

REQUEST FOR PROPOSALS

For

**Corrosion Protection
Support Services**

Zone 7 Water Agency



Request for Proposals
Corrosion Protection Support Services

December 8, 2021

INTRODUCTION

Zone 7 is one of ten active zones of the Alameda County Flood Control and Water Conservation District, which is a special district established by State legislature in 1949. Zone 7 was established by popular vote of the residents of the Livermore-Amador Valley in 1957 under an amendment to the District Act.

Today, Zone 7 owns about 40 miles of flood control channels and provides water to approximately 245,000 residents within a service area of approximately 425 square miles in eastern Alameda County (Service area comprised of Dublin, Pleasanton, Livermore, and unincorporated areas of eastern Alameda County).

As the major water supply and flood control agency in eastern Alameda County, Zone 7 has an ongoing commitment to plan for existing and future needs, implement needed projects, maintain a high quality, reliable water delivery and flood control system, and provide a quality product and service to the community.

Since Zone 7 does not have designated staff to perform corrosion protection related work, we are seeking Proposals from qualified firms to provide Corrosion Protection Support services as described in the Scope of Work.

I. INSTRUCTIONS TO PROPOSERS

A. Examination of Proposal Documents

By submitting a Proposal, the Proposer represents that it has thoroughly examined and become familiar with the work required under this RFP, and that it is capable of performing timely and quality work to the level of Zone 7's expectations and achievement of its objectives.

B. Addenda/Clarifications

Questions or comments regarding this RFP shall be addressed in writing to Athena Watson at awatson@zone7water.com. Responses from Zone 7 will be communicated by e-mail to all recipients of this RFP.

C. Submission of Proposals

All Proposals shall be submitted to Athena Watson by email to awatson@zone7water.com. Proposals must be received no later than **2:00 p.m. on January 6, 2022**. Proposals received after this time will not be accepted and will be returned to the Proposers unopened.

The Proposers email shall be clearly marked as **"RFP for Corrosion Protection Support Services."**

D. Proposal Documents Inclusion

At the sole discretion of Zone 7, the Proposal Documents may be deemed a part of the contract resulting from this RFP, if awarded.

E. Withdrawal of Proposals

A Proposer may withdraw its Proposal at any time before the expiration of the time for submission of Proposals as provided in this RFP by sending a written request for withdrawal signed by, or on behalf of, the Proposer to Athena Watson. The time of receipt of email shall be the time such request is received in hand by Zone 7. The Proposer assumes the risk of any failed delivery.

F. Public Records Act Requests

Zone 7 believes that the public interest is served by securing the best quality work at the lowest price. Accordingly, we request information about your company's qualifications, past experience and other similar items. Under California law, if requested to provide a copy of your proposal to a third party, we will do so in order to comply with the California Public Records Act.

If you believe that any information that you will be providing to Zone 7 is confidential or is subject to protection as a trade secret, please clearly mark that information as confidential in your submittal. You may highlight the confidential information in yellow or otherwise mark it so that Zone 7 personnel clearly know that it is confidential or trade secret information.

Zone 7 will do its best not to disclose confidential or trade secret information that is clearly marked as such, but you should know that you bear the risk of marking the confidential/trade secret information sufficiently clearly so as to allow Zone 7 personnel to redact that information prior to providing it to a requestor. Zone 7 assumes no responsibility for any failure on your part to mark the information sufficiently clearly so as to allow our staff to redact the information at the appropriate time.

Prior to disclosing your proposal to a requestor, Zone 7 will provide you with reasonable

notice of the request and a reasonable opportunity to seek a protective order from a court of competent jurisdiction. Zone 7 will not contest your request for a protective order but will also not contest a request for your response to the request for proposals. Zone 7 will comply with any order regarding disclosure from a court of competent jurisdiction.

G. Rights of Zone 7

This RFP does not commit Zone 7 to enter into a contract, nor does it obligate Zone 7 to pay for any costs incurred in the preparation and submission of Proposals or in anticipation of a contract.

Zone 7 may investigate the qualifications of any Proposer under consideration, require confirmation of information furnished by the Proposer, and require additional evidence of qualifications to perform the services described in this RFP.

Zone 7 reserves the right to:

1. Reject any or all Proposals.
2. Issue subsequent Requests for Proposals.
3. Postpone opening for its own convenience.
4. Remedy technical errors in the Request for Proposal process.
5. Approve or disapprove the use of particular subcontractors.
6. Negotiate with any, all, or none of the Proposers.
7. Solicit best and final offers from all or some of the Proposers.
8. Award a contract to one or more Proposers.
9. Award a contract to a team created by Zone 7 from the Proposers and/or its subcontractors.
10. Award a contract to a Proposer other than the one with the lowest rates.
11. Waive informalities and irregularities in Proposals.

H. Contract Type

By submitting a Proposal to Zone 7 in response to this RFP, Proposer agrees that if selected by Zone 7 as the successful consultant, it will enter into this contract with Zone 7 containing the terms and conditions as set forth in the attached sample contract and insurance requirements (Attachment 1).

Contract will be for Corrosion Protection Services: Professional Services Agreement with Fixed Rate Schedules to be used with issuance of Task Orders for specific assignments on various projects. The contract is expected to begin on or about March 7, 2022 and end on December 31, 2025. The contract may be extended for two additional one-year periods at Zone 7's discretion.

II. PROPOSER'S MINIMUM QUALIFICATIONS

1. The Proposer shall submit the required Certificate of Insurance (if consultant has been selected).
2. The Proposer is required to list the key individuals who will be assigned to the project, their qualifications and disciplines, and each individual's degree of commitment.
3. The Proposer shall provide a resume for each named key personnel that includes but is not limited to the following information:
 - Name and proposed assignment (do not include home addresses or phone numbers)
 - Years of experience
 - Education – degrees, schools and years obtained
 - Professional registration(s)
 - Experience directly related to proposed assignment
 - At least two client references, including contact names, addresses and telephone numbers
 - Description of projects of a similar nature worked on in the past 5 years
4. Proposer shall comply with applicable federal, state and local regulations concerning equal employment opportunity requirements.
5. The Proposer shall possess knowledge of regulations and ordinances regarding corrosion protection engineering and shall be familiar with local conditions relating to these services in Alameda County.

III. SCOPE OF WORK

The Consultant shall perform the following services.

1. Quarterly Rectifier and Anode Output - Measure and record the voltage and current output of tank and pipeline rectifiers with a portable digital voltmeter. Measure the current output of each impressed current anode using the calibrated shunts in the anode junction box. Inspect the rectifiers, anode cables, and anode junction boxes to determine if the components of the cathodic protection system require repair or replacement. Complete minor repairs or adjustments during the monitoring. Provide recommendations and cost estimates for any extensive repairs.
2. Bi-Annual Pipe-to-Soil Potential Survey and Report – Measure pipe-to-soil potentials at previously established test points on the Zone 7 water transmission

pipelines and treatment plant pipelines. Use current interrupters to remotely cycle the rectifiers on and off.

The bi-annual Cathodic Protection Report shall be submitted to Zone 7 by December 31, 2022, with a new report due every 2 years. The report shall include current and historical data sufficient to trend cathodic protection system function. The annual report shall also include any deficiencies in the existing system and provide recommendations available remediation options and associated costs.

Electronic copies of existing cathodic protection data are held by Zone 7. These files include .kmz and .xlsx files for cathodic protection geolocation and cathodic protection test data. Consultant shall update these record files as needed to capture all new cathodic protection location and test data.

3. Interrupted Tank-to-Water Potential Survey – Measure potentials at previously established test points on the Dougherty Reservoir, the Del Valle Clearwell, the Patterson Pass Backwash Tank, the Patterson Pass UF Clarifier, the Patterson Pass Chlorine Contact Tank, and the new Patterson Pass Clearwell.
4. Contingency Corrosion Assessments –Perform as-requested corrosion protection support services other than the assessments described. The contingency allows for additional corrosion protection support services to be performed when specifically requested by Zone 7 (through Task Order). Consultant shall obtain authorization from Zone 7 prior to performing these corrosion assessments.
5. Additional assignments may be requested by Zone 7 that may include, but would not be limited to, preparation of design drawings, technical specifications, and construction cost estimates that would be part of a bid package for public bidding to a general contractor.
6. Prepare any needed drawings (usually 11 x 17 or 22 x 34 inches) using current version of AutoCAD, or approved version. Zone 7 will provide a sample border and logo, and the Consultant shall use the Zone 7 CAD Standards attached to this document as Attachment 2.

Zone 7 will contact the Consultant to determine the type and amount of services required for the individual projects. Execution of the Master Agreement and Task Orders shall obligate Zone 7 to compensate the Consultant only for services provided to Zone 7 for that specific Task Order. Compensation for services will be based on Consultant's submitted fee schedule and as agreed by the Master Contract.

This is a Master Agreement (Contract) for a not-to-exceed amount of \$150,000 for the three-year term. Each additional one-year term would be a not-to-exceed amount of \$50,000 each year. Actual services will vary depending on project needs for the year.

Execution of the Master Agreement for On-Call Services and Task Orders shall obligate Zone 7 to compensate the Consultant only for services provided to Zone 7 for that specific Task Order. Compensation for services will be based on Consultant's submitted fee schedule and as agreed by the Master Agreement.

Zone 7 will contact the Consultant to set up a Task Order for corrosion protection engineering related services needed for the individual projects. The Consultant will perform the scope of the Task Order and provide noted deliverables under the agreed to price.

IV. EVALUATION AND SELECTION

A. Evaluation Criteria: The following criteria will be used to evaluate written proposals that are submitted. Quality and experience will be weighted most heavily. All others will be weighted approximately the same.

1. General response to the RFP: Approach and understanding of Zone 7 goals.
2. Quality and experience: Technical experience in performing work of closely similar nature; qualifications of key personnel; key personnel's level of involvement in performing related work; adequacy of labor commitment; concurrence in the restrictions on changes in key personnel; experience working with water supply, flood control or other public agencies; experience with on-call work, record of completing work on schedule; strength and stability of the firm; technical experience and strength and stability of proposed subcontractors.
3. Comments/suggestions on Preliminary Scope of Work.
4. Demonstrated understanding of the project requirements, potential problem areas, and project approach.
5. Assessments by client references.

B. Evaluation Procedure

A Review Board, generally made up of Zone 7 staff, will review the qualifications

submitted, establish a list of finalists based on pre-established review criteria, interview the finalist firms if necessary, and select the successful proposer based on demonstrated competence and necessary qualifications. The names of the Review Board Members and the individual or composite rating and/or evaluation forms prepared by Board Members will not be revealed. Negotiations of the contracts, the detailed scope of work, and the fee are not within the scope of the Review Board.

Members of the Review Board will review the Proposals to determine those firms to be invited for an oral interview, if needed. Approximately 45 minutes will be allowed for each oral interview and questions and answers. The proposed Project Manager must lead the presentation before the Review Board. Proposers should also be aware that award might be made without interviews or further discussion.

