

INVITATION FOR BIDS

SOLICITATION INFORMATION AND SCHEDULE

Solicitation Number: **PW 20-058**

Solicitation Title: **Riley Drive Wastewater Lift Station**

Release Date: **Jun. 18, 2020**

Advertisement Dates: **Jun. 17 and Jun. 24, 2020 SW Business Gazette
Jun. 18, 2020 AZ Business Gazette**

NON-MANDATORY
Prospective Bidders' Conference: **Jul. 2, 2020
2:00 p.m. (local-time, Phoenix, Arizona)
Please see Vendor Registry for Zoom meeting
instruction**

Final Date for Inquiries: **Jul. 9, 2020**

Bid Deadline: **Jul. 16, 2020
5:00 p.m. (local-time, Phoenix, Arizona)**

Bid Opening: **Jul. 16, 2020
5:00 p.m. (local-time, Phoenix, Arizona). There will be
no public bid opening since we are accepting bids
electronically through Vendor Registry.**

City Representative: Dean Pehrson DPehrson@avondaleaz.gov
623-333-2725

Procurement Administrator: Jill Lin JLin@avondaleaz.gov
623-333-2029

In accordance with the City of Avondale Procurement Code, competitive sealed Bids for the services specified herein shall be submitted electronically through City's Procurement Website via Vendor Registry before the date and time referenced above (the "Bid Deadline").

* The City of Avondale reserves the right to amend the solicitation schedule as necessary.

CITY OF AVONDALE
ACKNOWLEDGMENT OF PLANS AND SPECIFICATIONS RECEIVED
INVITATION FOR BIDS
RILEY DRIVE WASTEWATER LIFT STATION

Vendor certifies that it has reviewed and verified the following plans and specifications were included as part of IFB PW 20-058, released on June 18, 2020, and that the information contained therein has been incorporated in formulating the Vendor's Offer:

_____, _____ 2020
Signed Date

Print Name and Title

Company Name

ARTICLE I - DEFINITIONS

For purposes of this Invitation for Bids, the following definitions shall apply:

- 1.1. “Bid” or “Offer” means a responsive bid or quotation submitted by a Bidder in response to this Invitation for Bids.
- 1.2. “Bid Deadline” means the date and time set forth on the cover of this IFB for the City Clerk to be in actual possession of the sealed Bids.
- 1.3. “Bid Opening” means the date and time set forth on the cover of this Invitation for Bids for opening of sealed Bids.
- 1.4. “Bidder” means any person or firm submitting a competitive Bid in response to this IFB.
- 1.5. “City” means the City of Avondale, an Arizona municipal corporation.
- 1.6. “City Representative” means the City employee who has specifically been designated to act as a contact person to the City’s Procurement Administrator, and who is responsible for monitoring and overseeing the Contractor’s performance under this Contract and for providing information regarding details pertaining to the Work.
- 1.7. “Confidential Information” means that portion of a Bid, proposal, Offer, Specification or protest that contains information that the person submitting the information believes should be withheld, provided (i) such person submits a written statement advising the City of this fact at the time of the submission and (ii) the information is so identified wherever it appears.
- 1.8. “Consultant” means that an external consultant City has contracted to perform professional services includes but is not limited to architect services, engineer services, land surveying services, assayer services, geologist services and landscape architect services.
- 1.9. “Contract” means, collectively, (i) the executed Offer/Bid, (ii) the executed Acknowledgment of Plans and Specifications, (iii) this IFB, including all completed exhibits, (iv) the Notice of Award, (v) the Notice to Proceed or Purchase Order(s), (vi) any approved Addendum, Change Order or Amendment, (vii) the Contractor’s Certificates of Insurance and a copy of the Declarations Page(s) of the insurance policies, (viii) the Certificate of Completion and (ix) any Plans, Specifications, Reference Documents or other documents attached, appended or incorporated herein by reference. Alternate or optional bid items will become part of this Contract only if they are accepted by the City in writing on the Price Sheet.
- 1.10. “Contractor” means the individual, partnership, corporation or limited liability company who has submitted a Bid in response to this IFB and who, as a result of the competitive bidding process, is awarded a contract for Materials or Services by the City.
- 1.11. “Contract Time” means the time period during which the Contractor must complete all of the Work related to the Project.
- 1.12. “Day(s)” means calendar day(s) unless otherwise specified.
- 1.13. “Engineer” means the City Engineer or authorized designee.
- 1.14. “Final Completion” shall be defined as set forth in Section 3.18 and shall occur not later than 30 Days from the date of Substantial Completion unless otherwise designated by the Engineer and subject to modification by changes in the Work as provided in Section 3.16 below.
- 1.15. “Invitation for Bids” or “IFB” means this request by the City for participation in the competitive bidding process according to all documents, including those attached or incorporated herein by reference, utilized for soliciting Bids for the Materials and/or Services in compliance with the City’s Procurement Code.

- 1.16. “MAG Specifications” means, collectively, the “Uniform Standard Specifications for Public Works Construction,” current edition as of the date of Contract award and the “Uniform Standard Details for Public Works Construction,” current edition as of the date of Contract award, which are sponsored and distributed by the Maricopa Association of Governments (“MAG”) and any amendments or supplements adopted by the City.
- 1.17. “MAG Supplement” means the City of Avondale Supplement to the MAG Uniform Standard Specifications and Details for Public Works Construction, dated April, 2008.
- 1.18. “Materials” means any personal property, including equipment, materials, replacements and supplies provided by the Contractor in conjunction with this Contract and shall include, in addition to Materials incorporated in the Project, equipment and other material used and/or consumed in the performance of the Work.
- 1.19. “Multiple Award” means an award of an indefinite quantity contract for one or more similar products, commodities or Services to more than one Bidder.
- 1.20. “Plans” means drawings relating to the Project, prepared by or on behalf of the City, bearing the seal of the professional who is responsible for their preparation.
- 1.21. “Price” means the total expenditure for the defined Project, inclusive of all Materials, commodities or Services.
- 1.22. “Procurement Administrator” means a City employee, as designated on the cover of this IFB, who has specifically been designated to act as a contact person to the Bidders and/or Contractor relating to their IFB.
- 1.23. “Procurement Agent” means the City Manager or authorized designee.
- 1.24. “Procurement Code” means the City’s Procurement Code, as amended from time to time.
- 1.25. “Project” means the purpose and Work described as set forth in Section 2.1, in the “Purpose/Scope of Work” of the IFB.
- 1.26. “Punch List” means that list of items provided by City to Contractor at the time of Substantial Completion indicating items to be completed or corrected, including the time for completion or correction by Contractor after Substantial Completion.
- 1.27. “Reference Documents” means information provided by the City relating to the Project that must be evaluated by the Contractor and incorporated into its Bid.
- 1.28. “Services” means the furnishing of labor, time or effort by a Contractor, not involving the delivery of a specific end product other than reports which are merely incidental to the required performance and as further defined in this Contract. This term does not include “professional and technical services” as defined in the Procurement Code.
- 1.29. “Specification” means any description of the physical characteristics, functional characteristics, or the nature of a commodity, product, supply or Services. The term may include a description of any requirements for inspecting, testing, or preparing a supply or service item for delivery.
- 1.30. “Subcontractor” means those persons or groups of persons having a direct contract with the Contractor to perform a portion of the Work and those who furnish Materials according to the plans and/or Specifications required by this Contract.
- 1.31. “Substantial Completion” shall be defined as set forth in Section 3.17 below and shall occur not later than the date set forth in the Schedule, subject to modification by changes in the Work as provided in Section 3.16 below.
- 1.32. “Substitutions” means Contractor’s proposed changes in products, materials, equipment and methods of construction from those required by the Contract Documents.

- 1.33. “Substitutions for Cause” means changes proposed by Contractor that are required due to changed product conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
- 1.34. “Substitutions for Convenience” means changes proposed by Contractor or City that are not required in order to meet other Project requirements, but which may offer advantage to Contractor or City.
- 1.35. “Vendor” means any firms, entities or individuals desiring to prepare a responsive Bid in response to this Invitation for Bids.
- 1.36. “Work” means all labor, Materials and equipment incorporated or to be incorporated in the Project that are necessary to accomplish the construction required by this Contract.

ARTICLE II – BID PROCESS; BID AWARD

- 2.1. Purpose/Scope of Work. The City is seeking a qualified General Commercial Contractor to construct and provide material as more particularly described in the Specifications attached hereto as Exhibit A, and incorporated herein by reference, including but not limited to the following:
 - 2.1.1. Construction of one (1) duplex wastewater lift station with controls:
 - 2.1.1.1. Site Location: The north side of Riley Drive.
 - 2.1.1.2. The lift station construction will include new wet well, duplex 5HP chopper pumps, rail system, level controls, and all equipment and electrical controls for full lift station operation. It will also include approximately 100 feet of inlet gravity sewer piping, one sewer manhole, and approximately 200 feet of discharge piping for lift station force main into existing gravity sewer manhole. Site improvements will include site grading and compaction, block wall enclosure (32’ x 36’ site), manual access/maintenance gate, water service, driveway cut, gravel drive, site light (pole mounted light), conduit and concrete pads for future fiber optic communication/SCADA equipment, and new APS electrical service.
 - 2.1.1.3. The project also includes a deductive alternate for the deletion of a backup generator, concrete pad, ATS and associated electrical work from the scope. Includes substitution of MTS for portable generator connection.
 - 2.1.1.4. Abandonment of existing electrical service to existing lift station.
 - 2.1.2. This work replaces an Existing Wastewater Lift Station.
 - 2.1.2.1. Located on East Riley Drive (south side), slightly east of Dysart Avenue.
- 2.2. Amendment of IFB. Except as set forth in Section 3.57 below, no alteration may be made to this IFB or the resultant Contract without the express, written approval of the City in the form of an official IFB addendum or Contract amendment. Any attempt to alter this IFB/Contract without such approval is a violation of this IFB/Contract and the City Procurement Code. Any such action is subject to the legal and contractual remedies available to the City including, but not limited to, Contract cancellation and suspension and/or debarment of the Bidder or Contractor.
- 2.3. Preparation/Submission of Bid. Bidders are invited to participate in the competitive bidding process for the Project specified in this IFB. Bidders shall review their Bid submissions to ensure the following requirements are met.

