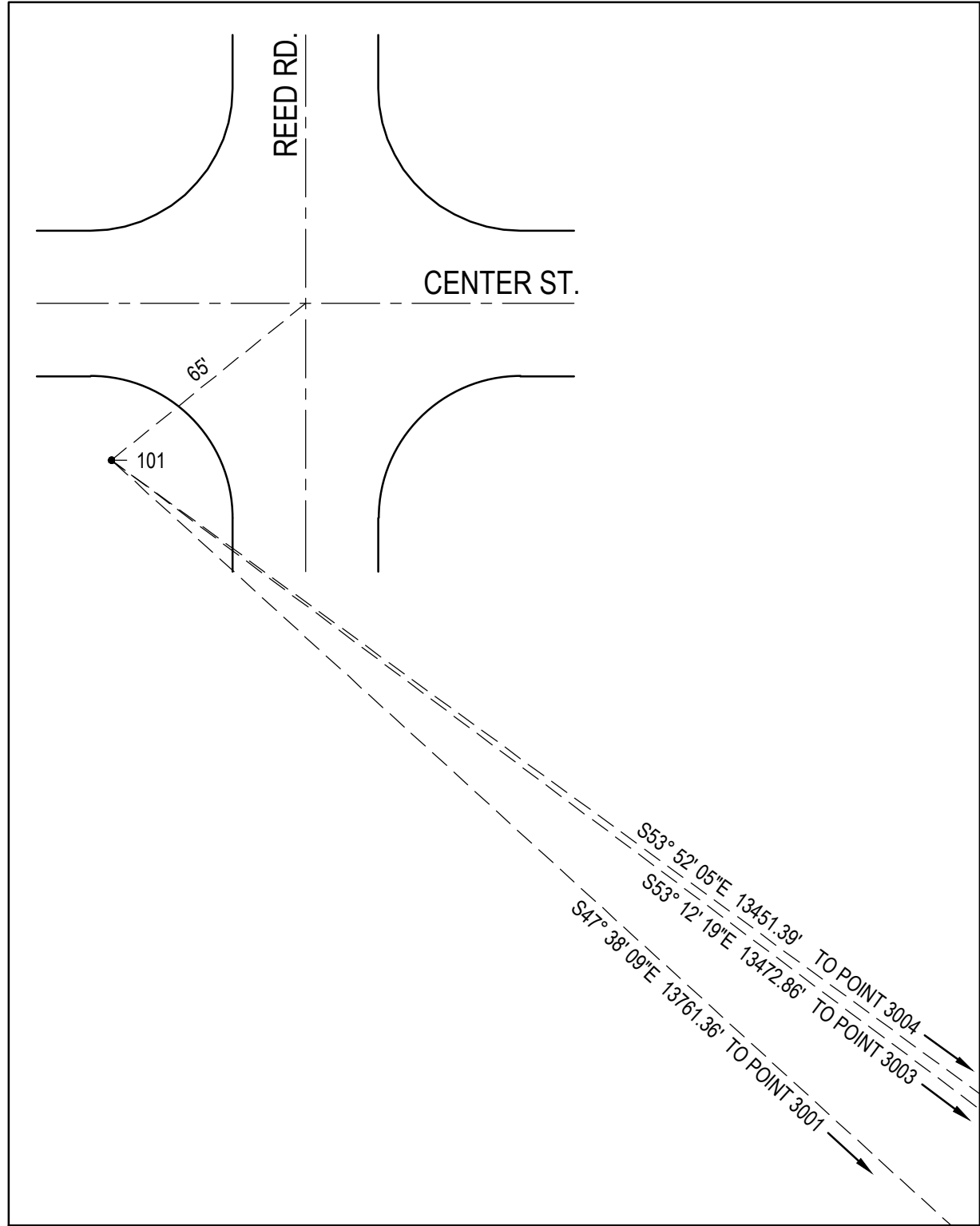
COMMON SYMBOLS

EXISTING	PROPOSED
	ARV IN WATER MH
	BOLLARD / POST
	FIRE HYDRANT
	GAS METER
	GUY ANCHOR
	MAILBOX
	POWER POLE
	SANITARY SEWER MANHOLE
	TELEPHONE PEDESTAL
	TELEVISION PEDESTAL
	TRAFFIC SIGN
	WATER METER
	WATER GATE VALVE

COMMON LINETYPES

EXISTING		PROPOSED
	CENTERLINE	_____ - - _____
— C —	COMMUNICATION	
---(5515)---	CONTOUR	
-----	EASEMENT	
— OHE —	ELECTRIC (OVERHEAD)	
— E-T-TV —	ELECTRIC, TELPHONE, CATV (UNDERGROUND)	
— G —	GAS	
— X —	FENCING	
— — — — —	FLOW LINE	
	PAVED ROAD EDGE	
	PIPE STORM DRAIN CULVERT	
=====	PROPERTY LINE	
-----	STATE HIGHWAY RIGHT-OF-WAY	
=====	TOCV RIGHT-OF-WAY	
— SS —	SEWER	_____ SS _____
=====	UNPAVED ROAD	
— W —	WATER	
— W —	36" COP WATER	

No. DATE:			
REVISION:		APP.	
NOTICE TO CONTRACTORS: THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "BLUE STAKE" AT 1-800-STAKE-IT (1-800-782-5348) TWO WORKING DAYS PRIOR TO ANY EXCAVATION OR CONSTRUCTION.			
TOWN OF CHINO VALLEY, ARIZONA			
EAST ROAD 4 SOUTH SEWER EXTENSION			
SANITARY SEWER IMPROVEMENT PLANS			
NOTES LEGEND & SYMBOLS			
DE: MM	DR: MM	CH: BT	JN: 2023747.00 SHEET 2 OF 10

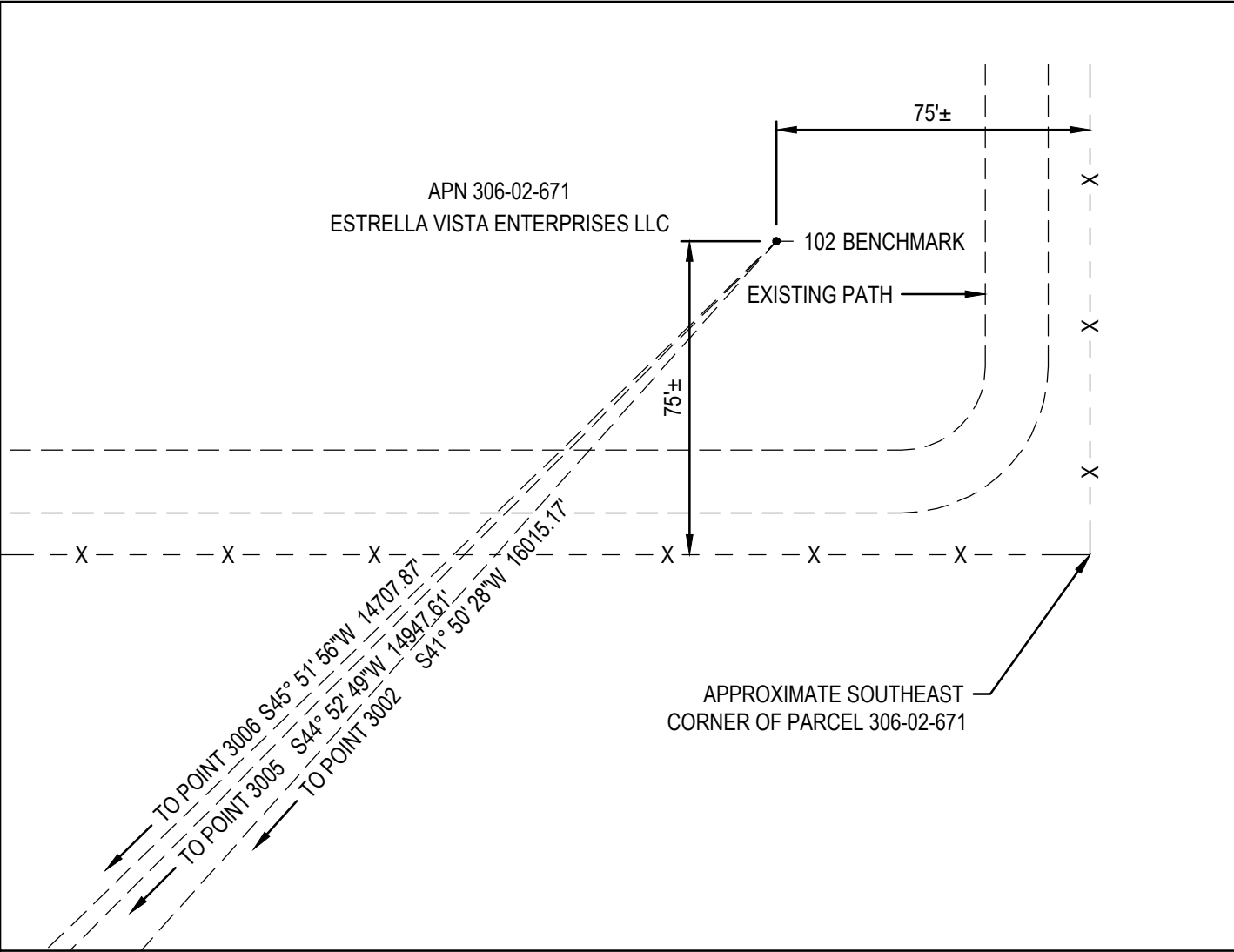


TOWN OF CHINO VALLEY CONTROL POINT 101

SCALE: 1"=40'
PER RECORD OF SURVEY BOOK 173, PAGE 44.

SURVEY CONTROL POINTS					
#	N.	E.	ELEV.	DESC.	
101	363555.62	129797.12	4832.12	BRASS CAP IN CONCRETE	
102	366217.63	151295.98	4813.54	TOWN OF CHINO VALLEY CONTROL POINT	
2009	354268.97	140734.19	4813.17	60D NAIL CHASER AT FNC COR 60SEC	
3002	354286.37	140612.78	0.00	SMH	
3003	355486.07	140586.01	0.00	SMH	
3004	355624.06	140661.29	0.00	SMH	
3005	355626.01	140748.54	0.00	EX SEWER MH	
3006	355975.90	140740.00	0.00	EX SEWER MH	

SEWER SYSTEM ALIGNMENT DATA						
	START STATION	END STATION	BEARING	DISTANCE	START NE	END NE
L1	10+00.00	16+47.72	N89°40'19"E	647.72'	N. 354282.66 E. 139965.08	N. 354286.37 E. 140612.78
L2	16+47.72	28+47.72	N1°16'42"W	1200.00'	N. 354286.37 E. 140612.78	N. 355486.07 E. 140586.01
L3	28+47.72	30+04.90	N28°36'47"E	157.19'	N. 355486.07 E. 140586.01	N. 355624.06 E. 140661.29
L4	30+04.90	30+92.17	N88°43'14"E	87.27'	N. 355624.06 E. 140661.29	N. 355626.01 E. 140748.54
L5	30+92.17	34+42.17	N1°23'50"W	350.00'	N. 355626.01 E. 140748.54	N. 355975.90 E. 140740.00



TOWN OF CHINO VALLEY CONTROL POINT 102

SCALE: 1"=40'

PER RECORD OF SURVEY BOOK 173, PAGE 44:
FROM 89 AT PERKINSVILLE ROAD, HEAD EAST 2.3 MILES TO M.A. PERKINS. HEAD SOUTH 1 MILE,
ROAD BEARS SOUTHEAST AND BECOMES 7 BAR ROAD. CONTINUE FOR 300'± TO ROAD 2 NORTH.
HEAD WEST ON ROAD 2N 300'±, CROSS FENCELINE AND HEAD SOUTH ON PATH FOR 0.5 MILES.

COORDINATE SYSTEM INFORMATION:

TOWN OF CHINO VALLEY CONTROL NETWORK:

COORDINATE SYSTEM: US STATE PLANE 1983
ZONE: ARIZONA CENTRAL 0202
PROJECT DATUM: NAD 1983 (2002)
VERTICAL DATUM: NAVD 88
GEOID MODEL: GEOID03 (CONUS)
COORDINATE UNITS: INTERNATIONAL FEET
DISTANCE UNITS: INTERNATIONAL FEET
HEIGHT UNITS: INTERNATIONAL FEET

GRID TO GROUND COMBINED FACTOR: 1.0002970869

TO CONVERT FROM STATE PLANE (GRID - NAD '83 EPOCH 2002) COORDINATES TO TOWN OF CHINO VALLEY COORDINATES (GROUND):

NORTHING: (STATE PLANE X 1.0002970869) - 1,000,000
EASTING: (STATE PLANE X 1.0002970869) - 400,000

BENCHMARK:

POINT 102, AS SHOWN IN THE TOWN OF CHINO VALLEY CONTROL NETWORK REPORT, RECORDED IN BOOK 173, PAGE 42, L.S., YCRO.

N: 366,217.63 IFT
E: 151,295.98 IFT
EL: 4813.54 IFT (NAVD88)
BRASS CAP IN CONCRETE (SEE NETWORK REPORT FOR EXACT LOCATION)

TEMPORARY BENCH MARKS

POINT No. 2009 (TBM).

SURVEY CONTROL:

TOWN OF CHINO VALLEY CONTROL NETWORK:
COORDINATE SYSTEM: US STATE PLANE 1983
ZONE: ARIZONA CENTRAL 0202
PROJECT DATUM: NAD 1983 (2002)
VERTICAL DATUM: NAVD 88
GEOID MODEL: GEOID03 (CONUS)K.

SURVEY NOTES:

- PROJECT LOCATION: A PORTION OF SECTIONS 34 & 35, TOWNSHIP 16N, RANGE 02W GILA AND SALT RIVER BASE AND MERIDIAN, YAVAPAI COUNTY, ARIZONA
- HORIZONTAL DATUM: NAD83 (2011) ARIZONA STATE PLANE, CENTRAL ZONE (0202), CALIBRATED TO THE CALIBRATION POINTS LISTED HEREON.
- VERTICAL DATUM: NAVD88 (GEOID12A) CALIBRATED TO THE POINTS LISTED HEREON.
- THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL CONTROL IN THE FIELD PRIOR TO CONSTRUCTION.
- DISTANCES ARE GRID DISTANCES AND COORDINATES ARE GRID COORDINATES UTILIZING INTERNATIONAL FEET.

3

2

1

No. DATE:

REVISION:

APP.

NOTICE TO CONTRACTORS:

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0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING ITEMS ARE NOT TO SCALE

Call at least two full working days before you begin excavation.

ARIZONA

Dial 8-1-1 or 1-800-STAKE-IT (782-5348) Maricopa County (602) 659-7500

REGISTERED PROFESSIONAL ENGINEER

CERTIFICATE NO. 45668

BENJAMIN W. TOWNSEND

State signed 1-14-24

ARIZONA, U.S.A.

CIVILTEC

engineering inc.

Civil, Water, Wastewater, Drainage, and Geotechnical Engineering Construction Management Surveying California • Arizona

2054 N. Willow Creek Rd.

Prescott, AZ 86301

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Fax: 928.771.2377

Web: www.civiltec.com

TOWN OF CHINO VALLEY, ARIZONA

EAST ROAD 4 SOUTH SEWER EXTENSION

SANITARY SEWER IMPROVEMENT PLANS

SURVEY CONTROL PLAN

DE: MM

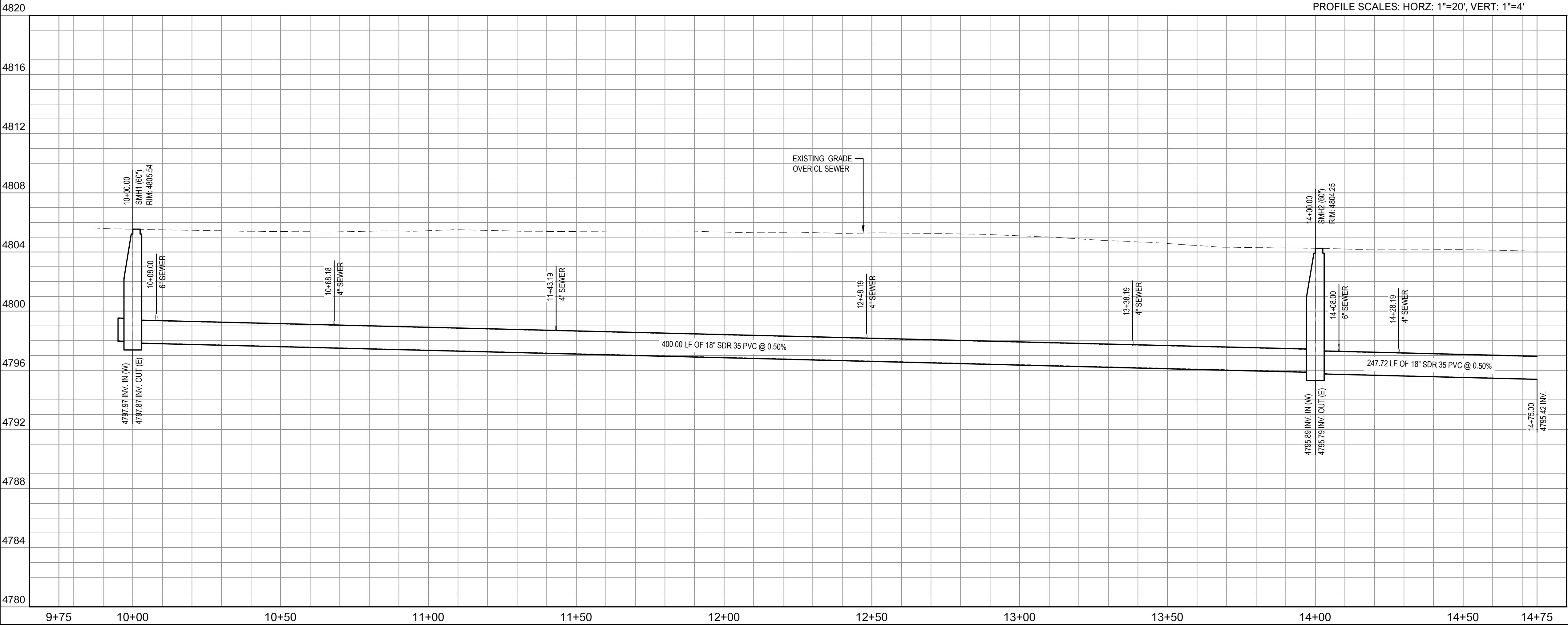
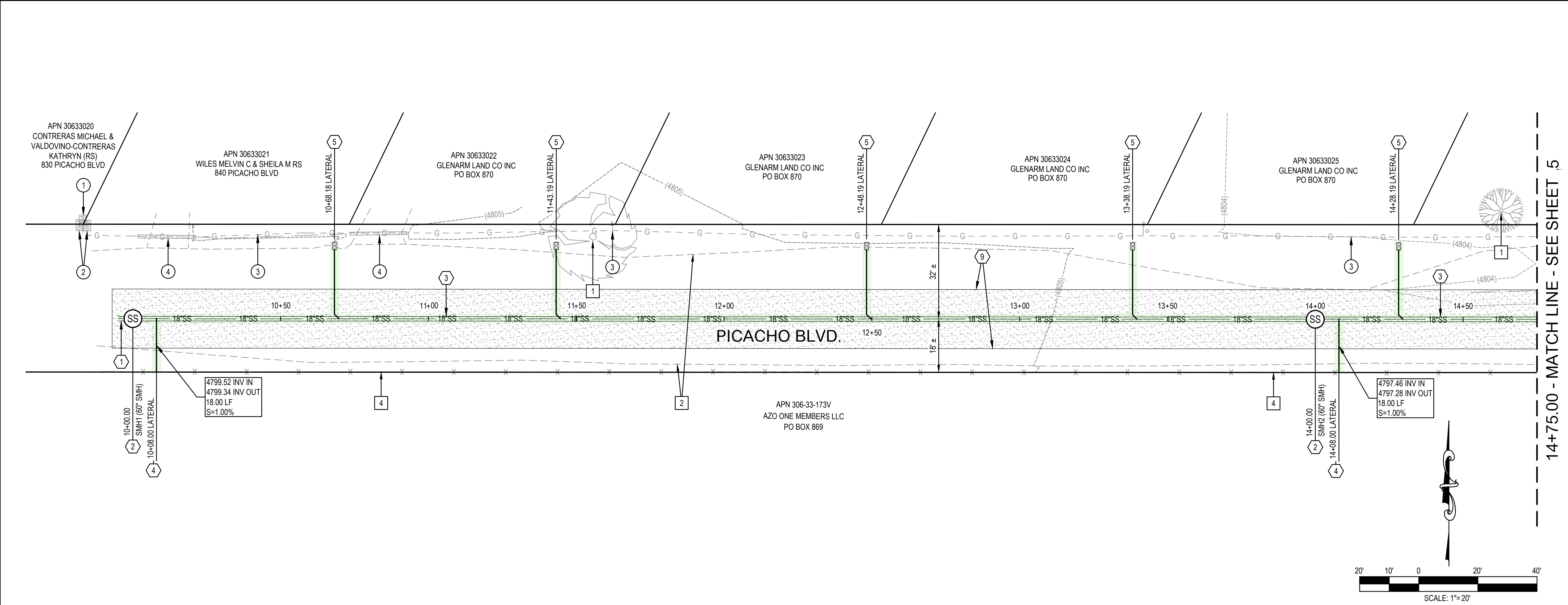
DR: MM

CH: BT

JN: 2023747.00

SHEET 3 OF 10

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NOTES

SEWER CONSTRUCTION

1INSTALL 18" SDR-35 PVC SEWER PIPE STUB-OUT PER Q.C.S.D. No. 427Q. SEE DETAIL, SHEET 10. INSTALL END CAP AT END OF SEWER STUB.

2CONSTRUCT 5' DIAMETER MANHOLE PER Q.C.S.D. No. 420Q-1. 30" FRAME AND COVER PER M.A.G. STD. No. 423-2. SEE DETAILS ON SHEET 9 & 10.

3INSTALL 18" SDR-35 PVC SEWER PIPE. TRENCHING PER Q.C.S.D. No. 200Q-1. TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEET 9.

4INSTALL NEW 6" SERVICE LATERAL TO TWO-WAY CLEANOUT PER Q.C.S.D. No. 440P-1. TRENCHING PER Q.C.S.D. No. 200Q-1 AND TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEETS 9 & 10.

5INSTALL NEW 4" SERVICE LATERAL TO TWO-WAY CLEANOUT PER Q.C.S.D. No. 440P-1. TRENCHING PER Q.C.S.D. No. 200Q-1 AND TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEETS 9 & 10.

9CONSTRUCT UTILITY EASEMENT ACCESS ROAD PER Q.C.S.D. No. 612P, DETAIL "A". SEE DETAIL SHEET 10.

REMOVALS & PROTECT IN PLACE

1EXISTING TREE TO REMAIN, PROTECT IN PLACE.

2EXISTING GRAVEL ACCESS ROAD / DRIVEWAY. RESTORE AFTER CONSTRUCTION.

4EXISTING FENCE TO REMAIN, PROTECT IN PLACE.

UTILITIES

1EXISTING GAS METER. PROTECT IN PLACE.

2EXISTING WATER METER. PROTECT IN PLACE.

3APPROXIMATE LOCATION OF EXISTING GAS LINE. PROTECT IN PLACE.

4EXISTING STORM DRAIN CULVERT. PROTECT IN PLACE.

3

2

1

No. DATE:

REVISION:

APP.

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01/21

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Call at least two full working days before you begin excavation.

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REGISTERED PROFESSIONAL ENGINEER

45668

BENJAMIN W. TOWNSEND

State signed 11/17/2024

ARIZONA, U.S.A.

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TOWN OF CHINO VALLEY, ARIZONA

EAST ROAD 4 SOUTH SEWER EXTENSION

SANITARY SEWER IMPROVEMENT PLANS

PLAN & PROFILE

DE: MM

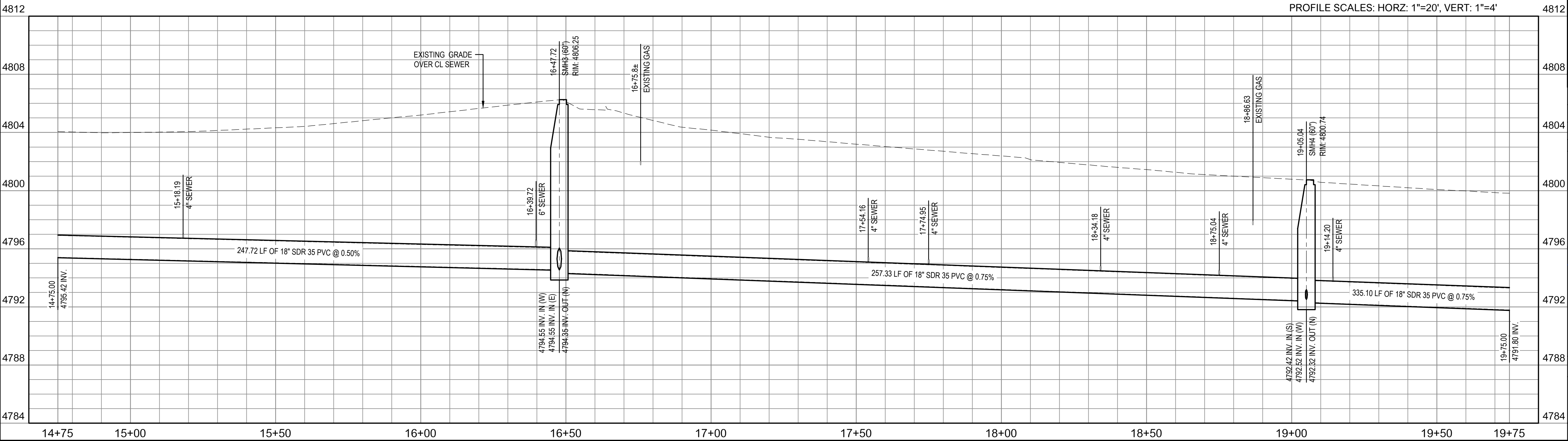
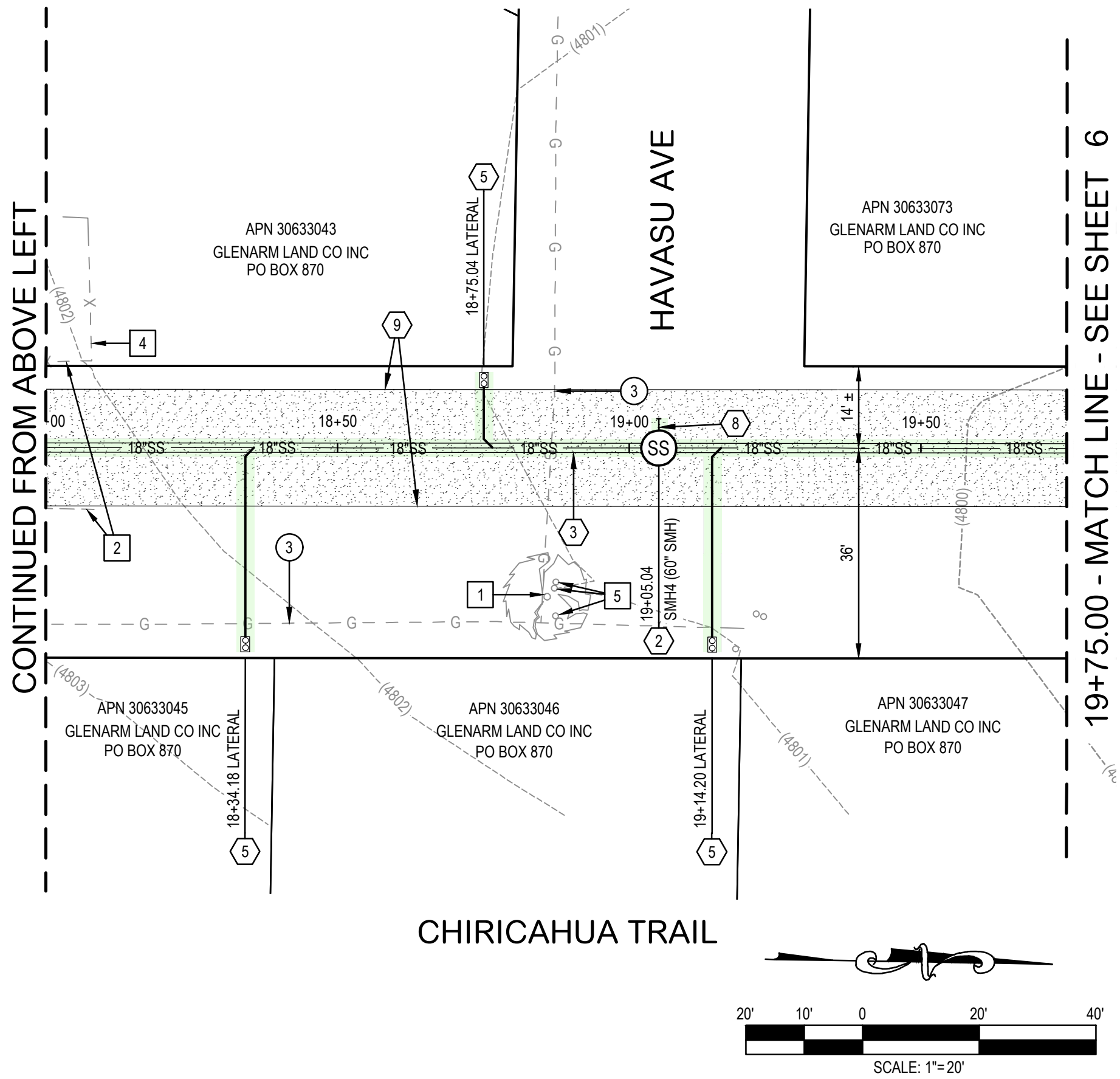
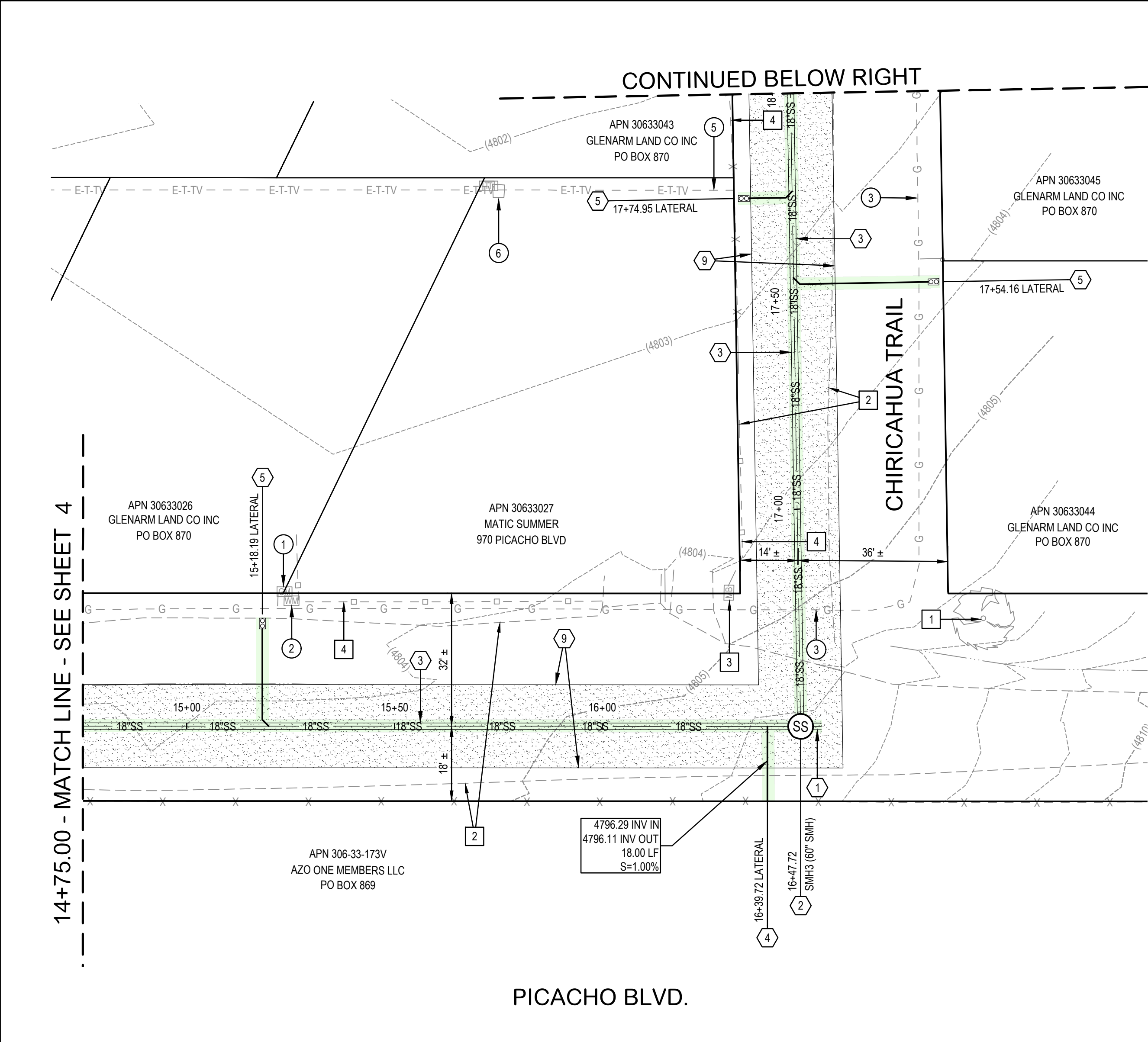
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SHEET 4 OF 10

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NOTES	
SEWER CONSTRUCTION	
1	INSTALL 18" SDR-35 PVC SEWER PIPE STUB-OUT PER Q.C.S.D. No. 427Q. SEE DETAIL, SHEET 10. INSTALL END CAP AT END OF SEWER STUB.
2	CONSTRUCT 6" DIAMETER MANHOLE PER Q.C.S.D. No. 420Q-1. 30" FRAME AND COVER PER M.A.G. STD. No. 423-2. SEE DETAILS ON SHEET 9 & 10.
3	INSTALL 18" SDR-35 PVC SEWER PIPE. TRENCHING PER Q.C.S.D. No. 200Q-1. TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEET 9.
4	INSTALL NEW 6" SERVICE LATERAL TO TWO-WAY CLEANOUT PER Q.C.S.D. No. 440P-1. TRENCHING PER Q.C.S.D. No. 200Q-1 AND TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEETS 9 & 10.
5	INSTALL NEW 4" SERVICE LATERAL TO TWO-WAY CLEANOUT PER Q.C.S.D. No. 440P-1. TRENCHING PER Q.C.S.D. No. 200Q-1 AND TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEETS 9 & 10.
9	CONSTRUCT UTILITY EASEMENT ACCESS ROAD PER Q.C.S.D. No. 612P, DETAIL "A". SEE DETAIL SHEET 10.

REMOVALS & PROTECT IN PLACE	
1	EXISTING TREE TO REMAIN, PROTECT IN PLACE.
2	EXISTING GRAVEL ACCESS ROAD / DRIVEWAY. RESTORE AFTER CONSTRUCTION.
3	EXISTING MAIL BOX TO REMAIN, PROTECT IN PLACE.
4	EXISTING FENCE TO REMAIN, PROTECT IN PLACE.
5	EXISTING PVC STUBS TO REMAIN, PROTECT IN PLACE.

UTILITIES	
1	EXISTING GAS METER. PROTECT IN PLACE.
2	EXISTING WATER METER. PROTECT IN PLACE.
3	APPROXIMATE LOCATION OF EXISTING GAS LINE. PROTECT IN PLACE.
5	APPROXIMATE LOCATION OF EXISTING ELECTRIC, TELEPHONE, AND CABLE TELEVISION LINES. PROTECT IN PLACE.
6	EXISTING ELECTRICAL STRUCTURE. PROTECT IN PLACE.

No.	DATE:	REVISION:	APP.
3			
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NOTICE TO CONTRACTORS:
THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "BLUE STAKE" AT 1-800-STAKE-IT (1-800-782-5348) TWO WORKING DAYS PRIOR TO ANY EXCAVATION OR CONSTRUCTION.

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING ITEMS ARE NOT TO SCALE

Call at least two full working days before you begin excavation.

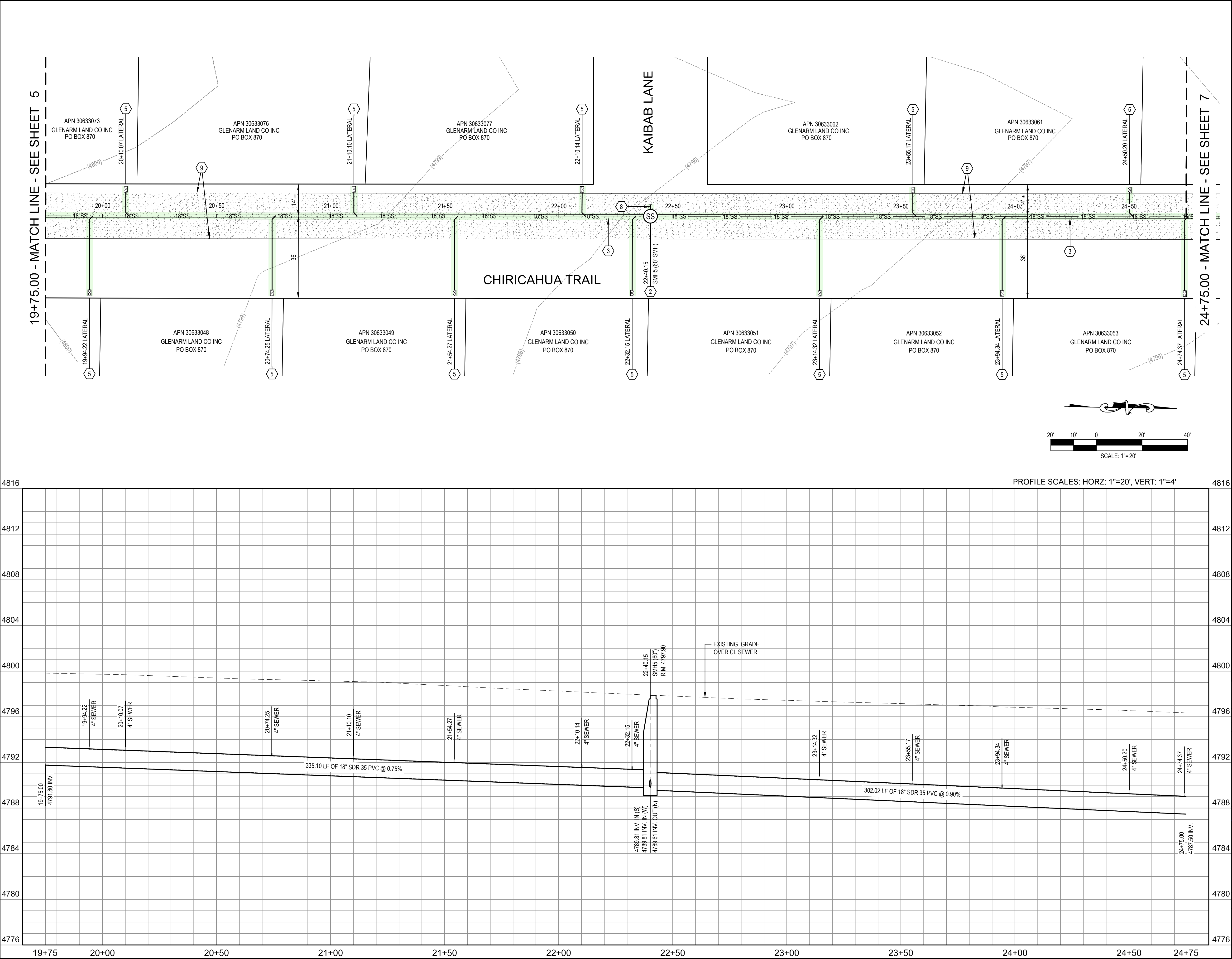
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TOWN OF CHINO VALLEY, ARIZONA
EAST ROAD 4 SOUTH SEWER EXTENSION
SANITARY SEWER IMPROVEMENT PLANS
PLAN & PROFILE

DE: MM DR: MM CH: BT JN: 2023747.00 SHEET 5 OF 10



NOTES	
SEWER CONSTRUCTION	
2	CONSTRUCT 5' DIAMETER MANHOLE PER Q.C.S.D. No. 420Q-1. 30" FRAME AND COVER PER M.A.G. STD. No. 423-2. SEE DETAILS ON SHEET 9 & 10.
3	INSTALL 18" SDR-35 PVC SEWER PIPE. TRENCHING PER Q.C.S.D. No. 200Q-1. TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEET 9.
5	INSTALL NEW 4" SERVICE LATERAL TO TWO-WAY CLEANOUT PER Q.C.S.D. No. 440P-1. TRENCHING PER Q.C.S.D. No. 200Q-1 AND TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEETS 9 & 10.
8	INSTALL 8" SDR-35 PVC SEWER PIPE STUB-OUT PER Q.C.S.D. No. 427Q. SEE DETAIL, SHEET 9. INSTALL END CAP AT END OF SEWER STUB.
9	CONSTRUCT UTILITY EASEMENT ACCESS ROAD PER Q.C.S.D. No. 612P, DETAIL "A". SEE DETAIL SHEET 10.
13	INSTALL 18" DUCTILE IRON (DIP) GRAVITY SEWER PIPE WITH EPOXY COATING PROTECTO COAT 401. TRENCHING PER Q.C.S.D. No. 200Q-1. TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEET 9.

No. DATE: REVISION: APP.

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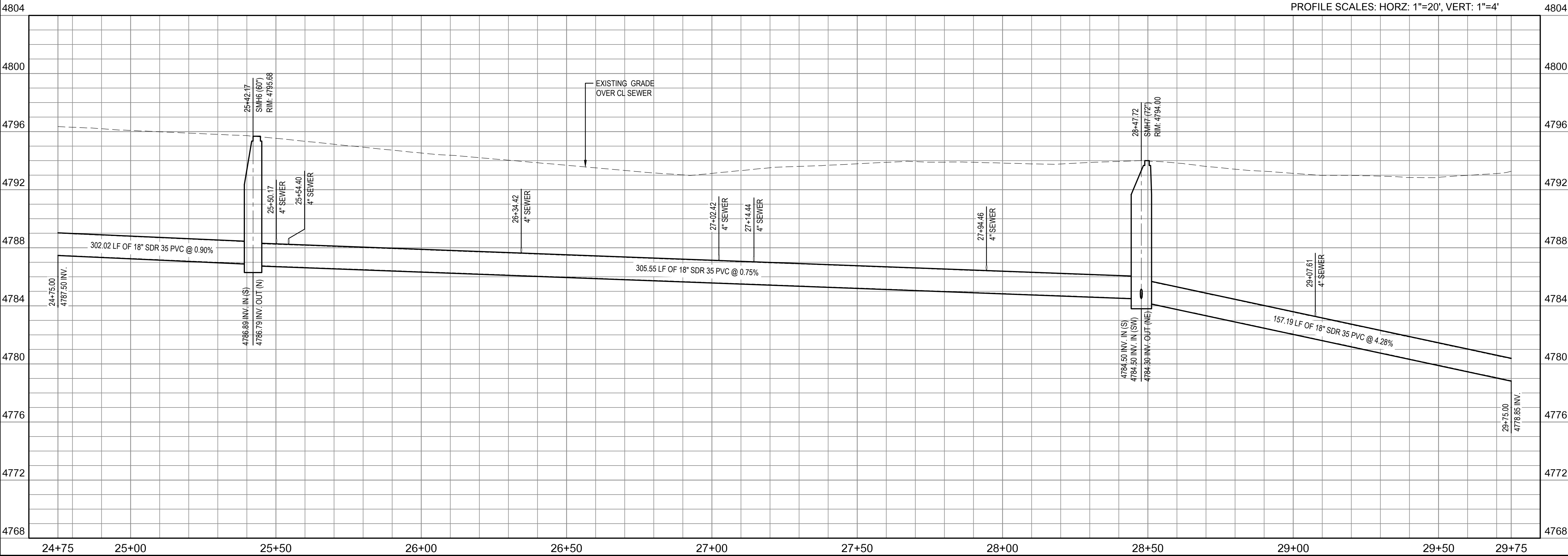
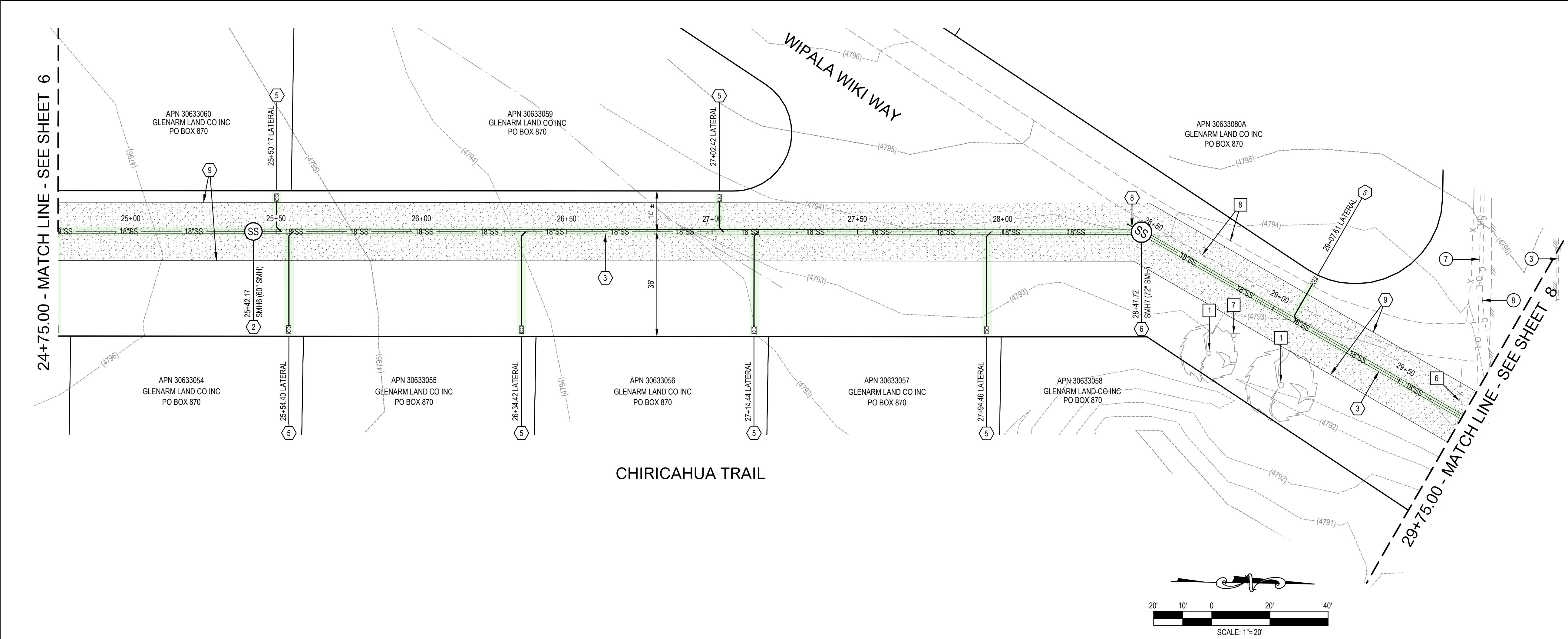
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BENJAMIN W. TOWNSEND
State signed 1/1/24
REGISTERED PROFESSIONAL ENGINEER
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Web: www.civiltec.com

TOWN OF CHINO VALLEY, ARIZONA
EAST ROAD 4 SOUTH SEWER EXTENSION
SANITARY SEWER IMPROVEMENT PLANS
PLAN & PROFILE

DE: MM DR: MM CH: BT JN: 2023747.00 SHEET 6 OF 10



NOTES

SEWER CONSTRUCTION

2

CONSTRUCT 5' DIAMETER MANHOLE PER Q.C.S.D. No. 420Q-1. 30" FRAME AND COVER PER M.A.G. STD. No. 423-2. SEE DETAILS ON SHEET 9 & 10.

3

INSTALL 18" SDR-35 PVC SEWER PIPE. TRENCHING PER Q.C.S.D. No. 200Q-1. TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEET 9.

5

INSTALL NEW 4" SERVICE LATERAL TO TWO-WAY CLEANOUT PER Q.C.S.D. No. 440P-1. TRENCHING PER Q.C.S.D. No. 200Q-1 AND TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEETS 9 & 10.

6

CONSTRUCT 6' DIAMETER MANHOLE PER Q.C.S.D. No. 420Q-1. 30" FRAME AND COVER PER M.A.G. STD. No. 423-2. SEE DETAILS ON SHEET 9 & 10.

8

INSTALL 8" SDR-35 PVC SEWER PIPE STUB-OUT PER Q.C.S.D. No. 427Q. SEE DETAIL, SHEET 9. INSTALL END CAP AT END OF SEWER STUB.

9

CONSTRUCT UTILITY EASEMENT ACCESS ROAD PER Q.C.S.D. No. 612P, DETAIL "A". SEE DETAIL SHEET 10.

REMOVALS & PROTECT IN PLACE

1

EXISTING TREE TO REMAIN, PROTECT IN PLACE.

6

REMOVE EXISTING FENCE FOR CONSTRUCTION OF SEWER SYSTEM. REPLACE AFTER COMPLETION.

7

EXISTING REFLECTOR SIGN TO REMAIN, PROTECT IN PLACE.

8

EXISTING DIRT PATH.

UTILITIES

3

APPROXIMATE LOCATION OF EXISTING GAS LINE. PROTECT IN PLACE.

7

EXISTING OVERHEAD LINES. PROTECT IN PLACE.

8

APPROXIMATE LOCATION OF EXISTING COMMUNICATIONS / TELEPHONE LINE(S). PROTECT IN PLACE.

3

2

1

No. DATE:REVISION:APP.

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01/21

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Benjamin W. Townsend

45668

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TOWN OF CHINO VALLEY, ARIZONA

EAST ROAD 4 SOUTH SEWER EXTENSION

SANITARY SEWER IMPROVEMENT PLANS

PLAN & PROFILE

DE: MM

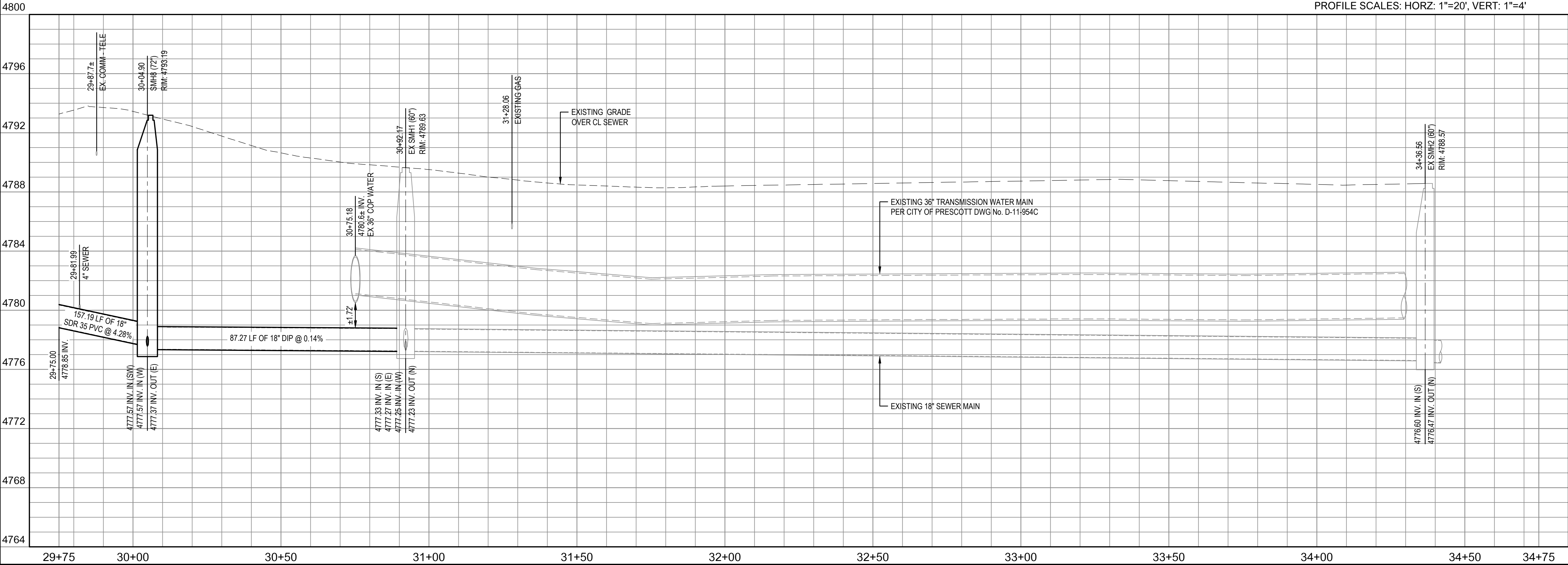
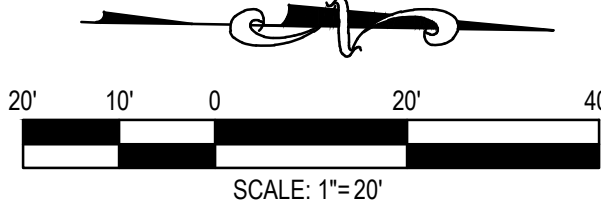
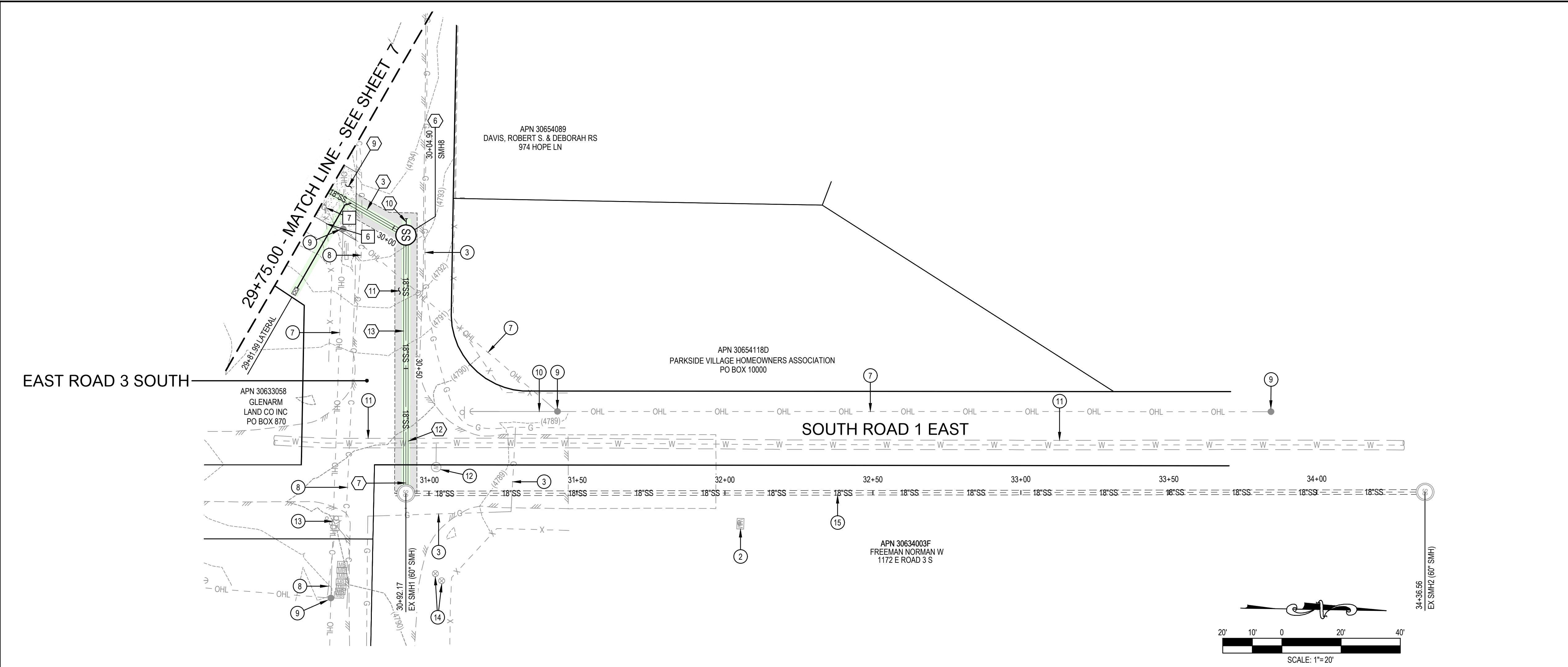
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SHEET 7 OF 10

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NOTES	
	SEWER CONSTRUCTION
2	CONSTRUCT 5' DIAMETER MANHOLE PER Q.C.S.D. No. 420Q-1. 30" FRAME AND COVER PER M.A.G. STD. No. 423-2. SEE DETAILS ON SHEET 9 & 10.
3	INSTALL 18" SDR-35 PVC SEWER PIPE. TRENCHING PER Q.C.S.D. No. 200Q-1. TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEET 9.
4	INSTALL NEW 6" SERVICE LATERAL TO TWO-WAY CLEANOUT PER Q.C.S.D. No. 440P-1. TRENCHING PER Q.C.S.D. No. 200Q-1 AND TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEETS 9 & 10.
5	INSTALL NEW 4" SERVICE LATERAL TO TWO-WAY CLEANOUT PER Q.C.S.D. No. 440P-1. TRENCHING PER Q.C.S.D. No. 200Q-1 AND TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEETS 9 & 10.
6	CONSTRUCT 6' DIAMETER MANHOLE PER Q.C.S.D. No. 420Q-1. 30" FRAME AND COVER PER M.A.G. STD. No. 423-2. SEE DETAILS ON SHEET 9 & 10.
7	REMOVE EXISTING 8" SEWER STUB. TIE-IN TO SEWER MANHOLE.
9	CONSTRUCT UTILITY EASEMENT ACCESS ROAD PER Q.C.S.D. No. 612P, DETAIL "A". SEE DETAIL SHEET 10.
10	INSTALL 12" SDR-35 PVC SEWER PIPE STUB-OUT PER Q.C.S.D. No. 427Q. SEE DETAIL, SHEET 9. INSTALL END CAP AT END OF SEWER STUB.
11	SAWCUT AND REMOVE EXISTING PAVEMENT. REPLACE PAVING IN KIND.
12	CONSTRUCT NEW SEWER MAIN UNDER EXISTING WATER MAIN. PRESERVE AND PROTECT THE EXISTING WATER MAIN IN PLACE. THE ANTICIPATED SEPARATION BETWEEN THE WATER AND SEWER MAINS IS GREATER THAN 1' BUT LESS THAN 2'. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION OF THE EXISTING WATER MAIN PRIOR TO CONSTRUCTION AND PROVIDE A MINIMUM OF 1' SEPARATION. PROVIDE EXTRA PROTECTION ON THE EXISTING WATER MAIN AND THE NEW SEWER MAIN PER Q.C.S.D. No. 404P-1, 404P-2, MAG SPECIFICATIONS SECTION 610 AND PER CITY OF PRESCOTT & TOWN OF CHINO VALLEY REQUIREMENTS.
13	INSTALL 18" DUCTILE IRON (DIP) GRAVITY SEWER PIPE WITH EPOXY COATING PROTECTO COAT 401. TRENCHING PER Q.C.S.D. No. 200Q-1. TRACER WIRE PER Q.C.S.D. No. 319Q-1. SEE DETAILS ON SHEET 9.

	REMOVALS & PROTECT IN PLACE
6	REMOVE EXISTING FENCE FOR CONSTRUCTION OF SEWER SYSTEM. REPLACE AFTER COMPLETION.
7	EXISTING REFLECTOR SIGN TO REMAIN, PROTECT IN PLACE.

	UTILITIES
2	EXISTING WATER METER. PROTECT IN PLACE.
3	APPROXIMATE LOCATION OF EXISTING GAS LINE. PROTECT IN PLACE.
8	APPROXIMATE LOCATION OF EXISTING COMMUNICATIONS / TELEPHONE LINE(S). PROTECT IN PLACE.
9	EXISTING POWER POLE AND GUY ANCHOR.
10	EXISTING GUY ANCHOR. PROTECT IN PLACE.
11	CAUTION - APPROXIMATE LOCATION OF EXISTING 36" CITY OF PRESCOTT HIGH PRESSURE WATER MAIN. PROTECT IN PLACE.
12	EXISTING WATER MH. PROTECT IN PLACE.
13	EXISTING CATV / TELEPHONE PEDESTAL. PROTECT IN PLACE.
14	EXISTING WATER VALVE. PROTECT IN PLACE.
15	EXISTING 18" SEWER. PROTECT IN PLACE.

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No. DATE:REVISION:APP.

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Maricopa County (602) 659-7500

REGISTERED PROFESSIONAL ENGINEER
45668
BENJAMIN W. TOWNSEND
Date signed 11/17/2024
ARIZONA, U.S.A.

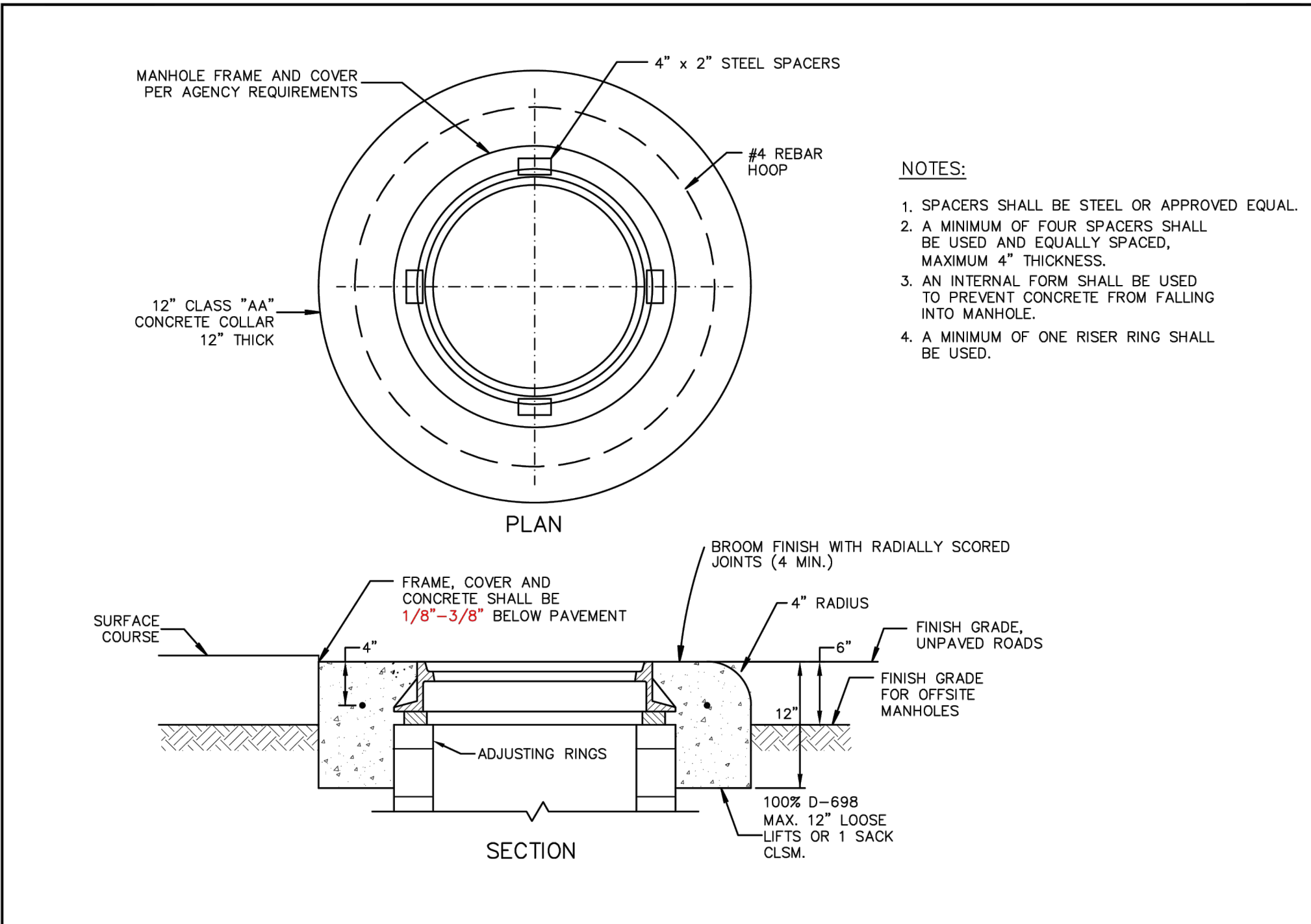
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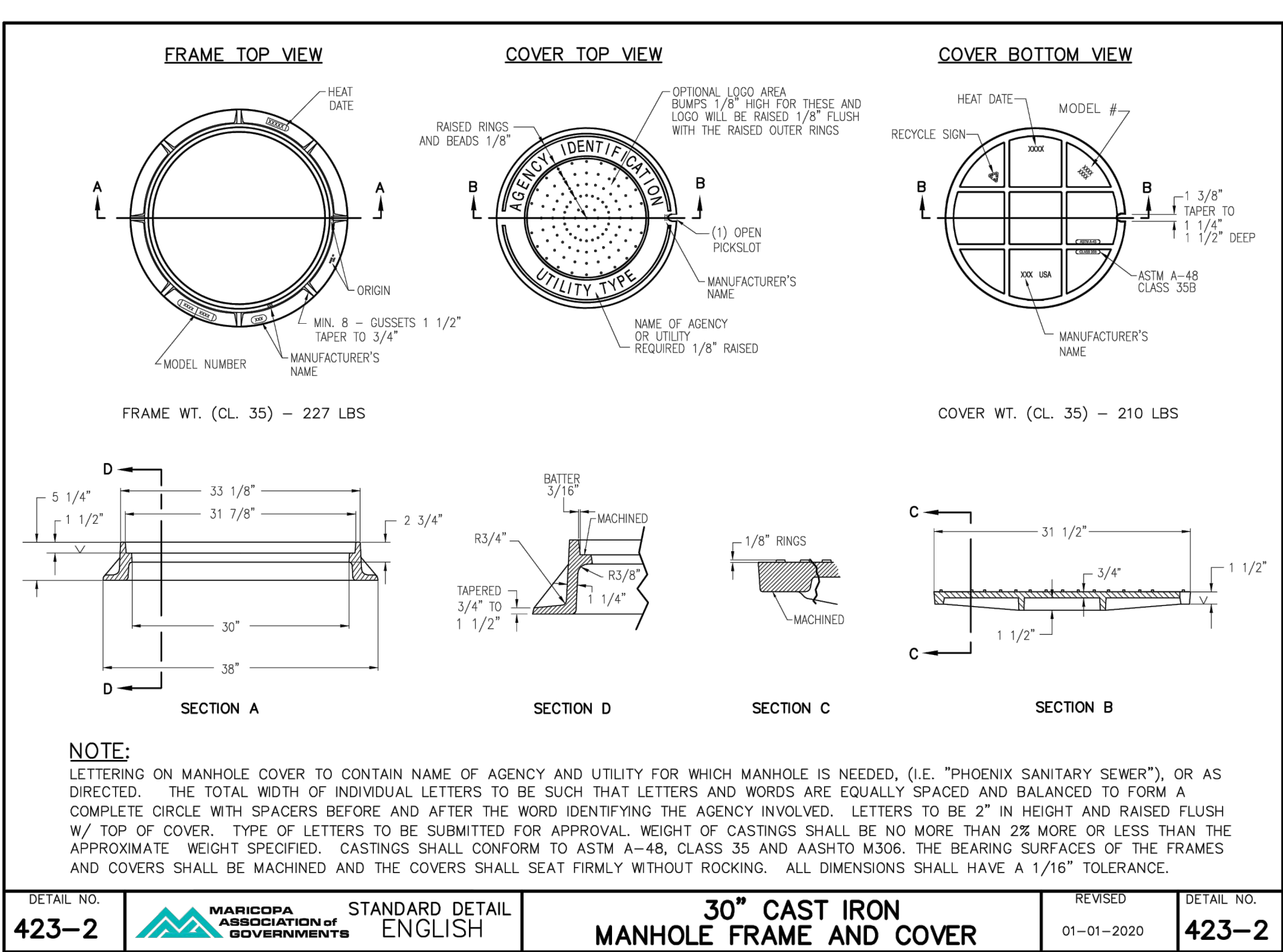
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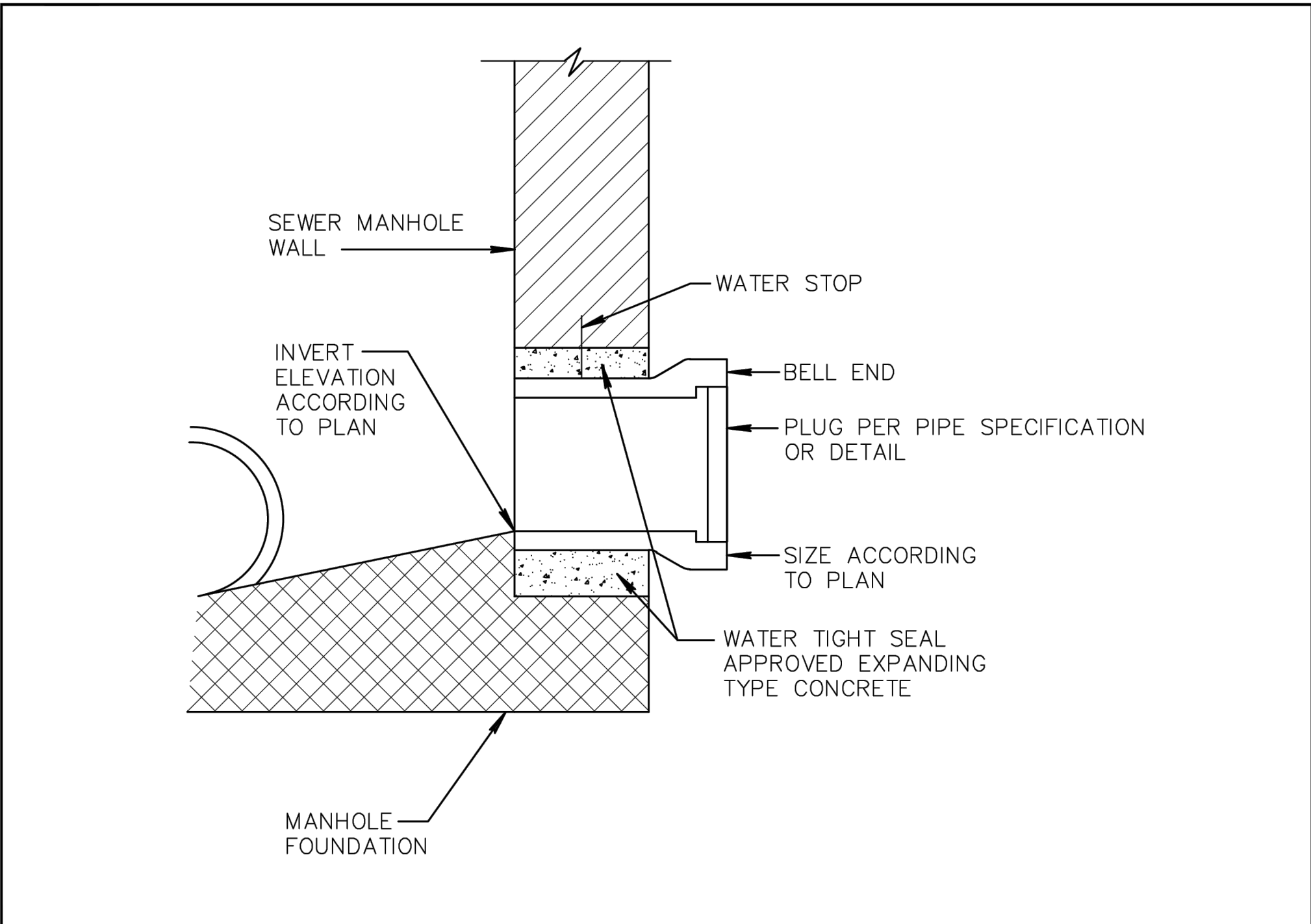
- NOTES:
1. SPACERS SHALL BE STEEL OR APPROVED EQUAL.
 2. A MINIMUM OF FOUR SPACERS SHALL BE USED AND EQUALLY SPACED, MAXIMUM 4" THICKNESS.
 3. AN INTERNAL FORM SHALL BE USED TO PREVENT CONCRETE FROM FALLING INTO MANHOLE.
 4. A MINIMUM OF ONE RISER RING SHALL BE USED.