C. Award

When the Review Board has completed its review, Proposers will be advised of the number one selection. A contract will then be negotiated with the selected firm for the extent of services to be rendered and for the method of compensation. The recommendations for approval of a Consultant Services Agreement and funding authorization of the contract are expected to be made to the Zone 7 Board of Directors at its February 2022 meeting.

PROPOSAL FORMAT AND CONTENT

A. Format

Please submit an electronic copy of your Proposal, which shall be organized and prepared according to the **Content** section that follows, with attention given to the following:

1. The project team including the organization chart and commitment (hours/%) of the team during the course of the project. The Project Manager listed should be available for, and lead, the oral presentation.
2. A record of experience and qualifications of the project members. Zone 7 is interested in the experience of the project members themselves in addition to the firm. Provide relevant examples of the project personnel experience as it relates to the Preliminary Scope of Work, local experience, and water supply and flood control projects/issues.
3. Any additional relevant services performed by your firm that were not outlined in the Preliminary Scope of Work.
4. **Submittals shall also include one (1) electronic copy of the firm's rates in a separate file. The rate sheet must identify the proposed**

job classifications and corresponding hourly rates (for Calendar Year 2022) for performing the services. Indicate your firm's name in the filename. This information will not be used during the Proposals review. It must show proposed staff including, at a minimum, the project manager, professional corrosion Engineer, field engineer (and/or field technician), and draftsman and corresponding hourly rates for performing the services discussed in the Preliminary Scope of Work.

B. Content

1. **Summary and Overview** - Use this section to summarize your approach to the topics identified in the Preliminary Scope of Work, the strengths of your project team, and why your firm should be selected.
2. **Team Personnel** - Identify the key project personnel and their roles associated with the tasks in the Preliminary Scope of Work. Identify the team and individual personnel experience as it relates to the Preliminary Scope of Work, local experience and water supply/flood control projects/issues. List other major projects the team or its personnel are involved with currently including project title, percent workload, and project responsibility.
3. **Comments on the Preliminary Scope of Work** - This may be used as an opportunity to expand upon your team's specific experience and expertise which may be applicable to the Preliminary Scope of Work.
4. **Work Plan** - Describe how the project team will fulfill the Preliminary Scope of Work. Include a matrix of personnel and tasks. To illustrate your strategy, describe tools and techniques you will use, and challenges you anticipate, in addressing specific issues identified in the Preliminary Scope of Work.
5. **References** - From recent applicable experience of the Project Manager and key project personnel, list three (3) relevant projects, and include the agency, staff contact name, address, and telephone number for each.
6. **Resumes** of the proposed project team may also be submitted.
7. **The total proposal length** should not exceed 10 pages, not including resumes.

ATTACHMENT 1
CONTRACT AND INSURANCE

SERVICES AGREEMENT

between

**ALAMEDA COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT, ZONE 7**

and

Consultant Name

for

Project/Program Name

Contract No. _____

Dated _____

This Professional Services Agreement ("**Agreement**") is made effective as of _____, by and between the Alameda County Flood Control and Water Conservation District, Zone 7 commonly known as ZONE 7 WATER AGENCY, hereinafter referred to as ("**Agency**"), a public body, corporate and politic, duly organized and existing under and by virtue of the laws of the State of California and _____, a **DESCRIBE BUSINESS ENTITY, E.G., PROFESSIONAL CORPORATION** ("Consultant") (collectively, the "Parties"), at Livermore, California, with reference to the following facts and intentions:

WHEREAS, The Agency is engaging in _____ ("Project"); and

WHEREAS, The Agency requires a highly qualified consultant with the requisite knowledge, skill, ability and expertise to provide the necessary services for the Project ("Services"); and

WHEREAS, Consultant represents to the Agency that it is fully qualified and available to perform the Services for and as requested by the Agency.

NOW, THEREFORE, in consideration of the mutual promises, covenants, and terms and conditions herein, the Parties agree as follows:

1. SCOPE OF WORK

- 1.1. Consultant shall provide all services set out in Appendix A, Scope of Work, attached and incorporated here to the satisfaction of the Agency.
- 1.2. **Independent Contractor; Agency** - The Consultant is acting hereunder as an independent contractor and not as an agent or employee of the Agency. The Consultant is thus not eligible to receive workers' compensation, medical, indemnity or retirement benefits, including but not limited to enrollment in the Alameda County Employees' Retirement Association (ACERA). Except as expressly provided herein, the Consultant is not eligible to receive overtime, vacation or sick pay. The Consultant shall not represent or otherwise hold out itself or any of its directors, officers, partners, employees, or agents to be an agent or employee of the Agency.
- 1.3. **Extra Services** - Before performing any services outside the scope of this Agreement ("Extra Services"), Consultant shall submit a written request for approval of such Extra Services and receive written approval from the Agency. The Agency shall have no responsibility to compensate Consultant for any Extra Services provided by Consultant without such prior written approval.
- 1.4. **Methods** - Consultant shall have the sole and absolute discretion in determining the methods, details and means of performing the Services

required by the Agency. The Agency shall not have any right to direct the methods, details and means of the Services; however, Consultant must receive prior written approval from the Agency before assigning or changing any assignment of Consultant's project manager or key personnel and before using any Sub-consultants ("Sub-consultants") or Sub-consultant agreements for services or materials under this Agreement and any work authorizations.

- 1.5. **Review** - Consultant shall furnish the Agency with reasonable opportunities from time to time to ascertain whether the Services of Consultant are being performed in accordance with this Agreement. All work done and materials furnished shall be subject to final review and approval by the Agency. The Agency's review and approval of the Services shall not, however, relieve Consultant of any of its obligations under this Agreement.

2. COMPENSATION

- 2.1. **Amount** – As consideration for the Services described above, THE AGENCY will pay the Consultant an amount not to exceed \$_____ ("Maximum Amount"). DESCRIBE ANY PERIODIC BILLING REQUIREMENTS, EXPECTATIONS OR OTHER PARTICULARS, E.G., NOT TO EXCEED \$_____ PER MONTH, OR CONSULTANT SHALL NOTIFY THE AGENCY WHEN TOTAL INVOICED AMOUNT EQUALS 80% OF MAXIMUM AMOUNT.

Payments will be made at the rates set forth in the Fee Schedule which is attached hereto within and incorporated herein as though fully set forth ("Fee Schedule" – Appendix B). Consultant shall submit an invoice within ten (10) days after the end of each month during the term of this Agreement describing the Services performed for which payment is requested.

- 2.2. **Invoicing** – The invoice shall identify and describe the activities performed by Consultant and state the total cost of the Services for the period of the invoice; the hours worked; the name and title of the person(s) performing the work; the hourly rate for the person(s) performing the work; the accrued reimbursable expenses; and the budget amount and percentage remaining (after invoice payment), without reduction for retentions. The invoice shall also identify expenses for which reimbursement is requested and attach supporting documentation, including original receipts and/or bills. Any expenses exceeding \$500 shall require written approval from the Agency. Reimbursable costs shall not include any administrative or overhead expenses and shall be reimbursable as described in the Fee Schedule.

Costs or expenses not designated or identified in the Fee Schedule shall not be reimbursable unless otherwise provided in this Agreement. Only actual time in providing the Services will be charged. The Agency will not make any payments for Consultant's travel time incurred in providing the Services, and

Consultant agrees not to invoice the Agency for any travel time incurred in providing the Services.

The Agency shall review and approve all invoices prior to payment. Consultant agrees to submit additional supporting documentation to support the invoice if requested by the Agency. If the Agency does not approve an invoice, the Agency shall send a notice to the Consultant setting forth the reason(s) the invoice was not approved. Consultant may re-invoice the Agency to cure the defects identified in the Agency notice. The revised invoice will be treated as a new submittal. If the Agency contests all or any portion of an invoice, the Agency and the Consultant shall use their best efforts to resolve the contested portion of the invoice.

The Agency shall pay approved invoice amounts within thirty (30) days of receipt. The Agency's determinations regarding verification of Consultant's performance, accrued reimbursable expenses, and percentage of completion shall be binding and conclusive. Consultant's time records, invoices, receipts and other documentation supporting the invoices shall be available for review by the Agency upon reasonable notice and shall be retained by Consultant for three (3) years after completion of the Project.

All invoices submitted for payment must indicate the Agreement number and either are to be emailed to accountspayable@zone7water.com or a hard copy mailed to Zone 7 Water Agency, 100 North Canyons Parkway, Livermore, CA 94551, Attention: Accounts Payable.

- 2.3. **Withholding Payment** – In the event the Agency has reasonable grounds for believing Consultant will be unable to materially perform the Services under this Agreement or unable to complete the Services within the Maximum Amount described in this Agreement, or if the Agency becomes aware of a potential claim against Consultant or the Agency arising out of Consultant's negligence, intentional act or breach of any provision of this Agreement, including a potential claim against Consultant by the Agency, then the Agency may withhold payment of any amount payable to Consultant that the Agency determines is related to such inability to complete the Services, negligence, intentional act, or breach.

3. TAXES; INSURANCE; PERMITS; LICENSES

- 3.1. **Taxes** - Consultant shall be solely responsible for the payment of all federal, state and local income tax, social security tax, worker's compensation insurance, state disability insurance, and any other taxes or insurance Consultant, as an independent contractor, is responsible for paying under federal, state or local law. Consultant is aware of the provisions of Section 3700 of the California Labor Code, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and Consultant

shall comply with such provisions before commencing the performance of the Services under the Agreement. Consultant and its Sub-consultants shall maintain applicable workers' compensation insurance for their employees in effect during all work covered by the Agreement.

- 3.2. **Permits and Licenses** - Consultant shall procure and maintain all permits, and licenses and other government-required certification necessary for the performance of the Services, all at the sole cost of Consultant. None of the items referenced in this section shall be reimbursable to Consultant under the Agreement. Consultant shall comply with any and all applicable local, state, and federal regulations and statutes including Cal/OSHA requirements.

4. RISK TRANSFER PROVISIONS

- 4.1. **Workers' Compensation Insurance** - By his/her signature hereunder, Consultant certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and he/she will comply with such provisions before commencing the performance of the work of this Agreement.

- 4.2. **Indemnification** - To the fullest extent permitted by law, Consultant will immediately defend, indemnify and hold harmless the Agency, its directors, officers, employees, or authorized volunteers, and each of them (collectively "the Agency") from and against:

4.2.1. All claims, demands, liabilities and losses arising out of the performance (or actual or alleged non-performance) of the services by Consultant, including its agents and employees, under this Agreement, for damages to persons or property arising, pertaining to or relating to the Consultant's negligent acts or omissions or willful misconduct or the failure of Consultant to comply with any professional standard of care applicable to Consultant's services.