- 2.3.1. Irregular/Non-responsive Bids. The City will consider as “irregular” or “non-responsive” and shall reject any Bid not prepared and submitted in accordance with the IFB and Specifications, or any Bid lacking sufficient information to enable the City to make a reasonable determination of compliance with the Specifications. Unauthorized or unreasonable exceptions, conditions, limitations, or provisions shall be cause for rejection. Bids may be deemed non-responsive at any time during the evaluation process if, in the sole opinion of the Procurement Agent, any of the following are true:
- 2.3.1.1. Bidder does not meet the minimum required skill, experience or requirements to perform the Work or provide the Materials.
 - 2.3.1.2. Bidder has a past record of failing to fully perform or fulfill contractual obligations.
 - 2.3.1.3. Bidder cannot demonstrate financial stability.
 - 2.3.1.4. Bid submission contains false, inaccurate or misleading statements that, in the opinion of the Procurement Agent, are intended to mislead the City in its evaluation of the Bid.
- 2.3.2. Specification Minimums. Bidders are reminded that the Specifications in this IFB are the minimum levels required and that Bids submitted must be for products that meet or exceed the minimum level of all features specifically listed in this IFB. Bids offering less than the minimums specified will be deemed not responsive. It shall be the Bidder’s responsibility to carefully examine each item listed in the Specifications.
- 2.3.3. Required Submittal. Bidders shall provide **the entire IFB document (all pages)** that contains the following completed pages/documents to be considered a responsive Bid:
- 2.3.3.1. The entire IFB document (Page 1 through Page 82)
 - 2.3.3.2. Offer, signed in ink by a person authorized to bind the Bidder (Page 2). The City will accept electronic signature.
 - 2.3.3.3. Acknowledgement of Plans and Specifications, signed in ink (Page 3). (The full set of Plans and Specifications does not need to be returned with the IFB.)
 - 2.3.3.4. Substitution/Equal Request Form (Exhibit B, if applicable) (Page 63 and 65)
 - 2.3.3.5. Price Sheet (Exhibit C or as subsequently replaced by Addendum)(Page 66 through Page 69)
 - 2.3.3.6. Licenses; DBE/WBE Status (Exhibit D)(Page 70-71).
 - 2.3.3.7. References (Exhibit E)(Page 72-73).
 - 2.3.3.8. Bid Bond (Exhibit F)(Page 74-75). Performance and Payment Bonds are not required until the Contract is executed.
 - 2.3.3.9. Key Personnel/Subcontractor Listing (Exhibit G)(Page 76-77).
 - 2.3.3.10. Acknowledgment page, signed in ink, for each Addendum received, if any (Exhibit J). (Revised Plans and Specifications attached to the Addendum do not need to be returned with the Acknowledgment.)
- 2.3.4. Bidder Responsibilities. All Bidders shall (1) examine the entire Bid package, (2) seek clarification of any item or requirement that may not be clear, (3) check all responses for accuracy before submitting a Bid and (4) submit the entire completed Bid package, in accordance with Subsection 2.3.3 above, by the official Bid Deadline. Late Bids shall not be considered. Bids not submitted with a **signed (wet ink and scanned or electronic signature)** Offer page by a person authorized to bind the Bidder shall be considered non-responsive. Negligence in preparing a Bid shall not be good cause for withdrawal after the Bid Deadline.
- 2.3.5. Online Submittals Only. All Bids shall be submitted electronically via the City’s Solicitation Webpage on Vendor Registry and shall be attached to the corresponding solicitation project before the Due Date and Time indicated on the cover page of IFB and clearly marked with the IFB number

and title, "IFB PW 20-058 Riley Drive Wastewater Lift Station". Please contact Vendor Registry directly for any technical issues.

- 2.3.6. Late Bid. Bids submitted after the Due Date and Time will be rejected and will not be considered. Telegraphic (facsimile), electronic (e-mail) or mailgram Bids are not acceptable. All Bids shall be on the forms provided in this IFB. It is permissible to copy these forms if required. Telegraphic (facsimile), electronic (email) or mailgram Bids will not be considered.
- 2.3.7. Modifications. Erasures, interlineations, or other modifications in the Bid shall be initialed in original ink by the authorized person signing the Bid.
- 2.3.8. Withdrawal. At any time prior to the specified Bid Opening, a Bidder (or designated representative) may amend or withdraw its Bid. Facsimile, electronic (email) or mailgram Bid amendments or withdrawals will not be considered. No Bid shall be altered, amended or withdrawn after the specified Bid Deadline, unless otherwise permitted pursuant to the City Procurement Code.

2.4. Inquiries; Interpretation of Plans, Specifications and Drawings.

- 2.4.1. Inquiries. Any question related to the IFB, including any part of the Plans, Specifications, Scope of Work or other Contract Documents, shall be directed to the City Representative and Procurement Administrator whose names appear on the cover page of this IFB. Verbal or telephone inquiries directed to City staff **will not be answered**. Within two business days following the Final Date for Inquiries listed on the cover page of this IFB, answers to all questions received in writing or via e-mail will be posted on City's procurement website. Questions shall be submitted in writing by the date indicated on the cover page of this IFB; the City will not respond to any inquiries submitted later than the Final Date for Inquiries. The Vendor submitting such inquiry will be responsible for its prompt delivery to the City. Any correspondence related to the IFB shall refer to the title and number, page and paragraph. Any interpretations or corrections of the proposed Contract Documents will be made only by addenda duly approved and issued by the City. The City will not be responsible for any other explanations or interpretations of the Contract Documents.
- 2.4.2. Addenda. It shall be the Bidder's responsibility to check for addenda issued to this IFB. Any addendum issued by the City with respect to this IFB will be available at: City's procurement website at

<https://www.avondaleaz.gov/government/departments/finance-budget/procurement>.
- 2.4.3. Approval of Substitutions. The Materials, products, and equipment described in this IFB establish a standard or required function, dimension, appearance and quality to be met by any proposed substitution. No substitute will be considered unless written Substitution/Equal Request in the form attached hereto as Exhibit B, has been received by the City Representative at least 10 Days prior to the Bid Deadline. Each such request shall include the name of the Material or equipment for which it is to be substituted and a complete description of the proposed substitute, including any drawings, performance and test data and any other information necessary for evaluation of the substitute. If a substitute is approved, the approval shall be by written addendum to the IFB. Bidder shall not rely upon approvals made in any other manner.
- 2.4.4. Use of Equals. When the Specifications for materials, articles, products and equipment include the phrase "*or equal*," Bidder may bid upon and use materials, articles, products and equipment that will perform equally the requirements imposed by the general design. The Engineer will have the final approval of all materials, articles, products and equipment proposed to be used as an "equal." No such "equal" shall be purchased or installed without prior, written approval from the Engineer. No "equal" will be considered unless a written Substitution/Equal Request, in the

form attached hereto as Exhibit B, has been received by the City Representative at least 10 Days prior to the Bid Deadline. The request shall include the name of the material or equipment for which the item is sought to be considered an equal and a complete description of the proposed equal including any drawings, cuts, performance and test data and any other information necessary for evaluation of the equal. All approval of equals shall be issued in the form of written addendum or amendment, as applicable, to this IFB or the Contract.

- 2.4.5. Bid Quantities. It is expressly understood and agreed by the parties hereto that the quantities of the various classes of Services and/or Materials to be furnished under this Contract, which have been estimated as stated in the Bidders' Offer, are only approximate and are to be used solely for the purpose of comparing, on a consistent basis, the Bidders' Offers presented for the Work under this Contract. The selected Contractor agrees that the City shall not be held responsible if any of the quantities shall be found to be incorrect and the Contractor will not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of Services and/or Materials as estimated and the Services and/or Materials actually provided. Contractor is responsible to insure that all services and materials necessary to provide a complete and operational system are included with the items that are listed on the enclosed Price Sheet. No additional items will be added to the Price Sheet. All work necessary to provide a complete and operational system shall be included in Contractor's bid, whether or not that work is listed specifically on the Price Sheet. Contractor shall bring any potential discrepancy between the Plans and the Price Sheet to the City's attention, either at the Prospective Bidders' Conference or by written inquiry, as set forth in Subsection 2.4.1 above. If any error, omission or misstatement is found to occur, the same shall not (1) invalidate this Contract or the whole or any part of the Scope of Work, (2) excuse Contractor from any of the obligations or liabilities hereunder or (3) entitle Contractor to any damage or compensation except as may be provided in this Contract.
- 2.5. Prospective Bidders' Conference. A Prospective Bidders' Conference may be held. If scheduled, the date and time of the Prospective Bidders' Conference will be indicated on the cover page of this IFB. The Prospective Bidders' Conference may be designated as mandatory or non-mandatory on the cover of this IFB. Bids shall not be accepted from Bidders who do not attend a mandatory Prospective Bidders' Conference. Bidders are strongly encouraged to attend those Prospective Bidder's Conferences designated as non-mandatory. The purpose of the Prospective Bidders' Conference will be to clarify the contents of the IFB in order to prevent any misunderstanding of the City's requirements. Any doubt as to the requirements of this IFB or any apparent omission or discrepancy should be presented to the City at the Prospective Bidders' Conference. The City will then determine if any action is necessary and may issue a written amendment or addendum to the IFB. Oral statements or instructions will not constitute an amendment or addendum to the IFB.
- 2.6. New Materials. All Materials to be provided by the Contractor and included in the Bid shall be new, unless otherwise stated in the Specifications.
- 2.7. Prices. Work shall be performed at the unit prices as set forth in the Price Sheet attached hereto as Exhibit C and incorporated herein by reference. Bid prices shall be submitted on a per unit basis by line item, when applicable and include all applicable transaction privilege, sales or use tax. In the event of a disparity between the unit price and extended price, the unit price shall prevail. The Contractor is responsible to include all costs and fees in their bid to provide a complete and operational system per the construction plans and contract documents and as detailed on the Price Sheet enclosed herein. All work necessary to provide a complete and operational system shall be included in Contractor's bid, whether or not that work is listed specifically on the Price Sheet. Work not specifically listed shall be considered incidental, the cost of which is to be included in the price of the items on the attached Price Sheet. No separate payment will be made to items, services, or materials, other than those listed on the attached Price Sheet. **NOTE: All pricing blanks must be filled in. Empty or unfilled spaces in the Bid Price Sheet shall result in a determination that a Bid is non-responsive.**

- 2.8. Force Account. The lump sum quantity shown in the Price Sheet on line item #51 “Force Account” shall be included in the Contractors Bid Price. Only the City shall determine and approve the use of monies in the “Force Account”.
- 2.9. Payment; Discounts. Any Bid that requires payment in less than 30 Days shall not be considered. Payment discounts of 30 Days or less will not be deducted from the Bid Price in determining the low Bid. The City shall be entitled to take advantage of any payment discount offered, provided payment is made within the discount period. Payment discounts shall be indicated on Price Sheet.
- 2.10. Taxes. The City is exempt from Federal Excise Tax, including the Federal Transportation Tax. Please be advised that ARIZ. REV. STAT. § 42-5075(P) applies to the Project contemplated within this Contract. Transaction privilege tax, sales tax and use tax, if any, shall be included in the unit price for each line item. It shall not be considered a lump sum payment item. Bidder should not include tax on any allowances. It is the sole responsibility of the Bidder to determine any applicable tax rates and calculate the tax accordingly. Failure to accurately tabulate any applicable taxes may result in a determination that a Bid is non-responsive. The Bidder shall not rely on, and shall independently verify, any tax information provided by the City.
- 2.11. Cost of Bid/Proposal Preparation. Bids submitted for consideration should be prepared simply and economically, providing adequate information in a straightforward and concise manner. The City does not reimburse the cost of developing, presenting or providing any response to this solicitation; the Bidder is responsible for all costs incurred in responding to this IFB. All materials and documents submitted in response to this IFB become the property of the City and will not be returned.
- 2.12. Public Record. All Bids shall become the property of the City. After Contract award, Bids shall become public records and shall be available for public inspection in accordance with the City’s Procurement Code, except that any portion of a Bid that was designated as confidential pursuant to Section 2.13 below shall remain confidential from and after the time of Bid opening to the extent permitted by Arizona law.
- 2.13. Confidential Information. If a Vendor/Bidder believes that a Bid, Specification, or protest contains information that should be withheld from the public record, a statement advising the Procurement Agent of this fact shall accompany the submission and the information shall be clearly identified. The information identified by the Vendor or Bidder as confidential shall not be disclosed until the Procurement Agent makes a written determination. The Procurement Agent shall review the statement and information with the City Attorney and shall determine in writing whether the information shall be withheld. If the City Attorney determines that it is proper to disclose the information, the Procurement Agent shall inform the Vendor or Bidder in writing of such determination.
- 2.14. Vendor Licensing and Registration. Prior to the award of the Contract, the successful Bidder shall (A) be registered with the Arizona Corporation Commission and authorized to do business in Arizona and (B) have a completed Vendor Registration Packet on file with the City Finance and Budget Department. Bidders shall provide license and certification information with the Bid, attached as Exhibit D and incorporated herein by reference. Upon the City’s request, corporations and limited liability companies shall provide Certificates of Good Standing from the Arizona Corporation Commission.
- 2.15. Bidder Qualifications.
- 2.15.1. Experience and References. Bidder must demonstrate successful completion of at least three similar projects within the past 60 months, one of which must have a dollar value of at least 75% of the total bid for this Project as set forth in the Price Sheet, attached as Exhibit C. Total bid price does not include any City allowances identified. For the purpose of this Solicitation, “successful completion” means completion of a project within the established schedule and budget and “similar projects” resemble this Project in size, nature and scope. References for these three projects shall be listed on the sheet attached hereto as Exhibit E and incorporated herein by reference. *These references will be checked*, and it is Bidder’s responsibility to ensure that all information is accurate and current. Bidder authorizes the City’s representative to verify all

information from these references and releases all those concerned from any liability in connection with the information they provide.