QUAD CITY STANDARD DETAIL MANHOLE FRAME ADJUSTMENT REVISED: X/17 DETAIL No. 422Q

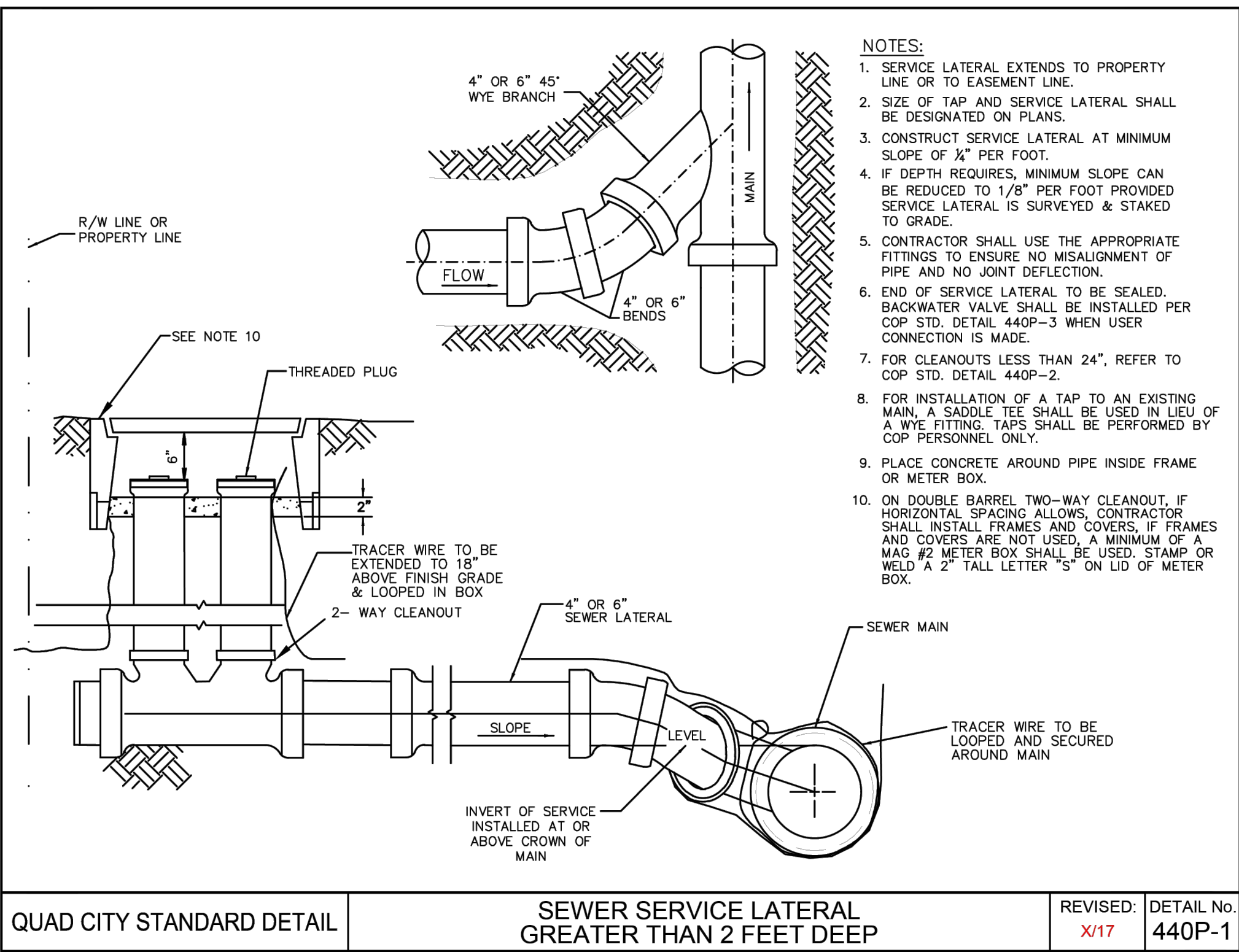


NOTE:
LETTERING ON MANHOLE COVER TO CONTAIN NAME OF AGENCY AND UTILITY FOR WHICH MANHOLE IS NEEDED, (I.E. "PHOENIX SANITARY SEWER"), OR AS DIRECTED. THE TOTAL WIDTH OF INDIVIDUAL LETTERS TO BE SUCH THAT LETTERS AND WORDS ARE EQUALLY SPACED AND BALANCED TO FORM A COMPLETE CIRCLE WITH SPACERS BEFORE AND AFTER THE WORD IDENTIFYING THE AGENCY INVOLVED. LETTERS TO BE 2" IN HEIGHT AND RAISED FLUSH W/ TOP OF COVER. TYPE OF LETTERS TO BE SUBMITTED FOR APPROVAL. WEIGHT OF CASTINGS SHALL BE NO MORE THAN 2% MORE OR LESS THAN THE APPROXIMATE WEIGHT SPECIFIED. CASTINGS SHALL CONFORM TO ASTM A-48, CLASS 35 AND AASHTO M306. THE BEARING SURFACES OF THE FRAMES AND COVERS SHALL BE MACHINED AND THE COVERS SHALL SEAT FIRMLY WITHOUT ROCKING. ALL DIMENSIONS SHALL HAVE A 1/16" TOLERANCE.

DETAIL No. 423-2 MARICOPA ASSOCIATION of GOVERNMENTS STANDARD DETAIL ENGLISH 30" CAST IRON MANHOLE FRAME AND COVER REVISED 01-01-2020 DETAIL No. 423-2

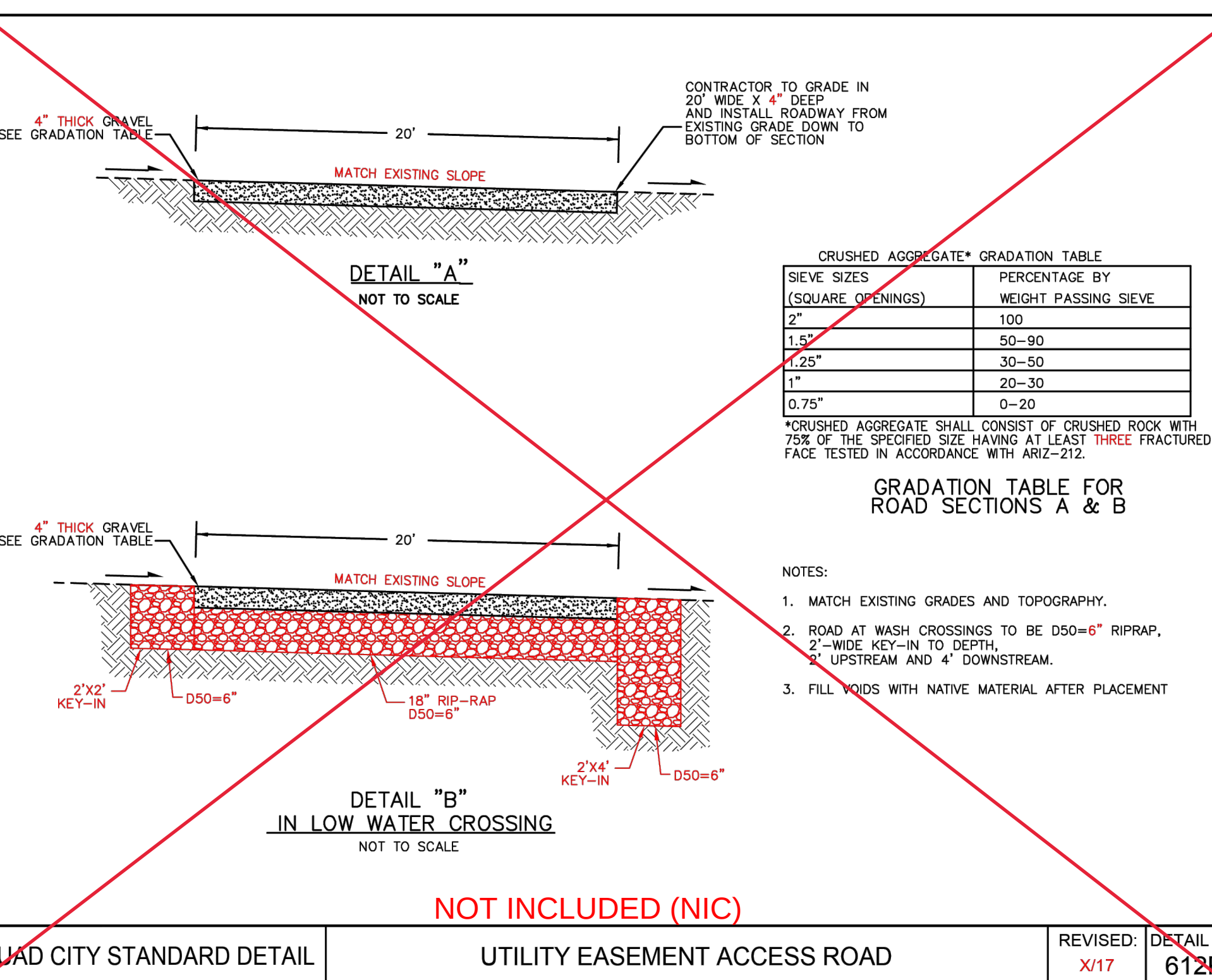


QUAD CITY STANDARD DETAIL SEWER STUB-OUT AND PLUGS REVISED: X/17 DETAIL No. 427Q



- NOTES:
1. SERVICE LATERAL EXTENDS TO PROPERTY LINE OR TO EASEMENT LINE.
 2. SIZE OF TAP AND SERVICE LATERAL SHALL BE DESIGNATED ON PLANS.
 3. CONSTRUCT SERVICE LATERAL AT MINIMUM SLOPE OF 1/4" PER FOOT.
 4. IF DEPTH REQUIRES, MINIMUM SLOPE CAN BE REDUCED TO 1/8" PER FOOT PROVIDED SERVICE LATERAL IS SURVEYED & STAKED TO GRADE.
 5. CONTRACTOR SHALL USE THE APPROPRIATE FITTINGS TO ENSURE NO MISALIGNMENT OF PIPE AND NO JOINT DEFLECTION.
 6. END OF SERVICE LATERAL TO BE SEALED. BACKWATER VALVE SHALL BE INSTALLED PER COP STD. DETAIL 440P-3 WHEN USER CONNECTION IS MADE.
 7. FOR CLEANOUTS LESS THAN 24", REFER TO COP STD. DETAIL 440P-2.
 8. FOR INSTALLATION OF A TAP TO AN EXISTING MAIN, A SADDLE TEE SHALL BE USED IN LIEU OF A WYE FITTING. TAPS SHALL BE PERFORMED BY COP PERSONNEL ONLY.
 9. PLACE CONCRETE AROUND PIPE INSIDE FRAME OR METER BOX.
 10. ON DOUBLE BARREL TWO-WAY CLEANOUT, IF HORIZONTAL SPACING ALLOWS, CONTRACTOR SHALL INSTALL FRAMES AND COVERS, IF FRAMES AND COVERS ARE NOT USED, A MINIMUM OF A WAG #2 METER BOX SHALL BE USED. STAMP OR WELD A 2" TALL LETTER "S" ON LID OF METER BOX.

QUAD CITY STANDARD DETAIL SEWER SERVICE LATERAL GREATER THAN 2 FEET DEEP REVISED: X/17 DETAIL No. 440P-1



SIEVE SIZES (SQUARE OPENINGS)	PERCENTAGE BY WEIGHT PASSING SIEVE
2"	100
1.5"	50-90
1.25"	30-50
1"	20-30
0.75"	0-20

*CRUSHED AGGREGATE SHALL CONSIST OF CRUSHED ROCK WITH 75% OF THE SPECIFIED SIZE HAVING AT LEAST THREE FRACTURED FACE TESTED IN ACCORDANCE WITH ARIZ-212.

GRADATION TABLE FOR ROAD SECTIONS A & B

- NOTES:
1. MATCH EXISTING GRADES AND TOPOGRAPHY.
 2. ROAD AT WASH CROSSINGS TO BE D50=6" RIPRAP, 2'-WIDE KEY-IN TO DEPTH, 4' UPSTREAM AND 4' DOWNSTREAM.
 3. FILL VOIDS WITH NATIVE MATERIAL AFTER PLACEMENT

QUAD CITY STANDARD DETAIL UTILITY EASEMENT ACCESS ROAD REVISED: X/17 DETAIL No. 612P

3			
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No.	DATE:	REVISION:	APP.

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TOWN OF CHINO VALLEY, ARIZONA EAST ROAD 4 SOUTH SEWER EXTENSION SANITARY SEWER IMPROVEMENT PLANS DETAILS	
DE: MM DR: MM CH: BT JN: 2023747.00 SHEET 10 OF 10	

PROJECT SPECIAL PROVISIONS MODIFICATIONS TO THE MAG SPECIAL PROVISIONS

For

TOWN OF CHINO VALLEY EAST ROAD 4 SOUTH SEWER EXTENSION (Chiricahua Sewer Project)

December, 2023



NOTE: THE SPECIFICATIONS AND DETAILS TO BE USED, AS REFERENCED IN THE BID DOCUMENTS AND THESE SPECIAL PROVISIONS, SHALL BE THE VERSIONS CURRENTLY IN USE AS OF THE DATE OF THE ENGINEERS SEAL ON THE COVER PAGE OF THE CONSTRUCTION PLANS.

Prepared For:
Town of Chino Valley
Public Works Department
1982 Voss Drive
Chino Valley, AZ 86323

Prepared By:
Civiltec Engineering, Inc.
2054 N. Willow Creek Road
Prescott, AZ 86301
P: 928.771.2376
F: 928.771.2377
email: raldridge@civiltec.com

CIVILTEC Project Number 2023747.00

INDEX TO SECTIONS OF THE SPECIAL PROVISIONS:

PART 000	INTRODUCTION
PART 100	GENERAL CONDITIONS
PART 200	EARTHWORK
PART 300	STREETS AND RELATED WORK
PART 400	RIGHT OF WAY AND TRAFFIC CONTROL
PART 600	WATER, SEWER, STORM DRAIN AND IRRIGATION
PART 700	MATERIALS

PART 000 INTRODUCTION

The work embraced herein shall be done in accordance with the requirements of the following:

Maricopa Association of Governments, *Uniform Standard Specifications and Details for Public Works Construction*, most recent edition;

All Arizona Department of Transportation Standard Specifications and Details, most recent editions that apply to the project.

Arizona Department of Health Services Engineering Bulletins:

- #8 *Disinfection of Water Systems*
- #10 *Guidelines for the Construction of Water Systems*

U.S. Department of Transportation, Federal Highway Administration, Manual on Uniform Traffic Control Devices (MUTCD)

American Water Works Association Standards, most recent edition.

Modifications to the MAG Specifications are made in these Special Provisions and take precedence over the MAG Specifications as follows: where there is no conflict between MAG Specifications and the Special Provisions, the Special Provisions are to be construed as being additions to the MAG Specifications. In cases of conflict between the MAG Specifications and the Special Provisions, the Special Provisions are to be construed as supplanting only the conflicting portions of the MAG Specifications.

Section numbers listed herein shall refer to the MAG Specifications, unless otherwise indicated.

Where conflicts between the funding agency contract requirements and these Special Provisions occur, the funding agency requirements shall supersede any conflicting portions of these Special Provisions and the referenced MAG Specifications.

UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, MARICOPA ASSOCIATION OF GOVERNMENTS

PART 100 GENERAL CONDITIONS

MAG SECTION 102 – BIDDING REQUIREMENTS AND CONDITIONS

102.4 EXAMINATION OF PLANS, SPECIAL PROVISIONS, AND SITE OF WORK:

Bidders are hereby advised that a Geotechnical Report was not prepared for this project.

Rock excavation shall include removal of any rock encountered during the construction. Removal of rock encountered during construction shall be considered incidental to the project bid and shall not require additional compensation. No separate measurement or payment will be made for rock excavation.

SECTION 104 SCOPE OF WORK

104 SCOPE OF WORK is revised to include all of the Section 104 modifications as included below: The project work includes a Base Bid only with no Additive Alternates.

104.1.1 GENERAL:

The project consists of a Base Bid with no Additive Alternates as indicated on the Bid Schedule. Work will be done within roadway Rights-of-Ways and/or property owned by the Town of Chino Valley.

The Contractor shall supply an independent testing laboratory to provide quality assurance testing as required by the Special Provisions. Construction staking and as-built plan preparation will also be provided by the Contractor.

The Contractor shall furnish all labor, materials, equipment, transportation, utilities, services, and facilities required to perform all work for the construction of the project within the time specified.

GENERAL PROJECT DESCRIPTION:

Base Bid:

The base bid generally consists of the installation of approximately 2,000 LF of new 18" sewer line, 54' of new 6" sewer services line (in 3 separate sewer service connections), 8 new manholes, 31 new 4" and 3 new 6" sewer service connections and surfacing restoration. The new construction runs from an existing Manhole tie-in in South Road 1 East, then westerly along East Road 3 South, then southerly on Chiricahua Trail, then westerly along Picacho Blvd for approximately 500 feet west of the Chiricahua Trail/Picacho Blvd. intersection in the Town of Chino Valley, Arizona, as shown on the plans and details:

Sewer improvements shall consist of 18" PVC sewer lines, manholes and stubs and new Quad City/City of Prescott Det 440P-1, 4" and 6" sewer services as shown on the plans. **Contractors are cautioned that existing City of Prescott water mains, including a 36" high pressure water main, are also located in South Road 1 East near the sewer line tie in and extreme caution needs to be used where working close to those City waterlines, and all other existing utilities.**

QUALITY CONTROL PLAN:

The Contractor shall submit a Quality Control Plan to the Town for approval 10 days prior to the start of construction. The approved plan shall be fully implemented by the Contractor in accordance with the requirements in Section 106.2 of these Special Provisions.

104.1.2 MAINTENANCE OF TRAFFIC (Add):

Construction traffic control must include phased lane closures. No full closure of any road shall be permitted on this project unless specifically authorized by the Town.

The Contractor shall submit a traffic control plan at the Pre-Construction conference for review by the Town prior to beginning any construction activities on the project.

104.3 PRE-CONSTRUCTION MEETING:

A pre-construction meeting will be scheduled by the Owner. Attendance of the Contractor is required at the scheduled place and time.

104.4 WEEKLY CONSTRUCTION MEETINGS:

The Contractor will schedule weekly construction meetings that shall be attended by representatives of subcontractors, utilities, the Owner, and other interested parties for the purpose of keeping the project on schedule and to provide necessary coordination of the work. The Contractor's project superintendent must attend the weekly construction meetings, prepare the agenda and meeting minutes, and distribute the minutes to the attendees.

**SECTION 105
CONTROL OF WORK****105.2 PLANS AND SHOP DRAWINGS (Add):**

Contractor shall provide material submittals for the sewer lines, manholes, sewer services and any other materials intended to be incorporated into the project per MAG Section 105.2.

The Contractor shall maintain a complete set of all approved shop drawings and an accurate, current, as-built set of plans on site for reference at all times by Town staff. The as-built plans will be furnished by the Contractor to the Owner at the completion of the project for record. The as-built plans must be updated daily by the Contractor and include, in addition to the planned construction and utility installations, any changes authorized by the Engineer and any utilities discovered during the trenching operations by size, location, and type redlined onto the plans by station/distance/depth etc.

105.4 COORDINATION OF PLANS AND SPECIFICATIONS (Add):

- A. In the event of any doubt or question arising regarding the true meaning of the plans, specifications, or other contract documents, reference shall be made to the Public Works Director, whose decision thereon shall be final. In the event of any discrepancy between any drawing and the figures written thereon, the figures shall be taken as correct.
- B. In the event of there being a conflict between one contract document and any other contract documents, the document highest in precedence shall control and supersede the document which is contrary to it. The order of precedence of the contract documents is as follows:
 - 1. Supplemental Agreements/Change Orders, the last in time being the first in precedence

2. The formal Contract
3. Call for Bids
4. Instructions for Bidding
5. Special Provisions
6. Technical Specifications
7. Plans
8. General Provisions
9. Contractor Proposal

105.5 COOPERATION OF CONTRACTOR third paragraph is revised to read:

The Project Superintendent must be on site at all times during performance of work. The superintendent shall be authorized to receive and fulfill instructions from the Engineer who shall supervise and direct the work. The Contractor shall submit to the Engineer for review and approval the name and qualifications of the proposed superintendent no less than fourteen days prior to the scheduled/planned Notice to Proceed. When the superintendent is approved, he shall not be changed by the Contractor without written approval of the Engineer. Instructions and information given by the Engineer to the Contractor's superintendent shall be considered as having been given to the Contractor.

105.6 COOPERATION WITH UTILITIES is modified to include:

The Town representative shall be made aware of any utility conflicts that may arise throughout the project duration.

The Contractor is advised that City of Prescott high pressure water mains exist in S. Road 1 E and caution needs to be exercised to avoid damaging those lines.

Engineer will not guarantee any elevations or locations of existing underground utilities shown on these plans.

105.8 CONSTRUCTION STAKES, LINES AND GRADES is revised as follows:

The Contractor shall be required to furnish all construction staking for the project and provide the final as-built survey and preparation of the sealed as-built plans for the constructed improvements.

105.12 MAINTENANCE DURING CONSTRUCTION

Adequate drainage of the construction area shall be provided at all times. Construction drains shall be provided as needed to enable water to drain from the construction area rapidly and without damaging work in progress. To further promote good drainage of the site, drainage channels, culverts, and structures, shall be constructed from downstream to upstream in such a way that, during construction, they do not impede the flow of water from the construction area.

Damage to any portion of the work caused by the contractor's failure to provide adequate drainage of the construction area, or to order the work to minimize the possible extent of such damage, shall be repaired at the Contractor's expense. No extension of time shall be granted on account of the time required to make such repairs.

SPECIAL NOTE REGARDING MAINTENANCE DURING CONSTRUCTION:

This project is anticipated to require an SWPPP due to the disturbance area being more than 1 acre in size. The Contractor will be responsible for complying with the requirements of the National Pollutant Discharge Elimination System permit program at his own expense. This generally includes preparation of the SWPPP, submittal of a Notice of Intent to the EPA, adherence to the Stormwater Pollution Prevention Plan for the site and notice of termination to EPA for the project. Erosion control devices are typically installed at the tops and toes of all fill slopes, in graded earthen channels, and at the inlets

and outlets of all drainage culverts. Devices generally include straw bales, straw wattles, or silt fences as appropriate. No separate measurement will be made for complying with this section and the cost for preparing the SWPPP, the NOI, the NOT and complying with the NPDES permit requirements shall be included in the Contractor's bid item for SWPPP, Erosion Control Devices and Seeding.

All exposed slopes, open areas, etc., shall be hand or hydraulically seeded by the Contractor at the completion of the project. The seed mix to be used for the seeding shall be provided by a local nursery and be appropriate for the Town of Chino Valley climate and be approved by the Town prior to distribution. No separate measurement will be made for seeding of the site and the cost of seeding will be included in the Contractor's bid item for SWPPP, Erosion Control Devices and Seeding.

Method of Measurement:

Measurement for work under this section shall be on a lump sum basis.

Basis of Payment:

Payment for work under this section, measured as provided above shall be paid for on a lump sum basis per Bid Schedule item: SWPPP, EROSION CONTROL DEVICES AND SEEDING, MAG SP 105.15.

105.16 – RECORD DRAWING PREPARATION AND COORDINATION (Add New Section)

The Contractor will be required to provide sealed record drawings of the completed construction by an engineer or land surveyor registered in the State of Arizona. The sealed drawings will be attached to and submitted with the Town Engineer's Approval of Construction for the ADEQ/YCDS Approval to Operate the sewer lines.

During the construction phase and prior to any backfilling or covering, the Contractor's surveyor will field survey the work for the purpose of as-built plan preparation. Surveying shall be performed and certified by a Registered Land Surveyor in good standing with the Arizona State Board of Technical Registration. The Contractor shall supply all horizontal and vertical as-built data in sealed PDF drawings and ASCII format, including a northing, easting, elevation, and description of all work completed under this contract. As-built data shall include, but not be limited to all items noted below.

1. Utility System
 - a. All utility pipes (gas, water, sewer, electrical and communications conduits, valves, fittings, manholes, storm drains, catch basins, services and associated appurtenances, and dry utilities installed or discovered during construction.
2. Paving & Miscellaneous Improvements
 - a. Shall include, but not be limited to pavement replacement limits, street centerline horizontal location and finished grades, edge of pavement horizontal location and finished grades, fencing, guardrail, signs, delineators, pavement markings and all other new construction elements.

Except for emergency or safety requirements, the Contractor generally shall not backfill or cover an item of work until verification has been completed by the Engineer or the Public Works Director, if available and if sufficient notice (48 hours) in advance of needing to cover the item. If an item of work is determined by the Engineer to be backfilled or covered prior to being recorded by the Contractor, the Contractor at the direction of the Engineer shall uncover the item of work at no additional cost to the Town.

Reference Section 105.8: The Contractor shall maintain a redlined copy of the project plans including changes made in the construction of the project. The redline copy shall be updated on a weekly basis in preparation for the weekly field meeting. The Contractor shall provide the Town with a copy of the

Record Drawings in both hard copy and PDF drawings sealed by an Arizona Registered Land Surveyor upon completion of the project. The digital record drawings shall also be furnished to the Town.

Weekly field meetings with the Contractor, Engineer, and Town shall occur to review information for conformance with the contract documents. The Contractor shall provide the Engineer with a schedule of work items to be constructed in the upcoming 30-day period, including approximate dates of installation prior to backfilling or covering. The Contractor shall maintain a set of field redlines and note any changes in the work. Missing, erroneous, or deficient redlined data must be corrected by the Contractor at no additional cost to the Town.

Measurement & Payment

Measurement and Payment for this work will be made on a lump sum basis for all construction staking, as-built survey and as-built plan preparation per Bid Schedule item: CONSTRUCTION SURVEY, STAKING, AS-BUILT SURVEY & AS-BUILT PLAN PREPARATION, MAG SP 105.8 & 105.16.

SECTION 106 CONTROL OF MATERIALS

106.2 SAMPLES AND TESTING OF MATERIALS: (Modify Section 106.2 as follows):

The Contractor shall employ and pay for an independent testing laboratory to provide all materials testing for the Project. This generally includes, but is not limited to earthwork, subgrade testing, ABC and AC pavement density testing and utility trench compaction testing. The sewer lines, manholes and other appurtenances shall be tested by the contractor in accordance with ADEQ requirements. Reference section 611.4 of these Special Provisions.

QUALITY CONTROL AND TESTING

It shall be the responsibility of the Contractor to administer a Quality Control Plan, hereinafter referred to as "Q.C.P.", sufficient to ensure a product meets the requirements of these specifications. The Q.C.P. may be operated wholly or in part by a subcontractor or an independent organization, however, the administration of the Q.C.P., including compliance with the Q.C.P. and its modifications, shall remain the responsibility of the Contractor.

The Contractor is required to provide and maintain a Quality Control Plan, along with all personnel, equipment, supplies and facilities as necessary to obtain samples, perform tests, and otherwise ensure the quality of the product.

The Contractor shall submit the Quality Control Plan, to the Owner's Engineer for approval, a minimum of ten working days prior to the start of work.

The Contractor shall perform process control sampling, testing and inspection during all phases of the work and shall perform the process control sampling, testing and inspection at a rate sufficient to assure that the work conforms to the contract requirements, and utilizing the Test Guide Tables, which are a part of this contract, as a minimum for all testing. The Contractor shall provide the Owner's Engineer with a certification stating that all of the testing equipment to be used is properly calibrated and will meet the specifications applicable for the specified test procedures. The Contractor's Engineer shall certify the results of all tests performed and provide copies of the test results to the Owner's Engineer.

Copies of all test results shall be submitted to the Owner or its representative within five (5) working days after testing and shall be certified by an engineer registered in the State of Arizona in an appropriate discipline.

Elements of the Quality Control Plan:

The Q.C.P. shall address all elements which affect the quality of any material or aspect of the project, and includes, but is not limited to the quality of the subgrade, trench bedding and backfill materials, aggregate base, chips, oil, concrete, and asphaltic concrete, and shall include, but not be limited to the following:

- A) Mix Designs
- B) Aggregate Production
- C) Quality of Components
- D) Stockpile Management
- E) Proportioning
- F) Mixing, including addition of Mineral Admixture, if required
- G) Placing and Finishing
- H) Joints
- I) Compaction

Method of Measurement:

Measurement for work under this section shall be on a lump sum basis.

Basis of Payment:

Payment for work under this section, measured as provided above shall be paid for on a lump sum basis per Bid Schedule item: SAMPLES AND TESTING OF MATERIALS, MAG, SP 106.2.

The Contractor shall utilize the following Test Guide Tables as a minimum sampling and testing requirement. The Contractor shall perform additional tests as required to produce a quality finished product as stipulated in this contract.

Table 1 – Quality Control Minimum Sampling Standard for ABC and Asphalt				
Standard MAG Spec Section	Material	Type of Test(s) Required	Sampling Point	Minimum Sampling Frequency
701, 702	Aggregate Base*	Proctor Density	Roadway and Pipe Bedding	At start of production, then as material changes
	(ABC)	Compaction	Roadway and Pipe Bedding	One per 500 ft, per lift, per lane pass
		Gradation, PI	Roadway and Pipe Bedding	One per project, or one per 1,000 tons or fraction thereof
321, 322, 323, 710	Hot In-Place Asphaltic Concrete	Oil Content and Gradation**	If no Inspector is at plant, sample in-place	One per day or one per 500 tons or fraction thereof
		Mix Design Properties	If no Inspector is at plant, sample in-place	One per day or one per 500 tons or fraction thereof
		Density/Nuke	Roadway	One per 500ft per lift, per lane pass
		Density/Core	Roadway	5 to 7 cores per mix/project** (additional cores to be taken if source or mix changes) per Engineer
Remarks:				
*If Asphalt Millings are used for bedding, they shall meet the requirements of virgin aggregate base course, Asphalt Millings are not accepted as ABC for pavement cross-section.				
**Asphalt deficient in oil content, at the direction of the Town Inspector/Lab, will be cored 50ft on both sides of failed section. The results of these 2 cores will be averaged with the original test result. Also the cores for gauge calibration.				
The Town, on an as needed basis, may require additional tests.				

Table 2 – Quality Control Minimum Sampling Standard for Concrete				
Standard MAG Spec Section	Material	Type of Test(s) Required	Sampling Point	Minimum Sampling Frequency
505, 701, 702, 725	Concrete Flat Work, CIP, Structural	Compressive Strength	At Discharge	One set of three cylinders per 50 C.Y. or portion thereof, a minimum of one per shift
		Slump, Air, Time and Temperature*	At Discharge	One per set of cylinders
		Thickness	Roadway	See Specification
	Structural Pre-cast** and Re-bar	Certification	Project	One per 100 LF of item. Re-bar size and heat number
701, 702, 725, 728	Lean Mix Concrete (Slurry)	Compressive Strength	At Discharge	One set of three cylinders per shift (per Engineer)
Remarks:				
*Concrete specification for time is 90 minutes and temperature is 90 degrees.				
**Manhole Shafts and Concrete Pipe need to have acceptance stamp on them and VCP need D-load test results from Certified Lab.				
The Town, on an as needed basis, may require additional tests.				

Table 3 – Quality Control Minimum Sampling Standard for Soil				
Standard MAG Spec Section	Material	Type of Test(s) Required	Sampling Point	Minimum Sampling Frequency
206, 601, 603, 205, 301	Soil Backfill or Trench Backfill	Proctor Density	In-Place	One per soil type
		Compaction	In-Place	One per 500ft, per lift
		Proctor Density	Roadway	One per soil type
	Subgrade	Compaction	Roadway	One per 500ft, per lift
		Gradation, PI	Roadway In-Place	One per soil type
	Manholes and Laterals	Compaction	In-Place	One per structure, pipe and lateral trench at various lifts
205, 601	Roadway, Excavation, Embankments	Proctor Density	In-Place	One per soil type
		Compaction	In-Place	One per 1,000 C.Y.
		Gradation, PI	In-Place or Source	One per soil type
211	Fill Construction	Compaction	In-Place	One per 500ft, per lift (MAG 211.3)
Remarks:				
* Any resulting failure will be re-worked before any re-tests are performed.				
** The Nuclear Gauge shall be calibrated against the Sand cone at least every twenty tests or per Engineer. Rock correction shall be used for any + #4 material to obtain Maximum Proctor Density.				
The Town, on an as needed basis, may require additional tests.				

SECTION 107

LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

107.2.3 ABOVE GROUND FUEL STORAGE PERMIT (Add):

The Contractor shall obtain an above ground fuel storage permit, if required, from the local responsible agency.

107.9 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE (is revised to include):

The Contractor shall notify the appropriate utility company, agency, or property owner of any construction that may affect their facilities.

The contractor shall include erosion control devices as necessary to limit the runoff of soils onto adjacent properties or drainages during construction and to remove the devices after construction has been completed and the site restored.

107.10 CONTRACTOR'S RESPONSIBILITY FOR WORK: (first paragraph, is revised to read)

The Contractor shall properly guard, protect, and take every precaution necessary against injury or damage to all finished or partially finished work, by the action of the elements or from any other cause until the date of final acceptance. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work before final acceptance at no cost to the Contracting Agency. Partial payment for completed portions of the work shall not release the Contractor from such responsibility.

107.15 PUBLIC NOTIFICATION:

Public notification is required for this project. The Contractor shall coordinate their construction activities with the Town, public safety agencies, ADOT, any affected schools, businesses and local residents including detour routes and roadway closures. No separate measurement or payment will be made for public notification. Any costs for Public Notification shall be included in the Contractors lump sum bid price for Mobilization.

SECTION 108

COMMENCEMENT, PROSECUTION AND PROGRESS

108.2 SUBLETTING OF CONTRACT:

F) Coordination of subcontractors' work with the Contractor's work shall be the responsibility of the Contractor.

108.5 LIMITATION OF OPERATIONS:

Except in emergencies endangering life or property, written permission shall be obtained from the Town prior to performing any work on weekends, legal holidays or after regular work hours.

Any overtime hours accrued by the Owner's inspector or appointed representatives due to the scheduling of the Contractor or any of its subcontractors shall be reimbursed to the Owner by the Contractor at a rate of \$150.00 per hour. Reimbursement shall be achieved through deductions for inspector overtime from contractor pay requests.

108.7 DETERMINATION AND EXTENSION OF CONTRACT TIME:

The contract time, including final cleanup of the project site and storage areas, may be extended as a result of weather conditions that cannot be reasonably anticipated. The number of actual days that the scheduled work is impacted by adverse weather shall be recorded weekly during the construction

period and included in the Contractors weekly schedule submittal. The effect of the delay must be shown on the Critical Path Schedule for the project. The Contractor shall submit claims for the delay of critical path work within two working days of experiencing adverse weather and associated project delays. Only delays affecting the Critical Path for the project will be considered for a time extension.

The contract time includes up to 5 Calendar days for weather conditions. Contract time extensions will be considered warranted when actual work critical to the timely completion of the project is delayed for fifty (50) percent or more of the Contractor's scheduled workday and daily precipitation, as recorded for Town is equal to or greater than twenty five (25) percent of the historical monthly average. Contract time extensions will only be considered when the weather days exceed the 5 days anticipated in the contract time.

No additional payment will be made to the Contractor for weather related time extensions.

THE CONTRACT TIME SHALL BE AS FOLLOWS:

For the **BASE BID and any awarded Bid Alternate**, the total Contract time will be **120** calendar days.

**SECTION 109
MEASUREMENTS OF QUANTITIES**

109.2 SCOPE OF PAYMENT: (Add)

Only the items listed on the Bid Schedule are pay items. Any items listed in the MAG Specifications or construction plans that are not listed on the Bid Schedule shall be considered incidental to the bid price for other items included in the Bid Schedule. Reference Section 200.1 of these Special Provisions for special earthwork measurement and payment conditions.

Cost of testing and other incidental operations, profit and overhead costs including the cost of supervision, temporary field offices, move-in, move-out, insurance, taxes, equipment not a permanent part of the job, and other incidental items, shall be included in the unit bid prices.

109.4.1 COMPENSATION FOR ALTERATION OF WORK BY THE CONTRACTING AGENCY:

(Add the following to Section 109.4, Compensation for Alteration of Work):

A Contract allowance bid item is provided for the purpose of encumbering funds to cover the costs of possible contract amendment work. The amount of the allowance item is determined by the Engineer and is not subject to individual bid pricing. All bidders shall incorporate the amount pre-entered in the bid proposal and shall include the same in the total amount bid for this Project.

This allowance item provides an estimated funding to cover unforeseen changes that may be encountered and corresponding extra work needed to complete the Contract per plan. Unforeseen extra work, if any, shall be in accordance with Section 109.4. It shall be understood that this allowance item is an estimate only and is based on contract amendment history of similar projects. It shall not be utilized without an approved contract amendment. It is further understood that authorized extra work, if any, may be less than the allowance item. The Contractor, by submittal of his bid, acknowledges that the total bid and individual bid items were prepared without anticipation of use of the contract allowance.

109.4.2 COMPENSATION FOR ALTERATION OF WORK DUE TO PHYSICAL CONDITIONS

(Replace section as follows):

No measurement or direct payment for alteration of work due to physical conditions will be made.

**PART 200
EARTHWORK
SECTION 201
CLEARING AND GRUBBING**

200.1 GENERAL:

No separate measurement for clearing and grubbing or any required earthwork (excavation, subgrade excavation, trench excavation, shoulder, slopes and channel grading and/or embankment) for the project will be made.

201.5 PAYMENT, CLEARING AND GRUBBING

Modify as follows:

No separate Measurement or Payment will be made for clearing and grubbing or project earthwork.

**PART 300
STREETS AND RELATED WORK
SECTION 301
SUBGRADE PREPARATION**

301.2 PREPARATION OF SUBGRADE: (ADD)

Subgrade preparation shall include all paved roadways and a 20' wide utility easement access road per COP Detail 612P, Detail "A", centered on all utility trench excavations that are located in undeveloped, dirt or gravel surfaced roadway areas.

301.3 RELATIVE COMPACTION: (ADD)

Unless a higher density requirement is specifically included elsewhere in the project bid documents, all subgrades and finish grading shall be compacted to a minimum of 95% of standard proctor.

301.7 MEASUREMENT is revised to read:

Subgrade preparation will be measured by the SY as allowed above. Measurement shall include paved roadways and the 20' wide utility easement access road or other miscellaneous surfaces indicated on the plans or as directed by the Engineer and will be used as the basis for payments.

301.8 PAYMENT is revised to read:

Subgrade preparation provided above will be paid for at the Bid Schedule contract unit price bid for **SUBGRADE PREPARATION** as measured per SY per 301.7 above, which price shall be full compensation for the item complete in place.

**MAG SECTION 321
PLACEMENT AND CONSTRUCTION OF ASPHALT CONCRETE PAVEMENT**

321.1 – DESCRIPTION

AMEND the following:

Description:

The work under this section shall be in accordance with Sections 321 of MAG Specifications, MAG Section 336, and MAG Section 710 Technical Supplement, QCSD Detail 200Q-1 for Trench Backfill and Surface Replacement and COP Detail 612P, Utility Easement Access Road, Detail A, with modifications and clarifications as follows:

Construction Requirements:

Asphalt pavement shall be placed in one 4" lift for all pavement replacement included on the plans. The 2" Gravel/4" ABC surfacing per COP Detail 612P Utility Easement Access Road 20' wide roadway section, Detail A, shall be constructed in all areas where new sewer lines are installed in unpaved areas.

SECTION 321.5 MIX DESIGN - ASPHALTIC CONCRETE – The asphalt that shall be used for this project shall be per MAG Section 321, MAG Section 710, and the included MAG Section 321 of these Special Provisions. The mix designation for the project shall include a 3/4" Mix with PG 64-16 binder. The use of RAP materials, per MAG Section 710.2.3, shall not be allowed for use on this project.

321.12 MEASUREMENT is revised to read:

Asphalt concrete pavement will be measured by the SY for the mixture actually used as allowed above, which shall include the required quantities of pavement saw cutting, mineral aggregates, asphalt binder, and mineral admixture. Measurement shall include intersections, roadways, streets, or other miscellaneous asphalt paved surfaces indicated on the plans or as directed by the Engineer and will be used as the basis for payments. No separate measurement or payment for saw cutting existing pavements and hard scaping shall be made, being considered incidental to the Surface Replacement item for Paved Roads.

The COP Detail 612P, Utility Easement Access Road, 2" Gravel/4" ABC construction, will be measured by the SY for the access road section actually installed for the project in unpaved areas.

321.13 PAYMENT is revised to read:

The asphalt concrete provided above will be paid for at the Bid Schedule contract unit price bid for **SURFACE REPLACEMENT - PAVED ROADS** as measured per SY per 321.12 above, which price shall be full compensation for the item complete in place.

COP Detail 612P Utility Easement Access Road will be paid for at the Bid Schedule contract unit price bid for **UTILITY EASEMENT ACCESS ROAD, COP 612P**, as measured per SY per 321.12 above, which price shall be full compensation for the item complete in place.

**MAG SECTION 329
BITUMINOUS TACK COAT**

329.1 MIX DESIGN is revised to read:

Tack coat for bituminous paved surfaces shall consist of the application of SS-1H.

329.3 APPLICATION is revised to read:

Tack coat shall be diluted in the proportion of 50 percent water and 50 percent emulsion and applied at a rate of approximately 0.10 gallons per square yard, or as directed by the Engineer. Application shall be made in advance of subsequent construction as ordered by the Engineer. Per MAG 713.5, 240 gallons of diluted material = one TON.

The tack coat shall be applied to all flat surfaces and to all saw cut edges that will receive new asphalt pavement.

329.6 METHOD OF MEASUREMENT is revised to read:

No separate measurement will be made for tack coating, being considered incidental to asphalt paving.

329.7 PAYMENT is revised to read:

No separate payment will be made for tack coating, being considered incidental to asphalt paving.

SECTION 350

REMOVAL OF EXISTING IMPROVEMENTS

350.1 – DESCRIPTION

ADD the following:

The work under this section shall consist of the removal, salvage and reinstallation, wholly or in part, and satisfactory disposal of all pavements, concrete, structures and obstructions within the project area which interfere with the construction of the proposed improvements. Salvaging of designated materials includes backfilling the resulting cavities. Existing structures, pavement, fencing and other existing improvements which are or are to become an integral part of the existing and/or planned improvements shall remain even though not specifically noted on the plans, specifications, and special provisions.

Materials removed and not designated to be salvaged or incorporated into the work shall become the property of the Contractor.

The removal of existing improvements shall be conducted in such a manner as not to injure active utilities or any portion of the existing improvements that are to remain in place.

All improvements located within the construction limits that require removal for the construction of the new improvements, whether included in the bid schedule or not, are to be removed and disposed of by the Contractor.

The following conditions shall apply for removal, replacement and matching of existing improvements to new construction. The cost of this work is incidental to the project bid amount:

1. Provide a minimum 24" of transition grading from existing improvements to new construction elements to provide a smooth transition between existing grades and the new improvements.
2. Existing improvements shall be removed and replaced in kind within the 24" transition zone. This includes concrete, ABC, asphalt driveway transitions, landscape stone/brick, irrigation components, fences or any other landscape features requiring the transition.
3. Shrubs/low growth vegetation may be trimmed to provide room for necessary construction devices.
4. The Contractor will coordinate with the Town for the exact limits of the removals and replacements as required at each match up location.
5. ABC shall be used for any match up required at unimproved driveways or other locations subject to vehicle or pedestrian traffic where not specifically called out for replacement on the plans. Native earthen materials may be used at locations not subject to vehicle or pedestrian traffic.
6. Improvements within the 24" transition zone must be adjusted to final finish grade elevations.

350.2 – CONSTRUCTION METHODS

ADD the following:

Culverts, signs, striping and other structures in use by traffic shall not be removed until satisfactory arrangements have been made to accommodate the traffic. Operations necessary for the removal of an existing structure or obstruction, which may damage new construction, shall be completed prior to commencing the new work.

Items to be salvaged and reused shall be carefully stockpiled or stored by the Contractor at locations designated in the Contract Documents or as directed by the Engineer and/or Owner. Items to be salvaged or reused in the new construction that are damaged or destroyed as a result of the

Contractor's operations shall be repaired or replaced by the Contractor at no additional cost to the Town.

350.2.1 - UTILITIES:

ADD the following:

All existing utilities not designated for removal shall remain in place and be protected against damage. The Contractors shall be responsible for utility damages and repairs per MAG Section 107.11.

The Contractor is cautioned that a 36" high pressure water main is located in South Road 1 East where the new sewer mains being installed for this project connect to the existing downstream manhole. **The Contractor shall exercise extreme caution when working near the existing City of Prescott water mains.**

350.3 – MISCELLANEOUS REMOVAL AND OTHER WORK

REPLACE in its entirety with the following:

Removal necessitated by the work as it progresses and not specifically called out on the Plans will be considered incidental work. All removal items not specifically designated for stockpiling or other uses shall be deemed to be Surplus Material and disposed of in accordance with the provisions of Section 205.6 of the Specifications. Hard surface removals (asphalt, concrete, etc.) shall require a neat saw cut edge or removal to the nearest joint. No separate measurement or payment will be made for saw cutting.

350.3.5 – REMOVAL OF SIGNS AND DELINEATORS:

Signs and delineators are not anticipated to require removal. Street signs, delineators and traffic control signs damaged by the Contractor shall be removed and replaced and new signs or delineators shall be installed by the Contractor at no cost to the Town. Sign replacements will require approval from the Town Engineer. The Contractor shall dismantle the signs and delineators and remove the signposts from the ground in such a manner as to prevent damage to the posts and signs. The Contractor shall execute care when removing all salvageable parts or appurtenances so as to permanently reinstall these items in as good as a condition as possible after construction is complete. Note that all new or relocated sign installations shall require **new posts and bases** per Quad City Standard Detail 131Q. Sign panels may be reused if not damaged.

Removal also includes removal of the sign and delineator concrete or other bases and backfill with compacted ABC to fill the void spaces left by the base removals. Per the direction of the Town Engineer, temporary street signs, delineators and traffic control signs may be required during construction and shall be provided by the Contractor. The Contractor shall not remove the existing street signs, delineators and traffic control signs without approval from the Engineer and/or Town and temporary street signs, delineators and traffic control signs in place.

Installation of new or relocated foundations, posts and signs shall be per Quad City Standard Detail 131Q, complete in place.

350.4 – MEASUREMENT AND PAYMENT:

REPLACE in its entirety with the following:

No separate measurement will be made for removals. Payment for removals will be made at the contractors lump sum bid amount included in the Bid Schedule for **REMOVALS, MAG 350** and include all removals required for the construction of the work associated with the project, whether indicated on the plans or not.

PART 400
RIGHT-OF-WAY AND TRAFFIC CONTROL
SECTION 401
TRAFFIC CONTROL

401.1 DESCRIPTION (Modify):

Traffic Control will be a critical component of the work and shall apply to both vehicle and pedestrian traffic at the construction sites.

All Traffic Control shall be in accordance with Section 401 of the MAG Standard Specifications and the Manual on Uniform Traffic Control Devices, 2009 Edition (MUTCD), U.S. Department of Transportation, Federal Highway Administration, ADOT requirements for work in the SR89 ROW, and all subsequent revisions thereto and as modified herein. Traffic control shall consist of furnishing, installing, maintaining, moving and removing barricades, warning signs, lights, signals, cones, and other traffic control devices, including construction signing of detour routes to provide safe and efficient passage through and/or around the work for movement of traffic through construction zones and to protect workmen in or adjacent to the work zone. The requirements of the MUTCD shall be considered as the minimum standards for the protection of workmen and the traveling public.

Prior to the commencement of any construction operations by the Contractor, a Traffic Control Plan shall be submitted to the Town for approval. The Traffic Control Plan shall be submitted prior to issuance of the Notice to Proceed with the construction; and shall specifically and graphically identify a proposed sequence of operations and a compatible method of maintaining traffic. No detours shall be opened to traffic until approved by the Engineer. Additional site specific adjustments to traffic control will be required if deemed necessary by the Engineer.

The Contractor will be responsible for the implementation and maintenance of all approved traffic control plans and devices. During the Contractor's working hours, sufficient staffing and traffic control around the active construction zone shall be provided to ensure safe conditions.

401.5 GENERAL TRAFFIC REGULATIONS is revised to include:

Full closure of any roads within this project will not be permitted unless specifically allowed by the Town. Flagmen with radio communication will be required to maintain at least one lane of traffic at all times unless traffic control signs and other devices are adequate to delineate the construction zone. Flagging stations shall be positioned at the beginning, end, and at all intersecting roadways within a paving segment where required.

Vehicular access shall be maintained to developed properties at all possible times. When access must be restricted for construction, the Contractor shall give written notice to each affected resident/business not less than 48 hours in advance.

It is important to note that flagging stations or appropriate signs shall be required at all roadway access points entering the work zone. This includes, but is not limited to mainline roads, side roads, service roads and commercial driveways.

The Contractor shall provide proper signing and delineators at all approaches to each construction zone and shall provide detailed road schematics and detour routes as necessary.

Electronic Message Board(s) will not be required for this project.

Fixed Project Information Sign - An 8' x 4' sign shall be installed at a fixed location for the project (as approved by the Town), which will provide the following information to the general public:

- Name of Project
- Dates of construction
- Name of Contractor
- Contractors contact phone number

All sign content shall be approved by the Town as appropriate and the cost and installation of the signs shall be considered incidental to Traffic Control.

Any project areas that will result in queuing of traffic into the roadways of other jurisdictions (ADOT, other local governments) may require that the Contractor secure a permit from that agency. Permit fees, traffic control plans and/or other requirements for the permit shall be included within the bid costs of the Traffic Control line item included in the Bid Schedule.

401.6 METHOD OF MEASUREMENT first paragraph is revised to read:

Traffic control shall be measured as a Lump Sum (LS) item and shall include all items, materials, equipment, signs, workmen, devices, fixed project information signs, facilities and work necessary to provide adequate traffic control and detours as detailed in the Contractors Traffic Control Plan and as directed by the Engineer.

401.7 PAYMENT is revised to read:

Payment will be made per the Bid Schedule item for **TRAFFIC CONTROL, MAG SP 401 & ADOT REQUIREMENTS** as a lump sum for this project.

PART 600
WATER, SEWER, STORM DRAIN AND IRRIGATION

SECTION 601
TRENCH EXCAVATION, BACKFILLING AND COMPACTION

601.4.6 COMPACTION DENSITIES: (ADD)

Trench backfill densities expressed as percent of maximum Std. Proctor are specified in the Plans per the TRENCH DETAILS. Minimum densities, in all instances, shall not be less than 95%, unless specifically authorized by the Engineer in writing.

No water settlement will be allowed.

All existing and/or new culverts with less than 2' of minimum cover to finished grade, located in traveled areas with new asphalt or other surfacing as a part of this project, will be required to be encased in a single sack slurry backfill (CLSM) per MAG Section 728 up to 6" above the top of the pipe.

611.4 SEWER LINE TESTING: (ADD)

Sewer line testing in accordance with ADEQ requirements shall be completed by the Contractor and witnessed by the Engineer. Testing includes deflection testing, low pressure air testing of the sewer lines and vacuum testing of the manholes. All test results will be provided to the Town/Engineer. Additionally, a video inspection of the interior of the sewer lines shall be completed by the Contractor and the results provided to the Town/Engineer in both electronic video and hard copy sewer inspection forms for the project record.

611.7 PAYMENT: (MODIFY)

No separate measurement or payment will be made for the sewer line testing and video inspection for the project, the cost of which being considered incidental to the sewer line construction.

PART 700 MATERIALS

700.1 GENERAL MATERIAL REQUIREMENTS (Add)

- All asphalt shall conform to a MAG Section 321, MAG Section 710 and the included MAG Section 321 in these Special Provisions. The mix designation for the project shall be a 3/4" Mix for all AC construction and include a PG 64-16 binder.
- RAP shall not be allowed per MAG 710.2.3.
- Aggregate Base Course material shall be per MAG Section 702 and Table 702-1 for "Aggregate Base Course".
- All concrete used on the project shall be MAG Class AA, 4,000 psi, with an air entraining admixture. This requirement supersedes all standard details and specifications where a lesser concrete strength is noted.
- Pavement markings and striping, if required, shall conform to ADOT material and painting standards.
- All sewer lines shall be ASTM D3034, SDR-35 PVC, sized per the plans and constructed in conformance with ASTM D2321.
- 4" and 6" sewer service laterals shall be per QCSD, City of Prescott Std Det 440P-1.
- All other materials shall be as required by the Standard Details, industry standards, manufacturers recommendations, and/or other referenced specifications.
- Work near or in ADOT ROW's will require conformance to ADOT permit requirements, including painting and pavement marking materials and any other special conditions of the ADOT permit.

**COOPERATIVE PURCHASING AGREEMENT
BETWEEN
THE TOWN OF CHINO VALLEY
AND
FANN CONTRACTING, INC.**

THIS COOPERATIVE PURCHASING AGREEMENT (this “Agreement”) is entered into as of September 26, 2023, between the Town of Chino Valley, an Arizona municipal corporation (the “Town”), and Fann Contracting, Inc., an Arizona corporation (the “Contractor”). The Town and Contractor are the only parties to this Agreement; they are each individually a “Party,” and together they are the “Parties.”

RECITALS

A. After a competitive procurement process, the City of Prescott, Arizona (“Prescott”), entered into Contract No. 2023-210, dated June 13, 2023 (the “Prescott Contract”), for the Contractor to provide job order contracting services for public works/horizontal construction projects. A copy of the Prescott Contract is attached hereto as Exhibit A and incorporated herein by reference to the extent not inconsistent with this Agreement.

B. The Town is permitted to purchase such materials and services under the Prescott Contract, at its discretion and with the agreement of the awarded Contractor.

C. The Town and the Contractor desire to enter into this Agreement for the purpose of (i) acknowledging their cooperative contractual relationship under the Prescott Contract and this Agreement, (ii) establishing the terms and conditions by which the Contractor may provide the Town with construction materials and services, as more particularly set forth in Section 2 below on an as-needed basis (the “Materials and Services”), and (iii) setting the maximum aggregate amount to be expended pursuant to this Agreement related to the Materials and Services.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing introduction and recitals, which are incorporated herein by reference, the following mutual covenants and conditions, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Town and the Contractor hereby agree as follows:

1. Term of Agreement. This Agreement shall be effective as of the date first set forth above and shall remain in full force and effect until June 30, 2025, unless terminated as otherwise provided in this Agreement or the Prescott Contract (the “Term”). The terms and conditions of the Prescott Contract are incorporated herein and shall survive the termination or expiration thereof.

2. Scope of Work. This is an indefinite quantity and indefinite delivery Agreement for job order contracting on public works/horizontal construction projects under the terms and conditions of the Prescott Contract and this Agreement. The Town does not guarantee any minimum or maximum number of purchases will be made pursuant to this Agreement. Purchases

of such Materials and Services will only be made when the Town identifies a need and proper authorization and documentation have been approved. For purchase(s) determined by the Town to be appropriate for this Agreement, the Contractor shall provide the Materials and Services to the Town in such quantities and configurations agreed upon between the Parties in a written invoice, quote, work order, job order, or other form of written agreement describing the work to be completed (each, a “Job Order”). Each Job Order shall (i) contain a reference to this Agreement and the Prescott Contract and (ii) be attached hereto as Exhibit B and incorporated herein by reference. Job Orders submitted without referencing this Agreement and the Prescott Contract will be subject to rejection. The Contractor acknowledges and agrees that Job Orders containing unauthorized exceptions, conditions, limitations, or provisions in conflict with the terms of this Agreement (collectively, the “Unauthorized Conditions”), other than Town’s project-specific requirements, are hereby expressly declared void and shall be of no force and effect. Acceptance by the Town of any Job Order or invoice containing any such Unauthorized Conditions or failure to demand full compliance with the terms and conditions set forth in this Agreement or under the Prescott Contract shall not alter such terms and conditions or relieve the Contractor from, nor be construed or deemed a waiver of, its requirements and obligations in the performance of this Agreement.

2.1 Inspection; Acceptance. All Materials and Services are subject to final inspection and acceptance by the Town. Materials failing to conform to the requirements of this Agreement or the Prescott Contract will be held at the Contractor’s risk and may be returned to the Contractor. If so returned, all costs are the responsibility of the Contractor. Upon discovery of non-conforming Materials or Services, the Town may elect to do any or all of the following by written notice to the Contractor: (A) waive the non-conformance; (B) stop the work immediately; or (C) bring Materials or Service into compliance and withhold the cost of same from any payments due to the Contractor.

2.2 Cancellation. The Town reserves the right to cancel Job Orders within a reasonable period of time after issuance. Should a Job Order be canceled, the Town agrees to reimburse the Contractor, but only for actual and documentable costs incurred by the Contractor due to and after issuance of the Job Order. The Town will not reimburse the Contractor for any costs incurred after receipt of the Town’s notice of cancellation, or for lost profits, shipment of product prior to issuance of a Job Order, or anything not expressly permitted pursuant to this Agreement.

3. Compensation. The Town shall pay the Contractor for the Materials and Services in the amounts set forth in each Job Order. The maximum dollar amount of an individual Job Order shall not exceed \$1,000,000, and the combined maximum dollar amount during any fiscal year shall not exceed \$3,000,000.

4. Payments. The Town shall pay the Contractor monthly, based upon acceptance and delivery of Materials and/or Services performed and completed to date, and upon submission and approval of invoices. Each invoice shall (i) contain a reference to this Agreement and the Prescott Contract and (ii) document and itemize all work completed to date. The invoice statement shall include a record of Materials delivered, time expended, and work performed in sufficient detail to justify payment. Additionally, invoices submitted without referencing this Agreement and the Prescott Contract will be subject to rejection and may be returned.

5. Safety Plan. The Contractor shall provide the Services in accordance with a safety plan that is compliant with Occupational Safety and Health Administration (“OSHA”), American National Standards Institute, and National Institute for Occupational Safety and Health standards. If, in the Contractor’s sole determination, the Services to be provided do not require a safety plan, the Contractor shall notify the Town, in writing, describing the reasons a safety plan is unnecessary. The Town reserves the right to request a safety plan following such notification.

6. Records and Audit Rights. To ensure that the Contractor and its subcontractors are complying with the warranty under Section 7 below, the Contractor’s and its subcontractors’ books, records, correspondence, accounting procedures and practices, and any other supporting evidence relating to this Agreement, including the papers of any of the Contractor’s and its subcontractors’ employees who perform any work or services pursuant to this Agreement (all of the foregoing hereinafter referred to as “Records”), shall be open to inspection and subject to audit and/or reproduction during normal working hours by the Town, to the extent necessary to adequately permit (i) evaluation and verification of any invoices, payments, or claims based on the Contractor’s and its subcontractors’ actual costs (including direct and indirect costs and overhead allocations) incurred, or units expended directly in the performance of work under this Agreement and (ii) evaluation of the Contractor’s and its subcontractors’ compliance with the Arizona employer sanctions laws referenced in Section 7 below. To the extent necessary for the Town to audit Records as set forth in this Section, the Contractor and its subcontractors hereby waive any rights to keep such Records confidential. For the purpose of evaluating or verifying such actual or claimed costs or units expended, the Town shall have access to said Records, even if located at its subcontractors’ facilities, from the effective date of this Agreement for the duration of the work and until three years after the date of final payment by the Town to the Contractor pursuant to this Agreement. The Contractor and its subcontractors shall provide the Town with adequate and appropriate workspace so that the Town can conduct audits in compliance with the provisions of this Section. The Town shall give the Contractor or its subcontractors reasonable advance notice of intended audits. The Contractor shall require its subcontractors to comply with the provisions of this Section by insertion of the requirements hereof in any subcontract pursuant to this Agreement.

7. E-Verify Requirements. To the extent applicable under ARIZ. REV. STAT. § 41-4401, the Contractor and its subcontractors warrant compliance with all federal immigration laws and regulations that relate to their employees and their compliance with the E-Verify requirements under ARIZ. REV. STAT. § 23-214(A). The Contractor’s or its subcontractor’s failure to comply with such warranty shall be deemed a material breach of this Agreement and may result in the termination of this Agreement by the Town.

8. Israel. To the extent applicable under ARIZ. REV. STAT. § 35-393 through § 35-393.03, the Parties hereby certify that they are not currently engaged in, and agree to not engage in for the duration of this Agreement, a “boycott” of goods or services from Israel, as that term is defined in ARIZ. REV. STAT. § 35-393.

9. Conflict of Interest. The Town may cancel this Agreement pursuant to ARIZ. REV. STAT. § 38-511.

10. Applicable Law; Venue. This Agreement shall be governed by the laws of the State of Arizona, and a suit pertaining to this Agreement may be brought only in courts in Yavapai County, Arizona.

11. Agreement Subject to Appropriation. The Town is obligated only to pay its obligations set forth in this Agreement as may lawfully be made from funds appropriated and budgeted for that purpose during the Town's then-current fiscal year. The Town's obligations under this Agreement are current expenses subject to the "budget law" and the unfettered legislative discretion of the Town concerning budgeted purposes and appropriation of funds. Should the Town elect not to appropriate and budget funds to pay its Agreement obligations, this Agreement shall be deemed terminated at the end of the then-current fiscal year term for which such funds were appropriated and budgeted for such purpose, and the Town shall be relieved of any subsequent obligation under this Agreement. The Parties agree that the Town has no obligation or duty of good faith to budget or appropriate the payment of the Town's obligations set forth in this Agreement in any budget in any fiscal year other than the fiscal year in which this Agreement is executed and delivered. The Town shall be the sole judge and authority in determining the availability of funds for its obligations under this Agreement. The Town shall keep the Contractor informed as to the availability of funds for this Agreement. The obligation of the Town to make any payment pursuant to this Agreement is not a general obligation or indebtedness of the Town. The Contractor hereby waives any and all rights to bring any claim against the Town from or relating in any way to the Town's termination of this Agreement pursuant to this section.

12. Conflicting Terms. In the event of any inconsistency, conflict, or ambiguity among the terms of this Agreement, including any amendments, and any Town-approved Job Orders, the Prescott Contract, and invoices, the documents shall govern in that order.

13. Rights and Privileges. To the extent provided under the Prescott Contract, the Town shall be afforded all of the rights and privileges afforded to Prescott and shall be the "City" (as defined in the Prescott Contract) for the purposes of this Agreement.

14. Indemnification; Insurance. In addition to and in no way limiting the provisions set forth in Section 13 above, the Town shall be afforded all of the insurance coverage and indemnifications afforded to Prescott to the extent provided under the Prescott Contract, and such insurance coverage and indemnifications shall inure and apply with equal effect to the Town under this Agreement including, but not limited to, the Contractor's obligation to provide the indemnification and insurance. In any event, the Contractor shall indemnify and hold harmless the Town and each council member, officer, employee, or agent thereof (the Town and any such person being herein called an "Indemnified Party"), for, from, and against any and all losses, claims, damages, liabilities, costs, and expenses (including, but not limited to, reasonable attorneys' fees, court costs, and the costs of appellate proceedings) to which any such Indemnified Party may become subject, under any theory of liability whatsoever ("Claims") to the extent that such Claims (or actions in respect thereof) are caused by the negligent acts, recklessness, or intentional misconduct of the Contractor, its officers, employees, agents, or any tier of subcontractor in connection with the Contractor's work or services in the performance of this Agreement.

15. Notices and Requests. Any notice or other communication required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been duly given if (i) delivered to the Party at the address set forth below, (ii) deposited in the U.S. Mail, registered or certified, return receipt requested, to the address set forth below, or (iii) given to a recognized and reputable overnight delivery service, to the address set forth below:

If to the Town Town of Chino Valley
 202 North State Route 89
 Chino Valley, Arizona 86323
 Attn: Town Manager

With copy to: GUST ROSENFELD P.L.C.
 One East Washington Street, Suite 1600
 Phoenix, Arizona 85004-2553
 Attn: Andrew J. McGuire

If to the Contractor: Fann Contracting, Inc.
 P. O. Box 4356
 Prescott, Arizona 86302
 jfann@fanncontracting.com
 Attn: Jason Fann

or at such other address, and to the attention of such other person or officer, as any Party may designate in writing by notice duly given pursuant to this subsection. Notices shall be deemed received (i) when delivered to the Party, (ii) three business days after being placed in the U.S. Mail, properly addressed, with sufficient postage, or (iii) the following business day after being given to a recognized overnight delivery service, with the person giving the notice paying all required charges and instructing the delivery service to deliver on the following business day. If a copy of a notice is also given to a Party's counsel or other recipient, the provisions above governing the date on which a notice is deemed to have been received by a Party shall mean and refer to the date on which the Party, and not its counsel or other recipient to which a copy of the notice may be sent, is deemed to have received the notice.

16. Forced Labor of Ethnic Uyghurs. To the extent applicable under ARIZ. REV. STAT. § 35-394, the Contractor warrants and certifies that it does not currently, and agrees that it will not for the duration of this Agreement use the forced labor, any goods or services produced by the forced labor, or any contractors, subcontractors, or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China. If the Contractor becomes aware that it is not in compliance with this paragraph, it shall notify the Town of the noncompliance within five business days of becoming aware of it. If the Contractor fails to provide a written certification that it has remedied the noncompliance within 180 days after that, this Agreement shall terminate unless the termination date of this Agreement occurs before the end of the remedy, in which case this Agreement terminates on its termination date.

17. Counterparts. This Agreement may be executed simultaneously or in counterparts, each of which constitutes an original, but all of which together constitute one and the same agreement.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the date and year first set forth above.

“Town”

TOWN OF CHINO VALLEY,
an Arizona municipal corporation



Jack W. Miller, Mayor
Eric Granillo, Vice-Mayor for Mayor Miller

ATTEST:



Erin N. Deskins, Town Clerk

APPROVED AS TO FORM:



Andrew J. McGuire, Town Attorney
Gust Rosenfeld, PLC

“Contractor”

FANN CONTRACTING, INC.,
an Arizona corporation



Jason Fann, President

EXHIBIT A
TO
COOPERATIVE PURCHASING AGREEMENT
BETWEEN
THE TOWN OF CHINO VALLEY
AND
FANN CONTRACTING, INC.

[Prescott Contract]

See following pages.

EXHIBIT B
TO
COOPERATIVE PURCHASING AGREEMENT
BETWEEN
THE TOWN OF CHINO VALLEY
AND
FANN CONTRACTING, INC.

[Job Orders]

See following pages (to be attached subsequent to execution).



TOWN COUNCIL AGENDA ITEM STAFF REPORT

AGENDA ITEM # 7b
MEETING DATE: 4/9/2024
CONTACT PERSON: Frank Marbury, Public Works Director/Town Engineer
ITEM TYPE: Action Item

AGENDA ITEM TITLE:

Consideration and possible action to award a Professional Service Agreement (PSA) for Engineering Services to Pacific Advanced Civil Engineering, Inc. (PACE) in the amount of \$826,915 for the Water Reclamation Facility Improvements Project.

SUMMARY:

The Town's Water Reclamation Facility (WRF) is comprised of an offsite influent lift station; a headworks facility for fine screening and grit removal; two MBR process trains, each consisting of anoxic, pre-aeration, and membrane separation tanks; an in-line ultraviolet (UV) disinfection system; a final effluent pump station; a Waste Activated Sludge (WAS) dewatering screw press; and five offsite rapid infiltration basins. The WRF was constructed in 2004 to treat Average Daily Flows (ADF) of up to 500,000 gallons per day along with corresponding treatment demand levels for Nitrogen, Biological Oxygen Demand (BOD), etc.

Even though the daily average flow is only around 310,000 gallons per day, the plant is experiencing two issues related to treatment. The plant experiences peak flow patterns in the morning and evening that exceed the amounts the plant can comfortably handle and conversely the flows overnight fall to almost zero. Secondly, the biological demand and incoming BOD and Nitrogen demand exceed the original design parameters for the flow amount. As a result, the plant is struggling to meet the permitted effluent limits in the secondary treatment process.

Lastly, the plant was never designed to consider treatment of PFOA and other emerging contaminants being looked at by the EPA. Effluent from the WRF has recorded contaminant levels potentially above the proposed maximum contaminant levels (MCLs) for all PFAS constituents for drinking water. Although these levels do not represent a violation of the existing discharge permits of the facility, the Town recognizes the potential impact of this facility on regional groundwater systems. The proposed pilot PFAS constituent removal program would analyze treatments in order to determine a strategy for future processes.

The Town's Public Works Department issued a Request for Qualifications (RFQ) to acquire a qualified engineering firm for design services on 12/26/23. On 1/25/24, the Town received two (2) Statements of Qualification (SOQ) as follows:

Rank	Firm
1	Pacific Advanced Civil Engineering, Inc. (PACE)

2	Kimley-Horn and Associates, Inc.
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A selection committee comprised of Town staff scored and ranked the SOQs on 2/7/24 and negotiated the scope and fee with the top ranked firm.