4.2.2. Any and all actions, proceedings, damages, costs, expenses, penalties or liabilities, in law or equity, of every kind or nature whatsoever, arising out of, resulting from, or on account of the intentional or negligent violation of any governmental law or regulation, compliance with which is the responsibility of Consultant.

4.2.3. Any and all losses, expenses, damages (including damages to the work itself), attorneys' fees, and other costs, including all costs of defense, including but not only costs of counsel acceptable to the Agency, which the Agency may incur with respect to the failure, neglect, or refusal of Consultant to perform the Services or its obligations under the Agreement. Such costs, expenses, and damages shall include all costs,

including attorneys' fees, incurred by the Agency in any lawsuit to which it is a party. Upon the Agency's tender, Consultant shall immediately defend, at its own cost, expense and risk, any and all such suits, actions or other legal proceedings, with counsel acceptable to the Agency. Consultant shall further defend itself against any and all liabilities, claims, losses, damages, and costs arising out of or alleged to arise out of performance or non-performance of the work hereunder, and shall not tender such claims to the Agency nor to its directors, officers, employees, or authorized volunteers, for defense or indemnity.

4.2.4. Consultant shall pay and satisfy any judgment, award or decree that may be rendered against the Agency or its directors, officers, employees, or authorized volunteers, in any and all such aforesaid suits, actions, or other legal proceedings if arising as provided in the previous subsections of this Section.

4.2.5. Consultant shall reimburse the Agency or its directors, officers, employees, or authorized volunteers, for any and all legal expenses and costs incurred by each of them in connection therewith.

Consultant's indemnification obligations shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Consultant, its agents, employees under any applicable Worker Compensation Act, Disability Benefits Act, or other employee benefit act. Consultant's obligation to defend and indemnify shall not be restricted by the insurance requirements of this Agreement or to insurance proceeds, if any received by the Agency, or its directors, officers, employees, or authorized volunteers.

Notwithstanding the foregoing obligations, Consultant shall not at any time be responsible for any claims, liabilities or demands to the extent that they arise from the negligence or willful misconduct of the Agency, provided, however, that contributory negligence will not relieve Consultant of its obligation to defend unless the claims, liabilities or demand are the result of the sole negligence or willful misconduct of Agency.

The indemnity provided under this indemnification provision is intended to and will survive the expiration or termination of the Agreement and remain in full force and effect until barred by the applicable statute of limitations.

5. GENERAL CONDITIONS

5.1. **Laws, Regulations and Permits** -The Consultant shall give all notices required by law and comply with all laws, ordinances, rules, and regulations pertaining to the conduct of the work. The Consultant shall be liable for all violations of the law in connection with work furnished by the Consultant. If the Consultant performs any work knowing it to be contrary to such laws,

ordinances, rules and regulations, the Consultant shall bear all costs arising therefrom.

- 5.2. **Safety** - The Consultant shall execute and maintain his/her work so as to avoid injury or damage to any person or property.

In carrying out his/her work, the Consultant shall at all times exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions under which the work is to be performed, and be in compliance with all applicable federal, state and local statutory and regulatory requirements including State of California, Department of Industrial Relations (Cal/OSHA) regulations, and the U.S. Department of Transportation Omnibus Transportation Employee Testing Act. Safety precautions, as applicable, shall include but shall not be limited to: adequate life protection and life-saving equipment; adequate illumination; instructions in accident prevention for all employees, such as the use of machinery guards, safe walkways, scaffolds, ladders, bridges, gang planks, confined space procedures, trenching and shoring, fall protection, and other safety devices; equipment and wearing apparel as are necessary or lawfully required to prevent accidents, injuries, or illnesses; and adequate facilities for the proper inspection and maintenance of all safety measures.

- 5.3. **Labor Compliance Requirements** - Labor Compliance requirements (Prevailing Wage, SB 854): Contractor/Vendor must comply with all labor compliance requirements including but not limited to prevailing wage requirements, SB 854, Labor Code sections 1771.1(a) & 1725.5, Public Works Contractor Registration Program, and Electronic Certified Payroll Records to Labor Commissioner. Additional information about these requirements and the new public works program regarding compliance monitoring, administration and enforcement are available at the Department of Industrial Relations. **[For Public Works Contracts]** Copies of the rate of per diem prevailing wage shall be on file at the principal office of the Agency, and shall be made available to any interested party upon request.

6. REQUIRED INSURANCE

Liability Insurance - The Consultant shall provide and maintain at all times during the performance of the work under this Agreement, the following commercial general liability, professional liability and automobile liability insurance. All of the insurance shall be provided on policy forms and through companies satisfactory to the Agency.

- 6.1. **Coverage** - Coverage shall be at least as broad as the following or as provided in Appendix C:

- 6.1.1. Coverage for Professional Liability appropriate to the Consultant's profession covering Consultant's wrongful acts, negligent actions, errors

or omissions. **If Claims Made Policies:** the Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work; insurance must be maintained and evidence of insurance must be provided **for at least five (5) years after completion of the contract of work**; and if coverage is canceled or non-renewed, and not **replaced with another claims-made policy form with a Retroactive Date** prior to the contract effective date, the Consultant must purchase "extended reporting" coverage for a minimum of **five (5)** years after completion of contract work.

6.1.2. Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 0001).

6.1.3. Insurance Services Office (ISO) Business Auto Coverage (Form CA 0001), covering Symbol 1 (non-owned and hired automobiles).

6.2. **Limits** - The Consultant shall maintain limits no less than the following:

6.2.1. Professional Liability – Two million dollars (\$2,000,000) per claim and annual aggregate.

6.2.2. Commercial General Liability – Two million dollars (\$2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater for bodily injury, personal injury and property damage and products & completed operations liability. If Commercial General Liability Insurance or other form with a general aggregate limit or products-completed operations aggregate limit is used, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 25 03, or ISO CG 25 04, or insurer's equivalent endorsement provided to the Agency) or the general aggregate limit and products-completed operations aggregate limit shall be twice the required occurrence limit.

6.2.3. Automobile Liability – One million dollars (\$1,000,000) for bodily injury and property damage each accident limit.

6.2.4. Excess Liability – The limits of insurance required in this Agreement may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of the Agency (if agreed to in a written contract or agreement) before the Agency's own primary or self-Insurance shall be called upon to protect it as a named insured.

6.3. **Required Provisions** - The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

- 6.3.1. The Agency, its directors, officers, employees, and authorized volunteers are to be given insured status at least as broad as ISO endorsement CG 20 10 10 01 specifically naming all of the Agency parties required in this Agreement, or using language that states "as required by contract"). All Sub-consultants hired by Consultant must also have the same forms or coverage at least as broad; as respects: liability arising out of activities performed by or on behalf of the Consultant; products and completed operations of the Consultant; premises owned, occupied or used by the Consultant; and automobiles owned, leased, hired or borrowed by the Consultant. The coverage shall contain no special limitations on the scope of protection afforded to the Agency, its directors, officers, employees, or authorized volunteers.
- 6.3.2. Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the Agency. Additionally, Consultant shall give Agency thirty (30) days written notice prior to any material change or cancellation of said coverage.
- 6.3.3. For any claims related to this project, the Consultant's insurance shall be primary insurance as respects the Agency, its directors, officers, employees, or authorized volunteers, using the ISO CG 20 01 04 13 or coverage at least as broad. Any insurance, self-insurance, or other coverage maintained by the Agency, its directors, officers, employees, or authorized volunteers shall be in excess of the insurance required under this Agreement, and shall not contribute to it.
- 6.3.4. Any failure to comply with the reporting or other provisions of the policies including breaches and warranties shall not affect coverage provided to the Agency, its directors, officers, employees, or authorized volunteers.
- 6.3.5. Such liability insurance shall indemnify the Consultant and his/her Sub-consultants against loss from liability imposed by law upon, or assumed under contract by, the Consultant or his/her Sub-consultants for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.
- 6.3.6. The general liability policy shall cover bodily injury and property damage liability, owned and non-owned equipment, blanket contractual liability, completed operations liability.
- 6.3.7. The automobile liability policy shall cover all owned, non-owned, and hired automobiles.
- 6.4. **Workers' Compensation and Employer's Liability Insurance** - The Consultant and all Sub-consultants shall cover or insure under the applicable laws relating to workers' compensation insurance, all of their employees employed directly by them or through Sub-consultants in carrying out the

work contemplated under this Agreement, all in accordance with the "Workers' Compensation and Insurance Act", Division IV of the Labor Code of the State of California and any Acts amendatory thereof, with statutory limits. The Consultant shall provide employer's liability insurance with limits of no less than \$1,000,000 each accident, \$1,000,000 disease policy limit, and \$1,000,000 disease each employee. **Waiver of Subrogation:** The insurer(s) named above agree to waive all rights of subrogation against the Agency, its elected or appointed officers, officials, agents, authorized volunteers and employees for losses paid under the terms of this policy which arise from work performed by the Named Insured for the Agency; but this provision applies regardless of whether or not the Agency has received a waiver of subrogation from the insurer.

- 6.5. **Deductibles and Self-Insured Retentions** - Any deductible or self-insured retention must be declared to and approved by the Agency. At the option of the Agency, the insurer shall either reduce or eliminate such deductibles or self-insured retentions. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named or additional insureds, co-insurers, and/or insureds other than the First Named Insured.
- 6.6. **Acceptability of Insurers** - Insurance is to be placed with insurers having a current A.M. Best rating of no less than A:VII or equivalent or as otherwise approved by the Agency.
- 6.7. **Evidences of Insurance** - Prior to execution of the Agreement, the Consultant shall file with the Agency a certificate of insurance (Acord Form 25 or equivalent) signed by the insurer's representative evidencing the coverage required by this Agreement. Such evidence shall include (1) attached additional insured endorsements with primary & non-contributory wording, (2) Workers' Compensation waiver of subrogation. The Agency reserves the right to obtain complete, certified copies of all required insurance policies, at any time. Consultant shall maintain the Insurance required by this Agreement throughout the term of the Agreement and for a period of not less than 5 years following the termination of completion of this Agreement. Consultant further waives all rights of subrogation under this Agreement. Failure to continually satisfy the Insurance requirements is a material breach of contract.

The Consultant shall, upon demand of the Agency, deliver to the Agency such policy or policies of insurance and the receipts for payment of premiums thereon.

- 6.8. **Continuation of Coverage** - If any of the required coverages expire during the term of this Agreement, the Consultant shall deliver the renewal certificate(s) including the general liability additional insured endorsement to the Agency at least ten (10) days prior to the expiration date. Failure to

comply with any of the Insurance requirements shall constitute material breach of contract. The insurance requirements in this Agreement do not in any way represent or imply that such coverage is sufficient to adequately cover the Consultant's obligations under this Agreement. All Insurance or self-insurance coverage and limits applicable to a given loss or available to the named insured shall be available and applicable to the additional insured. The insurance obligations under this Agreement are independent of and in addition to the defense and indemnity obligations contained elsewhere in this Agreement and shall not in any way act to limit or restrict the defense or indemnity or additional insure obligations of the Consultant or the Consultant's insurance carrier, and shall be for (1) the full extent of the insurance or self-insurance coverages and limits carried by or available to the Consultant, or (2) the minimum insurance coverage and amounts shown in this Agreement; whichever is greater. Agency reserves the right to add such other parties as may be required in the future to the indemnity and additional insured requirements of this Agreement.