2.15.2. Investigation. The City's representative may conduct any investigation deemed necessary to determine the Bidder's ability to perform the Work in accordance with the Contract Documents. The three lowest Bidders may be requested to submit additional documentation within 72 hours (or as specified) to assist the City in its evaluation.

2.16. Certification. By submitting a Bid, the Bidder certifies:

2.16.1. No Collusion. The submission of the Bid did not involve collusion or other anti-competitive practices.

2.16.2. No Discrimination. It shall not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11246.

2.16.3. No Gratuity. It has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip favor or service to a City employee, officer, agent or elected official in connection with the submitted Bid or a resultant Contract. In the event that the resultant Contract is canceled pursuant to this provision, the City shall be entitled, in addition to any other rights and remedies, to recover and withhold from the Contractor an amount equal to 150% of the gratuity.

2.16.4. Financial Stability. It is financially stable, solvent and has adequate cash reserves to meet all financial obligations including any potential costs resulting from an award of the Contract.

2.16.5. No Signature/False Statement. The signature on the Bid and the Vendor Information Form is genuine. Failure to sign the Bid and the Vendor Information Form, or signing either with a false statement, shall void the submitted Bid and any resulting Contract, and the Bidder may be debarred from further bidding in the City.

2.17. Bid Bond. All Vendors desiring to prepare a responsive Bid shall submit a non-revocable bid security payable to the City in the amount of ten percent (10%) of the total Bid Price. This security shall be in the form of a bid bond, certified check or cashier's check and must be in the possession of the Procurement Office by the Bid Deadline. All bid security from Contractor(s) who have been issued a Notice of Award shall be held until the successful execution of all required Contract Documents and bonds. If the Contractor fails to execute the required contractual documents and bonds within the time specified, or 10 Days after Notice of Award if no period is specified, the Contractor may be found to be in default and this Contract terminated by the City. In case of default, the City reserves all rights inclusive of, but not limited to, the right to purchase material and/or to complete the Work and to recover any actual excess costs associated with such completion from the Contractor. All bid bonds shall be executed in the form attached hereto as Exhibit F, duly executed by the Bidder as Principal and having as Surety thereon a Surety company holding a Certificate of Authority from the Arizona Department of Insurance to transact surety business in the State of Arizona. Individual sureties are unacceptable. All insurers and sureties shall have, at the time of submission of the proposal, an A.M. Best's Key Rating Guide of "A-" or better as currently listed in the most recent Best Key Guide, published by the A.M. Best Company. As soon as is practicable after the completion of the evaluation, the City will (A) issue a Notice of Award for those Offers accepted by the City and (B) return all checks or bonds to those Bidders who have not been issued a Notice of Award.

2.18. Award of Contract.

2.18.1. Multiple Award. The City may, at its sole discretion, accept Bidder's Offer as part of a Multiple Award.

2.18.2. Evaluation. The evaluation of this Bid will be based on, but not limited to, the following: (1) compliance with Specifications, (2) tax-inclusive Price, including alternates selected by the City, if

- any, and taxes, but excluding “as-needed” services requested by the City and (3) Bidder qualifications to perform the Work.
- 2.18.3. Waiver, Rejection, Reissuance. Notwithstanding any other provision of this IFB, the City expressly reserves the right to: (1) waive any immaterial defect or informality, (2) reject any or all Bids or portions thereof and (3) cancel or reissue an IFB.
- 2.18.4. A Bid is a binding offer to contract with the City based upon the terms, conditions and Specifications contained in this IFB and the Bidder’s responsive Bid, unless any of the terms, conditions, or Specifications are modified by a written addendum or Contract amendment. Bids become binding Contracts when the Acceptance of Offer and Notice of Award is executed in writing by the City. Bidder Offers shall be valid and irrevocable for **90** Days after the Bid Opening.
- 2.18.5. Any Bidder may protest this IFB, the proposed award of a Contract, or the actual award of a Contract. All protests will be considered in accordance with the City Procurement Code.

ARTICLE III – GENERAL TERMS AND CONDITIONS

PART A – GENERAL

- 3.1. Reference Standards and Reference Documents. The Contractor shall perform the Work required in conformance with MAG Specifications and the MAG Supplement, each of which is incorporated herein by reference. In the event of a conflict between the MAG Specifications and the MAG Supplement, the MAG Supplement shall prevail. In performing the work defined herein, Contractor is responsible to comply with all applicable regulations, requirements, and procedures for Arizona Pollution Discharge Elimination System (AZPDES) and Avondale’s Storm Water Pollution Prevention Plan (SWPPP) program as contained in Avondale Municipal Code, Chapter 8. All plans and applications required to comply with AZPDES and Avondale SWPPP shall be provided by Contractor. The Contractor shall also perform the Work in accordance with the Reference Documents, a list of which is attached hereto as part of Exhibit A.
- 3.2. Plans and Specifications to Successful Contractor. The successful Contractor is responsible to download and print Plans and Specifications for this Project available at the following website:
<https://www.avondaleaz.gov/government/departments/finance-budget/procurement>
- 3.3. Contract Time. The Contract Time for this Project shall be 115 days from the Notice to Proceed. All Work on the Project shall be completed on or before the expiration of the Contract Time.
- 3.4. Pre-Construction Conference. No more than 10 Days of the issuance of the Notice of Award, the Contractor shall attend a pre-construction conference. The City will contact the Contractor to schedule a specific date, time and location for the pre-construction conference. The purpose of this conference is to outline specific items and procedures and to address items that require special attention on the part of the Contractor. The Contractor may also present proposed variations in procedures that the Contractor believes may (A) improve the Project, (B) reduce cost or (C) reduce inconvenience to the public. Any necessary coordination and procedures for construction inspection and staking will be addressed during the pre-construction conference. The Contractor will be required to provide the following items at, or prior to, the pre-construction conference, each of which is subject to review and approval by the Engineer:
- 3.4.1. Key Personnel; Subcontractors. A list of the names and emergency telephone numbers of all proposed key personnel, Subcontractors and suppliers that the Contractor intends to utilize on the Project, in the form attached hereto as Exhibit G and incorporated herein by reference. The term “Key Personnel” means individuals who will be directly assigned to this Project and includes, but is not limited to, the owner, principals, project manager, project superintendent, scheduler, construction engineer and supervisory personnel. At least two of the Bidder’s Key Personnel must have a minimum of three years’ experience in similar projects (defined above) and the

scheduler must have experience in employing scheduling techniques appropriate for this Project. Resumes of Key Personnel shall be submitted upon request by the City's representative. Proposed Subcontractors shall be qualified and have the requisite professional or technical licenses and be licensed to do business in the State of Arizona. The list shall include such information on the professional background of each of the assigned key individuals as may be requested by the City Representative. Such key personnel and Subcontractors shall be satisfactory to the Engineer and shall not be changed except with the consent of the Engineer. Additionally, the Engineer shall have the right to request that the Contractor personnel and Subcontractors be removed from the Project if, in the Engineer's sole discretion, such personnel or Subcontractor(s) are detrimental to the Project delivery process. Upon receipt of such request, the Contractor shall remove such personnel or Subcontractor(s) unless the Contractor can provide the City with sufficient documentation to prove it is commercially impractical to replace the personnel or Subcontractor(s) with substitute personnel possessing similar qualifications. The Engineer's approval of substituted personnel or Subcontractor(s) shall not be unreasonably withheld.

- 3.4.2. Progress Schedule. A construction progress schedule showing the estimated time for start and completion of each project site.
 - 3.4.3. Payment Schedule. A payment schedule showing the estimated dollar volume of Work for each calendar month during the life of the Project.
 - 3.4.4. Traffic Control. A written proposal, prepared by an individual who is IMSA or ATSSA certified, outlining the intended plans for traffic control and for maintaining continuous access to residences and businesses along the construction site.
 - 3.4.5. Drawings, Materials & Equipment. An itemized list of all required shop drawings, material and equipment submittals and a schedule indicating the dates each of these items will be transmitted to the City for review.
- 3.5. Notice to Proceed. Within 15 Days of the issuance of the Purchase Order the City may issue a written Notice to Proceed. The Notice to Proceed shall stipulate the actual Contract start date, the Contract Time and the dates of Substantial Completion and Final Completion. The time required for the Contractor to obtain permits, licenses and easements shall be included in the Contract Time and shall not be justification for a delay claim by the Contractor. The time required for the Contractor to prepare, transmit and obtain approval of applicable submittals shall be included in the Contract Time and shall not be justification for a delay claim by the Contractor. No Work shall be started until after all required permits, licenses, and easements have been obtained. The Contractor shall notify the City Representative, in writing, at least 72 hours before the following events:
- 3.5.1. Commencement. The start of construction.
 - 3.5.2. City Services Shut Down. Shutdown of City water, sewer, drainage, irrigation and/or traffic control facilities.
 - 3.5.3. Well or Pump Shut Down. Shutdown of existing water wells and booster pumps. Such shutdown shall not exceed 72 hours of any facility and only one facility may be shutdown at any one time.
 - 3.5.4. Water Lines. All draining and filling of water lines and irrigation laterals and all operations of existing valves or gauges. The City will furnish all required water meters; provided however, that the meter provided is only for construction purposes. Any domestic water meter necessary for the Project shall be included in the Bid.
 - 3.5.5. Start-up and Testing. Start-up or testing of any water well or booster pump to be connected to any part of the existing City water system. This includes operation of existing valves necessary to accommodate the water.

- 3.6. Laws and Regulations. The Contractor shall keep fully informed of all rules, regulations, ordinances, statutes or laws affecting the Work herein specified, including existing and future (A) City and County ordinances and regulations, (B) State and Federal laws and (C) Occupational Safety and Health Administration (“OSHA”) standards.
- 3.7. Affirmative Action Report. It is the policy of the City that suppliers of goods or services to the City adhere to a policy of equal employment opportunity and demonstrate an affirmative effort to recruit, hire, and promote regardless of race, color, religion, gender, national origin, age or disability. On any Contract in excess of six months, the Contractor shall provide an annual report to the Engineer highlighting its activities to comply with this Section 3.7.
- 3.8. Rights-of-Way. The Contractor shall obtain a right-of-way permit for any of the Work completed in the public right-of-way. The Contractor will be responsible for any required Maricopa County permits or other agency permits. The City will provide any necessary easements for Work specified under this Contract, and the Contractor shall not enter or occupy with workers, tools, equipment or materials any private ground outside the property of the City without the written consent of the owner thereof. The Contractor, at its own expense, is responsible for the acquisition of any additional easements or rights-of-way.
- 3.9. Inspection and Compliance. Each Contractor must inform itself fully of the conditions relating to the construction of the Project and the employment of labor thereon. Failure to do so will not relieve the Contractor of its obligation to furnish all material and labor necessary to carry out the provisions of this Contract. Insofar as possible in carrying out its work, the Contractor must employ such methods or means as will not cause any interruption of or interference with the Work of any other contractor. Contractor affirms that it has inspected the jobsite and has thoroughly reviewed this Contract including, without limitation, the Specifications listed on Exhibit A, as the same may be revised by the City, and is not relying on any opinions or representations of City. Contractor agrees to perform and complete such Work in strict accordance with this Contract and under the general direction of the City. Contractor agrees that any exclusions of any Work must be approved in writing by the City prior to acceptance of this Contract or same shall not be excluded hereunder. Contractor shall provide all competent supervision necessary to execute all Work and any Work incidental thereto in a thorough, first-class, workmanlike manner. It is Contractor’s responsibility that all of the Work and any Work incidental thereto conforms to, and is performed in accordance with, all applicable Federal, State, County and City laws, codes, ordinances, regulations (including National Pollutant Discharge Elimination System and air pollution standards) and orders of public authorities bearing on performance of the Work.
- 3.10. Safety Plan. Contractor is responsible for all safety precautions and programs and shall perform the Work in accordance with a safety plan that is compliant with OSHA, American National Standards Institute and National Institute for Occupational Safety and Health standards. Contractor shall provide all protection and necessary supervision to implement said safety plan. Contractor shall take all reasonable precautions for the safety of and provide reasonable protection to prevent damage, injury or loss to: (A) employees or others on the Project, (B) the Work and materials and (C) other property at the Project or adjacent thereto. Contractor shall designate a responsible person on the Project whose duty shall be prevention of accidents.
- 3.11. Traffic Regulations. All traffic affected by the Work under this Contract shall be regulated in accordance with the then-current version of the *City of Phoenix-Traffic Barricade Manual* (the “Barricade Manual”) which is incorporated herein by reference; provided, however, that this Contract shall govern in a conflict with the terms of the Barricade Manual. At the time of the pre-construction conference, the Contractor shall designate an employee who is well qualified and experienced in construction traffic control and safety to be responsible for implementing, monitoring and altering traffic control measures, as necessary. At the same time, the City will designate a representative who will be responsible to see that all traffic control and any alterations are implemented and monitored to the extent that traffic is carried through the Work area in an effective manner and that motorists, pedestrians, bicyclists and workers are protected from hazard and accidents.