The proposed task with associated fees are as follows:

Task #	Task Description	Fee
10	Project Funding	\$14,170
11	Water Quality Evaluation	\$234,280
20	Design Management & Coordination	\$32,890
21	Conceptual Design Report	\$45,460
22	CMAR Selection	\$19,540
23	CMAR Design Coordination	\$50,120
24	Data Gathering	\$47,091
30	60% Design Services	\$190,344
31	90% Design Services	\$102,618
32	100% Design Services	\$64,382
40	Permitting	\$26,020
	Total	\$826,915

(Note, there is an optional \$259,800 for the full design of the PFAS Treatment that staff will bring back to Council if the option needs to be exercised.)

PREVIOUS ACTION:

N/A

STAFF RECOMMENDATION:

Award a Professional Service Agreement (PSA) for Engineering Services to Pacific Advanced Civil Engineering, Inc. (PACE) in the amount of \$826,915 for the Water Reclamation Facility Improvements Project.

FISCAL IMPACT?

Available budget: Capital Improvement Fund - Sewer	\$976,500
Less this approval item: PSA - Pacific Advanced Civil Engineering	<u>-826,915</u>

Remaining budget: Capital Improvement Fund - Sewer	\$149,585
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***Note:** A loan from WIFA will most likely be required for this PSA in the amount of \$826,915 in addition to the cost of the WRF improvement project costs. The funding details will be determined during the first stage of this PSA over the next few months.*

ATTACHMENTS:

-
-
1. PSA - WRF Improvements Engineering Services - PACE (w/ exhibits)
 2. Exhibit A - PACE Statement of Qualifications
 3. Exhibit B - Scope of Work and Fee Proposal
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**PROFESSIONAL SERVICES AGREEMENT
BETWEEN
THE TOWN OF CHINO VALLEY
AND
PACIFIC ADVANCED CIVIL ENGINEERING, INC.**

THIS PROFESSIONAL SERVICES AGREEMENT (this “Agreement”) is entered into as of April 9, 2024, between the Town of Chino Valley, an Arizona municipal corporation (the “Town”), and Pacific Advanced Civil Engineering, Inc., a California corporation (the “Consultant”).

RECITALS

A. The Town issued a Request for Qualifications, “RFQ for Engineering Consulting Services for the Chino Valley Water Reclamation Facility Improvements Project” (the “RFQ”), a copy of which is on file in the Town’s Finance Office and incorporated herein by reference, seeking statements of qualifications from vendors for professional engineering services that include design, permitting, bid management and procurement, construction support, evaluation, and grant writing (the “Services”).

B. The Consultant responded to the RFQ by submitting a statement of qualifications (the “SOQ”), attached hereto as Exhibit A and incorporated herein by reference.

C. The Town desires to enter into an agreement with the Consultant for the Services.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing introduction and recitals, which are incorporated herein by reference, the following mutual covenants and conditions, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Town and the Consultant hereby agree as follows:

1. Term of Agreement. This Agreement shall be effective as of the date first set forth above and shall remain in full force and effect until April 8, 2026, unless terminated as otherwise provided in this Agreement.

2. Scope of Work. The Consultant shall provide the Services set forth in the Scope of Work attached hereto as Exhibit B and incorporated herein by reference. The Consultant shall (A) provide the Services required by this Agreement, (B) be responsible for all means, methods, techniques, sequences, and proceedings associated with the Services, and (C) be responsible for the acts and omissions of its employees, agents, and other persons performing any of the Services under a contract with the Consultant. Prior to commencing the Services, the Consultant shall tour the Project site, become familiar with existing conditions, including utilities, and notify the Town of any constraints associated with the Project site.

3. Compensation. The Town shall pay the Consultant an amount not to exceed **\$826,915.00** for the Services at the rates set forth in the Fee Proposal, attached hereto as part of Exhibit B and incorporated herein by reference.

4. Payments. The Town shall pay the Consultant monthly, based on work performed and completed to date, and upon submission and approval of invoices. All invoices shall document and itemize all work completed to date. Each invoice statement shall include a record of time expended and work performed in sufficient detail to justify payment.

5. Safety Plan. The Consultant shall provide the Services in accordance with a safety plan that is compliant with Occupational Safety and Health Administration (“OSHA”), American National Standards Institute, and National Institute for Occupational Safety and Health standards. If, in the Consultant’s sole determination, the Services to be provided do not require a safety plan, the Consultant shall notify the Town, in writing, describing the reasons a safety plan is unnecessary. The Town reserves the right to request a safety plan following such notification.

6. Documents. All documents, including any intellectual property rights thereto, prepared and submitted to the Town pursuant to this Agreement shall be the property of the Town. The Town may use such documents for other purposes without further compensation to the Consultant; however, any reuse without written verification or adaptation by the Consultant for the specific purpose intended will be at the Town’s sole risk and without liability or legal exposure to the Consultant.

7. Consultant Personnel. The Consultant shall provide experienced personnel, capable of and devoted to the successful performance of the Services under this Agreement. The Consultant agrees to assign specific individuals to key positions. If deemed qualified, the Consultant is encouraged to hire Town residents to fill vacant positions at all levels. The Consultant agrees that, upon commencement of the Services to be performed under this Agreement, key personnel will not be removed or replaced without prior written notice to the Town. If key personnel are not available to perform the Services for a continuous period exceeding 30 calendar days, or are expected to devote substantially less effort to the Services than initially anticipated, the Consultant shall immediately notify the Town of same and shall, subject to the concurrence of the Town, replace such personnel with personnel possessing substantially equal ability and qualifications.

8. Inspection; Acceptance. All work shall be subject to inspection and acceptance by the Town at reasonable times during the Consultant’s performance. The Consultant shall provide and maintain a self-inspection system that is acceptable to the Town.

9. Licenses. The Consultant shall maintain in current status all federal, state, and local licenses and permits required for the operation of the business conducted by the Consultant. The Town has no obligation to provide the Consultant, its employees, or subcontractors any business registrations or licenses required to perform the specific services set forth in this Agreement.

10. Materials; Equipment. The Consultant shall provide, pay for, and insure under the requisite laws and regulations all labor, materials, equipment, tools, transportation, and other facilities and services necessary for the proper execution and completion of the Services.

11. Performance Warranty. In addition to any specific obligations set forth in Exhibit B, the Consultant warrants that the Services rendered will conform to the requirements of this Agreement and shall be carried out with the care and skill ordinarily used by members of the same profession practicing under similar circumstances at the same time and in the same locality.

12. Indemnification. To the fullest extent permitted by law, the Consultant shall indemnify and hold harmless the Town and each council member, officer, employee, or agent thereof (the Town and any such person being herein called an “Indemnified Party”), for, from, and against any and all losses, claims, damages, liabilities, costs, and expenses (including, but not limited to, reasonable attorneys’ fees, court costs, and the costs of appellate proceedings) to which any such Indemnified Party may become subject, under any theory of liability whatsoever (“Claims”) to the extent that such Claims (or actions in respect thereof) are caused by the negligent acts, recklessness, or intentional misconduct of the Consultant, its officers, employees, agents, or any tier of subcontractor in connection with the Consultant’s work or services in the performance of this Agreement. The amount and type of insurance coverage requirements set forth below will in no way be construed as limiting the scope of the indemnity in this Section.

13. Insurance.

13.1 General.

A. Insurer Qualifications. Without limiting any obligations or liabilities of the Consultant, the Consultant shall purchase and maintain, at its own expense, hereinafter stipulated minimum insurance with insurance companies authorized to do business in the State of Arizona pursuant to ARIZ. REV. STAT. § 20-206, as amended, with an AM Best, Inc. rating of A- or above with policies and forms satisfactory to the Town. Failure to maintain insurance as specified herein may result in termination of this Agreement at the Town’s option.

B. No Representation of Coverage Adequacy. By requiring insurance herein, or by approving or expressing satisfaction with insurance policies and forms pursuant to the provisions of this Agreement, the Town does not represent that coverage and limits will be adequate to protect the Consultant. The Town reserves the right to review any and all of the insurance policies and/or endorsements cited in this Agreement, but has no obligation to do so. Failure to demand such evidence of full compliance with the insurance requirements set forth in this Agreement or failure to identify any insurance deficiency shall not relieve the Consultant from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Agreement.

C. Additional Insured. All insurance coverage, except Workers’ Compensation insurance and Professional Liability insurance, if applicable, shall name, to the fullest extent permitted by law for claims arising out of the performance of this Agreement, the Town, its agents, representatives, officers, directors, officials, and employees as Additional Named Insured as specified under the respective coverage sections of this Agreement.

D. Coverage Term. All insurance required herein shall be maintained in full force and effect until all work or services required to be performed under the terms of this Agreement are satisfactorily performed, completed, and formally accepted by the Town unless specified otherwise in this Agreement.

E. Primary Insurance. The Consultant's insurance shall be primary and non-contributory insurance with respect to performance of this Agreement and in the protection of the Town as an Additional Insured.

F. Claims Made. If any insurance policies required by this Agreement are written on a "claims made" basis, coverage shall extend, either by keeping coverage in force or purchasing an extended reporting option, for three years past completion and acceptance of the Services. Such continuing coverage shall be evidenced by submission of annual Certificates of Insurance and necessary endorsements citing applicable coverage is in force and contains the provisions as required herein for the three-year period.

G. Waiver. All policies, except for Professional Liability, including Workers' Compensation insurance, shall contain a waiver of rights of recovery (subrogation) against the Town, its agents, representatives, officials, officers, and employees for any claims arising out of the work or services of the Consultant. The Consultant shall arrange to have such subrogation waivers incorporated into each policy via formal written endorsement thereto.

H. Policy Deductibles and/or Self-Insured Retentions. The policies set forth in these requirements may provide coverage that contains deductibles or self-insured retention amounts. Such deductibles or self-insured retention shall not be applicable with respect to the policy limits provided to the Town. The Consultant shall be solely responsible for any such deductible or self-insured retention amount.

I. Use of Subcontractors. If any work under this Agreement is subcontracted in any way, the Consultant shall execute written agreements with its subcontractors containing the indemnification provisions set forth in this Section and insurance requirements set forth herein protecting the Town and the Consultant. The Consultant shall be responsible for executing any agreements with its subcontractors and obtaining certificates of insurance verifying the insurance requirements.

J. Evidence of Insurance. Prior to commencing any work or services under this Agreement, the Consultant will provide the Town with suitable evidence of insurance in the form of certificates of insurance and a copy of the declaration page(s) of the insurance policies as required by this Agreement, issued by the Consultant's insurer(s) as evidence that policies are placed with acceptable insurers as specified herein and provide the required coverages, conditions and limits of coverage specified in this Agreement and that such coverage and provisions are in full force and effect. Confidential information such as the policy premium may be redacted from the declaration page(s) of each insurance policy, provided that such redactions do not alter any of the information required by this Agreement. The Town shall reasonably rely upon the certificates of insurance and

declaration page(s) of the insurance policies as evidence of coverage. Still, such acceptance and reliance shall not waive or alter in any way the insurance requirements or obligations of this Agreement. If any of the policies required by this Agreement expire during the life of this Agreement, it shall be the Consultant's responsibility to forward renewal certificates and declaration page(s) to the Town 30 days prior to the expiration date. All certificates of insurance and declarations required by this Agreement shall be identified by referencing this Agreement. A \$25.00 administrative fee shall be assessed for all certificates or declarations received without the appropriate reference to this Agreement. Additionally, certificates of insurance and declaration page(s) of the insurance policies submitted without referencing this Agreement will be subject to rejection and may be returned or discarded. Certificates of insurance and declaration page(s) shall specifically include the following provisions:

(1) The Town, its agents, representatives, officers, directors, officials, and employees are Additional Insureds as follows:

(a) Commercial General Liability – Under Insurance Services Office, Inc., (“ISO”) Form CG 20 10 04 13 or equivalent.

(b) Auto Liability – Under ISO Form CA 20 48 or equivalent.

(c) Excess Liability – Follow Form to underlying insurance.

(2) The Consultant's insurance shall be primary insurance with respect to performance of this Agreement.

(3) All policies, except for Professional Liability, including Workers' Compensation, waive rights of recovery (subrogation) against the Town, its agents, representatives, officers, officials, and employees for any claims arising out of work or services performed by the Consultant under this Agreement.

ACORD certificate of insurance form 25 (2014/01) is preferred. If ACORD certificate of insurance form 25 (2001/08) is used, the phrases in the cancellation provision “endeavor to” and “but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives” shall be deleted. Certificate forms other than ACORD form shall have similar restrictive language deleted.

K. Endorsements. The Consultant shall provide the Town with the necessary endorsements to ensure the Town is provided the insurance coverage set forth in this Section 13.

13.2 Required Insurance Coverage.

A. Commercial General Liability. The Consultant shall maintain “occurrence” form Commercial General Liability insurance with an unimpaired limit of

not less than \$1,000,000 for each occurrence, \$2,000,000 Products and Completed Operations Annual Aggregate, and a \$2,000,000 General Aggregate Limit. The policy shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury, and advertising injury. Coverage under the policy will be at least as broad as ISO policy form CG 00 010 93 or equivalent thereof, including but not limited to, separation of insured's clause. To the fullest extent allowed by law, for claims arising out of the performance of this Agreement, the Town, its agents, representatives, officers, officials, and employees shall be named as an Additional Insured. If any Excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.

B. Vehicle Liability. The Consultant shall maintain Business Automobile Liability insurance with a limit of \$1,000,000 each occurrence on the Consultant's owned, hired, and non-owned vehicles assigned to or used in the performance of the Consultant's work or services under this Agreement. Coverage will be at least as broad as ISO coverage code "1" "any auto" policy form CA 00 01 12 93 or equivalent thereof. To the fullest extent allowed by law, for claims arising out of the performance of this Agreement, the Town, its agents, representatives, officers, directors, officials, and employees shall be cited as an Additional Insured under ISO Business Auto policy Designated Insured Endorsement form CA 20 48 or equivalent. If any Excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.

C. Professional Liability. If this Agreement is the subject of any professional services or work, or if the Consultant engages in any professional services or work in any way related to performing the work under this Agreement, the Consultant shall maintain Professional Liability insurance covering negligent errors and omissions arising out of the Services performed by the Consultant, or anyone employed by the Consultant, or anyone for whose negligent acts, mistakes, errors, and omissions the Consultant is legally liable, with an unimpaired liability insurance limit of \$2,000,000 each claim and \$2,000,000 annual aggregate.

D. Workers' Compensation Insurance. If the Consultant employs anyone who is required by law to be covered by workers' compensation insurance, the Consultant shall maintain Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction over the Consultant's employees engaged in the performance of work or services under this Agreement and shall also maintain Employers Liability Insurance of not less than \$500,000 for each accident, \$500,000 disease for each employee and \$1,000,000 disease policy limit.

13.3 Cancellation and Expiration Notice. The Consultant shall provide at least 30 days prior written notice to the Town before insurance required herein expires, is canceled, or is materially changed.

14. Termination; Cancellation. The Town may, by written notice to the Consultant as set forth in this Section, terminate this Agreement in whole or in part.

14.1 For Town's Convenience. This Agreement is for the convenience of the Town and, as such, may be terminated without cause after receipt by the Consultant of written notice by the Town. Upon termination for convenience, the Consultant shall be paid for all undisputed Services performed to the termination date.

14.2 For Cause. If either party fails to perform any obligation pursuant to this Agreement and such party fails to cure its nonperformance within 30 days after notice of nonperformance is given by the non-defaulting party, such party will be in default. In the event of such default, the non-defaulting party may terminate this Agreement immediately for cause and will have all remedies available to it at law or in equity, including, without limitation, the remedy of specific performance. If the nature of the defaulting party's nonperformance is such that it cannot reasonably be cured within 30 days, then the defaulting party will have such additional periods of time as may be reasonably necessary under the circumstances, provided the defaulting party immediately (A) provides written notice to the non-defaulting party and (B) commences to cure its nonperformance and thereafter diligently continues to completion the cure of its nonperformance. In no event shall any such cure period exceed 90 days. In the event of such termination for cause, the Town shall make payment to the Consultant for the undisputed portion of its fee due as of the termination date.

14.3 Due to Work Stoppage. The Town may terminate this Agreement upon 30 days' written notice to the Consultant in the event that the Services are permanently abandoned. If the Consultant abandons the Services without the consent of the Town, the Consultant shall be liable for all actual, incidental, and consequential damages arising from or related to said abandonment, including, but not limited to (A) the difference between the cost of a replacement consultant to complete the Services and the contract price for the Consultant under this Agreement; and (B) any additional charges, costs, fees or expenses for labor, materials or professional services incurred by the Town as a result of delays caused by abandonment of the Services by the Consultant. The Town shall use its best efforts to replace the Consultant within a reasonable time.

14.4 Conflict of Interest. This Agreement is subject to the provisions of ARIZ. REV. STAT. § 38-511. The Town may cancel this Agreement without penalty or further obligations by the Town or any of its departments or agencies if any person significantly involved in initiating, negotiating, securing, drafting, or creating this Agreement on behalf of the Town or any of its departments or agencies is, at any time while this Agreement or any extension of this Agreement is in effect, an employee of any other party to this Agreement in any capacity or a consultant to any other party of this Agreement with respect to the subject matter of this Agreement.

14.5 Gratuities. The Town may, by written notice to the Consultant, cancel this Agreement if it is found by the Town that gratuities, in the form of economic opportunity, future employment, entertainment, gifts, or otherwise, were offered or given by the Consultant or any agent or representative of the Consultant to any officer, agent or employee of the Town for the purpose of securing this Agreement. In the event this Agreement is canceled by the Town pursuant to this provision, the Town shall be entitled, in addition to any other rights and remedies, to recover and withhold from the Consultant an amount equal to 150% of the gratuity.

14.6 Agreement Subject to Appropriation. The Town is obligated only to pay its obligations set forth in this Agreement as may lawfully be made from funds appropriated and budgeted for that purpose during the Town's then-current fiscal year. The Town's obligations under this Agreement are current expenses subject to the "budget law" and the unfettered legislative discretion of the Town concerning budgeted purposes and appropriation of funds. Should the Town elect not to appropriate and budget funds to pay its Agreement obligations, this Agreement shall be deemed terminated at the end of the then-current fiscal year term for which such funds were appropriated and budgeted for such purpose, and the Town shall be relieved of any subsequent obligation under this Agreement. The parties agree that the Town has no obligation or duty of good faith to budget or appropriate the payment of the Town's obligations set forth in this Agreement in any budget in any fiscal year other than the fiscal year in which this Agreement is executed and delivered. The Town shall be the sole judge and authority in determining the availability of funds for its obligations under this Agreement. The Town shall keep the Consultant informed as to the availability of funds for this Agreement. The obligation of the Town to make any payment pursuant to this Agreement is not a general obligation or indebtedness of the Town. The Consultant hereby waives any and all rights to bring any claim against the Town from or relating in any way to the Town's termination of this Agreement pursuant to this Section.

14.7 Obligations Upon Receipt of Termination Notice. Upon receipt of a notice of termination as set forth above, the Consultant shall (A) immediately discontinue all Services affected (unless the notice directs otherwise), and (B) deliver to the Town copies of all data, reports, calculations, drawings, specifications, and estimates entirely or partially completed, together with all unused materials supplied by the Town, related to the Services including any completed divisible part of the Services which can be deemed to stand alone (the completed divisible parts of the Services will be determined by both parties at the time of termination). Such termination shall not relieve the Consultant of liability for errors and omissions. Any use of incomplete documents for the Services or for any other project without the specific written authorization by the Consultant will be without liability or legal exposure to the Consultant. The Consultant shall appraise the work it has completed and submit the appraisal to the Town for evaluation.

15. Suspension of Work.

15.1 Order to Suspend. The Town may, for its convenience, order the Consultant, in writing, to suspend all or any part of the Services for such period of time as it may determine to be appropriate.

15.2 Adjustment to Contract Sum. If the performance of all or any part of the Services is, for any unreasonable period of time, suspended or delayed by an act of the Town in the administration of this Agreement, or by its failure to act within the time specified in this Agreement (or if no time is specified, within a reasonable time), an adjustment shall be made for any increase in the cost of performance of this Agreement necessarily caused by such unreasonable suspension or modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension or delay (A) to the extent that performance was suspended or delayed for any other cause, including the fault or negligence of the Consultant, or (B) for which a change order is executed.

16. Miscellaneous.

16.1 Independent Contractor. It is clearly understood that each party will act in its individual capacity and not as an agent, employee, partner, joint venturer, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other for any purpose whatsoever. The Consultant acknowledges and agrees that the Services provided under this Agreement are being provided as an independent contractor, not as an employee or agent of the Town. The Consultant, its employees, and subcontractors are not entitled to workers' compensation benefits from the Town. The Town does not have the authority to supervise or control the actual work of the Consultant, its employees, or subcontractors. The Consultant, and not the Town, shall determine the time of its performance of the services provided under this Agreement so long as the Consultant meets the requirements of its agreed Scope of Work as set forth in Section 2 and in Exhibit B. The Consultant is neither prohibited from entering into other contracts nor prohibited from practicing its profession elsewhere. The Town and the Consultant do not intend to nor will they combine business operations under this Agreement.

16.2 Applicable Law; Venue. This Agreement shall be governed by the laws of the State of Arizona, and suit pertaining to this Agreement may be brought only in courts in Yavapai County, Arizona.

16.3 Laws and Regulations. The Consultant shall keep fully informed and shall at all times during the performance of its duties under this Agreement ensure that it and any person for whom the Consultant is responsible abides by, and remains in compliance with, all rules, regulations, ordinances, statutes, or laws affecting the Services, including, but not limited to, (A) existing and future Town and County ordinances and regulations, (B) existing and future State and Federal laws, and (C) existing and future OSHA standards.

16.4 Amendments. This Agreement may be modified only by a written amendment signed by persons duly authorized to enter into contracts on behalf of the Town and the Consultant.

16.5 Provisions Required by Law. Each and every provision of law and any clause required by law to be in this Agreement will 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 correctly inserted, then upon the application of either party, this Agreement will promptly be physically amended to make such insertion or correction.

16.6 Severability. The provisions of this Agreement are severable to the extent that any provision or application held to be invalid by a Court of competent jurisdiction shall not affect any other provision or application of this Agreement that may remain in effect without the invalid provision or application.

16.7 Entire Agreement; Interpretation; Parol Evidence. This Agreement represents the entire agreement of the parties with respect to its subject matter, and all previous agreements, whether oral or written, entered into prior to this Agreement are hereby revoked and superseded by this Agreement. No representations, warranties, inducements, or oral agreements have been made by any of the parties except as expressly set forth herein, or in any other

contemporaneous written agreement executed for the purposes of carrying out the provisions of this Agreement. This Agreement shall be construed and interpreted according to its plain meaning, and no presumption shall be deemed to apply in favor of, or against the party drafting this Agreement. The parties acknowledge and agree that each has had the opportunity to seek and utilize legal counsel in the drafting and reviewing of, and entry into, this Agreement.

16.8 Assignment; Delegation. No right or interest in this Agreement shall be assigned or delegated by the Consultant without prior, written permission of the Town, signed by the Town Manager. Any attempted assignment or delegation by the Consultant in violation of this provision shall be a breach of this Agreement by the Consultant.

16.9 Subcontracts. No subcontract shall be entered into by the Consultant with any other party to furnish any of the material or services specified herein without the prior written approval of the Town. The Consultant is responsible for performance under this Agreement whether or not subcontractors are used. Failure to pay subcontractors in a timely manner pursuant to any subcontract shall be a material breach of this Agreement by the Consultant.

16.10 Rights and Remedies. No provision in this Agreement shall be construed, expressly or by implication, as waiver by the Town of any existing or future right and/or remedy available by law in the event of any claim of default or breach of this Agreement. The failure of the Town to insist upon the strict performance of any term or condition of this Agreement or to exercise or delay the exercise of any right or remedy provided in this Agreement, or by law, or the Town's acceptance of and payment for Services, shall not release the Consultant from any responsibilities or obligations imposed by this Agreement or by law, and shall not be deemed a waiver of any right of the Town to insist upon the strict performance of this Agreement.

16.11 Attorneys' Fees. In the event either party brings any action for any relief, declaratory or otherwise, arising out of this Agreement or on account of any breach or default hereof, the prevailing party shall be entitled to receive from the other party reasonable attorneys' fees and reasonable costs and expenses, determined by the court sitting without a jury, which shall be deemed to have accrued on the commencement of such action and shall be enforced whether or not such action is prosecuted through judgment.

16.12 Liens. All materials or services shall be free of all liens and, if the Town requests, a formal release of all liens shall be delivered to the Town.

16.13 Offset.

A. Offset for Damages. In addition to all other remedies at law or equity, the Town may offset from any money due to the Consultant any amounts the Consultant owes to the Town for damages that have been reduced to a judgment resulting from breach or deficiencies in performance or breach of any obligation under this Agreement.

B. Offset for Delinquent Fees or Taxes. The Town may offset from any money due to the Consultant any amounts the Consultant owes to the Town for

delinquent fees, transaction privilege use taxes, and property taxes, including any interest or penalties.

16.14 Notices and Requests. Any notice or other communication required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been duly given if (A) delivered to the party at the address set forth below, (B) deposited in the U.S. Mail, registered or certified, return receipt requested, to the address set forth below, or (C) given to a recognized and reputable overnight delivery service, to the address set forth below, or at such other address, and to the attention of such other person or officer, as any party may designate in writing by notice duly given pursuant to this subsection:

If to the Town: Town of Chino Valley
202 North State Route 89
Chino Valley, Arizona 86323
Attn: Cindy Blackmore, Town Manager

With copy to: GUST ROSENFELD P.L.C.
One East Washington Street, Suite 1600
Phoenix, Arizona 85004-2553
Attn: Andrew J. McGuire

If to Consultant: Pacific Advanced Civil Engineering, Inc.
8723 E. Via de Commercio, #A-204
Scottsdale, AZ 85258
Attn: James A. Matthews, Sr. VP - Environmental Water
Division

Notices shall be deemed received (A) when delivered to the party, (B) three business days after being placed in the U.S. Mail, properly addressed, with sufficient postage, or (C) the following business day after being given to a recognized overnight delivery service, with the person giving the notice paying all required charges and instructing the delivery service to deliver on the following business day. If a copy of a notice is also given to a party's counsel or other recipient, the provisions above governing the date on which a notice is deemed to have been received by a party shall mean and refer to the date on which the party, and not its counsel or other recipient to which a copy of the notice may be sent, is deemed to have received the notice.

16.15 Confidentiality of Records. The Consultant shall establish and maintain procedures and controls that are acceptable to the Town for the purpose of ensuring that information contained in its records or obtained from the Town or from others in carrying out its obligations under this Agreement shall not be used or disclosed by it, its agents, officers, or employees, except as required to perform the Consultant's duties under this Agreement. Persons requesting such information should be referred to the Town. The Consultant also agrees that any information pertaining to individual persons shall not be divulged other than to employees or officers of the Consultant as needed for the performance of duties under this Agreement.

16.16 Information Technology.

A. Limited Access. If necessary for the fulfillment of this Agreement, the Town may provide the Consultant with non-exclusive, limited access to the Town's information technology infrastructure. The Consultant understands and agrees to abide by all Town policies, standards, regulations, and restrictions regarding access and usage of the Town's information and communication technology resources. The Consultant shall enforce all such policies, standards, regulations, and restrictions with all the Consultant's employees, agents, or any tier of subcontractor granted access in the performance of this Agreement and shall be granted and authorized only such access as may be necessary for the purpose of fulfilling the requirements of this Agreement.

B. Permitted Access. The Consultant's employees, agents, and subcontractors must receive prior, written approval from the Town before being granted access to the Town's information and communication technology resources and data. The Town, in its sole discretion, shall determine accessibility and limitations thereto. The Consultant agrees that the requirements of this Section shall be incorporated into all subcontractor/subconsultant agreements entered into by the Consultant. It is further agreed that a violation of this Section shall be deemed to cause irreparable harm that justifies injunctive relief in court. Notwithstanding the provisions in Section 14, a violation of this Section may result in immediate termination of this Agreement without notice.

C. Data Confidentiality. All Town data and technical information, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to the Consultant in connection with this Agreement, are confidential, proprietary information owned by the Town. Except as specifically provided in this Agreement, the Consultant shall not, without the prior, written consent of the Town Manager or authorized designee, (1) disclose data generated in the performance of the Services to any third party, or (2) use Town data and information.

D. Data Security. Personal identifying information, financial account information, or restricted Town information, whether in electronic format or hard copy, must be secured and protected at all times to avoid unauthorized access. At a minimum, the Consultant must encrypt and/or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When Town information, regardless of its format, is no longer required by the Consultant to execute the work contracted by the Town, the information must be redacted or destroyed through appropriate and secure methods to ensure the information cannot be viewed, accessed, or reconstructed.

E. Compromised Security. In the event that data collected or obtained by the Consultant in connection with this Agreement is believed to have been compromised, the Consultant shall immediately notify the Town Manager or authorized Town designee. The Consultant agrees to reimburse the Town for any costs incurred by the Town to investigate potential breaches of this data by the Consultant and, where applicable, the cost of notifying and/or assisting individuals who may be impacted by the breach.

F. Disengagement. In the event this Agreement is terminated by either party, the Consultant agrees to confer back to the Town all of its data, in usable and normalized format, within 30 days of notice of termination. There shall be no charge for the return of Town data to the Town.

G. Survival. The obligations of the Consultant under this Section 16.16 shall survive the termination of this Agreement.

16.17 Records and Audit Rights. To ensure that the Consultant and its subcontractors are complying with the warranty under subsection 16.18, the Consultant's and its subcontractor's books, records, correspondence, accounting procedures and practices, and any other supporting evidence relating to this Agreement, including the papers of any of the Consultant's and its subcontractors' employees who perform any work or services pursuant to this Agreement (all of the foregoing hereinafter referred to as "Records"), shall be open to inspection and subject to audit and/or reproduction during normal working hours by the Town, to the extent necessary to adequately permit (A) evaluation and verification of any invoices, payments or claims based on the Consultant's and its subcontractors' actual costs (including direct and indirect costs and overhead allocations) incurred, or units expended directly in the performance of work under this Agreement and (B) evaluation of the Consultant's and its subcontractors' compliance with the Arizona employer sanctions laws referenced in subsection 16.18. To the extent necessary for the Town to audit Records as set forth in this subsection, the Consultant and its subcontractors hereby waive any rights to keep such Records confidential. For the purpose of evaluating or verifying such actual or claimed costs or units expended, the Town shall have access to said Records, even if located at its subcontractors' facilities, from the effective date of this Agreement for the duration of the work and until three years after the date of final payment by the Town to the Consultant pursuant to this Agreement. The Consultant and its subcontractors shall provide the Town with adequate and appropriate workspace so that the Town can conduct audits in compliance with the provisions of this subsection. The Town shall give the Consultant or its subcontractors reasonable advance notice of intended audits. The Consultant shall require its subcontractors to comply with the provisions of this subsection by insertion of the requirements hereof in any subcontract pursuant to this Agreement.

16.18 E-Verify Requirements. To the extent applicable under ARIZ. REV. STAT. § 41-4401, the Consultant and its subcontractors warrant compliance with all federal immigration laws and regulations that relate to their employees and their compliance with the E-Verify requirements under ARIZ. REV. STAT. § 23-214(A). The Consultant's or its subcontractor's failure to comply with such warranty shall be deemed a material breach of this Agreement and may result in the termination of this Agreement by the Town.

16.19 Israel. To the extent applicable under ARIZ. REV. STAT. § 35-393 through § 35-393.03, the parties hereby certify that they are not currently engaged in, and agree to not engage in for the duration of this Agreement, a "boycott" of goods or services from Israel, as that term is defined in ARIZ. REV. STAT. § 35-393.

16.20 Conflicting Terms. In the event of any inconsistency, conflict, or ambiguity among the terms of this Agreement, any amendments to this Agreement, the Scope of Work, any

Town-approved Purchase Order, the Fee Proposal, the RFQ, and the Consultant's SOQ, the documents shall govern in that order.

16.21 Time is of the Essence. The timely completion of the Services is of critical importance to the economic circumstances of the Town.

16.22 Meaning of Terms. References made in the singular shall include the plural, and the masculine shall include the feminine or the neuter.

16.23 Non-Exclusive Contract. This Agreement is entered into with the understanding and agreement that it is for the sole convenience of the Town. The Town reserves the right to obtain like goods and services from another source when necessary.

16.24 Forced Labor of Ethnic Uyghurs. To the extent applicable under ARIZ. REV. STAT. § 35-394, the Consultant warrants and certifies that it does not currently, and agrees that it will not for the duration of this Agreement use the forced labor, any goods or services produced by the forced labor, or any contractors, subcontractors, or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China. If the Consultant becomes aware that it is not in compliance with this paragraph, the Consultant shall notify the Town of the noncompliance within five business days of becoming aware of it. If the Consultant fails to provide a written certification that it has remedied the noncompliance within 180 days after that, this Agreement shall terminate unless the termination date of this Agreement occurs before the end of the remedy, in which case this Agreement terminates on its termination date.

16.25 Excluded Terms. Terms and conditions not fully outlined in this Agreement, provided to the Town only by reference to one or more websites, or provided to the Town only as "clickwrap" or "clickthrough" terms when using or attempting to use a site or service, are not binding upon the Town.

16.26 Licensing and Registration. The Consultant warrants that it is registered with the Arizona Corporation Commission to do business in Arizona and, upon request, will provide proof thereof to the Town.

16.27 Counterparts. This Agreement may be executed simultaneously or in counterparts, each of which constitutes an original, but all of which together constitute one and the same agreement.

16.28 Cooperative Purchasing. Specific eligible political subdivisions and nonprofit educational or public health institutions ("Eligible Procurement Unit(s)") are permitted to utilize procurement agreements developed by the Town, at their discretion and with the agreement of the awarded Consultant. The Consultant may, at its sole discretion, accept orders from Eligible Procurement Unit(s) for the purchase of the Services at the prices and under the terms and conditions of this Agreement, in such quantities and configurations as may be agreed upon between the parties. All cooperative procurements under this Agreement shall be transacted solely between the requesting Eligible Procurement Unit and the Consultant. Payment for such purchases will be the sole responsibility of the Eligible Procurement Unit. The exercise of any

rights, responsibilities, or remedies by the Eligible Procurement Unit shall be the exclusive obligation of such unit. The Town assumes no responsibility for payment, performance, or any liability or obligation associated with any cooperative procurement under this Agreement. The Town shall not be responsible for any disputes arising out of transactions made by others.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first set forth above.

“Town”

TOWN OF CHINO VALLEY,
an Arizona municipal corporation

“Consultant”

PACIFIC ADVANCED CIVIL
ENGINEERING, INC.,
a California corporation

Jack W. Miller, Mayor

James A. Matthews, PE, Senior Vice
President – Environmental Water Division

ATTEST:

Erin N. Deskins, Town Clerk

APPROVED AS TO FORM:

Andrew J. McGuire, Town Attorney
Gust Rosenfeld, PLC

EXHIBIT A
TO
PROFESSIONAL SERVICES AGREEMENT
BETWEEN
THE TOWN OF CHINO VALLEY
AND
PACIFIC ADVANCED CIVIL ENGINEERING, INC.

[Consultant's SOQ]

See following pages.

PROFESSIONAL ENGINEERING CONSULTING SERVICES

CHINO VALLEY WATER RECLAMATION FACILITY IMPROVEMENTS PROJECT



PREPARED FOR:



Town of Chino Valley
Public Works Department
1982 Voss Drive
Chino Valley, Arizona 86323

PREPARED BY:



8723 E. Via de Commercio, #A-204
Scottsdale, AZ 85258
480.991.3595 | pacewater.com

C104 | JANUARY 25, 2024
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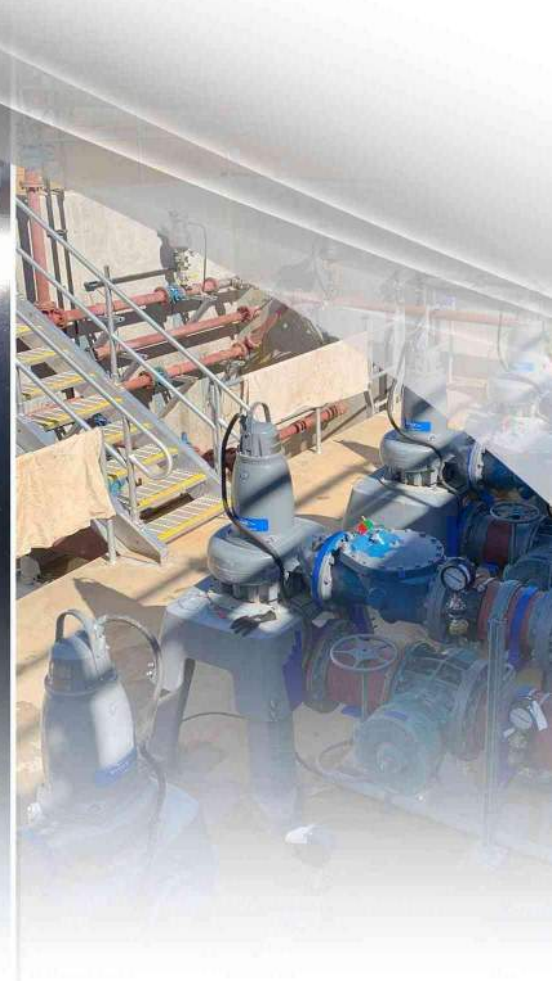
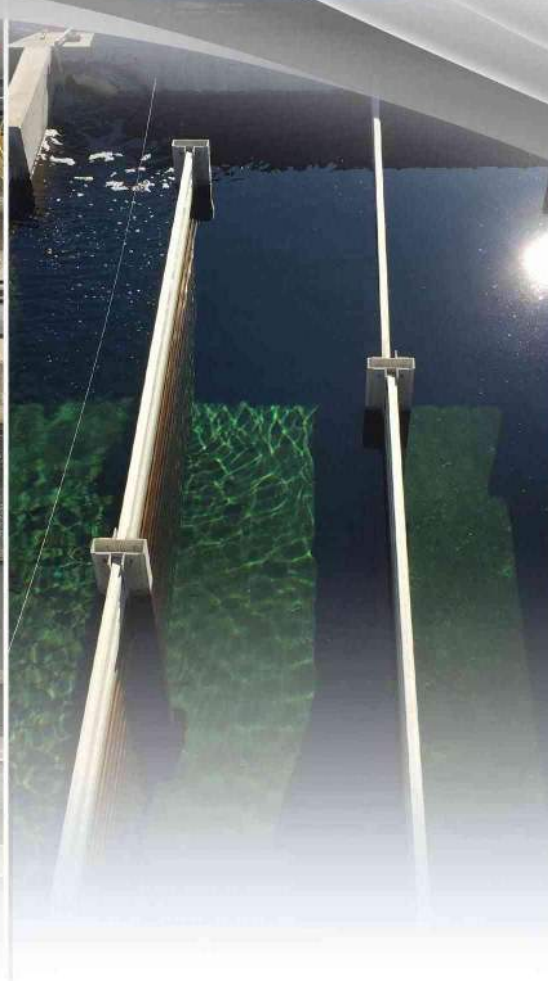
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A GENERAL INFORMATION





January 25, 2024

Town of Chino Valley Public Works Dept 1982 Voss Drive, Chino Valley, Arizona 86323
Jesse Holyfield (928) 636-7140 | Mark Holmes (928) 277-5253

**Re: Professional Engineering Consulting Services for
Chino Valley Water Reclamation Facility Improvements Project**

Dear Mr. Holyfield & Mr. Holmes,

The Town of Chino Valley (Town) has been proactive in seeking a comprehensive solution for the upgrade of its Chino Valley Water Reclamation Facility (WRF). PACE has gained a deep understanding of this project through our work for the WRF Capacity and Expansion Evaluation completed in June 2023. We look forward to collaborating together to develop and implement a successful project: a well-functioning and easy-to-operate facility that will maximize the useful life of the existing infrastructure.

We believe we will bring value to the project through unique qualifications that you may not find with other firms. Within this statement of qualifications, we will demonstrate our following unique qualifications that will benefit the Town:

- Thorough Understanding of the Chino Valley WRF to “Hit-the-Ground-Running”
- Extensive MBR Experience Leading to Energy-Efficient Design Approaches
- Extensive Federal/State Funding Experience Provides Proficient Support in Grant Applications and Administrative/Compliance Activities
- Arizona Smaller Communities/District Experience Ensures Sensible Approach
- PFAS Treatment Experience to Support Project Objectives
- Extensive Piloting Experience and Equipment to Support PFAS Testing

Our team is supported by subconsultants locally based in Arizona to support the project needs, including Civiltec for Survey services, Western Technologies for Geotechnical Engineering, PK Associates for Structural Engineering and Kim Joyce for Grant Writing Support. We also propose to utilize Local First Arizona’s complimentary grant writing resources, which includes 40-50 grant writers and support on up to four grant applications per year to provide cost-effective support to the Town

Our delivery approach centers on the critical milestones leading to the successful project completion, including:

- 1. Conceptual Design Report (CDR) Preparation for Pursuing Funding and CMAR Selection:** Our recent experience completing the WRF evaluation allows us to proceed quickly with delivering a CDR, expediting delivery of the necessary information for funding applications. The CDR will include outline specifications and critical content in support of the CMAR solicitation at the ideal stage of the project.
- 2. Early Applications for Funding to Meeting Project Schedule:** A completed CDR will give the Town the sufficient project detail necessary to apply for a wide range of state and

federal funding opportunities. Our experience with 25 federally/state-funded projects in the last 15 years will streamline this process and avoid any potential hurdles.

- 3. Early CMAR Selection Essential for Cost Control and to Maintain Project Schedule:** We have successfully delivered projects with a CMAR delivery by engaging the CMAR team early in the project. Engagement with the CMAR following the completion of the CDR will ensure their critical input on the 60% draft design in support of budget and schedule objectives.

- 4. Design Approach and Productive Scheduling to Minimize Unnecessary Delays:** We offer project delivery tools that are particularly effective with the CMAR delivery, such as developing up-front Performance-Based Specifications for use in soliciting vendor equipment proposals, leading to potentially locked-in purchase costs and performance guarantees through a competitive solicitation process; and the ability to utilize our in-house Instrumentation and Controls team for both design and integration of the controls and SCADA upgrades for seamless delivery of this critical project element.



Project Manager, Taylor Pierce, PE, will serve as your primary contact and, as Principal, I will continue to be intimately involved in the project through making design approach recommendations and ensuring quality control. The Town and the WRF improvements are a priority for our team and we are ready to commence on this project immediately upon notice to proceed. We have developed the enclosed Statement of Qualifications carefully following the RFQ guidelines and we look forward to your review and feedback.

James A. Matthews, PE
Sr. Vice President – Environmental Water Division

VENDOR IDENTIFICATION INFORMATION

ABOUT PACE

Pacific Advanced Civil Engineering, Inc. (PACE) is a **specialized civil engineering firm offering advanced water resource services with a local office in Scottsdale, AZ**. We offer a wide range of engineering services related to water, wastewater, stormwater management and water resource permitting and regulatory compliance to ensure projects are both economically viable and environmentally sustainable. Our engineering approach focuses on maximizing value by creating multi-use infrastructure systems, cost-effective phasing strategies and systems that include environmental, aesthetic and recreation uses. Guided by the principle of our approach, **we deliver engineering solutions that are reliable, easy to construct, and straightforward to operate**.



Incorporated Year **1987** /
Legal Form: **C-Corporation**,
State of California.
DUNS 14-356-4719



Employees (approx.) Firm **90**

Contact Person **Taylor Pierce**, *Project Manager*
D (480) 991-3595 | C (602) 540-2727 | tpierce@pacewater.com

Headquarters: 17520 Newhope St., Suite 200,
Fountain Valley, CA 9270 | (714) 481-7300

Local Work Office: 8723 E. Via de Commercio, #A-204,
Scottsdale, AZ 85258 | (480) 991-3595

Engineering Services



Water / Wastewater



Water / Sewer Pipeline



Stormwater



Permitting

relevant expertise areas provided for the last 30+ years

- ◆ Wastewater Process & Infrastructure Evaluations, Master Planning, & Design
- ◆ Wastewater Quality Assessment, Treatment Development, Planning, & Permitting
- ◆ Collection Infrastructure Component Design / System Improvements
- ◆ Pumping Facilities & Conveyance / Collection Pipes
- ◆ Effluent Reuse Design and Management
- ◆ Sludge Processing & Biosolids Management Planning & Design
- ◆ Energy Efficiency Evaluation & Alternative Energy System Design
- ◆ Value Engineering, Constructability Review & Accurate Cost Estimation
- ◆ Construction and O&M Cost Estimating
- ◆ Electrical, Controls & Instrumentation
- ◆ Construction Management / Field Assistance
- ◆ Funding Assistance & Administration

TERMINATED CONTRACTS OR CLAIMS IN THE LAST 5 YEARS

PACE has had no contracts or subcontracts terminated and no claims brought resulting in litigation or arbitration in the last 5 years.

VENDOR INFORMATION FORM

The Vendor Information Form is located in the Appendices.

B

EXPERIENCE AND QUALIFICATIONS



KEY QUALIFICATIONS

01 Noteworthy Chino Valley Experience Offers Seamless Transition

PACE's core team members, Taylor Pierce, PE and James Matthews, PE, have recently worked with the Chino Valley team on an evaluation of the Chino Valley WRF and with the Del Rio Spring Development to the north of the facility. The knowledge gained allows PACE to provide a team that is ready to continue our support by "hitting the ground running."

02 MBR Experience Leads to Energy Efficient Design Approaches

PACE has designed approximately 15 MBR facilities and applies advanced techniques to optimize energy efficiency and lifespans of MBR filtration equipment. Most recently, our experience includes the design of the 4.0 MGD MBR Sarival Water Recycling Facility, located in Goodyear, AZ with design strategies such as automation schemes combined with a closed-loop biological process with energy efficient variable speed-controlled aeration blowers and variable low-speed small horsepower adaptive control mixers. This configuration, control strategy and equipment selection reduced energy consumption by two-thirds compared to a conventional MBR arrangement at Sarival.

03 Extensive Federal/State Funding Experience Provides Proficient Support in Administrative/Compliance Activities

Our experience and continuous interaction with federal and state funding agencies ensures our ability to meet requirements for compliance and funding administration activities. PACE has been involved with 25 federally/State funded projects in southwestern US (Arizona, California) in the last 15 years working with USDA-RD, WIFA, CDBG, NADB, and others. We have helped secure nearly \$130 million in funding for these projects.

04 Arizona Smaller Communities/District Experience Ensures Sensible Approach

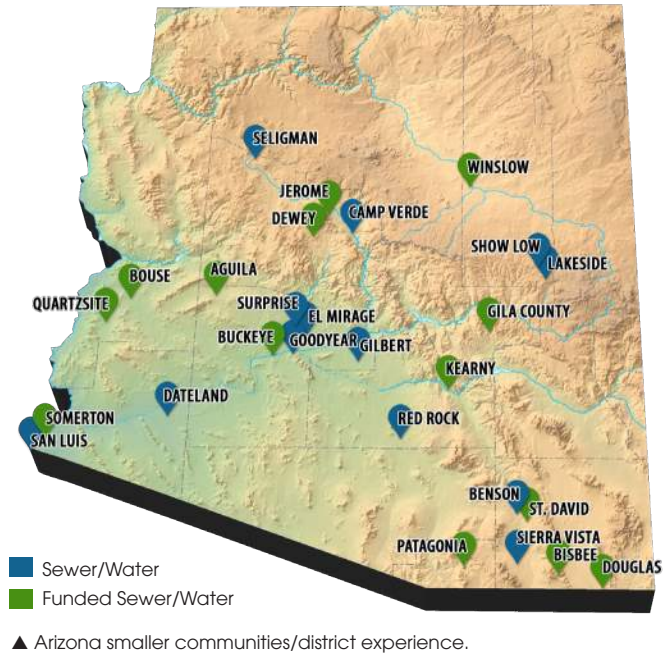
Our experience with and understanding of smaller community infrastructure financing limitations has led us to develop successful strategies for a valuable product that exceeds expectations. Our design philosophy centers on modest, simple, cost-effective designs creating reduced up-front capital costs, increased ease of operation, and minimizes operational and maintenance costs. Our team is programmed to consistently perform value engineering throughout the design phase to ensure we meet the project needs without sacrificing quality while avoiding over-engineering.

05 PFAS Treatment Experience To Support Project Objectives

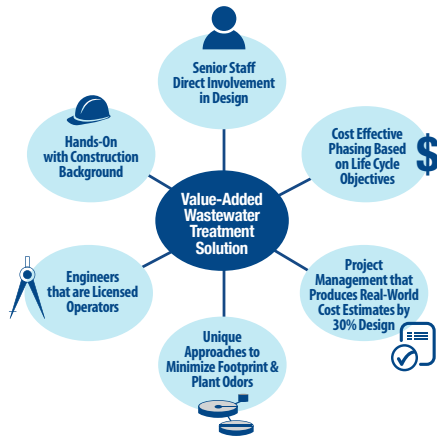
PACE, using our in-house water quality laboratory and staff, have piloted a multitude of PFAS/PFOS treatment technologies; including Ion Exchange, Activated Carbon and Engineered Proprietary Medias, as well as development of our own biological filtration process for specific contaminate removal in groundwater. In addition, PACE has completed two potable water PFAS treatment projects in the last two years, which included pilot testing, process selection, final design and construction / commissioning services.

06 Extensive Piloting Experience and Equipment to Support PFAS Testing

PACE offers a unique specialization in piloting and testing proposed treatment processes supported by a Research and Development division, an in-house water quality testing lab, and ownership of sophisticated piloting equipment, including a vessel testing system that accommodates up to six different filtration medias with a holding tank for long-term monitoring and automated chemical coagulation, disinfection dosing, automated flux control valves and flow meters. Pilot testing has been performed on numerous filtration projects, including PFAS removal for the City of Riverside, CA Garner B Well system and the recycled water polishing treatment system at SoFi Stadium in Los Angeles, CA.



EXPERIENCE & SERVICE CAPABILITIES



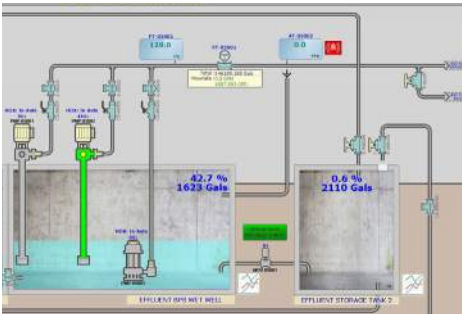
Wastewater Treatment

PACE has experience designing and permitting a wide range of process technologies based on project needs. From Conventional Activated Sludge and Oxidation Ditches to sophisticated Sequential Batch Reactors (SBRs) and Membrane Bio-Reactors (MBRs), PACE seamlessly provides our clients with high-performance, cost-effective solutions to their treatment needs. We have repeatedly provided treatment facility solutions that are innovative, cost-effective, straightforward to construct, and simple to operate. The water exiting PACE-designed wastewater reclamation facilities are clean and safe for water applications, including storage reservoirs, advanced irrigation treatment systems, cooling tower filtration systems, and pump stations for recycled water application, as well as recharge and injection systems to store recycled water underground.



Pumping & Regulating Stations

PACE has completed numerous pump facility upgrades and rehabilitation projects. Our direct experience in design, construction and operations provides us a unique ability to identify and work around these site issues while maintaining capital and operational budgets. PACE has worked with vertical turbine, centrifugal, and horizontal split-case mechanical equipment systems with constant pressure application using VFDs.



Instrumentation & Controls

PACE's in-house Instrumentation & Control group has extensive experience in the design, configuration, programming and commissioning of PLC Control Systems and SCADA Systems. In-depth knowledge of control and instrumentation systems equipment will seamlessly integrate mechanical design with equipment control functions, providing complete turnkey systems. Using our expertise in design, construction and operation of water / wastewater distribution facilities to provide a system design that is robust and encompassing in data collection and control, yet provides the usable information operators need, without the clutter of "information overload".

Constructability, Operability Review, and Operations Expertise Inherent in Design

PACE was born from a water construction company and, as such, has extensive Design-Build (DB) / Design-Build-Operate (DBO), Construction-Manager-at-Risk (CMAR), and Value Engineering (VE) experience that drives us to consider constructability of all elements of our design. This experience provides the Town with a sound technical design, and also ensures that the facility will be easy to construct and operate, with reduced time of delivery, and reduced capital and operational costs. Our team includes senior licensed engineering staff who also are or have been certified operators. This benefits the Project as our design team will be able to integrate with the Town staff more effectively, delivering a "soup-to-nuts" system design that is focused on ease of operation and maintenance. Our operations experience will also be critical to both construction, start-up, and commissioning of the facilities, working hand-in-hand with the future operators throughout the process.



Services During Construction

PACE's extensive experience with both design-bid-build and design-build projects has provided specialized hands-on experience to proactively assist the contractors to meet the design intent and solve challenges prior to improper procurement or installation. Our philosophy for construction management is to encourage contractors to verbally communicate potential solutions to RFIs and submittal revisions prior to formalizing them in writing so that coordinated and agreed upon direction have opportunities to be completed in the first response. Additionally, we are well-versed in various agencies requirements for funding opportunities.

RELEVANT EXPERIENCE

The following is a summary of select wastewater experience in the areas pertinent to the Chino Valley WRF performed in the last 20 years to demonstrate our technical expertise.

Project	Capacity (MGD)	Delivery Method	Facility Process	Flow EQ	Public Sector	Funded (State/Federal)	Facility Modification
Barona WRF (Original and Upgrades), Lakeside, CA	0.8	DBO	SBR	x			x
Chumash WRF Expansion, Santa Ynez, CA	0.2	DBO	MBR	x			x
City of Adelanto WWTP Upgrades, Adelanto, CA	3.0	DBO	ASBP	x	x		x
City of Bisbee San Jose WWTP, Bisbee, AZ	1.2	DB	SBR	x	x	x	x
City of Burbank WRP Upgrades, Burbank, CA	12.0	DBB	ASBP		x		x
City of El Mirage WRF, El Mirage, AZ	3.6	DBO	SBR	x	x		x
City of Lathrop WRF Expansion, Lathrop, CA	2.5	DBB	MBR		x		x
City of San Clemente WRP Upgrades, San Clemente, CA	7.2	DBB	BNR		x		x
City of Santa Monica SWIP Advanced Water Treatment Facility, Santa Monica, CA	1.5	DBO	MBR		x		
City of Santa Paula WRF, Santa Paula, CA	4.2	DBOF	MBR	x	x		
City of Show Low WWTP, Show Low, AZ	2.5	CMAR	Biolac		x		x
City of Sierra Vista EOP WWTP Upgrades, Sierra Vista, AZ	4.0	DBB	ASBP	x	x		x
City of Sierra Vista Tribute WRF, Sierra Vista, AZ	0.5	DBB	MBR	x	x		
City of Somerton Phase III Expansion, Somerton, AZ	1.8	CMAR	SBR		x	x	x
City of Winslow WWTP, Winslow, AZ	2.2	DBB	ASBP	x	x	x	x
Civita WRF, San Diego, CA	0.3	DBO	MBR		x		
Mountain House WRF Phase II Expansion, Tracy, CA	3.4	DBO	SBR	x			x
Mountain House WRF Phase III Expansion, Tracy, CA	5.4	DBB	MBR				x
Pinetop-Lakeside Sanitary District WWTP Improvements, Lakeside, AZ	2.0	DBB	OD	x	x		x
Sarival Water Reclamation Facility, Goodyear, AZ	2.0	DBO	MBR	x			
Solvang WWTP Enhanced Treatment Study, Solvang, CA	1.5	DBB	MBR		x		
Sonora Regional Wastewater Treatment Plant Expansion, Sonora, CA	2.6	DBB	EAAS	x	x		x
SPA 2 WRF, Surprise, AZ	1.2	DBO	SBR	x			
SPA 3 WRF, Surprise, AZ	1.8	DBO	SBR	x			
Sundance WRF Phase I, Buckeye, AZ	1.2	DBO	SBR	x			
Sundance WRF Phase II, Buckeye, AZ	3.5	DBO	SBR				
Tartesso WRF, Buckeye, AZ	1.2	DBO	SBR	x			
Town of Jerome WWTP Improvements, Jerome, AZ	0.1	DBB	SBR		x	x	x
Town of Patagonia WWTP Improvements, Patagonia, AZ	0.1	DBB	EAAS		x	x	x
Town of Quartzsite WWTP Expansion, Quartzsite, AZ	0.9	DBB	SBR	x	x	x	x
Tri-City Regional Sanitary District Wastewater Collection & Treatment, Gila County, AZ	0.3	DBB	MBR	x	x	x	x
Tuolumne Utilities District Sonora Regional WWTP Upgrades, Sonora, CA	2.5	DBB	EAAS	x	x	x	x

ASBP
BNR
DBB

Activated Sludge Biological Process
Biological Nutrient Removal
Design Bid Build

DBO
EAAS
MBR

Design Build Operate
Extended Aeration Activated Sludge
Membrane Bioreactor

OD
SBR

Oxidation Ditch
Sequential Batch Reactor

SUCCESSFUL COMPLETION OF SIMILAR PROJECTS

Winslow Wastewater Treatment Plant Evaluation and Upgrade Winslow, AZ



Relevant Features

- ◆ Re-utilization and expansion of the abandoned flow equalization
- ◆ Beneficial reuse of existing infrastructure
- ◆ Rural community
- ◆ Qualified for USDA Rural Development low-interest loan
- ◆ Comprehensive deficiency and overall efficiency assessment of existing wastewater treatment facility
- ◆ Operational during construction – developed sequence of construction
- ◆ Flow equalization



PACE was hired as the prime consultant by the City of Winslow to perform an evaluation of the deficiencies of the City's WWTP, which was struggling to meet water quality permit requirements. The plant was plagued by operational issues, making the effective treatment capacity roughly half of its design capacity of 2.2 MGD. Through the preparation of a Process, Efficiency, and Alternative Analysis Evaluation, several major process deficiencies were identified, as well as proposed improvements for each that preserved as much of the existing facility that was practical. Renovations were recommended to numerous processes including the lift station, headworks, flow equalization basin, oxidation ditches, filters, UV disinfection system, effluent pump station, sludge dewatering process and the SCADA/control system. The improvements recovered the 2.2 MGD average daily flow capacity design which increased efficiency of its operations to exceed the best available demonstrated control technology (BADCT) and meets Arizona Class A+ Reclaimed Water Quality Standards, along with a projected reduction in total energy consumption of over 65%. The plant upgrades also included the replacement of its clarifiers and headworks, modifications to its oxidation ditches with a new aeration and blower system, and a complete overhaul of the plant's major instrumentation and control infrastructure components.

Contact Info

City of Winslow
21 Williamson Ave
Winslow, AZ 86407

Tim Westover
(928) 289-4011
TWestover@winslowaz.gov

Contract Initiation/Expiration

May 2012 – June 2018 (all phases)

Service Provided

- Planning
- Funding Agency Reports & Compliance Activities
- Design
- Permitting
- Bid Services
- Construction Services



Quartzsite Wastewater Treatment Plant Evaluation and Expansion Quartzsite, AZ



Relevant Features

- ◆ Similar in size prior to upgrades, 0.45 MGD
- ◆ Re-utilization and expansion of the abandoned flow equalization
- ◆ Beneficial reuse of existing infrastructure
- ◆ Rural community
- ◆ Federally and state-funded project (USDA, WIFA)
- ◆ Comprehensive deficiency and overall efficiency assessment of existing wastewater treatment facility
- ◆ Operational during construction – developed sequence of construction
- ◆ Federally and state-funded project



USDA Funded

The Town of Quartzsite, AZ was having difficulties with treating its highly seasonal wastewater flow. In the winter, the WWTP sees an average-day flow of approximately 350,000 gpd but the flow drops to less than 100,000 gpd in the summer. With anticipated growth in the winter months, flow is expected to exceed the WWTP treatment capacity within a couple of years.

To increase the WWTP capacity, the Town moved forward with the design of the WWTP expansion only to stop short of construction due to funding requirements. PACE was then contracted by the Town of Quartzsite's Engineer (Atkins) to perform an assessment/value engineering review of the proposed expansion design plans that consisted of increasing the current capacity from 0.45 MGD to 0.90 MGD by constructing a new second sequential batch reactor (SBR) basin as well as other ancillary systems necessary to increase the capacity.

PACE was hired as the prime consultant to provide an in-depth evaluation of the proposed expansion and existing system. The evaluation included detailed hydraulic analysis, biological process modeling, energy consumption analysis, and electrical and control system review. PACE's evaluation revealed the proposed expansion did not provide adequate summer low-flow treatment and would double the electrical power requirements.

PACE also identified several cost reduction measures that provided better day-to-day treatment performance, an energy cost reduction of 40% equating to a savings of \$25,000/yr at current flows and up to \$40,000/yr at design flow. One of the solutions included dividing the existing SBR basin into two smaller basins to allow better summer low-flow treatment but still had the capacity to treat the design flow of 0.9 MGD. The approach of splitting the SBR basin instead of duplicating saved nearly \$750K used to further improvements including a new headworks system and controls/SCADA system. This project was completed in January 2020.

Contact Info

Town of Quartzsite
465 N Plymouth Ave
Quartzsite, AZ 85346

Emmett Brinkerhoff
(928) 916-9694
ebrinkerhoff@quartzsiteaz.org

Contract Initiation/Expiration

June 2019 – January 2020

Service Provided

- Planning
- Funding Agency Reports & Compliance Activities
- Design
- Permitting
- Bid Services
- Construction Services (USDA-RD Resident Project Representative (RPR))

Tuolumne Utilities District Sonora Regional Wastewater Treatment Plant Sonora, CA



Relevant Features

- ◆ Provides freeboard and equalized secondary treatment to handle variability in inflow and loading
- ◆ Treatment process conversion
- ◆ Beneficial reuse of existing infrastructure
- ◆ Rural community
- ◆ Federally funded project (USDA)
- ◆ Operational during construction – developed sequence of construction
- ◆ Flow equalization



USDA Funded

PACE was hired as the prime consultant to perform a facility assessment and upgrade design for the 2.6 MGD Average Daily Flows (ADF) Sonora Regional Wastewater Treatment Plant (SRWWTP) to address the facility's declining effluent performance. The existing SRWWTP features a conventional trickling filter secondary process that utilizes two trickling filters, followed by two secondary clarifiers, three aerated polishing ponds, and a chlorine disinfection system. Based on recent flows and loads, the influent flow limits identified in the WDRs are not exceeded, but the facility was at its design Biochemical Oxygen Demand (BOD) influent load limit, and was exceeding its design suspended solids loading criteria. To improve the facility's functionality and performance, PACE designed upgrades to increase the capacity to 5.0 MGD of Max Day Flows (MDF) and 10.0 MGD Peak Hour Flows (PHF) and to convert the secondary treatment process to an Extended Aeration Activated Sludge (EAAS) process utilizing the Parkson's Biolac® mixing and aeration process. All wastewater flows to the proposed SRWWTP process are treated by a new headworks, primary screening and grit removal, new dual-train extended aeration activated sludge (EAAS) basins, new secondary clarifiers, new chlorine disinfection system, new effluent disk cloth filters and a new sludge dewatering facility. These upgrades also replace the existing polishing ponds and include a new administration and electrical building, a new headworks and sludge dewatering building and a renovated digestion building where the existing anaerobic digesters were repurposed into aerobic digesters for solids processing. Operation was maintained during construction; the upgraded facility was substantially complete in December 2023, and commissioning is in progress.

Contact Info

Tuolumne Utilities District
18885 Nugget Blvd
Sonora, CA 95370

Erik Johnson
District Engineer
(209) 532-5536 ext. 520
Ejohnson@tudwater.com

Contract Initiation/Expiration

March 2019 – January 2024

Service Provided

- Planning
- Funding Agency Reports & Compliance Activities
- Design
- Permitting
- Bid Services
- Construction Services



Sarival Water Reclamation Facility (WRF) Goodyear, AZ



Relevant Features

- ◆ MBR treatment process
- ◆ Footprint constraints
- ◆ Influent pump Station
- ◆ Alternative construction delivery
- ◆ Flow equalization



This new facility treats an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10.0 MGD, providing support to an existing built-out regional WRF for current loading and future flow conditions. The facility uses a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process consists of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full build-out, the design of the WRF will provide an average daily flow capacity of up to 8.0 MGD with a maximum daily capacity of 12.0 MGD. Future phases of the facility will also introduce an advanced biosolids processing facility to handle solids processing for multiple treatment plants within the regional area. Design began in January of 2022, with construction paralleling the final design beginning in June of 2022, which led to the substantial fast-track completion being reached in January 2024.

Contact Info

Liberty Utilities
14222 W. McDowell Rd
Goodyear, AZ 85395

Rick Rhoads
(623) 688-4371
rick.rhoads@libertyutilities.com

Contract Initiation/Expiration

January 2022 – January 2024

Service Provided

- Planning
- Design
- Permitting
- Construction Services



Golden State Water Imperial Plant PFAS-PFOA Treatment Facility

Imperial, CA



Relevant Features

- ◆ PFAS-PFOA Removal System
- ◆ Pressure Vessel Treatment System
- ◆ GAC Treatment Media

The Golden State Water Imperial Plant PFAS-PFOA Treatment Facility was completed as a design-build project with PACE serving as the prime consultant and engineer of record under the Metro Builders & Engineers Group. The project encompassed demolition of existing air stripping towers and construction of a new Granular Activated Carbon Filter System to remove PFAS-PFOA from the groundwater produced by two on-site water wells. A pre-engineered package GAC system from Aqueous Vets (AV) was utilized, and PACE prepared demolition plans, grading and site detail plans, concrete foundation plans and details, mechanical interconnection piping plans and details, mechanical design and plans for a pre-treatment basket strainer system and provided construction and commissioning assistance.

Contact Info

Metro Builders & Engineers Group
2610 Avon Street
Newport Beach, CA 92663
Cameron Kosbab
(949) 515-4350
cameron@metrobuilders.com

Contract Initiation/Expiration

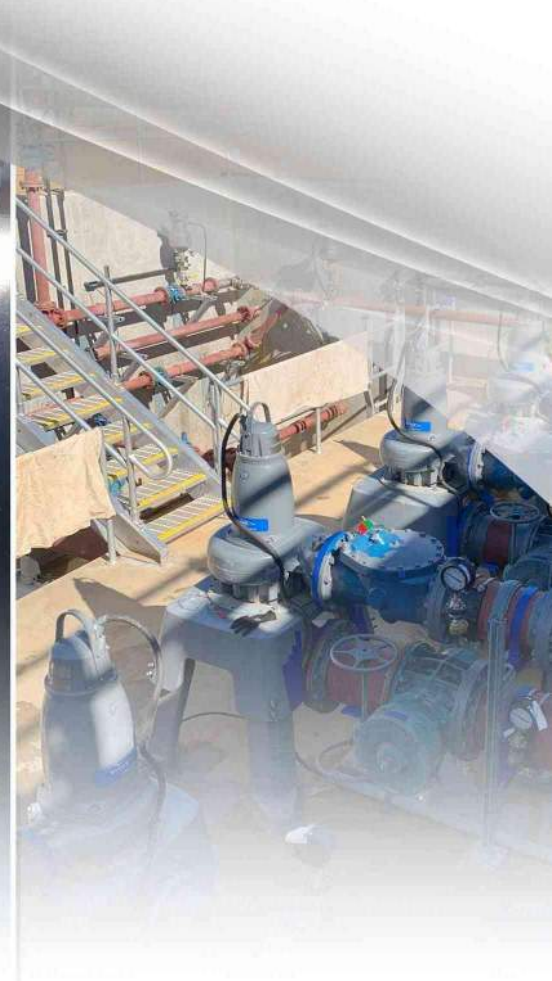
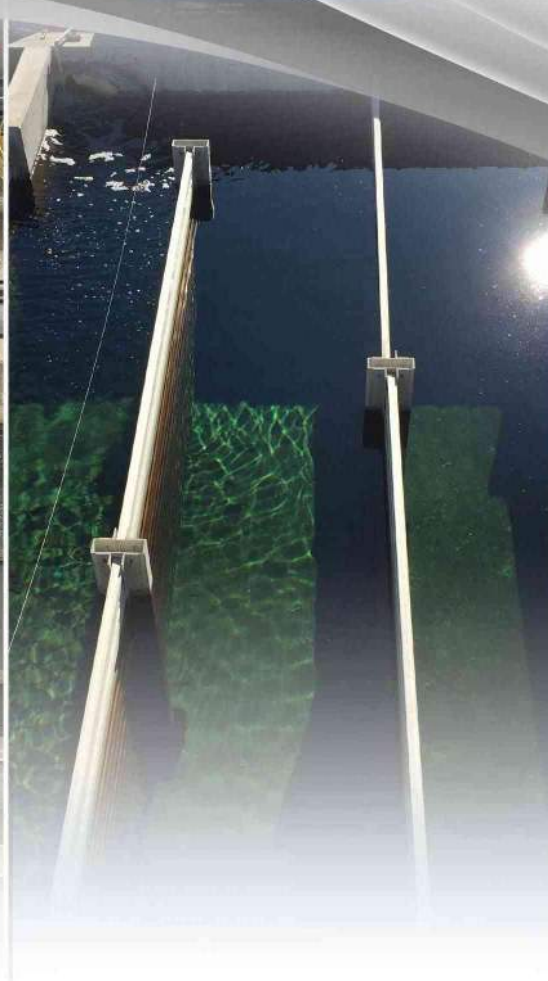
January 2021 – September 2022

Service Provided

- Planning
- Design
- Construction Services

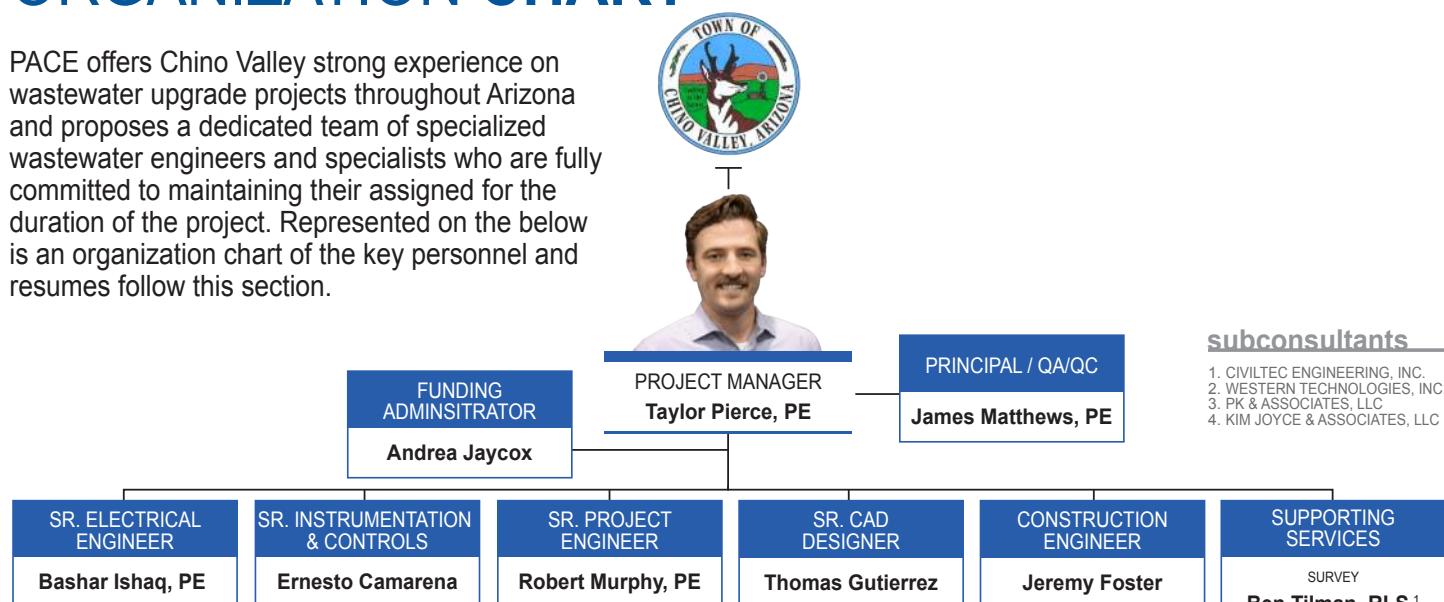


C KEY POSITIONS



ORGANIZATION CHART

PACE offers Chino Valley strong experience on wastewater upgrade projects throughout Arizona and proposes a dedicated team of specialized wastewater engineers and specialists who are fully committed to maintaining their assigned for the duration of the project. Represented on the below is an organization chart of the key personnel and resumes follow this section.



subconsultants

1. CIVILTEC ENGINEERING, INC.
2. WESTERN TECHNOLOGIES, INC.
3. PK & ASSOCIATES, LLC
4. KIM JOYCE & ASSOCIATES, LLC

SUBCONSULTANTS

SUBCONSULTANT SUPERVISION Agreements with our subconsultants will be followed by detailed task orders delineating the budget, schedule, and scope. These task orders will be monitored for progress and compliance. We will track the resources and the costs against the planned targets to ensure the resources are efficiently employed. Our project knowledge and the skill of our management team provide the basis for a well-managed design process.