- 6.9. **Sub-Consultants** - In the event that the Consultant employs other consultants ("Sub-consultants") as part of the services covered by this Agreement, it shall be the Consultant's responsibility to require and confirm that each Sub-consultant meets the minimum insurance requirements specified above.

7. LABOR AND MATERIALS

Consultant shall furnish, at its own expense, all labor, materials, equipment, tools, transportation and services necessary for the successful completion of the Services to be performed under this Agreement. Consultant shall give its full attention and supervision to the fulfillment of the provisions of this Agreement by its employees and Sub-consultants and shall be responsible for the timely performance of the Services required by this Agreement. Consultant's standard schedule of fees and charges is attached, which is incorporated herein as though fully set forth in the Fee Schedule attached hereto (Appendix B). All compensation for Consultant's Services under this Agreement shall be pursuant to the Fee Schedule.

8. TERM OF THE AGREEMENT

- 8.1. **Period of Services** – This Agreement between the Agency and Consultant is for a term of NUMBER OF MONTHS, beginning DATE and ending DATE, subject to the termination provisions herein.
- 8.2. **Termination** – The Agency may terminate this Agreement for any reason by giving Consultant at least thirty (30) days or earlier (depending on nature of services) prior written notice of such termination. Such termination shall not relieve the Agency from responsibility for payment for Services rendered by Consultant prior to the date of termination but shall relieve the Agency of

its obligations for the full payment of compensation due under the Agreement for the Services of Consultant after the notice of termination.

- 8.3. **Termination for Cause** – The Agency may terminate the Agreement for cause, effective immediately upon written notice of such termination to Consultant, based upon the occurrence of any of the following events:

8.3.1. Material breach of the Agreement by Consultant

8.3.2. Cessation of Consultant to be licensed, as required by law

8.3.3. Failure of Consultant to substantially comply with any applicable federal, state or local laws or regulations

8.3.4. The voluntary or involuntary filing of any petition under any law for the relief of debtors with respect to Consultant

8.3.5. Conviction of Consultant of any crime other than minor traffic offenses

- 8.4. **Compensation Upon Termination** - If the Services of Consultant are terminated, in whole or in part, Consultant shall be compensated as provided herein for all Services and approved Extra Services performed prior to the date of such termination.

9. CALIFORNIA LABOR CODE REQUIREMENTS

- 9.1. Consultant is aware of the requirements of California Labor Code Sections 1720 et seq. and 1770 et seq., which require the payment of prevailing wage rates and the performance of other requirements on certain “public works” and “maintenance” projects. If the services are being performed as part of an applicable “public works” or “maintenance” project, as defined by the Prevailing Wage Laws, and if the total compensation is \$1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws, if applicable. Consultant shall defend, indemnify and hold the Agency, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Prevailing Wage Laws. It shall be mandatory upon the Consultant and all sub-consultants to comply with all California Labor Code provisions, which include but are not limited to prevailing wages, employment of apprentices, hours of labor and debarment of contractors and subcontractors.

- 9.2. **Effective March 1, 2015**, if the services are being performed as part of an applicable “public works” or “maintenance” project, in addition to the foregoing, then pursuant to Labor Code sections 1725.5 and 1771.1, the Consultant and all sub-consultants must be registered with the Department of Industrial Relations (“DIR”). Consultant shall maintain registration for the

duration of the project and require the same of any sub-consultants. This project may also be subject to compliance monitoring and enforcement by the DIR. It shall be Consultant's sole responsibility to comply with all applicable registration and labor compliance requirements, including the submission of payroll records directly to the DIR.

10. INTERESTS OF CONSULTANT

- 10.1. Consultant represents and warrants that it presently has no interests, and covenants that it will not acquire any interests, direct or indirect, financial or otherwise, that would conflict with the performance of the Services to be provided by Consultant under the Agreement. Consultant further covenants that, in the performance of the Agreement, it will not employ any Sub-consultant or employee with any such interest. Consultant certifies that no one who has or will have any financial interest under this Agreement or within Consultant is a director, officer or employee of the Agency.
- 10.2. Although Consultant is retained as an independent contractor, Consultant's employees or agents may still be required under the California Political Reform Act and the Agency Conflict of Interest Code to file annual financial disclosure statements. Consultant agrees that its employees and/or agents will file with the Agency in a timely manner those financial disclosure statements that the Agency determines Consultant is required to file pursuant to the Political Reform Act. Failure to file such financial disclosure statements by Consultant and any of its employees or agents is grounds for termination of this Agreement.

11. COMPLETED WORK AND WORK PRODUCT

In the event of termination or completion of the Services under the Agreement, Consultant shall, at the Agency's request, promptly surrender to the Agency all completed work and work in progress and all materials, records and notes developed, procured, or produced pursuant to the Agreement. Consultant may retain copies of such work product as a part of its record of professional activity.

12. CONFIDENTIALITY AND RESTRICTIONS ON DISCLOSURE

- 12.1. **Confidential Nature of Materials** - The Consultant understands that all documents, records, reports, data, or other materials (collectively "Materials") provided by the Agency to the Consultant pursuant to the Agreement, including but not limited to draft reports, final report(s) and all data, information, documents, graphic displays and other items that are not proprietary to the Consultant and that are utilized or produced by the Consultant pursuant to the Agreement are to be considered confidential for all purposes.

12.2. **No Disclosure of Confidential Materials** - The Consultant shall be responsible for protecting the confidentiality and maintaining the security of the Agency documents and records in its possession. All Materials shall be deemed confidential and shall remain the property of the Agency. The Consultant understands the sensitive nature of the above and agrees that neither its officers, partners, employees, agents or Sub-consultants will release, disseminate, or otherwise publish said reports or other such data, information, documents, graphic displays, nor other materials except as provided herein or as authorized, in writing, by the Agency. The Consultant agrees not to make use of such Materials for any purpose not related to the performance of the Services under the Agreement. The Consultant shall not make written or oral disclosures thereof, other than as necessary for its performance of the Services hereunder, without the prior written approval of the Agency. Disclosure of confidential Materials shall not be made to any individual, agency, or organization except as provided for in the Agreement or as may be required by law, or by a court of competent jurisdiction.

12.3. **Protections to Ensure Control over Materials** - All confidential Materials saved or stored by the Consultant in an electronic form shall be protected by adequate security measures to ensure that such confidential Materials are safe from theft, loss, destruction, erasure, alteration, and any unauthorized viewing, duplication, or use. Such security measures shall include, but not be limited to, the use of current virus protection software, firewalls, data backup, passwords, and internet controls.

The provisions of this Section survive the termination or completion of the Agreement.

13. OWNERSHIP OF DOCUMENTS AND DISPLAYS

All original written or recorded data, documents, graphic displays, reports or other materials which contain information relating to the Consultant's performance hereunder and which are originated and prepared for the Agency pursuant to the Agreement shall be "work for hire" and shall be the property of the Agency. The Consultant hereby assigns all of its right, title and interest therein to the Agency, including but not limited to any copyright interest. In addition, the Agency reserves the right to use, duplicate and disclose in whole, or in part, in any manner and for any purpose whatsoever all such data, documents, graphic displays, reports or other materials delivered to the Agency pursuant to this Agreement and to authorize others to do so.

To the extent that the Consultant utilizes any of its property (including, without limitation, any hardware or software of Consultant or any proprietary or confidential information of Consultant or any trade secrets of Consultant) in performing services hereunder, such property shall remain the property of Consultant, and the Agency shall acquire no right or interest in such property.

14. ASSIGNMENT PROHIBITED

The Consultant shall not assign, transfer, convey, or otherwise dispose of its rights, title or interest in or to this Agreement or any part thereof without the previous written consent of the Agency.

15. REPRESENTATIVES OF THE PARTIES AND SERVICE OF NOTICES

- 15.1. **Designated Representatives** – The Agency representative designated below shall be the principal representative of the Agency for purposes of the Services that are the subject of this Agreement. Consultant shall designate, in writing, Consultant's project engineer and/or project manager for the performance of the Services under this Agreement, which designation shall be subject to the Agency's reasonable approval.

The representatives of the Parties who are authorized to administer this Agreement and to whom formal notices, demands and communications shall be given are as follows:

ZONE 7 WATER AGENCY Representative:

Name
Title
Zone 7 Water Agency
100 N. Canyons Parkway
Livermore, CA 94551

Consultant:

Name
Title
Firm Name
Address
Firm Tax ID

- 15.2. **Notices** - Formal notices, demands and communications to be given hereunder by either Party shall be made in writing and may be effected by personal delivery or fax or by registered or certified mail, postage prepaid, return receipt requested to the address set out below and shall be deemed communicated as of the date of mailing. If the name or address of the person to whom notices, demands or communications shall be given changes, written notice of such change shall be given, in accordance with this section within five (5) working days.

16. MISCELLANEOUS PROVISIONS

- 16.1. Integration – This Agreement represents the complete Agreement of the parties and supersedes any other Agreements between the parties, whether written or oral.
- 16.2. No Waiver – No waiver by either parties of any term or condition of this Agreement shall be a continuing waiver thereof.
- 16.3. Modification – This Agreement only may be amended in writing, signed by all parties.
- 16.4. Attorneys' Fees – In any proceeding to enforce this Agreement, the prevailing party shall be entitled to attorneys' fees and costs in any amount determined by the court.
- 16.5. Choice of Laws/Venue – This Agreement shall in all respects be governed by the laws of the State of California applicable to Agreement executed and to be wholly performed with the State. Any action regarding this Agreement shall be brought in Alameda County Superior Court.
- 16.6. Counterparts – This Agreement may be executed in separate counterparts that, together, shall constitute and be one and the same instrument.
- 16.7. No Third Party Beneficiaries – This Agreement is for the sole benefit of the parties hereto and their permitted assigns (if any), and nothing herein expressed or implied shall give or be construed to give to any person, other than the parties hereto and such assigns any legal or equitable rights hereunder.
- 16.8. No Presumption Regarding Drafter – The parties to this Agreement acknowledge that its terms and provisions have been negotiated and discussed among them and that it reflects their mutual agreement regarding its subject matter. Therefore, neither party shall be deemed to be the drafter of this Agreement nor shall there be no presumption for or against the drafter in its interpretation or enforcement.

IN WITNESS WHEREOF, the Parties have executed this Agreement at the place and as of the date first written above.