- 3.11.1. Major Streets. The following shall be considered major streets: All major parkway, mile (section line), arterial and collector (mid-section line and quarter section line) streets so classified by the City.
- 3.11.2. Traffic Control Devices. All traffic control devices required for the Work under this Contract shall be the responsibility of the Contractor. The Contractor shall place advance warning signs (such as REDUCE SPEED, LOOSE GRAVEL, 25 MPH SPEED LIMIT and DO NOT PASS) in accordance with the Barricade Manual. The Contractor shall provide, erect and maintain all necessary flashing arrow boards, barricades, suitable and sufficient warning lights, signals and signs and shall take all necessary precautions for the protection of the Work and safety of the public. The Contractor shall provide, erect and maintain acceptable and adequate detour signs at all closures and along detour routes. All barricades and obstructions shall be illuminated at night, and all safety lights shall be illuminated from sunset until sunrise. All barricades and signs used by the Contractor shall conform to the standard design generally accepted for such purposes and payment for all such services and materials shall be considered as included in the other pay items of this Contract.
- 3.11.3. Existing Signs. The Contractor shall ensure that all existing traffic signs are erect, clean and in full view of the intended traffic at all times. Street name signs at major street intersections shall be maintained erect at all times. If these signs should interfere with construction, the Contractor shall notify the Engineer, in writing, at least 48 hours in advance for City personnel to temporarily relocate or cover said signs. The Engineer will direct the Contractor as to the correct positions to re-set all traffic and street name signs to permanent locations when notified by the Contractor that the interfering construction is complete.
- 3.11.4. Manual Traffic Control. Manual traffic control shall be in conformity with the Barricade Manual, except that the designated liaison officer shall be contacted at the Avondale Police Department. When construction activities or traffic hazards at the construction site require the use of flagmen, it shall be the Contractor's responsibility to provide trained flagmen to direct traffic safely. When traffic hazards at construction sites warrant the use of certified police personnel to direct traffic, arrangements must be made with the liaison officer at the Avondale Police Department.
- 3.11.5. Contractor Equipment. The assembly and turnarounds of the Contractor's equipment shall be accomplished using adjacent local streets when possible. Equipment used and/or directed by the Contractor shall travel with traffic at all times. Supply trucks shall travel with traffic except when being spotted. Contractor shall provide a flagman or off-duty, uniformed Avondale officer to assist with spotting.
- 3.11.6. Traffic Alterations. During construction, it may be necessary to alter traffic control. Any such alterations shall be in accordance with the Barricade Manual. No street within the Project area may be closed to through traffic or to local emergency traffic without prior, written approval of the Engineer. Written approval may be given if sufficient time exists to allow for notification of the public at least 72 hours in advance of such closing. Partial closure of streets within the Project shall be done in strict conformity with the Barricade Manual and the Engineer's written directions.
- 3.11.7. Intersections. Caution should be used when excavating near intersections with traffic signal underground cable. Contractor shall notify the Engineer, in writing, 24 hours in advance of any Work at such intersections. The Contractor shall install and maintain temporary overhead traffic signal cable as specified by the Engineer when underground conduit is to be severed by excavations at intersections. The Contractor shall provide an off-duty, uniformed Avondale police officer to direct traffic while the traffic signal is turned off and the wiring is transferred. All damaged or modified traffic signal overhead and underground items shall be repaired and restored to the Engineer's satisfaction. Magnetic detector loops shall, under no circumstances, be spliced.

- 3.11.8. Adjacent Property Access. The Contractor shall maintain access to all businesses, schools and residences along the Project alignment at all times in accordance with the MAG Supplement, Section 107.7.1 (Access).
- 3.11.9. Covered Crossings. Where crossings of existing pavement occurs, no open trenches shall be permitted overnight, but plating may be permitted if conditions allow, as determined by the Engineer in his sole discretion. If plates cannot be used, crossings shall either be back-filled or the Contractor shall provide a detour.
- 3.12. Indemnification. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the City and each council member, officer, employee or agent thereof (the City and any such person being herein called an “Indemnified Party”), for, from and against any and all losses, claims, damages, liabilities, costs and expenses (including, but not limited to, reasonable attorneys’ fees, court costs and the costs of appellate proceedings) to which any such Indemnified Party may become subject, under any theory of liability whatsoever (“Claims”) to the extent that such Claims (or actions in respect thereof) are caused by the negligent acts, recklessness or intentional misconduct of the Contractor, its officers, employees, agents, or any tier of subcontractor in connection with Contractor’s work or services in the performance of this Agreement. The amount and type of insurance coverage requirements set forth below will in no way be construed as limiting the scope of the indemnity in this Section.
- 3.13. Insurance.
- 3.13.1. General.
- 3.13.1.1. Insurer Qualifications. Without limiting any obligations or liabilities of Contractor, Contractor shall purchase and maintain, at its own expense, hereinafter stipulated minimum insurance with insurance companies authorized to do business in the State of Arizona pursuant to ARIZ. REV. STAT. § 20-206, as amended, with an AM Best, Inc. rating of A- or above with policies and forms satisfactory to the City. Failure to maintain insurance as specified herein may result in termination of this Contract at the City’s option.
- 3.13.1.2. No Representation of Coverage Adequacy. By requiring insurance herein, the City does not represent that coverage and limits will be adequate to protect Contractor. The City reserves the right to review any and all of the insurance policies and/or endorsements cited in this Contract but has no obligation to do so. Failure to demand such evidence of full compliance with the insurance requirements set forth in this Contract or failure to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Contract.
- 3.13.1.3. Additional Insured. All insurance coverage, except Workers’ Compensation insurance and Professional Liability insurance, if applicable, shall name, to the fullest extent permitted by law for claims arising out of the performance of this Contract, the City, its agents, representatives, officers, directors, officials and employees as Additional Named Insured as specified under the respective coverage sections of this Contract.
- 3.13.1.4. Coverage Term. All insurance required herein shall be maintained in full force and effect until all Work or Services required to be performed under the terms of this Contract are satisfactorily performed, completed and formally accepted by the City, unless specified otherwise in this Contract.
- 3.13.1.5. Primary Insurance. Contractor’s insurance shall be primary insurance with respect to performance of this Contract and in the protection of the City as an Additional Insured.

- 3.13.1.6. Claims Made. In the event any insurance policies required by this Agreement are written on a “claims made” basis, coverage shall extend, either by keeping coverage in force or purchasing an extended reporting option, for three years past completion and acceptance of the services. Such continuing coverage shall be evidenced by submission of annual Certificates of Insurance and necessary endorsements citing applicable coverage is in force and contains the provisions as required herein for the three-year period.
- 3.13.1.7. Waiver. All policies, except for Professional Liability, including Workers’ Compensation insurance, shall contain a waiver of rights of recovery (subrogation) against the City, its agents, representatives, officials, officers and employees for any claims arising out of the Work or Services of Contractor. Contractor shall arrange to have such subrogation waivers incorporated into each policy via formal written endorsement thereto.
- 3.13.1.8. Policy Deductibles and/or Self-Insured Retentions. The policies set forth in these requirements may provide coverage that contains deductibles or self-insured retention amounts. Such deductibles or self-insured retention shall not be applicable with respect to the policy limits provided to the City. Contractor shall be solely responsible for any such deductible or self-insured retention amount.
- 3.13.1.9. Use of Subcontractors. If any Work under this Contract is subcontracted in any way, Contractor shall execute written agreement with its Subcontractors containing the indemnification provisions set forth above and insurance requirements set forth herein protecting the City and Contractor. Contractor shall be responsible for executing any agreements with its Subcontractor and obtaining certificates of insurance verifying the insurance requirements.
- 3.13.1.10. Evidence of Insurance. Contractor will provide to the City within 10 business days after receipt of the executed Agreement, and prior to commencing any Work or Services under this Contract, suitable evidence of insurance in the form of certificates of insurance and a copy of the declaration page(s) of the insurance policies as required by this Contract, issued by Contractor’s insurance insurer(s) as evidence that policies are placed with acceptable insurers as specified herein and provide the required coverages, conditions and limits of coverage specified in this Contract and that such coverage and provisions are in full force and effect. Confidential information such as the policy premium may be redacted from the declaration page(s) of each insurance policy, provided that such redactions do not alter any of the information required by this Contract. The City shall reasonably rely upon the certificates of insurance and declaration page(s) of the insurance policies as evidence of coverage but such acceptance and reliance shall not waive or alter in any way the insurance requirements or obligations of this Contract. If any of the policies required by this Contract expire during the life of this Contract, it shall be Contractor’s responsibility to forward renewal certificates and declaration page(s) to the City 30 Days prior to the expiration date. All certificates of insurance and declarations required by this Contract shall be identified by referencing this Contract. A \$25.00 administrative fee shall be assessed for all certificates or declarations received without a reference to this Contract. Additionally, certificates of insurance and declaration page(s) of the insurance policies submitted without referencing this Contract will be subject to rejection and may be returned or discarded. Certificates of insurance and declaration page(s) shall specifically include the following provisions:
- 3.13.1.10.1.1. The City, its agents, representatives, officers, directors, officials and employees are Additional Insureds as follows:

- 3.13.1.10.1.1.1. Commercial General Liability - Under Insurance Services Office, Inc., (“ISO”) Form CG 20 10 03 97 or equivalent.
 - 3.13.1.10.1.1.2. Auto Liability - Under ISO Form CA 20 48 or equivalent.
 - 3.13.1.10.1.1.3. Excess Liability - Follow Form to underlying insurance.
 - 3.13.1.10.1.2. Contractor’s insurance shall be primary insurance with respect to performance of this Contract.
 - 3.13.1.10.1.3. All policies, except for Professional Liability, including Workers’ Compensation, waive rights of recovery (subrogation) against City, its agents, representatives, officers, officials and employees for any claims arising out of Work or Services performed by Contractor under this Contract.
 - 3.13.1.10.1.4. ACORD certificate of insurance form 25 (2014/01) is preferred. If ACORD certificate of insurance form 25 (2001/08) is used, the phrases in the cancellation provision “endeavor to” and “but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives” shall be deleted. Certificate forms other than ACORD form shall have similar restrictive language deleted.
 - 3.13.1.11. Endorsements. Contractor shall provide the City with the necessary endorsements to ensure City is provided the insurance coverage set forth in this Subsection.
- 3.13.2. Required Insurance Coverage.
 - 3.13.2.1. Commercial General Liability. Contractor shall maintain “occurrence” form Commercial General Liability insurance with an unimpaired limit of not less than \$1,000,000 for each occurrence, \$2,000,000 Products and Completed Operations Annual Aggregate and a \$2,000,000 General Aggregate Limit. The policy shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury. Coverage under the policy will be at least as broad as ISO policy form CG 00 010 93 or equivalent thereof, including but not limited to, separation of insured’s clause. To the fullest extent allowed by law, for claims arising out of the performance of this Contract, the City, its agents, representatives, officers, officials and employees shall be cited as an Additional Insured under ISO, Commercial General Liability Additional Insured Endorsement form CG 20 10 03 97, or equivalent, which shall read “Who is an Insured (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of “your work” for that insured by or for you.” If any Excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be “follow form” equal or broader in coverage scope than underlying insurance.
 - 3.13.2.2. Vehicle Liability. Contractor shall maintain Business Automobile Liability insurance with a limit of \$1,000,000 each occurrence on Contractor’s owned, hired and non-owned vehicles assigned to or used in the performance of the Contractor’s Work or Services under this Contract. Coverage will be at least as broad as ISO coverage code “1” “any auto” policy form CA 00 01 12 93 or equivalent thereof. To the fullest extent

allowed by law, for claims arising out of the performance of this Contract, the City, its agents, representatives, officers, directors, officials and employees shall be cited as an Additional Insured under ISO Business Auto policy Designated Insured Endorsement form CA 20 48 or equivalent. If any Excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be “follow form” equal or broader in coverage scope than underlying insurance.