SUBCONSULTANT BIOGRAPHIES



SURVEY Civiltec Engineering, Inc. (Civiltec) was founded in 1986 and has six offices, three in Arizona (Prescott, Peoria, and Phoenix) and three in California (Monrovia (headquarters), Fullerton, and Upland). Civiltec has cultivated a strong relationship with Chino Valley since 2001 and has completed 60+ survey projects. Surveys have been performed for various venues, including topographic surveys, boundary surveys, ALTA surveys, construction staking, easements and legal descriptions, and control surveys.



GEOTECHNICAL ENGINEERING Western Technologies (WT) is a consulting engineering firm and testing lab, specializing in Geotechnical Engineering, Environmental Consulting, Materials Inspection and Testing, Nondestructive Testing and Examination, and Water/Wastewater Bacteriological Analysis. WT has been in the forefront of establishing and providing quality and responsive services to meet the needs of their clients.



STRUCTURAL ENGINEERING PK Associates (PKA) provides a full range of Structural Engineering Services from conceptual design through construction administration and special structural inspections. Over the past 31 years, they have delivered structural design expertise on 65+ new and expansion projects for wastewater collection and treatment system facilities. PKA's teams have proven collaborative communication and an integrated approach to projects which provides overall savings with both project cost and schedule.



GRANT WRITING Kim Joyce & Associates (KJA) is a full-service grant consulting firm serving non-profits, for-profits, small businesses, hospital systems, schools and school districts, institutes of higher education, tribes, associations, government agencies, United Ways, funding agencies, and more. Kim Joyce & Associates has secured more than \$400,000,000+ in grant awards for its clients and continues to grow to meet the needs of communities.

KEY PERSONNEL

PROJECT MANAGER



TAYLOR PIERCE, PE

EDUCATION

Bachelor of Science, Civil Engineering, Arizona State University, Phoenix, AZ

YEARS OF EXPERIENCE

13+ Years

REGISTRATIONS

PE: AZ 70097, CA 84580, CO 52801, KS 26632

Taylor Pierce's experience includes design of wastewater treatment plants, sewer/potable/reclaimed pump stations, water treatment and storage design. Mr. Pierce has developed several performance-based equipment specifications for process equipment selection prior to design, and the creation of operation and maintenance manuals for several wastewater and water conveyance and treatment systems and facilities. His construction administration responsibilities include observation and inspection of field work to ensure general compliance with the design. Mr. Pierce is adept in coordinating project plans, specifications, and reports with multiple consultants to obtain an efficient buildable and operable system.

CHINO VALLEY PROJECT ROLE

Taylor is the Point-of-Contact for the Town of Chino Valley throughout the project and will be responsible for all project management activities. He performed the evaluation of the existing facility, and will apply the detailed insight he has on the facility to seamlessly transition to the improvement design phase. He will serve as the Engineer-of-Record and his responsibilities will include oversight, staffing, and directing required efforts to make sure the Town's expectations, project objectives and PACE's standards are being met from beginning to end.

TEAM MEMBER RESUME TABLE

NAME AND ROLE	EDUCATION AND PROFESSIONAL REGISTRATION	ROLES & RESPONSIBILITIES	RELATED PROJECT EXPERIENCE
PACE			
JAMES MATTHEWS, PE <i>Principal / QA/QC</i>	BS Civil Engineering, San Diego State University 28+ Yrs of Exp. AZ – PE: 34090	• Oversight of engineering team • Quality control / assurance • Independent milestone review • Design standard/criteria check • Overall compatibility / coordination	• Chino Valley WRF Capacity and Expansion Evaluation • Winslow Wastewater Treatment Plant • Quartzsite Wastewater Treatment Plant Evaluation and Expansion • Tuolumne Utilities District Sonora Regional WWTP • Sarival Water Reclamation Facility • Golden State Water Imperial Plant PFOS-PFOA Treatment Facility • Huntington Beach Well 9 BAC Treatment System
ROBERT MURPHY, PE <i>Sr. Project Engineer</i>	BS Civil Engineering, California State University, Long Beach 17+ Yrs of Exp. CA – PE: C83207	• Civil design / mechanical / process design • Lead of engineering team • Project / concept development	• Winslow Wastewater Treatment Plant Renovations • Tuolumne Utilities District Sonora Regional WWTP Upgrades • Sarival Water Reclamation Facility • Huntington Beach Well 9 BAC Treatment System & Sewer Line Improvement • City of Santa Paula Advanced Water Treatment and Recycling Facility

NAME AND ROLE	EDUCATION AND PROFESSIONAL REGISTRATION	ROLES & RESPONSIBILITIES	RELATED PROJECT EXPERIENCE
JEREMY FOSTER <i>Construction Engineer</i>	BSE Civil Engineering, Arizona State University 12+ Yrs of Exp.	- Construction coordination and scheduling - Meeting facilitation - Submittal reviews - Field observation	- Quartzsite WWTP Upgrades - Tri-City Regional Sanitary District Phase 1, 2 & 3 Wastewater Collection System & Water Reclamation Facility - Jerome WWTP Improvements & Sewer Line Extension - Sierra Vista EOP Water Reclamation Facility - Sarival Water Reclamation Facility
TOM GUTIERREZ <i>Sr. CAD Designer</i>	AA Applied Science, Computer Aided Drafting, ITT Technical Institute 29+ Yrs of Exp.	- Design and preparation of mechanical plans - Mechanical 3D modeling - Autodesk, AutoCAD, Civil 3D, and MEP - System layout, site grading, assemblies, profile design, etc.	- Golden State Water Imperial Plant PFAS-PFOA Treatment Facility - Huntington Beach Well 9 BAC Treatment System - Sarival Water Reclamation Facility - City of Santa Paula Advanced Water Treatment and Recycling Facility - City of Adelanto Treatment Plant Upgrades - Show Low Wastewater Treatment Plant Expansion
BASHAR ISHAQ, PE, MBA, PMP <i>Sr. Electrical Engineer</i>	BS electrical Engineering, University West 9+ Yrs of Exp. CA – PE: 24590	- Power distribution design - Project planning and final commissioning of project - Oversight of electrical team - Electrical design for direct on-line low voltage motors	- Vallejo Waste Treatment Plant System Upgrades Project for the Arc Flash and Coordination Study - System Upgrades Project for the Moccasin Powerhouse - North Shore Pump Station Wet Weather Improvements - Oceanside Water Pollution Control Plant WW-639 Digester Gas Utilization - Reformulated Esso Diesel Fuel (RFD) Project
ERNESTO CAMARENA <i>Sr. Instrumentation & Controls Specialist</i>	AA Applied Science, Computer Aided Drafting, ITT Technical Institute 28+ Yrs of Exp.	- Field instrumentation - PLCs, SCADA - Conceptual design exhibit creation - Start-up, commissioning, and training - Troubleshooting and operations support	- Winslow Wastewater Treatment Plant Renovations - Tuolumne Utilities District Sonora Regional Wastewater Treatment Plant - Sarival Water Reclamation Facility - Huntington Beach Well 9 BAC Treatment - City of Lathrop Advanced Water Treatment and Recycling Facility Expansion - Mountain House Water Reclamation Facility Expansion Phase II and III
ANDREA JAYCOX <i>Project Coordinator / Funding Administration / Permitting Support</i>	AA in General Studies, Paradise Valley Community College 23+ Yrs of Exp.	- Project administration and support - Contract administration - Technical writing - Funding administration and compliance - Permitting support	- Winslow Wastewater Treatment Plant Renovations - Quartzsite WWTP Upgrades - Tri-City Regional Sanitary District Phase 1, 2 & 3 Wastewater Collection System & Water Reclamation Facility - Show Low Wastewater Treatment Plant Upgrades
CIVILTEC ENGINEERING, INC			
BEN TILMAN, RLS <i>Surveyor</i>	BBS, Calvary Bible College 16+ Yrs of Exp. AZ – RLS: 55698	- Topographic and design surveys - Construction management - Survey observations - Planimetric, Boundary, and Utility data	- Chino Panels, Town of Chino Valley - Central Arizona Static Backbone

NAME AND ROLE	EDUCATION AND PROFESSIONAL REGISTRATION	ROLES & RESPONSIBILITIES	RELATED PROJECT EXPERIENCE
WESTERN TECHNOLOGIES, INC.			
GREG BURR, MS, RG, PE <i>Geotechnical</i>	MS Geology, Northern Arizona University 10+ Yrs of Exp. AZ – PE: 79669	• Geotechnical and materials testing • Management and coordination of required geotechnical investigations	• YAN Wastewater Treatment Plant Additions • Quartzite Wastewater Line • Mishongnovi Lagoon
PK & ASSOCIATES, LLC			
JAMES APPELYARD, PE <i>Structural</i>	BS Civil Engineering, Seattle University 12+ Yrs of Exp. AZ – PE: 70374	• Structural design and analysis • Calculations and structural details • Construction administration	• Sarival WRF • Show Low WWTP upgrades • Quartzsite WWTP Expansion • Sonora WWTP Expansion • West County WWTP Upgrade • Lathrop Consolidated Treatment Facility Expansion (WRP)
KIM JOYCE & ASSOCIATES, LLC			
KRISTEN KREY <i>Grant Writing</i>	MA Organizational Management, University of Phoenix BS, Criminal Justice/Political Science, State University of New York 26+ Yrs of Exp.	• Grant research • Grant writing • Grant management	• City of Glendale • City of Glendale Diversity Committee • Glendale City Council • Glendale Police Department

RESUMES, LICENSES, AND CERTIFICATIONS

Resumes, licenses, and certifications are located in the **Appendices**.

D

PROJECT UNDERSTANDING AND APPROACH



PROJECT UNDERSTANDING

The Town of Chino Valley is seeking professional engineering design services to implement process improvements to its existing water reclamation facility (WRF) that will reclaim the 0.5 MGD rated capacity of the facility and ensure exceptional effluent water quality for the foreseeable future. In addition, the improvements will allow the facility to accommodate near-term development within the Town's service area while also providing flexibility in the Town's long-term water planning efforts. The facility consists of an offsite lift station with two (2) influent pumps, a headworks with two (2) mechanical drum screen systems and one (1) vortex grit removal unit, two (2) MBR process trains, each consisting of Anoxic / Pre-Aeration / Membrane Separation tanks, two (2) in-line ultraviolet (UV) disinfection units, a final booster pump station with two (2) effluent pumps, five (5) offsite rapid infiltration basins, and one (1) dewatering screw press.



The current average annual day flow (AADF) observed at the facility is 0.323 MGD. However, the daily flow volume is not evenly distributed over a 24-hour period, instead, data shows that flow into the facility exceeds 0.36 MGD for a 14-hour period each day, with 2-hour peaks near the facilities rated capacity of 0.5 MGD creating higher than recommended flux rates on the membranes for extended periods of time.

The original design capacity of the facility is 0.5 MGD but the permitted capacity of the facility is 1.0 MGD according to the existing APP No. P-104236 and the Town is actually authorized to operate the WRF up to a maximum average monthly flow rate of 5.0 MGD. This allows the Town to evaluate expanding the facility or increasing membrane capacity within the same footprint at a later date. It is typical that state regulators require the Owner to initiate planning for expansion when the facility reaches 80% of the facility's rated capacity and begin construction by the time it reaches 90%.



In June of 2023, PACE prepared a Capacity and Expansion Evaluation to determine the hydraulic and biological capacity of the facility as well as provide recommendations to expand capacity consistent with the Town's current and projected future flow rates. Based on the analysis, PACE concluded that the facility is capable of treating 0.5 MGD, with a Peak Day Capacity of 0.85 MGD, with the addition of two flow equalization basins. In addition, the project offers the Town an opportunity to address other limitations at the facility due to aging equipment and lack of redundancy in critical areas. The identified improvements include:

1. Influent flow equalization basins between the headworks and secondary treatment process
2. Equalization lift station, basin mixing and aeration
3. Automated MicroC dosing system near the RAS return to the Anoxic Basins if the Town isn't able to identify atypical sewer dischargers

- | | | |
|--|---|---|
| 4. Drying beds located at the west boundary of the plant site for Town vector dumping | and redundancy under emergency operating conditions. | 9. Pilot PFAS/PFOA treatment |
| 5. Replace the existing UV system with a new low-pressure high-output inline UV disinfection system | 7. Add sludge conveyance and rearrange the roll-off bin to be located outside the dewatering building. | 10. Odor scrubbers for the headworks and dewatering buildings with the option to cover and plumb the EQ basins. |
| 6. Add an additional sludge dewatering unit to provide additional capacity under normal operating conditions | 8. Elevate existing headworks screens with a stand and walkway for improved access and downstream flow. | 11. Update existing SCADA system to include new components. |

Therefore, the Scope of Work for this proposal is to prepare Plans and Specifications for the recommended improvements and carry out construction activities using the preferred Construction-Manager-At-Risk (CMAR) project delivery.

project objectives

Our team considers the following to be major project objectives:

- Maximize the useful life of the existing infrastructure that has been very well maintained by the Town.
- Implement improvements that will provide the Town with process performance, additional operational flexibility, reduced near-term capital expense and increased time until a major capacity expansion is required.

CRITICAL ITEMS

In order to properly execute the Town's Scope of Work and to fully meet the Project objectives, we have identified the following Critical Items that need to be considered and addressed.

1. Conceptual Design Report Preparation for Pursuing Funding and CMAR Selection
2. Early Applications for Funding to Meet Project Schedule
3. Early CMAR Selection Essential for Cost Control and to Maintain Project Schedule
4. Design Approach and Productive Scheduling to Minimize Unnecessary Delays

PROJECT TECHNICAL APPROACH

Through our previous work with the Town and on other MBR projects, PACE's staff is intimately familiar with the design and operation of the Chino Valley WRF and its Kubota MBR system. Over the past twelve months, we have been analyzing your facility data and working with your operations staff to understand the challenges that the Town faces both in operating the current facility and in planning for the future. With this work, we have assisted plant operations in significantly improving the existing biological nitrogen removal process, producing higher quality effluent on a more consistent basis. Through this work, we evaluated multiple alternative technical approaches, which were presented in our 2023 technical memorandum. Although several of the alternatives were certainly viable, our proposed approach will minimize current capital expenditures while maximizing the available treatment capacity and useful life of existing infrastructure. New equipment and process basins proposed for this project have been located and sized so as to future-proof your initial capital investment, by not only providing major process benefits today, but also integrating the reuse / re-purposing of the components into the future capacity expansion at this site. Additionally, through control and instrumentation improvements and modifications, we will simplify operations, reduce energy costs and further improve water quality.

To do so, we will continue our working relationship with the Town's operation, engineering / planning and financial staff. Working together, we will utilize your staff's historical facility knowledge, paired with our extensive knowledge of advanced water and wastewater treatment, as well as our design, construction and operations experience at numerous rural and small community facilities, to provide individually unique solutions, backed by field-proven applications. Our construction and operations experience in a variety of project delivery approaches, such as CMAR, Design-Build and conventional Design-Bid-Build settings, has trained us to take a value-driven design approach, which drives the balance of both construction costs and ongoing operation and maintenance costs for the facility, while consistently maintaining the highest level of product quality.

For this project, we understand the Town is interested in using a CMAR delivery approach. Therefore, it will be very important to focus on developing outline specifications for the project work and a preliminary technical package for selection of a CMAR team member early in the project schedule. PACE will work with the Town in development of this package and, if requested, will be part of the CMAR selection team.

We have developed project tools which are applicable to any delivery method our client chooses, but are particularly effective with CMAR delivery. These include; development of upfront Performance-Based Specifications to solicit and potentially lock-in purchase costs and process performance guarantees from major equipment vendors up-front, prior to final design, pre-purchase agreements by either the client or CMAR contractor to reduce overall project schedule and utilizing our in-house Instrumentation & Control group to not only design instrument, control and SCADA upgrades, but to also provide the integration services as the owner's or CMAR's integrator.

Combined, these tools produce assurance of costs, performance and schedule, early on in the project, which greatly assist in securing grant and low-interest loans for the capital improvements needed. Based on the funding available, we will be able to tailor the project with modular design elements that can be added/ subtracted from the scope of work to meet the operational and financial goals of the Town.

conceptual site plan



ADDRESSING CRITICAL ITEMS

CRITICAL ITEM 01

Funding Mechanism Approach Prior to Construction Award Crucial for Design Completion

Preparation of a Conceptual Design Report (CDR) is critical to layout the preliminary engineering and cost estimates in order to 1) have the information available for technical/costs to apply for funding and 2) provide in a Request for Qualifications (RFQ) for potential CMAR selection process. Once the CMAR is on board, the CDR will enable the CMAR to solicit vendors for proposal for the major process equipment. The development of the CDR will ensure that the project challenges are met head-on by involving the Town's staff early and often. In essence, the Town operators become an integral part of our team and are utilized to discuss the project solutions and show examples that are "the best" and "the worst" in their own experience. From this the team gains "lessons learned" knowledge to better meet the staff expectations.

APPROACH STRATEGY

Promptly Prepare a Comprehensive CDR that Covers Vital Information

The CDR will determine the direction of the design, size of the facilities, quantity of equipment, preliminary layout, and type of equipment to use. It will be important to properly select and make good decisions on these design elements to bring the project in on time and on budget, with minimal risk to operations during construction. The CDR will include, but may not be limited to:

- Project location and background
- Town population and financial conditions
- Need for the project
- Environmental conditions
- Preliminary design information (improvements, layouts, permits, etc.)
- Identify and Define Major Process Equipment for Early CMAR Procurement
- Project cost estimates
- Update Project schedule if Necessary

CRITICAL ITEM 02

Applying for Funding Early Crucial to Meet Project Schedule

There are countless funding programs available for wastewater infrastructure throughout the US offered at the federal, state and local levels. The funding application processes and requirements can differ making timing very important to a project schedule.

APPROACH STRATEGY

Immediately Engage Local First Arizona as a Funding Resource at No Cost to the Town

Local First Arizona is a nonprofit organization committed to community and economic development throughout Arizona. They have an "Economic Resource Center" that employs 40-50 grant writers at any given time, each with their unique specialization in different grants. We would assist in facilitating a meeting to ensure the Town's eligibility. With their current funding, they are able to provide each entity assistance with up to four (4) grant applications per year. They also provide the research for possible additional opportunities. In an effort to save the Town time and money, we believe reaching out to this resource first may provide a great value.

APPROACH STRATEGY

Apply Our Team's Funding Expertise and Agency Contacts

We have been involved with 25 federally/state-funded projects in the southwestern US (Arizona, California) in the last 15 years working with USDA-RD, WIFA, CDBG, NADB, USACE, EPA and others, and have helped secure nearly \$125 million in funding for these projects through various types of funding applications. Upon the notice-to-proceed, we would reach out to our contacts at the previously mentioned agencies to begin researching and compiling available funding options. In addition to our experience, we have included Kim Joyce & Associates to our team to offer further expertise in identifying grants and grant writing. We would supply any technical information as necessary.

CRITICAL ITEM 03**Early CMAR Selection Essential for Cost Control and to Maintain Project Schedule**

Selecting and bringing the CMAR on early in the project will be essential to collaboratively work during the design for value-engineering opportunities, constructability reviews and active cost analysis.

APPROACH STRATEGY**Bring CMAR in Early**

It has proven to be advantageous in our previous alternative-delivery projects to bring the CMAR onto the project as early in the design stage as possible. PACE recommends that the CMAR procurement be initiated as soon as the CDR has been completed and accepted by the Town. This will enable the CMAR to be on board prior to the completion of the 60% design package. The CMAR's input on the 60% draft design will be critical in maintaining the project budget, proposed schedule, and can also reduce the amount of redesign of the 60% package. The added value of the CMAR input prior to completion of the 60% design will enable the incorporation of Construction Value Engineering into the 60% design and the CMAR's GMP.

APPROACH STRATEGY**Utilize Construction Understanding to Assist in CMAR Selection**

PACE can assist the Town with the review and evaluation of the Statement of Qualifications (SOQ) received. PACE has a previous CMAR project where the owner has requested PACE to be a part of the CMAR selection team. Either way, we can provide a recommendation to the Town based on the evaluation of the received SOQ. PACE has a proven list of contractors and can assist the Town in soliciting CMAR firms in the response to the RFQ.

APPROACH STRATEGY**Allow for Open and Constant Communication with the CMAR**

PACE will work closely with the selected CMAR team in order to quickly bring them up to date to ensure there is no loss of project time. The CMAR will be able to start promptly by reviewing the 60% and providing comments that can be incorporated into the design package. This will enable the CMAR to prepare equipment procurement packages and the 60% GMP. Following the Town's review and approval, the PACE/CMAR/TOWN Team will move forward with 90% design package and final design. Once the plans and specifications are complete and the final GMP has been established, PACE will assist in the construction by performing engineering construction services which will include submittal review, observation and inspections, as well as attending all construction meetings and site walks. Past CMAR projects have shown that the teams continuous open and honest communication is essential to project success.

CRITICAL ITEM 04**Design Approach and Productive Scheduling Minimize Unnecessary Delays**

Our approach to the design and scheduling will be focused on a simplified design focused on reliability, operability and constructability. We thoroughly considered alternative methods including treatment processes, how to utilize the existing components and the future needs of the facility in development of the project schedule. The approach presented herein represents our opinion of best alternatives to minimize the project timeline and maximize value to the Town. With our knowledge of the facility and experience with similar upgrades we can implement a fast-tracked schedule to hit deadlines ahead of a traditional Design-Bid-Build project or comparable CMAR approach advertised at 60% design. Every iteration of the design and scheduling will incorporate a simplified focus on reliability, operability and constructability.

APPROACH STRATEGY**Constructability and Operability Background Ensures Buildable and Low-Cost Reliable Operation**

PACE has an extensive background in design-bid-build, design-build, CMAR, and operations that provide unique insight into project designs to improve constructability and minimize construction cost. Consideration for the Town's wish list items, future facility modifications, pilot and full-scale PFAS treatment, and ultimate buildout of the facility will be carefully integrated into all design packages.

APPROACH STRATEGY

Involve Town O&M Staff Early and Often in Developing Final Design Option, Plans, and Specifications

PACE will use experience in the design, construction, and operations to assist the Town in determining an optimal design and equipment selection for the Project. PACE will start by meeting with the Town's Engineering team and the O&M staff to fully understand and solidify the project objectives. PACE will review all data and perform a site visit, alongside the Town's Project Manager and the O&M staff to better understand current challenges.



APPROACH STRATEGY

Establish Effective Schedule to Reach Project Objectives

The effectiveness of the project schedule is defined by the immediate action and dependency on one item that enables the project to move forward in several other areas. The initial items are data gathering and the Conceptual Design Report (CDR). The CDR then is utilized to provide details for the project funding application and the CMAR Selection Process. The CDR will then enable the CMAR to initiate the process equipment procurement.

We have prepared a detailed schedule (page 24 of this SOQ) and here are the following assumptions and considerations:

- Project initiation requires the CDR is completed within 30 days of the NTP to be followed by a Town seven-day review period ending with the team to discuss and approve the CDR.
- Project Schedule also initiates a project funding meeting within 7 days of the NTP, as well as the CMAR RFQ assembly enabling its completion to coincide with the completion of the CDR, followed by advertising RFQ. The project design schedule for the on-time completion of 60% plans requires that the CMAR be on board a month prior to the completion of the 60% plans.
- The remaining critical milestones are the completion of the 90% & 100% designs and the timely team reviews of the design packages and CMAR GMP. ADEQ/NACOG pre-application meetings will be scheduled early following the completion of the CDR and within a month of starting 60% design. At that meeting the pilot study can be discussed and scheduled.

PFAS EVALUATION & PILOT SYSTEM DESIGN

Trace organic compounds are consistently difficult to treat in recycled water systems; therefore, we recommend pilot testing on the effluent to see what treatments will be most economical given the high likelihood of interfering contaminants. The discharge of wastewater facilities is not yet regulated for PFAS constituents and may prove to be an inefficient location for a full-scale treatment system. It is our intent to prepare a pilot implementation plan and preliminary design report parallel but separate from the 60% design package. It will be beneficial to involve ADEQ early in the design process by scheduling a courtesy review of the pilot implementation plan to allow for agency input on the duration of the pilot and treatment goals for any potential future regulation.



We intend to deploy the pilot unit with selective IX resin and GAC filter media columns of varying bed depths, sequencing and flow rates with an effluent target value of less than 4 ng/L for all PFAS constituents. The pilot unit can utilize post-UV effluent water and be located near the effluent wet well to discharge filtered effluent. The backwash volume will be returned to the head of the WRF. At this time, we anticipate a 6-month observation and data gathering period. During this period PACE will actively monitor and maintain the pilot system. We anticipate that interfering contaminants will shorten the effective life of the media and may lead to more frequent media replacements or regeneration. Therefore, we will closely monitor elements of particular concern including media lifespan, backwash frequency, and biogrowth fouling.

Following the completion of the pilot, PACE will prepare a final design report summarizing the findings and present the most economical treatment option to the Town. Should the Town decide to implement a full-scale treatment system at the WRF, PACE will be able to quickly prepare the bid documents and assist the Town through construction of that project as well.

PROJECT MANAGEMENT

Our benchmark Project Management Approach considers each individual project to remain flexible for the specific project needs and objectives concerning planning, scheduling, estimating, communication, quality assurance / quality control (QA/QC), etc. Project Manager, Taylor Pierce, PE, will be responsible for all project management activities and will be the direct contact with the Town. He will coordinate all planning and design work with all subconsultants and staff. Regular meetings or teleconferences will be held with applicable Project Team members and consultants to coordinate engineering study and/or design issues. Meeting minutes will be kept and retained in project files.

CLIENT COORDINATION

All correspondence to the client, whether incoming or outgoing, will be through the Project Manager. The Project Manager will keep the client informed of the project progress on a monthly basis unless otherwise indicated in the work plan or contract work scope. The monthly progress reports will, at a minimum include:

- Progress To-Date
- List of Issues Which May Affect Project
- Schedule / Objectives
- Schedule Status
- Work Planned for Upcoming Month

SCHEDULING

PACE will create a detailed schedule using Smartsheet that will be maintained on a monthly basis. This program is easy to read, follow and maintain. Our Project schedule includes submittal dates, meetings, design progress, and more. If delays occur, in or out of our control, that impact the schedule, we will know early and allocate resources in order to keep the project on track. The established schedule includes assumptions that immediately initiate upon the NTP both the development of the CDR and the CMAR RFQ. This is critical to the project as the CMAR's input to design is of utmost importance. Our experience has seen delays in CMAR awards can translate into a delay in the project. The schedule also includes specified documentation review periods to include the Town, CMAR and PACE.

BUDGET CONTROL

Engineering costs will be controlled by frequent monitoring and early identification of any scope/design change affecting project costs. Construction cost estimates provided by the CMAR will be reviewed to ensure that the cost is in line with the industry standard cost. The CMAR will develop GMP based on the 60% and 100% design efforts. The estimate will then be compared to the Town budget expectations and if a gap is present, discussions will take place to determine if value engineering or other actions are necessary.

All PACE project management efforts will be coordinated out of our Scottsdale, AZ office. Regular coordination meetings will occur in Chino Valley, or using one of the many meeting and coordination resources we have available such as Teams or Zoom (video conferencing), which allow us to minimize budget for travel and meetings. However, in-person meetings will be encouraged at critical project durations (kick-off, final design submittals, etc.).

QUALITY ASSURANCE / QUALITY CONTROL

Beyond implementing a Project Management Approach, PACE regularly carries out Quality Assurance / Quality Control (QA/QC) practices necessary to the project.

Our approach to Project Delivery is consistent “checks and balances” occurring throughout the duration of the Project through our internal QA/QC process. Quality management will be used to ensure that the deliverables for the project meet a formally established standard of acceptance. Reviews are provided at critical points and specific responsibilities for the different levels of reviews during the life of the project are predefined.

QA/QC reviews will take place throughout project progress milestones and consist of the following review levels:

Level 1 Self Review

Determine if Project requirements are being met and development is progressing in line with scope. Not intended to include detailed technical aspects of the project or include documentation.

Level 2 Subtask Leader Review

Verify that design has been correctly interpreted and transferred correctly to specifications and drawings. Subtask leader will ensure each individual system is provided with sufficient technical concepts, layout, and detail so contract documents may be developed.

Level 3 PM Task Review

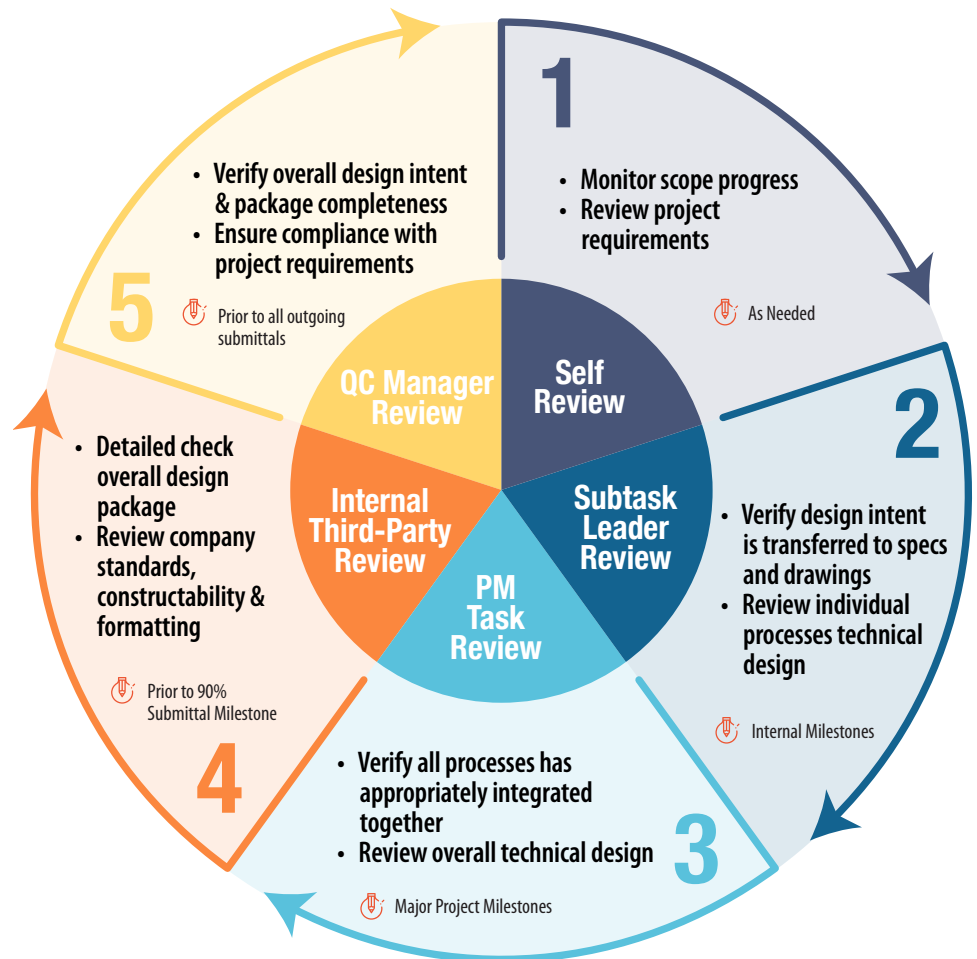
Determine various technical components of all disciplines which have been developed are integrated together and each individual system is provided with sufficient technical concepts, layout, and detail. Following this, the applicable documents can be prepared for independent review.

Level 4 Internal Third-Party Review

Third-Party Reviewer (internal to PACE, but not assigned to Project) is to perform a detailed checking of the design packages to review and verify company and industry standards, constructability and formatting.

Level 5 QC Manager Review

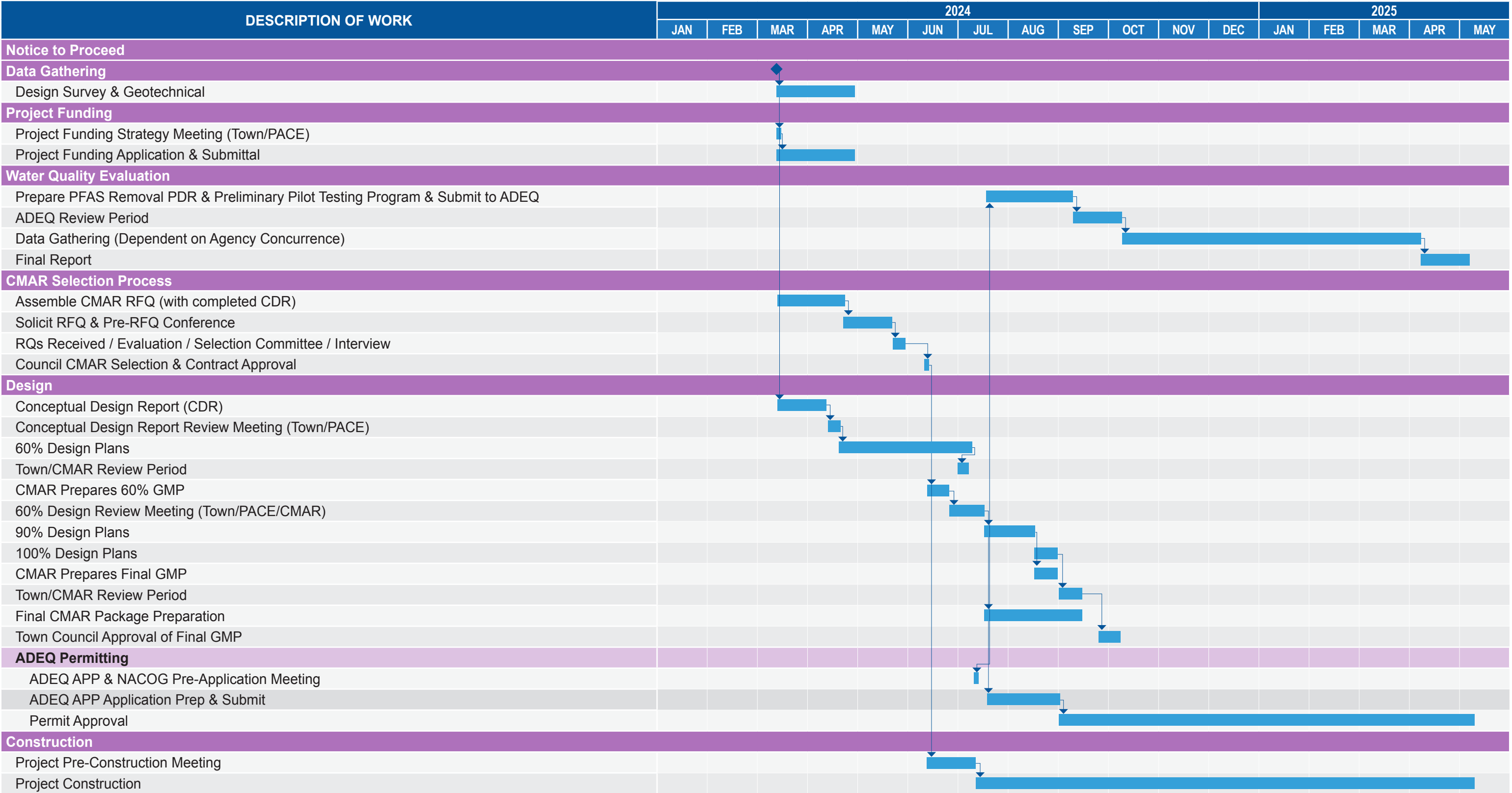
Review overall design intent and assure documents for purchasing and construction contracts are complete with regard to legal requirements for the work intended.



E PROJECT SCHEDULE



PROJECT SCHEDULE



F

ADDENDUM ACKNOWLEDGMENT



ADDENDUM ACKNOWLEDGMENT

Q&A Addendum

2023-0022 - Engineering Consulting Services for the Chino Valley WRF Improvements Project

Q: Is the Town looking for our qualification in grant writing or should I provide qualifications for a subconsultant that specializes in grant writing?

A: Regarding your question of grant writer, you will want to identify who that is whether it is an employee, subcontractor, or partner and state their qualification etc. and any track record of success.

Q: Regarding the original signatures required, is this for all 4 copies with wet signature or just 1 "original" and 3 copies?

A: Just one original signed submittal with the remainder being copies of the original.

Q: On PDF page 8 (A-6) under Part II 2.2 A. (2): The RFQ asks for vendor identification information, specifically asking for an identification number. Can you explain what the identification number refers to?

A: This will refer to your Federal Tax ID Number

Q: On PDF page 8 (A-6) under Part II 2.2 A. (3): The RFQ asks for "documentation that supports the Vendor's authority to provide services in Arizona." Is this referring to our AZ Corp commission number (provided in Vendor form) and/or our firm's engineering registration with the Arizona Board of registration, or something else?

A: This will refer to the Arizona Corporation Commission Number.

PACE acknowledges receipt of the addendum.

Signature: 
James Matthews, PE – Sr. Vice President – Environmental Water Division

G

APPENDICES



VENDOR INFORMATION FORM

SECTION A**PUBLIC WORKS DEPARTMENT****PART IV. VENDOR INFORMATION FORM**

By submitting a State of Qualifications, the submitting Vendor certifies that it has reviewed the administrative information and draft of the Professional Services Agreement's terms and conditions and, if awarded the Agreement, agrees to be bound thereto.

Pacific Advanced Civil Engineering, Inc. (PACE)
VENDOR SUBMITTING SOQ

33-0265538
FEDERAL TAX ID NUMBER

James Matthews - Vice President, Environmental Water Division
PRINTED NAME AND TITLE


AUTHORIZED SIGNATURE

8723 E. Via de Commercio, #A-204
ADDRESS

(480) 991-3595 (480) 751-1810
TELEPHONE FAX #

Scottsdale AZ 85258
CITY STATE ZIP

1/17/24
DATE

www.pacewater.com
WEBSITE

jmatthews@pacewater.com
E-MAIL

F00403244
ARIZONA CORPORATION COMMISSION FILE NO.

SMALL, MINORITY, DISADVANTAGED, AND WOMEN-OWNED BUSINESS ENTERPRISES (check appropriate item(s):

- ☐ Small Business Enterprise (SBE)
☐ Minority Business Enterprise (MBE)
☐ Disadvantaged Business Enterprise (DBE)
☐ Women-Owned Business Enterprise (WBE)

Has the Vendor been certified by any jurisdiction in Arizona as a minority or woman-owned business enterprise?

SECTION A**PUBLIC WORKS DEPARTMENT**

If yes, please provide details and documentation of the certification.

RESUMES, LICENSES, AND CERTIFICATIONS



project manager

Taylor B. Pierce, PE

EDUCATION

BS / Civil Engineering
Arizona State University - 2012
Magna Cum Laude

YEARS OF EXPERIENCE

13 years
With others more than 2 years

REGISTRATIONS

Professional Engineer / AZ – 2019 / 70097
Professional Engineer / CA – 2015 / 84580
Professional Engineer / CO – 2017 / 52801
Professional Engineer / KS – 2018 / 26632
Water Treatment Operator T2
California (2016/ 38811)
Wastewater Treatment Operator
Grade 4 Arizona (2022/ OP048247)

AFFILIATIONS

Chi Epsilon – Honor Society
American Public Works Association (APWA)
AZ Water

Taylor Pierce has Civil Engineering experience spanning back to 2011. His experience includes design of wastewater treatment plants, sewer / potable / reclaimed pump stations, water treatment and storage design. Mr. Pierce has developed several equipment performance-based equipment specifications for process equipment selection prior to design, and the creation of operation and maintenance manuals for several wastewater and water conveyance and treatment systems and facilities. His construction administration responsibilities include observation and inspection of field work to ensure general compliance with the design. Mr. Pierce is adept in coordinating project plans, specifications, and reports with multiple consultants to obtain an efficient buildable and operable system. He is proficient in AutoCAD, as well as familiar with construction estimating and project scheduling.

RELATED EXPERIENCE

Chino Valley WRF Capacity and Expansion Evaluation – Chino Valley, AZ

Mr. Pierce served as Project Engineer for the evaluation of the Town of Chino Valley's Water Reclamation Facility (CVWRF) which treats raw wastewater collected from the Town of Chino Valley, Arizona. Although the CVWRF was satisfying the current permit requirements, the Town recognized a risk of violation with current flow conditions due to daily periods of high inflow and operation at or above industry standard, occasionally reaching 80% of the 0.5 MGD design capacity. As a result, the biological loading rates consistently exceeded the design loading rates for the facility and as such, the secondary treatment process struggled to treat to the permitted limits for Total Nitrogen. PACE performed numerous evaluations, and based on the results of the hydraulic and biological capacity studies, recommended the following minimum improvements across multiple proposed alternatives for flow / load equalization or additional hydraulic and biological capacity to meet current and near-term conditions: add an automated MicroC dosing system at the RAS return to the Anoxic Basins, replace the existing UV system with a new low-pressure high-output inline UV disinfection system, and install an additional sludge dewatering system to provide more dewatering capacity for normal operating conditions and redundancy to accommodate mechanical failures in the system.



Winslow Wastewater Treatment Plant Renovations – Winslow, AZ

Mr. Pierce served as the project field engineer during the upgrades to the Winslow WWTP. PACE oversaw the evaluation of existing facilities and analyzed whether the projected growth was better served through improvement of the existing facility or the design and construction of a new treatment facility, and developed a facility phasing plan used to implement the recommended upgrades to the existing plant. Through interviews with operating staff, detailed site visits, and careful analysis of available operating data, PACE identified options that reduced current O&M costs, reduced capital improvement costs, and improved effluent quality without triggering regulatory delays due to existing permits.

BDWID Water System Improvements – Bouse, AZ

Mr. Pierce is serving as the Project Manager for the Bouse Domestic Water Improvement District (BDWID) Water System Improvements. PACE provided planning, evaluation and preliminary engineering services to obtain USDA-RD funding for the system improvements. The USDA-RD PER explored distribution lines, new supply well, treatment processes, plant site, new water meters, adding sufficient water storage. The USDA-RD

PROJECT MANAGER – Taylor B. Pierce, PE

RELATED EXPERIENCE CONT.

has issued a funding package and the project is moving forward to the design phase.

Jerome WWTP Improvements & Sewer Line Extension – Jerome, AZ

Mr. Pierce is serving as the Project Manager for the Jerome WWTP Improvements & Sewer Line Extension project. The Jerome WWTP is a tertiary treatment facility that is experiencing exceedances of ammonia impact ratio (AIR) as well as some random exceedances for total copper. The existing sewer lines are in dire need of improvements as they have passed their useful life and many are exposed, or under existing structures. The Town pursued and received USDA funding. PACE completed the USDA Preliminary Engineering Report (PER) process to review alternatives and make a recommendation based on 20-year life cycle cost analysis. PACE has been awarded the contract for the design, bidding, construction and post construction services for the completion of these improvements. Improvements will include installation of 2,400 LF of new 10" HDPE gravity sewer pipe, 5 new 48" Manholes, grading of 2,000 LF of new site access roadway, complete flood impact analysis of treatment plant site, install new mechanical screen, a new 90,000 GPD SBR treatment plant and aerobic sludge storage tank, a new dewatering press, a new liquid chlorine system, and providing maintenance access to constructed wetlands.



Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Pierce is serving as the Project Manager for the construction phase of this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-solids processing facility to handle solids processing for multiple treatment plants within the regional area.

San Luis East Wastewater Treatment Plant – San Luis, AZ

Mr. Pierce is serving as the Project Engineer for the San Luis East Wastewater Treatment Plant. PACE was charged with providing engineering services to the City of San Luis for miscellaneous improvements to its existing facility. A PACE evaluation recommended improvements include headworks capacity and redundancy improvements, Grading and Site Improvements, and Effluent Flow Meter and Chlorine Contact Basin Improvements. Additionally, Consultant shall perform a preliminary evaluation of the plant expansion to 4.0 MGD. The plant expansion evaluation will be considered in 3 phases in 1 MGD increments with an alternate to increase from 2.0 MGD to 4.0MGD as a cost comparison. The purpose of these evaluations is to provide the City with a planning document that will assist the City with any future development treatment expansion requirements.

Home / 66052 / 70097

70097

First Name Taylor

Last Name Pierce

License Status

Active

Discipline

ENGINEER/CIVIL

Initial Registration Date 27 Sep 2019

Expiration Date 31 Dec 2025

Address Line 1

8723 E Via de Commericia, A-204

City Scottsdale

State Arizona

Zip 85258

Phone 602-540-2727



principal/ qa/qc

James A. Matthews, PE

EDUCATION

BS / Civil Engineering
San Diego State University - 1994

YEARS OF EXPERIENCE

31 years
Joined PACE in 1994
With others more than 2 years

REGISTRATIONS

Professional Engineer / AZ – 1999 / 34090
Professional Engineer / CA – 1997 / C57446
Professional Engineer / CO – 2018 / 0054243
Professional Engineer / FL – 2009 / 69722
Professional Engineer / HI – 2009 / 13718
Professional Engineer / ID – 2004 / 11229
Professional Engineer / NM – 2004 / 16491
Professional Engineer / TX – 2018 / 132370
Professional Engineer / UT – 2020 / 11893246-2202
Professional Engineer / VA – 2005 / 040716
NCEES 18-931-54
Wastewater Treatment Operator Certification:
1997 / WW023812

AFFILIATIONS

American Water Works Association (AWWA)
Water Environment Federation (WEF)

PUBLICATIONS

EPA's Small Flows Quarterly:
"Hybrid Sequencing Batch Reactors"

Santa Margarita Water District: "Advanced Processes for Water Reuse"

City of Lathrop:
Title 22 Recycled Water Training Program

PEARL Education Program:
Electrical Power and Control Systems

James Matthews is highly regarded in the water, wastewater, recycled water, and stormwater industries for his tremendous wealth of practical knowledge and ability to use old and new technologies, hands-on experience, and research to produce value for his clients and their projects. Mr. Matthews has created designs for a multitude of award-winning projects, saving capital and operation costs, reducing construction schedules, and minimizing operation and maintenance needs on reservoirs, pump stations, and water & wastewater treatment facilities, by implementing creative ideas and concepts.

As both a licensed engineer and wastewater treatment operator, Mr. Matthews is a technical expert in infrastructure engineering design, construction, and operations. He has particular experience reviewing, troubleshooting, and renovation on over 250 projects in the US, Canada, and Central America.

However, his expertise is not limited to just water resources; having a wealth of knowledge in electrical, controls, and instrumentation. He has personally fabricated, programmed, and installed a multitude of custom control systems, which included PLC/PAC programming, radio telemetry, and Supervisory Control and Data Acquisition (SCADA) systems for numerous water, wastewater and co-generation projects.

RELATED EXPERIENCE

Chino Valley WRF Capacity and Expansion Evaluation – Chino Valley, AZ

Mr. Matthews served as Principal/Consulting Engineer for the evaluation of the Town of Chino Valley's Water Reclamation Facility (CVWRF) which treats raw wastewater collected from the Town of Chino Valley, Arizona. Although the CVWRF was satisfying the current permit requirements, the Town recognized a risk of violation with current flow conditions due to daily periods of high inflow and operation at or above industry standard, occasionally reaching 80% of the 0.5 MGD design capacity. As a result, the biological loading rates consistently exceeded the design loading rates for the facility and as such, the secondary treatment process struggled to treat to the permitted limits for Total Nitrogen. PACE performed numerous evaluations, and based on the results of the hydraulic and biological capacity studies, recommended the following minimum improvements across multiple proposed alternatives for flow / load equalization or additional hydraulic and biological capacity to meet current and near-term conditions: add an automated MicroC dosing system at the RAS return to the Anoxic Basins, replace the existing UV system with a new low-pressure high-output inline UV disinfection system, and install an additional sludge dewatering system to provide more dewatering capacity for normal operating conditions and redundancy to accommodate mechanical failures in the system.

Winslow Wastewater Treatment Plant Renovations – Winslow, AZ

PACE performed an evaluation of the deficiencies of the City of Winslow's WWTP, which was plagued by operational issues, making the effective treatment capacity roughly half of its design capacity of 2.2 MGD. Mr. Matthews served as the Principal / QA/QC, and led the Instrumentation and Controls upgrades. He provided key input in the development of a Process, Efficiency, and Alternative Analysis Evaluation, to identify several major process deficiencies, as well as proposed improvements for each that preserved as much of the existing facility that was practical. Mr. Matthews

PRINCIPAL/ QA/QC – James A. Matthews, PE

RELATED EXPERIENCE CONT.

recommended numerous renovations to these processes including the lift station, headworks, flow equalization basin, oxidation ditches, filters, UV disinfection system, effluent pump station, sludge dewatering process and the SCADA/control system. The plant upgrades also included the replacement of its clarifiers and headworks, modifications to its oxidation ditch with a new aeration and blower system, and a complete overhaul of the plant's support and control infrastructure components.



Quartzsite Wastewater Treatment Plant Evaluation and Expansion – Quartzsite, AZ

Mr. Matthews served as the QA/QC Principal Engineer to increase the Quartzsite WWTP capacity from 0.45 MGD to 0.90 MGD. Mr. Matthews provided an in-depth evaluation of the proposed SBR expansion and the existing SBR system, along with all the other existing unit processes. A new second sequential batch reactor (SBR) basin was designed to effectively treat its highly seasonal wastewater flow with better day-to-day treatment performance using significantly less energy.



Tuolumne Utilities District Sonora Regional WWTP Upgrades – Sonora, CA

The Sonora Regional Wastewater Treatment Facility (SRWWTF) owned by Tuolumne Utilities District was constructed in 1974 and permitted to handle 2.6 MGD (million gallons per day) average dry weather flow rate. This facility also receives septage from the Tuolumne County. In recent years, the treated water quality was observed from district operational staff and seasonal variation on biomass growth was noticed on trickling filters. Based on the treatment plant discharge permit, treatment scheme should achieve a 30- day average BOD and TSS (Total suspended solids) levels of less than 30 mg/L. However, summer operations in trickling filters followed by secondary clarification demonstrated a reduction in system performance specifically in BOD and TSS reduction. Mr. Matthews served as the Principal / QA/QC leading to concepts to retrofit the existing open pond into Parkson "Biolac®" basins containing modern swing air diffusers with hydraulic retention times of 24-36 hours, with more efficient waste processing and flexibility with varying inflows. This upgraded Biolac system freeboard in the secondary process allows equalization of flows within the basin, eliminating the need for offline equalization, as well as providing the ability to treat lower flows when the basin level was decreased intentionally. As a result, this new process will enhance processing capacity, performance, efficiency, and optimization.

Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Matthews is serving as the Project Manager for this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-solids processing facility to handle solids processing for multiple treatment plants within the regional area.

Home / 66052 / 34090

34090

First Name James

Last Name Matthews

License Status
Active

Discipline
[ENGINEER/CIVIL](#)

Initial Registration Date 6 Aug 1999

Expiration Date 30 Sep 2026

Address Line 1
17520 Newhope Street

Address Line 2
Suite 200

City Fountain Valley

State California

Zip 92708

Phone [714-481-7300](#)



sr. project engineer

Robert Murphy, PE

EDUCATION

BS / Civil Engineering
California State University, Long Beach - 2007

YEARS OF EXPERIENCE

17 years
Joined PACE in 2006

REGISTRATIONS

Professional Engineer / CA – 2014 / C83207

AFFILIATIONS

Water Environment Federation (WEF)
American Society of Civil Engineers (ASCE)

PUBLICATIONS

Peterson, J.D., Murphy, R.R., Jin, Y., Wang, L., Nessler, M.B., Ikehata, K. (2011) Health effects associated with wastewater treatment, reuse, and disposal. Water Environment Research 83:10, 1853-1875.

Robert Murphy has Civil Engineering experience spanning back to 2006. His experience includes design of wastewater treatment plants, sewer / stormwater / potable / reclaimed pump stations, water treatment and storage design. Mr. Murphy has developed several performance-based equipment specifications for process equipment selection prior to design, and the creation of operation and maintenance manuals for several wastewater and water conveyance and treatment systems and facilities. He has also served as the resident engineer for the construction of several wastewater treatment facilities, water distribution, and sewer collection and pump station projects. Mr. Murphy is adept in coordinating project plans, specifications, and reports with multiple consultants to obtain an efficient buildable and operable system.

RELATED EXPERIENCE

Winslow Wastewater Treatment Plant Renovations – Winslow, AZ

Mr. Murphy served as the Project Engineer for the Winslow WWTP renovation project and provided process, mechanical, and civil design. PACE identified options that will reduce current O&M costs, reduce capital improvement costs, and improve effluent quality without triggering regulatory delays due to existing permits. The plant upgrades included the replacement of its clarifiers and headworks, modifications to its oxidation ditch with a new aeration and blower system, and a complete overhaul of the plant's support and control infrastructure components.

Tuolumne Utilities District Sonora Regional WWTP Upgrades – Sonora, CA

Mr. Murphy served as the Sr. Project Engineer working on concepts to retrofit the existing open pond into Parkson "Biolac®" basins containing modern swing air diffusers with hydraulic retention times of 24-36 hours, with more efficient waste processing and flexibility with varying inflows. This upgraded Biolac system freeboard in the secondary process allows equalization of flows within the basin, eliminating the need for offline equalization, as well as providing the ability to treat lower flows when the basin level was decreased intentionally. As a result, this new process will enhance processing capacity, performance, efficiency, and optimization.

Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Murphy is serving as the Sr. Project Manager for the construction phase of this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-



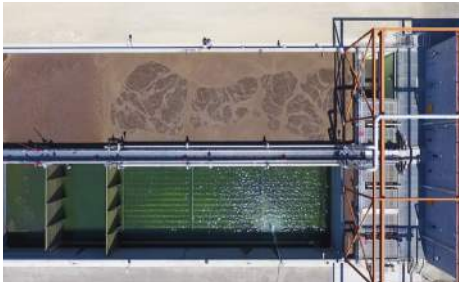
SR. PROJECT ENGINEER – Robert Murphy, PE

RELATED EXPERIENCE CONT.

solids processing facility to handle solids processing for multiple treatment plants within the regional area.

Mountain House Water Reclamation Facility Expansion Phase III – Mountain House, CA

Mr. Murphy is currently serving as the Sr. Project Engineer for the Phase III expansion from 3.0 MGD to 5.4 MGD average dry weather flow. The expansion converts the secondary treatment process to an MBR. Performance specifications were developed for new high efficiency blowers, and he analyzed and repurposed existing diffusers at the facility.



City of Lathrop Advanced Water Treatment and Recycling Facility Expansion – Lathrop, CA

As Sr. Project Engineer, Mr. Murphy provided design services for the expansion of the Lathrop Consolidated Treatment Facility, an MBR wastewater treatment facility, for the City of Lathrop, California. PACE provided project development, studies, design, and bid and construction administration services for two phases of expansion of the City of Lathrop Consolidated Treatment Facility (CTF), an MBR wastewater treatment facility that treats residential and commercial/industrial sewage flows. Prior to the first expansion, the facility's capacity was 1.0 MGD. The Phase 2 expansion took the capacity to 2.5 MGD, and the Phase 3 capacity currently under design will bring the facility to 4.0 MGD, with several major provisions designed as part of Phase 3 to support the ultimate buildout capacity of 6.0 MGD. Mr. Komor developed a creative approach to the upgrade with a new secondary and MBR treatment system accessed at grade level with an integrated process mechanical design that minimized valving and pumping that improves process treatment simplicity and makes the unit processes visible to operators. The design is straightforward and allowed for ease in facility expansion. The new treatment system process design was based around use of the existing chlorine contact basin (CCB), without having to expand the CCB infrastructure for continued production of Title 22 disinfected tertiary recycled water under the new design flow conditions. This was achieved through a free chlorine contact time revalidation study performed by PACE and approved through the CA DDW.



City of Santa Paula Advanced Water Treatment and Recycling Facility – Santa Paula, CA

The Santa Paula Advanced Water Treatment and Recycling Facility features all-enclosed treatment with a common-wall design and creative redundancy features. The 4.2 MGD MBR treatment facility ensures a neighbor-friendly facility and the treated effluent meets California's stringent Title 22 effluent requirements with 0.2 NTU turbidity allowing groundwater recharge. Mr. Murphy served as the Project Engineer for the design of this facility which includes a 17 MGD influent lift station, twin progressive coarse-grit-fine screening headworks, two-stage surge attenuation basins, three activated sludge - biological nutrient removal trains, six hollow-fiber membrane separation trains, and a National Water Research Institute (NWRI) compliant UV disinfection system. The facility also features three 200 HP, five 100 HP, and three 75 HP Aerzen air-bearing turbo blower units and ultra-fine bubble aeration, which reduced the overall energy consumption by 15-20%.

Adelanto Wastewater Treatment Plant Upgrades – Adelanto, CA

Mr. Murphy was the Project Engineer for the City of Adelanto WWTP Improvement Plan and provided process, mechanical, and civil design. The WWTP receives an average flow of 1.8 MGD, of which only 0.5 MGD was able to be treated prior to the upgrades. PACE evaluated the existing facility and recommended new infrastructure and rehabilitation of the existing systems to not only regain the original plant capacity, but to increase the rated capacity to 4.0 MGD. New plant infrastructure includes screening and washing systems in the headworks, three 200 HP Aerzen air-bearing turbo blowers and new aeration equipment in the existing secondary basins, two new 70' diameter circular clarifiers, a RAS/WAS pump station, and new internal recycle pumping on the biological process. Modifications were made to the existing effluent filters and chlorine contact basin to produce full Title 22 compliant recycled water. Improvements were also made to the solids handling to reduce cake volumes and improve dewatering performance.

BOARD FOR PROFESSIONAL ENGINEERS,
LAND SURVEYORS, AND GEOLOGISTS
LICENSING DETAILS FOR: 83207

NAME: MURPHY, ROBERT RUSSELL

LICENSE TYPE: CIVIL ENGINEER

LICENSE STATUS: CLEAR
ADDRESS

630 W KNEPP AVE
FULLERTON CA 92832
ORANGE COUNTY

ISSUANCE DATE

DECEMBER 17, 2014

EXPIRATION DATE

MARCH 31, 2025

CURRENT DATE / TIME

JANUARY 3, 2024
1:12:35 PM



sr. cad designer

Thomas Gutierrez

EDUCATION

AA / Applied Science, Computer Aided Drafting
Technology ITT Technical Institute - 1994

YEARS OF EXPERIENCE

29 years
Joined PACE in 2001
With others more than 7 years

Thomas Gutierrez has more than 27 years of experience in design and preparation of mechanical plans, sections and details for engineered construction documents within the wastewater and water industry. He has in-depth knowledge of mechanical systems layout, mechanical assemblies, fittings, valving, pipe materials and ratings, site grading, drainage, and utility plan/profile design (pressure and gravity systems). Mr. Gutierrez also has in-depth experience with design of mechanical 3D models of wastewater treatment plants for construction drawings. His 3D design and modeling experience includes design and draft BIM-ready civil 3D pipe networks, surface models, grading and basic corridors for earthwork calculations and cross sections, process piping for complete plant layouts, and mechanical process equipment (i.e. blowers, pumps, etc.). Mr. Gutierrez is an advanced user of Autodesk AutoCAD, Civil 3D, and MEP. He has also has the responsibility of directing CAD staff and engineers to ensure project documents are accurate, professional and meet project goals. He is responsible for communicating with engineers and production staff to ensure all needs are met, this includes support, training and solving critical task obstacles.

RELATED EXPERIENCE

Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Gutierrez is serving as the Sr. CAD Designer for this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-solids processing facility to handle solids processing for multiple treatment plants within the regional area.



Palm Valley Water Reclamation Facility – Litchfield Park, AZ

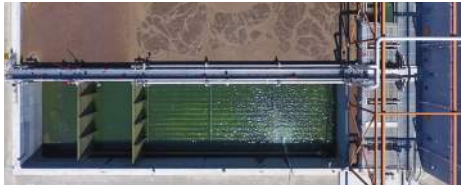
Mr. Gutierrez was Sr. CAD Designer for the design of 4.1 MGD (expandable to 8.2 MGD) water reclamation facility for the Litchfield Park Service Co (LPSCo). The DBO approach used on the project allowed the utility to implement ADEQ Class A+ treatment including a peak 24 MGD sewer lift station in less than 18 months from start design to construction completion at 30% less cost than constructing an expansion to the City of Goodyear's existing treatment plant. The facility features advanced biological nutrient removal, Aqua-disk filtration, UV disinfection and an Auto Thermophilic Aerobic Digestion (ATAD) process for EPA Class A bio-solids. Mr. Matthews was responsible for all engineering



SR. CAD DESIGNER – Thomas Gutierrez

RELATED EXPERIENCE CONT.

aspects of the project including design, construction services, start-up assistance and permitting of the facility which now treats an excess of 4.0 MGD for direct groundwater recharge.



City of Lathrop Advanced Water Treatment and Recycling Facility Expansion – City of Lathrop, CA

Mr. Gutierrez prepared the design and construction documents for the expansion of the Lathrop Consolidated Treatment Facility, an MBR wastewater treatment facility, for the City of Lathrop, CA. Mr. Gutierrez led all CAD design and oversaw the team producing all design plans.



Show Low Wastewater Treatment Plant Evaluation and Expansion – Show Low, AZ

The City of Show Low commissioned PACE to evaluate, design and assist in implementing the most appropriate and cost effective solutions to upgrade and expand the City's existing WWTP. The new WWTP utilizes an Extended Aeration Activated Sludge (EAAS) process to produce effluent quality that can meet AZ Title 18 BADCT effluent limits for Total Nitrogen (TN) of <10 mg/L. Since the construction was completed, the facility has consistently produced effluent with TN level of less than 3 mg/L (and at times <1 mg/L). In addition to the new treatment process, a key component to meeting and maintaining consistent effluent quality is the WWTP process control. Mr. Gutierrez served as the Sr. CAD Designer for the design of the Show Low WWTP Upgrades.

Sundance Water Reclamation Facility – Buckeye, AZ

Mr. Gutierrez was the Sr. CAD Designer for the design services under a Design-Build-Operate (DBO) contract for a WRF for the Sundance residential master-planned community. The facility was constructed in two phases. Phase 1, with a 1.2 MGD capacity provided advanced biological treatment and producing Class A+ effluent for reuse and remained in service during the construction of the Phase 2 expansion. Phase 2 expanded the capacity to 3.4 MGD. A design highlight included the reduction of traditional SBR sludge output by 50 percent.



Santa Monica Sustainable Water Infrastructure Project (SWIP) Advanced Water Recycling Facility – Santa Monica, CA

Mr. Gutierrez served as Sr. CAD Designer, overseeing the CAD plan production of the Advanced Water Treatment Facility (AWTF). The AWTF treats a combination of raw wastewater and harvested stormwater, producing 1.0 MGD of purified water for groundwater augmentation. The facility is one of the first to take in raw wastewater, fully oxidize the stream via biological treatment, and provide the pathogen reduction requirements to meet California Title 22 regulations for Indirect Potable Reuse (IPR) of 12 log virus, 10 log cryptosporidium, and 10 log giardia all within one facility. The treatment process consists of a five-barrier stream: membrane bioreactor (MBR), cartridge filtration, reverse osmosis (RO), ultraviolet advanced oxidation process (UVAOP), and chlorine disinfection.

Santa Paula Water Recycling Facility – Santa Paula, CA

Mr. Gutierrez served as Sr. CAD Designer for the design of the Santa Paula Water Recycling Facility (WRF). The existing wastewater treatment plant had reached the end of its service life and was no longer in compliance with current regulatory requirements. The City has replaced the existing facility with a new WRF and percolation basin effluent disposal system. Mr. Gutierrez coordinated the CAD plan set of the civil, grading, mechanical, and utility plans for the duration of the project. The Santa Paula WRF is designed as a Membrane Bio Reactor (MBR) with an initial capacity of 3.4 MGD and readily expandable to 4.2 MGD to meet wastewater flow projections for the year 2025. The Santa Paula WRF is the largest Koch MBR facility in the United States. It is also the first DBOF municipal WRF in California.





sr. electrical engineer

Bashar Ishaq, PE, MBA, PMP

EDUCATION

BS / Electrical Engineering
University West - 2014

MS / Business Administration
Hult International Business School - 2020

MS / Business Analytics
Hult International Business School - 2021

YEARS OF EXPERIENCE

9 years
Joined PACE in 2023
With others more than 8 years

REGISTRATIONS

Professional Electrical Engineer / CA – 24590
ICC Commercial Electrical Inspector – 9916237
Project Management Professional – 3010684
OSHA 10
OSHA Confined Spaces
Safe Electrical Work Practices (NFPA)
NFPA 70: National Electrical Code

Bashar Ishaq is an internationally established Electrical Engineer with 8+ years of hands-on experience in global industrial plant facilities. Bashar's key areas of experience are: power distribution design, project planning, and final commissioning in wastewater & petrochemical plants. His unique expertise includes electrical design for direct-on-line low voltage motors, UPS as a key client for electrical design systems (30-60kVA) & low-voltage substations. Additionally, he specializes in developing arc flash and coordination studies. Recognized as a reliable and trustworthy SME, Bashar has been granted direct access to customer facilities, where he continues to hone his skills as a Field Engineer by directly implementing his electrical designs for clients, resulting in significant project cost & time savings. Bashar has also served as Project Engineer for a \$40 million multi-disciplinary project, with primary responsibilities including managing cross-functional stakeholders, and leading the development of a needs assessment report with a team of engineers. In addition to being a strategic problem-solver, Bashar prides himself on his vast knowledge of safe working practices & potential hazards in operating plant environment and construction.

RELATED EXPERIENCE

Vallejo Waste Treatment Plant System Upgrades Project for the Arc Flash and Coordination Study – Vallejo, CA

Mr. Ishaq developed an arc flash, short circuit, and protective device coordination study for the West County Wastewater Plant. The data in the study was 100% verified in the field for the 12.5 MGD WWTP. The scope of the study included data collection in the field, modeling in SKM, confirmation of calculations, and writing the report of findings and recommendations.

WQCF Phase-3A – City of Patterson CA

Mr. Ishaq designed the power distribution system and the control system for the expansion of a wastewater treatment plant. The design included a new power utility service (480V, 1600A), new low-voltage switchgear, a low-voltage motor control center, 20+ motors, and other miscellaneous systems. The design and specified the requirements for a standby diesel generator with an automatic transfer switch (ATS). Additionally, Mr. Ishaq interfaced with the power utility and completed the application for the new service with all the required documents per the utility requirements on behalf of the client.

System Upgrades Project for the Moccasin Powerhouse – Moccasin, CA

The powerhouse has two hydroelectric generators rated 57.5 MVA, and two generator step-up autotransformers rated 72 MVA, 230/115 kV-13.8 kV, providing electricity through four transmission lines. This multi-disciplinary project's goal is to upgrade the balance of the plant (supporting/auxiliary) systems/equipment for the City & County of San Francisco. The project commenced in 2021 and is expected to be commissioned in 2027. Mr. Ishaq served as Assistant Project Engineer during the initial project planning phase & needs assessment. Responsibilities included leading meetings, conducting site visits, spearheading stakeholder collaboration, and developing a needs assessment report with a cross-functional team of engineers. Mr. Ishaq was also responsible for upgrading 13.8 kV switchgear, seven low-voltage MCCs, DC auxiliary system, two excitation systems, one main control board, grid protection and control, one cooling water system, two HVAC systems, and two fire suppression systems.

SR. ELECTRICAL ENGINEER – Bashar Ishaq, PE, MBA, PMP

RELATED EXPERIENCE CONT.

North Shore Pump Station Wet Weather Improvements – San Francisco, CA

This project is replacing four (4) dry weather pumps with larger capacity units so that they are capable of pumping redundant capacity during wet weather. The project also includes upgrades to the motor control centers (MCCs) and distributed control system (DCS). Mr. Ishaq provided field inspection support to verify contract document and code compliance during construction, start-up & commissioning phases, and witnessed performance field tests to ensure that tests were carried out per NETA, National Electrical Code, and the contract requirements.

Oceanside Water Pollution Control Plant WW-639 Digester Gas Utilization Upgrades – San Francisco, CA

The objective of this project was to sequentially remove, replace, and upgrade existing deficient & deteriorated digester biogas internal combustion cogeneration systems. Mr. Ishaq provided support during construction, start-up & commissioning phases, and witnessed performance field tests to ensure that tests were carried out per national code & contract requirements. Additional construction management duties included: key participant in construction meetings, review & approval of force account reports, and evaluation of change order requests proposed by contractors. The electrical work for the project included electrical power system upgrades, new motor control center & electrical substation, lighting system upgrades, packaged standby diesel engine generator assembly, diesel fuel leak monitoring system, modification of fixed gas monitoring system, instrumentation, and controls work. Serving as Electrical Inspector, Mr. Ishaq's specific responsibilities for this project included field inspection of electrical equipment, including a 1000 kVA diesel generator, 1600 A distribution board, 10 low-voltage motors, and other electrical equipment.