ALAMEDA COUNTY FLOOD CONTROL and WATER
CONSERVATION DISTRICT, Zone 7, commonly known as
ZONE 7 WATER AGENCY ("Agency")

Consultant

Valerie L. Pryor
General Manager

Date

Signature

Date

Print Name & Title

Address

Telephone

TIN or SS Number

APPROVED AS TO FORM: – (check with GM or Assistant General Manager if needed to be reviewed by legal. If not, delete this legal section)

Downey Brand LLP

By: _____

David Aladjem, General Counsel

Date: _____

APPENDIX B - FEE SCHEDULE

1. **Basic Services.** District will pay Consultant for Basic Services, a maximum compensation as shown ("**Contract Price**"), which sum includes costs for reimbursable expenses as identified below. Such payment shall be full compensation for all Basic Services required, performed or accepted under this Agreement.
2. **Costs and Reimbursables.**
 - 2.1 Additional Services. District will pay Consultant for "Costs and Reimbursable Expenses" in connection with Additional Services as set forth below. All costs not listed will not be allowed in connection with Additional Services.
 - 2.2 Delivery Costs. Courier services and overnight delivery costs incurred performing Additional Services.
 - 2.3 Reproduction Costs. Reproduction and postage costs of required plans, specifications, bidding and Agreement Documents, if any, incurred performing Additional Services.
 - 2.4 Basic Services. For Basic Services, District will not pay Consultant additional compensation for Costs and Reimbursable Expenses, as these costs are deemed included in the Contract Price.
3. **Invoices.** All payments shall require a written invoice from Consultant in a form acceptable to District. District shall make payment on approved amounts within each invoice within 30 days of receipt. Invoices shall have reasonable detail of the daily time incurred by personnel assigned to the Project, along with a schedule of Subconsultant and Reimbursable Expenses incurred, supported by invoices and appropriate backup documentation. Each invoice shall report on Consultant's total billings and Reimbursable Expenses to date.
4. **Rates.** Consultant Rate Schedule is attached as Appendix B-1. For design services contracts, the Consultant Rate Schedule shall be valid through the end of the design phase and bid period.
5. **Reimbursable Expenses.** Reimbursable Expenses shall be billed at the amount billed to Consultant therefore times [1.1] for general and administrative expenses.
6. **Subconsultants.** Subconsultants shall be billed at the amount billed to Consultant therefore times [1.05] for general and administrative expenses.

APPENDIX C INSURANCE

This is an appendix attached to, and made a part of, the Services Agreement dated _____ ("Agreement") between THE ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7 commonly known as ZONE 7 WATER AGENCY ("District") and _____ ("Vendor"), for the provision of services agreement ("Services").

Minimum Insurance Requirements: Design Professional shall procure and maintain for the duration of the contract insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Design Professional, his agents, representatives, employees or subcontractors.

Coverage – Coverage shall be at least as broad as the following:

1. **Commercial General Liability (CGL)** – Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury, personal and advertising injury with limit of at least two million dollars (\$2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater for. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to the District) or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability** – (If necessary) Insurance Services Office (ISO) Business Auto Coverage (Form CA 0001), covering Symbol 1 (any auto) or if Design Professional has no owned autos, Symbol 8 (hired) and 9 (non-owned) with limit of one million dollars (\$1,000,000) for bodily injury and property damage each accident.
3. **Workers' Compensation Insurance** – as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease. Waiver of Subrogation: The insurer(s) named above agree to waive all rights of subrogation against the District, its directors, officers, employees, and authorized volunteers for losses paid under the terms of this policy which arise from work performed by the Named Insured for the Agency; but this provision applies regardless of whether or not the District has received a waiver of subrogation from the insurer.
4. **Professional Liability** – (also known as Errors & Omission) Insurance appropriate to the Design Professional profession, with limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate.

If Claims Made Policies:

1. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work.

3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the Design Professional must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.

If the Design Professional maintains broader coverage and/or higher limits than the minimums shown above, the District requires and shall be entitled to the broader coverage and/or higher limits maintained by the Design Professional. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the District.

Other Required Provisions – The Commercial General Liability policy must contain, or be endorsed to contain, the following provisions:

1. Additional Insured Status: Zone 7 Water Agency, its directors, officers, employees, and authorized volunteers are to be given insured status insurance (at least as broad as ISO Form CG 20 10 10 01 with respect to liability arising out of work or operations performed by or on behalf of the Design Professional including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Design Professional's insurance.
2. Primary Coverage: For any claims related to this project, the Design Professional's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 as respects to the District, its directors, officers, employees, and authorized volunteers. Any insurance or self-insurance maintained by the District, its directors, officers, employees, and authorized volunteers shall be excess of the Design Professional's insurance and shall not contribute with it.

Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the District.

Self-Insured Retentions – Self-insured retentions must be declared to and approved by the District. The District may require the Design Professional to provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or District.

Acceptability of Insurers – Insurance is to be placed with insurers having a current A.M. Best rating of no less than A: VII or as otherwise approved by District.

Verification of Coverage – Design Professional shall furnish the District with certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the District before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Design Professional's obligation to provide them. The District reserves the right to require complete, certified copies of all required insurance policies, including policy Declaration and Endorsements pages listing all policy endorsements.

Subcontractors – Design Professional shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Design Professional shall ensure that District is an additional insured on insurance required from subcontractors.

END OF APPENDIX C

SAMPLE

SECTION 1

1 INTRODUCTION

This manual describes the application of Computer Aided Design (CAD) standards and procedures for **ZONE 7 Water Agency**.

The quality and consistency of drafting on drawings and exhibits is important to the overall satisfaction with the project. The purpose of this manual is to establish CAD drafting standards and procedures that will help maintain uniformity throughout the set of drawings. There shall be no deviation from this set of standards without permission of the ZONE 7 PROJECT CAD LEAD. Any deviations from the set standards may cause production deficiencies and may cause delays in meeting project deadlines.

This manual is intended to provide **ZONE 7** CAD staff and ZONE 7 CONSULTANTS with the necessary information required to provide a consistent and thorough product to ZONE 7.

This manual assumes CAD fluency by the user. This manual is not intended to substitute for specific training in the use of CAD or CAD related software packages.

ZONE 7 will NOT allow deviations from the standard requirement specified and/or referenced in this manual.

2 DRAWING ORGANIZATION

PURPOSE

This section details the strategies for the organization of CAD files to support the various stages and multi-discipline projects that we produce. The procedures described here are used extensively in the design industry to gain the greatest productivity from CAD users.

2.1 File Types

To minimize repetitious drafting, information shall be organized into two file types, "Model Files" and "Sheet Files".

2.1.1 Model (Base) Files

Project model files contain project specific geometry currently being designed such as structures, piping, equipment and sections. A "Model File" contains all the line work for a specific discipline on the project (see 2.4 Separation of Information). The "Model Files" created will be combined into one or more "Sheet Files" to obtain a project deliverable. All elements of the "Model File" are drawn at "real world" size (1:1) and at "real world" coordinates, based on the site drawing provided for the project. This method assures that all "Model Files" are referenced in at 0,0,0.

"Model Files" shall not contain borders, leaders, dimension or annotations. Plan and profiles created with Autodesk Civil 3D or another Advanced CAD package may keep all data required to maintain the intelligence of the file in the "Model Files".

2.1.2 Sheet (Layout) Files

A "Sheet File" represents one plotted drawing. Multiple layout tabs will **NOT** be allowed. "Sheet Files" are plotted at full size (1:1) and the origin of each sheet is 0,0. Sheet files contain drawing specific information such as borders, north arrows, graphic scales, dimensions and annotations as well as the "Model Files" needed to create the plotted sheet. Xrefs, annotations and dimensions shall be placed in the model space of the "Sheet File". North arrows, graphic scales, sheet titles and sheet notes can be placed in paperspace of the "Sheet File". A "Sheet File" shall not be reference to another "Sheet File" to create a final product.

2.1.3 Project Border Files

A "Project Border File" will be established at the beginning of each project.

2.2 Reference Files

Model Files and Project borders are reference files (XREF). Reference files are the single most powerful capability of CAD and therefore it is important to understand what they are and how they are to be used.

AutoCAD (XREF) function allows graphic information in one file to be reference into other files. The value in referencing these files is that information will only need to be added once and edited in one place. The information can be distributed to multiple

SECTION 2

drawings, and as the base information changes, each of the associated drawings will be updated automatically. (Fig 2-2)

On a multi-discipline project, this allows disciplines to work on their respective drawings without delaying others. As their work is completed the other disciplines files will automatically update with the changes. The benefit of this is a consistent and organized design that minimizes on redundancy that impacts a projects schedule.