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

3.13.2.4. Workers’ Compensation Insurance. If Contractor employs anyone who is required by law to be covered by workers’ compensation insurance, Contractor shall maintain Workers’ Compensation insurance to cover obligations imposed by Federal and State statutes having jurisdiction over Contractor’s employees engaged in the performance of Work or Services under this Contract and shall also maintain Employers Liability Insurance of not less than \$500,000 for each accident, \$500,000 disease for each employee and \$1,000,000 disease policy limit.

3.13.2.5. Builder’s Risk Insurance. Unless expressly waived by the City Manager in a written addendum or amendment to this Contract, the Contractor shall be responsible for purchasing and maintaining insurance to protect the Project from perils of physical loss. The insurance shall provide for the full cost of replacement for the entire Project at the time of any loss. The insurance shall include as named insureds the City, the Contractor, the Contractor’s Subcontractors and subcontractors and shall insure against loss from the perils of fire and all-risk coverage for physical loss or damage due to theft, vandalism, collapse, malicious mischief, transit, flood, earthquake, testing, resulting loss arising from defective design, negligent workmanship or defective material. The Contractor shall increase the coverage limits as necessary to reflect changes in the estimated replacement cost.

3.13.3. Cancellation and Expiration Notice. Insurance required herein shall not expire, be canceled, or be materially changed without 30 Days’ prior written notice to the City.

3.14. Performance Bond. The Contractor shall be required to furnish non-revocable security binding the Contractor to provide faithful performance of this Contract in the amount of one hundred percent (100%) of the total Contract Price payable to the City. Performance security shall be in the form of a performance bond, certified check, cashier’s check or irrevocable letter of credit. This security must be in the possession of the Engineer within 10 business days after receipt of the executed Agreement from the City. If the Contractor fails to execute and deliver the security instrument as required, the Contractor may be found in default and this Contract terminated by the City. In case of default the City reserves all rights. All performance bonds shall be executed in the form attached hereto as Exhibit H, duly executed by the Contractor as Principal and having as Surety thereon a Surety company approved by the City and holding a Certificate of Authority to transact surety business in the State of Arizona by the Arizona Department of Insurance. Individual sureties are unacceptable. All Insurers and Sureties shall have, at the time of submission of the performance bond, an A.M. Best’s Key Rating Guide of “A-” or better as currently listed in the most recent Best Key Guide, published by the A.M. Best Company.

- 3.15. Payment Bond. The Contractor shall be required to furnish non-revocable security for the protection of all persons supplying labor and material to the Contractor or any Subcontractor for the performance of any Work related to this Contract. Payment security shall be in the amount of one hundred percent (100%) of the total Contract Price and be payable to the City. Payment security shall be in the form of a payment bond, certified check, cashier's check or irrevocable letter of credit. This security must be in the possession of the Engineer within 10 business days after receipt of the executed Agreement from the City. If the Contractor fails to execute and deliver the security instrument as required, the Contractor may be found in default and this Contract terminated by the City. In case of default the City reserves all rights. All payment bonds shall be executed in the form attached hereto as Exhibit I, duly executed by the Contractor as Principal and having as Surety thereon a Surety company approved by the City and holding a Certificate of Authority to transact surety business in the State of Arizona by the Arizona Department of Insurance. Individual sureties are unacceptable. All Insurers and Sureties shall have, at the time of submission of the payment bond, an A.M. Best's Key Rating Guide of "A-" or better as currently listed in the most recent Best Key Guide, published by the A.M. Best Company.
- 3.16. Changes in the Work. The City may, without invalidating this Contract, order changes in the Work consisting of additions, deletions or other revisions to this Contract and the Contract Price and the Contract Time shall be adjusted as provided below. The Contract Price and/or the Contract Time may only be changed by the City's written approval authorizing said change and said changes shall be performed under the applicable conditions of this Contract. The Contract Price shall be adjusted as a result of a change in the Work as follows:
- 3.16.1. Additions. When the City increases the scope of the Work, Contractor will perform the increased work pursuant to Contractor's unit prices set forth on the Price Sheet.
- 3.16.2. Deletions. When the City decreases the Work resulting in a decrease in Contractor's quantity of the Work, the City shall be allowed a decrease in the Contract Price amounting to the quantity of the deleted Work multiplied by the Contractor's unit prices.
- 3.16.3. Estimating. Whenever the City is considering a change to the Work, Contractor shall promptly, and in any event within five business days, estimate the price of the contemplated additional or deleted Work in good faith and as accurately as is then-feasible. The estimate shall show quantities of labor, material and equipment and shall be pursuant to the rates set forth in the Contractor's Bid.
- 3.17. Substantial Completion. When the Contractor considers that the Work is Substantially Complete, the Consultant shall prepare and submit to the Contractor a comprehensive list of Punch List items, which the Contractor may edit and supplement. The Contractor shall proceed promptly to complete and correct Punch List items. Failure to include an item on the Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The City shall determine when the Project and the Contractor's Work is substantially complete. "Substantial Completion" means construction has been completed in accordance with the Contract Documents to the extent that the City can use or occupy the entire Project, or the designated portion of the Project, for the use intended without any outstanding, concurrent construction at the site, except as may be required to complete or correct Punch List items. A prerequisite for Substantial Completion, over and above the extent of construction completion required, is receipt by the City of acceptable documentation that Contractor has successfully tested and demonstrated all systems for their intended use. The date of Substantial Completion shall be confirmed by a Certificate of Substantial Completion signed by the City and Contractor. The Certificate of Substantial Completion signed by the City and Contractor shall state the respective responsibilities of the City and the Contractor for security, maintenance, utilities, damage to the Work and insurance. The Certificate of Substantial Completion shall also include the Punch List as created by the Contractor and modified by the City and establish the time for completion and correction of all Punch List items. If the City and the Contractor cannot agree as to the appropriate date of Substantial Completion, such issue shall be submitted for dispute resolution in accordance with the procedures set forth in Article III, Part B below. Notwithstanding such disagreement, the Contractor shall diligently proceed with completion of the Punch List items.

- 3.18. Final Completion. The City shall determine when the Project and the Contractor's Work is finally completed. "Final Completion" means completion of the Project by the Contractor in accordance with the Contract Documents, certified to the City by the Contractor. Final Completion shall be achieved only upon the City's written acceptance of (A) the construction, (B) all testing, (C) demonstration by Contractor that the Work functions as required by the Contract Documents and meets all Contract requirements, (D) resolution of all outstanding system deficiencies and Punch List items, if any, (E) delivery of all as-built documentation, drawings, completed record documents (with revisions made after Substantial Completion), annotated submittals and design document deliverables, (F) submittal, acceptance, and delivery of the one hundred percent (100%) complete O&M manuals, (G) delivery of warranties, inspection certificates, bonds and all other required documents, (H) all pre-requisites for final payment and (I) submittal of Contractor's request for final payment and acceptance enclosing all required documentation. Upon Final Completion the Engineer shall issue a Certificate of Final Completion to the Contractor on behalf of the City. Following receipt of payment from the City, the Contractor shall make all payments due to the Subcontractors.
- 3.19. Payments to Contractor. Payment shall be conditioned upon Contractor's compliance with the payment terms and conditions set forth below. Contractor expressly acknowledges and agrees that (A) the Contract Price is an estimated amount based upon an engineer's estimate of the quantities of the Materials deemed necessary to perform the Work and (B) the amount of any payment to be made pursuant to this Contract shall be determined by the field-measured quantities of Materials actually installed by Contractor. Material or equipment delivered to the Project by or on behalf of Contractor shall not constitute material or equipment furnished in the performance of the Work until same has been incorporated into the improvements constituting the Project. Payment shall not constitute acceptance by the City or evidence thereof of any Work performed.
- 3.19.1. Progress Payments.
- 3.19.1.1. On or before the 15th day of each month after construction has commenced, the Contractor shall submit to the City an application for payment consisting of the cost of the Work performed up to the end of the prior month, including the cost of material stored on the site or at other locations approved by the City. Each project location shall be invoiced separately and itemized as detailed on the Price Sheet. The application shall be deemed approved and certified for payment seven Days after it is submitted unless before that time the City prepares and issues a specific written finding setting forth those items in detail that are not approved for payment under this Contract. Prior to submission of the next application for payment, the Contractor shall make available at the request of the City a statement accounting for the disbursement of funds received under the previous application for purposes of audit. The extent of such statement shall be as agreed upon between the City and Contractor.
 - 3.19.1.2. Within 14 Days after approval of each monthly application for payment, the City shall pay directly to the Contractor the appropriate amount for which application for payment is made, less amounts (a) previously paid by the City, (b) sufficient to pay expenses the City reasonably expects to incur in correcting deficiencies which are set forth in writing and provided to the Contractor and (c) any retainage as set forth in subsection 3.19.2 below.
 - 3.19.1.3. The City's progress payment, occupancy or use of the Project, whether in whole or in part, shall not be deemed as acceptance of any Work not conforming to the requirements of this Contract.
 - 3.19.1.4. Upon Substantial Completion of the Work, the City shall pay the Contractor the unpaid balance of the cost of the Work, less a sum equal to the Contractor's estimated cost of completing any unfinished items as agreed to between the City and the Contractor as

to extent and time for Final Completion. The City thereafter shall pay the Contractor monthly the amount retained for unfinished items as each item is completed.