Reformulated Esso Diesel Fuel (RFD) Project – Norway

The objective of this \$90 million project was to add a new unit - RFD, to enable an oil refinery to extract more oil, leading to increased revenues. The RFD utilized advanced technology to refine heavy crude oil and included installation of a new oil refining tower in the refinery. As the Electrical Field Engineer, Mr. Ishaq was responsible for developing test plans, witnessing field testing, and coordinating contractors & electricians for all project associated motors. Test plans included installing required software in the motor starters, in conjunction with relay settings. Project components included: 16 LV motors (400V) & 4 LV (690V) motors that were installed in the refinery, either controlled by DOL with Simocode (Siemens intelligent motor controls) or by VFD (ABB ACS880), electrical heat trace panel, emergency lighting panel, power panel, and MOV (motor-operated valve).

Replacement of Esso Truck Loading Switchgear – Norway

Mr. Ishaq served as an Electrical Lead Engineer & Project Engineer for this project, which included replacing an existing low-voltage switchgear inside a refinery. The switchgear was in a hazardous zone, resulting in all new electrical equipment requiring pre-approval for the zone in accordance with local standards & regulations. Responsible for developing electrical specifications, reviewing electrical design, vendor coordination, and cross-functional management of engineers from other departments. Switchgear had two incoming feeders, 690V; downstream loads included motors, lighting, and power to control equipment. The project's primary challenge was how to utilize outdated & inaccurate documentation for existing switchgear. Mr. Ishaq worked in collaboration with one electrician to validate/update the electrical & control documentation in the field (included 45 motor starters, one lighting panel, and one power panel).

**ISHAQ, BASHAR MATE**

LICENSE NUMBER: 24590 LICENSE TYPE: ELECTRICAL ENGINEER

LICENSE STATUS: CLEAR  EXPIRATION DATE: JUNE 30, 2025

SECONDARY STATUS: N/A

CITY: SAN FRANCISCO STATE: CALIFORNIA COUNTY: SAN FRANCISCO ZIP: 94102



sr. instrumentation & controls specialist

Ernesto Camarena

EDUCATION

AA / Applied Science, Computer Aided Drafting,
ITT Technical Institute, West Covina, CA - 1993

YEARS OF EXPERIENCE

28 years
Joined PACE in 2005

SEMINARS

TESCO New Plant and SCADA Security Regulations,
Cell Modern Telemetry via 4G, High Voltage Safety
Codes
Temecula, 2010

Sage Clear SCADA and SCADAPak Certification
Los Angeles, 2009

Ernesto Camarena has automation experience spanning back to 1994. His areas of expertise include controls and automation design for water and wastewater treatment, wells, pump stations, and storage reservoirs. Mr. Camarena's responsibilities include preparing process and instrumentation design, process flow schematics, conceptual design exhibits including termination diagrams, and QA/ QC for the electrical power and controls design. Mr. Camarena is a valuable and unique designer and startup expert of water infrastructure due to his extensive background in hands-on implementation of projects, including panel building, programming, troubleshooting, and installation in the field during construction and operations. Because of his experience in performing water and wastewater related controls designs and installations, Mr. Camarena also is well-versed on water/sewer transport and treatment processes, which enable him to provide complete and accurate process and instrumentation diagrams.

RELATED EXPERIENCE

Winslow Wastewater Treatment Plant Renovations – Winslow, AZ

Mr. Camarena served as the Sr. Instrumentation and Controls Specialist for the Winslow WWTP renovation project. PACE developed a facility phasing plan that will be used to implement any recommended upgrades to the existing plant. PACE identified options that will reduce current O&M costs, reduce capital improvement costs, and improve effluent quality without triggering regulatory delays due to existing permits.

Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Camarena is serving as the Sr. Instrumentation and Controls Specialist for this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-solids processing facility to handle solids processing for multiple treatment plants within the regional area.

Somerton Wastewater Treatment Plant Phase III Expansion – Somerton, AZ

Mr. Camarena provided complete process and instrumentation diagrams for the City of Somerton's wastewater treatment facility expansion from 0.8 MGD to 1.6 MGD. The previous plant was a 0.8 MGD biological aeration process plant using SBR technology. PACE value engineered the original plan which called for 0.4 MGD expansion at a \$6.2 million budget. PACE modified the original plan to utilize the 4-stage Continuous Flow



SR. INSTRUMENTATION & CONTROLS SPECIALIST – Ernesto Camarena

RELATED EXPERIENCE CONT.

Biological Nutrient Removal (BNR) Process and will be designed to have a flow capacity of 1.8 MGD when completed for the same budget, producing the following benefits: an additional 1.0 MGD of capacity instead of 0.4 MGD, creating 1.0 MGD at under \$7/gallon versus the original 0.4 MGD at over \$15/gallon, and reduced land use by conversion of the facility's process and using existing tankage instead of duplicating and constructing four new SBR tanks.



Show Low Wastewater Treatment Plant Upgrades – Show Low, AZ

The City of Show Low commissioned PACE to evaluate, design and assist in implementing the most appropriate and cost effective solutions to upgrade and expand the City's existing WWTP. The new WWTP utilizes an Extended Aeration Activated Sludge (EAAS) process to produce effluent quality that can meet AZ Title 18 BADCT effluent limits for Total Nitrogen (TN) of <10 mg/L. Since the construction was completed, the facility has consistently produced effluent with TN level of less than 3 mg/L (and at times <1 mg/L). In addition to the new treatment process, a key component to meeting and maintaining consistent effluent quality is the WWTP process control. Mr. Camarena served as the Instrumentation & Controls Specialist to program and integrate the PLC controls and SCADA for the WWTP. Since the WWTP new process requires constant flow and level control in order to maintain proper treatment, a network of PLCs, field instrumentation and SCADA was implemented that allows for tight controls of the process with minimum onsite supervision. PACE's ability to provide both process design and engineering, along with the ability to provide controls integration has made the Show Low WWTP Upgrades Project a great success for the City.

Sierra Vista Environmental Operations Park (EOP) – Sierra Vista, AZ

Mr. Camarena provided complete process and instrumentation diagrams for the design of a 4 MGD multi-cell advanced secondary lagoon treatment system. He coordinated the general location of all equipment and instrumentation with the electrical designer, and provided quality analysis and quality control of the entire set of complete electrical plans. Mr. Camarena also provided specifications for hardware and equipment, and reviewed and approved construction submittals.



Santa Monica Sustainable Water Infrastructure Project (SWIP) Advanced Water Treatment Facility – Santa Monica, CA

The Santa Monica Water Infrastructure Project (SWIP) is helping secure the City of Santa Monica's water future by using the City's existing infrastructure and linking together three new distributed water reuse elements into a single cohesive and comprehensive project to harvest, treat, and reuse non-conventional water resources. The SWIP will deliver reliable advanced treated water to be injected into local groundwater basins for indirect potable reuse via aquifer recharge, while meeting the non-potable reuse demands. Mr. Camarena served as the Sr. Instrumentation and Controls Specialist for the design of the Advanced Water Treatment Facility (AWTF) with a capacity of 1.0 MGD through the use of a Membrane Bioreactor-Reverse Osmosis-UV Advanced Oxidation Process to treat municipal wastewater, stormwater, and dry weather runoff to replenish the groundwater aquifer, making the facility an indirect potable reuse system.



construction engineer

Jeremy Foster

EDUCATION

BS / Civil Engineering
Arizona State University - 2019
Cum Laude

American Public Works Association Construction
Management Workshop

YEARS OF EXPERIENCE

12 years
Joined PACE in 2019

AFFILIATIONS

Chi Epsilon – Honor Society

Jeremy Foster has a background in the construction industry with a focus in plumbing. For over 12 years, he has overseen all phases of the construction process through his field work on a variety of projects not only in a support role, but also in a supervisory role. Immediately after graduating, he joined PACE and was placed in a construction management role on the award-winning Quartzsite Wastewater Treatment Plant Improvements project. His construction management responsibilities include construction coordination and scheduling, meeting facilitation, submittal reviews, field observation and other required services to ensure general compliance with the intended design. Additionally, Mr. Foster provides design engineer services to support the PACE Arizona office.

RELATED EXPERIENCE

Quartzsite WWTP Upgrades – Quartzsite, AZ

Mr. Foster served as the Resident Project Representative for the expansion of this existing 0.45 MGD SBR WWTP. The design upgrades included increasing the capacity to 0.9 MGD, improvement of water quality, process redundancy, and reduced operating cost. The challenge of the project was to provide a design that can be implemented within a 7-month window while maintaining treatment without the use of the existing single-basin SBR. Mr. Foster developed a transition plan that converted the existing digester into a temporary SBR, while the existing single-basin SBR was upgraded to a two-basin SBR and equipped with new fine bubble aeration that is coupled with (3) 100 HP high-speed, hybrid screw blowers. The project also included upgrades to the influent lift station, headworks screening, chlorine gas disinfection system, and the onsite reuse pump system. The Quartzsite WWTP was awarded the 2020 APWA Project of the Year Award - Small Cities/ Rural Communities and the 2020 AZ Water Association Treatment Plant of the Year – Small Systems.

Sarival Water Reclamation Facility– Goodyear, AZ

Mr. Foster is serving as Field Engineer for the Sarival Water Reclamation Facility project for construction of site improvements. PACE was a subconsultant for the Sarival WRF Conceptual Design Report (CDR). The CDR laid out a development program for the WRF and a regional bio-solids facility to accommodate the growth of Liberty Utility's western service area. The CDR considered growth projections, flexibility to manage flows between Sarival WRF and Palm Valley WRF, and cost-effective bio-solids management strategies. The design concept developed features expandability from 2.0 MGD to 12.0 MGD average day capacity, fitting within the 6.1-acre designated site where the Sarival Lift Station currently resides and providing flexibility for various effluent reuse alternatives. Currently, PACE is providing design, permitting, and construction services for the new 4.0 MGD WRF.

BDWID Water System Improvements – Bouse, AZ

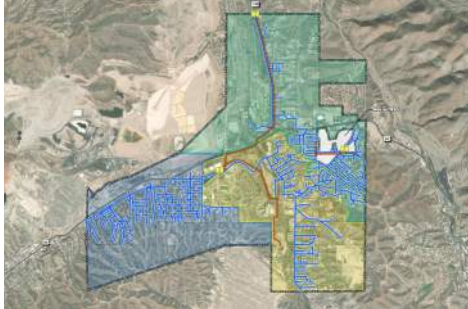
Mr. Foster is serving as a Design Engineer for the Bouse Domestic Water Improvement District (BDWID) Water System Improvements. Bouse Domestic Water Improvement District (BDWID) employed PACE for its groundwater well and treatment system upgrades. PACE completed a Preliminary Engineering Report for the evaluation of required upgrades to assist BDWID in facing issues with its existing potable water system associated with water quality and aging infrastructure. Design has been complete



CONSTRUCTION ENGINEER – Jeremy Foster

RELATED EXPERIENCE CONT.

and upgrades include replacing existing 13,000 LF of 2" water line with 6" piping, installing new drive-by radio read meters, a new 100 gpm adsorption with granular ferric hydroxide arsenic treatment facility, operations building, a new 100gpm (at minimum new groundwater production well, and a new 70,000-gallon storage tank.



Tri-City Regional Sanitary District Phase 1, 2 & 3 Wastewater Collection System & Water Reclamation Facility – Gila County, AZ

Mr. Foster is serving as a Design Engineer for Phases 1, 2 & 3, respectively, of a new regional wastewater system for the Tri-City Regional Sanitary District (TRSD). TRSD encompasses over five square miles of residential, commercial and industrial property in Gila County, AZ. The majority of the homes currently use cesspools and septic systems for wastewater disposal. Over 80% of these systems are functioning below ideal performance and some are completely out-of-service. The proposed project will abandon existing cesspools and septic systems and install an 8-10" sewer pipeline, lift stations, and a new MBR water reclamation facility that will serve approximately 4,200 residents.

Jerome WWTP Improvements & Sewer Line Extension – Jerome, AZ

Mr. Foster is serving as a design Engineer for the Jerome WWTP Improvements & Sewer Line Extension project. The Jerome WWTP is a tertiary treatment facility that is experiencing exceedances of ammonia impact ratio (AIR) as well as some random exceedances for total copper. The existing sewer lines are in dire need of improvements as they have passed their useful life and many are exposed, or under existing structures. The Town pursued and received USDA funding. PACE completed the USDA Preliminary Engineering Report (PER) process to review alternatives and make a recommendation based on 20 year life cycle cost analysis. PACE has been awarded the contract for the design, bidding, construction and post construction services for the completion of these improvements. Improvements will include installation of 2,400 LF of new 10" HDPE gravity sewer pipe, 5 new 48" Manholes, grading of 2,000 LF of new site access roadway, complete flood impact analysis of treatment plant site, install new mechanical screen, a new 90,000 GPD SBR treatment plant and aerobic sludge storage tank, a new dewatering press, a new liquid chlorine system, and providing maintenance access to constructed wetlands.

New Port of Entry Water & Wastewater Services– Douglas, AZ

Mr. Foster served as the Design Engineer for the New Port of Entry Water & Wastewater Services project. The City of Douglas was exploring alternatives for how to provide water and wastewater services to a New Port of Entry. Mr. Foster worked with the City, Border Patrol, and other stakeholders to establish a possible site for new facilities to supply the New Port of Entry. He also assisted in data gathering, development of cost estimates for different alternatives and in presenting findings in the technical report.



Town of Kearny Water Systems Improvement– Kearny, AZ

Mr. Foster is serving as a Design Engineer for the Town of Kearny Water Systems Improvement project. The water system has been experiencing repeated operational failures with its potable water filtration system, which consists of pressured media filtration vessel designed to remove manganese and has a design capacity of 700 gpm. The facility suffers from hydraulic surges and equipment and valve failures that has made the system inoperable for the majority of time since its implementation. Mr. Foster assisted in the gathering of existing data, plant operator and manufacturer of the current system. He also helped in evaluating the current systems deficiencies to conceptualize alternatives, and assisted in the drafting of the technical memorandum.



project coordinator / funding/ permitting

Andrea Jaycox

EDUCATION

AA / General Studies
Paradise Valley Community College

YEARS OF EXPERIENCE

23 years
Joined PACE in 2007

With over 22 years experience in engineering, architecture and construction industries, Mrs. Jaycox has supported projects with PACE for 15 years. She has managed all aspects of project administration for sewer, water, and recycled water systems from project administration and support, contract administration, technical writing, permitting and funding administration/compliance. The majority of the projects have been completed for municipalities and improvement districts in Arizona. She has extensive experience in project management support for multiple projects with numerous simultaneous efforts. She leads funding application and compliance efforts on all Arizona projects, including application content development, required submittals and pay applications throughout the projects with funding entities such as WIFA, USDA, CBDG, USACE and others.

RELATED EXPERIENCE

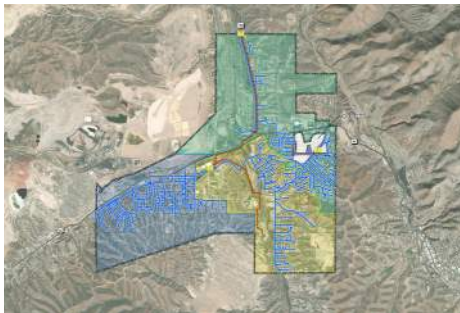
Winslow WWTP Renovations – Winslow, AZ

Mrs. Jaycox served as the Project Coordinator for the evaluation and improvement designs to regain the original plant design capacity of 2.2 MGD. The improvements installed a new combined headworks system consisting of a 6.8 MGD rated, 6mm drum screen with an attached aerated grit chamber and conveyor. The grit removal system consists of an aerated grit chamber installed directly after the drum screen. To promote settling of grit, coarse bubble diffusers installed on one side of the tank promote a spiral mixing pattern where a horizontal screw conveyor moves the collected grit into a centralized hopper. From here an inclined screw conveyor conveys the grit out of the tank for disposal. Mrs. Jaycox coordinated the USDA-RD funding application process, including the development of a Preliminary Engineering Report (PER), which led to an award of \$6.6 million in funding.



Quartzsite WWTP Upgrades – Quartzsite, AZ

Mrs. Jaycox served as the Project Coordinator for the expansion of this existing 0.45 MGD SBR WWTP. The design upgrades included increasing the capacity to 0.9 MGD, improvement of water quality, process redundancy, and reduced operating cost. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has also coordinated all USDA-RD funding activities, helping to secure over \$11M in funding by leading the assembly of a PER, the Environmental Assessment (EA), RD Apply online application and pay applications throughout the project. The Quartzsite WWTP was awarded the 2020 APWA Project of the Year Award -Small Cities/ Rural Communities and the 2020 AZ Water Association Treatment Plant of the Year – Small Systems.



Tri-City Regional Sanitary District Phase I, II & III Wastewater Collection System & Water Reclamation Facility – Gila County, AZ

Mrs. Jaycox served and is serving as the Project Coordinator for Phase I & II, respectively, of a new regional wastewater system for the Tri-City Regional Sanitary District (TRSD). TRSD encompasses over five square miles of residential, commercial and industrial property in Gila County, AZ. The project will abandon existing cesspools and septic systems and install of 8-10" sewer pipeline, lift stations, and a new water reclamation facility that will serve approximately 1,200 residents. Mrs. Jaycox oversees schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has

PROJECT COORDINATOR / FUNDING / PERMITTING – Andrea Jaycox

RELATED EXPERIENCE CONT.

also coordinated all USDA-RD and WIFA funding activities, leading the assembly of two PERs, the EA, RD Apply online applications and pay applications throughout the project, helping to secure nearly \$34M in funding.

Somerton WWTP Phase III Expansion – Somerton, AZ

Mrs. Jaycox served as the Project Coordinator for the City of Somerton's wastewater treatment facility expansion from 0.8 MGD to 1.6 MGD. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has also coordinated all USDA-RD and WIFA funding activities, leading the assembly of a PER, the EA, RD Apply online application and pay applications throughout the project.



Sarival Water Reclamation Facility– Goodyear, AZ

Mrs. Jaycox is serving as a Project Coordinator for permitting of the Sarival Water Reclamation Facility project. Permits included ADEQ APP, AZPDES, AQD. PACE was a subconsultant to PERC Water for the Design-Build of the facility, serving as engineer-of-record and leading the design of an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD. The facility uses an MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water.

Valley Vista Sewer Lift Station & Force Main – Somerton, AZ

Mrs. Jaycox served as the Project Coordinator for this USDA-RD funded wastewater collection system project and helped to secure nearly \$1.7M in funding. PACE was engaged by the City of Somerton to provide design services for the decommissioning of a small wastewater treatment plant and lift station, and subsequently for a new lift station and installation of a new sewer collection system that will redirect the flows to the newly upgraded Somerton WWTP. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has also coordinated all USDA-RD funding activities by leading the assembly of a PER, the Environmental Assessment (EA), RD Apply online application and pay applications throughout the project.



Sierra Vista EOP Water Reclamation Facility – Sierra Vista, AZ

Mrs. Jaycox served as the Project Coordinator for the complete design of the facility, including overall project coordination, process evaluation and design, plan development and permitting for the City's Environmental Operations Park (EOP), a 4 MGD multi-cell advanced secondary lagoon treatment system. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has also coordinated all USDA-RD funding activities by leading the assembly of a PER, the Environmental Assessment (EA), RD Apply online application and pay applications throughout the project. The City of Sierra Vista WWTP was awarded the 2014 APWA Public Works Project of the Year.

Show Low Wastewater Treatment Plant Upgrades – Show Low, AZ

Mrs. Jaycox served as the Project Coordinator on the Show Low Wastewater Treatment Plant Upgrade project, which converted a multi-cell aerated lagoon into a 2.5 MGD Extended Aeration Activated Sludge (EAAS) WWTP, using Parkson's Biolac Treatment Process. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She also led the permit applications for the project, including ADEQ, AQD, APP, AZPDES, Clean Closure and USACE Jurisdictional Delineation. The Show Low WWTP was awarded the 2018 WaterReuse Award.



BENJAMIN I. TILMAN, RLS

SURVEY MANAGER

PROFESSIONAL REGISTRATION

Registered Land Surveyor
Arizona No. 55698

CERTIFICATIONS

UAS Commercial-level Pilot
Certification
Mine Safety and Health Administration
(MSHA) Certified
BNSF Contractor Safety Certification

EDUCATION

B.B.S. Calvary Bible College
A.A. Yavapai College

EXPERTISE

- ☐ Civil Engineering
- ☐ Drainage Engineering
- ☐ Electrical Engineering
- ☐ Transportation Engineering
- ☐ Wastewater Engineering
- ☐ Water Engineering
- ☒ Survey
- ☒ Construction Management

SUMMARY

Mr. Tilman has 16+ years (all with Civiltec) of experience. His field experience includes topographic and design surveys, flood certification surveys, American Land Title Association (ALTA)/ American Congress of Surveying and Mapping (ACSM) surveys, control network surveys, boundary surveys and construction staking. He is Mine Safety and Health Administration (MSHA), MNSF Contractor Safety and USA Commercial Level Pilot certified. Mr. Tilman serves as party chief in one- or two-man crews for all Civiltec survey needs. He is primarily responsible for all data collection including survey observations, filed photographs, planimetric data, boundary data, and utility data. His experience includes working with Trimble total station and Global Positioning System equipment, and Trimble field data collection software including TGO and TBC. Mr. Tilman closely communicates with the client and scheduling of survey crews, particularly for construction staking projects.

Mr. Tilman's recent project experience includes providing all field surveying services for numerous Resolution Copper Mine Company projects. This has included all phases of survey for landmark environmental cleanup projects like the Tailings Pile rehabilitations, and the survey of wells for the development of a 3-D model of the underground ore body which Resolution Copper Mining will be extracting, as well as boundary surveys to facilitate the land exchanges that Resolution Copper Mining is working out with the federal government. Mr. Tilman also provided design survey and construction staking for drainage projects in Coconino County totaling \$14 million in improvements. He was also responsible for thousands of field observations for the recent runway lengthening and development of new Federal Aviation Administration's instrument procedures at the Prescott Airport.

PROJECT CHINO VALLEY EXPERIENCE

Chino Panels, Town of Chino Valley

Surveyor. This project was a drainage study over the entire area of Chino Valley. This involved using existing control from the Chino Valley static network to set aerial panels around Chino Valley. A significant amount of time was invested communicating with landowners and setting the panel control points.

Central Arizona Static Backbone

Surveyor. Geodetic coordinates for the control were established using Global Positioning System redundant observations and tied to Continuously Operating Reference Stations FST1 (Flagstaff), AZAH (Ashler Hills), and AZPE (Peoria). Comparison of adjusted geodetic coordinates were performed using the Online Positioning User Service from the National Geodetic Survey and results of said comparisons published. Two project combined factors were created for the project due to its length and elevation differences.



BENJAMIN I. TILMAN, RLS

SURVEY MANAGER

Two corresponding project centroids were created. The northerly centroid was defined between Chino Valley and Ash Fork, and the southerly centroid was defined for the area between Chino Valley and Prescott Valley. All field crews were coordinated for a static network control observation survey. Five survey crews occupied points in a time orchestrated fashion to assure redundant observations of multiple points. Data sets were imported and adjusted utilizing 99% confidence limits in Trimble least squares adjustment software.

ADDITIONAL CHINO VALLEY PROJECTS

Home / 55698

55698

First Name Benjamin

Last Name Tilman

License Status

Active

Discipline

LAND SURVEYOR

Initial Registration Date 19 Sep 2011

Expiration Date 31 Dec 2025

Address Line 1

2050 Willow Creek Road

City Prescott

State Arizona

Zip 86301

Phone 928-771-2376



GREGORY BURR, R.G., P.E.
DIRECTOR OF GEOTECHNICAL SERVICES
(928) 744-8700 • G.BURR@WT-US.COM

PROFESSIONAL QUALIFICATIONS

- Strong background in geology and familiarly with local geological conditions.
- Significant experience in geotechnical and materials field and laboratory testing.
- Experience managing and coordinating projects with local government agencies, architects, and general contractors.

PROFESSIONAL HISTORY

- | | |
|---|--------------|
| • Geotechnical Project Manager, WT, Flagstaff, AZ | 2016-Present |
| • Teaching Assistant, Northern Arizona University, AZ | 2014-2016 |
| • Basin Analyst, Petrolog, Ventura, CA | 2013-2014 |

REGISTRATION/CERTIFICATIONS

- Geologist-in-Training 2017
- Registered Geologist (#67873) 2018
- Professional Engineer: Arizona (#79669) 2023

EDUCATION/TRAINING

- | | |
|---|-----------------|
| • M.S. in Geology, Northern Arizona University | Graduated: 2017 |
| • B.S. in Geology, California State University Northridge | Graduated: 2014 |



Relevant Experience

YAN Wastewater Treatment Plant Additions: (WT Ref. Job # 2521JB276)

Job Completion: 2021

The project consisted of five single-story wastewater treatment structures and a MRB skid with plan areas ranging from approximately 400 to 4,000 square feet. On-site pavements and a stormwater retention basin were included as part of the proposed development.

Project Manager: Greg Burr

Senior Engineer: Craig Wiedeman

Job Location: Camp Verde, Arizona

Quartzite Wastewater Line: (WT Ref. Job 3 2521JB182)

Job Completion: 2023

The project consisted of approximately 24,536 linear feet of wastewater line with sixty-one manholes to be installed. The proposed wastewater line was to be a new 8-inch diameter PVC line that runs along Moon Mountain Avenue, Desert Vista Street, Tyson Street, Byeryl Lane, Malapais Lane, Pyramid Street, Camel Street and Saguaro Street. Pipe inverts were assumed to be a maximum of about 10 feet below the lowest existing site grades.

Project Manager: Greg Burr

Senio Engineer; Craig Wiedeman

Job Location: Quartzite, Arizona

Mishongnovi Lagoon: (WT Ref. Job # 2529JB020A)

Job Completion: 2019

The project consisted of a new lagoon site consisting of two treatment cells and one disposal cell. Anticipated cell depths ranged from about 6 to 10 feet, and perimeter embankment fill heights ranged from about 3 to 8 feet.

Home / 67873

67873

First Name	Gregory
Last Name	Burr
License Status	Active
Discipline	GEOLOGIST
Initial Registration Date	2 Nov 2018
Expiration Date	31 Dec 2024
Address Line 1	2400 East Huntington Drive
City	Flagstaff
State	Arizona
Zip	86004
Phone	928-774-8700

79669

First Name	Gregory
Last Name	Burr
License Status	Active
Discipline	ENGINEER/CIVIL
Initial Registration Date	13 Oct 2023
Expiration Date	31 Dec 2026
Address Line 1	2400 E. Huntington Dr
City	Flagstaff
State	Arizona
Zip	86004
Phone	928 774 8700



YEARS WITH FIRM
12

EDUCATION
B.S., Civil Engineering, Minor in
Mathematics, Seattle University

PROFESSIONAL REGISTRATIONS
Professional Engineer:
AZ #70374

PROFESSIONAL AFFILIATIONS
SEAoA

JAMES APPELYARD, PE

SENIOR ASSOCIATE | PROJECT MANAGER

James has 12 years of experience as a structural designer with expertise in wastewater collection and treatment system structures. As Project Manager, he will follow the design from beginning to end, with responsibilities including structural design and analysis, calculations and structural details, and construction administration.

RELATED EXPERIENCE

SARIVAL WRF | Goodyear, AZ

New single story administration building, integrated process mechanical building (with headworks room, blower room, MBR pumping room, and electrical and controls room), a separate integrated process mechanical building (with sludge dewatering room, odor control room/yard, and chemical storage room), secondary biological tank, membrane separation tank, and chlorine contact basin/recycled water pump station.

SHOW LOW WWTP UPGRADES | Show Low, AZ

New headworks structure (parallel channels equipped screens and grit removal), concrete slabs, influent splitter box-precast; RAS/WAS pump station structure, 2 external clarifiers, sludge storage steel tank-foundation design, chlorination concrete structure, new administration and dewatering building.

QUARTZSITE WWTP EXPANSION | Quartzsite, AZ

Expansion of the WWTP included the addition of a new concrete divider wall at existing sequencing batch reactor (SBR) basin, catwalk framing over new divider wall, new wall at perimeter of existing SBR basin, supports for crane, new sludge drying beds (masonry walls and concrete loader ramp slabs), equipment pads on grade, foundations for prefabricated metal building at blowers, addition of fourth block wall to existing electrical room, foundation for crane at lift station, and foundation for relocated existing canopy.

PLSD - WWTP | Pinetop-Lakeside, AZ

New walkway at the oxidation ditch; extension of concrete splitter box vault; anchorage of existing walkway to existing oxidation ditch; davit crane supports at the new walkway; pipe supports to existing wall at pump gallery.

SONORA WWTP EXPANSION | Sonora, CA

Expansion included an administration building, a headworks building, two 65'-diameter clarifiers, and a filter and chlorine contact basin. These new facilities have the capacity to handle up to 2.5 MGD.

WEST COUNTY WWTP UPGRADE | Richmond, CA

Upgrade to an existing 25 MGD treatment plant including a 2-story steel frame industrial building for sludge dewatering and thermal drying equipment, steel frame mezzanine (20' x 30' x 10' tall) in existing sludge thickening building to support two new rotary drum thickeners above the existing floor, revised headworks channel for new grit "teacup" system, new concrete slab foundation for 2MW digester gas engine cogeneration package unit, and mechanical equipment foundations.



STRUCTURAL INTEGRITY | COLLABORATIVE SOLUTIONS



JAMES APPELYARD, PE

SENIOR ASSOCIATE | PROJECT MANAGER

RELATED EXPERIENCE (continued)

LATHROP CONSOLIDATED TREATMENT FACILITY EXPANSION (WRP) |

Lathrop, CA

Expansion of MBR WRP from 1.0 MGD to 2.5 MGD, with an ultimate build-out capacity of 9.0 MGD, as well as design for 1-story, 6,000 SF administration building and 4,000 SF steel frame headworks building adjacent to a below-grade process tank.

MOUNTAIN HOUSE WRF EXPANSION | Mountain House, CA

Expansion of existing influent lift station included new headworks/dewatering building over 4 below-grade digester tanks, 5,500 SF headworks/grit removal structure, influent control structure, CIP concrete structural divider walls in two tanks, and 13,000 SF MBR process structure. These new facilities add a capacity of up to 5.4 MGD.

CITY OF PACIFIC GROVE WRF | Pacific Grove, CA

Structural design of a new water reclamation facility, which consisted of concrete tanks, an office/electrical room, and a mechanical process room. Construction type is concrete walls with a concrete deck above the aeration tanks for the screens with a parapet around the perimeter.

VISTA CANYON WRP | Santa Clarita, CA

Water reclamation plant consisting of a below-grade concrete tank (with catwalks at grade level) directly adjacent to three below-grade concrete tanks with an above-grade building for an office, electrical room and mechanical room, as well as a steel framed canopy and façade walls at exposed tank and 4' site retaining wall. Construction type is concrete walls with a concrete deck above the aeration tanks; concrete and steel framed building; steel catwalk beams.

PECK RESERVOIR PUMP STATION | Huntington Beach, CA

Structural design and calculations for 532 SF control and security building, 840 SF electrical building, and new motor support platform and catwalks.

UC SANTA CRUZ HAGER WRF | Santa Cruz, CA

New process building over 19'x52'x10' underground concrete tank. Construction type is masonry and CIP concrete.

RINDGE LANE PUMP STATION UPGRADE | Redondo Beach, CA

Structural assessment and report of findings of the existing wet well. Design of a new wet well adjacent to the existing wet well, a new electrical room and generator room on top of the existing wet well, and design of repairs to the existing wet well in order to support the new rooms above.

SOUTH LATHROP STORMWATER PUMP STATION | Huntington Beach, CA

Structural design of 650 SF below grade CIP concrete pump station and a 1,200 SF one-story steel framed building.

PANTAGES LAKE BUILDINGS | Discovery Bay, CA

Structural design for the Lake pump station and sewer lift station electrical/chemical building.



STRUCTURAL INTEGRITY | COLLABORATIVE SOLUTIONS

70374

First Name James

Last Name Appleyard

License Status

Active

Discipline

ENGINEER/CIVIL

Initial Registration Date 15 Nov 2019

Expiration Date 31 Dec 2025

Address Line 1

7434 E McDonald Drive

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State Arizona

Zip 85250

Phone 480-922-8854



KIM JOYCE
& ASSOCIATES, LLC
Grant Writing Consultancy Firm

Kristen Krey

602-908-6180

kkreyaz@gmail.com

Executive Profile

- Results-oriented leader with successful experience in organizational and grants management, communication, and collaboration.
- Expertise in program and process development, stakeholder engagement, strategic planning, and service delivery.
- Proven strengths include promoting cohesiveness within organizations while utilizing innovative strategies abilities to develop and implement effective partnerships.
- A seasoned professional with a career of promotions based on exceptional performance, contributions, and outcomes. Experienced in all levels of government: local, county, state and federal.

Professional Experience

Kim Joyce and Associates, LLC

September 2022- Present

Director, Government and Community Engagement

Provide expert advice and guidance to clients seeking and receiving grant funding and expand the company through new and innovative revenue streams and marketing initiatives.

- Successful creation of a new division to expand the business, providing grant research, grant writing, grants management and training to municipal, county, state & federal government clients.
- Managing a team of grant experts overseeing a grant portfolio of \$20 million for our clients in the non-profit sector.
- Expanding the footprint and marketing of the company through various channels, organizational development, social media, conferences, presentations, and client events.

City of Glendale, Arizona

December 1997 – August 2022

City Grants Administrator

2015-2022

Manage the city grants portfolio, directly working with city departments providing policy, best practices, and guidance in alignment with the city's mission and strategic plans.

- Implementation of a grants management system.
- Annually managed approximately \$20 million in grant funding with liaisons throughout the city.
- Develop and update city-wide grant policies and policy manuals.
- Review and approve all city grant applications to determine alignment with strategies.
- Provide training city-wide regarding seeking, applying and compliance.
- Create collaborative relationships with external city and community partners.
- Oversee community giving programs 100k to 200k annually.
- Determine compliance and reporting strategies.

City Council Administrator-Glendale City Council

2006 - 2014

Provide leadership for the City Council office, consisting of six political districts in a city of 230,000 citizens. Responsible for developing and maintaining highly effective working relationships with Councilmembers, citizens, city leadership, business leaders, community leaders and government officials to advise on organizational and community strategies, initiatives and political issues. Liaison with local, state, and national entities.

- Develop strategies with Councilmembers; perform research on issues, analyze findings and develop reports and recommendations for changes in policies/procedures and disseminate public information promoting local government transparency.

- Program development and implementation of local government best practices including public policy related to citizen engagement and community leaders.
- Exercise independent decision-making authority and confidentiality managing sensitive information to serve as Council representative to the citizens, organization, and public; investigate sensitive inquiries and complaints, determine responsible departments, and establish inter-disciplinary teams to solve problems and develop resolution.

(In addition to City Council Administrator) Chairperson- City of Glendale Diversity Committee 2008-2013

Provide leadership for developing and implementing a strategic plan for City-wide diversity initiatives. Promote and model diversity and inclusiveness through internal and community-wide communications and practices including City leadership, City employees and committee of 60 members from city-wide. Facilitate monthly committee meetings; manage City-wide diversity programming such as quarterly diversity dialogues with City employees and the annual MLK event with the community.

Police Technical Services Manager- Glendale Police Department 1997 - 2005

Managed critical liability areas in the Police Department through implementation of community oriented policing initiatives and provided direction for achieving and maintaining CALEA accreditation for those critical areas. Areas of responsibility included Detention Facility: Housing 11,000 detainees per year. Property and Evidence Area: Responsible for 85,000 items of property, evidence, and fleet of 240 vehicles. Identification Unit and Fleet Management: Providing crime scene evidence processing and management of automated fingerprinting identification; Personnel Management: Recruitment/selection/hiring/training of police personnel.

- Managed a \$2 million budget, supervised 30 staff, and served as a liaison with national and local public safety agencies and officials.
- Developed logistical/tactical planning for large-scale projects/events: NHL Arena, NFL Stadium.
- Implemented over a hundred standards of compliance relevant to Police Accreditation in a one-year period through streamlining of processes and creation of efficient practices.
- Developed/coordinated the regional automated booking processes supporting departmental initiatives.
- Reduced liability to the City by training employees in departmental, City, legal and risk management practices resulting in safer practices decreasing industrial injuries and use of force related legal issues.

Fleetwood Corporation – Regional Human Resources Manager 1995-1997

Managing southwest, central California and western divisions, with a focus on hiring and training.

Coconino County, Arizona – Juvenile Detention Manager 1994 –1995

Transitioning juvenile detention to a secure facility, implementing new policies, and hiring, training and supervising youth detention officers.

City of New York, Department of Correction- Director (93-94) Specialist (91-93) Analyst (90-91) 1990-1994

Managing multiple programs and departmental investigations in the jails, Rikers Island and 4 NYC boroughs.

Education

MA, Organizational Management, University of Phoenix, Phoenix, Arizona

BS, Criminal Justice/Political Science, State University of New York, Brockport, NY

Certified Public Manager, Arizona State University

Graduate, Rocky Mountain Executive Leadership Program

Graduate, Advanced Public Executive Program, Arizona Regional Community Policing Institute

Professional Development

2015- Present: Member, Board member (AZ), Certified Trainer, Grant Professionals Association

2013 -2015: Board member, Arizona City/County Manager's Association

2008 - 2010: Board member Glendale/Peoria YMCA

2006 -2015: Associate Member Arizona City/County Manager's Association



8723 E. Via de Commercio, #A-204
Scottsdale, AZ 85258
480.991.3595 | pacewater.com

EXHIBIT B
TO
PROFESSIONAL SERVICES AGREEMENT
BETWEEN
THE TOWN OF CHINO VALLEY
AND
PACIFIC ADVANCED CIVIL ENGINEERING, INC.

[Scope of Work and Fee Proposal]

See following pages.



March 19, 2024

Mr. Frank Marbury
Public Works Director
Town of Chino Valley
202 N State Route 89
Chino Valley, AZ 86323
Phone (928) 636-3401

**Re: Town of Chino Valley – Water Reclamation Facility Improvements
Professional Engineering Services Proposal**

#C104

Dear Mr. Marbury,

PACE is pleased to provide our proposal for the Town of Chino Valley Water Reclamation Facility Improvements project. Attached are our Scope of Services, Compensation, Hourly Rate Schedule, Provisions and Labor Breakdown.

We appreciate the opportunity to be of service to the Town of Chino Valley, and look forward to working with and your staff on this project. Please contact me if there are any questions or if we may provide any additional information.

Sincerely,

A blue ink handwritten signature, appearing to read "James A. Matthews", is written over a light blue wavy line.

James A. Matthews, PE
Senior Vice President – Environmental Water Division

JAM//alj

Enclosures: Scope of Services, Compensation, Hourly Rate Schedule, Provisions and Labor Breakdown

cc: File

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PROPOSAL FOR PROFESSIONAL ENGINEERING SERVICES

TOWN OF CHINO VALLEY WATER RECLAMATION FACILITY IMPROVEMENTS #C104

BACKGROUND & OBJECTIVES:

In June of 2023, PACE prepared a Capacity and Expansion Evaluation of the Town of Chino Valley Water Reclamation Facility (WRF) to determine the hydraulic and biological capacity of the facility as well as provide recommendations to expand capacity consistent with the Town's current and projected future flow rates. Based on the analysis, PACE concluded that the facility is capable of reclaiming the rated capacity of 0.5 MGD, with a Peak Day Capacity of 0.85 MGD, with the addition of two flow equalization basins. In addition, the project offers the Town an opportunity to address other limitations at the facility due to aging equipment and lack of redundancy in critical areas. The identified improvements include:

- 1) Influent flow equalization basins between the headworks and secondary treatment process;
- 2) Equalization lift station, basin mixing and aeration systems;
- 3) Automated MicroC dosing system near the RAS return to the Anoxic Basins if the Town is not able to identify and eliminate atypical sewer dischargers;
- 4) Drying beds located at the west boundary of the plant site for Town vector dumping;
- 5) Replace the existing UV system with a new low-pressure high-output inline UV disinfection system;
- 6) Add an additional sludge dewatering unit to provide additional capacity under normal operating conditions and redundancy under emergency operating conditions;
- 7) Add sludge conveyance and rearrange roll-off bin to be located outside of the dewatering building;
- 8) Elevate existing headworks screens with a stand and walkway for improved access and downstream flow;
- 9) Odor scrubbers for the headworks and dewatering buildings with the option to cover and plumb the EQ basins;
- 10) Update the existing SCADA system to include new components.

The scope of work for this proposal is to prepare design for construction that will utilize a Construction-Manager-At-Risk (CMAR) project delivery.

Additionally, scope includes a water quality evaluation to provide recommendation for a PFAS pilot treatment system. The pilot process will provide direction on moving forward with a full-scale PFAS treatment system. At that time and if desired, the client can proceed with the design of a full-scale PFAS treatment system through a separate authorization to proceed.

SECTION A - SCOPE OF SERVICES:

A. Consultant agrees to perform the following services:

Task 10 – Project Funding

Consultant will provide funding assistance to the Client by:

- 1) Facilitating a strategy meeting (or meetings, up to two (2) anticipated) with Local First Arizona to relay the project goals and release Local First to research available grant funding and determine which programs to pursue.
- 2) Attend meetings and provide technical support to Local First Arizona for up to four (4) grant applications.

Deliverables: Council Meeting Presentation Materials

Task 11 – Water Quality Evaluation

Consultant will provide engineering services required for the pre-design of PFAS removal by:

- 1) Providing a PFAS Pilot Program
 - a. The program will include an evaluation and project-specific recommendations for the type and location of pilot PFAS constituent Removal System on the WRF property, along with the best way to deploy and incorporated recommended system into existing facilities.
- 2) Deployment and operation of a pilot unit, collecting water samples and downloading data for six (6) months. Water samples will be collected and analyzed at least once a week to monitor water quality parameters outlined in the pilot sampling plan. Limited on-site water quality testing can be completed by Consultant, however specific parameters testing will be completed by a lab of the Client's choice and testing costs will be paid directly by the Client.
- 3) Prepare PFAS Pilot Program Report to summarize the results of the analysis and findings from data collected to the Client and ADEQ.
- 4) The PFAS Pilot Program Report will provide conclusions of the most effective media and direction on moving forward with a full-scale PFAS treatment system following pilot evaluation, analysis and review by both the Owner and ADEQ.

Deliverables: One (1) Draft PFAS Pilot Program for review, comment and approval
One (1) PFAS Pilot Program
One (1) Pilot Unit Rental
One (1) Final PFAS Pilot Program Report detailing findings

Task 12 – PFAS Treatment System Full-Scale Design (Budgetary)

If pilot system proves effective to both the Owner and ADEQ, **and with separate written Notice-to-Proceed** from Client, Consultant shall perform the following design. **Note: Design requirements are unknown since these will be revealed through the Water Quality Evaluation, so the associated cost for this task is budgetary. At the time of consent to proceed, billing rates may be adjusted (Consultant rates are evaluated/adjusted annually) and hours adjusted as necessary to provide the determined required scope of work.**

- 1) PFAS Removal System Design
 - a. Consultant will prepare design plans, technical specifications and cost estimate for recommended improvements once preliminary approval of PFAS Pilot Program Report is obtained.
 - b. Consultant will coordinate with ADEQ during the full-scale design phase.

Deliverables: One (1) Electronic copy of Draft Design Report for review and comment

- One (1) Electronic copy of Draft Plan Set for review and comment
- One (1) Electronic copy of Final Design Report
- One (1) Electronic copy of Final Plan Set
- One (1) Electronic copy of Final Technical Specifications
- One (1) Electronic copy of Final Cost Estimate

Task 20 – Design Management & Coordination

Consultant will provide project management/coordination of the Project including obtaining and directing subconsultants, preparing a project management plan, project communication/files and quality assurance and quality control (QA/QC).

- 1) Design Coordination Meetings
 - a. Design and Coordination Meetings will be held on an as needed basis, to be scheduled in advance between the Client, Project Team and Consultant's Project Manager. Up to two (2) onsite meetings and eight (8) bi-monthly conference call meetings are envisioned to take place during the project design period (projected to be 6 months). These meetings will provide a forum for project and design discussions. Consultant shall provide meeting agendas and minutes.
- 2) Engineering Project Management
 - a. This task will include project management/coordination of the Project including coordinating and directing internal staff and subconsultants, preparing a project management plan, and maintaining project communication/files. This task also includes the efforts to track time and calculate and prepare monthly invoices.
- 3) Council Meetings
 - a. Council Meeting Presentations will be made on an as needed basis, to be scheduled in advance between the Client and Consultant's Project Manager. Up to two (2) presentations are envisioned. The Consultant will be responsible for technical information and project support for the Client by providing, when necessary, a presentation and by responding to questions during the Council Meetings. The Consultant will prepare a PowerPoint Presentation consisting of up to 10 Slides per meeting. It is assumed that a presentation will be approximately 15 minutes.

Deliverables: Progress Meeting Agendas and Minutes
Invoices
Council Meeting Presentation Materials

Task 21 – Conceptual Design Report

Consultant will prepare a conceptual design report (CDR) for the Chino Valley WRF Improvements to be used to pursue funding and provide for the CMAR selection process. Our work generally includes the following:

1. Preparation of a preliminary Basis of Design technical description
2. Calculations and sizing of major process equipment and unit processes
3. Development of a preliminary process layout, site plan(s) and sections
4. Preparation of a preliminary equipment list with models and capacities identified
5. Provide cut sheets and technical product specification sheets for major equipment
6. Development of a preliminary one-line electrical diagram
7. Development of a preliminary P&ID for the treatment facility

8. Preparation of a preliminary cost estimate

Deliverables: One (1) Electronic copy of Draft Conceptual Design Report for review/ comment
One (1) Electronic copy of Final Conceptual Design Report
One (1) Hard copy of Final Conceptual Design Report

Task 22 – CMAR Selection

Consultant shall assist the Client on the following proceedings required for selection of a CMAR for the project.

- 1) RFQ Preparation Assistance
 - a. Assist the Client in preparing the RFQ document.
 - b. Client shall provide any necessary contract forms, terms, insurance requirements, etc. to be included in RFQ document.
- 2) Solicitation Process
 - a. Attend pre-proposal meeting
 - b. Provide support to answer technical questions prepare addendums
 - c. Evaluate CMAR SOQs for accuracy and qualifications, participate in interviews as necessary to select CMAR.
- 3) Contract Process
 - a. Client will prepare the contract for the CMAR utilizing the RFQ document items and finalize the contract.

Deliverables: None

Task 23 – CMAR Design Coordination

Consultant shall coordinate with the CMAR during the design progress to ensure consistent and open communication as to the design parameters and intent. This is above and beyond the normal meetings with the Client and is additional communication and design work for the CMAR and Consultant. This will prepare the CMAR for each revision and submittal for review at 60%, and 90% and include Value Engineering and Constructability Reviews. Consultant will provide the CMAR with necessary information for CMAR to assemble GMPs at 60% and 90% and 100% milestones.

Deliverables: None

Task 24 – Data Gathering

- 1) Site Visit
 - a. Consultant shall coordinate with the Client's operations staff and perform a site visit to review preferred improvements, gather equipment inventory and any other information, testing and operational input to solidify understanding of what is needed for the WRF improvements.
- 2) Design Survey
 - a. Consultant shall coordinate with the Geotechnical Consultant during the design process to ensure accurate data and information are shared.
 - b. Topographic Survey & Base Map

- Perform a complete topographic survey of the site and existing improvements. Survey shall show any property monuments found (if any) in the field during the survey on the design base maps. The topographic survey will include the fencing limits of the site, presumably representing the project limits.
- The Client will furnish a current title report with schedule B for the site for review regarding potential existing easements. If existing easements are revealed by the title report, they will be researched and added to the base drawings to be prepared by Civiltec. Additional services for easement dedication or abandonment or other modification could also be included by separate contract if required.
- It is anticipated that utility locating services for marking the existing buried utilities at the project location will be needed. Civiltec will coordinate with the Client to collect buried utility location surface markings (marking performed by others) and include this information in the base mapping, together with any above ground evidence. Civiltec will coordinate with the Client to collect any available as-built plans and previous design plans and incorporate that information into the base mapping.

3) Geotechnical Investigation

- a. Consultant shall coordinate with the Geotechnical Consultant during the design process to ensure accurate data and information are shared.
- b. The purpose of geotechnical engineering services will be to evaluate the subsurface conditions to provide recommendations and/or discussion for the following:
 - Foundation design parameters, including footing types, depths, allowable bearing capacities, and estimated settlements
 - Slabs-on-grade
 - Excavation conditions
 - Earthwork, including backfill placement and suitability of existing soils for backfill materials
 - Cut slopes
 - Lateral earth pressures
 - Corrosivity
 - Aggregate Surfacing
- c. Field Exploration

Conduct subsurface exploration program that is based on current site access conditions and our knowledge of the general geotechnical conditions in the area:

 - Equalization Basins – Two borings auger drilled to a depth of 20 feet below the existing site grades.
 - Drying beds – Two borings auger drilled to a depth of 10 feet below the existing site grades.

All explorations will be advanced to the depths outlined unless refusal to auger penetration is encountered. A field engineer will log the test borings, record blow counts of penetration tests, and obtain undisturbed and representative samples of soils encountered as conditions dictate.

d. Laboratory Testing

A geotechnical engineer will examine the samples and field logs and assign the laboratory tests. The following laboratory tests may be performed:

- Field moisture content
- In-situ soil density
- Remolded expansion potential
- Compression
- Sieve analysis
- Liquid limit and plasticity index
- Soluble salts/sulfates/chlorides
- Corrosivity (ASTM A674)

e. Analyses and Report

Prepare a geotechnical engineering report that includes a description of the project, a discussion of the field and laboratory testing programs, a discussion of the subsurface conditions, and design recommendations as required to satisfy the purpose previously described, including recommendations for further investigation and analysis, if necessary.

Deliverables: One (1) Electronic copy of Final Topographic Survey Drawing
One (1) Electronic copy of Final Geotechnical Report

Task 30 – 60% Design Services

The Consultant shall perform detail design of the Chino Valley WRF Improvements. Construction Contract Documents shall be in accordance with the approved CDR.

Any major changes made by the Client to the design concept set forth in the CDR, after detailed design has been initiated, may constitute a change in scope requiring a contract change order. Similarly, any major changes in design concepts set forth at previous Project milestones (for example, changing a design concept set forth at the 60 percent milestone subsequent to the 60 percent review meeting), will constitute a change in scope requiring a contract change order. For purposes of this contract, a “major” change is defined as:

1. *A change in the scope of work that requires the production of additional drawings and/or specifications by Consultant, or substantial modifications to existing drawings and or specifications.*
2. *A change in effluent quality criteria or a change in the means of effluent disposal from those set forth in the CDR that increase or decreases the scope of work and requires changes to the design drawings or specifications.*
3. *A change in Client’s preferences that requires changing allowable materials and/or manufactures, when those materials and/or manufacturers have previously been agreed to, if it results in additional work for the Consultant.*
4. *A change in the Project numbering and/or naming system, including drawings, specifications, equipment, instruments, conduit, conductors and similar items.*
5. *A change in the electrical or control system architecture after conceptual approval.*
6. *A change in the style or level of detail in the presentation of the design (i.e., drawings and specifications). Unless explicitly stated otherwise, all design documents will be prepared using Consultant’s established standards.*
7. *A change from Consultant’s current standard presentation for drawings and specifications.*

8. Expediting of agreed upon schedule or timeframe by the Client.

It is expected that comments on proposed design concepts will be provided by the Client in a timely fashion (within 14 calendar days), including but not limited to processes, design criteria, numbering systems, electrical and control system architecture, materials, equipment, allowable manufacturers, or design features.

Consultant shall provide design of the WRF improvements to a 60% progress.

1) General / Project Data Plan Sheet

- a. Construction drawings to be prepared for general design will include Project information and location maps, general construction notes, plant flow schematics, plant hydraulic profiles, and basis of design.

2) Site Civil Design Plans

- a. Site Civil design shall include development of WRF layout and survey control; yard piping plan and profiles, etc. Civil yard piping shall be limited to the process yard piping only. Utility plans shall be provided by others and shall be depicted for reference purposes only

3) Grading & Drainage Plans

- a. Civiltec will use the site-specific topographic survey and the site layout plan (provided to Civiltec by the design team) to create a site grading and drainage plan. The plan will include removal limits of existing improvements (if required); match conditions; new finished surface improvements per the site plan including general graded areas, sidewalks and driveways; design spot grade elevations; existing and design contours; and construction notes with references to applicable local design standards and details. Site grading design will be ADA compliant as required based on the routes/locations as directed by the Client.

4) Process Structural Plans

- a. Structural plans for WRF shall be provided by others (PK Associates, LLC). Consultant shall coordinate with project structural engineer for structural layout of the WRF to include:
 - Equalization tanks with rough footprint of 35' x 68', 13' deep. The design will be common wall construction with 3 rectangular compartments.
 - Drying Beds
 - Equipment pads on grade
 - Steel framed shade structure over off-site lift station

5) Mechanical Process Plans

- a. Mechanical process design shall include development of the detailed control and operational schemes for the various processes and process units. The preliminary process schematic diagrams will be developed into fully detailed drawings and incorporated into the construction documents. Processes and equipment shall be as set forth in the CDR. The design will include the mechanical equipment, location and arrangement of the equipment and the associated piping, and design of the supports for equipment and piping. Consultant shall provide mechanical and process design to include:
 - Headworks screening

- Equalization Tank
- Aeration Basin (Anoxic/ Oxic basin) Process
- Aeration Blower System
- UV Disinfection
- Dewatering System
- Chemical Injection and Storage System
- Odor Control and Ventilation

6) Electrical Design Plans

- a. Electrical design shall include assessment of the WRF, pumping stations and unit power requirements, plant-wide power and control distribution, as well as integration of motor control schemes and motor control centers and power conduits. The electrical design shall be coordinated with utility requirements. Specifically, the electrical design plans shall include the following:

- Review Existing Electrical Drawings and Load Calculations for site.
- Prepare load calculations and single line diagram for WRF.
- Prepare electrical drawings including an overall site plan showing new equipment to include the following:
 - Distribution Panel, and MCC
 - Process equipment and instrumentation
- Prepare a conduit and wire table showing all power conduits and wire for equipment listed above.
- Prepare necessary elevation views of the equipment listed above to help determine layout and size.
- Prepare panel schedule and other electrical installation details as required.
- Prepare system fault current and voltage drop calculations as required.
- Show all areas that will be classified (Class I Div. II or greater) and show all seal-off locations as required.
- Prepare schematics for control of all motors listed above.

This design scope does not include standby generation power since this facility is not anticipated to upsize the existing generator or power service. If required, standby generator design can be included as a separate task for additional fee.

7) Process and Instrumentation Control Design Plans

- a. Instrumentation design shall include selection/specification of instrumentation hardware and software to accomplish the control and operation scheme required, design of alarm and display systems, functional layout of area control centers and selection of control and monitoring instruments. Instrumentation requirements will be prepared as part of the construction documents, and shown on the Process and Instrumentation Diagrams (P&IDs) and instrumentation drawings. Consultant shall prepare specifications describing the plant monitoring and control systems to be furnished by the contractor. Process and Instrumentation drawings shall show control devices.

8) Preliminary Project Technical Specifications and Design Report

- a. The Consultant shall prepare project specifications based on the Construction Specification Institute (CSI) 2014 format. Construction specifications shall define

the qualitative requirements of materials and products and set forth the special conditions and technical requirements for construction of the Project.

A preliminary report shall be prepared to provide the Basis of Design for the different process areas within the proposed WRF. The Preliminary Design Report will identify process equipment requirements, sizing and functionality.

Deliverables: One (1) Electronic copy of Draft 60% Design Report
One (1) Electronic copy of Draft 60% Drawings and Technical Specifications
One (1) Electronic copy of Final 60% Design Report
One (1) Hard copy of Final 60% Design Report
One (1) Electronic copy of Final 60% Drawings and Technical Specifications
One (1) Hard copy of Final 60% Drawings (half-size) and Technical Specifications

Task 31 – 90% Design Services

Consultant shall provide design of the WRF upgrades to include general/civil, grading & drainage, process/mechanical, structural, electrical, instrumentation, technical specifications and design report to a 90% progress based on comments from the 60% design review.

Deliverables: One (1) Electronic copy of Draft 90% Design Report
One (1) Electronic copy of Draft 90% Drawings and Technical Specifications
One (1) Electronic copy of Final 90% Design Report
One (1) Hard copy of Final 90% Design Report
One (1) Electronic copy of Final 90% Drawings and Technical Specifications
One (1) Hard copy of Final 90% Drawings (half-size) and Technical Specifications

Task 32 – 100% Design Services

Consultant shall provide design of the WRF upgrades to include general/civil, grading & drainage, process/mechanical, structural, electrical, instrumentation, technical specifications and design report to a 100% progress based on comments from the 90% design review.

Deliverables: One (1) Electronic copy of Draft 100% Design Report
One (1) Electronic copy of Draft 100% Drawings and Technical Specifications
One (1) Electronic copy of Final 100% Design Report
One (1) Hard copy of Final 100% Design Report
One (1) Electronic copy of Final 100% Drawings and Technical Specifications
One (1) Hard copy of Final 100% Drawings (half-size) and Technical Specifications

Task 40 – Permitting

Consultant will assist the Client with permitting activities.

- 1) ADEQ APP Significant Amendment
The APP program is administered by ADEQ and regulates facilities that discharge pollutants to the land surface, underlying soil, or groundwater, where there is a reasonable probability that pollutants could reach the aquifer. Wastewater treatment facilities are required to obtain an individual APP for operation. Per ACC R18-9-A211 (Permit Amendments), material and substantial alterations or additions to a permitted facility will require a significant permit amendment.

- a. Consultant will assist Owner with preparing the required application for the Significant Amendment to the existing APP for process and equipment modifications and operation of the WRF.
 - b. APP Pre-Application Meeting
 - Consultant will meet with the ADEQ to discuss the Project, the permitting schedule and permitting objectives.
 - This will take place early in the design phase.
 - c. APP Application Preparation
 - Consultant will collect all of the data required for the APP and it will be compiled into the draft APP application and submitted for review. This information will include general owner/operator information, demonstrations of financial and technical capability and site-specific characteristics. Consultant will provide Owner with draft copies of the APP Significant Amendment application for review and comment prior to submission to ADEQ. This will also include an application pre-submission review meeting with ADEQ.
 - This will take place at 60% design progress.
 - d. APP Respond to ADEQ Administrative and Technical Comments
 - Consultant will prepare written responses to ADEQ's administrative and technical comments, as necessary, during the review process. The Consultant will work with Owner to prepare timely, adequate responses to the agency.
- 2) NACOG CWA 208 WQMP Contact
- Consultant shall contact NACOG to verify if the proposed WRF improvements will require a NACOG CWA 208 WQMP Amendment. It is anticipated that an amendment will not be required. Should it be required, a change order will be request to provide these additional services.

Deliverables: One (1) Electronic copy of Draft APP Application
One (1) Electronic copy of Final APP Application
One (1) Hard copy of Final APP Application

Task 60 – Services During Construction (Placeholder)

Consultant shall provide separate scope and fee proposal for this work at the Client's request.

Task 70 – Post-Construction Services (Placeholder)

Consultant shall provide separate scope and fee proposal for this work at the Client's request.

SECTION B - COMPENSATION:

CONSULTANT will complete the work outlined herein, and invoice Client monthly at time and expense (T&E) for a total lump sum budget of **\$826,915** in accordance with the attached “Hourly Labor and Expenses Rates Schedule” and “Estimate Worksheet). Budgeted future tasks for Task 12 PFAS Treatment System Design has been estimated to cost **\$259,800** at this time but may be updated upon completion of task 11. No fee is provided for future tasks 60 and 70 until further direction is provided by the Client.

<u>Task Description</u>		<u>Professional Fee</u>
10	Project Funding	\$ 14,170
11	Water Quality Evaluation	\$ 234,280
20	Design Management & Coordination	\$ 32,890
21	Conceptual Design Report	\$ 45,460
22	CMAR Selection	\$ 19,540
23	CMAR Design Coordination	\$ 50,120
24	Data Gathering	\$ 47,091
30	60% Design Services	\$ 190,344
31	90% Design Services	\$ 102,618
32	100% Design Services	\$ 64,382
40	Permitting	\$ 26,020
TOTAL FIXED FEE:		\$ 826,915

ASSUMPTIONS AND EXCLUSIONS:

1. The Client’s responsibilities shall include providing CONSULTANT with the base data and project information in a timely manner, coordination and management of other team consultants to assure that the project schedule can be met, and prompt payment of invoices in accordance with the terms and conditions included herein. The specific items that are to be provided by the Client or other consultants include the following:
 - a. Client input pertaining to project design issues and requirements including scheduling.
 - b. Existing and proposed hydrologic and drainage data, maps, and reports.
 - c. Any other data that directly impacts CONSULTANT ability to perform the design in an efficient and economic manner.
2. Any proposed project changes which affect work in progress or previously completed will be justification for additional compensation.
3. Base topo and site information will be provided in digital (electronic) format compatible with AUTOCAD or C3D version 2023 or earlier.
4. No environmental documentation or support, including no environmental permitting.
5. No construction staking is included.
6. Local government approval meetings, hearings, etc., and preparation of presentation graphics will be under separate work authorization, if required.

7. Existing utility information research and mapping is not included and will be provided by Client.
8. For all the data delivered to CONSULTANT for the purpose of digital mapping, including but not limited to GIS and AutoCAD, CONSULTANT requires said data be delivered in one of the recognized standard coordinate systems such as the Stateplane Coordinate System or the Universe Transverse Mercator (UTM). In addition, CONSULTANT requires all datums, vertical and horizontal, be documented in a metadata sheet and be included along with the delivered data. If the coordinate system is in what is often referred to as a "Local Coordinate System," and the deliverer does not have the capability to convert data into one of the recognized standard coordinate systems, CONSULTANT requires a Control Conversion document (CCD) be included in the deliverable. The CCD will include all the necessary coordinate transformation information and scale factors needed to make an accurate translation of the data to CONSULTANT's acceptable coordinate systems. If this information is not available, CONSULTANT will require an addendum to this proposal to include Time and Materials used to translate the delivered data into the appropriate standard coordinate system.
9. The fees proposed herein shall apply until one year from date of proposal. Due to ever-changing costs, Consultant will increase those portions of the contract fee for which work must still be completed after one year from date of proposal, as negotiated with the Client up to a maximum of ten-percent (10%).



2024 HOURLY LABOR RATES

Principal	\$300
Sr. Project Manager / Sr. Consulting Engineer	\$260
Project Manager / Consulting Engineer / Sr. I&C Specialist	\$250
Sr. Electrical Engineer / Sr. GIS Analyst	\$245
Sr. Project Engineer / Sr. Design Engineer	\$220
Project Engineer / Design Engineer II	\$190
Instrumentation & Controls Specialist	\$185
Sr. CAD Designer	\$175
Design Engineer	\$150
CAD Designer / GIS Analyst	\$145
Graphic Designer	\$125
Project Coordinator	\$105
Administrative Support	\$100
Assistant Designer	\$85
G.P.S. Survey Unit (w/ Operator)	\$290
Expert Witness / Legal Consultation	\$400 + Exp.

REIMBURSABLE EXPENSE RATES*

	Units	Cost
<u>Travel</u>		
Mileage (Per Mile)	Mile	\$0.67
Airfare, Auto Rental, Hotel		At Cost
Misc. Travel (Parking, tax, tolls, meals, etc.)		At Cost
Per Diem (Contract Rate)	DAY	Contract Rate
<u>Outside Reproduction</u>		At Cost
<u>Shipping (FedEx, UPS, Courier, etc.)</u>		At Cost
<u>Misc. (Review Fees, Specific Charges)</u>		At Cost
<u>Reproduction (In-House)</u>		
Sheet Bond - B/W Prints and Copies – All sizes (8 ½ x 11 to 12 x18)	SF	\$0.16
Sheet - Color Prints and Copies – All sizes	SF	\$1.20
Sheet - Glossy Color Print/Photo – All sizes	SF	\$2.60
Roll - Plots and Copies (Roll Paper)		
- Bond (B/W)	SF	\$0.88
- Bond (Color)	SF	\$1.56
Roll - Vellum or Mylar Plots	SF	\$2.60
Roll - Glossy Color Plot Exhibits (Roll Paper)	SF	\$3.12
Report 3-Ring Binders		
≤ 1.5"	EA	\$10.40
1.5" to 3"	EA	\$15.60
> 3"	EA	\$26.00
Coil or GBC Punch Binding	EA	\$1.04

*Note: All reimbursable expenses will be invoiced at the above rates + 10%



AGREEMENT BETWEEN CLIENT AND CONSULTANT

AGREEMENT ENTERED INTO AT Scottsdale, AZ made this 19th day of March 2024, by and between **Town of Chino Valley** hereinafter called "Client," and **Pacific Advanced Civil Engineering, Inc. (PACE)**, a California corporation, herein called "Consultant."

Client and Consultant agree as follows:

- A. Client retains Consultant to perform services for:

Provide design for the Chino Valley WRF improvements and perform a water quality evaluation for PFAS removal.

hereinafter called "Project."

- B. Consultant agrees to perform the following scope of services:

(See attached Scope of Services – Section "A" for a detailed description)

- C. Client agrees to compensate Consultant for such services as follows:

Fee

(See attached Compensation Page – Section "B" for a detailed description)

- D. This Agreement is subject to Provisions of Agreement 1 through 28 attached herewith, and the terms and conditions attached and made a part hereof.

IN WITNESS WHEREOF, the parties hereby execute this agreement upon the terms and conditions stated above and on the day and year indicated above.

Pacific Advanced Civil Engineering, Inc. (PACE)

CLIENT: Town of Chino Valley

By:

By:

Name: James A. Matthews, PE

Name:

Title: Sr. VP – Environmental Water Division

Title:

Job #: C104

Date:

W:\C104\3-Contracts - Proposals\1. Proposal\2024-03-19 PRO WRF Improvements\4. Agreement_2024-03-19.doc



ENGINEERING FEE ESTIMATE
PROJECT WORKSHEET

Project Data
Project Name: Chino Valley WRF Improvements
Client: Town of Chino Valley
PACE Job Number: C104
Estimate Date: March 19, 2024

PACE Hourly Rate Schedule	
Description	Hourly Rate
Principal	\$300
Sr. Proj. Mgr./Sr. Consulting Engr.	\$260
Sr. Electrical Engineer / Sr. GIS Analyst	\$245
Project Manager /Consulting Engr./Sr. I&C Specialist	\$250
Sr. Proj. Engr./Sr. Design Engr.	\$220
Instrumentation & Controls Specialist	\$185
Proj. Engr/Design Engineer II	\$190
Design Engineer	\$150
Sr. CAD Designer	\$175
CAD Designer/GIS Analyst	\$145
Graphic Designer	\$125
Project Coordinator	\$105
Administrative Support	\$100
Assistant Designer	\$85
G.P.S. Survey Unit (w/Operator)	\$290
Expert Witness/Legal Consultation	\$400 + Exp.