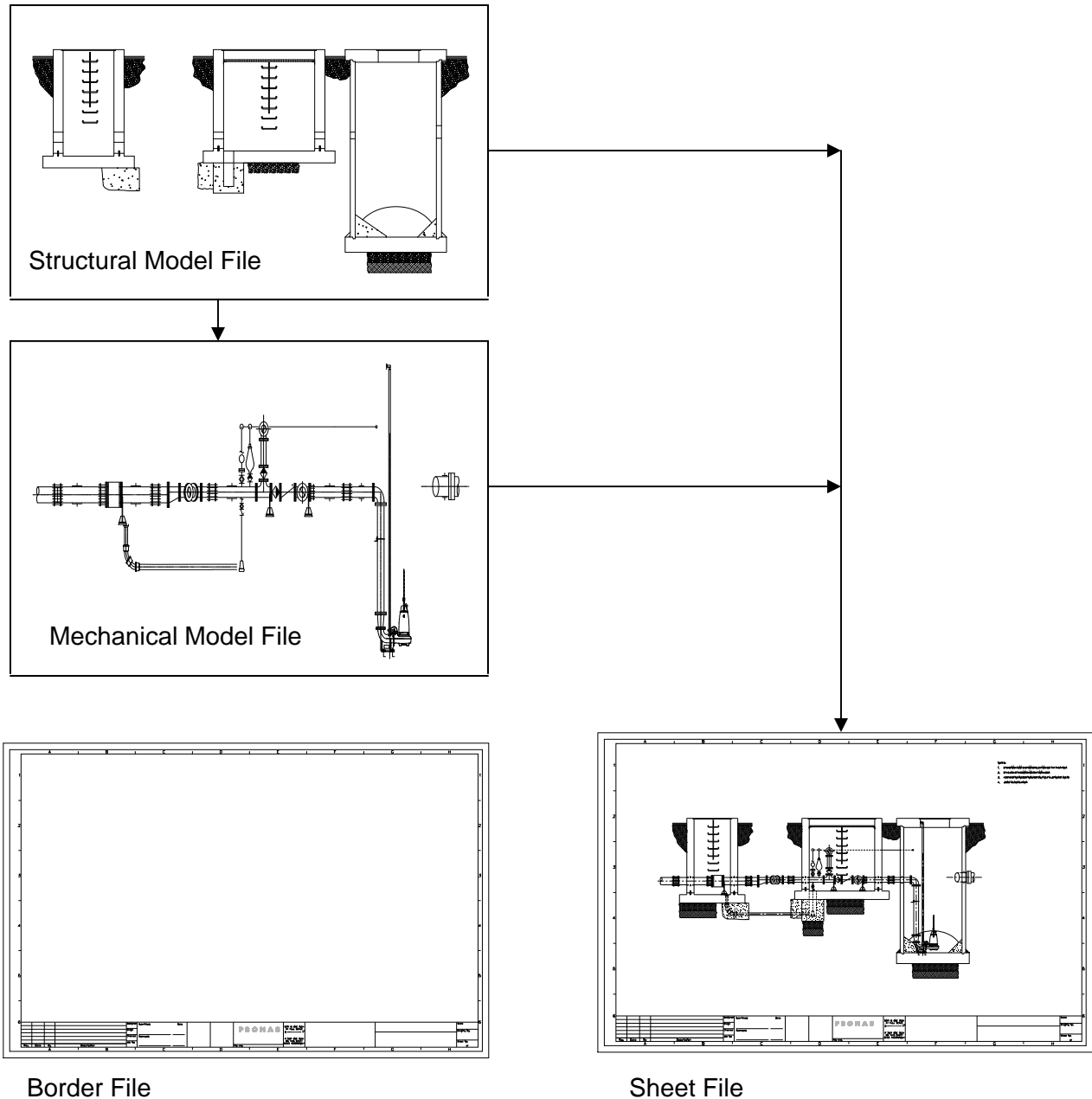


Fig 2-2

2.3 Reference File Attachments

AutoCAD has two options for attaching reference files, “attach” and “overlay”. ALL reference files are to be loaded using the “overlay” method. This will avoid circular xrefs and problems caused by nested xrefs. All xrefs will be inserted on the G-ANNO-XREF layer.

2.4 Separation of information

Each “Model File” shall contain information associated with one discipline (i.e. Civil, Structural, Mechanical, etc.). On a given project, there shall be one “Model File” per discipline per structure. It is important to note that this separation of information is to be maintained even if the same person is working on more than one discipline. For example, if a mechanical CAD designer is working on both the mechanical and structural portions of a structure, he/she must create a “Model File” for the mechanical information and a “Model File” for the structural information. Both files are referenced, as necessary, to create “Sheet Files”, but the information is never combined into one “Model File”.

2.5 Scales, Units and Coordinates

“Model Files” are always drawn 1:1. Civil Plans are to use decimal units and building plans are to use architectural units (yard piping, although plotted at a civil scale, are to be created using architectural units). Civil “Model Files” are created so that the information contained in the file is in its proper geographical position in the design plane. This position is defined by X and Y coordinates or Northing and Easting. Schematic drawings such as Process & Instrumentation Drawings (P&ID’s) shall be developed using a grid. The grid is a pattern of dots that extend over the drawing area. Grid spacing of .10” and a snap of 0.05” is preferred.

2.6 Rotation

Views may be rotated to create a more desirable display without affecting the actual coordinates of the design data. “Model File” design data shall not be rotated from their real world coordinates. View rotation does not affect the way a design file appears when referenced to another file.

When referencing a file into a space that has a rotated view, remember to set the UCS to world.

2.7 Linetypes

All lines shall be drawn “bylayer”, except for single line piping. All typical piping shall be placed on the same layer (color “bylayer”) but will utilize the linetypes provided.

3 FILE NAMING CONVENTION**PURPOSE**

This section details the strategies for the naming of “Model Files” and “Sheet Files” to support multi-discipline projects. The naming convention allows for easy identification on the contents of a CAD file without the need to view it. It also provides a convenient and clear structure for organizing files. The procedures described here are used extensively in the design industry to gain the greatest productivity from CAD users.

3.1 Model, Reference and Image Files

Names for “Model Files” are derived from the discipline, the facility and the type of information contained in the files. It is preferred that 4 characters be used for all groups but due to the number of facilities in larger treatment plants and the need to be descriptive, a modified NCS guideline will be used for all projects. All “Model File” names shall be capitalized.

A-BBBB-CCCC-DDDD-EEEE.dwg

- A - Discipline Code
- B - Major Group (8 characters max)
- C - Minor Group (8 characters max)
- D – Sub Group
- E – Status Code (optional)

Discipline Code:

A	Architectural	L	Landscape
C	Civil	M	Mechanical (Process)
E	Electrical	P	Plumbing
G	General	S	Structural
H	HVAC		
I	Instrumentation		

Major Group

The major group field refers to the facility being designed. For each facility, the naming shall be consistent between disciplines. All facility names shall be finalized before detailed design begins. A maximum of 8 characters can be used to describe the facility being designed.

Examples of Major Group:

PRETREAT	Pretreatment	ACTIFLO	Actiflo
DRYBED	Drying Beds	FILTERS	Filters
LAB	Laboratory	ADMIN	Administration
SITE	Sitework	GRADPAVE	Grading & Paving

SECTION 3

Minor Group

The minor group field will be used to identify the different models belonging to the same facility, i.e. operating floor plan and foundation plan. The minor group is an option and does not need to be used. A maximum of 8 characters can be used to describe the facility being designed.

Examples of Minor Group:

ROOF	Roof
FNDN	Foundation
FLOR	Floor

Sub Group

The sub group field will be used to identify the different types of models belonging to the same facility, i.e. plan and sections. The minor group is an option and does not need to be used. Names should be reduced to 4 characters

Examples of Sub Group:

PLAN	Plans
SECT	Sections

Status

The status field is a single character designator the differentiates the type of file.

DEMO	Demolition
EXST	Existing
FUTR	Future

3.2 Sheet Files

The naming convention for “Sheet Files” is determined on a project basis. Two methods are available to use and are described below.

Method 1 is preferred on projects that will have multi-discipline input. This method is required for large treatment facilities.

Method 2 is for single discipline project, such as pipelines, which have plan and profiles in sequential order.

Method 1

Names for “Sheet Files” are derived from the discipline, building code, drawing type and sequence number.

ABCDD.dwg

- A – Discipline Code
- B – Building Code
- C – Drawing Type
- D - Sequence No. for 01-99

SECTION 3

ZONE 7 WATER DIVISION CAD STANDARD

Discipline Code:

A	Architectural	L	Landscape
C	Civil	M	Mechanical (Process)
E	Electrical	P	Plumbing
G	General	S	Structural
H	HVAC		
I	Instrumentation		

Building Code

Please note that the building code must be identified before “Sheet Files” can be created.

Drawing Type

0	Discipline Specific General
1	Plans, Enlarged Plans – Horizontal Views
2	Elevations – Vertical Views
3	Sections
4	User Defined
5	Details
6	Electrical One-Lines
7	Electrical Schematics
8	User Defined
9	User Defined
-	Not associated with a facility

Sequence No.

Sequential numbering from 01 – 99

Examples:

G-001	General, (not associated with a facility) General, Sheet 2
SM101	Structural, Membrane Building, Plan, Sheet 1

Method 2

The names for the “Sheet Files” are constructed from the discipline and the sequence number. (See Method 1 for discipline codes)

A-BB.dwg

A – Discipline Code

B – Sequential numbering from 01 – 99

4 LAYERING GUIDELINES

PURPOSE

This section details a modified AIA CAD layer guideline. The guideline incorporates five components – discipline designator, major group, minor group, minor group and color code.

A-BBBB-CCCC-DDDD-EEE

A - Discipline Designator
B - Major Group
C - Minor Group (optional)
D – Minor Group (optional)
E – Color Code

4.1 Discipline Designator:

A	Architectural	L	Landscape
C	Civil	M	Mechanical
E	Electrical	P	Plumbing
G	General	S	Structural

4.2 Major Group

The major group designation identifies the building system. Although major groups are logically grouped with specific discipline codes, it is possible to combine major groups with any of the discipline designators.

4.3 Minor Group (optional)

This group is used for further differentiation of major groups. The minor group can be defines by the user, which allows additional layers to be added to accommodate special project requirements. This should only be done if a defined layer does not apply to a project.

4.4 Minor Group (optional)

To ensure that all linetypes are drawn bylayer, this group will be used to identify the linetype used. (Continuous linetype is considered the default linetype).

4.5 Color Code

To properly show depth on drawings, one layer name may be needed to produce different plotted lineweights. To ensure that all entities are drawn bylayer the color number will append all layers. The code will be 3 digits (i.e. color red will be 001). The number will correspond with the color being used.

4.6 Common Layers

This is not intended to represent all the layers that will be used on a project. The layers shown are common examples and should be used as a guideline when creating layers for your project. Some CAD programs will automatically assign layer names for object to be drawn on; it is not the intent of this section to create more work for the user. The layers provided by the CAD program will not be modified, but additional layers that the user creates shall follow this guideline.

* Represents discipline code

**** Represents any major group

4.6.1 Annotation Layers

Layer Name	Color	Linetype	Description
*-ANNO-TEXT			Text
*-ANNO-WIPE	255		Wipeouts
*-ANNO-REDL			Redline
*-ANNO-SYMB			Symbols
*-ANNO-SEAL			Engineers seal
*-ANNO-DIMS			Dimensions
*-ANNO-TTLB			Border and Title Block
*-ANNO-NPLT			Construction lines, non-plotting info
*-ANNO-REVS			Revisions
*-ANNO-XREF	6		Referenced model files

4.6.2 Common Layers

Layer Name	Color	Linetype	Description
*-LNWK			Miscellaneous linework

4.6.3 Common Modifiers

Layer Name	Color	Linetype	Description
*-****-PATT			Cross-hatching, poche
*-****-IDEN			Identification tags
*-****-ELEV			Elevation (vertical surfaces)
*-****-DASH			Dashed/hidden linework
*-****-MATC			Match lines
*-****-SPCL			Special lines
*-****-CNTR			Center lines
*-****-OTLN			Outlines

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4.7 Architectural

4.7.1 Drawing Type: Ceiling plan

Layer Name	Color	Linetype	Description
A-CLNG			Ceiling information
A-CLNG-GRID			Ceiling grid

4.7.2 Drawing Type: Elevation

Layer Name	Color	Linetype	Description
A-ELEV			Interior & exterior elevations

4.7.3 Drawing Type: Floor plan

Layer Name	Color	Linetype	Description
A-FLOR-AREA			Area calculation boundary lines
A-FLOR-COLS			Columns
A-FLOR-DOOR			Doors
A-FLOR-DOORJAMB			Door jamb
A-FLOR-DOOROTLN			Door outlines
A-FLOR-EQPM			Equipment
A-FLOR-EQPMIDEN			Equipment identification numbers
A-FLOR			Floor plan information
A-FLOR-IDEN			Room numbers, names, etc.
A-FLOR-OTLN			Floor or building outline
A-FLOR-FURN			Furniture
A-FLOR-GLAZ			Windows, glazed partitions
A-FLOR-GRID			Planning grid or column grid
A-FLOR-PMFN			Materials and finish plan
A-FLOR-STRS			Stairs
A-FLOR-WALL			Exterior/Interior walls
A-FLOR-WALLCNTR			Wall centerlines