- 3.19.2. Retainage. With respect to the Work, the City shall retain ten percent (10%) of the amount of each estimate until Final Completion and acceptance of all Material, equipment and Work covered by this Contract.
- 3.19.2.1. Any securities submitted by Contractor in lieu of retainage as may be allowed by law, shall be deposited in an escrow account by the City. The City shall be listed as payee or multiple payees with Contractor on all such securities.
- 3.19.2.2. When the Work is fifty percent (50%) completed, one-half of the amount retained including any securities substituted pursuant to subsection 3.19 2.1 shall be paid to the Contractor upon the Contractor's request, provided the Contractor is making satisfactory progress on the Work and there is no specific cause or claim requiring a greater amount to be retained. After the construction Work is fifty percent (50%) completed, no more than five percent (5%) of the amount of any subsequent progress payments made under this Contract may be retained, provided the Contractor is making satisfactory progress on the Project. If, at any time, the City determines satisfactory progress is not being made, ten percent (10%) retention shall be reinstated for all progress payments made under this Contract after the determination.
- 3.19.3. Payment for On-site and Off-site Stored Materials. Payment shall be made on account of Materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. Payment may similarly be made for Materials and equipment suitably stored off the site, conditioned upon the Contractor furnishing evidence to the City that (1) title to the Materials and equipment will pass to the City upon payment therefore, (2) the Materials and equipment are adequately safeguarded and insured, including during transit from the off-site location to the Project site and (3) such other matters as the City may reasonably request in order to protect its interests. With the prior, written approval of the City, Contractor may advance order the bulk delivery of Materials to be incorporated into the Work over the course of this Contract. Upon delivery and receipt of supplier invoice, the City shall pay for the bulk delivery, either directly to the Contractor or to the vendor or by joint check to Contractor and vendor, and shall receive a full release for the amount paid from vendor and Contractor. Contractor agrees to assume full responsibility for the safekeeping of all such Materials and shall guarantee to the City that such Materials shall remain safe from theft or damage from any and all causes (unless caused by the sole negligence of the City). Contractor shall immediately replace, repair or restore said Materials to their original condition so as to not cause any delay in the Work, and Contractor shall indemnify and hold harmless the City for, from and against any and all loss, cost, liability or expense resulting from any loss or damage to any of the Materials described herein from any cause unless due to the City's sole negligence. Should the City have reason to believe Contractor is not properly safeguarding any of the Materials, the City shall have the right, but not the affirmative duty, to immediately take such steps as it deems necessary to do so, including removing Contractor from the job, replacing any Materials or expending any sums to properly carry out Contractor's responsibility hereunder, and any amounts so expended shall be billed back to Contractor or deducted from any sums then or thereafter due to Contractor. Contractor shall fully insure all Materials stored on site as required by the City, and if such insurance is not obtained due to a lack of insurable interest, the City shall have the right to obtain such insurance and charge the amount thereof back to Contractor or deduct said amount from any funds then or thereafter due to Contractor.
- 3.19.4. Title to Construction Work. The Contractor warrants that title to all Work covered by an application for payment shall pass to the City no later than the time of payment. The Contractor further warrants that upon submittal of an application for payment, all Work for which applications for payment have been previously issued and payments received from the City shall be free and clear of liens,

claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, Materials and equipment relating to the Work.

3.19.5. Final Payment.

3.19.5.1. Final payment, consisting of the unpaid balance of the cost of the Work shall be due and payable at Final Completion and acceptance by the City. Before issuance of final payment, the City may request satisfactory evidence that all payrolls, Materials bills and other indebtedness connected with the Work have been paid or otherwise satisfied.

3.19.5.2. In making final payment the City waives all claims except for:

3.19.5.2.1. Outstanding liens.

3.19.5.2.2. Improper workmanship or defective Materials.

3.19.5.2.3. Work not in conformance with this Contract or Work not completed.

3.19.5.2.4. Terms of any special warranties required by this Contract.

3.19.5.2.5. Delivery to City of all warranties, operation and maintenance manuals, "AS-BUILT" record drawings and other documents as required by this Contract.

3.19.5.2.6. Right to audit Contractor records for a period of three years.

3.19.5.2.7. Claims previously made in writing and which remain unsettled.

3.19.5.3. Acceptance of final payment by the Contractor shall constitute a waiver of affirmative claims by the Contractor, except those previously made in writing and identified as unsettled at the time of final payment.

3.19.6. Warranty. Contractor or its assignee shall give to the City a one-year warranty against deficiencies in material and workmanship for all Work on the Project or other such warranty as required by the City Engineer, which warranty shall begin on the date that the City accepts the Work as provided in this Section. Any material deficiencies in material or workmanship identified by City staff during the one-year warranty period shall be brought to the attention of the Contractor or its assignee that provided the warranty, which shall promptly remedy or cause to be remedied such deficiencies to the reasonable satisfaction of the City Engineer. Continuing material deficiencies in a particular portion of the Work shall be sufficient grounds for the City to require (1) an extension of the warranty for an additional one-year period and (2) the proper repair of or the removal and reinstallation of, that portion of the Work that is subject to such continuing deficiencies. Regardless of whether the applicable warranty period has expired, the Contractor agrees to repair any damage to the Work caused by Contractor's construction activities on the Property. Nothing contained herein shall prevent the City or Contractor from seeking recourse against any other third party for damage to the Work caused by such third party.

3.20. Offset.

3.20.1. Offset for Damages. In addition to all other remedies at law or equity, the City may offset from any money due to the Contractor any amounts Contractor owes to the City for damages resulting from breach or deficiencies in performance or breach of any obligation under this Contract.

3.20.2. Offset for Delinquent Fees or Taxes. The City may offset from any money due to the Contractor any amounts Contractor owes to the City for delinquent fees, transaction privilege use taxes and property taxes, including any interest or penalties.

PART B - PERFORMANCE OF THE WORK

- 3.21. Project Videotape. [Intentionally omitted.]
- 3.22. Soil and Subsurface Conditions. [Intentionally omitted.]
- 3.23. Work Scheduling. Time is of the essence for this Contract. Contractor shall provide the Engineer with any requested scheduling information and a proposed schedule for performance of the Work within the Contract Time in a form acceptable to the Engineer and approved by the Engineer, in his sole and absolute discretion, providing for commencement and completion of the Work (the "Schedule"). The Schedule shall include the date for Substantial Completion of the Work. The Engineer may revise the Schedule during the course of the Work. Contractor, to induce the City to enter into this Contract, has and does hereby agree to fully perform and complete the Work for the Contract Price within the Schedule.
- 3.24. Contractor's Representative. The Contractor or his authorized representative shall be present at the Work site at all times during working hours. Instructions and information provided by the Engineer to the Contractor's representative shall be considered as having been given to the Contractor, per MAG Supplement Section 105.5.2.
- 3.25. Prosecution of the Work. The Contractor shall prosecute the Work so that the portion of the Work completed at any point in time shall be not less than as required by the Schedule. If the delay is an Inexcusable Delay, as defined below, the Contractor shall prepare a recovery schedule for the Engineer's review and approval, showing how the Contractor will compensate for the delays and achieve Substantial Completion by the date(s) shown on the Schedule. If the Contractor is unable to demonstrate how it will overcome Inexcusable Delays, the Engineer may order the Contractor to employ such extraordinary measures as are necessary to bring the Work into conformity with the Substantial Completion date(s) set forth therein, the costs of which shall be included as part of the Cost of the Work. If the delay is an Excusable Delay, as defined below, the Engineer shall either (A) authorize an equitable extension in the Schedule to account for such delay, and equitably adjust the contract sum on account of such delay or (B) request that the Contractor prepare a recovery schedule showing how (if possible) the Contractor can achieve Substantial Completion by the applicable date shown on the Schedule, and equitably adjust the Contract Price in accordance with the provisions of this Contract on account of any extraordinary activities required of the Contractor on account of such recovery schedule.
- 3.26. Extensions of Time.
- 3.26.1. Allowable Extensions. An extension in the scheduled date of Substantial Completion will only be granted in the event of Excusable Delays affecting the Schedule for the Work. The Contractor shall be entitled to general condition costs and extra costs related to the Excusable Delay for idle labor, equipment inefficiency and lost productivity of the performance of the Work. The Contractor must submit evidence reasonably satisfactory to the City substantiating such costs. Such adjustment to the Price and Substantial Completion date shall be issued in a Change Order or Contract amendment, as applicable.
- 3.26.2. Excusable Delay. To the extent any of the following events results in an actual delay in the Work, such shall constitute an "Excusable Delay" (to the extent not set forth below, a delay will be considered an "Inexcusable Delay"):
- 3.26.2.1. Delays resulting from Force Majeure.
- 3.26.2.2. Differing, unusual or concealed site conditions that could not reasonably have been anticipated by the Contractor in preparing the Schedule, including, without limitation, archaeological finds and unusual soil conditions (including rock or other geological conditions), underground foundations, abandoned utility lines and water conditions.

- 3.26.2.3. Delays resulting from the existence or discovery of Hazardous Materials on the Site not brought to the Site by the Contractor.
- 3.26.2.4. Delays resulting from changes in Applicable Laws occurring after the date of execution of this Contract.
- 3.26.2.5. Delays occurring due to the acts or omissions of the City and those within the control of the City.
- 3.26.2.6. Delays occurring due to the acts or omissions of a utility, so long as Contractor has coordinated with the utility causing the delay and the delay occurs despite reasonable steps taken by Contractor to avoid the delay.
- 3.26.2.7. Delays resulting from weather conditions that make it unreasonable to perform the Work in accordance with the Schedule; provided, however, that Contractor's Schedule shall be deemed to include seven days for weather delays (the "Expected Delay Days"), regardless of whether such weather delays are specifically set forth in the Schedule. Contractor shall notify the City within 24 hours in writing of a weather-related delay. If Contractor fails to give the required 24-hour notice, no such weather delay will be subtracted from the Expected Delay Days. Weather delays shall not be deemed "Excusable" unless all of the Expected Delay Days have been exhausted.
- 3.26.2.8. Delays resulting from Additional Work (defined below) that cannot be performed concurrently with the Work on the Schedule.
- 3.26.3. Required Notice. In order to obtain an extension of time due to an Excusable Delay, the Contractor shall comply with the following requirements. The Contractor shall notify the Engineer in writing of the Excusable Delay as soon as practicable, but in no event more than seven Days after the Contractor becomes aware of the occurrence of the Excusable Delay. Such notice shall describe the Excusable Delay and shall state the approximate number of Days the Contractor expects to be delayed. After the cessation of the Excusable Delay, the Contractor shall notify the Engineer of the number of Days the Contractor believes that its activities were in fact delayed by the Excusable Delay. In the event that the delay arises as a result of a Change Order request by the City, the request for an extension of time contained in the resulting Change Order proposal shall be deemed sufficient for purposes of this subsection.
- 3.26.4. Determination. Within 10 Days after cessation of an event giving rise to either an Excusable Delay or Inexcusable Delay, the parties will use good faith efforts to agree on the extent to which the Work has been delayed and whether the delay is an Excusable Delay or an Inexcusable Delay. In the absence of agreement between the parties as to the then-current status of Excusable Delays and Inexcusable Delays, the Engineer will provide the Contractor with written notice of Engineer's determination of the respective number of Days of Excusable Delay and/or Inexcusable Delay. The Engineer's determination may be issued at such time as the Engineer deems reasonable, but not later than 10 Days after receipt by the Engineer of the Contractor's written request for such determination. The Contractor shall not, however, deem an issuance by the Engineer of such a determination to be a concurrence of the matters set forth in the Contractor's request. The Contractor may invoke the dispute resolution procedures set forth in Part D below with respect to such determination.
- 3.26.5. Concurrent Delay. To the extent the Contractor is entitled to an extension of time due to an Excusable Delay, but the performance of the Work would have been suspended, delayed or interrupted by the fault or neglect of the Contractor or by an Inexcusable Delay, the Contractor shall not be entitled to any additional costs for the period of such concurrency.
- 3.27. Liquidated Damages. It is expressly understood that should Contractor fail to complete the Work covered hereby within the Contract Time, the Contractor agrees to pay and shall pay to the City upon request

therefore for each Day of delay beyond the original or revised scheduled time of completion of Contractor's Work as liquidated damages, and not as a penalty, in the amount per day as set forth in MAG Specifications for each Day of delay.

3.27.1. Prior to Termination. If this Contract is not terminated, the Contractor shall continue performance and be liable to the City for the liquidated damages until the Work is complete.

3.27.2. After Termination. In the event the City exercises its right of termination, the Contractor shall be liable to the City for any excess costs and, in addition, for liquidated damages until such time as the City may reasonably obtain delivery or performance of similar Services.