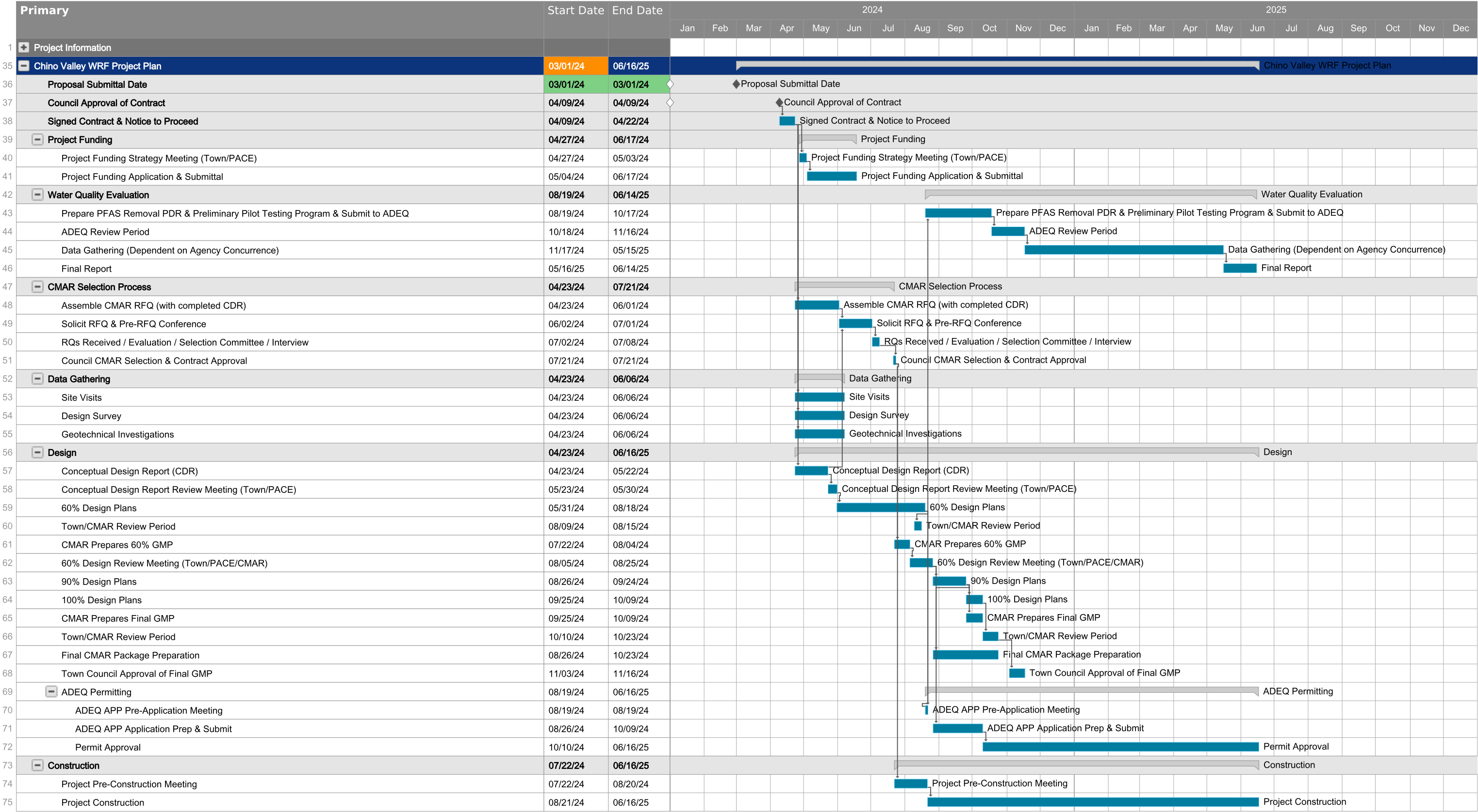
Total Fee Amount	\$826,915
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Item No.	Work Item Description	Estimated Manhours									Man-Power Subtotal	Subconsultant Cost	Expenses	Total Task Costs
		Principal	Sr. Project Manager/Sr. Consulting Engr.	Sr. Electrical Engineer/Sr. GIS Analyst	Project Mgr./ Consulting Engr./ Sr. I&C Specialist	Instrumentation & Controls Specialist	Design Engineer	Sr. CAD Designer	CAD Designer /GIS Analyst	Project Coordinator				
		300	260	245	250	185	150	175	145	105				
Project Funding & Water Quality Evaluation														
10	Project Funding													
10.1	Funding Strategy Meeting(s)	4			4					4	\$2,620	\$0	\$0	\$2,620
10.2	Funding Application(s) Meetings & Support	16		2	16				4	16	\$11,550	\$0	\$0	\$11,550
PROJECT FUNDING PHASE TOTAL											\$14,170	\$0	\$0	\$14,170
11	Water Quality Evaluation													
11.1	PFAS Pilot Program	16			40		60	12		8	\$26,740	\$0	\$0	\$26,740
11.2	Pilot Unit Delivery & Assembly				32		32				\$12,800	\$0	\$2,500	\$15,300
11.3	Pilot Unit Rental (Free)										\$0	\$0	\$0	\$0
11.4	Pilot Unit Operation & Data Gathering (6 month operation)				300		600				\$165,000	\$0	\$10,000	\$175,000
11.5	Final Report	8			32		40			8	\$17,240	\$0	\$0	\$17,240
WATER QUALITY EVALUATION PHASE TOTAL											\$221,780	\$0	\$12,500	\$234,280
WRF Improvements Design & Permitting														
20	Design & Funding Management & Coordination													
20.1	Design Kick-off & Progress Meetings	4			16					4	\$5,620	\$0	\$1,250	\$6,870
20.2	Design Project Management	8			24					24	\$10,920	\$0	\$0	\$10,920
20.4	Council Meetings	8			16					40	\$10,600	\$0	\$4,500	\$15,100
DESIGN MANAGEMENT & COORDINATION PHASE TOTAL											\$27,140	\$0	\$5,750	\$32,890
21	Conceptual Design Report													
21.1	Draft Report	6			20		30	24	40	16	\$22,980	\$0	\$0	\$22,980
21.2	Final Report	4			16		24	24	48	24	\$22,480	\$0	\$0	\$22,480
CONCEPTUAL DESIGN REPORT PHASE TOTAL											\$45,460	\$0	\$0	\$45,460
22	CMAR Selection													
22.1	RFQ Preparation Assistance	4			16		8			4	\$6,820	\$0	\$0	\$6,820
22.2	Solicitation Process	12			24		8			4	\$11,220	\$0	\$1,500	\$12,720
CMAR SELECTION PHASE TOTAL											\$18,040	\$0	\$1,500	\$19,540
23	CMAR Design Coordination													
23.1	CMAR General Coordination & Meetings	24			40		40			8	\$24,040	\$0	\$0	\$24,040
23.2	GMP Review (60% and 90%)	16			16		16			8	\$12,040	\$0	\$2,000	\$14,040
23.3	Value Engineering & Constructability Reviews (60% and 90%)	16			16		16			8	\$12,040	\$0	\$0	\$12,040
CMAR DESIGN COORDINATION PHASE TOTAL											\$48,120	\$0	\$2,000	\$50,120
24	Data Gathering													
24.1	Site Visit				8		8				\$3,200	\$0	\$500	\$3,700
24.2	Design Survey	2			16			2	8	8	\$6,950	\$25,751	\$0	\$32,701
24.3	Geotechnical Investigation	2			8		8			8	\$4,640	\$6,050	\$0	\$10,690
DATA GATHERING PHASE TOTAL											\$14,790	\$31,801	\$500	\$47,091
30	60% Design Services													
30.1	60% Construction Drawings & Technical Specifications	24		96	180	96	80	96	120	16	\$141,360	\$27,974	\$750	\$170,084
30.2	60% Engineering Design Report	4		4	32		56			16	\$20,260	\$0	\$0	\$20,260
60% DESIGN SERVICES PHASE TOTAL											\$161,620	\$27,974	\$750	\$190,344

31	90% Design Services													
31.1	90% Construction Drawings & Technical Specifications	16		48	80	40	32	60	80	8	\$71,700	\$15,748	\$750	\$88,198
31.2	90% Engineering Design Report	2		4	24		40			8	\$14,420	\$0	\$0	\$14,420
90% DESIGN SERVICES PHASE TOTAL											\$86,120	\$15,748	\$750	\$102,618
32	100% Design Services													
32.1	100% Construction Drawings & Technical Specifications	4		32	80	32	24	24	32	8	\$48,240	\$6,422	\$500	\$55,162
32.2	100% Engineering Design Report	2		4	8		32			8	\$9,220	\$0	\$0	\$9,220
100% DESIGN SERVICES PHASE TOTAL											\$57,460	\$6,422	\$500	\$64,382
40	Permitting													
40.1	ADEQ APP Significant Amendment	4		2	40		40		16	40	\$24,210	\$0	\$500	\$24,710
40.2	NACOG CWA 208 WQMP Amendment	2			2					2	\$1,310	\$0	\$0	\$1,310
PERMITTING PHASE TOTAL											\$25,520	\$0	\$500	\$26,020
TOTALS		208	0	192	1106	168	1194	242	348	298	\$720,220	\$81,945	\$24,750	\$826,915

Budgetary Tasks														
12	PFAS Treatment System Design													
12.1	100% Engineering Design Report & Cost Estimate	24		40	80	40	80			24	\$58,920	\$0	\$0	\$58,920
12.2	100% Construction Drawings & Specifications	40		120	200	120	96	208	240	16	\$200,880	\$0	\$0	\$200,880
PFAS TREATMENT SYSTEM DESIGN PHASE TOTAL											\$259,800	\$0	\$0	\$259,800
TOTALS		444	0	542	2400	496	2472	680	932	608	\$259,800	\$0	\$0	\$259,800

Chino Valley WRF Project Plan



PROFESSIONAL ENGINEERING CONSULTING SERVICES

CHINO VALLEY WATER RECLAMATION FACILITY IMPROVEMENTS PROJECT



PREPARED FOR:



Town of Chino Valley
Public Works Department
1982 Voss Drive
Chino Valley, Arizona 86323

PREPARED BY:



8723 E. Via de Commercio, #A-204
Scottsdale, AZ 85258
480.991.3595 | pacewater.com

C104 | JANUARY 25, 2024
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A GENERAL INFORMATION





January 25, 2024

Town of Chino Valley Public Works Dept 1982 Voss Drive, Chino Valley, Arizona 86323
 Jesse Holyfield (928) 636-7140 | Mark Holmes (928) 277-5253

**Re: Professional Engineering Consulting Services for
 Chino Valley Water Reclamation Facility Improvements Project**

Dear Mr. Holyfield & Mr. Holmes,

The Town of Chino Valley (Town) has been proactive in seeking a comprehensive solution for the upgrade of its Chino Valley Water Reclamation Facility (WRF). PACE has gained a deep understanding of this project through our work for the WRF Capacity and Expansion Evaluation completed in June 2023. We look forward to collaborating together to develop and implement a successful project: a well-functioning and easy-to-operate facility that will maximize the useful life of the existing infrastructure.

We believe we will bring value to the project through unique qualifications that you may not find with other firms. Within this statement of qualifications, we will demonstrate our following unique qualifications that will benefit the Town:

- Thorough Understanding of the Chino Valley WRF to “Hit-the-Ground-Running”
- Extensive MBR Experience Leading to Energy-Efficient Design Approaches
- Extensive Federal/State Funding Experience Provides Proficient Support in Grant Applications and Administrative/Compliance Activities
- Arizona Smaller Communities/District Experience Ensures Sensible Approach
- PFAS Treatment Experience to Support Project Objectives
- Extensive Piloting Experience and Equipment to Support PFAS Testing

Our team is supported by subconsultants locally based in Arizona to support the project needs, including Civiltec for Survey services, Western Technologies for Geotechnical Engineering, PK Associates for Structural Engineering and Kim Joyce for Grant Writing Support. We also propose to utilize Local First Arizona’s complimentary grant writing resources, which includes 40-50 grant writers and support on up to four grant applications per year to provide cost-effective support to the Town

Our delivery approach centers on the critical milestones leading to the successful project completion, including:

- 1. Conceptual Design Report (CDR) Preparation for Pursuing Funding and CMAR Selection:** Our recent experience completing the WRF evaluation allows us to proceed quickly with delivering a CDR, expediting delivery of the necessary information for funding applications. The CDR will include outline specifications and critical content in support of the CMAR solicitation at the ideal stage of the project.
- 2. Early Applications for Funding to Meeting Project Schedule:** A completed CDR will give the Town the sufficient project detail necessary to apply for a wide range of state and

federal funding opportunities. Our experience with 25 federally/state-funded projects in the last 15 years will streamline this process and avoid any potential hurdles.

- 3. Early CMAR Selection Essential for Cost Control and to Maintain Project Schedule:** We have successfully delivered projects with a CMAR delivery by engaging the CMAR team early in the project. Engagement with the CMAR following the completion of the CDR will ensure their critical input on the 60% draft design in support of budget and schedule objectives.

- 4. Design Approach and Productive Scheduling to Minimize Unnecessary Delays:** We offer project delivery tools that are particularly effective with the CMAR delivery, such as developing up-front Performance-Based Specifications for use in soliciting vendor equipment proposals, leading to potentially locked-in purchase costs and performance guarantees through a competitive solicitation process; and the ability to utilize our in-house Instrumentation and Controls team for both design and integration of the controls and SCADA upgrades for seamless delivery of this critical project element.



Project Manager, Taylor Pierce, PE, will serve as your primary contact and, as Principal, I will continue to be intimately involved in the project through making design approach recommendations and ensuring quality control. The Town and the WRF improvements are a priority for our team and we are ready to commence on this project immediately upon notice to proceed. We have developed the enclosed Statement of Qualifications carefully following the RFQ guidelines and we look forward to your review and feedback.

James A. Matthews, PE
 Sr. Vice President – Environmental Water Division

VENDOR IDENTIFICATION INFORMATION

ABOUT PACE

Pacific Advanced Civil Engineering, Inc. (PACE) is a **specialized civil engineering firm offering advanced water resource services with a local office in Scottsdale, AZ**. We offer a wide range of engineering services related to water, wastewater, stormwater management and water resource permitting and regulatory compliance to ensure projects are both economically viable and environmentally sustainable. Our engineering approach focuses on maximizing value by creating multi-use infrastructure systems, cost-effective phasing strategies and systems that include environmental, aesthetic and recreation uses. Guided by the principle of our approach, **we deliver engineering solutions that are reliable, easy to construct, and straightforward to operate.**



Incorporated Year **1987** /
Legal Form: **C-Corporation**,
State of California.
DUNS 14-356-4719



Employees (approx.) Firm **90**

Contact Person **Taylor Pierce**, *Project Manager*
D (480) 991-3595 | C (602) 540-2727 | tpierce@pacewater.com

Headquarters: 17520 Newhope St., Suite 200,
Fountain Valley, CA 9270 | (714) 481-7300

Local Work Office: 8723 E. Via de Commercio, #A-204,
Scottsdale, AZ 85258 | (480) 991-3595

Engineering Services



Water / Wastewater



Water / Sewer Pipeline



Stormwater



Permitting

relevant expertise areas provided for the last 30+ years

- ◆ Wastewater Process & Infrastructure Evaluations, Master Planning, & Design
- ◆ Wastewater Quality Assessment, Treatment Development, Planning, & Permitting
- ◆ Collection Infrastructure Component Design / System Improvements
- ◆ Pumping Facilities & Conveyance / Collection Pipes
- ◆ Effluent Reuse Design and Management
- ◆ Sludge Processing & Biosolids Management Planning & Design
- ◆ Energy Efficiency Evaluation & Alternative Energy System Design
- ◆ Value Engineering, Constructability Review & Accurate Cost Estimation
- ◆ Construction and O&M Cost Estimating
- ◆ Electrical, Controls & Instrumentation
- ◆ Construction Management / Field Assistance
- ◆ Funding Assistance & Administration

TERMINATED CONTRACTS OR CLAIMS IN THE LAST 5 YEARS

PACE has had no contracts or subcontracts terminated and no claims brought resulting in litigation or arbitration in the last 5 years.

VENDOR INFORMATION FORM

The Vendor Information Form is located in the Appendices.

B

EXPERIENCE AND QUALIFICATIONS



KEY QUALIFICATIONS

01 Noteworthy Chino Valley Experience Offers Seamless Transition

PACE's core team members, Taylor Pierce, PE and James Matthews, PE, have recently worked with the Chino Valley team on an evaluation of the Chino Valley WRF and with the Del Rio Spring Development to the north of the facility. The knowledge gained allows PACE to provide a team that is ready to continue our support by "hitting the ground running."

02 MBR Experience Leads to Energy Efficient Design Approaches

PACE has designed approximately 15 MBR facilities and applies advanced techniques to optimize energy efficiency and lifespans of MBR filtration equipment. Most recently, our experience includes the design of the 4.0 MGD MBR Sarival Water Recycling Facility, located in Goodyear, AZ with design strategies such as automation schemes combined with a closed-loop biological process with energy efficient variable speed-controlled aeration blowers and variable low-speed small horsepower adaptive control mixers. This configuration, control strategy and equipment selection reduced energy consumption by two-thirds compared to a conventional MBR arrangement at Sarival.

03 Extensive Federal/State Funding Experience Provides Proficient Support in Administrative/Compliance Activities

Our experience and continuous interaction with federal and state funding agencies ensures our ability to meet requirements for compliance and funding administration activities. PACE has been involved with 25 federally/State funded projects in southwestern US (Arizona, California) in the last 15 years working with USDA-RD, WIFA, CDBG, NADB, and others. We have helped secure nearly \$130 million in funding for these projects.

04 Arizona Smaller Communities/District Experience Ensures Sensible Approach

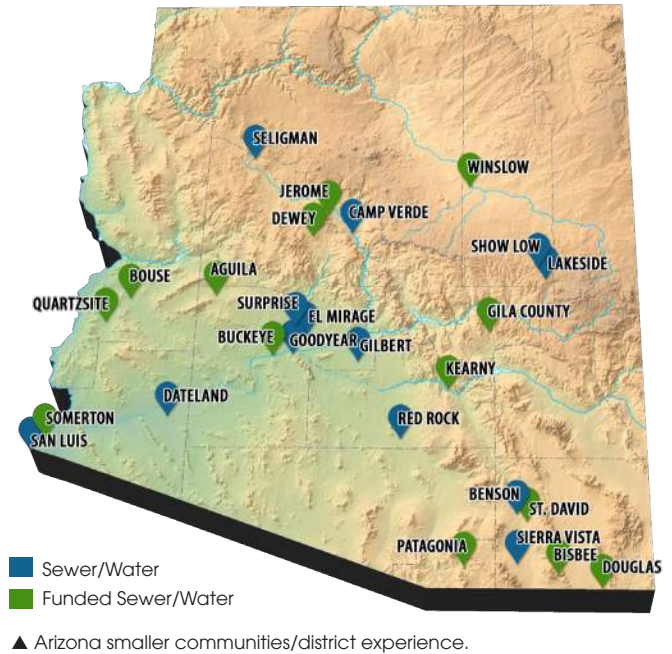
Our experience with and understanding of smaller community infrastructure financing limitations has led us to develop successful strategies for a valuable product that exceeds expectations. Our design philosophy centers on modest, simple, cost-effective designs creating reduced up-front capital costs, increased ease of operation, and minimizes operational and maintenance costs. Our team is programmed to consistently perform value engineering throughout the design phase to ensure we meet the project needs without sacrificing quality while avoiding over-engineering.

05 PFAS Treatment Experience To Support Project Objectives

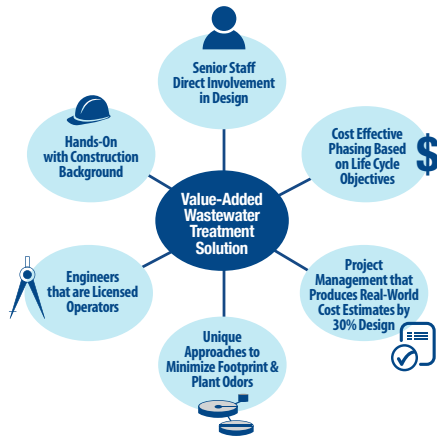
PACE, using our in-house water quality laboratory and staff, have piloted a multitude of PFAS/PFOS treatment technologies; including Ion Exchange, Activated Carbon and Engineered Proprietary Medias, as well as development of our own biological filtration process for specific contaminate removal in groundwater. In addition, PACE has completed two potable water PFAS treatment projects in the last two years, which included pilot testing, process selection, final design and construction / commissioning services.

06 Extensive Piloting Experience and Equipment to Support PFAS Testing

PACE offers a unique specialization in piloting and testing proposed treatment processes supported by a Research and Development division, an in-house water quality testing lab, and ownership of sophisticated piloting equipment, including a vessel testing system that accommodates up to six different filtration medias with a holding tank for long-term monitoring and automated chemical coagulation, disinfection dosing, automated flux control valves and flow meters. Pilot testing has been performed on numerous filtration projects, including PFAS removal for the City of Riverside, CA Garner B Well system and the recycled water polishing treatment system at SoFi Stadium in Los Angeles, CA.



EXPERIENCE & SERVICE CAPABILITIES



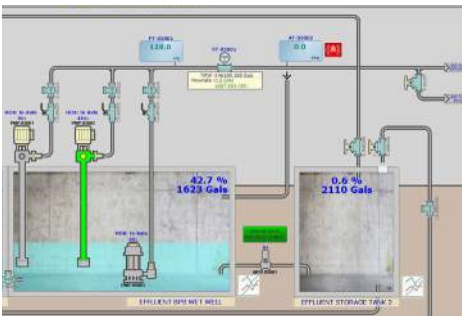
Wastewater Treatment

PACE has experience designing and permitting a wide range of process technologies based on project needs. From Conventional Activated Sludge and Oxidation Ditches to sophisticated Sequential Batch Reactors (SBRs) and Membrane Bio-Reactors (MBRs), PACE seamlessly provides our clients with high-performance, cost-effective solutions to their treatment needs. We have repeatedly provided treatment facility solutions that are innovative, cost-effective, straightforward to construct, and simple to operate. The water exiting PACE-designed wastewater reclamation facilities are clean and safe for water applications, including storage reservoirs, advanced irrigation treatment systems, cooling tower filtration systems, and pump stations for recycled water application, as well as recharge and injection systems to store recycled water underground.



Pumping & Regulating Stations

PACE has completed numerous pump facility upgrades and rehabilitation projects. Our direct experience in design, construction and operations provides us a unique ability to identify and work around these site issues while maintaining capital and operational budgets. PACE has worked with vertical turbine, centrifugal, and horizontal split-case mechanical equipment systems with constant pressure application using VFDs.



Instrumentation & Controls

PACE's in-house Instrumentation & Control group has extensive experience in the design, configuration, programming and commissioning of PLC Control Systems and SCADA Systems. In-depth knowledge of control and instrumentation systems equipment will seamlessly integrate mechanical design with equipment control functions, providing complete turnkey systems. Using our expertise in design, construction and operation of water / wastewater distribution facilities to provide a system design that is robust and encompassing in data collection and control, yet provides the usable information operators need, without the clutter of "information overload".

Constructability, Operability Review, and Operations Expertise Inherent in Design

PACE was born from a water construction company and, as such, has extensive Design-Build (DB) / Design-Build-Operate (DBO), Construction-Manager-at-Risk (CMAR), and Value Engineering (VE) experience that drives us to consider constructability of all elements of our design. This experience provides the Town with a sound technical design, and also ensures that the facility will be easy to construct and operate, with reduced time of delivery, and reduced capital and operational costs. Our team includes senior licensed engineering staff who also are or have been certified operators. This benefits the Project as our design team will be able to integrate with the Town staff more effectively, delivering a "soup-to-nuts" system design that is focused on ease of operation and maintenance. Our operations experience will also be critical to both construction, start-up, and commissioning of the facilities, working hand-in-hand with the future operators throughout the process.



Services During Construction

PACE's extensive experience with both design-bid-build and design-build projects has provided specialized hands-on experience to proactively assist the contractors to meet the design intent and solve challenges prior to improper procurement or installation. Our philosophy for construction management is to encourage contractors to verbally communicate potential solutions to RFIs and submittal revisions prior to formalizing them in writing so that coordinated and agreed upon direction have opportunities to be completed in the first response. Additionally, we are well-versed in various agencies requirements for funding opportunities.

RELEVANT EXPERIENCE

The following is a summary of select wastewater experience in the areas pertinent to the Chino Valley WRF performed in the last 20 years to demonstrate our technical expertise.

Project	Capacity (MGD)	Delivery Method	Facility Process	Flow EQ	Public Sector	Funded (State/Federal)	Facility Modification
Barona WRF (Original and Upgrades), Lakeside, CA	0.8	DBO	SBR	x			x
Chumash WRF Expansion, Santa Ynez, CA	0.2	DBO	MBR	x			x
City of Adelanto WWTP Upgrades, Adelanto, CA	3.0	DBO	ASBP	x	x		x
City of Bisbee San Jose WWTP, Bisbee, AZ	1.2	DB	SBR	x	x	x	x
City of Burbank WRP Upgrades, Burbank, CA	12.0	DBB	ASBP		x		x
City of El Mirage WRF, El Mirage, AZ	3.6	DBO	SBR	x	x		x
City of Lathrop WRF Expansion, Lathrop, CA	2.5	DBB	MBR		x		x
City of San Clemente WRP Upgrades, San Clemente, CA	7.2	DBB	BNR		x		x
City of Santa Monica SWIP Advanced Water Treatment Facility, Santa Monica, CA	1.5	DBO	MBR		x		
City of Santa Paula WRF, Santa Paula, CA	4.2	DBOF	MBR	x	x		
City of Show Low WWTP, Show Low, AZ	2.5	CMAR	Biolac		x		x
City of Sierra Vista EOP WWTP Upgrades, Sierra Vista, AZ	4.0	DBB	ASBP	x	x		x
City of Sierra Vista Tribute WRF, Sierra Vista, AZ	0.5	DBB	MBR	x	x		
City of Somerton Phase III Expansion, Somerton, AZ	1.8	CMAR	SBR		x	x	x
City of Winslow WWTP, Winslow, AZ	2.2	DBB	ASBP	x	x	x	x
Civita WRF, San Diego, CA	0.3	DBO	MBR		x		
Mountain House WRF Phase II Expansion, Tracy, CA	3.4	DBO	SBR	x			x
Mountain House WRF Phase III Expansion, Tracy, CA	5.4	DBB	MBR				x
Pinetop-Lakeside Sanitary District WWTP Improvements, Lakeside, AZ	2.0	DBB	OD	x	x		x
Sarival Water Reclamation Facility, Goodyear, AZ	2.0	DBO	MBR	x			
Solvang WWTP Enhanced Treatment Study, Solvang, CA	1.5	DBB	MBR		x		
Sonora Regional Wastewater Treatment Plant Expansion, Sonora, CA	2.6	DBB	EAAS	x	x		x
SPA 2 WRF, Surprise, AZ	1.2	DBO	SBR	x			
SPA 3 WRF, Surprise, AZ	1.8	DBO	SBR	x			
Sundance WRF Phase I, Buckeye, AZ	1.2	DBO	SBR	x			
Sundance WRF Phase II, Buckeye, AZ	3.5	DBO	SBR				
Tartesso WRF, Buckeye, AZ	1.2	DBO	SBR	x			
Town of Jerome WWTP Improvements, Jerome, AZ	0.1	DBB	SBR		x	x	x
Town of Patagonia WWTP Improvements, Patagonia, AZ	0.1	DBB	EAAS		x	x	x
Town of Quartzsite WWTP Expansion, Quartzsite, AZ	0.9	DBB	SBR	x	x	x	x
Tri-City Regional Sanitary District Wastewater Collection & Treatment, Gila County, AZ	0.3	DBB	MBR	x	x	x	x
Tuolumne Utilities District Sonora Regional WWTP Upgrades, Sonora, CA	2.5	DBB	EAAS	x	x	x	x

ASBP
BNR
DBB

Activated Sludge Biological Process
Biological Nutrient Removal
Design Bid Build

DBO
EAAS
MBR

Design Build Operate
Extended Aeration Activated Sludge
Membrane Bioreactor

OD
SBR

Oxidation Ditch
Sequential Batch Reactor

SUCCESSFUL COMPLETION OF SIMILAR PROJECTS

Winslow Wastewater Treatment Plant Evaluation and Upgrade Winslow, AZ



Relevant Features

- ◆ Re-utilization and expansion of the abandoned flow equalization
- ◆ Beneficial reuse of existing infrastructure
- ◆ Rural community
- ◆ Qualified for USDA Rural Development low-interest loan
- ◆ Comprehensive deficiency and overall efficiency assessment of existing wastewater treatment facility
- ◆ Operational during construction – developed sequence of construction
- ◆ Flow equalization



PACE was hired as the prime consultant by the City of Winslow to perform an evaluation of the deficiencies of the City's WWTP, which was struggling to meet water quality permit requirements. The plant was plagued by operational issues, making the effective treatment capacity roughly half of its design capacity of 2.2 MGD. Through the preparation of a Process, Efficiency, and Alternative Analysis Evaluation, several major process deficiencies were identified, as well as proposed improvements for each that preserved as much of the existing facility that was practical. Renovations were recommended to numerous processes including the lift station, headworks, flow equalization basin, oxidation ditches, filters, UV disinfection system, effluent pump station, sludge dewatering process and the SCADA/control system. The improvements recovered the 2.2 MGD average daily flow capacity design which increased efficiency of its operations to exceed the best available demonstrated control technology (BADCT) and meets Arizona Class A+ Reclaimed Water Quality Standards, along with a projected reduction in total energy consumption of over 65%. The plant upgrades also included the replacement of its clarifiers and headworks, modifications to its oxidation ditches with a new aeration and blower system, and a complete overhaul of the plant's major instrumentation and control infrastructure components.

Contact Info

City of Winslow
21 Williamson Ave
Winslow, AZ 86407

Tim Westover
(928) 289-4011
TWestover@winslowaz.gov

Contract Initiation/Expiration

May 2012 – June 2018 (all phases)

Service Provided

- Planning
- Funding Agency Reports & Compliance Activities
- Design
- Permitting
- Bid Services
- Construction Services



Quartzsite Wastewater Treatment Plant Evaluation and Expansion Quartzsite, AZ



Relevant Features

- ◆ Similar in size prior to upgrades, 0.45 MGD
- ◆ Re-utilization and expansion of the abandoned flow equalization
- ◆ Beneficial reuse of existing infrastructure
- ◆ Rural community
- ◆ Federally and state-funded project (USDA, WIFA)
- ◆ Comprehensive deficiency and overall efficiency assessment of existing wastewater treatment facility
- ◆ Operational during construction – developed sequence of construction
- ◆ Federally and state-funded project



USDA Funded

The Town of Quartzsite, AZ was having difficulties with treating its highly seasonal wastewater flow. In the winter, the WWTP sees an average-day flow of approximately 350,000 gpd but the flow drops to less than 100,000 gpd in the summer. With anticipated growth in the winter months, flow is expected to exceed the WWTP treatment capacity within a couple of years.

To increase the WWTP capacity, the Town moved forward with the design of the WWTP expansion only to stop short of construction due to funding requirements. PACE was then contracted by the Town of Quartzsite's Engineer (Atkins) to perform an assessment/value engineering review of the proposed expansion design plans that consisted of increasing the current capacity from 0.45 MGD to 0.90 MGD by constructing a new second sequential batch reactor (SBR) basin as well as other ancillary systems necessary to increase the capacity.

PACE was hired as the prime consultant to provide an in-depth evaluation of the proposed expansion and existing system. The evaluation included detailed hydraulic analysis, biological process modeling, energy consumption analysis, and electrical and control system review. PACE's evaluation revealed the proposed expansion did not provide adequate summer low-flow treatment and would double the electrical power requirements.

PACE also identified several cost reduction measures that provided better day-to-day treatment performance, an energy cost reduction of 40% equating to a savings of \$25,000/yr at current flows and up to \$40,000/yr at design flow. One of the solutions included dividing the existing SBR basin into two smaller basins to allow better summer low-flow treatment but still had the capacity to treat the design flow of 0.9 MGD. The approach of splitting the SBR basin instead of duplicating saved nearly \$750K used to further improvements including a new headworks system and controls/SCADA system. This project was completed in January 2020.

Contact Info

Town of Quartzsite
465 N Plymouth Ave
Quartzsite, AZ 85346

Emmett Brinkerhoff
(928) 916-9694
ebrinkerhoff@quartzsiteaz.org

Contract Initiation/Expiration

June 2019 – January 2020

Service Provided

- Planning
- Funding Agency Reports & Compliance Activities
- Design
- Permitting
- Bid Services
- Construction Services (USDA-RD Resident Project Representative (RPR))

Tuolumne Utilities District Sonora Regional Wastewater Treatment Plant Sonora, CA



Relevant Features

- ◆ Provides freeboard and equalized secondary treatment to handle variability in inflow and loading
- ◆ Treatment process conversion
- ◆ Beneficial reuse of existing infrastructure
- ◆ Rural community
- ◆ Federally funded project (USDA)
- ◆ Operational during construction – developed sequence of construction
- ◆ Flow equalization



USDA Funded

PACE was hired as the prime consultant to perform a facility assessment and upgrade design for the 2.6 MGD Average Daily Flows (ADF) Sonora Regional Wastewater Treatment Plant (SRWWTP) to address the facility's declining effluent performance. The existing SRWWTP features a conventional trickling filter secondary process that utilizes two trickling filters, followed by two secondary clarifiers, three aerated polishing ponds, and a chlorine disinfection system. Based on recent flows and loads, the influent flow limits identified in the WDRs are not exceeded, but the facility was at its design Biochemical Oxygen Demand (BOD) influent load limit, and was exceeding its design suspended solids loading criteria. To improve the facility's functionality and performance, PACE designed upgrades to increase the capacity to 5.0 MGD of Max Day Flows (MDF) and 10.0 MGD Peak Hour Flows (PHF) and to convert the secondary treatment process to an Extended Aeration Activated Sludge (EAAS) process utilizing the Parkson's Biolac® mixing and aeration process. All wastewater flows to the proposed SRWWTP process are treated by a new headworks, primary screening and grit removal, new dual-train extended aeration activated sludge (EAAS) basins, new secondary clarifiers, new chlorine disinfection system, new effluent disk cloth filters and a new sludge dewatering facility. These upgrades also replace the existing polishing ponds and include a new administration and electrical building, a new headworks and sludge dewatering building and a renovated digestion building where the existing anaerobic digesters were repurposed into aerobic digesters for solids processing. Operation was maintained during construction; the upgraded facility was substantially complete in December 2023, and commissioning is in progress.

Contact Info

Tuolumne Utilities District
18885 Nugget Blvd
Sonora, CA 95370

Erik Johnson
District Engineer
(209) 532-5536 ext. 520
Ejohnson@tudwater.com

Contract Initiation/Expiration

March 2019 – January 2024

Service Provided

- Planning
- Funding Agency Reports & Compliance Activities
- Design
- Permitting
- Bid Services
- Construction Services



Sarival Water Reclamation Facility (WRF) Goodyear, AZ



Relevant Features

- ◆ MBR treatment process
- ◆ Footprint constraints
- ◆ Influent pump Station
- ◆ Alternative construction delivery
- ◆ Flow equalization



This new facility treats an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10.0 MGD, providing support to an existing built-out regional WRF for current loading and future flow conditions. The facility uses a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process consists of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full build-out, the design of the WRF will provide an average daily flow capacity of up to 8.0 MGD with a maximum daily capacity of 12.0 MGD. Future phases of the facility will also introduce an advanced biosolids processing facility to handle solids processing for multiple treatment plants within the regional area. Design began in January of 2022, with construction paralleling the final design beginning in June of 2022, which led to the substantial fast-track completion being reached in January 2024.

Contact Info

Liberty Utilities
14222 W. McDowell Rd
Goodyear, AZ 85395

Rick Rhoads
(623) 688-4371
rick.rhoads@libertyutilities.com

Contract Initiation/Expiration

January 2022 – January 2024

Service Provided

- Planning
- Design
- Permitting
- Construction Services



Golden State Water Imperial Plant PFAS-PFOA Treatment Facility

Imperial, CA



Relevant Features

- ◆ PFAS-PFOA Removal System
- ◆ Pressure Vessel Treatment System
- ◆ GAC Treatment Media

The Golden State Water Imperial Plant PFAS-PFOA Treatment Facility was completed as a design-build project with PACE serving as the prime consultant and engineer of record under the Metro Builders & Engineers Group. The project encompassed demolition of existing air stripping towers and construction of a new Granular Activated Carbon Filter System to remove PFAS-PFOA from the groundwater produced by two on-site water wells. A pre-engineered package GAC system from Aqueous Vets (AV) was utilized, and PACE prepared demolition plans, grading and site detail plans, concrete foundation plans and details, mechanical interconnection piping plans and details, mechanical design and plans for a pre-treatment basket strainer system and provided construction and commissioning assistance.

Contact Info

Metro Builders & Engineers Group
2610 Avon Street
Newport Beach, CA 92663
Cameron Kosbab
(949) 515-4350
cameron@metrobuilders.com

Contract Initiation/Expiration

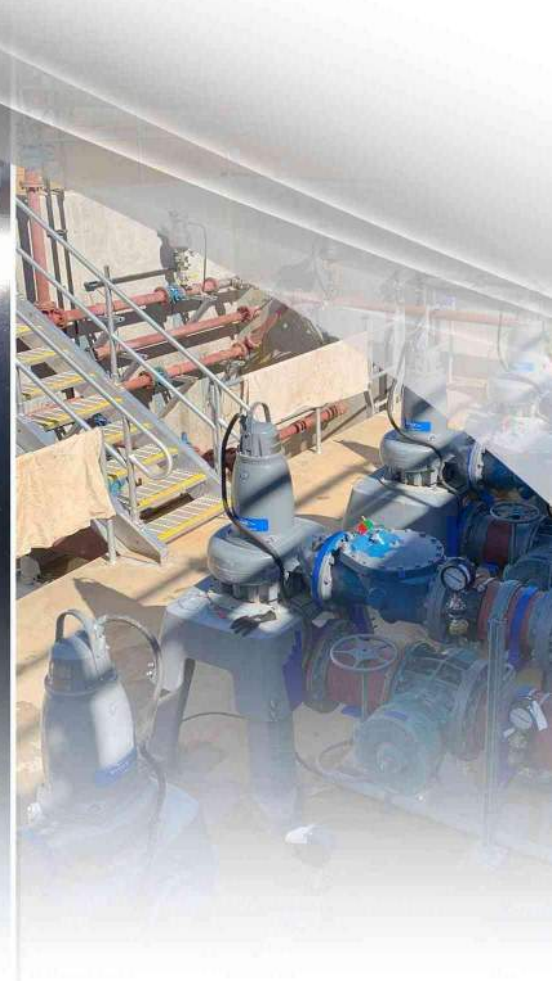
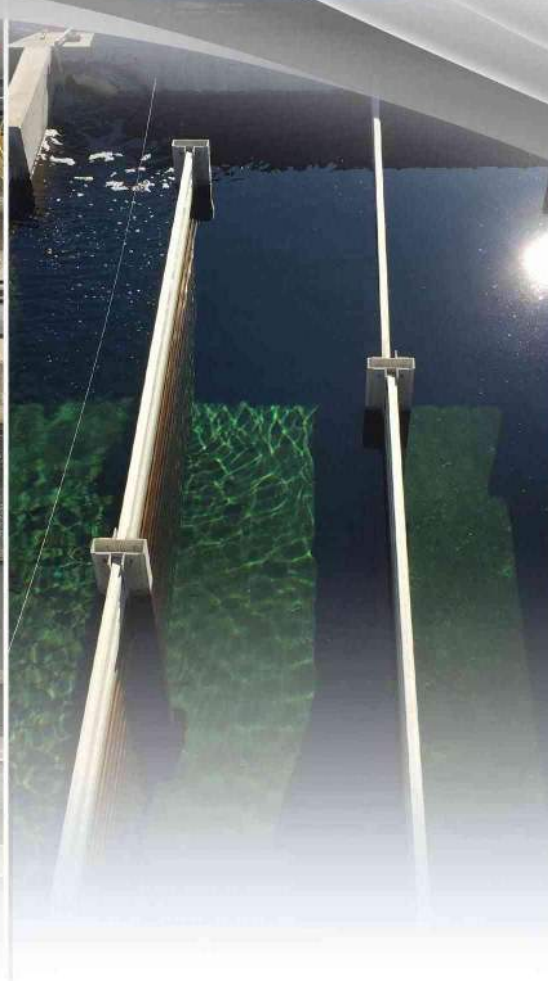
January 2021 – September 2022

Service Provided

- Planning
- Design
- Construction Services

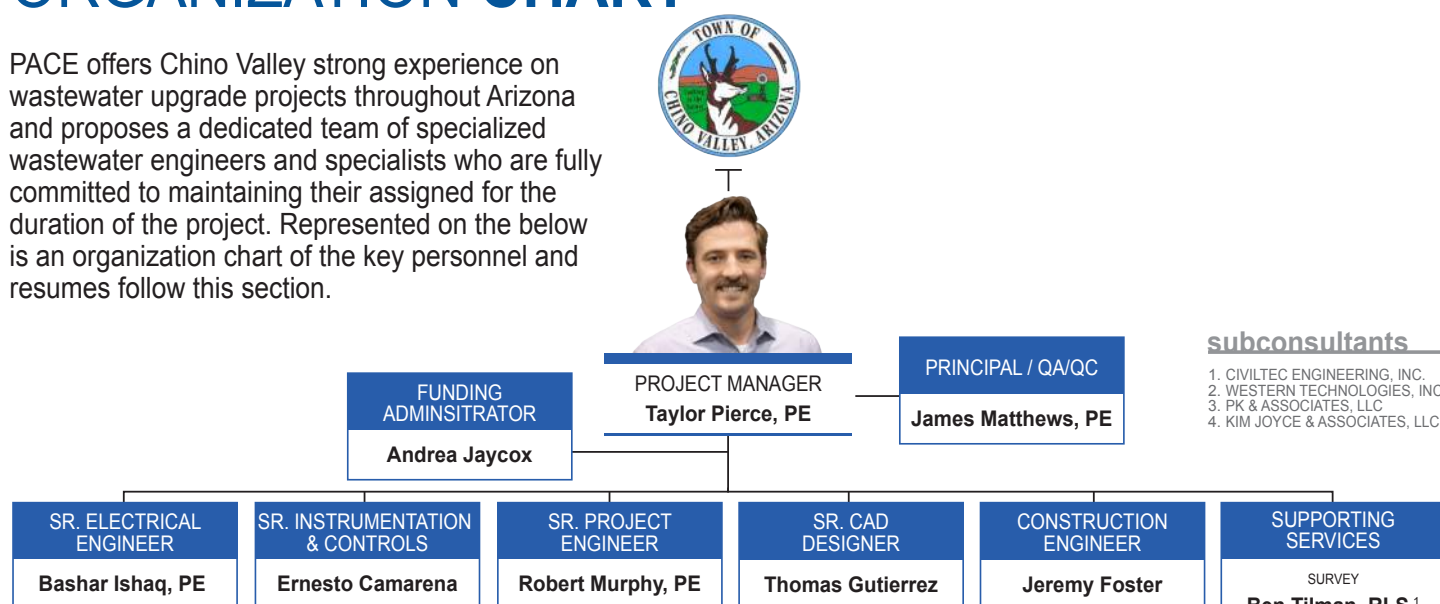


C KEY POSITIONS



ORGANIZATION CHART

PACE offers Chino Valley strong experience on wastewater upgrade projects throughout Arizona and proposes a dedicated team of specialized wastewater engineers and specialists who are fully committed to maintaining their assigned for the duration of the project. Represented on the below is an organization chart of the key personnel and resumes follow this section.



subconsultants

1. CIVILTEC ENGINEERING, INC.
2. WESTERN TECHNOLOGIES, INC.
3. PK & ASSOCIATES, LLC
4. KIM JOYCE & ASSOCIATES, LLC

SUBCONSULTANTS

SUBCONSULTANT SUPERVISION Agreements with our subconsultants will be followed by detailed task orders delineating the budget, schedule, and scope. These task orders will be monitored for progress and compliance. We will track the resources and the costs against the planned targets to ensure the resources are efficiently employed. Our project knowledge and the skill of our management team provide the basis for a well-managed design process.

SUBCONSULTANT BIOGRAPHIES



SURVEY Civiltec Engineering, Inc. (Civiltec) was founded in 1986 and has six offices, three in Arizona (Prescott, Peoria, and Phoenix) and three in California (Monrovia (headquarters), Fullerton, and Upland). Civiltec has cultivated a strong relationship with Chino Valley since 2001 and has completed 60+ survey projects. Surveys have been performed for various venues, including topographic surveys, boundary surveys, ALTA surveys, construction staking, easements and legal descriptions, and control surveys.



GEOTECHNICAL ENGINEERING Western Technologies (WT) is a consulting engineering firm and testing lab, specializing in Geotechnical Engineering, Environmental Consulting, Materials Inspection and Testing, Nondestructive Testing and Examination, and Water/Wastewater Bacteriological Analysis. WT has been in the forefront of establishing and providing quality and responsive services to meet the needs of their clients.



STRUCTURAL ENGINEERING PK Associates (PKA) provides a full range of Structural Engineering Services from conceptual design through construction administration and special structural inspections. Over the past 31 years, they have delivered structural design expertise on 65+ new and expansion projects for wastewater collection and treatment system facilities. PKA's teams have proven collaborative communication and an integrated approach to projects which provides overall savings with both project cost and schedule.



GRANT WRITING Kim Joyce & Associates (KJA) is a full-service grant consulting firm serving non-profits, for-profits, small businesses, hospital systems, schools and school districts, institutes of higher education, tribes, associations, government agencies, United Ways, funding agencies, and more. Kim Joyce & Associates has secured more than \$400,000,000+ in grant awards for its clients and continues to grow to meet the needs of communities.

KEY PERSONNEL

PROJECT MANAGER



TAYLOR PIERCE, PE

EDUCATION

Bachelor of Science, Civil Engineering, Arizona State University, Phoenix, AZ

YEARS OF EXPERIENCE

13+ Years

REGISTRATIONS

PE: AZ 70097, CA 84580, CO 52801, KS 26632

Taylor Pierce's experience includes design of wastewater treatment plants, sewer/potable/reclaimed pump stations, water treatment and storage design. Mr. Pierce has developed several performance-based equipment specifications for process equipment selection prior to design, and the creation of operation and maintenance manuals for several wastewater and water conveyance and treatment systems and facilities. His construction administration responsibilities include observation and inspection of field work to ensure general compliance with the design. Mr. Pierce is adept in coordinating project plans, specifications, and reports with multiple consultants to obtain an efficient buildable and operable system.

CHINO VALLEY PROJECT ROLE

Taylor is the Point-of-Contact for the Town of Chino Valley throughout the project and will be responsible for all project management activities. He performed the evaluation of the existing facility, and will apply the detailed insight he has on the facility to seamlessly transition to the improvement design phase. He will serve as the Engineer-of-Record and his responsibilities will include oversight, staffing, and directing required efforts to make sure the Town's expectations, project objectives and PACE's standards are being met from beginning to end.

TEAM MEMBER RESUME TABLE

NAME AND ROLE	EDUCATION AND PROFESSIONAL REGISTRATION	ROLES & RESPONSIBILITIES	RELATED PROJECT EXPERIENCE
PACE			
JAMES MATTHEWS, PE <i>Principal / QA/QC</i>	BS Civil Engineering, San Diego State University 28+ Yrs of Exp. AZ – PE: 34090	• Oversight of engineering team • Quality control / assurance • Independent milestone review • Design standard/criteria check • Overall compatibility / coordination	• Chino Valley WRF Capacity and Expansion Evaluation • Winslow Wastewater Treatment Plant • Quartzsite Wastewater Treatment Plant Evaluation and Expansion • Tuolumne Utilities District Sonora Regional WWTP • Sarival Water Reclamation Facility • Golden State Water Imperial Plant PFOS-PFOA Treatment Facility • Huntington Beach Well 9 BAC Treatment System
ROBERT MURPHY, PE <i>Sr. Project Engineer</i>	BS Civil Engineering, California State University, Long Beach 17+ Yrs of Exp. CA – PE: C83207	• Civil design / mechanical / process design • Lead of engineering team • Project / concept development	• Winslow Wastewater Treatment Plant Renovations • Tuolumne Utilities District Sonora Regional WWTP Upgrades • Sarival Water Reclamation Facility • Huntington Beach Well 9 BAC Treatment System & Sewer Line Improvement • City of Santa Paula Advanced Water Treatment and Recycling Facility

NAME AND ROLE	EDUCATION AND PROFESSIONAL REGISTRATION	ROLES & RESPONSIBILITIES	RELATED PROJECT EXPERIENCE
JEREMY FOSTER <i>Construction Engineer</i>	BSE Civil Engineering, Arizona State University 12+ Yrs of Exp.	- Construction coordination and scheduling - Meeting facilitation - Submittal reviews - Field observation	- Quartzsite WWTP Upgrades - Tri-City Regional Sanitary District Phase 1, 2 & 3 Wastewater Collection System & Water Reclamation Facility - Jerome WWTP Improvements & Sewer Line Extension - Sierra Vista EOP Water Reclamation Facility - Sarival Water Reclamation Facility
TOM GUTIERREZ <i>Sr. CAD Designer</i>	AA Applied Science, Computer Aided Drafting, ITT Technical Institute 29+ Yrs of Exp.	- Design and preparation of mechanical plans - Mechanical 3D modeling - Autodesk, AutoCAD, Civil 3D, and MEP - System layout, site grading, assemblies, profile design, etc.	- Golden State Water Imperial Plant PFAS-PFOA Treatment Facility - Huntington Beach Well 9 BAC Treatment System - Sarival Water Reclamation Facility - City of Santa Paula Advanced Water Treatment and Recycling Facility - City of Adelanto Treatment Plant Upgrades - Show Low Wastewater Treatment Plant Expansion
BASHAR ISHAQ, PE, MBA, PMP <i>Sr. Electrical Engineer</i>	BS electrical Engineering, University West 9+ Yrs of Exp. CA – PE: 24590	- Power distribution design - Project planning and final commissioning of project - Oversight of electrical team - Electrical design for direct on-line low voltage motors	- Vallejo Waste Treatment Plant System Upgrades Project for the Arc Flash and Coordination Study - System Upgrades Project for the Moccasin Powerhouse - North Shore Pump Station Wet Weather Improvements - Oceanside Water Pollution Control Plant WW-639 Digester Gas Utilization - Reformulated Esso Diesel Fuel (RFD) Project
ERNESTO CAMARENA <i>Sr. Instrumentation & Controls Specialist</i>	AA Applied Science, Computer Aided Drafting, ITT Technical Institute 28+ Yrs of Exp.	- Field instrumentation - PLCs, SCADA - Conceptual design exhibit creation - Start-up, commissioning, and training - Troubleshooting and operations support	- Winslow Wastewater Treatment Plant Renovations - Tuolumne Utilities District Sonora Regional Wastewater Treatment Plant - Sarival Water Reclamation Facility - Huntington Beach Well 9 BAC Treatment - City of Lathrop Advanced Water Treatment and Recycling Facility Expansion - Mountain House Water Reclamation Facility Expansion Phase II and III
ANDREA JAYCOX <i>Project Coordinator / Funding Administration / Permitting Support</i>	AA in General Studies, Paradise Valley Community College 23+ Yrs of Exp.	- Project administration and support - Contract administration - Technical writing - Funding administration and compliance - Permitting support	- Winslow Wastewater Treatment Plant Renovations - Quartzsite WWTP Upgrades - Tri-City Regional Sanitary District Phase 1, 2 & 3 Wastewater Collection System & Water Reclamation Facility - Show Low Wastewater Treatment Plant Upgrades
CIVILTEC ENGINEERING, INC			
BEN TILMAN, RLS <i>Surveyor</i>	BBS, Calvary Bible College 16+ Yrs of Exp. AZ – RLS: 55698	- Topographic and design surveys - Construction management - Survey observations - Planimetric, Boundary, and Utility data	- Chino Panels, Town of Chino Valley - Central Arizona Static Backbone

NAME AND ROLE	EDUCATION AND PROFESSIONAL REGISTRATION	ROLES & RESPONSIBILITIES	RELATED PROJECT EXPERIENCE
WESTERN TECHNOLOGIES, INC.			
GREG BURR, MS, RG, PE <i>Geotechnical</i>	MS Geology, Northern Arizona University 10+ Yrs of Exp. AZ – PE: 79669	• Geotechnical and materials testing • Management and coordination of required geotechnical investigations	• YAN Wastewater Treatment Plant Additions • Quartzite Wastewater Line • Mishongnovi Lagoon
PK & ASSOCIATES, LLC			
JAMES APPELYARD, PE <i>Structural</i>	BS Civil Engineering, Seattle University 12+ Yrs of Exp. AZ – PE: 70374	• Structural design and analysis • Calculations and structural details • Construction administration	• Sarival WRF • Show Low WWTP upgrades • Quartzsite WWTP Expansion • Sonora WWTP Expansion • West County WWTP Upgrade • Lathrop Consolidated Treatment Facility Expansion (WRP)
KIM JOYCE & ASSOCIATES, LLC			
KRISTEN KREY <i>Grant Writing</i>	MA Organizational Management, University of Phoenix BS, Criminal Justice/Political Science, State University of New York 26+ Yrs of Exp.	• Grant research • Grant writing • Grant management	• City of Glendale • City of Glendale Diversity Committee • Glendale City Council • Glendale Police Department

RESUMES, LICENSES, AND CERTIFICATIONS

Resumes, licenses, and certifications are located in the **Appendices**.

D

PROJECT UNDERSTANDING AND APPROACH



PROJECT UNDERSTANDING

The Town of Chino Valley is seeking professional engineering design services to implement process improvements to its existing water reclamation facility (WRF) that will reclaim the 0.5 MGD rated capacity of the facility and ensure exceptional effluent water quality for the foreseeable future. In addition, the improvements will allow the facility to accommodate near-term development within the Town's service area while also providing flexibility in the Town's long-term water planning efforts. The facility consists of an offsite lift station with two (2) influent pumps, a headworks with two (2) mechanical drum screen systems and one (1) vortex grit removal unit, two (2) MBR process trains, each consisting of Anoxic / Pre-Aeration / Membrane Separation tanks, two (2) in-line ultraviolet (UV) disinfection units, a final booster pump station with two (2) effluent pumps, five (5) offsite rapid infiltration basins, and one (1) dewatering screw press.



The current average annual day flow (AADF) observed at the facility is 0.323 MGD. However, the daily flow volume is not evenly distributed over a 24-hour period, instead, data shows that flow into the facility exceeds 0.36 MGD for a 14-hour period each day, with 2-hour peaks near the facilities rated capacity of 0.5 MGD creating higher than recommended flux rates on the membranes for extended periods of time.

The original design capacity of the facility is 0.5 MGD but the permitted capacity of the facility is 1.0 MGD according to the existing APP No. P-104236 and the Town is actually authorized to operate the WRF up to a maximum average monthly flow rate of 5.0 MGD. This allows the Town to evaluate expanding the facility or increasing membrane capacity within the same footprint at a later date. It is typical that state regulators require the Owner to initiate planning for expansion when the facility reaches 80% of the facility's rated capacity and begin construction by the time it reaches 90%.



In June of 2023, PACE prepared a Capacity and Expansion Evaluation to determine the hydraulic and biological capacity of the facility as well as provide recommendations to expand capacity consistent with the Town's current and projected future flow rates. Based on the analysis, PACE concluded that the facility is capable of treating 0.5 MGD, with a Peak Day Capacity of 0.85 MGD, with the addition of two flow equalization basins. In addition, the project offers the Town an opportunity to address other limitations at the facility due to aging equipment and lack of redundancy in critical areas. The identified improvements include:

1. Influent flow equalization basins between the headworks and secondary treatment process
2. Equalization lift station, basin mixing and aeration
3. Automated MicroC dosing system near the RAS return to the Anoxic Basins if the Town isn't able to identify atypical sewer dischargers

- | | | |
|--|---|---|
| 4. Drying beds located at the west boundary of the plant site for Town vector dumping | and redundancy under emergency operating conditions. | 9. Pilot PFAS/PFOA treatment |
| 5. Replace the existing UV system with a new low-pressure high-output inline UV disinfection system | 7. Add sludge conveyance and rearrange the roll-off bin to be located outside the dewatering building. | 10. Odor scrubbers for the headworks and dewatering buildings with the option to cover and plumb the EQ basins. |
| 6. Add an additional sludge dewatering unit to provide additional capacity under normal operating conditions | 8. Elevate existing headworks screens with a stand and walkway for improved access and downstream flow. | 11. Update existing SCADA system to include new components. |

Therefore, the Scope of Work for this proposal is to prepare Plans and Specifications for the recommended improvements and carry out construction activities using the preferred Construction-Manager-At-Risk (CMAR) project delivery.

project objectives

Our team considers the following to be major project objectives:

- Maximize the useful life of the existing infrastructure that has been very well maintained by the Town.
- Implement improvements that will provide the Town with process performance, additional operational flexibility, reduced near-term capital expense and increased time until a major capacity expansion is required.

CRITICAL ITEMS

In order to properly execute the Town's Scope of Work and to fully meet the Project objectives, we have identified the following Critical Items that need to be considered and addressed.

1. Conceptual Design Report Preparation for Pursuing Funding and CMAR Selection
2. Early Applications for Funding to Meet Project Schedule
3. Early CMAR Selection Essential for Cost Control and to Maintain Project Schedule
4. Design Approach and Productive Scheduling to Minimize Unnecessary Delays

PROJECT TECHNICAL APPROACH

Through our previous work with the Town and on other MBR projects, PACE's staff is intimately familiar with the design and operation of the Chino Valley WRF and its Kubota MBR system. Over the past twelve months, we have been analyzing your facility data and working with your operations staff to understand the challenges that the Town faces both in operating the current facility and in planning for the future. With this work, we have assisted plant operations in significantly improving the existing biological nitrogen removal process, producing higher quality effluent on a more consistent basis. Through this work, we evaluated multiple alternative technical approaches, which were presented in our 2023 technical memorandum. Although several of the alternatives were certainly viable, our proposed approach will minimize current capital expenditures while maximizing the available treatment capacity and useful life of existing infrastructure. New equipment and process basins proposed for this project have been located and sized so as to future-proof your initial capital investment, by not only providing major process benefits today, but also integrating the reuse / re-purposing of the components into the future capacity expansion at this site. Additionally, through control and instrumentation improvements and modifications, we will simplify operations, reduce energy costs and further improve water quality.

To do so, we will continue our working relationship with the Town's operation, engineering / planning and financial staff. Working together, we will utilize your staff's historical facility knowledge, paired with our extensive knowledge of advanced water and wastewater treatment, as well as our design, construction and operations experience at numerous rural and small community facilities, to provide individually unique solutions, backed by field-proven applications. Our construction and operations experience in a variety of project delivery approaches, such as CMAR, Design-Build and conventional Design-Bid-Build settings, has trained us to take a value-driven design approach, which drives the balance of both construction costs and ongoing operation and maintenance costs for the facility, while consistently maintaining the highest level of product quality.

For this project, we understand the Town is interested in using a CMAR delivery approach. Therefore, it will be very important to focus on developing outline specifications for the project work and a preliminary technical package for selection of a CMAR team member early in the project schedule. PACE will work with the Town in development of this package and, if requested, will be part of the CMAR selection team.

We have developed project tools which are applicable to any delivery method our client chooses, but are particularly effective with CMAR delivery. These include; development of upfront Performance-Based Specifications to solicit and potentially lock-in purchase costs and process performance guarantees from major equipment vendors up-front, prior to final design, pre-purchase agreements by either the client or CMAR contractor to reduce overall project schedule and utilizing our in-house Instrumentation & Control group to not only design instrument, control and SCADA upgrades, but to also provide the integration services as the owner's or CMAR's integrator.

Combined, these tools produce assurance of costs, performance and schedule, early on in the project, which greatly assist in securing grant and low-interest loans for the capital improvements needed. Based on the funding available, we will be able to tailor the project with modular design elements that can be added/ subtracted from the scope of work to meet the operational and financial goals of the Town.

conceptual site plan



ADDRESSING CRITICAL ITEMS

CRITICAL ITEM 01

Funding Mechanism Approach Prior to Construction Award Crucial for Design Completion

Preparation of a Conceptual Design Report (CDR) is critical to layout the preliminary engineering and cost estimates in order to 1) have the information available for technical/costs to apply for funding and 2) provide in a Request for Qualifications (RFQ) for potential CMAR selection process. Once the CMAR is on board, the CDR will enable the CMAR to solicit vendors for proposal for the major process equipment. The development of the CDR will ensure that the project challenges are met head-on by involving the Town's staff early and often. In essence, the Town operators become an integral part of our team and are utilized to discuss the project solutions and show examples that are "the best" and "the worst" in their own experience. From this the team gains "lessons learned" knowledge to better meet the staff expectations.

APPROACH STRATEGY

Promptly Prepare a Comprehensive CDR that Covers Vital Information

The CDR will determine the direction of the design, size of the facilities, quantity of equipment, preliminary layout, and type of equipment to use. It will be important to properly select and make good decisions on these design elements to bring the project in on time and on budget, with minimal risk to operations during construction. The CDR will include, but may not be limited to:

- Project location and background
- Town population and financial conditions
- Need for the project
- Environmental conditions
- Preliminary design information (improvements, layouts, permits, etc.)
- Identify and Define Major Process Equipment for Early CMAR Procurement
- Project cost estimates
- Update Project schedule if Necessary

CRITICAL ITEM 02

Applying for Funding Early Crucial to Meet Project Schedule

There are countless funding programs available for wastewater infrastructure throughout the US offered at the federal, state and local levels. The funding application processes and requirements can differ making timing very important to a project schedule.

APPROACH STRATEGY

Immediately Engage Local First Arizona as a Funding Resource at No Cost to the Town

Local First Arizona is a nonprofit organization committed to community and economic development throughout Arizona. They have an "Economic Resource Center" that employs 40-50 grant writers at any given time, each with their unique specialization in different grants. We would assist in facilitating a meeting to ensure the Town's eligibility. With their current funding, they are able to provide each entity assistance with up to four (4) grant applications per year. They also provide the research for possible additional opportunities. In an effort to save the Town time and money, we believe reaching out to this resource first may provide a great value.

APPROACH STRATEGY

Apply Our Team's Funding Expertise and Agency Contacts

We have been involved with 25 federally/state-funded projects in the southwestern US (Arizona, California) in the last 15 years working with USDA-RD, WIFA, CDBG, NADB, USACE, EPA and others, and have helped secure nearly \$125 million in funding for these projects through various types of funding applications. Upon the notice-to-proceed, we would reach out to our contacts at the previously mentioned agencies to begin researching and compiling available funding options. In addition to our experience, we have included Kim Joyce & Associates to our team to offer further expertise in identifying grants and grant writing. We would supply any technical information as necessary.

CRITICAL ITEM 03**Early CMAR Selection Essential for Cost Control and to Maintain Project Schedule**

Selecting and bringing the CMAR on early in the project will be essential to collaboratively work during the design for value-engineering opportunities, constructability reviews and active cost analysis.

APPROACH STRATEGY**Bring CMAR in Early**

It has proven to be advantageous in our previous alternative-delivery projects to bring the CMAR onto the project as early in the design stage as possible. PACE recommends that the CMAR procurement be initiated as soon as the CDR has been completed and accepted by the Town. This will enable the CMAR to be on board prior to the completion of the 60% design package. The CMAR's input on the 60% draft design will be critical in maintaining the project budget, proposed schedule, and can also reduce the amount of redesign of the 60% package. The added value of the CMAR input prior to completion of the 60% design will enable the incorporation of Construction Value Engineering into the 60% design and the CMAR's GMP.

APPROACH STRATEGY**Utilize Construction Understanding to Assist in CMAR Selection**

PACE can assist the Town with the review and evaluation of the Statement of Qualifications (SOQ) received. PACE has a previous CMAR project where the owner has requested PACE to be a part of the CMAR selection team. Either way, we can provide a recommendation to the Town based on the evaluation of the received SOQ. PACE has a proven list of contractors and can assist the Town in soliciting CMAR firms in the response to the RFQ.

APPROACH STRATEGY**Allow for Open and Constant Communication with the CMAR**

PACE will work closely with the selected CMAR team in order to quickly bring them up to date to ensure there is no loss of project time. The CMAR will be able to start promptly by reviewing the 60% and providing comments that can be incorporated into the design package. This will enable the CMAR to prepare equipment procurement packages and the 60% GMP. Following the Town's review and approval, the PACE/CMAR/TOWN Team will move forward with 90% design package and final design. Once the plans and specifications are complete and the final GMP has been established, PACE will assist in the construction by performing engineering construction services which will include submittal review, observation and inspections, as well as attending all construction meetings and site walks. Past CMAR projects have shown that the teams continuous open and honest communication is essential to project success.

CRITICAL ITEM 04**Design Approach and Productive Scheduling Minimize Unnecessary Delays**

Our approach to the design and scheduling will be focused on a simplified design focused on reliability, operability and constructability. We thoroughly considered alternative methods including treatment processes, how to utilize the existing components and the future needs of the facility in development of the project schedule. The approach presented herein represents our opinion of best alternatives to minimize the project timeline and maximize value to the Town. With our knowledge of the facility and experience with similar upgrades we can implement a fast-tracked schedule to hit deadlines ahead of a traditional Design-Bid-Build project or comparable CMAR approach advertised at 60% design. Every iteration of the design and scheduling will incorporate a simplified focus on reliability, operability and constructability.

APPROACH STRATEGY**Constructability and Operability Background Ensures Buildable and Low-Cost Reliable Operation**

PACE has an extensive background in design-bid-build, design-build, CMAR, and operations that provide unique insight into project designs to improve constructability and minimize construction cost. Consideration for the Town's wish list items, future facility modifications, pilot and full-scale PFAS treatment, and ultimate buildout of the facility will be carefully integrated into all design packages.

APPROACH STRATEGY

Involve Town O&M Staff Early and Often in Developing Final Design Option, Plans, and Specifications

PACE will use experience in the design, construction, and operations to assist the Town in determining an optimal design and equipment selection for the Project. PACE will start by meeting with the Town's Engineering team and the O&M staff to fully understand and solidify the project objectives. PACE will review all data and perform a site visit, alongside the Town's Project Manager and the O&M staff to better understand current challenges.



APPROACH STRATEGY

Establish Effective Schedule to Reach Project Objectives

The effectiveness of the project schedule is defined by the immediate action and dependency on one item that enables the project to move forward in several other areas. The initial items are data gathering and the Conceptual Design Report (CDR). The CDR then is utilized to provide details for the project funding application and the CMAR Selection Process. The CDR will then enable the CMAR to initiate the process equipment procurement.

We have prepared a detailed schedule (page 24 of this SOQ) and here are the following assumptions and considerations:

- Project initiation requires the CDR is completed within 30 days of the NTP to be followed by a Town seven-day review period ending with the team to discuss and approve the CDR.
- Project Schedule also initiates a project funding meeting within 7 days of the NTP, as well as the CMAR RFQ assembly enabling its completion to coincide with the completion of the CDR, followed by advertising RFQ. The project design schedule for the on-time completion of 60% plans requires that the CMAR be on board a month prior to the completion of the 60% plans.
- The remaining critical milestones are the completion of the 90% & 100% designs and the timely team reviews of the design packages and CMAR GMP. ADEQ/NACOG pre-application meetings will be scheduled early following the completion of the CDR and within a month of starting 60% design. At that meeting the pilot study can be discussed and scheduled.

PFAS EVALUATION & PILOT SYSTEM DESIGN

Trace organic compounds are consistently difficult to treat in recycled water systems; therefore, we recommend pilot testing on the effluent to see what treatments will be most economical given the high likelihood of interfering contaminants. The discharge of wastewater facilities is not yet regulated for PFAS constituents and may prove to be an inefficient location for a full-scale treatment system. It is our intent to prepare a pilot implementation plan and preliminary design report parallel but separate from the 60% design package. It will be beneficial to involve ADEQ early in the design process by scheduling a courtesy review of the pilot implementation plan to allow for agency input on the duration of the pilot and treatment goals for any potential future regulation.



We intend to deploy the pilot unit with selective IX resin and GAC filter media columns of varying bed depths, sequencing and flow rates with an effluent target value of less than 4 ng/L for all PFAS constituents. The pilot unit can utilize post-UV effluent water and be located near the effluent wet well to discharge filtered effluent. The backwash volume will be returned to the head of the WRF. At this time, we anticipate a 6-month observation and data gathering period. During this period PACE will actively monitor and maintain the pilot system. We anticipate that interfering contaminants will shorten the effective life of the media and may lead to more frequent media replacements or regeneration. Therefore, we will closely monitor elements of particular concern including media lifespan, backwash frequency, and biogrowth fouling.

Following the completion of the pilot, PACE will prepare a final design report summarizing the findings and present the most economical treatment option to the Town. Should the Town decide to implement a full-scale treatment system at the WRF, PACE will be able to quickly prepare the bid documents and assist the Town through construction of that project as well.

PROJECT MANAGEMENT

Our benchmark Project Management Approach considers each individual project to remain flexible for the specific project needs and objectives concerning planning, scheduling, estimating, communication, quality assurance / quality control (QA/QC), etc. Project Manager, Taylor Pierce, PE, will be responsible for all project management activities and will be the direct contact with the Town. He will coordinate all planning and design work with all subconsultants and staff. Regular meetings or teleconferences will be held with applicable Project Team members and consultants to coordinate engineering study and/or design issues. Meeting minutes will be kept and retained in project files.

CLIENT COORDINATION

All correspondence to the client, whether incoming or outgoing, will be through the Project Manager. The Project Manager will keep the client informed of the project progress on a monthly basis unless otherwise indicated in the work plan or contract work scope. The monthly progress reports will, at a minimum include:

- Progress To-Date
- List of Issues Which May Affect Project
- Schedule / Objectives
- Schedule Status
- Work Planned for Upcoming Month

SCHEDULING

PACE will create a detailed schedule using Smartsheet that will be maintained on a monthly basis. This program is easy to read, follow and maintain. Our Project schedule includes submittal dates, meetings, design progress, and more. If delays occur, in or out of our control, that impact the schedule, we will know early and allocate resources in order to keep the project on track. The established schedule includes assumptions that immediately initiate upon the NTP both the development of the CDR and the CMAR RFQ. This is critical to the project as the CMAR's input to design is of utmost importance. Our experience has seen delays in CMAR awards can translate into a delay in the project. The schedule also includes specified documentation review periods to include the Town, CMAR and PACE.

BUDGET CONTROL

Engineering costs will be controlled by frequent monitoring and early identification of any scope/design change affecting project costs. Construction cost estimates provided by the CMAR will be reviewed to ensure that the cost is in line with the industry standard cost. The CMAR will develop GMP based on the 60% and 100% design efforts. The estimate will then be compared to the Town budget expectations and if a gap is present, discussions will take place to determine if value engineering or other actions are necessary.

All PACE project management efforts will be coordinated out of our Scottsdale, AZ office. Regular coordination meetings will occur in Chino Valley, or using one of the many meeting and coordination resources we have available such as Teams or Zoom (video conferencing), which allow us to minimize budget for travel and meetings. However, in-person meetings will be encouraged at critical project durations (kick-off, final design submittals, etc.).

QUALITY ASSURANCE / QUALITY CONTROL

Beyond implementing a Project Management Approach, PACE regularly carries out Quality Assurance / Quality Control (QA/QC) practices necessary to the project.

Our approach to Project Delivery is consistent “checks and balances” occurring throughout the duration of the Project through our internal QA/QC process. Quality management will be used to ensure that the deliverables for the project meet a formally established standard of acceptance. Reviews are provided at critical points and specific responsibilities for the different levels of reviews during the life of the project are predefined.

QA/QC reviews will take place throughout project progress milestones and consist of the following review levels:

Level 1 Self Review

Determine if Project requirements are being met and development is progressing in line with scope. Not intended to include detailed technical aspects of the project or include documentation.

Level 2 Subtask Leader Review

Verify that design has been correctly interpreted and transferred correctly to specifications and drawings. Subtask leader will ensure each individual system is provided with sufficient technical concepts, layout, and detail so contract documents may be developed.

Level 3 PM Task Review

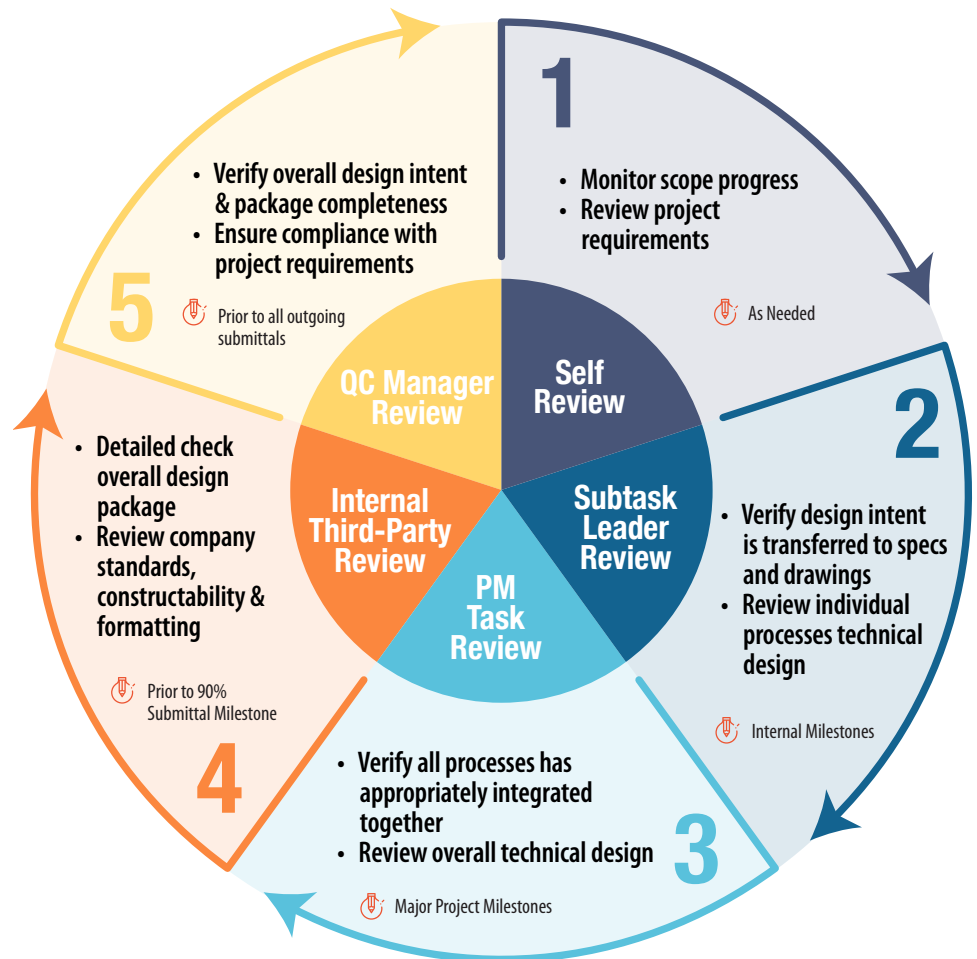
Determine various technical components of all disciplines which have been developed are integrated together and each individual system is provided with sufficient technical concepts, layout, and detail. Following this, the applicable documents can be prepared for independent review.