4.7.4 Drawing Type: Roof plan

Layer Name	Color	Linetype	Description
A-ROOF			Roof information
A-ROOF-OTLN			Roof outline

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4.8 Civil

4.8.1 *Drawing Type: Topo (Grading)*

Layer Name	Color	Linetype	Description
C-TOPO-ALGN			Horizontal Alignment
C-TOPO-MAJR			Proposed major contour lines
C-TOPO-MNOR			Proposed minor contour lines
C-TOPO-TEXT			Contour elevations
C-TOPO-SPOT			Proposed spot elevations
C-TOPO-SURV			Benchmarks, survey control lines
C-TOPO-BORW			Borrow/spoil area

4.8.2 *Drawing Type: Site improvements*

Layer Name	Color	Linetype	Description
C-SITE-AREA			Area code boundary (process areas)
C-SITE-BLDG			Bldg., primary structures
C-SITE-FNCE			Fencing
C-SITE-MNHL			Manholes
C-SITE-PAVE			Edge of pavement
C-SITE-PKNG			Parking lots
C-SITE-PKNG-DRAN			Parking lot drainage slope indicators
C-SITE-PKNG-ISLD			Parking islands
C-SITE-PKNG-STRP			Parking lot striping, handicapped
C-SITE-PROP			Property lines, survey benchmarks
C-SITE-PROP-ESMT			Easements, right-of-ways, setbacks
C-SITE-RAIL			Railroad outlines, centerlines
C-SITE-ROAD			Roadway
C-SITE-ROAD-CNTR			Roadway Center lines
C-SITE-CURB			Curbs
C-SITE-STAG			Construction staging
C-SITE-STRM			Storm drainage, catch basins, inlets
C-SITE-SWAL			Swale
C-SITE-TUNL			Tunnel outlines
C-SITE-TUNL-CNTR			Tunnel centerlines
C-SITE-VEGE			Vegetation
C-SITE-WALK			Walkway
C-SITE-WATR-FIRE			Fire water
C-SITE-WRKA			Work area, project boundary

4.9 Electrical**4.9.1 Drawing Type: Site improvements**

Layer Name	Color	Linetype	Description
E-SITE-ALRM			Alarm systems
E-SITE-AUXL			Auxiliary systems
E-SITE-CCTV			Closed circuit TV
E-SITE-COMMFOC			Fiber optic cable, telecommunications
E-SITE-COMMVALT			Fiber optic vaults, telecommunications
E-SITE-DUCT			Electrical conduit, duct bank
E-SITE-VALT			Electrical vaults
E-SITE-GRND			Ground system
E-SITE-HDHL			Handhole
E-SITE-LITE			Lighting
E-SITE-LITEEQPM			Major lighting equipment
E-SITE-LITEPNLS			Lighting panels
E-SITE-LITEPOLE			Lighting pole
E-SITE-MNHL			Electrical/communications manhole
E-SITE-SERT			Security
E-SITE-SOUN			Sound/PA Systems
E-SITE-POWRPOLE			Power pole
E-SITE-POWREQPM			Major power equipment

4.9.2 Drawing Type: Floor plan

Layer Name	Color	Linetype	Description
E-GRND			Ground system
E-LITE-CLNG			Ceiling mounted lights
E-LITE-EXIT			Exit signs
E-LITE-EXTR			Exterior lighting
E-LITE-EQPM			Miscellaneous lighting equipment
E-LITE-JBOX			Lighting junction box
E-LITE-FLOR			Floor mounted lighting
E-LITE-PANL			Lighting panel
E-LITE-SPCL			Special
E-LITE-SWCH			Light switches
E-LITE-WALL			Wall mounted lighting
E-POWR-CABL			Cable tray
E-POWR-DUCT			Electrical conduit, duct bank
E-POWR-EQPM			Miscellaneous Power equipment

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E-POWR-JBOX			Electrical junction box
E-POWR-PANL			Power Panel

4.10 Instrumentation

4.10.1 Process & Instrumentation Diagrams

Layer Name	Color	Linetype	Description
I-PID-MAJR	8		Major Process Lines
I-PID-SECD	5		Secondary Process Lines
I-PID-MISC	2		Miscellaneous Process Lines
I-PID-ELEC	1	Cedashed	Electrical Connection Lines
I-PID-LNWK			Miscellaneous Line Work

4.10.2 Instrument Loop Diagrams (ILD)

Layer Name	Color	Linetype	Description
I-LOOP-LNWK			Major Process Lines

4.11 Landscape

4.11.1 Drawing Type: Site Improvements

Layer Name	Color	Linetype	Description
L-DEMO			Demolition
L-IRRI			Irrigation
L-PLNT			Plant and landscape materials
L-WALK			Walks and steps
L-HYDR			Hydroseeding, seed, sod
L-TURF			Mulching outline
L-SEED			Seed, sod

4.12 Mechanical**4.12.1 Drawing Type: Piping and Equipment**

Layer Name	Color	Linetype	Description
M-CHEM-UNKN			Unknown chemical
M-****-EQPM			Equipment
M-****-PIPE			Pipe
M-****-PIPE-CNTL			Pipe centerline

**** indicates pipe contents. Code abbreviation shall be four (4) characters and shall be consistent with projects P&ID system codes.

4.12.2 Drawing Type: HVAC

Layer Name	Color	Linetype	Description
H-CONT-THER			Thermostats
H-CWTR			Cold water system
H-CWTR-EQPM			Cold water equipment
H-CWTR-PIPE			Cold water piping
H-DAMP			Dampners
H-SDFF			Supply diffusers
H-DUCT-SPLY			HVAC ductwork (supply)
H-RDFF			Return diffusers
H-DUCT-RTRN			HVAC ductwork (return)
H-HOTW			Hot water heating system
H-HOTW-EQPM			Hot water equipment
H-HOTW-PIPE			Hot water piping
H-REFG			Refrigeration systems
H-REFG-EQPM			Refrigeration Equipment
H-REFG-PIPE			Refrigeration Piping
H-PADS			HVAC equipment pads

4.12.3 Drawing Type: Mechanical systems

Layer Name	Color	Linetype	Description
M-GATE			Sluice Gate
M-MACT			Motorized actuator
M-MOTR			Motors
M-****-PANL			Mechanical control panels
M-****-PUMP			Pumps
M-****-SAMP			Sample
M-SUMP			Sump

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Layer Name	Color	Linetype	Description
P-DOMW			Domestic hot/cold water system
P-DOMW-EQPM			Domestic hot/cold water equipment
P-DOMW-CPIP			Domestic cold water pipe
P-DOMW-HPIP			Domestic hot water pipe
P-DRAN-FLOR			Floor drains
P-EQPM			Plumbing miscellaneous equipment
P-FIXT			Plumbing fixtures
P-NPWR			Non-potable water
P-SANR			Sanitary system
P-SANR-EQPM			Sanitary equipment
P-SANR-FIXT			Sanitary fixtures
P-SANR-FLDR			Sanitary floor drains
P-SANR-PIPE			Sanitary pipe
P-SANR-RISR			Sanitary risers
P-WASH			Emergency shower, eyewash

4.13 Structural**4.13.1 Drawing Type: Elevation**

Layer Name	Color	Linetype	Description
S-ELEV			Interior & exterior elevations

4.13.2 Drawing Type: Foundation plan

Layer Name	Color	Linetype	Description
S-STEL(CONC)-BEAM			Beams
S-STEL(CONC)-COLS			Primary & secondary columns
S-CONC			Concrete
S-CONC-CURB			Curb
S-CONC-ENCS			Concrete encasement
S-CONC-FNDN			Footings, grade beams, piles
S-GRAD			Elevated grading, floor grading
S-STEL(ALUM)-GRAT			Elevated grating, catwalks
S-GRID			Grid lines, column tags
S-STEL(ALUM)-HRAL			Handrails
S-JOIN			Construction joints, expansion joints
S-STEL(ALUM)-LADR			Ladders
S-METL			Miscellaneous metal
S-CONC-OPNG			Opening

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S-CONC-PADS			Support pads
S-PIPE			Piping within structural elements
S-PIPE-WFTG			Pipe wall fitting
S-POST			Posts
S-CONC-RAMP			Ramps
S-RBAR			Rebar
S-SLAB			Slab outline, control joints
S-SPPT			Miscellaneous fasteners, anchor bolts
S-STEL			Structural steel
S-STRS			Stair control joints, ladders
S-TRCH			Trench
S-VALT			Vaults
S-CONC-WALL			Concrete walls, CMU walls
S-WALL-RETG			Retaining wall
S-WEIR			Weir

This section discusses the basic sheet layout and symbols that will be used on all projects to create the sheet files. There is a tendency to show more or duplicated information on a set of drawings. Over detailing shall be avoided.

5.1 Drawing Layout

The following criteria shall be followed on sheet files:

Sheet Annotations

- Scale bar shall be used on all drawings using a Civil Scale.
- “SEE” shall only be used when referencing another drawing. “SEE” shall not be used in conjunction with a detail bubble.
- “SHT” “SHEET” shall NOT be used when referring to drawing numbers.
- Drawing notes shall be placed in the upper right corner. Section and detail specific notes shall be placed above the section/detail callout.
- “DIA” or the diameter symbol shall only be used when the shape of the object is not clear (i.e. do not use on pipes or bolts).
- Section and detail callouts in notes shall be expressed X/XXXXX. (i.e. SEE DETAIL 4/MM501).
- Wipeouts and background masks shall be used. Place wipeouts on layer G-ANNO-WIPE, with color 255. Background masks are used for text. Set the fill color to “use background”.
- Typical shall be abbreviated as (TYP) when used in a note and TYP when used with a detail bubble.

Elevations

Show the following:

- Concrete Substructures – corbels, projections and footings.
- Finish Grade, retaining walls, fences and walkways.
- Key elevations – Architectural – operating floor, etc.
 Structural – top of slab, top of steel.
These elevations shall match wall sections
- Exterior materials – limited delineation.

- Column centerlines with bubble callout.
- Miscellaneous information:
 - Gas mask cabinets
 - Dock bumpers
 - Splash blocks and downspouts
 - Ladders
 - Handrails
 - Monorail systems
- If project is an addition to an existing structure, show enough of existing structure to denote tie in between old and new.