3.28. Suspension by the City for Convenience.

3.28.1. City Determination. The City may order the Contractor in writing to suspend, delay or interrupt all or any part of the Work without cause for such period of time as the City may determine to be appropriate for its convenience.

3.28.2. Contract Adjustments. Adjustments caused by suspension, delay or interruption shall be made for increases in the applicable contract sum and/or the date(s) of Substantial Completion. No adjustment shall be made if the Contractor is or otherwise would have been responsible for the suspension, delay or interruption of the Work, or if another provision of this Contract is applied to render an equitable adjustment.

3.29. Termination by the City for Convenience. The City may, upon 30 Days' written notice to the Contractor, terminate this Contract, in whole or in part, for the convenience of the City without prejudice to any right or remedy otherwise available to the City. Upon receipt of such notice, the Contractor shall immediately discontinue all Services affected unless such notice directs otherwise. In the event of a termination for convenience of the City, the Contractor's sole and exclusive right and remedy shall be payment for all Work performed through the date of termination. The Contractor shall not be entitled to be paid any amount as profit for unperformed Services or consideration for the City's termination by convenience.

3.30. Termination by the City for Cause.

3.30.1. Default; Cure. If the Contractor refuses or fails to supply sufficient properly skilled staff or proper Materials, or disregards laws, ordinances, rules, regulations, or orders of any public authority jurisdiction, or otherwise substantially violates or materially breaches any term or provision of this Contract, and such nonperformance or violation continues without cure for 15 Days after the Contractor receives written notice of such nonperformance or violation from the City, then the City may, without prejudice to any right or remedy otherwise available to the City, terminate this Contract.

3.30.2. Substitute Performance. Upon termination of this Contract by the City, the City shall be entitled to furnish or have furnished the Services to be performed hereunder by the Contractor by whatever method the City may deem expedient. Also, in such case, the Contractor shall not be entitled to receive any further payment until completion of the Work, and the total compensation to the Contractor under this Contract shall be the amount that is equitable under the circumstances. If the City and the Contractor are unable to agree on the amount to be paid under the foregoing sentence, the City shall fix an amount, if any, that it deems appropriate in consideration of all of the circumstances surrounding such termination, and shall make payment accordingly. The Contractor may dispute the City's assessment of the termination amount pursuant to the dispute resolution process set forth in in Part D of this Contract.

3.30.3. Contractor Insolvency. Upon the appointment of a receiver for the Contractor, or if the Contractor makes a general assignment for the benefit of creditors, the City may terminate this Contract, without prejudice to any right or remedy otherwise available to the City, upon giving three business days' written notice to the Contractor. If an order for relief is entered under the bankruptcy code

with respect to the Contractor, the City may terminate this Contract by giving three business days' written notice to the Contractor unless the Contractor or the trustee completes all of the following:

- 3.30.3.1. Promptly cures all breaches within such three-day period.
- 3.30.3.2. Provides adequate assurances of future performance.
- 3.30.3.3. Compensates the City for actual pecuniary loss resulting from such breaches.
- 3.30.3.4. Assumes the obligations of the Contractor within the established time limits.

- 3.31. Contract Subject to Appropriation. The City is obligated only to pay its obligations set forth in this Agreement as may lawfully be made from funds appropriated and budgeted for that purpose during the City's then current fiscal year. The City's obligations under this Agreement are current expenses subject to the "budget law" and the unfettered legislative discretion of the City concerning budgeted purposes and appropriation of funds. Should the City elect not to appropriate and budget funds to pay its Agreement obligations, this Agreement shall be deemed terminated at the end of the then-current fiscal year term for which such funds were appropriated and budgeted for such purpose and the City shall be relieved of any subsequent obligation under this Agreement. The parties agree that the City has no obligation or duty of good faith to budget or appropriate the payment of the City's obligations set forth in this Agreement in any budget in any fiscal year other than the fiscal year in which this Agreement is executed and delivered. The City shall be the sole judge and authority in determining the availability of funds for its obligations under this Agreement. The City shall keep Contractor informed as to the availability of funds for this Agreement. The obligation of the City to make any payment pursuant to this Agreement is not a general obligation or indebtedness of the City. Contractor hereby waives any and all rights to bring any claim against the City from or relating in any way to the City's termination of this Agreement pursuant to this section.
- 3.32. Additional Work, Materials and/or Overtime. Contractor expressly agrees that if overtime or additional workers or materials are necessary to meet the Schedule, that such overtime will be performed or additional workers or materials will be procured by the Contractor, and the additional expense thereof shall be borne by Contractor unless the delay requiring overtime was directly caused by the City, in which event Contractor shall be entitled to compensation for such overtime Work. If the City requests Contractor to perform additional Work in connection with the Project ("Additional Work"), Contractor shall charge the City a negotiated fixed amount for the Additional Work. In the event a fixed amount cannot be negotiated, Contractor shall invoice the City on a time and materials basis for the Additional Work at the unit prices set forth in the price sheet.
- 3.33. No Damage for Delay or Additional Work by the City. Contractor shall adjust its operations to conform to any progress schedule changes and hereby waives and releases the City from any liability for damages or expenses that may be caused to or sustained by Contractor by reason of such changes or by reason of delays in the Work, whether caused in whole or in part by conduct on the part of the City, including without limitation, any breach of this Contract or delays by other contractors or Subcontractors. Contractor's exclusive remedy in the event of delay or Additional Work by the City shall be an extension of time hereunder to complete the Work.
- 3.34. Risk of Loss. Contractor shall assume the risk of loss occasioned by fire, theft or other damage to Materials, machinery, apparatus, tools and equipment relating to the Work prior to actual installation in final place on the Project and acceptance by the City. Contractor shall be responsible for damage to the Materials, machinery, apparatus, tools, equipment and property of the City and other contractors resulting from the acts or omissions of its Subcontractors, employees, agents, representatives Subcontractors, and for payment of the full costs of repair or replacement of any said damage.
- 3.35. Protection of Finished or Partially Finished Work. The Contractor shall properly guard and protect all finished or partially finished Work and shall be responsible for the same until the entire Contract is

completed and accepted by the Engineer. The Contractor shall turn over the entire Work in full accordance with this Contract before final settlement shall be made.

- 3.36. Character and Status of Workers. Only skilled foremen and workers shall be employed on portions of the Work requiring special qualifications. When required by the Engineer, the Contractor shall discharge any person who is, in the opinion of the Engineer, disorderly, dangerous, insubordinate, incompetent or otherwise objectionable. The Contractor shall indemnify and hold harmless the City from and against damages or claims for compensation that may occur in the enforcement of this Section. The Contractor shall be responsible for ensuring the legal working status of its employees and its Subcontractor's employees. The Contractor agrees that once assigned to Work under this Contract, key personnel shall not be removed or replaced without written notice to the City. If key personnel are not available for Work under this Contract for a continuous period exceeding 30 Days, or are expected to devote substantially less effort to the Work than initially anticipated, the Contractor shall immediately notify the City and shall, subject to the concurrence of the City, replace such personnel with personnel of substantially equal ability and qualifications.
- 3.37. Work Methods. The methods, equipment and appliances used on the Work shall be such as will produce a satisfactory quality of Work, and shall be adequate to complete this Contract within the Contract Time. Except as is otherwise specified in this Contract, the Contractor's procedure and methods of construction may, in general, be of its own choosing, provided such methods (A) follow best general practice and (B) are calculated to secure results which will satisfy the requirements of this Contract. The Work covered by this Contract shall be carefully laid out in advance and performed in a manner to minimize interference with normal operation and utilization of the City's right-of-way. The Contractor shall exercise caution during the course of this Work to avoid damage to all known existing or possible unknown existing underground utilities. It shall conduct its operations in such a manner as to avoid injury to its personnel and to avoid damage to all utilities. Any damage done will be repaired without delay and at the expense of the Contractor.
- 3.38. Safety Fencing Requirement for Trenches and Excavations. The Contractor shall provide safety construction fencing around all open trenches and excavations during all non-working hours. In addition, the Contractor shall provide safety fencing around the Project site during working hours in order to ensure public safety. The Contractor shall provide for the safety and welfare of the general public by adequately fencing all excavations and trenches that are permitted by the Engineer to remain open when construction is not in progress. Fencing shall be securely anchored to approved steel posts located not less than six feet on center, having a minimum height of six feet, and shall consist of wire mesh fabric of sufficient weight and rigidity to adequately span a maximum supporting post separation of six feet. The fencing, when installed about the periphery of excavations and trenches, shall form an effective barrier against intrusion by the general public into areas of construction. The Contractor, at all times when construction is not in progress, shall be responsible for maintaining the fencing in good repair, and upon notification by the Engineer, shall take immediate action to rectify any deficiency. Prior to the start of any excavation or trenching required for the execution of the proposed Work, the Contractor shall submit to the Engineer for approval, detailed plans showing types of materials and methods of fabrication for the protective fencing. There will be no separate measurement or payment for furnishing, installing, or maintaining protective fencing. The cost shall be considered incidental to the cost of the pipe, bridge, and any other structures for which trenching is necessary.
- 3.39. Plans and Shop Drawings, Samples and Substitution of Materials. All submittals shall conform to MAG Specifications, Section 105.2 (Plans and Drawings) as modified by the MAG Supplement. Contractor shall furnish, within three business days following request therefore by the City, detailed drawings of the Work, samples of Materials and other submittals required for the performance or coordination of the Work. Substitutions shall be equal or superior to Materials specified in the Contract Documents, shall be clearly identified on submittals as "proposed substitutions" and shall be approved by the City in accordance with Section 2.4 above. Contractor shall be fully responsible for the adequacy, completeness and promptness of all such submittals. Materials shall not be furnished to the jobsite unless same is in strict compliance with

the Specifications or otherwise approved in writing by the City. Approval by the City shall not relieve Contractor of full responsibility for compliance with scope, intent and performance in accordance with this Contract.

- 3.40. Cooperation with Utilities. The Contractor shall comply with the requirements of MAG Specifications 105.6, as modified by the MAG Supplement.
- 3.41. Sampling and Testing. Sampling and testing shall conform to the requirements of the MAG Specifications, Section 106, as modified by the MAG Supplement.
- 3.42. Cooperation between Contractors. The Contractor shall comply with the requirements of MAG Specifications, Section 105.7, as modified by the MAG Supplement.
- 3.43. Outdoor Construction Time Restrictions. Unless otherwise permitted by the Engineer, construction will be restricted as listed in the following table:

May 1 – October 31	November 1 – April 30
5:00 a.m. to 7:00 p.m.	6:00 a.m. to 7:00 p.m.

Construction Work shall not begin Work prior to 7:00 a.m. and shall stop by 7:00 p.m. on Saturdays, Sundays and all City, State and Federal holidays.