Level 4 Internal Third-Party Review

Third-Party Reviewer (internal to PACE, but not assigned to Project) is to perform a detailed checking of the design packages to review and verify company and industry standards, constructability and formatting.

Level 5 QC Manager Review

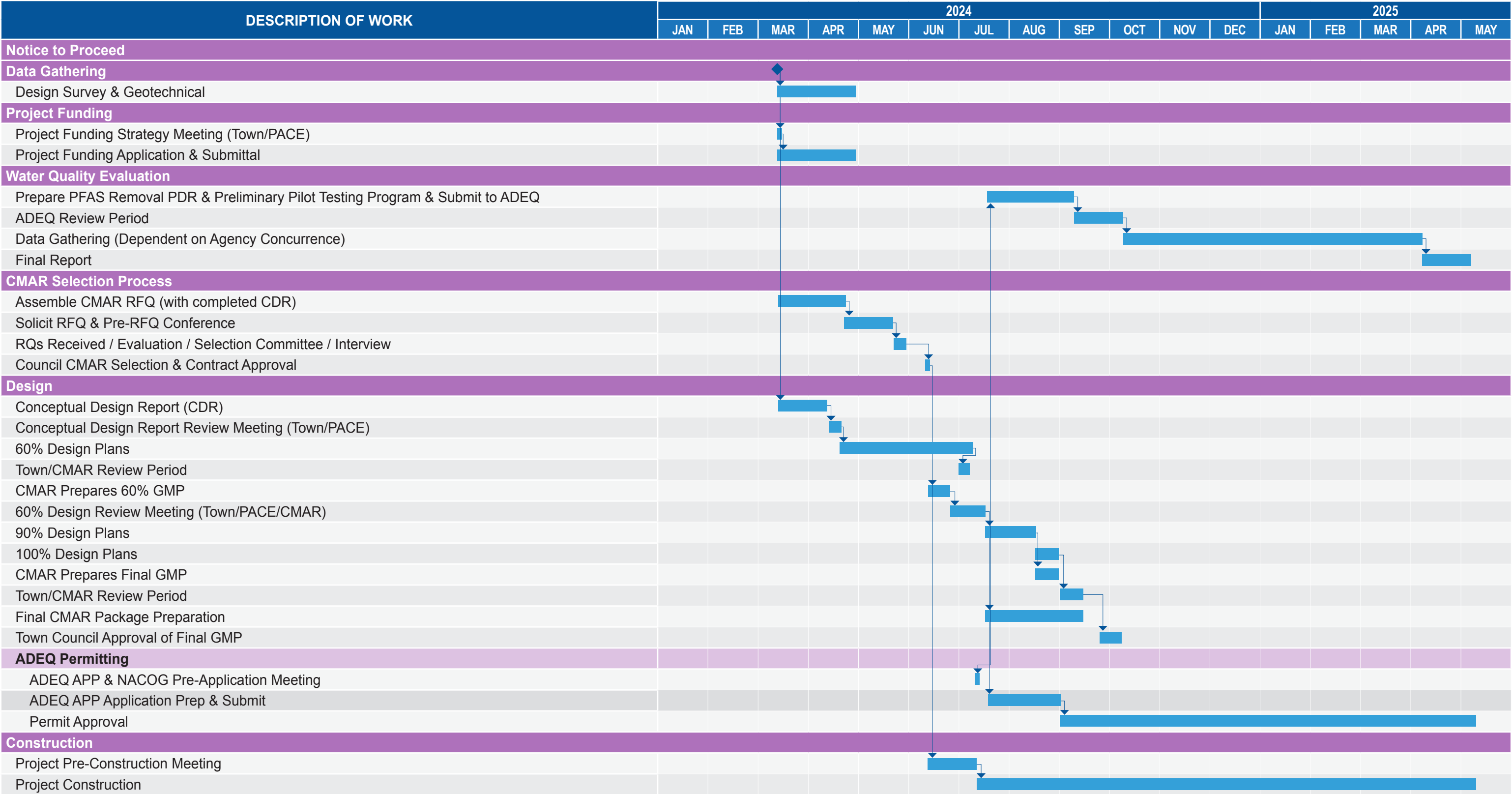
Review overall design intent and assure documents for purchasing and construction contracts are complete with regard to legal requirements for the work intended.



E PROJECT SCHEDULE



PROJECT SCHEDULE



F

ADDENDUM ACKNOWLEDGMENT



ADDENDUM ACKNOWLEDGMENT

Q&A Addendum

2023-0022 - Engineering Consulting Services for the Chino Valley WRF Improvements Project

Q: Is the Town looking for our qualification in grant writing or should I provide qualifications for a subconsultant that specializes in grant writing?

A: Regarding your question of grant writer, you will want to identify who that is whether it is an employee, subcontractor, or partner and state their qualification etc. and any track record of success.

Q: Regarding the original signatures required, is this for all 4 copies with wet signature or just 1 "original" and 3 copies?

A: Just one original signed submittal with the remainder being copies of the original.

Q: On PDF page 8 (A-6) under Part II 2.2 A. (2): The RFQ asks for vendor identification information, specifically asking for an identification number. Can you explain what the identification number refers to?

A: This will refer to your Federal Tax ID Number

Q: On PDF page 8 (A-6) under Part II 2.2 A. (3): The RFQ asks for "documentation that supports the Vendor's authority to provide services in Arizona." Is this referring to our AZ Corp commission number (provided in Vendor form) and/or our firm's engineering registration with the Arizona Board of registration, or something else?

A: This will refer to the Arizona Corporation Commission Number.

PACE acknowledges receipt of the addendum.

Signature: 
James Matthews, PE – Sr. Vice President – Environmental Water Division

G

APPENDICES



VENDOR INFORMATION FORM

SECTION A**PUBLIC WORKS DEPARTMENT****PART IV. VENDOR INFORMATION FORM**

By submitting a State of Qualifications, the submitting Vendor certifies that it has reviewed the administrative information and draft of the Professional Services Agreement's terms and conditions and, if awarded the Agreement, agrees to be bound thereto.

Pacific Advanced Civil Engineering, Inc. (PACE)
VENDOR SUBMITTING SOQ

33-0265538
FEDERAL TAX ID NUMBER

James Matthews - Vice President, Environmental Water Division
PRINTED NAME AND TITLE


AUTHORIZED SIGNATURE

8723 E. Via de Commercio, #A-204
ADDRESS

(480) 991-3595 (480) 751-1810
TELEPHONE FAX #

Scottsdale AZ 85258
CITY STATE ZIP

1/17/24
DATE

www.pacewater.com
WEBSITE

jmatthews@pacewater.com
E-MAIL

F00403244
ARIZONA CORPORATION COMMISSION FILE NO.

SMALL, MINORITY, DISADVANTAGED, AND WOMEN-OWNED BUSINESS ENTERPRISES (check appropriate item(s):

- ☐ Small Business Enterprise (SBE)
☐ Minority Business Enterprise (MBE)
☐ Disadvantaged Business Enterprise (DBE)
☐ Women-Owned Business Enterprise (WBE)

Has the Vendor been certified by any jurisdiction in Arizona as a minority or woman-owned business enterprise?

SECTION A**PUBLIC WORKS DEPARTMENT**

If yes, please provide details and documentation of the certification.

RESUMES, LICENSES, AND CERTIFICATIONS



project manager

Taylor B. Pierce, PE

EDUCATION

BS / Civil Engineering
Arizona State University - 2012
Magna Cum Laude

YEARS OF EXPERIENCE

13 years
With others more than 2 years

REGISTRATIONS

Professional Engineer / AZ – 2019 / 70097
Professional Engineer / CA – 2015 / 84580
Professional Engineer / CO – 2017 / 52801
Professional Engineer / KS – 2018 / 26632
Water Treatment Operator T2
California (2016/ 38811)
Wastewater Treatment Operator
Grade 4 Arizona (2022/ OP048247)

AFFILIATIONS

Chi Epsilon – Honor Society
American Public Works Association (APWA)
AZ Water

Taylor Pierce has Civil Engineering experience spanning back to 2011. His experience includes design of wastewater treatment plants, sewer / potable / reclaimed pump stations, water treatment and storage design. Mr. Pierce has developed several equipment performance-based equipment specifications for process equipment selection prior to design, and the creation of operation and maintenance manuals for several wastewater and water conveyance and treatment systems and facilities. His construction administration responsibilities include observation and inspection of field work to ensure general compliance with the design. Mr. Pierce is adept in coordinating project plans, specifications, and reports with multiple consultants to obtain an efficient buildable and operable system. He is proficient in AutoCAD, as well as familiar with construction estimating and project scheduling.

RELATED EXPERIENCE

Chino Valley WRF Capacity and Expansion Evaluation – Chino Valley, AZ

Mr. Pierce served as Project Engineer for the evaluation of the Town of Chino Valley's Water Reclamation Facility (CVWRF) which treats raw wastewater collected from the Town of Chino Valley, Arizona. Although the CVWRF was satisfying the current permit requirements, the Town recognized a risk of violation with current flow conditions due to daily periods of high inflow and operation at or above industry standard, occasionally reaching 80% of the 0.5 MGD design capacity. As a result, the biological loading rates consistently exceeded the design loading rates for the facility and as such, the secondary treatment process struggled to treat to the permitted limits for Total Nitrogen. PACE performed numerous evaluations, and based on the results of the hydraulic and biological capacity studies, recommended the following minimum improvements across multiple proposed alternatives for flow / load equalization or additional hydraulic and biological capacity to meet current and near-term conditions: add an automated MicroC dosing system at the RAS return to the Anoxic Basins, replace the existing UV system with a new low-pressure high-output inline UV disinfection system, and install an additional sludge dewatering system to provide more dewatering capacity for normal operating conditions and redundancy to accommodate mechanical failures in the system.



Winslow Wastewater Treatment Plant Renovations – Winslow, AZ

Mr. Pierce served as the project field engineer during the upgrades to the Winslow WWTP. PACE oversaw the evaluation of existing facilities and analyzed whether the projected growth was better served through improvement of the existing facility or the design and construction of a new treatment facility, and developed a facility phasing plan used to implement the recommended upgrades to the existing plant. Through interviews with operating staff, detailed site visits, and careful analysis of available operating data, PACE identified options that reduced current O&M costs, reduced capital improvement costs, and improved effluent quality without triggering regulatory delays due to existing permits.

BDWID Water System Improvements – Bouse, AZ

Mr. Pierce is serving as the Project Manager for the Bouse Domestic Water Improvement District (BDWID) Water System Improvements. PACE provided planning, evaluation and preliminary engineering services to obtain USDA-RD funding for the system improvements. The USDA-RD PER explored distribution lines, new supply well, treatment processes, plant site, new water meters, adding sufficient water storage. The USDA-RD

PROJECT MANAGER – Taylor B. Pierce, PE

RELATED EXPERIENCE CONT.

has issued a funding package and the project is moving forward to the design phase.

Jerome WWTP Improvements & Sewer Line Extension – Jerome, AZ

Mr. Pierce is serving as the Project Manager for the Jerome WWTP Improvements & Sewer Line Extension project. The Jerome WWTP is a tertiary treatment facility that is experiencing exceedances of ammonia impact ratio (AIR) as well as some random exceedances for total copper. The existing sewer lines are in dire need of improvements as they have passed their useful life and many are exposed, or under existing structures. The Town pursued and received USDA funding. PACE completed the USDA Preliminary Engineering Report (PER) process to review alternatives and make a recommendation based on 20-year life cycle cost analysis. PACE has been awarded the contract for the design, bidding, construction and post construction services for the completion of these improvements. Improvements will include installation of 2,400 LF of new 10" HDPE gravity sewer pipe, 5 new 48" Manholes, grading of 2,000 LF of new site access roadway, complete flood impact analysis of treatment plant site, install new mechanical screen, a new 90,000 GPD SBR treatment plant and aerobic sludge storage tank, a new dewatering press, a new liquid chlorine system, and providing maintenance access to constructed wetlands.



Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Pierce is serving as the Project Manager for the construction phase of this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-solids processing facility to handle solids processing for multiple treatment plants within the regional area.

San Luis East Wastewater Treatment Plant – San Luis, AZ

Mr. Pierce is serving as the Project Engineer for the San Luis East Wastewater Treatment Plant. PACE was charged with providing engineering services to the City of San Luis for miscellaneous improvements to its existing facility. A PACE evaluation recommended improvements include headworks capacity and redundancy improvements, Grading and Site Improvements, and Effluent Flow Meter and Chlorine Contact Basin Improvements. Additionally, Consultant shall perform a preliminary evaluation of the plant expansion to 4.0 MGD. The plant expansion evaluation will be considered in 3 phases in 1 MGD increments with an alternate to increase from 2.0 MGD to 4.0MGD as a cost comparison. The purpose of these evaluations is to provide the City with a planning document that will assist the City with any future development treatment expansion requirements.

Home / 66052 / 70097

70097

First Name Taylor

Last Name Pierce

License Status

Active

Discipline

ENGINEER/CIVIL

Initial Registration Date 27 Sep 2019

Expiration Date 31 Dec 2025

Address Line 1

8723 E Via de Commericia, A-204

City Scottsdale

State Arizona

Zip 85258

Phone 602-540-2727



principal/ qa/qc

James A. Matthews, PE

EDUCATION

BS / Civil Engineering
San Diego State University - 1994

YEARS OF EXPERIENCE

31 years
Joined PACE in 1994
With others more than 2 years

REGISTRATIONS

Professional Engineer / AZ – 1999 / 34090
Professional Engineer / CA – 1997 / C57446
Professional Engineer / CO – 2018 / 0054243
Professional Engineer / FL – 2009 / 69722
Professional Engineer / HI – 2009 / 13718
Professional Engineer / ID – 2004 / 11229
Professional Engineer / NM – 2004 / 16491
Professional Engineer / TX – 2018 / 132370
Professional Engineer / UT – 2020 / 11893246-2202
Professional Engineer / VA – 2005 / 040716
NCEES 18-931-54
Wastewater Treatment Operator Certification:
1997 / WW023812

AFFILIATIONS

American Water Works Association (AWWA)
Water Environment Federation (WEF)

PUBLICATIONS

EPA's Small Flows Quarterly:
"Hybrid Sequencing Batch Reactors"

Santa Margarita Water District: "Advanced
Processes for Water Reuse"

City of Lathrop:
Title 22 Recycled Water Training Program

PEARL Education Program:
Electrical Power and Control Systems

James Matthews is highly regarded in the water, wastewater, recycled water, and stormwater industries for his tremendous wealth of practical knowledge and ability to use old and new technologies, hands-on experience, and research to produce value for his clients and their projects. Mr. Matthews has created designs for a multitude of award-winning projects, saving capital and operation costs, reducing construction schedules, and minimizing operation and maintenance needs on reservoirs, pump stations, and water & wastewater treatment facilities, by implementing creative ideas and concepts.

As both a licensed engineer and wastewater treatment operator, Mr. Matthews is a technical expert in infrastructure engineering design, construction, and operations. He has particular experience reviewing, troubleshooting, and renovation on over 250 projects in the US, Canada, and Central America.

However, his expertise is not limited to just water resources; having a wealth of knowledge in electrical, controls, and instrumentation. He has personally fabricated, programmed, and installed a multitude of custom control systems, which included PLC/PAC programming, radio telemetry, and Supervisory Control and Data Acquisition (SCADA) systems for numerous water, wastewater and co-generation projects.

RELATED EXPERIENCE

Chino Valley WRF Capacity and Expansion Evaluation – Chino Valley, AZ

Mr. Matthews served as Principal/Consulting Engineer for the evaluation of the Town of Chino Valley's Water Reclamation Facility (CVWRF) which treats raw wastewater collected from the Town of Chino Valley, Arizona. Although the CVWRF was satisfying the current permit requirements, the Town recognized a risk of violation with current flow conditions due to daily periods of high inflow and operation at or above industry standard, occasionally reaching 80% of the 0.5 MGD design capacity. As a result, the biological loading rates consistently exceeded the design loading rates for the facility and as such, the secondary treatment process struggled to treat to the permitted limits for Total Nitrogen. PACE performed numerous evaluations, and based on the results of the hydraulic and biological capacity studies, recommended the following minimum improvements across multiple proposed alternatives for flow / load equalization or additional hydraulic and biological capacity to meet current and near-term conditions: add an automated MicroC dosing system at the RAS return to the Anoxic Basins, replace the existing UV system with a new low-pressure high-output inline UV disinfection system, and install an additional sludge dewatering system to provide more dewatering capacity for normal operating conditions and redundancy to accommodate mechanical failures in the system.

Winslow Wastewater Treatment Plant Renovations – Winslow, AZ

PACE performed an evaluation of the deficiencies of the City of Winslow's WWTP, which was plagued by operational issues, making the effective treatment capacity roughly half of its design capacity of 2.2 MGD. Mr. Matthews served as the Principal / QA/QC, and led the Instrumentation and Controls upgrades. He provided key input in the development of a Process, Efficiency, and Alternative Analysis Evaluation, to identify several major process deficiencies, as well as proposed improvements for each that preserved as much of the existing facility that was practical. Mr. Matthews

PRINCIPAL/ QA/QC – James A. Matthews, PE

RELATED EXPERIENCE CONT.

recommended numerous renovations to these processes including the lift station, headworks, flow equalization basin, oxidation ditches, filters, UV disinfection system, effluent pump station, sludge dewatering process and the SCADA/control system. The plant upgrades also included the replacement of its clarifiers and headworks, modifications to its oxidation ditch with a new aeration and blower system, and a complete overhaul of the plant's support and control infrastructure components.



Quartzsite Wastewater Treatment Plant Evaluation and Expansion – Quartzsite, AZ

Mr. Matthews served as the QA/QC Principal Engineer to increase the Quartzsite WWTP capacity from 0.45 MGD to 0.90 MGD. Mr. Matthews provided an in-depth evaluation of the proposed SBR expansion and the existing SBR system, along with all the other existing unit processes. A new second sequential batch reactor (SBR) basin was designed to effectively treat its highly seasonal wastewater flow with better day-to-day treatment performance using significantly less energy.



Tuolumne Utilities District Sonora Regional WWTP Upgrades – Sonora, CA

The Sonora Regional Wastewater Treatment Facility (SRWWTF) owned by Tuolumne Utilities District was constructed in 1974 and permitted to handle 2.6 MGD (million gallons per day) average dry weather flow rate. This facility also receives septage from the Tuolumne County. In recent years, the treated water quality was observed from district operational staff and seasonal variation on biomass growth was noticed on trickling filters. Based on the treatment plant discharge permit, treatment scheme should achieve a 30- day average BOD and TSS (Total suspended solids) levels of less than 30 mg/L. However, summer operations in trickling filters followed by secondary clarification demonstrated a reduction in system performance specifically in BOD and TSS reduction. Mr. Matthews served as the Principal / QA/QC leading to concepts to retrofit the existing open pond into Parkson "Biolac®" basins containing modern swing air diffusers with hydraulic retention times of 24-36 hours, with more efficient waste processing and flexibility with varying inflows. This upgraded Biolac system freeboard in the secondary process allows equalization of flows within the basin, eliminating the need for offline equalization, as well as providing the ability to treat lower flows when the basin level was decreased intentionally. As a result, this new process will enhance processing capacity, performance, efficiency, and optimization.

Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Matthews is serving as the Project Manager for this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-solids processing facility to handle solids processing for multiple treatment plants within the regional area.

Home / 66052 / 34090

34090

First Name James

Last Name Matthews

License Status
Active

Discipline
[ENGINEER/CIVIL](#)

Initial Registration Date 6 Aug 1999

Expiration Date 30 Sep 2026

Address Line 1
17520 Newhope Street

Address Line 2
Suite 200

City Fountain Valley

State California

Zip 92708

Phone [714-481-7300](#)



sr. project engineer

Robert Murphy, PE

EDUCATION

BS / Civil Engineering
California State University, Long Beach - 2007

YEARS OF EXPERIENCE

17 years
Joined PACE in 2006

REGISTRATIONS

Professional Engineer / CA – 2014 / C83207

AFFILIATIONS

Water Environment Federation (WEF)
American Society of Civil Engineers (ASCE)

PUBLICATIONS

Peterson, J.D., Murphy, R.R., Jin, Y., Wang, L., Nessler, M.B., Ikehata, K. (2011) Health effects associated with wastewater treatment, reuse, and disposal. Water Environment Research 83:10, 1853-1875.

Robert Murphy has Civil Engineering experience spanning back to 2006. His experience includes design of wastewater treatment plants, sewer / stormwater / potable / reclaimed pump stations, water treatment and storage design. Mr. Murphy has developed several performance-based equipment specifications for process equipment selection prior to design, and the creation of operation and maintenance manuals for several wastewater and water conveyance and treatment systems and facilities. He has also served as the resident engineer for the construction of several wastewater treatment facilities, water distribution, and sewer collection and pump station projects. Mr. Murphy is adept in coordinating project plans, specifications, and reports with multiple consultants to obtain an efficient buildable and operable system.

RELATED EXPERIENCE

Winslow Wastewater Treatment Plant Renovations – Winslow, AZ

Mr. Murphy served as the Project Engineer for the Winslow WWTP renovation project and provided process, mechanical, and civil design. PACE identified options that will reduce current O&M costs, reduce capital improvement costs, and improve effluent quality without triggering regulatory delays due to existing permits. The plant upgrades included the replacement of its clarifiers and headworks, modifications to its oxidation ditch with a new aeration and blower system, and a complete overhaul of the plant's support and control infrastructure components.

Tuolumne Utilities District Sonora Regional WWTP Upgrades – Sonora, CA

Mr. Murphy served as the Sr. Project Engineer working on concepts to retrofit the existing open pond into Parkson "Biolac®" basins containing modern swing air diffusers with hydraulic retention times of 24-36 hours, with more efficient waste processing and flexibility with varying inflows. This upgraded Biolac system freeboard in the secondary process allows equalization of flows within the basin, eliminating the need for offline equalization, as well as providing the ability to treat lower flows when the basin level was decreased intentionally. As a result, this new process will enhance processing capacity, performance, efficiency, and optimization.

Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Murphy is serving as the Sr. Project Manager for the construction phase of this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-



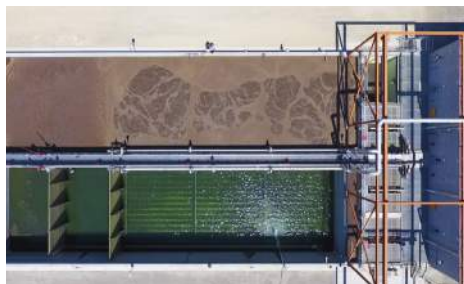
SR. PROJECT ENGINEER – Robert Murphy, PE

RELATED EXPERIENCE CONT.

solids processing facility to handle solids processing for multiple treatment plants within the regional area.

Mountain House Water Reclamation Facility Expansion Phase III – Mountain House, CA

Mr. Murphy is currently serving as the Sr. Project Engineer for the Phase III expansion from 3.0 MGD to 5.4 MGD average dry weather flow. The expansion converts the secondary treatment process to an MBR. Performance specifications were developed for new high efficiency blowers, and he analyzed and repurposed existing diffusers at the facility.



City of Lathrop Advanced Water Treatment and Recycling Facility Expansion – Lathrop, CA

As Sr. Project Engineer, Mr. Murphy provided design services for the expansion of the Lathrop Consolidated Treatment Facility, an MBR wastewater treatment facility, for the City of Lathrop, California. PACE provided project development, studies, design, and bid and construction administration services for two phases of expansion of the City of Lathrop Consolidated Treatment Facility (CTF), an MBR wastewater treatment facility that treats residential and commercial/industrial sewage flows. Prior to the first expansion, the facility's capacity was 1.0 MGD. The Phase 2 expansion took the capacity to 2.5 MGD, and the Phase 3 capacity currently under design will bring the facility to 4.0 MGD, with several major provisions designed as part of Phase 3 to support the ultimate buildout capacity of 6.0 MGD. Mr. Komor developed a creative approach to the upgrade with a new secondary and MBR treatment system accessed at grade level with an integrated process mechanical design that minimized valving and pumping that improves process treatment simplicity and makes the unit processes visible to operators. The design is straightforward and allowed for ease in facility expansion. The new treatment system process design was based around use of the existing chlorine contact basin (CCB), without having to expand the CCB infrastructure for continued production of Title 22 disinfected tertiary recycled water under the new design flow conditions. This was achieved through a free chlorine contact time revalidation study performed by PACE and approved through the CA DDW.



City of Santa Paula Advanced Water Treatment and Recycling Facility – Santa Paula, CA

The Santa Paula Advanced Water Treatment and Recycling Facility features all-enclosed treatment with a common-wall design and creative redundancy features. The 4.2 MGD MBR treatment facility ensures a neighbor-friendly facility and the treated effluent meets California's stringent Title 22 effluent requirements with 0.2 NTU turbidity allowing groundwater recharge. Mr. Murphy served as the Project Engineer for the design of this facility which includes a 17 MGD influent lift station, twin progressive coarse-grit-fine screening headworks, two-stage surge attenuation basins, three activated sludge - biological nutrient removal trains, six hollow-fiber membrane separation trains, and a National Water Research Institute (NWRI) compliant UV disinfection system. The facility also features three 200 HP, five 100 HP, and three 75 HP Aerzen air-bearing turbo blower units and ultra-fine bubble aeration, which reduced the overall energy consumption by 15-20%.

Adelanto Wastewater Treatment Plant Upgrades – Adelanto, CA

Mr. Murphy was the Project Engineer for the City of Adelanto WWTP Improvement Plan and provided process, mechanical, and civil design. The WWTP receives an average flow of 1.8 MGD, of which only 0.5 MGD was able to be treated prior to the upgrades. PACE evaluated the existing facility and recommended new infrastructure and rehabilitation of the existing systems to not only regain the original plant capacity, but to increase the rated capacity to 4.0 MGD. New plant infrastructure includes screening and washing systems in the headworks, three 200 HP Aerzen air-bearing turbo blowers and new aeration equipment in the existing secondary basins, two new 70' diameter circular clarifiers, a RAS/WAS pump station, and new internal recycle pumping on the biological process. Modifications were made to the existing effluent filters and chlorine contact basin to produce full Title 22 compliant recycled water. Improvements were also made to the solids handling to reduce cake volumes and improve dewatering performance.

BOARD FOR PROFESSIONAL ENGINEERS,
LAND SURVEYORS, AND GEOLOGISTS
LICENSING DETAILS FOR: 83207

NAME: MURPHY, ROBERT RUSSELL

LICENSE TYPE: CIVIL ENGINEER

LICENSE STATUS: CLEAR
ADDRESS

630 W KNEPP AVE
FULLERTON CA 92832
ORANGE COUNTY

ISSUANCE DATE

DECEMBER 17, 2014

EXPIRATION DATE

MARCH 31, 2025

CURRENT DATE / TIME

JANUARY 3, 2024
1:12:35 PM



sr. cad designer

Thomas Gutierrez

EDUCATION

AA / Applied Science, Computer Aided Drafting
Technology ITT Technical Institute - 1994

YEARS OF EXPERIENCE

29 years
Joined PACE in 2001
With others more than 7 years

Thomas Gutierrez has more than 27 years of experience in design and preparation of mechanical plans, sections and details for engineered construction documents within the wastewater and water industry. He has in-depth knowledge of mechanical systems layout, mechanical assemblies, fittings, valving, pipe materials and ratings, site grading, drainage, and utility plan/profile design (pressure and gravity systems). Mr. Gutierrez also has in-depth experience with design of mechanical 3D models of wastewater treatment plants for construction drawings. His 3D design and modeling experience includes design and draft BIM-ready civil 3D pipe networks, surface models, grading and basic corridors for earthwork calculations and cross sections, process piping for complete plant layouts, and mechanical process equipment (i.e. blowers, pumps, etc.). Mr. Gutierrez is an advanced user of Autodesk AutoCAD, Civil 3D, and MEP. He has also has the responsibility of directing CAD staff and engineers to ensure project documents are accurate, professional and meet project goals. He is responsible for communicating with engineers and production staff to ensure all needs are met, this includes support, training and solving critical task obstacles.

RELATED EXPERIENCE

Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Gutierrez is serving as the Sr. CAD Designer for this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-solids processing facility to handle solids processing for multiple treatment plants within the regional area.



Palm Valley Water Reclamation Facility – Litchfield Park, AZ

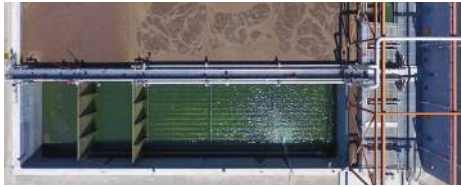
Mr. Gutierrez was Sr. CAD Designer for the design of 4.1 MGD (expandable to 8.2 MGD) water reclamation facility for the Litchfield Park Service Co (LPSCo). The DBO approach used on the project allowed the utility to implement ADEQ Class A+ treatment including a peak 24 MGD sewer lift station in less than 18 months from start design to construction completion at 30% less cost than constructing an expansion to the City of Goodyear's existing treatment plant. The facility features advanced biological nutrient removal, Aqua-disk filtration, UV disinfection and an Auto Thermophilic Aerobic Digestion (ATAD) process for EPA Class A bio-solids. Mr. Matthews was responsible for all engineering



SR. CAD DESIGNER – Thomas Gutierrez

RELATED EXPERIENCE CONT.

aspects of the project including design, construction services, start-up assistance and permitting of the facility which now treats an excess of 4.0 MGD for direct groundwater recharge.



City of Lathrop Advanced Water Treatment and Recycling Facility Expansion – City of Lathrop, CA

Mr. Gutierrez prepared the design and construction documents for the expansion of the Lathrop Consolidated Treatment Facility, an MBR wastewater treatment facility, for the City of Lathrop, CA. Mr. Gutierrez led all CAD design and oversaw the team producing all design plans.



Show Low Wastewater Treatment Plant Evaluation and Expansion – Show Low, AZ

The City of Show Low commissioned PACE to evaluate, design and assist in implementing the most appropriate and cost effective solutions to upgrade and expand the City's existing WWTP. The new WWTP utilizes an Extended Aeration Activated Sludge (EAAS) process to produce effluent quality that can meet AZ Title 18 BADCT effluent limits for Total Nitrogen (TN) of <10 mg/L. Since the construction was completed, the facility has consistently produced effluent with TN level of less than 3 mg/L (and at times <1 mg/L). In addition to the new treatment process, a key component to meeting and maintaining consistent effluent quality is the WWTP process control. Mr. Gutierrez served as the Sr. CAD Designer for the design of the Show Low WWTP Upgrades.

Sundance Water Reclamation Facility – Buckeye, AZ

Mr. Gutierrez was the Sr. CAD Designer for the design services under a Design-Build-Operate (DBO) contract for a WRF for the Sundance residential master-planned community. The facility was constructed in two phases. Phase 1, with a 1.2 MGD capacity provided advanced biological treatment and producing Class A+ effluent for reuse and remained in service during the construction of the Phase 2 expansion. Phase 2 expanded the capacity to 3.4 MGD. A design highlight included the reduction of traditional SBR sludge output by 50 percent.



Santa Monica Sustainable Water Infrastructure Project (SWIP) Advanced Water Recycling Facility – Santa Monica, CA

Mr. Gutierrez served as Sr. CAD Designer, overseeing the CAD plan production of the Advanced Water Treatment Facility (AWTF). The AWTF treats a combination of raw wastewater and harvested stormwater, producing 1.0 MGD of purified water for groundwater augmentation. The facility is one of the first to take in raw wastewater, fully oxidize the stream via biological treatment, and provide the pathogen reduction requirements to meet California Title 22 regulations for Indirect Potable Reuse (IPR) of 12 log virus, 10 log cryptosporidium, and 10 log giardia all within one facility. The treatment process consists of a five-barrier stream: membrane bioreactor (MBR), cartridge filtration, reverse osmosis (RO), ultraviolet advanced oxidation process (UVAOP), and chlorine disinfection.

Santa Paula Water Recycling Facility – Santa Paula, CA

Mr. Gutierrez served as Sr. CAD Designer for the design of the Santa Paula Water Recycling Facility (WRF). The existing wastewater treatment plant had reached the end of its service life and was no longer in compliance with current regulatory requirements. The City has replaced the existing facility with a new WRF and percolation basin effluent disposal system. Mr. Gutierrez coordinated the CAD plan set of the civil, grading, mechanical, and utility plans for the duration of the project. The Santa Paula WRF is designed as a Membrane Bio Reactor (MBR) with an initial capacity of 3.4 MGD and readily expandable to 4.2 MGD to meet wastewater flow projections for the year 2025. The Santa Paula WRF is the largest Koch MBR facility in the United States. It is also the first DBOF municipal WRF in California.





sr. electrical engineer

Bashar Ishaq, PE, MBA, PMP

EDUCATION

BS / Electrical Engineering
University West - 2014

MS / Business Administration
Hult International Business School - 2020

MS / Business Analytics
Hult International Business School - 2021

YEARS OF EXPERIENCE

9 years
Joined PACE in 2023
With others more than 8 years

REGISTRATIONS

Professional Electrical Engineer / CA – 24590
ICC Commercial Electrical Inspector – 9916237
Project Management Professional – 3010684
OSHA 10
OSHA Confined Spaces
Safe Electrical Work Practices (NFPA)
NFPA 70: National Electrical Code

Bashar Ishaq is an internationally established Electrical Engineer with 8+ years of hands-on experience in global industrial plant facilities. Bashar's key areas of experience are: power distribution design, project planning, and final commissioning in wastewater & petrochemical plants. His unique expertise includes electrical design for direct-on-line low voltage motors, UPS as a key client for electrical design systems (30-60kVA) & low-voltage substations. Additionally, he specializes in developing arc flash and coordination studies. Recognized as a reliable and trustworthy SME, Bashar has been granted direct access to customer facilities, where he continues to hone his skills as a Field Engineer by directly implementing his electrical designs for clients, resulting in significant project cost & time savings. Bashar has also served as Project Engineer for a \$40 million multi-disciplinary project, with primary responsibilities including managing cross-functional stakeholders, and leading the development of a needs assessment report with a team of engineers. In addition to being a strategic problem-solver, Bashar prides himself on his vast knowledge of safe working practices & potential hazards in operating plant environment and construction.

RELATED EXPERIENCE

Vallejo Waste Treatment Plant System Upgrades Project for the Arc Flash and Coordination Study – Vallejo, CA

Mr. Ishaq developed an arc flash, short circuit, and protective device coordination study for the West County Wastewater Plant. The data in the study was 100% verified in the field for the 12.5 MGD WWTP. The scope of the study included data collection in the field, modeling in SKM, confirmation of calculations, and writing the report of findings and recommendations.

WQCF Phase-3A – City of Patterson CA

Mr. Ishaq designed the power distribution system and the control system for the expansion of a wastewater treatment plant. The design included a new power utility service (480V, 1600A), new low-voltage switchgear, a low-voltage motor control center, 20+ motors, and other miscellaneous systems. The design and specified the requirements for a standby diesel generator with an automatic transfer switch (ATS). Additionally, Mr. Ishaq interfaced with the power utility and completed the application for the new service with all the required documents per the utility requirements on behalf of the client.

System Upgrades Project for the Moccasin Powerhouse – Moccasin, CA

The powerhouse has two hydroelectric generators rated 57.5 MVA, and two generator step-up autotransformers rated 72 MVA, 230/115 kV-13.8 kV, providing electricity through four transmission lines. This multi-disciplinary project's goal is to upgrade the balance of the plant (supporting/auxiliary) systems/equipment for the City & County of San Francisco. The project commenced in 2021 and is expected to be commissioned in 2027. Mr. Ishaq served as Assistant Project Engineer during the initial project planning phase & needs assessment. Responsibilities included leading meetings, conducting site visits, spearheading stakeholder collaboration, and developing a needs assessment report with a cross-functional team of engineers. Mr. Ishaq was also responsible for upgrading 13.8 kV switchgear, seven low-voltage MCCs, DC auxiliary system, two excitation systems, one main control board, grid protection and control, one cooling water system, two HVAC systems, and two fire suppression systems.

SR. ELECTRICAL ENGINEER – Bashar Ishaq, PE, MBA, PMP

RELATED EXPERIENCE CONT.

North Shore Pump Station Wet Weather Improvements – San Francisco, CA

This project is replacing four (4) dry weather pumps with larger capacity units so that they are capable of pumping redundant capacity during wet weather. The project also includes upgrades to the motor control centers (MCCs) and distributed control system (DCS). Mr. Ishaq provided field inspection support to verify contract document and code compliance during construction, start-up & commissioning phases, and witnessed performance field tests to ensure that tests were carried out per NETA, National Electrical Code, and the contract requirements.

Oceanside Water Pollution Control Plant WW-639 Digester Gas Utilization Upgrades – San Francisco, CA

The objective of this project was to sequentially remove, replace, and upgrade existing deficient & deteriorated digester biogas internal combustion cogeneration systems. Mr. Ishaq provided support during construction, start-up & commissioning phases, and witnessed performance field tests to ensure that tests were carried out per national code & contract requirements. Additional construction management duties included: key participant in construction meetings, review & approval of force account reports, and evaluation of change order requests proposed by contractors. The electrical work for the project included electrical power system upgrades, new motor control center & electrical substation, lighting system upgrades, packaged standby diesel engine generator assembly, diesel fuel leak monitoring system, modification of fixed gas monitoring system, instrumentation, and controls work. Serving as Electrical Inspector, Mr. Ishaq's specific responsibilities for this project included field inspection of electrical equipment, including a 1000 kVA diesel generator, 1600 A distribution board, 10 low-voltage motors, and other electrical equipment.

Reformulated Esso Diesel Fuel (RFD) Project – Norway

The objective of this \$90 million project was to add a new unit - RFD, to enable an oil refinery to extract more oil, leading to increased revenues. The RFD utilized advanced technology to refine heavy crude oil and included installation of a new oil refining tower in the refinery. As the Electrical Field Engineer, Mr. Ishaq was responsible for developing test plans, witnessing field testing, and coordinating contractors & electricians for all project associated motors. Test plans included installing required software in the motor starters, in conjunction with relay settings. Project components included: 16 LV motors (400V) & 4 LV (690V) motors that were installed in the refinery, either controlled by DOL with Simocode (Siemens intelligent motor controls) or by VFD (ABB ACS880), electrical heat trace panel, emergency lighting panel, power panel, and MOV (motor-operated valve).

Replacement of Esso Truck Loading Switchgear – Norway

Mr. Ishaq served as an Electrical Lead Engineer & Project Engineer for this project, which included replacing an existing low-voltage switchgear inside a refinery. The switchgear was in a hazardous zone, resulting in all new electrical equipment requiring pre-approval for the zone in accordance with local standards & regulations. Responsible for developing electrical specifications, reviewing electrical design, vendor coordination, and cross-functional management of engineers from other departments. Switchgear had two incoming feeders, 690V; downstream loads included motors, lighting, and power to control equipment. The project's primary challenge was how to utilize outdated & inaccurate documentation for existing switchgear. Mr. Ishaq worked in collaboration with one electrician to validate/update the electrical & control documentation in the field (included 45 motor starters, one lighting panel, and one power panel).

**ISHAQ, BASHAR MATE**

LICENSE NUMBER: 24590 LICENSE TYPE: ELECTRICAL ENGINEER

LICENSE STATUS: CLEAR  EXPIRATION DATE: JUNE 30, 2025

SECONDARY STATUS: N/A

CITY: SAN FRANCISCO STATE: CALIFORNIA COUNTY: SAN FRANCISCO ZIP: 94102



sr. instrumentation & controls specialist

Ernesto Camarena

EDUCATION

AA / Applied Science, Computer Aided Drafting,
ITT Technical Institute, West Covina, CA - 1993

YEARS OF EXPERIENCE

28 years
Joined PACE in 2005

SEMINARS

TESCO New Plant and SCADA Security Regulations,
Cell Modem Telemetry via 4G, High Voltage Safety
Codes
Temecula, 2010

Sage Clear SCADA and SCADAPak Certification
Los Angeles, 2009

Ernesto Camarena has automation experience spanning back to 1994. His areas of expertise include controls and automation design for water and wastewater treatment, wells, pump stations, and storage reservoirs. Mr. Camarena's responsibilities include preparing process and instrumentation design, process flow schematics, conceptual design exhibits including termination diagrams, and QA/ QC for the electrical power and controls design. Mr. Camarena is a valuable and unique designer and startup expert of water infrastructure due to his extensive background in hands-on implementation of projects, including panel building, programming, troubleshooting, and installation in the field during construction and operations. Because of his experience in performing water and wastewater related controls designs and installations, Mr. Camarena also is well-versed on water/sewer transport and treatment processes, which enable him to provide complete and accurate process and instrumentation diagrams.

RELATED EXPERIENCE

Winslow Wastewater Treatment Plant Renovations – Winslow, AZ

Mr. Camarena served as the Sr. Instrumentation and Controls Specialist for the Winslow WWTP renovation project. PACE developed a facility phasing plan that will be used to implement any recommended upgrades to the existing plant. PACE identified options that will reduce current O&M costs, reduce capital improvement costs, and improve effluent quality without triggering regulatory delays due to existing permits.

Sarival Water Reclamation Facility (WRF) - Goodyear, AZ

Mr. Camarena is serving as the Sr. Instrumentation and Controls Specialist for this new facility which will treat an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD, providing support to an existing built out regional WRF for current loading and future flow conditions. The facility will use a MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water. The treatment process will consist of an advanced and integrated influent headworks and grit removal and washing system, followed by the advanced Closed Loop Reactor (CLR) secondary treatment process trains, coupled to four membrane separation trains and followed by the sodium hypochlorite disinfection process and chlorine contact basins and effluent reclamation pump station. Effluent from the WRF is designed to go to two discharge points – one sharing a discharge point to an aquifer with another regional facility and the other to a local irrigation district's canal for irrigation use. At full buildout, the design of the WRF will provide an average daily flow capacity of up to eight MGD with a maximum daily capacity of 12 MGD. Future phases of the facility will also introduce an advanced bio-solids processing facility to handle solids processing for multiple treatment plants within the regional area.



Somerton Wastewater Treatment Plant Phase III Expansion – Somerton, AZ

Mr. Camarena provided complete process and instrumentation diagrams for the City of Somerton's wastewater treatment facility expansion from 0.8 MGD to 1.6 MGD. The previous plant was a 0.8 MGD biological aeration process plant using SBR technology. PACE value engineered the original plan which called for 0.4 MGD expansion at a \$6.2 million budget. PACE modified the original plan to utilize the 4-stage Continuous Flow

SR. INSTRUMENTATION & CONTROLS SPECIALIST – Ernesto Camarena

RELATED EXPERIENCE CONT.

Biological Nutrient Removal (BNR) Process and will be designed to have a flow capacity of 1.8 MGD when completed for the same budget, producing the following benefits: an additional 1.0 MGD of capacity instead of 0.4 MGD, creating 1.0 MGD at under \$7/gallon versus the original 0.4 MGD at over \$15/gallon, and reduced land use by conversion of the facility's process and using existing tankage instead of duplicating and constructing four new SBR tanks.



Show Low Wastewater Treatment Plant Upgrades – Show Low, AZ

The City of Show Low commissioned PACE to evaluate, design and assist in implementing the most appropriate and cost effective solutions to upgrade and expand the City's existing WWTP. The new WWTP utilizes an Extended Aeration Activated Sludge (EAAS) process to produce effluent quality that can meet AZ Title 18 BADCT effluent limits for Total Nitrogen (TN) of <10 mg/L. Since the construction was completed, the facility has consistently produced effluent with TN level of less than 3 mg/L (and at times <1 mg/L). In addition to the new treatment process, a key component to meeting and maintaining consistent effluent quality is the WWTP process control. Mr. Camarena served as the Instrumentation & Controls Specialist to program and integrate the PLC controls and SCADA for the WWTP. Since the WWTP new process requires constant flow and level control in order to maintain proper treatment, a network of PLCs, field instrumentation and SCADA was implemented that allows for tight controls of the process with minimum onsite supervision. PACE's ability to provide both process design and engineering, along with the ability to provide controls integration has made the Show Low WWTP Upgrades Project a great success for the City.

Sierra Vista Environmental Operations Park (EOP) – Sierra Vista, AZ

Mr. Camarena provided complete process and instrumentation diagrams for the design of a 4 MGD multi-cell advanced secondary lagoon treatment system. He coordinated the general location of all equipment and instrumentation with the electrical designer, and provided quality analysis and quality control of the entire set of complete electrical plans. Mr. Camarena also provided specifications for hardware and equipment, and reviewed and approved construction submittals.



Santa Monica Sustainable Water Infrastructure Project (SWIP) Advanced Water Treatment Facility – Santa Monica, CA

The Santa Monica Water Infrastructure Project (SWIP) is helping secure the City of Santa Monica's water future by using the City's existing infrastructure and linking together three new distributed water reuse elements into a single cohesive and comprehensive project to harvest, treat, and reuse non-conventional water resources. The SWIP will deliver reliable advanced treated water to be injected into local groundwater basins for indirect potable reuse via aquifer recharge, while meeting the non-potable reuse demands. Mr. Camarena served as the Sr. Instrumentation and Controls Specialist for the design of the Advanced Water Treatment Facility (AWTF) with a capacity of 1.0 MGD through the use of a Membrane Bioreactor-Reverse Osmosis-UV Advanced Oxidation Process to treat municipal wastewater, stormwater, and dry weather runoff to replenish the groundwater aquifer, making the facility an indirect potable reuse system.



construction engineer

Jeremy Foster

EDUCATION

BS / Civil Engineering
Arizona State University - 2019
Cum Laude

American Public Works Association Construction
Management Workshop

YEARS OF EXPERIENCE

12 years
Joined PACE in 2019

AFFILIATIONS

Chi Epsilon – Honor Society

Jeremy Foster has a background in the construction industry with a focus in plumbing. For over 12 years, he has overseen all phases of the construction process through his field work on a variety of projects not only in a support role, but also in a supervisory role. Immediately after graduating, he joined PACE and was placed in a construction management role on the award-winning Quartzsite Wastewater Treatment Plant Improvements project. His construction management responsibilities include construction coordination and scheduling, meeting facilitation, submittal reviews, field observation and other required services to ensure general compliance with the intended design. Additionally, Mr. Foster provides design engineer services to support the PACE Arizona office.

RELATED EXPERIENCE

Quartzsite WWTP Upgrades – Quartzsite, AZ

Mr. Foster served as the Resident Project Representative for the expansion of this existing 0.45 MGD SBR WWTP. The design upgrades included increasing the capacity to 0.9 MGD, improvement of water quality, process redundancy, and reduced operating cost. The challenge of the project was to provide a design that can be implemented within a 7-month window while maintaining treatment without the use of the existing single-basin SBR. Mr. Foster developed a transition plan that converted the existing digester into a temporary SBR, while the existing single-basin SBR was upgraded to a two-basin SBR and equipped with new fine bubble aeration that is coupled with (3) 100 HP high-speed, hybrid screw blowers. The project also included upgrades to the influent lift station, headworks screening, chlorine gas disinfection system, and the onsite reuse pump system. The Quartzsite WWTP was awarded the 2020 APWA Project of the Year Award - Small Cities/ Rural Communities and the 2020 AZ Water Association Treatment Plant of the Year – Small Systems.

Sarival Water Reclamation Facility– Goodyear, AZ

Mr. Foster is serving as Field Engineer for the Sarival Water Reclamation Facility project for construction of site improvements. PACE was a subconsultant for the Sarival WRF Conceptual Design Report (CDR). The CDR laid out a development program for the WRF and a regional bio-solids facility to accommodate the growth of Liberty Utility's western service area. The CDR considered growth projections, flexibility to manage flows between Sarival WRF and Palm Valley WRF, and cost-effective bio-solids management strategies. The design concept developed features expandability from 2.0 MGD to 12.0 MGD average day capacity, fitting within the 6.1-acre designated site where the Sarival Lift Station currently resides and providing flexibility for various effluent reuse alternatives. Currently, PACE is providing design, permitting, and construction services for the new 4.0 MGD WRF.

BDWID Water System Improvements – Bouse, AZ

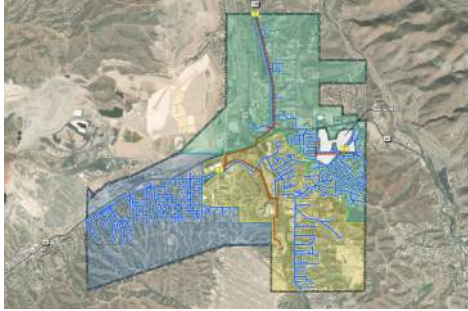
Mr. Foster is serving as a Design Engineer for the Bouse Domestic Water Improvement District (BDWID) Water System Improvements. Bouse Domestic Water Improvement District (BDWID) employed PACE for its groundwater well and treatment system upgrades. PACE completed a Preliminary Engineering Report for the evaluation of required upgrades to assist BDWID in facing issues with its existing potable water system associated with water quality and aging infrastructure. Design has been complete



CONSTRUCTION ENGINEER – Jeremy Foster

RELATED EXPERIENCE CONT.

and upgrades include replacing existing 13,000 LF of 2" water line with 6" piping, installing new drive-by radio read meters, a new 100 gpm adsorption with granular ferric hydroxide arsenic treatment facility, operations building, a new 100gpm (at minimum new groundwater production well, and a new 70,000-gallon storage tank.



Tri-City Regional Sanitary District Phase 1, 2 & 3 Wastewater Collection System & Water Reclamation Facility – Gila County, AZ

Mr. Foster is serving as a Design Engineer for Phases 1, 2 & 3, respectively, of a new regional wastewater system for the Tri-City Regional Sanitary District (TRSD). TRSD encompasses over five square miles of residential, commercial and industrial property in Gila County, AZ. The majority of the homes currently use cesspools and septic systems for wastewater disposal. Over 80% of these systems are functioning below ideal performance and some are completely out-of-service. The proposed project will abandon existing cesspools and septic systems and install an 8-10" sewer pipeline, lift stations, and a new MBR water reclamation facility that will serve approximately 4,200 residents.

Jerome WWTP Improvements & Sewer Line Extension – Jerome, AZ

Mr. Foster is serving as a design Engineer for the Jerome WWTP Improvements & Sewer Line Extension project. The Jerome WWTP is a tertiary treatment facility that is experiencing exceedances of ammonia impact ratio (AIR) as well as some random exceedances for total copper. The existing sewer lines are in dire need of improvements as they have passed their useful life and many are exposed, or under existing structures. The Town pursued and received USDA funding. PACE completed the USDA Preliminary Engineering Report (PER) process to review alternatives and make a recommendation based on 20 year life cycle cost analysis. PACE has been awarded the contract for the design, bidding, construction and post construction services for the completion of these improvements. Improvements will include installation of 2,400 LF of new 10" HDPE gravity sewer pipe, 5 new 48" Manholes, grading of 2,000 LF of new site access roadway, complete flood impact analysis of treatment plant site, install new mechanical screen, a new 90,000 GPD SBR treatment plant and aerobic sludge storage tank, a new dewatering press, a new liquid chlorine system, and providing maintenance access to constructed wetlands.

New Port of Entry Water & Wastewater Services– Douglas, AZ

Mr. Foster served as the Design Engineer for the New Port of Entry Water & Wastewater Services project. The City of Douglas was exploring alternatives for how to provide water and wastewater services to a New Port of Entry. Mr. Foster worked with the City, Border Patrol, and other stakeholders to establish a possible site for new facilities to supply the New Port of Entry. He also assisted in data gathering, development of cost estimates for different alternatives and in presenting findings in the technical report.



Town of Kearny Water Systems Improvement– Kearny, AZ

Mr. Foster is serving as a Design Engineer for the Town of Kearny Water Systems Improvement project. The water system has been experiencing repeated operational failures with its potable water filtration system, which consists of pressured media filtration vessel designed to remove manganese and has a design capacity of 700 gpm. The facility suffers from hydraulic surges and equipment and valve failures that has made the system inoperable for the majority of time since its implementation. Mr. Foster assisted in the gathering of existing data, plant operator and manufacturer of the current system. He also helped in evaluating the current systems deficiencies to conceptualize alternatives, and assisted in the drafting of the technical memorandum.



project coordinator / funding/ permitting

Andrea Jaycox

EDUCATION

AA / General Studies
Paradise Valley Community College

YEARS OF EXPERIENCE

23 years
Joined PACE in 2007

With over 22 years experience in engineering, architecture and construction industries, Mrs. Jaycox has supported projects with PACE for 15 years. She has managed all aspects of project administration for sewer, water, and recycled water systems from project administration and support, contract administration, technical writing, permitting and funding administration/compliance. The majority of the projects have been completed for municipalities and improvement districts in Arizona. She has extensive experience in project management support for multiple projects with numerous simultaneous efforts. She leads funding application and compliance efforts on all Arizona projects, including application content development, required submittals and pay applications throughout the projects with funding entities such as WIFA, USDA, CBDG, USACE and others.

RELATED EXPERIENCE

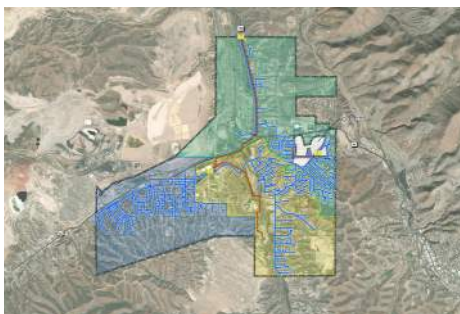
Winslow WWTP Renovations – Winslow, AZ

Mrs. Jaycox served as the Project Coordinator for the evaluation and improvement designs to regain the original plant design capacity of 2.2 MGD. The improvements installed a new combined headworks system consisting of a 6.8 MGD rated, 6mm drum screen with an attached aerated grit chamber and conveyor. The grit removal system consists of an aerated grit chamber installed directly after the drum screen. To promote settling of grit, coarse bubble diffusers installed on one side of the tank promote a spiral mixing pattern where a horizontal screw conveyor moves the collected grit into a centralized hopper. From here an inclined screw conveyor conveys the grit out of the tank for disposal. Mrs. Jaycox coordinated the USDA-RD funding application process, including the development of a Preliminary Engineering Report (PER), which led to an award of \$6.6 million in funding.



Quartzsite WWTP Upgrades – Quartzsite, AZ

Mrs. Jaycox served as the Project Coordinator for the expansion of this existing 0.45 MGD SBR WWTP. The design upgrades included increasing the capacity to 0.9 MGD, improvement of water quality, process redundancy, and reduced operating cost. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has also coordinated all USDA-RD funding activities, helping to secure over \$11M in funding by leading the assembly of a PER, the Environmental Assessment (EA), RD Apply online application and pay applications throughout the project. The Quartzsite WWTP was awarded the 2020 APWA Project of the Year Award -Small Cities/ Rural Communities and the 2020 AZ Water Association Treatment Plant of the Year – Small Systems.



Tri-City Regional Sanitary District Phase I, II & III Wastewater Collection System & Water Reclamation Facility – Gila County, AZ

Mrs. Jaycox served and is serving as the Project Coordinator for Phase I & II, respectively, of a new regional wastewater system for the Tri-City Regional Sanitary District (TRSD). TRSD encompasses over five square miles of residential, commercial and industrial property in Gila County, AZ. The project will abandon existing cesspools and septic systems and install of 8-10" sewer pipeline, lift stations, and a new water reclamation facility that will serve approximately 1,200 residents. Mrs. Jaycox oversees schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has

PROJECT COORDINATOR / FUNDING / PERMITTING – Andrea Jaycox

RELATED EXPERIENCE CONT.

also coordinated all USDA-RD and WIFA funding activities, leading the assembly of two PERs, the EA, RD Apply online applications and pay applications throughout the project, helping to secure nearly \$34M in funding.

Somerton WWTP Phase III Expansion – Somerton, AZ

Mrs. Jaycox served as the Project Coordinator for the City of Somerton's wastewater treatment facility expansion from 0.8 MGD to 1.6 MGD. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has also coordinated all USDA-RD and WIFA funding activities, leading the assembly of a PER, the EA, RD Apply online application and pay applications throughout the project.



Sarival Water Reclamation Facility– Goodyear, AZ

Mrs. Jaycox is serving as a Project Coordinator for permitting of the Sarival Water Reclamation Facility project. Permits included ADEQ APP, AZPDES, AQD. PACE was a subconsultant to PERC Water for the Design-Build of the facility, serving as engineer-of-record and leading the design of an average day flow capacity of 4.0 MGD with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10 MGD. The facility uses an MBR treatment process followed by chlorination disinfection to meet Arizona Department of Environmental Quality Title 18 Class A+ requirements for unrestricted reuse of recycled water.

Valley Vista Sewer Lift Station & Force Main – Somerton, AZ

Mrs. Jaycox served as the Project Coordinator for this USDA-RD funded wastewater collection system project and helped to secure nearly \$1.7M in funding. PACE was engaged by the City of Somerton to provide design services for the decommissioning of a small wastewater treatment plant and lift station, and subsequently for a new lift station and installation of a new sewer collection system that will redirect the flows to the newly upgraded Somerton WWTP. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has also coordinated all USDA-RD funding activities by leading the assembly of a PER, the Environmental Assessment (EA), RD Apply online application and pay applications throughout the project.



Sierra Vista EOP Water Reclamation Facility – Sierra Vista, AZ

Mrs. Jaycox served as the Project Coordinator for the complete design of the facility, including overall project coordination, process evaluation and design, plan development and permitting for the City's Environmental Operations Park (EOP), a 4 MGD multi-cell advanced secondary lagoon treatment system. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She has also coordinated all USDA-RD funding activities by leading the assembly of a PER, the Environmental Assessment (EA), RD Apply online application and pay applications throughout the project. The City of Sierra Vista WWTP was awarded the 2014 APWA Public Works Project of the Year.

Show Low Wastewater Treatment Plant Upgrades – Show Low, AZ

Mrs. Jaycox served as the Project Coordinator on the Show Low Wastewater Treatment Plant Upgrade project, which converted a multi-cell aerated lagoon into a 2.5 MGD Extended Aeration Activated Sludge (EAAS) WWTP, using Parkson's Biolac Treatment Process. Mrs. Jaycox oversaw schedule, budget and project deliverables for the team, including subconsultants, providing detailed tracking and documentation of every element of the project. She also led the permit applications for the project, including ADEQ, AQD, APP, AZPDES, Clean Closure and USACE Jurisdictional Delineation. The Show Low WWTP was awarded the 2018 WaterReuse Award.



BENJAMIN I. TILMAN, RLS

SURVEY MANAGER

PROFESSIONAL REGISTRATION

Registered Land Surveyor
Arizona No. 55698

CERTIFICATIONS

UAS Commercial-level Pilot
Certification
Mine Safety and Health Administration
(MSHA) Certified
BNSF Contractor Safety Certification

EDUCATION

B.B.S. Calvary Bible College
A.A. Yavapai College

EXPERTISE

- ☐ Civil Engineering
- ☐ Drainage Engineering
- ☐ Electrical Engineering
- ☐ Transportation Engineering
- ☐ Wastewater Engineering
- ☐ Water Engineering
- ☒ Survey
- ☒ Construction Management

SUMMARY

Mr. Tilman has 16+ years (all with Civiltec) of experience. His field experience includes topographic and design surveys, flood certification surveys, American Land Title Association (ALTA)/ American Congress of Surveying and Mapping (ACSM) surveys, control network surveys, boundary surveys and construction staking. He is Mine Safety and Health Administration (MSHA), MNSF Contractor Safety and USA Commercial Level Pilot certified. Mr. Tilman serves as party chief in one- or two-man crews for all Civiltec survey needs. He is primarily responsible for all data collection including survey observations, filed photographs, planimetric data, boundary data, and utility data. His experience includes working with Trimble total station and Global Positioning System equipment, and Trimble field data collection software including TGO and TBC. Mr. Tilman closely communicates with the client and scheduling of survey crews, particularly for construction staking projects.

Mr. Tilman's recent project experience includes providing all field surveying services for numerous Resolution Copper Mine Company projects. This has included all phases of survey for landmark environmental cleanup projects like the Tailings Pile rehabilitations, and the survey of wells for the development of a 3-D model of the underground ore body which Resolution Copper Mining will be extracting, as well as boundary surveys to facilitate the land exchanges that Resolution Copper Mining is working out with the federal government. Mr. Tilman also provided design survey and construction staking for drainage projects in Coconino County totaling \$14 million in improvements. He was also responsible for thousands of field observations for the recent runway lengthening and development of new Federal Aviation Administration's instrument procedures at the Prescott Airport.

PROJECT CHINO VALLEY EXPERIENCE

Chino Panels, Town of Chino Valley

Surveyor. This project was a drainage study over the entire area of Chino Valley. This involved using existing control from the Chino Valley static network to set aerial panels around Chino Valley. A significant amount of time was invested communicating with landowners and setting the panel control points.

Central Arizona Static Backbone

Surveyor. Geodetic coordinates for the control were established using Global Positioning System redundant observations and tied to Continuously Operating Reference Stations FST1 (Flagstaff), AZAH (Ashler Hills), and AZPE (Peoria). Comparison of adjusted geodetic coordinates were performed using the Online Positioning User Service from the National Geodetic Survey and results of said comparisons published. Two project combined factors were created for the project due to its length and elevation differences.



BENJAMIN I. TILMAN, RLS

SURVEY MANAGER

Two corresponding project centroids were created. The northerly centroid was defined between Chino Valley and Ash Fork, and the southerly centroid was defined for the area between Chino Valley and Prescott Valley. All field crews were coordinated for a static network control observation survey. Five survey crews occupied points in a time orchestrated fashion to assure redundant observations of multiple points. Data sets were imported and adjusted utilizing 99% confidence limits in Trimble least squares adjustment software.

ADDITIONAL CHINO VALLEY PROJECTS

Home / 55698

55698

First Name Benjamin

Last Name Tilman

License Status

Active

Discipline

LAND SURVEYOR

Initial Registration Date 19 Sep 2011

Expiration Date 31 Dec 2025

Address Line 1

2050 Willow Creek Road

City Prescott

State Arizona

Zip 86301

Phone 928-771-2376



GREGORY BURR, R.G., P.E.
DIRECTOR OF GEOTECHNICAL SERVICES
(928) 744-8700 • G.BURR@WT-US.COM

PROFESSIONAL QUALIFICATIONS

- Strong background in geology and familiarly with local geological conditions.
- Significant experience in geotechnical and materials field and laboratory testing.
- Experience managing and coordinating projects with local government agencies, architects, and general contractors.

PROFESSIONAL HISTORY

- | | |
|---|--------------|
| • Geotechnical Project Manager, WT, Flagstaff, AZ | 2016-Present |
| • Teaching Assistant, Northern Arizona University, AZ | 2014-2016 |
| • Basin Analyst, Petrolog, Ventura, CA | 2013-2014 |

REGISTRATION/CERTIFICATIONS

- Geologist-in-Training 2017
- Registered Geologist (#67873) 2018
- Professional Engineer: Arizona (#79669) 2023

EDUCATION/TRAINING

- | | |
|---|-----------------|
| • M.S. in Geology, Northern Arizona University | Graduated: 2017 |
| • B.S. in Geology, California State University Northridge | Graduated: 2014 |



Relevant Experience

YAN Wastewater Treatment Plant Additions: (WT Ref. Job # 2521JB276)

Job Completion: 2021

The project consisted of five single-story wastewater treatment structures and a MRB skid with plan areas ranging from approximately 400 to 4,000 square feet. On-site pavements and a stormwater retention basin were included as part of the proposed development.

Project Manager: Greg Burr

Senior Engineer: Craig Wiedeman

Job Location: Camp Verde, Arizona

Quartzite Wastewater Line: (WT Ref. Job 3 2521JB182)

Job Completion: 2023

The project consisted of approximately 24,536 linear feet of wastewater line with sixty-one manholes to be installed. The proposed wastewater line was to be a new 8-inch diameter PVC line that runs along Moon Mountain Avenue, Desert Vista Street, Tyson Street, Byeryl Lane, Malapais Lane, Pyramid Street, Camel Street and Saguaro Street. Pipe inverts were assumed to be a maximum of about 10 feet below the lowest existing site grades.

Project Manager: Greg Burr

Senio Engineer; Craig Wiedeman

Job Location: Quartzite, Arizona

Mishongnovi Lagoon: (WT Ref. Job # 2529JB020A)

Job Completion: 2019

The project consisted of a new lagoon site consisting of two treatment cells and one disposal cell. Anticipated cell depths ranged from about 6 to 10 feet, and perimeter embankment fill heights ranged from about 3 to 8 feet.

Home / 67873

67873

First Name	Gregory
Last Name	Burr
License Status	Active
Discipline	GEOLOGIST
Initial Registration Date	2 Nov 2018
Expiration Date	31 Dec 2024
Address Line 1	2400 East Huntington Drive
City	Flagstaff
State	Arizona
Zip	86004
Phone	928-774-8700

79669

First Name	Gregory
Last Name	Burr
License Status	Active
Discipline	ENGINEER/CIVIL
Initial Registration Date	13 Oct 2023
Expiration Date	31 Dec 2026
Address Line 1	2400 E. Huntington Dr
City	Flagstaff
State	Arizona
Zip	86004
Phone	928 774 8700

**YEARS WITH FIRM**

12

EDUCATION

B.S., Civil Engineering, Minor in
Mathematics, Seattle University

PROFESSIONAL REGISTRATIONS

Professional Engineer:
AZ #70374

PROFESSIONAL AFFILIATIONS

SEAoA

JAMES APPELYARD, PE

SENIOR ASSOCIATE | PROJECT MANAGER

James has 12 years of experience as a structural designer with expertise in wastewater collection and treatment system structures. As Project Manager, he will follow the design from beginning to end, with responsibilities including structural design and analysis, calculations and structural details, and construction administration.

RELATED EXPERIENCE**SARIVAL WRF | Goodyear, AZ**

New single story administration building, integrated process mechanical building (with headworks room, blower room, MBR pumping room, and electrical and controls room), a separate integrated process mechanical building (with sludge dewatering room, odor control room/yard, and chemical storage room), secondary biological tank, membrane separation tank, and chlorine contact basin/recycled water pump station.

SHOW LOW WWTP UPGRADES | Show Low, AZ

New headworks structure (parallel channels equipped screens and grit removal), concrete slabs, influent splitter box-precast; RAS/WAS pump station structure, 2 external clarifiers, sludge storage steel tank-foundation design, chlorination concrete structure, new administration and dewatering building.

QUARTZSITE WWTP EXPANSION | Quartzsite, AZ

Expansion of the WWTP included the addition of a new concrete divider wall at existing sequencing batch reactor (SBR) basin, catwalk framing over new divider wall, new wall at perimeter of existing SBR basin, supports for crane, new sludge drying beds (masonry walls and concrete loader ramp slabs), equipment pads on grade, foundations for prefabricated metal building at blowers, addition of fourth block wall to existing electrical room, foundation for crane at lift station, and foundation for relocated existing canopy.

PLSD - WWTP | Pinetop-Lakeside, AZ

New walkway at the oxidation ditch; extension of concrete splitter box vault; anchorage of existing walkway to existing oxidation ditch; davit crane supports at the new walkway; pipe supports to existing wall at pump gallery.

SONORA WWTP EXPANSION | Sonora, CA

Expansion included an administration building, a headworks building, two 65'-diameter clarifiers, and a filter and chlorine contact basin. These new facilities have the capacity to handle up to 2.5 MGD.

WEST COUNTY WWTP UPGRADE | Richmond, CA

Upgrade to an existing 25 MGD treatment plant including a 2-story steel frame industrial building for sludge dewatering and thermal drying equipment, steel frame mezzanine (20' x 30' x 10' tall) in existing sludge thickening building to support two new rotary drum thickeners above the existing floor, revised headworks channel for new grit "teacup" system, new concrete slab foundation for 2MW digester gas engine cogeneration package unit, and mechanical equipment foundations.

**STRUCTURAL INTEGRITY | COLLABORATIVE SOLUTIONS**



JAMES APPELYARD, PE

SENIOR ASSOCIATE | PROJECT MANAGER

RELATED EXPERIENCE (continued)

LATHROP CONSOLIDATED TREATMENT FACILITY EXPANSION (WRP) |

Lathrop, CA

Expansion of MBR WRP from 1.0 MGD to 2.5 MGD, with an ultimate build-out capacity of 9.0 MGD, as well as design for 1-story, 6,000 SF administration building and 4,000 SF steel frame headworks building adjacent to a below-grade process tank.

MOUNTAIN HOUSE WRF EXPANSION | Mountain House, CA

Expansion of existing influent lift station included new headworks/dewatering building over 4 below-grade digester tanks, 5,500 SF headworks/grit removal structure, influent control structure, CIP concrete structural divider walls in two tanks, and 13,000 SF MBR process structure. These new facilities add a capacity of up to 5.4 MGD.

CITY OF PACIFIC GROVE WRF | Pacific Grove, CA

Structural design of a new water reclamation facility, which consisted of concrete tanks, an office/electrical room, and a mechanical process room. Construction type is concrete walls with a concrete deck above the aeration tanks for the screens with a parapet around the perimeter.

VISTA CANYON WRP | Santa Clarita, CA

Water reclamation plant consisting of a below-grade concrete tank (with catwalks at grade level) directly adjacent to three below-grade concrete tanks with an above-grade building for an office, electrical room and mechanical room, as well as a steel framed canopy and façade walls at exposed tank and 4' site retaining wall. Construction type is concrete walls with a concrete deck above the aeration tanks; concrete and steel framed building; steel catwalk beams.

PECK RESERVOIR PUMP STATION | Huntington Beach, CA

Structural design and calculations for 532 SF control and security building, 840 SF electrical building, and new motor support platform and catwalks.

UC SANTA CRUZ HAGER WRF | Santa Cruz, CA

New process building over 19'x52'x10' underground concrete tank. Construction type is masonry and CIP concrete.

RINDGE LANE PUMP STATION UPGRADE | Redondo Beach, CA

Structural assessment and report of findings of the existing wet well. Design of a new wet well adjacent to the existing wet well, a new electrical room and generator room on top of the existing wet well, and design of repairs to the existing wet well in order to support the new rooms above.

SOUTH LATHROP STORMWATER PUMP STATION | Huntington Beach, CA

Structural design of 650 SF below grade CIP concrete pump station and a 1,200 SF one-story steel framed building.