Plans

- Preferred scale for plans is 1/4"=1'-0".
- All plans shall be displayed with north oriented to the top or left of the drawings. The preferred location of north arrows on all plans is the upper left corner of the drawing. Drawings with multiple plans will require a north arrow for each plan. All plans of a facility will be oriented the same across all disciplines.
- All enlarged plans shall have the same north orientation as the smaller scaled plans.
- Do not annotate or dimension information that is called out in the small scale plan.
- All plans of the same facility shall be plotted at the same scale.
- Number and give each room a designation. Provide finish floor elevation under designation if at different elevations.
- If equipment is outlined (bold) indicate what it is.
- Show all section cuts
- Roof plans shall indicate all openings in roof for power ventilators, skylights, hatches, drawings and expansion joints.

Sections

- Preferred minimum scale for sections shall be 3/8" = 1'-0"
- Cross sections and longitudinal sections shall show structural system, key elevations and materials. All mechanical sections shall indicate the elevation of all pipes in the view.

- Show in background – all structural and architectural information. Be sure cut placement reflects view shown.
- Elevations to the nearest 100th shall be used instead of vertical dimensions. (Exception: a vertical dimension shall be used for slab/foundation thickness.)
- Sections shall be arranged with equal elevations in alignment.
- Sections are letters and shall be placed on the drawings from left to right. Do not use the letters “I” or “O”.

Structural Sections

- Reinforcement abbreviations:
Abbreviations shall be placed immediately after bar size and spacing. Bar size shall not contain a space. Example: #5@12”EWEF.
 - EF – Each Face
 - EW – Each Way
 - EWEF – Each Way Each Face
 - T&B – Top & Bottom
 - EWT&B – Each Way Top & BottomEW and EWEF shall be used for vertical reinforcing
T&B and EWT&B shall be used for horizontal reinforcing
- Callouts using “EWEF” or “EWT&B” requires only one leader pointing to the middle of the wall or slab. Callouts using “EF” or T&B shall point to steel being described.
- Reinforcing callouts shall be placed on the side nearest the bar that is being described. Avoid crossing to opposite face if possible.
- Special bar identification tags and abbreviations shall be placed immediately after the bar size. Example: #5DWLS@12”.
 - DWLS – Dowels
 - TIES – Horizontal reinforcing in vertical elements
 - STIRRUPS – Vertical reinforcing in horizontal elements.TIES & STIRRUPS set a pattern of multiple bars referenced by pointing at one of the bars in the pattern.
- The word LAP shall be included in all lap dimensions.
- The length of bar shall be called out after the bar spacing, e.g. #5@12”x1’-0”.
- The abbreviation “CTRD” shall be added following the spacing if reinforcing is to be centered in the wall or slab, e.g. #5@12”EW CTRD.

- The use of bar bend diagrams should be limited to cases where actual shapes cannot be seen in section. When required, the diagram shall be placed at the end or below the callout.
- Concrete anchors shall have the depth of the embedment included at the end of the callout, e.g. 1" EXP ANCHORS @2'-0" (W/5" EMBED).
- If the word WATERSTOP (WS) is spelled out, it will be one word. BOND BREAKER will be two.

Details

- Do not repeat detail information. Mark as (TYP).
- Keep dimensions on one side and notes, in line, on the other.
- Details are numeric and shall be placed on the drawings from left to right. Do not use the number "0".
- Do not crowd details.

Dimensions

It is the responsibility of the CAD technician to ensure that all objects are drawn to scale so that the dimension are correct. If a change to an object is required, the object shall be modified. DO NOT just modify the dimension.

- Column grid bubbles shall have alpha characters in the horizontal and numerical in the vertical. Preferred method is to place the bubbles across to top and down the left side.
- Overall dimensions are out to out of masonry, where masonry occurs, or out to out of concrete for structural walls and foundation.
- Whenever possible, keep dimensions in a continuous string.
- Reference from a common fixed point, such as column lines, foundations etc. When masonry occurs around columns, do not dimension each column or pilaster. If it is typical, mark as (TYP).
- Place dimension lines so they will not run through equipment or other congested areas.
- Do not repeat dimensions.
- Dimension openings in interior masonry walls. Be sure masonry courses.
- Use nominal wall thickness.

Screening and Wipeouts

Visual representation is the job of all CAD technicians, the project is being built on what we produce and it is our goal to provide clear, easy to follow drawings to the engineer and the client.

We all know that screening is used for existing objects and linework. To increase the look and feel of our drawings, screening will also be used when creating sheet files by referencing drawings from other disciplines. Example: when a mechanical sheet is being created it will require a structural and mechanical xref. The structural xref is supporting the mechanical xref; our sheet file will only contain annotations on the mechanical elements. Therefore the structural xref would be screened, to highlight the mechanical, but is still visible for the contractor. Another way of thinking about it is that by the time the mechanical is going to be put in; the structure will already be completed, so it actually exists.

Wipeouts and text masks are to be used to clean up drawings. These are mainly used when we have notes and callouts that have linework running through them. If we are putting a note or call out on the drawing, then the contractor must be able to read it. If the note or callout is over something important, move the note or callout.

Hatching

Hatching, when used correctly, will enhance the look of the drawings sets. Although over use of hatch can create larger and slower files that are distracting to the contractor. Common hatching used that will be presented on multiple discipline drawings shall be placed in the xrefs. This will decrease the amount of hatching in each sheet file and maintain a consistency between files. The hatch that is in the xref must be placed on the correct layer so that the disciplines using the xref can toggle it on and off as needed for the creation on their sheets.

- Concrete hatch shall only be used in existing concrete (screened) and concrete that is not part of a structure, i.e. concrete fill, concrete encasement.

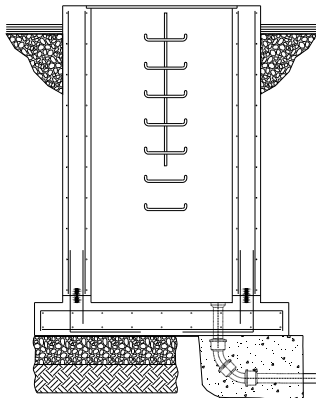


Fig 5-1

Standard Drawing Requirements

This section establishes additional standards and procedures.

- Repetitious drafting should be avoided. Only the information associated with the work being performed should be detailed
- All objects will be drawn at 1=1 scale in model space of the “XREF”. These files will contain all the geometry and linework. Each discipline can have multiple “XREF” files per building, and/or per floor.
- There will be “**NO**” text, annotations or dimensions in the “XREF” file. “Xref” files will be referenced into the sheet files. All text, annotations and dimensions will be placed in the model space of the sheet file at the correct plotting scale.
- All referenced files will be “overlaid” into the sheet file at 0,0,0 and placed on layer G-ANNO-XREF. In general, data that will be shared between multiple disciplines will be contained in separate files. Xrefs are always referenced by other files, sheet files are never referenced by other files.
- **Drawings created by Civil 3D will contain information automatically generated by the software, this includes text and cross-sections. It is the responsibility of the CAD technician to ensure that these items are controllable by the other disciplines and DO NOT impact the way other drawing are viewed.**
- All discipline plans of the same area shall have the same plotting scale. However, if any area requires only minimal information, a smaller, more efficient plotting scale may be used.
- The north orientation of the general layout and all building plans will be straight up or to the left and this orientation will be used on similar plans of the other disciplines. The north arrow will be placed in the upper left hand of the drawing.
- In plan views, the viewport will extend .5” (in paperspace) beyond any matchline. Objects between the matchline and the edge of the viewport window will not be called out.
- All new elevations will be indicated to two decimal places except finish grade, which will be one decimal place and a +/-.
- All sanitary sewer (drain) waste lines and storm sewer profile/section information shall be based upon the invert elevations; all other pipeline information will be based upon centerline elevations.
- Floor drain elevations are to be shown on plans, or called out in a note on the drawing where floor drains are shown.

- Plant Piping
 - Mechanical process piping 4" and smaller will be drawn as single line. All piping 5" and larger shall be double line.
 - All piping materials and connection joints shall be determined by the Engineer prior to drafting.
 - Where piping is shown in different elevations, the section should be cut to show all piping. However, if this is not possible, the piping of least importance shall be omitted to show important fittings.
- All wall pipes and wall sleeves shown on plans and sections will be drawn as if not in section.
- Operator positions, on valves 12" and larger, are to be shown in plans larger than 3/16" plotting scale and in section views. For special operators, or where conflicts may occur, operators may be shown on smaller valves.
- The current Edition of AISC will govern for structural steel callouts and weld symbols.
- Section cuts on plan sheets are to be looking up or to the left. Show horizontal dimension on sections only if they are not clearly apparent on the plan views.
-

5.2 Plotting Lineweights

The eight line weights defined below are considered sufficient and should not be expanded unless an appreciable improvement in drawing clarity or contrast can be realized.

AutoCAD Color	Plotted Width (In.)	AutoCAD Colors (Screening)	Plotted Width (In.)
1 (Red)	0.005	9	0.005
2 (Yellow)	0.010	10	0.010
3 (Green)	0.015	11	0.015
4 (Cyan)	0.020	12	0.020
5 (Blue)	0.025	13	0.025
6 (Magenta)	0.030	14	0.030
7 (White)	0.035	15	0.035
8 (Gray)	0.040	16	0.040

The following are typical usage for the line widths shown:

- 1 (Red) Used for depicting dimension lines, dimension leader/witness lines, note leader lines, line terminators, phantom lines, hidden lines, center lines, long break lines, schedule grid lines, and other object lines seen at a distance.
- 2 (Yellow) Used for depicting minor object lines, text for notes, callouts, and schedule text.
- 3 (Green) Medium lines should be used for depicting minor object lines.
- 4 (Cyan) Used for major object lines, cut lines, section cutting plane lines, and titles.
- 5 (Blue) Used for Match lines.
- 8 (Gray) Used for Electrical One-Line Diagrams (BUS)

Note: The use of AutoCAD Polylines with a variable width is discouraged.

5.3 Plotting Scales

Table 0-1		
Drawing Type	Preferred Drawing Scale	
Site plans	$1'' = 10'$ $1'' = 20'$ $1'' = 40'$ $1'' = 100'$	
Floor plans	$1/4'' = 1' - 0''$	
Plan and Profiles	Horizontal $1'' = 50'$	Vertical $1'' = 5'$
Sections	$3/8'' = 1' - 0''$	
Details	$1/4'' = 1' - 0''$ $3/8'' = 1' - 0''$ $1/2'' = 1' - 0''$ $3/4'' = 1' - 0''$ $1'' = 1' - 0''$	
Schematics	NTS	

All scales are subjective. The intent of this chart is to show the baseline standard. It is the CAD Professional's responsibility to ensure that the drawing is clear and complete, based on the Engineer's design.

SECTION 5

5.4 *Text Styles/Fonts*

Zone 7 uses Simplex for all drawing text.

- **All General text shall be:**
0.10" Plotted Height
- **All Subtitle text shall be:**
Underlined
0.15" Plotted Height
- **All Title text shall be**
Underlined
0.1875" Plotted Height

Text callouts are left justified. Periods will not be used after an abbreviation.

SECTION 5

**Zone 7 Water Agency
CAD STANDARD**