PANTAGES LAKE BUILDINGS | Discovery Bay, CA

Structural design for the Lake pump station and sewer lift station electrical/chemical building.



STRUCTURAL INTEGRITY | COLLABORATIVE SOLUTIONS

70374

First Name James

Last Name Appleyard

License Status

Active

Discipline

ENGINEER/CIVIL

Initial Registration Date 15 Nov 2019

Expiration Date 31 Dec 2025

Address Line 1

7434 E McDonald Drive

City Scottsdale

State Arizona

Zip 85250

Phone 480-922-8854



KIM JOYCE
& ASSOCIATES, LLC
Grant Writing Consultancy Firm

Kristen Krey

602-908-6180

kkreyaz@gmail.com

Executive Profile

- Results-oriented leader with successful experience in organizational and grants management, communication, and collaboration.
- Expertise in program and process development, stakeholder engagement, strategic planning, and service delivery.
- Proven strengths include promoting cohesiveness within organizations while utilizing innovative strategies abilities to develop and implement effective partnerships.
- A seasoned professional with a career of promotions based on exceptional performance, contributions, and outcomes. Experienced in all levels of government: local, county, state and federal.

Professional Experience

Kim Joyce and Associates, LLC

September 2022- Present

Director, Government and Community Engagement

Provide expert advice and guidance to clients seeking and receiving grant funding and expand the company through new and innovative revenue streams and marketing initiatives.

- Successful creation of a new division to expand the business, providing grant research, grant writing, grants management and training to municipal, county, state & federal government clients.
- Managing a team of grant experts overseeing a grant portfolio of \$20 million for our clients in the non-profit sector.
- Expanding the footprint and marketing of the company through various channels, organizational development, social media, conferences, presentations, and client events.

City of Glendale, Arizona

December 1997 – August 2022

City Grants Administrator

2015-2022

Manage the city grants portfolio, directly working with city departments providing policy, best practices, and guidance in alignment with the city's mission and strategic plans.

- Implementation of a grants management system.
- Annually managed approximately \$20 million in grant funding with liaisons throughout the city.
- Develop and update city-wide grant policies and policy manuals.
- Review and approve all city grant applications to determine alignment with strategies.
- Provide training city-wide regarding seeking, applying and compliance.
- Create collaborative relationships with external city and community partners.
- Oversee community giving programs 100k to 200k annually.
- Determine compliance and reporting strategies.

City Council Administrator-Glendale City Council

2006 - 2014

Provide leadership for the City Council office, consisting of six political districts in a city of 230,000 citizens. Responsible for developing and maintaining highly effective working relationships with Councilmembers, citizens, city leadership, business leaders, community leaders and government officials to advise on organizational and community strategies, initiatives and political issues. Liaison with local, state, and national entities.

- Develop strategies with Councilmembers; perform research on issues, analyze findings and develop reports and recommendations for changes in policies/procedures and disseminate public information promoting local government transparency.

- Program development and implementation of local government best practices including public policy related to citizen engagement and community leaders.
- Exercise independent decision-making authority and confidentiality managing sensitive information to serve as Council representative to the citizens, organization, and public; investigate sensitive inquiries and complaints, determine responsible departments, and establish inter-disciplinary teams to solve problems and develop resolution.

(In addition to City Council Administrator) Chairperson- City of Glendale Diversity Committee 2008-2013

Provide leadership for developing and implementing a strategic plan for City-wide diversity initiatives. Promote and model diversity and inclusiveness through internal and community-wide communications and practices including City leadership, City employees and committee of 60 members from city-wide. Facilitate monthly committee meetings; manage City-wide diversity programming such as quarterly diversity dialogues with City employees and the annual MLK event with the community.

Police Technical Services Manager- Glendale Police Department 1997 - 2005

Managed critical liability areas in the Police Department through implementation of community oriented policing initiatives and provided direction for achieving and maintaining CALEA accreditation for those critical areas. Areas of responsibility included Detention Facility: Housing 11,000 detainees per year. Property and Evidence Area: Responsible for 85,000 items of property, evidence, and fleet of 240 vehicles. Identification Unit and Fleet Management: Providing crime scene evidence processing and management of automated fingerprinting identification; Personnel Management: Recruitment/selection/hiring/training of police personnel.

- Managed a \$2 million budget, supervised 30 staff, and served as a liaison with national and local public safety agencies and officials.
- Developed logistical/tactical planning for large-scale projects/events: NHL Arena, NFL Stadium.
- Implemented over a hundred standards of compliance relevant to Police Accreditation in a one-year period through streamlining of processes and creation of efficient practices.
- Developed/coordinated the regional automated booking processes supporting departmental initiatives.
- Reduced liability to the City by training employees in departmental, City, legal and risk management practices resulting in safer practices decreasing industrial injuries and use of force related legal issues.

Fleetwood Corporation – Regional Human Resources Manager 1995-1997

Managing southwest, central California and western divisions, with a focus on hiring and training.

Coconino County, Arizona – Juvenile Detention Manager 1994 –1995

Transitioning juvenile detention to a secure facility, implementing new policies, and hiring, training and supervising youth detention officers.

City of New York, Department of Correction- Director (93-94) Specialist (91-93) Analyst (90-91) 1990-1994

Managing multiple programs and departmental investigations in the jails, Rikers Island and 4 NYC boroughs.

Education

MA, Organizational Management, University of Phoenix, Phoenix, Arizona

BS, Criminal Justice/Political Science, State University of New York, Brockport, NY

Certified Public Manager, Arizona State University

Graduate, Rocky Mountain Executive Leadership Program

Graduate, Advanced Public Executive Program, Arizona Regional Community Policing Institute

Professional Development

2015- Present: Member, Board member (AZ), Certified Trainer, Grant Professionals Association

2013 -2015: Board member, Arizona City/County Manager's Association

2008 - 2010: Board member Glendale/Peoria YMCA

2006 -2015: Associate Member Arizona City/County Manager's Association



8723 E. Via de Commercio, #A-204
Scottsdale, AZ 85258
480.991.3595 | pacewater.com



March 19, 2024

Mr. Frank Marbury
Public Works Director
Town of Chino Valley
202 N State Route 89
Chino Valley, AZ 86323
Phone (928) 636-3401

**Re: Town of Chino Valley – Water Reclamation Facility Improvements
Professional Engineering Services Proposal**

#C104

Dear Mr. Marbury,

PACE is pleased to provide our proposal for the Town of Chino Valley Water Reclamation Facility Improvements project. Attached are our Scope of Services, Compensation, Hourly Rate Schedule, Provisions and Labor Breakdown.

We appreciate the opportunity to be of service to the Town of Chino Valley, and look forward to working with and your staff on this project. Please contact me if there are any questions or if we may provide any additional information.

Sincerely,

A blue ink handwritten signature, appearing to read "James A. Matthews", is written over a light blue wavy line.

James A. Matthews, PE
Senior Vice President – Environmental Water Division

JAM//alj

Enclosures: Scope of Services, Compensation, Hourly Rate Schedule, Provisions and Labor Breakdown

cc: File

W:\C104\3-Contracts - Proposals\1. Proposal\2024-03-19 PRO WRF Improvements\1. FMarbury Cover Letter_2024-03-19.doc

PROPOSAL FOR PROFESSIONAL ENGINEERING SERVICES

TOWN OF CHINO VALLEY WATER RECLAMATION FACILITY IMPROVEMENTS #C104

BACKGROUND & OBJECTIVES:

In June of 2023, PACE prepared a Capacity and Expansion Evaluation of the Town of Chino Valley Water Reclamation Facility (WRF) to determine the hydraulic and biological capacity of the facility as well as provide recommendations to expand capacity consistent with the Town's current and projected future flow rates. Based on the analysis, PACE concluded that the facility is capable of reclaiming the rated capacity of 0.5 MGD, with a Peak Day Capacity of 0.85 MGD, with the addition of two flow equalization basins. In addition, the project offers the Town an opportunity to address other limitations at the facility due to aging equipment and lack of redundancy in critical areas. The identified improvements include:

- 1) Influent flow equalization basins between the headworks and secondary treatment process;
- 2) Equalization lift station, basin mixing and aeration systems;
- 3) Automated MicroC dosing system near the RAS return to the Anoxic Basins if the Town is not able to identify and eliminate atypical sewer dischargers;
- 4) Drying beds located at the west boundary of the plant site for Town vector dumping;
- 5) Replace the existing UV system with a new low-pressure high-output inline UV disinfection system;
- 6) Add an additional sludge dewatering unit to provide additional capacity under normal operating conditions and redundancy under emergency operating conditions;
- 7) Add sludge conveyance and rearrange roll-off bin to be located outside of the dewatering building;
- 8) Elevate existing headworks screens with a stand and walkway for improved access and downstream flow;
- 9) Odor scrubbers for the headworks and dewatering buildings with the option to cover and plumb the EQ basins;
- 10) Update the existing SCADA system to include new components.

The scope of work for this proposal is to prepare design for construction that will utilize a Construction-Manager-At-Risk (CMAR) project delivery.

Additionally, scope includes a water quality evaluation to provide recommendation for a PFAS pilot treatment system. The pilot process will provide direction on moving forward with a full-scale PFAS treatment system. At that time and if desired, the client can proceed with the design of a full-scale PFAS treatment system through a separate authorization to proceed.

SECTION A - SCOPE OF SERVICES:

A. Consultant agrees to perform the following services:

Task 10 – Project Funding

Consultant will provide funding assistance to the Client by:

- 1) Facilitating a strategy meeting (or meetings, up to two (2) anticipated) with Local First Arizona to relay the project goals and release Local First to research available grant funding and determine which programs to pursue.
- 2) Attend meetings and provide technical support to Local First Arizona for up to four (4) grant applications.

Deliverables: Council Meeting Presentation Materials

Task 11 – Water Quality Evaluation

Consultant will provide engineering services required for the pre-design of PFAS removal by:

- 1) Providing a PFAS Pilot Program
 - a. The program will include an evaluation and project-specific recommendations for the type and location of pilot PFAS constituent Removal System on the WRF property, along with the best way to deploy and incorporated recommended system into existing facilities.
- 2) Deployment and operation of a pilot unit, collecting water samples and downloading data for six (6) months. Water samples will be collected and analyzed at least once a week to monitor water quality parameters outlined in the pilot sampling plan. Limited on-site water quality testing can be completed by Consultant, however specific parameters testing will be completed by a lab of the Client's choice and testing costs will be paid directly by the Client.
- 3) Prepare PFAS Pilot Program Report to summarize the results of the analysis and findings from data collected to the Client and ADEQ.
- 4) The PFAS Pilot Program Report will provide conclusions of the most effective media and direction on moving forward with a full-scale PFAS treatment system following pilot evaluation, analysis and review by both the Owner and ADEQ.

Deliverables: One (1) Draft PFAS Pilot Program for review, comment and approval
One (1) PFAS Pilot Program
One (1) Pilot Unit Rental
One (1) Final PFAS Pilot Program Report detailing findings

Task 12 – PFAS Treatment System Full-Scale Design (Budgetary)

If pilot system proves effective to both the Owner and ADEQ, **and with separate written Notice-to-Proceed** from Client, Consultant shall perform the following design. **Note: Design requirements are unknown since these will be revealed through the Water Quality Evaluation, so the associated cost for this task is budgetary. At the time of consent to proceed, billing rates may be adjusted (Consultant rates are evaluated/adjusted annually) and hours adjusted as necessary to provide the determined required scope of work.**

- 1) PFAS Removal System Design
 - a. Consultant will prepare design plans, technical specifications and cost estimate for recommended improvements once preliminary approval of PFAS Pilot Program Report is obtained.
 - b. Consultant will coordinate with ADEQ during the full-scale design phase.

Deliverables: One (1) Electronic copy of Draft Design Report for review and comment

- One (1) Electronic copy of Draft Plan Set for review and comment
- One (1) Electronic copy of Final Design Report
- One (1) Electronic copy of Final Plan Set
- One (1) Electronic copy of Final Technical Specifications
- One (1) Electronic copy of Final Cost Estimate

Task 20 – Design Management & Coordination

Consultant will provide project management/coordination of the Project including obtaining and directing subconsultants, preparing a project management plan, project communication/files and quality assurance and quality control (QA/QC).

- 1) Design Coordination Meetings
 - a. Design and Coordination Meetings will be held on an as needed basis, to be scheduled in advance between the Client, Project Team and Consultant's Project Manager. Up to two (2) onsite meetings and eight (8) bi-monthly conference call meetings are envisioned to take place during the project design period (projected to be 6 months). These meetings will provide a forum for project and design discussions. Consultant shall provide meeting agendas and minutes.
- 2) Engineering Project Management
 - a. This task will include project management/coordination of the Project including coordinating and directing internal staff and subconsultants, preparing a project management plan, and maintaining project communication/files. This task also includes the efforts to track time and calculate and prepare monthly invoices.
- 3) Council Meetings
 - a. Council Meeting Presentations will be made on an as needed basis, to be scheduled in advance between the Client and Consultant's Project Manager. Up to two (2) presentations are envisioned. The Consultant will be responsible for technical information and project support for the Client by providing, when necessary, a presentation and by responding to questions during the Council Meetings. The Consultant will prepare a PowerPoint Presentation consisting of up to 10 Slides per meeting. It is assumed that a presentation will be approximately 15 minutes.

Deliverables: Progress Meeting Agendas and Minutes
Invoices
Council Meeting Presentation Materials

Task 21 – Conceptual Design Report

Consultant will prepare a conceptual design report (CDR) for the Chino Valley WRF Improvements to be used to pursue funding and provide for the CMAR selection process. Our work generally includes the following:

1. Preparation of a preliminary Basis of Design technical description
2. Calculations and sizing of major process equipment and unit processes
3. Development of a preliminary process layout, site plan(s) and sections
4. Preparation of a preliminary equipment list with models and capacities identified
5. Provide cut sheets and technical product specification sheets for major equipment
6. Development of a preliminary one-line electrical diagram
7. Development of a preliminary P&ID for the treatment facility

8. Preparation of a preliminary cost estimate

Deliverables: One (1) Electronic copy of Draft Conceptual Design Report for review/ comment
One (1) Electronic copy of Final Conceptual Design Report
One (1) Hard copy of Final Conceptual Design Report

Task 22 – CMAR Selection

Consultant shall assist the Client on the following proceedings required for selection of a CMAR for the project.

- 1) RFQ Preparation Assistance
 - a. Assist the Client in preparing the RFQ document.
 - b. Client shall provide any necessary contract forms, terms, insurance requirements, etc. to be included in RFQ document.
- 2) Solicitation Process
 - a. Attend pre-proposal meeting
 - b. Provide support to answer technical questions prepare addendums
 - c. Evaluate CMAR SOQs for accuracy and qualifications, participate in interviews as necessary to select CMAR.
- 3) Contract Process
 - a. Client will prepare the contract for the CMAR utilizing the RFQ document items and finalize the contract.

Deliverables: None

Task 23 – CMAR Design Coordination

Consultant shall coordinate with the CMAR during the design progress to ensure consistent and open communication as to the design parameters and intent. This is above and beyond the normal meetings with the Client and is additional communication and design work for the CMAR and Consultant. This will prepare the CMAR for each revision and submittal for review at 60%, and 90% and include Value Engineering and Constructability Reviews. Consultant will provide the CMAR with necessary information for CMAR to assemble GMPs at 60% and 90% and 100% milestones.

Deliverables: None

Task 24 – Data Gathering

- 1) Site Visit
 - a. Consultant shall coordinate with the Client's operations staff and perform a site visit to review preferred improvements, gather equipment inventory and any other information, testing and operational input to solidify understanding of what is needed for the WRF improvements.
- 2) Design Survey
 - a. Consultant shall coordinate with the Geotechnical Consultant during the design process to ensure accurate data and information are shared.
 - b. Topographic Survey & Base Map

- Perform a complete topographic survey of the site and existing improvements. Survey shall show any property monuments found (if any) in the field during the survey on the design base maps. The topographic survey will include the fencing limits of the site, presumably representing the project limits.
- The Client will furnish a current title report with schedule B for the site for review regarding potential existing easements. If existing easements are revealed by the title report, they will be researched and added to the base drawings to be prepared by Civiltec. Additional services for easement dedication or abandonment or other modification could also be included by separate contract if required.
- It is anticipated that utility locating services for marking the existing buried utilities at the project location will be needed. Civiltec will coordinate with the Client to collect buried utility location surface markings (marking performed by others) and include this information in the base mapping, together with any above ground evidence. Civiltec will coordinate with the Client to collect any available as-built plans and previous design plans and incorporate that information into the base mapping.

3) Geotechnical Investigation

- a. Consultant shall coordinate with the Geotechnical Consultant during the design process to ensure accurate data and information are shared.
- b. The purpose of geotechnical engineering services will be to evaluate the subsurface conditions to provide recommendations and/or discussion for the following:
 - Foundation design parameters, including footing types, depths, allowable bearing capacities, and estimated settlements
 - Slabs-on-grade
 - Excavation conditions
 - Earthwork, including backfill placement and suitability of existing soils for backfill materials
 - Cut slopes
 - Lateral earth pressures
 - Corrosivity
 - Aggregate Surfacing
- c. Field Exploration
Conduct subsurface exploration program that is based on current site access conditions and our knowledge of the general geotechnical conditions in the area:
 - Equalization Basins – Two borings auger drilled to a depth of 20 feet below the existing site grades.
 - Drying beds – Two borings auger drilled to a depth of 10 feet below the existing site grades.

All explorations will be advanced to the depths outlined unless refusal to auger penetration is encountered. A field engineer will log the test borings, record blow counts of penetration tests, and obtain undisturbed and representative samples of soils encountered as conditions dictate.

d. Laboratory Testing

A geotechnical engineer will examine the samples and field logs and assign the laboratory tests. The following laboratory tests may be performed:

- Field moisture content
- In-situ soil density
- Remolded expansion potential
- Compression
- Sieve analysis
- Liquid limit and plasticity index
- Soluble salts/sulfates/chlorides
- Corrosivity (ASTM A674)

e. Analyses and Report

Prepare a geotechnical engineering report that includes a description of the project, a discussion of the field and laboratory testing programs, a discussion of the subsurface conditions, and design recommendations as required to satisfy the purpose previously described, including recommendations for further investigation and analysis, if necessary.

Deliverables: One (1) Electronic copy of Final Topographic Survey Drawing
One (1) Electronic copy of Final Geotechnical Report

Task 30 – 60% Design Services

The Consultant shall perform detail design of the Chino Valley WRF Improvements. Construction Contract Documents shall be in accordance with the approved CDR.

Any major changes made by the Client to the design concept set forth in the CDR, after detailed design has been initiated, may constitute a change in scope requiring a contract change order. Similarly, any major changes in design concepts set forth at previous Project milestones (for example, changing a design concept set forth at the 60 percent milestone subsequent to the 60 percent review meeting), will constitute a change in scope requiring a contract change order. For purposes of this contract, a “major” change is defined as:

- 1. A change in the scope of work that requires the production of additional drawings and/or specifications by Consultant, or substantial modifications to existing drawings and or specifications.*
- 2. A change in effluent quality criteria or a change in the means of effluent disposal from those set forth in the CDR that increase or decreases the scope of work and requires changes to the design drawings or specifications.*
- 3. A change in Client’s preferences that requires changing allowable materials and/or manufactures, when those materials and/or manufacturers have previously been agreed to, if it results in additional work for the Consultant.*
- 4. A change in the Project numbering and/or naming system, including drawings, specifications, equipment, instruments, conduit, conductors and similar items.*
- 5. A change in the electrical or control system architecture after conceptual approval.*
- 6. A change in the style or level of detail in the presentation of the design (i.e., drawings and specifications). Unless explicitly stated otherwise, all design documents will be prepared using Consultant’s established standards.*
- 7. A change from Consultant’s current standard presentation for drawings and specifications.*

8. *Expediting of agreed upon schedule or timeframe by the Client.*

It is expected that comments on proposed design concepts will be provided by the Client in a timely fashion (within 14 calendar days), including but not limited to processes, design criteria, numbering systems, electrical and control system architecture, materials, equipment, allowable manufacturers, or design features.

Consultant shall provide design of the WRF improvements to a 60% progress.

1) General / Project Data Plan Sheet

- a. Construction drawings to be prepared for general design will include Project information and location maps, general construction notes, plant flow schematics, plant hydraulic profiles, and basis of design.

2) Site Civil Design Plans

- a. Site Civil design shall include development of WRF layout and survey control; yard piping plan and profiles, etc. Civil yard piping shall be limited to the process yard piping only. Utility plans shall be provided by others and shall be depicted for reference purposes only

3) Grading & Drainage Plans

- a. Civiltec will use the site-specific topographic survey and the site layout plan (provided to Civiltec by the design team) to create a site grading and drainage plan. The plan will include removal limits of existing improvements (if required); match conditions; new finished surface improvements per the site plan including general graded areas, sidewalks and driveways; design spot grade elevations; existing and design contours; and construction notes with references to applicable local design standards and details. Site grading design will be ADA compliant as required based on the routes/locations as directed by the Client.

4) Process Structural Plans

- a. Structural plans for WRF shall be provided by others (PK Associates, LLC). Consultant shall coordinate with project structural engineer for structural layout of the WRF to include:
 - Equalization tanks with rough footprint of 35' x 68', 13' deep. The design will be common wall construction with 3 rectangular compartments.
 - Drying Beds
 - Equipment pads on grade
 - Steel framed shade structure over off-site lift station

5) Mechanical Process Plans

- a. Mechanical process design shall include development of the detailed control and operational schemes for the various processes and process units. The preliminary process schematic diagrams will be developed into fully detailed drawings and incorporated into the construction documents. Processes and equipment shall be as set forth in the CDR. The design will include the mechanical equipment, location and arrangement of the equipment and the associated piping, and design of the supports for equipment and piping. Consultant shall provide mechanical and process design to include:
 - Headworks screening

- Equalization Tank
- Aeration Basin (Anoxic/ Oxic basin) Process
- Aeration Blower System
- UV Disinfection
- Dewatering System
- Chemical Injection and Storage System
- Odor Control and Ventilation

6) Electrical Design Plans

- a. Electrical design shall include assessment of the WRF, pumping stations and unit power requirements, plant-wide power and control distribution, as well as integration of motor control schemes and motor control centers and power conduits. The electrical design shall be coordinated with utility requirements. Specifically, the electrical design plans shall include the following:

- Review Existing Electrical Drawings and Load Calculations for site.
- Prepare load calculations and single line diagram for WRF.
- Prepare electrical drawings including an overall site plan showing new equipment to include the following:
 - Distribution Panel, and MCC
 - Process equipment and instrumentation
- Prepare a conduit and wire table showing all power conduits and wire for equipment listed above.
- Prepare necessary elevation views of the equipment listed above to help determine layout and size.
- Prepare panel schedule and other electrical installation details as required.
- Prepare system fault current and voltage drop calculations as required.
- Show all areas that will be classified (Class I Div. II or greater) and show all seal-off locations as required.
- Prepare schematics for control of all motors listed above.

This design scope does not include standby generation power since this facility is not anticipated to upsize the existing generator or power service. If required, standby generator design can be included as a separate task for additional fee.

7) Process and Instrumentation Control Design Plans

- a. Instrumentation design shall include selection/specification of instrumentation hardware and software to accomplish the control and operation scheme required, design of alarm and display systems, functional layout of area control centers and selection of control and monitoring instruments. Instrumentation requirements will be prepared as part of the construction documents, and shown on the Process and Instrumentation Diagrams (P&IDs) and instrumentation drawings. Consultant shall prepare specifications describing the plant monitoring and control systems to be furnished by the contractor. Process and Instrumentation drawings shall show control devices.

8) Preliminary Project Technical Specifications and Design Report

- a. The Consultant shall prepare project specifications based on the Construction Specification Institute (CSI) 2014 format. Construction specifications shall define

the qualitative requirements of materials and products and set forth the special conditions and technical requirements for construction of the Project.

A preliminary report shall be prepared to provide the Basis of Design for the different process areas within the proposed WRF. The Preliminary Design Report will identify process equipment requirements, sizing and functionality.

Deliverables: One (1) Electronic copy of Draft 60% Design Report
One (1) Electronic copy of Draft 60% Drawings and Technical Specifications
One (1) Electronic copy of Final 60% Design Report
One (1) Hard copy of Final 60% Design Report
One (1) Electronic copy of Final 60% Drawings and Technical Specifications
One (1) Hard copy of Final 60% Drawings (half-size) and Technical Specifications

Task 31 – 90% Design Services

Consultant shall provide design of the WRF upgrades to include general/civil, grading & drainage, process/mechanical, structural, electrical, instrumentation, technical specifications and design report to a 90% progress based on comments from the 60% design review.

Deliverables: One (1) Electronic copy of Draft 90% Design Report
One (1) Electronic copy of Draft 90% Drawings and Technical Specifications
One (1) Electronic copy of Final 90% Design Report
One (1) Hard copy of Final 90% Design Report
One (1) Electronic copy of Final 90% Drawings and Technical Specifications
One (1) Hard copy of Final 90% Drawings (half-size) and Technical Specifications

Task 32 – 100% Design Services

Consultant shall provide design of the WRF upgrades to include general/civil, grading & drainage, process/mechanical, structural, electrical, instrumentation, technical specifications and design report to a 100% progress based on comments from the 90% design review.

Deliverables: One (1) Electronic copy of Draft 100% Design Report
One (1) Electronic copy of Draft 100% Drawings and Technical Specifications
One (1) Electronic copy of Final 100% Design Report
One (1) Hard copy of Final 100% Design Report
One (1) Electronic copy of Final 100% Drawings and Technical Specifications
One (1) Hard copy of Final 100% Drawings (half-size) and Technical Specifications

Task 40 – Permitting

Consultant will assist the Client with permitting activities.

- 1) ADEQ APP Significant Amendment
The APP program is administered by ADEQ and regulates facilities that discharge pollutants to the land surface, underlying soil, or groundwater, where there is a reasonable probability that pollutants could reach the aquifer. Wastewater treatment facilities are required to obtain an individual APP for operation. Per ACC R18-9-A211 (Permit Amendments), material and substantial alterations or additions to a permitted facility will require a significant permit amendment.

- a. Consultant will assist Owner with preparing the required application for the Significant Amendment to the existing APP for process and equipment modifications and operation of the WRF.
 - b. APP Pre-Application Meeting
 - Consultant will meet with the ADEQ to discuss the Project, the permitting schedule and permitting objectives.
 - This will take place early in the design phase.
 - c. APP Application Preparation
 - Consultant will collect all of the data required for the APP and it will be compiled into the draft APP application and submitted for review. This information will include general owner/operator information, demonstrations of financial and technical capability and site-specific characteristics. Consultant will provide Owner with draft copies of the APP Significant Amendment application for review and comment prior to submission to ADEQ. This will also include an application pre-submission review meeting with ADEQ.
 - This will take place at 60% design progress.
 - d. APP Respond to ADEQ Administrative and Technical Comments
 - Consultant will prepare written responses to ADEQ's administrative and technical comments, as necessary, during the review process. The Consultant will work with Owner to prepare timely, adequate responses to the agency.
- 2) NACOG CWA 208 WQMP Contact
- Consultant shall contact NACOG to verify if the proposed WRF improvements will require a NACOG CWA 208 WQMP Amendment. It is anticipated that an amendment will not be required. Should it be required, a change order will be request to provide these additional services.

Deliverables: One (1) Electronic copy of Draft APP Application
One (1) Electronic copy of Final APP Application
One (1) Hard copy of Final APP Application

Task 60 – Services During Construction (Placeholder)

Consultant shall provide separate scope and fee proposal for this work at the Client's request.

Task 70 – Post-Construction Services (Placeholder)

Consultant shall provide separate scope and fee proposal for this work at the Client's request.

SECTION B - COMPENSATION:

CONSULTANT will complete the work outlined herein, and invoice Client monthly at time and expense (T&E) for a total lump sum budget of **\$826,915** in accordance with the attached “Hourly Labor and Expenses Rates Schedule” and “Estimate Worksheet). Budgeted future tasks for Task 12 PFAS Treatment System Design has been estimated to cost **\$259,800** at this time but may be updated upon completion of task 11. No fee is provided for future tasks 60 and 70 until further direction is provided by the Client.

Task Description**Professional Fee**

10	Project Funding	\$ 14,170
11	Water Quality Evaluation	\$ 234,280
20	Design Management & Coordination	\$ 32,890
21	Conceptual Design Report	\$ 45,460
22	CMAR Selection	\$ 19,540
23	CMAR Design Coordination	\$ 50,120
24	Data Gathering	\$ 47,091
30	60% Design Services	\$ 190,344
31	90% Design Services	\$ 102,618
32	100% Design Services	\$ 64,382
40	Permitting	\$ 26,020

TOTAL FIXED FEE:**\$ 826,915****ASSUMPTIONS AND EXCLUSIONS:**

1. The Client’s responsibilities shall include providing CONSULTANT with the base data and project information in a timely manner, coordination and management of other team consultants to assure that the project schedule can be met, and prompt payment of invoices in accordance with the terms and conditions included herein. The specific items that are to be provided by the Client or other consultants include the following:
 - a. Client input pertaining to project design issues and requirements including scheduling.
 - b. Existing and proposed hydrologic and drainage data, maps, and reports.
 - c. Any other data that directly impacts CONSULTANT ability to perform the design in an efficient and economic manner.
2. Any proposed project changes which affect work in progress or previously completed will be justification for additional compensation.
3. Base topo and site information will be provided in digital (electronic) format compatible with AUTOCAD or C3D version 2023 or earlier.
4. No environmental documentation or support, including no environmental permitting.
5. No construction staking is included.
6. Local government approval meetings, hearings, etc., and preparation of presentation graphics will be under separate work authorization, if required.

7. Existing utility information research and mapping is not included and will be provided by Client.
8. For all the data delivered to CONSULTANT for the purpose of digital mapping, including but not limited to GIS and AutoCAD, CONSULTANT requires said data be delivered in one of the recognized standard coordinate systems such as the Stateplane Coordinate System or the Universe Transverse Mercator (UTM). In addition, CONSULTANT requires all datums, vertical and horizontal, be documented in a metadata sheet and be included along with the delivered data. If the coordinate system is in what is often referred to as a "Local Coordinate System," and the deliverer does not have the capability to convert data into one of the recognized standard coordinate systems, CONSULTANT requires a Control Conversion document (CCD) be included in the deliverable. The CCD will include all the necessary coordinate transformation information and scale factors needed to make an accurate translation of the data to CONSULTANT's acceptable coordinate systems. If this information is not available, CONSULTANT will require an addendum to this proposal to include Time and Materials used to translate the delivered data into the appropriate standard coordinate system.
9. The fees proposed herein shall apply until one year from date of proposal. Due to ever-changing costs, Consultant will increase those portions of the contract fee for which work must still be completed after one year from date of proposal, as negotiated with the Client up to a maximum of ten-percent (10%).



2024 HOURLY LABOR RATES

Principal	\$300
Sr. Project Manager / Sr. Consulting Engineer	\$260
Project Manager / Consulting Engineer / Sr. I&C Specialist	\$250
Sr. Electrical Engineer / Sr. GIS Analyst	\$245
Sr. Project Engineer / Sr. Design Engineer	\$220
Project Engineer / Design Engineer II	\$190
Instrumentation & Controls Specialist	\$185
Sr. CAD Designer	\$175
Design Engineer	\$150
CAD Designer / GIS Analyst	\$145
Graphic Designer	\$125
Project Coordinator	\$105
Administrative Support	\$100
Assistant Designer	\$85
G.P.S. Survey Unit (w/ Operator)	\$290
Expert Witness / Legal Consultation	\$400 + Exp.

REIMBURSABLE EXPENSE RATES*

	Units	Cost
<u>Travel</u>		
Mileage (Per Mile)	Mile	\$0.67
Airfare, Auto Rental, Hotel		At Cost
Misc. Travel (Parking, tax, tolls, meals, etc.)		At Cost
Per Diem (Contract Rate)	DAY	Contract Rate
<u>Outside Reproduction</u>		At Cost
<u>Shipping (FedEx, UPS, Courier, etc.)</u>		At Cost
<u>Misc. (Review Fees, Specific Charges)</u>		At Cost
<u>Reproduction (In-House)</u>		
Sheet Bond - B/W Prints and Copies – All sizes (8 ½ x 11 to 12 x18)	SF	\$0.16
Sheet - Color Prints and Copies – All sizes	SF	\$1.20
Sheet - Glossy Color Print/Photo – All sizes	SF	\$2.60
Roll - Plots and Copies (Roll Paper)		
- Bond (B/W)	SF	\$0.88
- Bond (Color)	SF	\$1.56
Roll - Vellum or Mylar Plots	SF	\$2.60
Roll - Glossy Color Plot Exhibits (Roll Paper)	SF	\$3.12
Report 3-Ring Binders		
≤ 1.5"	EA	\$10.40
1.5" to 3"	EA	\$15.60
> 3"	EA	\$26.00
Coil or GBC Punch Binding	EA	\$1.04

*Note: All reimbursable expenses will be invoiced at the above rates + 10%



AGREEMENT BETWEEN CLIENT AND CONSULTANT

AGREEMENT ENTERED INTO AT Scottsdale, AZ made this 19th day of March 2024, by and between **Town of Chino Valley** hereinafter called "Client," and **Pacific Advanced Civil Engineering, Inc. (PACE)**, a California corporation, herein called "Consultant."

Client and Consultant agree as follows:

- A. Client retains Consultant to perform services for:

Provide design for the Chino Valley WRF improvements and perform a water quality evaluation for PFAS removal.

hereinafter called "Project."

- B. Consultant agrees to perform the following scope of services:

(See attached Scope of Services – Section "A" for a detailed description)

- C. Client agrees to compensate Consultant for such services as follows:

Fee

(See attached Compensation Page – Section "B" for a detailed description)

- D. This Agreement is subject to Provisions of Agreement 1 through 28 attached herewith, and the terms and conditions attached and made a part hereof.

IN WITNESS WHEREOF, the parties hereby execute this agreement upon the terms and conditions stated above and on the day and year indicated above.

Pacific Advanced Civil Engineering, Inc. (PACE)

CLIENT: Town of Chino Valley

By:

By:

Name: James A. Matthews, PE

Name:

Title: Sr. VP – Environmental Water Division

Title:

Job #: C104

Date:

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ENGINEERING FEE ESTIMATE
PROJECT WORKSHEET

Project Data
Project Name: Chino Valley WRF Improvements
Client: Town of Chino Valley
PACE Job Number: C104
Estimate Date: March 19, 2024

PACE Hourly Rate Schedule	
Description	Hourly Rate
Principal	\$300
Sr. Proj. Mgr./Sr. Consulting Engr.	\$260
Sr. Electrical Engineer / Sr. GIS Analyst	\$245
Project Manager /Consulting Engr./Sr. I&C Specialist	\$250
Sr. Proj. Engr./Sr. Design Engr.	\$220
Instrumentation & Controls Specialist	\$185
Proj. Engr/Design Engineer II	\$190
Design Engineer	\$150
Sr. CAD Designer	\$175
CAD Designer/GIS Analyst	\$145
Graphic Designer	\$125
Project Coordinator	\$105
Administrative Support	\$100
Assistant Designer	\$85
G.P.S. Survey Unit (w/Operator)	\$290
Expert Witness/Legal Consultation	\$400 + Exp.

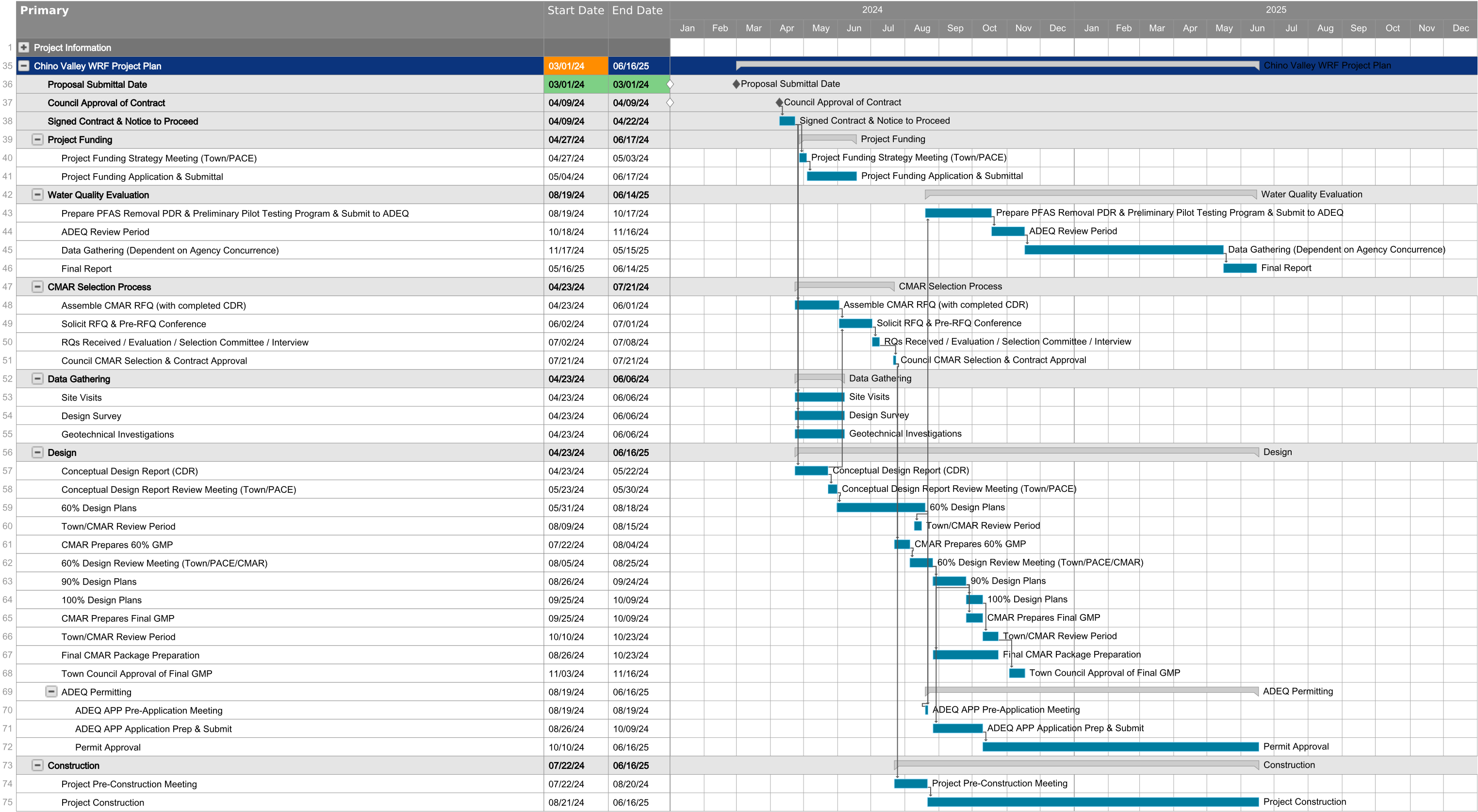
Total Fee Amount	\$826,915
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Item No.	Work Item Description	Estimated Manhours									Man-Power Subtotal	Subconsultant Cost	Expenses	Total Task Costs
		Principal	Sr. Project Manager/Sr. Consulting Engr.	Sr. Electrical Engineer/Sr. GIS Analyst	Project Mgr./ Consulting Engr./ Sr. I&C Specialist	Instrumentation & Controls Specialist	Design Engineer	Sr. CAD Designer	CAD Designer /GIS Analyst	Project Coordinator				
		300	260	245	250	185	150	175	145	105				
Project Funding & Water Quality Evaluation														
10	Project Funding													
10.1	Funding Strategy Meeting(s)	4			4					4	\$2,620	\$0	\$0	\$2,620
10.2	Funding Application(s) Meetings & Support	16		2	16				4	16	\$11,550	\$0	\$0	\$11,550
PROJECT FUNDING PHASE TOTAL											\$14,170	\$0	\$0	\$14,170
11	Water Quality Evaluation													
11.1	PFAS Pilot Program	16			40		60	12		8	\$26,740	\$0	\$0	\$26,740
11.2	Pilot Unit Delivery & Assembly				32		32				\$12,800	\$0	\$2,500	\$15,300
11.3	Pilot Unit Rental (Free)										\$0	\$0	\$0	\$0
11.4	Pilot Unit Operation & Data Gathering (6 month operation)				300		600				\$165,000	\$0	\$10,000	\$175,000
11.5	Final Report	8			32		40			8	\$17,240	\$0	\$0	\$17,240
WATER QUALITY EVALUATION PHASE TOTAL											\$221,780	\$0	\$12,500	\$234,280
WRF Improvements Design & Permitting														
20	Design & Funding Management & Coordination													
20.1	Design Kick-off & Progress Meetings	4			16					4	\$5,620	\$0	\$1,250	\$6,870
20.2	Design Project Management	8			24					24	\$10,920	\$0	\$0	\$10,920
20.4	Council Meetings	8			16					40	\$10,600	\$0	\$4,500	\$15,100
DESIGN MANAGEMENT & COORDINATION PHASE TOTAL											\$27,140	\$0	\$5,750	\$32,890
21	Conceptual Design Report													
21.1	Draft Report	6			20		30	24	40	16	\$22,980	\$0	\$0	\$22,980
21.2	Final Report	4			16		24	24	48	24	\$22,480	\$0	\$0	\$22,480
CONCEPTUAL DESIGN REPORT PHASE TOTAL											\$45,460	\$0	\$0	\$45,460
22	CMAR Selection													
22.1	RFQ Preparation Assistance	4			16		8			4	\$6,820	\$0	\$0	\$6,820
22.2	Solicitation Process	12			24		8			4	\$11,220	\$0	\$1,500	\$12,720
CMAR SELECTION PHASE TOTAL											\$18,040	\$0	\$1,500	\$19,540
23	CMAR Design Coordination													
23.1	CMAR General Coordination & Meetings	24			40		40			8	\$24,040	\$0	\$0	\$24,040
23.2	GMP Review (60% and 90%)	16			16		16			8	\$12,040	\$0	\$2,000	\$14,040
23.3	Value Engineering & Constructability Reviews (60% and 90%)	16			16		16			8	\$12,040	\$0	\$0	\$12,040
CMAR DESIGN COORDINATION PHASE TOTAL											\$48,120	\$0	\$2,000	\$50,120
24	Data Gathering													
24.1	Site Visit				8		8				\$3,200	\$0	\$500	\$3,700
24.2	Design Survey	2			16			2	8	8	\$6,950	\$25,751	\$0	\$32,701
24.3	Geotechnical Investigation	2			8		8			8	\$4,640	\$6,050	\$0	\$10,690
DATA GATHERING PHASE TOTAL											\$14,790	\$31,801	\$500	\$47,091
30	60% Design Services													
30.1	60% Construction Drawings & Technical Specifications	24		96	180	96	80	96	120	16	\$141,360	\$27,974	\$750	\$170,084
30.2	60% Engineering Design Report	4		4	32		56			16	\$20,260	\$0	\$0	\$20,260
60% DESIGN SERVICES PHASE TOTAL											\$161,620	\$27,974	\$750	\$190,344

31	90% Design Services													
31.1	90% Construction Drawings & Technical Specifications	16		48	80	40	32	60	80	8	\$71,700	\$15,748	\$750	\$88,198
31.2	90% Engineering Design Report	2		4	24		40			8	\$14,420	\$0	\$0	\$14,420
90% DESIGN SERVICES PHASE TOTAL											\$86,120	\$15,748	\$750	\$102,618
32	100% Design Services													
32.1	100% Construction Drawings & Technical Specifications	4		32	80	32	24	24	32	8	\$48,240	\$6,422	\$500	\$55,162
32.2	100% Engineering Design Report	2		4	8		32			8	\$9,220	\$0	\$0	\$9,220
100% DESIGN SERVICES PHASE TOTAL											\$57,460	\$6,422	\$500	\$64,382
40	Permitting													
40.1	ADEQ APP Significant Amendment	4		2	40		40		16	40	\$24,210	\$0	\$500	\$24,710
40.2	NACOG CWA 208 WQMP Amendment	2			2					2	\$1,310	\$0	\$0	\$1,310
PERMITTING PHASE TOTAL											\$25,520	\$0	\$500	\$26,020
TOTALS		208	0	192	1106	168	1194	242	348	298	\$720,220	\$81,945	\$24,750	\$826,915

Budgetary Tasks														
12	PFAS Treatment System Design													
12.1	100% Engineering Design Report & Cost Estimate	24		40	80	40	80			24	\$58,920	\$0	\$0	\$58,920
12.2	100% Construction Drawings & Specifications	40		120	200	120	96	208	240	16	\$200,880	\$0	\$0	\$200,880
PFAS TREATMENT SYSTEM DESIGN PHASE TOTAL											\$259,800	\$0	\$0	\$259,800
TOTALS		444	0	542	2400	496	2472	680	932	608	\$259,800	\$0	\$0	\$259,800

Chino Valley WRF Project Plan





TOWN COUNCIL AGENDA ITEM STAFF REPORT

AGENDA ITEM # 7c
MEETING DATE: 4/9/2024
CONTACT PERSON: Laurie Lineberry, Development Services Director
ITEM TYPE: Action Item

AGENDA ITEM TITLE:

Public hearing, consideration, and possible action to approve Ordinance No. 2024-943 to amend the Unified Development Ordinance, to create Section 4.32 - Metal Storage Containers.

SUMMARY:

This is a request to amend the Town of Chino Valley Unified Development Ordinance, Chapter 154, by adding Section 4.32 regarding Metal Storage Containers.

PREVIOUS ACTION:

On March 5, 2024, the Planning and Zoning Commission forwarded a recommendation of approval for TA-2024-01 to Town Council with a 5-2 vote. For the text amendment language and background, please refer to the Planning and Zoning Staff Report. For a detailed account of what was discussed at the commission meeting, please refer to the attached Planning and Zoning minutes.

STAFF RECOMMENDATION:

i) Hold a public hearing ii) Approve Ordinance No. 2024-943

FISCAL IMPACT?

N/A

ATTACHMENTS:

-
- | | |
|----|--|
| 1. | ORD - 2024-943 - UDO Text Amendment - Metal Storage Containers |
| 2. | Attachment 1 - P&Z Staff Report |
| 3. | Attachment 2 - P&Z Minutes |
| 4. | Attachment 3 - Ord for TA |
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ORDINANCE NO. 2024-943

AN ORDINANCE OF THE MAYOR AND COMMON COUNCIL OF THE TOWN OF CHINO VALLEY, ARIZONA, AMENDING THE CHINO VALLEY TOWN CODE, TITLE XV, LAND USAGE, CHAPTER 154, UNIFIED DEVELOPMENT ORDINANCE OF THE TOWN OF CHINO VALLEY, BY ADDING A NEW SECTION 4.32, METAL STORAGE CONTAINERS.

WHEREAS, the Mayor and Common Council of the Town of Chino Valley (the "Town Council") desires to amend the Chino Valley Town Code, Title XV, Land Usage, Chapter 154, Unified Development Ordinance of the Town of Chino Valley (the "UDO"), by adding a new section 4.32, Metal Storage Containers, as set forth herein (the "Text Amendment"); and

WHEREAS, the Town Council has determined that the Text Amendment is not in conflict with the Town of Chino Valley General Plan and any applicable specific area plan, neighborhood plan, or any other plan; and

WHEREAS, in accordance with Article II, Sections 1 and 2 of the Constitution of Arizona, the Town Council has considered the individual property rights and personal liberties of the residents of the Town before adopting this ordinance; and

WHEREAS, the Town Council has determined that this ordinance, although a "zoning ordinance text amendment of general applicability" as described in A.R.S. § 9-462.01(J), does not, because of its limited applicability to metal storage containers, have any relationship to, or impact on, housing; therefore, the Town Council has determined it is not possible to prepare or consider a housing impact statement regarding the impact of the Text Amendment that includes the information required by A.R.S. § 9-462.01(J)(1)-(3).

NOW, THEREFORE, BE IT ORDAINED by the Mayor and Common Council of the Town of Chino Valley, Arizona, as follows:

Section 1. The above recitals are hereby incorporated as if fully set forth herein.

Section 2. The UDO is hereby amended to add a new section 4.32 to read as follows:

4.32 METAL STORAGE CONTAINERS

A. Purpose. This Section regulates the siting and use of metal storage containers (also known as cargo containers and conex boxes). "Metal storage containers" and "containers" are used synonymously in this Section.

B. General Requirements.

1. Containers are prohibited except as set forth in this Section 4.32.
2. Containers are only allowed:
 - a. After obtaining an over-the-counter administrative land use permit.
 - b. As permitted Accessory Uses; a primary use on the property is required for any container to be allowed.

- c. In the zoning districts and quantities set forth in Table 4.32-1 below. No containers are allowed in any zoning district not specifically authorized by this Section.
 - d. For storage use. No human or animal habitation is allowed.
- C. Development Standards. Storage containers must conform to the following development standards:
 - 1. Modifications. Except as otherwise set forth herein, containers must not be modified from their original design.
 - a. Any modification or alteration to a container, including but not limited to cutting any openings, adding electrical, plumbing, heating, or air conditioning, adding a roof structure, or making the unit habitable in any way, will cause the container to be reclassified from an Accessory Use allowed by this Code to a structure that (i) requires a Building Permit and (ii) must meet all Building Codes and Engineering requirements for structures.
 - b. Containers may be modified to add passive ventilation. Passive ventilation does not include windows or HVAC.
 - 2. Placement. Metal storage containers must:
 - a. Meet all the same setback requirements that are required for the primary structure on the property.
 - b. Be placed at the rear of the Lot or Parcel to reduce the storage containers' visual prominence.
 - c. Not be placed in any Tract, retention basin or known flood area.
 - d. Not occupy any required off-street parking space.
 - e. Not be stacked.
 - 3. Aesthetics.
 - a. Containers must be a single color, either the color of the property's primary structure or an earth tone consistent with the surrounding terrain. Containers not in compliance with this requirement at the time of placement must be painted within 15 days of placement.
 - b. No graffiti or signage is allowed on containers.
 - c. Containers on properties along SR 89 and on corner lots must be screened from public view.
 - 4. Construction Storage.
 - a. Contractors may use containers in any zone for temporary storage of equipment and materials at a construction site during construction that is authorized by a Town of

Chino Valley Building Permit. Such containers are allowed only for the duration of the Building Permit.

- b. Homeowners may use containers for temporary storage of equipment and materials during construction that is authorized by a Town of Chino Valley Building Permit. Such containers are allowed only for the duration of the Building Permit.

D. Current Violations; Time to Comply. Property owners who had one or more containers on their property on or before April 9, 2024, shall bring such properties and containers into full compliance with this Section 4.32 by not later than April 8, 2025. Containers placed after April 9, 2024, must comply with this Section 4.32 immediately.

E. Containers by Zoning District. Table 4.32-1 below sets forth the number of metal storage containers allowed per zoning district.

Table 4.32-1 Containers by Zoning District		
Zoning District	Containers* Per Acre	Maximum Number
AR-36 Agricultural/Residential	1/acre	5 containers max.**
AR-5 Agricultural/Residential	1/acre	5 containers max.**
AR-4 Agricultural/Residential	1/acre	4 containers max.**
SR-2.5 Single-Family Residential	1/acre	2 containers max.**
SR-2 Single-Family Residential	1/acre	2 containers max.**
SR-1.6 Single-Family Residential	1/acre	1 container max.**
SR-1 Single-Family Residential	1/acre	1 container max.**
SR-0.16 Single-Family Residential	Prohibited	
SF-24,000 Single-Family Residential	Prohibited	
SF-12,000 Single-Family Residential	Prohibited	
MR-1 Multiple Family Residential – 1 acre min.	Requires a CUP	
MHP-4 Mobile Home Parks – 4 acre min.	Requires a CUP	
Along SR-89 CL – Commercial Light CH – Commercial Heavy I – Industrial	1/acre	1 container
Not on SR-89 CL – Commercial Light CH – Commercial Heavy I – Industrial	2/acre	2 containers
PL - Public Land	1/acre	1 container max.**
OS - Open Space/Resource Conservation	Requires a CUP	
PAD	Prohibited	
* All containers are limited to 40’ in length. Two 20’ containers can be used in place of one 40’ container in all zones where containers are permitted.		
** For properties larger than the minimum acreage in the zone: for every five acres above the base acreage in the zone, an additional 40’ container is allowed.		
Property owners requesting more than the maximum number of containers may apply for a CUP.		

Section 3. If any section, subsection, sentence, clause, phrase, or portion of this Ordinance or any part of the Amendments adopted herein is for any reason held to be invalid or unconstitutional by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof.

Section 4. The Mayor, the Town Manager, the Town Clerk, and the Town Attorney are hereby authorized and directed to take all steps necessary to carry out the purpose and intent of this Ordinance.

Section 5. Except as otherwise provided, any person found responsible for violating any provisions of this Ordinance shall be guilty of a civil violation, punishable by imposition of a civil sanction not to exceed \$500.00. Each day a violation continues shall be considered a separate violation. A person who commits a violation of this Ordinance after previously having been found responsible for committing two or more civil violations of this Ordinance within a 24-month period, whether by admission, by payment of the sanction, by default, or by judgment after hearing, shall be guilty of a class one misdemeanor.

PASSED AND ADOPTED by the Mayor and Common Council of the Town of Chino Valley, Arizona, this 9th day of April 2024.

Jack W. Miller, Mayor

ATTEST:

Erin N. Deskins, Town Clerk

APPROVED AS TO FORM:

Andrew J. McGuire, Town Attorney
Gust Rosenfeld P.L.C.

I hereby certify that the foregoing Ordinance No. 2024-943 was duly passed by the Council of the Town of Chino Valley, Arizona, at a meeting held on April 9, 2024, and that quorum was present, and that the vote thereon was ____ ayes and ____ nays and ____ abstentions. ____ Council members were absent or excused.

Erin N. Deskins, Town Clerk



TOWN OF CHINO VALLEY
Planning Commission Staff Report
March 5, 2024
File Number TA-2024-01
Text Amendment

PROJECT DESCRIPTION A request to amend the Town of Chino Valley Unified Development Ordinance, Chapter 154, by adding Section 4.32 Metal Storage Containers.

Staff Analysis:

Metal Storage Containers continue to be an item of demand for securing personal items on larger parcels of land in Chino Valley.

The Unified Development Ordinance states that the UDO “may be amended, supplemented, changed, modified or repealed when deemed necessary to best serve the public interest, health, comfort, convenience, safety and general welfare of the citizens of the Town.” This current text amendment request from staff, is deemed necessary to best serve the public convenience and property safety. The proposal is to add a section to the General Regulations that defines metal storage containers and identifies which zones permit metal storage containers, how many containers are allowed on each lot, and other required provisions to ensure compatibility on-site and with neighboring properties.

The use of metal storage containers has been discussed between staff and Council for a number of years; most recently in 2020 and 2021. During that time period, the discussion centered around considering these units “structures”. There was much discussion involving a variety of ways to determine how much storage would be allowed on each individual lot with an effort to reduce over-regulation and to be fair in the application of the new rules.

Consideration of the use of Metal Storage Containers by the UDO Subcommittee, the Planning and Zoning Commission, and the Town Council included the following direction/discussion items during 2020 and 2021:

- **Number and Size:** How to determine the number and size of Containers on parcels:
 - SR-1 or greater with a one acre minimum.
 - Agricultural zones to have two Containers and residential zones to have one container.
 - Containers in commercial zones based on the square footage of the commercial building on site.
 - Number of Containers based on the parcel size.
 - By length or storage amounts, based on zoning classification.
 - Commercial properties - max.one-400 square foot Container per property.
 - 160 square feet of storage container for each 1000 square feet of building on commercial property.
 - For SR-1, SR-2, SR-2.5 zones: 1-20’ Container. For AR-4, AR-5 zones: 2-40’ Containers.
 - Allow up to 50% of the lot in Containers.
 - Number of Containers based on 1% of lot size.
 - Allow 3% of lot for Containers for off highway commercial and industrial (four 40’ Containers per acre), 1.5% for highway commercial (two 40’ Containers per acre). One 40’ Container for ½ acre commercial.
 - Allow 1% of lot for Containers in Residential zones.
 - Anyone could request more Containers than allowed, by applying for a CUP.

- Location: Where the Containers should be allowed to be placed on the lot:
 - Behind the main structure on-site.
 - Screened from public view.
 - In the rear of the parcel.
 - Anywhere.
 - 10' from property lines.
 - Same setbacks as primary structure.
 - Treat Containers like a permanent structure in regard to setbacks.
 - If in a special flood hazard or sheet flow area, units need to be anchored.
- Appearance: Container appearance/visibility:
 - Require Containers to be painted to match the main building or home on the lot.
 - Screen with walls or landscaping.
 - Buffer from neighboring properties.
 - No stacking Containers.
- Process: What review and approval process(es) should be required to place a Container on a lot?
 - CUP – Containers not a listed use in the code, so a CUP is the way to allow them.
 - Site Plan review – a more in-depth process to access the entire lot.
 - Land Use Permit - for setbacks, to ensure initial placement location is right for records/tracking,
 - Building Permit: required for all Containers as Containers are structures; only required for Containers over 200 square feet; required only if the Container is modified; required if connected to any other structure; required if modified for animal use.
- Alterations: Should alterations to the Containers be allowed:
 - Not allow any Container to be modified.
 - Allow ventilation but no plumbing.
 - Any Container, regardless of size, that was modified in any way other than painting, would require a building permit.
 - Not allow electricity or plumbing in any Container.
 - Electrical service for lighting with a building permit.
 - No electrical permits, as there were lighting options available that did not require electricity to the Containers.
- Include a sunset clause in the ordinance.
- Create a sticker system that shows the Container had gone through the appropriate process (which would make it easier for code enforcement).
- A Primary Use is required on-site for a Container, except for contractor lots in Heavy Commercial.
- Temporary containers are allowed with the issuance of a Building Permit and must be removed at Building Permit Final.

These dialog points reflect many viewpoints, some conflicting, on how best to approach the number, review, approval, and placement of Metal Storage Containers.

The prior years' discussions centered on Containers being structures. When Containers are considered structures, they are required to meet all the Building Codes, including being set on foundations, using tie-downs, calculating snow loads, and all the rest of the reviews and requirements that goes along with that designation, including building permit review times and permit fees. This pathway of considering Containers structures complicates a relatively simple solution.

Current staff thought, is to consider the Containers solely storage containers, as an Accessory Use. If we do that, and with NO alterations to the Container, this review and approval can be an over-the-counter same-day approval. Any alteration shifts the Container to the status of a structure and would be required to meet all Building Code and Engineering requirements for placement.

Development Standards

When allowed, Metal Storage Containers shall meet the following development standards:

- (1) Metal Storage Containers are for storage only. No human habitation or occupancy is allowed.
- (2) A primary use is required on the property in order for any Metal Storage Container to be allowed.
- (3) No modification of the Metal Storage Container is allowed, other than painting.
- (4) No addition of plumbing or electrical equipment is allowed.
- (5) Metal Storage Containers shall meet all setback requirements for the primary structure in the district.
- (6) Metal Storage Containers shall be placed at the rear of the lot to reduce the visual prominence of the container.
- (7) Metal Storage Containers shall be painted a single color within 15 days of placement. The container color shall be either the color of the primary/closest structure on-site, or an earth-tone consistent with the surrounding terrain.
- (8) Metal Storage Containers shall not be placed in retention basins or known flood areas.
- (9) Metal Storage Containers shall not occupy any required off-street parking space.
- (10) Metal Storage Containers shall not be stacked.
- (11) No graffiti or signage is allowed on Metal Storage Containers.
- (12) Metal Storage Containers on properties along SR 89 and properties on corner lots shall be screened from public view.
- (13) Contractors may use metal storage containers in any zone for temporary storage of equipment and/or materials at a construction site during construction that is authorized by a Town of Chino Valley building permit. The containers are allowed for the duration of the building permit.
- (14) Homeowners may use cargo containers for temporary storage of equipment and/or materials during construction that is authorized by a Town of Chino Valley building permit. The containers are allowed for the duration of the building permit.
- (15) No metal storage container is allowed to be in any district not specifically authorized by this ordinance.
- (16) An over-the-counter Land Use Permit is required.
- (17) Any alteration to a Metal Storage Container, including but not limited to cutting any openings, adding electrical or plumbing or ventilation, adding a roof structure, or making the unit habitable in any way, reclassifies the Container from an Accessory Use that is allowed by this code, to a structure needing a Building Permit, which requires meeting all Building Codes and Engineering requirements for structures.

It is important to take time and to apply thoughtful rules. With zoning, it is always wise to start small and increase incrementally. Once established, it is very challenging to pull back/reduce/change zoning rules to allow less. Therefore, staff will generally recommend a more cautious code change in order for the proposed change to take hold and for any possible impacts to be felt within the community. Impacts can be immediate, or they may take years.

Staff is recommending the following number of Containers per Zoning District:

Containers by Zoning District

Table 1

Zoning District	Containers per Acre	
AR-36 Agricultural/Residential	1-40'/acre	5 containers max.*
AR-5 Agricultural/Residential	1-40'/acre	5 containers max.*
AR-4 Agricultural/Residential	1-40'/acre	4 containers max.*
SR-2.5 Single Family Residential	1-40'/acre	2 containers max.*
SR-2 Single Family Residential	1-40'/acre	2 containers max.*
SR-1.6 Single Family Residential	1-40'/acre	1 container max.*
SR-1 Single Family Residential	1-40'/acre	1 container max.*
SF-24,000 Single Family Residential	Prohibited	
SF-12,000 Single Family Residential	Prohibited	
MR-1 Multiple Family Residential – 1 acre min	CUP	
MHP-4 Mobile Home Parks - 4 AC min.	CUP	
Along SR-89 CL – Commercial Light CH – Commercial Heavy I - Industrial	1-40'/acre	1 container
Not on SR-89 CL – Commercial Light CH – Commercial Heavy I - Industrial	2-40'/acre	2 containers
PL – Public Land	1-40'/acre	1 container max.*
OS - Open Space/Resource Conservation	CUP	
SR-0.16 Single Family Residential	Prohibited	
PAD	Prohibited	

* - For properties larger than the minimum acreage in the zone: for every 5 acres above the base acreage in the zone, an additional 40' container is allowed.

Two 20-foot containers can be used in place of one 40' container in all zones where permitted.

Property owners requesting more than the maximum # of containers can submit for a CUP.

Staff Recommendation:

Staff recommends **APPROVAL** of the text amendment to create Section 4.32 Metal Storage Containers, as reflected in the 17 Development Standards listed on page 3, and in Table 1, Containers by Zoning District, above.

**SUGGESTED
COMMISSION MOTION:**

Move to **APPROVE** Text Amendment TA-2024-01 as reflected in the 17 Development Standards listed on page 3, and in Table 1 “Containers by Zoning District”, as amended by the Commission, subject to the staff report, information provided during this hearing, and the Planning Commission discussion.

Effect of the Approval:

By approving the Text Amendment, the Planning and Zoning Commission is recommending that the Town Council approve the text amendment to provide the ability to place metal storage containers (cargo containers/conex boxes) on certain zoned and sized parcels of land in Chino Valley, subject to specific criteria.

Prepared By:

Laurie Lineberry, AICP
Development Services Director
llineberry@chinoaz.net
(928)636-4427, x1217

Date: February 20, 2024

March 5th, 2024

Minutes - Planning and Zoning

PUBLIC HEARING #D.3 – Case # TA-2024-01 — Metal Storage Containers - A request to amend the Town of Chino Valley Unified Development Ordinance, Chapter 154 Section 4 General Regulations, to create Section 4.32 – Metal Storage Containers.

Chair Merritt asked if anyone on the commission had a disclosure to declare regarding this project. There were none.

Development Service Director, **Laurie Lineberry** presented the staff report and stated that the Commission discussed this item at their February 6, 2024 study session and had been discussed for a number of years. Staff had researched minutes from all the Planning & Zoning Commission meetings, Town Council study sessions, and UDO Sub Committee meetings and provided the full range of comments and suggestions made at all of those meetings. They were reflected in the bullet points on page 1 and 2 of the staff report. Staff looked at Yavapai County standards per zoning designations. Counties generally have lesser standards than Towns and Cities. Staff's recommendations, considering all the comments on page 1 and 2 of the staff report, were shown on the chart. What was being proposed by staff was more lenient than the County standards. There were two directions the Town could take in considering the approval of cargo containers: 1. Consider them a structure and permit them like any other building in the Town, allowing alterations to the containers, or, 2. Consider them solely a metal storage container and not allow alterations. If not altered, building permits would not be needed. If someone were to alter the container, they would need a building permit, and the container would then be required to meet all building codes, engineering standards, electrical, etc. If allowed just as a metal storage container the request for a container would be processed by a simple land use permit, an over-the-counter process and staff would go out and check for setbacks and painting after 15 days. **Lineberry** went over the development standards on the staff report and stated the item would go to Town Counsel at end of the month.

Chair Merritt asked if the Commission had any questions for staff.

Switzer stated he had a recommendation, since the County normally has less restrictions, that on 1-acre and 1.6-acre parcels within the Town, to only allow one 10 or 20-foot container. He felt that a 40-foot container was pretty big for a one-acre lot.

Lineberry stated it could be a motion the Commission could make to change that standard and that staff would pass it on to the Town Council as the Commission's recommendation.

Penn stated he believed for 1-acre lots, no storage container should be allowed.

Lineberry stated that the Commission needed to discuss it, and whatever the Commission agreed to as a group, that would be what the staff would bring forward to Town Counsel.

Penn stated he believed even on a 2-acre lot, two containers was overkill; one container was more than sufficient, aesthetically, he felt two containers was too much.

Switzer stated he would adjust his as well, one 10-foot container on 1-acre, one 20-foot container on 1.6-acre and one 40-foot on 2-acres.

Meadors stated she liked the draft as written.

Chair Merritt opened the meeting for public comments. There were none.

Chair Merritt closed the public hearing.

Motion was made by Meadors, seconded by Pasciak to approve TA-2024-01, as presented,

subject to the staff report and information provided during the hearing.

Merritt recapped the changes proposed earlier in the meeting: SR-1 one 10-foot container, SR-1.6 one 20-foot container, SR-2 one 40-foot container.

Switzer stated if Commission agreed with those, then he would propose altering AR-4 as well.

Merritt suggested a maximum of three containers, and more would need to be discussed before allowed.

Switzer stated more than these could ask for a CUP.

Lineberry concurred about the CUP.

Merritt stated he agreed but does not like a lot of CUP's. To recap the discussion, SR-1 would get one 10-foot container, SR-1.6 would get one 20-foot container, SR-2 would get one 40-foot container, SR-2.5 would get two max 40-foot containers, SR-4 would get three max 40-foot containers, higher acres would get a maximum of five containers with possibility of more through a CUP. The Commission agreed.

Lineberry stated she made notes of all the changes.

Meadors stated she wanted the discussion as an amendment and wanted a vote on the amendment.

Merritt called for a Motion on the amendments as listed.

Switzer stated he believes the SR-1 and SR-1.6 should be allowed one 20-foot container.

Merritt - to recap again, SR-1 would get one 20-foot container, SR-1.6 would get one 20-foot container, SR-2 would get one 40-foot container, SR-2.5 would get two max 40-foot containers, SR-4 would get three max 40-foot containers.

Pasciak stated he believed what staff originally proposed was adequate.

Merritt asked for a consensus.

Zamudio stated he liked what was written by staff, that it should stay the same.

Switzer stated he liked the amendments.

Meadors stated as presented by staff.

Pasciak stated as presented by staff.

Penn stated on SR-2.5, he would like to see one 40-foot container max.

Welker stated as presented by staff.

Merritt stated he believed what staff presented was adequate.

Merritt suggested sticking with the staff proposal and to let the Town Counsel massage it more, if they chose.

A vote was taken and the motion passed with a 5-2 vote with Switzer and Penn voting nay, for reasons stated in the discussion of the case.

4.0 General Regulations

4.32 Metal Storage Container Regulations

A. Purpose

B. Containers by Zoning District

C. General Requirements and Development Standards

ORDINANCE NO. 2024-[REDACTED]

AN ORDINANCE OF THE MAYOR AND COMMON COUNCIL OF THE TOWN OF CHINO VALLEY, ARIZONA, ADOPTING THE AMENDMENTS TO THE TOWN OF CHINO VALLEY UNIFIED DEVELOPMENT ORDINANCE AMENDING THE CODE OF THE TOWN OF CHINO VALLEY, ARIZONA, TITLE XV, LAND USAGE, CHAPTER 154, UNIFIED DEVELOPMENT ORDINANCE, BY AMENDING CERTAIN PROVISIONS OF CHAPTER 4 BY ADDING SECTION 4.32 METAL STORAGE CONTAINER REGULATIONS.

WHEREAS, The Mayor and Common Council of the Town of Chino Valley (the “Town Council”) desires to amend the Chino Valley Town Code, Title XV, Land Usage, Chapter 154, Unified Development Ordinance of the Town of Chino Valley (the “UDO”), Section 4, General Regulations, by creating section 4.32 “Metal Storage Container Regulations”; and

WHEREAS, the Town Council has determined that the Text Amendment is not in conflict with the Town of Chino Valley General Plan and any applicable specific area plan, neighborhood plan, or any other plan; and

WHEREAS, in accordance with Article II, Sections 1 and 2 of the Constitution of Arizona, the Town Council has considered the individual property rights and personal liberties of the residents of the Town before adopting this ordinance; and

NOW, THEREFORE, BE IT ORDAINED by the Mayor and Common Council of the Town of Chino Valley, Arizona, as follows:

Section 1. The recitals above are hereby incorporated as if fully set forth herein.

Section 2. The UDO section 4.32 (Metal Storage Container Regulations) is here by created as follows:

4.32 METAL STORAGE CONTAINER REGULATIONS

A. PURPOSE

B. CONTAINERS BY ZONING DISTRICT

C. GENERAL REQUIREMENTS AND DEVELOPMENT STANDARDS

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Section 3. All ordinances and parts of ordinances in conflict with the provisions of this Ordinance are hereby repealed.

Section 4. If any section, subsection, sentence, clause, phrase or portion of this Ordinance, is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof.

Section 5. The Mayor, the Town Manager, the Town Clerk and the Town Attorney are hereby authorized and directed to take all steps necessary to carry out the purpose and intent of this Ordinance.

PASSED AND ADOPTED by the Mayor and Common Council of the Town of Chino Valley, Arizona, this 26th day of March, 2024.

Jack W. Miller, Mayor

ATTEST:

Erin N. Deskins, Town Clerk

APPROVED AS TO FORM:

Gust Rosenfeld PLC, Town Attorney
By: Andrew J. McGuire

I hereby certify the above foregoing Ordinance No. 2024-*** was duly passed by the Council of the Town of Chino Valley, Arizona, at a meeting held on March 26, 2024, and that quorum was present, and that the vote thereon was _____ ayes and _____ nays and _____ abstentions. Council members were absent or excused.

Erin N. Deskins, Town Clerk