- 3.44. Construction Survey. [Intentionally omitted.]
- 3.45. Survey Control Points. [Intentionally omitted.]
- 3.46. Stockpile of Materials. Materials or equipment must be stored or stockpiled either on site, in a warehouse, or secured storage area. The Contractor assumes all responsibility for protection of these materials or equipment and shall insure them to cover loss or damage to same without additional liability or added costs to the Agency for providing this security, insurance, and storage.
- 3.47. Excess Materials. When excavations are made, resultant loose earth shall be (A) utilized for filling by compacting in place or (B) disposed of off-site. Excess or unsuitable material, broken asphaltic concrete and broken portland cement concrete excavated from the right-of-way shall be removed from the Project Site and disposed of by the Contractor. Disposal of material within the Avondale City Limits or Planning Area must be approved by the Engineer. Waste material shall not be placed on private property without express permission of the property owner. The Contractor shall, at all times, keep the premises free from accumulation of waste materials or rubbish caused by its operations. At the completion of the Work, Contractor shall remove all equipment, tools and surplus materials, and shall completely clean the premises, removing and disposing of all debris and rubbish and cleaning all stains, spots, marks, dirt, smears or other blemishes. When the Work premises are turned over to the City, they shall be thoroughly clean and ready for immediate use. Clean-up shall include removal of all excess pointing mortar materials within pipes and removal of oversized rocks and boulders left after finish grading. The Contractor shall provide for the legal disposal of all waste products and debris and shall make necessary arrangements for such disposal.
- 3.48. Dust Control and Water. Contractor shall implement dust control measures in accordance with MAG Specifications, Section 104.1, and the MAG Supplement. Installation and removal of fire hydrant meters should be scheduled at least three business days in advance through the City Water Billing Department. Watering shall conform to the provisions of MAG Specifications, Section 225. A deposit and installation fee in amounts set forth in the City’s fee schedule is required for each meter. The cost of the water is at the prevailing rate.
- 3.49. Temporary Sanitary Facilities. The Contractor shall provide ample toilet facilities with proper enclosures for the use of workers employed on the Work site. Toilet facilities shall be installed and maintained in conformity with all applicable State and local laws, codes, regulations and ordinances and shall be properly lit and ventilated, and kept clean at all times. Adequate and satisfactory drinking water shall be provided at

all times and under no circumstances and under no conditions will the use of common cups be permitted. The Contractor must supply sanitary drinking cups for the benefit of all employees.

- 3.50. Electric Power, Water and Telephone. Unless otherwise specified, the Contractor shall make its own arrangements for electric power, water and telephone. Subject to the convenience of the utility, it may be permitted to connect to existing facilities where available, but Contractor shall meter and bear the cost of such power or water, and installation and disconnect of such power, water and telephone services.
- 3.51. Energized Aerial Electrical Power Lines. Utility companies may maintain energized aerial electrical power lines in the immediate vicinity of this Project. Contractor shall not presume any such lines to be insulated. Construction personnel working in proximity to these lines may be exposed to an extreme hazard from electrical shock. Contractor shall ensure that its employees and all other construction personnel working on this Project are warned of the danger and instructed to take adequate protective measures, including maintaining a minimum ten feet of clearance between the lines and all construction equipment and personnel. (see: OSHA Std. 1926.550 (a) 15, as amended). As an additional safety precaution, Contractor shall call the affected utility companies to arrange, if possible, to have these lines de-energized or relocated when the Work reaches their immediate vicinity. The cost of such temporary arrangements shall be borne by the Contractor. Contractor shall account for the time necessary to cause such utility disconnection in the preparation of its Bid. Electrical utility companies may maintain energized underground electrical power lines in the immediate vicinity of this Project. These power lines represent an extreme hazard of electrical shock to any construction personnel or equipment coming in contact with them. Arizona law requires all parties planning excavations in public rights-of-way to contact all utility firms for locations of their underground facilities. Contractor shall ensure that its employees and all other personnel working near any underground power lines must be warned to take adequate protective measure. (see: OSHA Std. 1926-651 (A), as amended).
- 3.52. Site Clean Up. Contractor shall at all times, but not less than daily unless otherwise agreed by City Representative, keep the premises on which the Work is being performed clean and free from accumulation of any waste materials, trash, debris and excess dirt, and at all times shall remove Contractor's implements, machinery, tools, apparatus and equipment from the jobsite when not needed on the jobsite. Should the City Representative find it necessary in his/her opinion to employ help to clean up, remove or store any of the foregoing due to failure of Contractor to do so, the expense thereof shall be charged to Contractor. Verbal notice from the City Representative on clean-up or removal is considered adequate notice hereunder, and failure to conform with his/her request within 24 hours thereof will be construed as a breach of this Contract by the Contractor and such charges will be made against Contractor's account as are necessary to accomplish the clean-up or removal. The cost of cleanup, removal or storage by the City, if not deducted by the City from monies due Contractor, shall be paid by Contractor within five business days of written demand by the City.
- 3.53. Use of the Site. Contractor shall at all times comply fully with all laws, orders, citations, rules, regulations, standards and statutes with respect to occupational health and safety, the handling and storage of hazardous materials, accident prevention and safety equipment and practices, including any accident prevention and safety program of the City; provided, however, that the City shall not be required to impose any safety requirements or administer any such programs and the review or requirement of any safety plan by the City shall not be deemed to release Contractor or in any way diminish its liability, by way of indemnity or otherwise, as assumed by it under this Contract. Contractor shall conduct inspections regularly to determine that safe working conditions and equipment exist and accepts sole responsibility for providing a safe place to Work for its employees and employees of its Subcontractors, laborers, suppliers of material and equipment and any other person visiting the Site, for adequacy of and required use of all safety equipment and for compliance herewith. When so ordered, Contractor shall stop any part of the Work that the City deems unsafe until corrective measures satisfactory to the City have been taken. Should Contractor neglect to adopt such corrective measures, the City may do so and deduct the cost from payments due Contractor. Contractor shall timely submit copies of all accident or injury reports to the City.

3.54. Public Information and Notification. The Contractor shall submit a public information and notification plan for this Project (the “Notification Plan”) to the City Representative at the first pre-construction meeting held prior to start of construction. The Notification Plan shall include, at a minimum, the items set forth in this Section 3.54; provided, however, that the Engineer may waive any portion of the requirements of this Section upon a written determination that the Project scope does not warrant such notification. Contractor shall provide Project information to affected residents and homeowners’ associations prior to and throughout the Project’s duration. The Contractor shall use the Notification Plan to inform the local citizens, businesses and City officials, not less than five business days in advance, of subsections 3.54.1 necessary operations that create high noise levels, 3.54.2 street closures, 3.54.3 detour locations, 3.54.4 haul routes and material delivery routes and 3.54.5 disruption of bus routes, mail routes and other delivery/pick-up routes.

3.54.1. Neighborhood Notification. Prior to the start of any Work on the Project, the Contractor shall distribute a preliminary “Dear Neighbor” letter (8-1/2”x11”), as submitted to and subject to the approval of the Engineer, to all businesses, property owners and residents within 600 feet of any portion of this Project. This “Dear Neighbor” letter shall include, at a minimum, the following information:

- 3.54.1.1. Contractor’s name, business telephone number and the 24-hour “Hot Line” telephone number for this Project.
- 3.54.1.2. Name of Contractor’s Project Manager.
- 3.54.1.3. Name of Contractor’s Project Superintendent.
- 3.54.1.4. Brief description of the Project.
- 3.54.1.5. Construction schedule, including anticipated Work hours.
- 3.54.1.6. Anticipated lane restrictions, including the expected duration thereof.
- 3.54.1.7. Name of City’s Project Manager.
- 3.54.1.8. Name of the Engineer.

The Engineer shall provide the Contractor with a distribution list for this “Dear Neighbor” letter. Contractor shall (1) ensure that the letter is distributed to all persons and businesses indicated on the list provided by the Engineer and (2) provide the Engineer with a copy of the letter sent and sufficient proof of mailing. Subsequent to delivery of the “Dear Neighbor” letter, the Contractor shall distribute bi-monthly construction progress updates, including construction schedule and any additional information the Engineer deems important as a result of construction activities, to all persons and businesses included on the aforementioned distribution list. At the request of the Engineer, Contractor may be required to distribute additional public notifications. At the end of construction a final “Dear Neighbor” letter shall be distributed to the persons and businesses on the aforementioned distribution list highlighting the Contractor’s and the City’s appreciation for their patience during construction of the Project.

3.55. Project Signs. Unless otherwise directed by the Engineer, the Contractor shall furnish and install at least [Project Name] Project signs, not less than five business days before beginning construction, at locations determined by the Engineer, to inform the public of the forthcoming Project, construction dates and 24-Hour Hotline number. The Contractor shall submit the proposed layout of the Project signs to the Engineer for approval prior to fabrication of the signs. The Contractor shall maintain the signs as necessary and update the information as directed by the Engineer. At the Final Completion of the Project, the Contractor shall remove and dispose of the signs. The Project signs shall be fabricated as follows: (1) the vinyl sheeting for the background, legend, and border shall be applied by heat bonding, except that the decal and legend for the project title, cost, and Contractor’s name shall be pressure sensitive application; (2) the four foot by eight foot (4’ x 8’) signs shall be mounted four feet above the ground level and anchored three feet into the ground with concrete backfill around the posts; and (3) sign colors shall be black letters on white background, over a ghost image of the City of Avondale logo. The information on the Project signs shall

be in the format and fonts proportions as depicted on the sample sign below. The image template may be obtained from the City of Avondale Engineering Department as a computer image file.

3.56.24-Hour Project Hotline. The Contractor shall be required to furnish a private 24-hour telephone line to be used solely for receiving incoming calls from local citizens or businesses with questions or complaints concerning Project construction operations or procedures (the "Hotline"). The Contractor shall include this Hotline telephone number on all public information distributed throughout the duration of the Project. Contractor shall ensure that Contractor personnel man the Hotline during all hours that there is any Work being performed on this Project; the Hotline shall be answered by a live answering service during all other hours. The Contractor shall maintain a log of incoming calls, responses and action taken that shall be submitted to the Engineer weekly and upon request.

3.57.Public Meetings. The Contractor shall attend such public meetings as deemed necessary by the Engineer.

3.58.Press Releases. The Contractor shall, at the request of the Engineer, prepare press releases regarding the Project.

PART C - MISCELLANEOUS

- 3.59. Applicable Law; Venue. This Contract shall be governed by the laws of the State of Arizona and suit pertaining to this Contract may be brought only in courts in Maricopa County, Arizona.
- 3.60. Conflict of Interest. This Contract is subject to the provisions of ARIZ. REV. STAT. § 38-511. The City may cancel this Contract without penalty or further obligations by the City or any of its departments or agencies if any person significantly involved in initiating, negotiating, securing, drafting or creating this Contract on behalf of the City or any of its departments or agencies is, at any time while this Contract or any extension of this Contract is in effect, an employee of any other party to this Contract in any capacity or a consultant to any other party of this Contract with respect to the subject matter of this Contract.
- 3.61. Contract Amendments. This Contract may be modified only by a written amendment signed by persons duly authorized to enter into contracts on behalf of the City and the Contractor; provided, however, that Change Orders may be issued and approved administratively by the City when such changes do not alter the Contract Price.
- 3.62. Provisions Required by Law. Each and every provision of law and any clause required by law to be in this Contract will be read and enforced as though it were included herein and, if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, this Contract will promptly be physically amended to make such insertion or correction.
- 3.63. Severability. The provisions of this Contract are severable to the extent that any provision or application held to be invalid by a Court of competent jurisdiction shall not affect any other provision or application of this Contract which may remain in effect without the invalid provision or application.
- 3.64. Independent Contractor. It is clearly understood that each party will act in its individual capacity and not as an agent, employee, partner, joint venturer, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other for any purpose whatsoever. The Contractor acknowledges and agrees that the Services provided under this Agreement are being provided as an independent contractor, not as an employee or agent of the City. Contractor, its employees and subcontractors are not entitled to workers' compensation benefits from the City. The City does not have the authority to supervise or control the actual work of Contractor, its employees or subcontractors. The Contractor, and not the City, shall determine the time of its performance of the services provided under this Agreement so long as Contractor meets the requirements of its agreed scope of work and the Specifications, Plans/construction drawings and Reference Documents as set forth in

Section 2.1 above and Exhibit A. Contractor is neither prohibited from entering into other contracts nor prohibited from practicing its profession elsewhere. City and Contractor do not intend to nor will they combine business operations under this Agreement.

- 3.65. Entire Agreement; Interpretation-Parol Evidence. This Contract represents the entire agreement of the parties with respect to its subject matter, and all previous agreements, whether oral or written, entered into prior to this Contract are hereby revoked and superseded by this Contract. No representations, warranties, inducements or oral agreements have been made by any of the parties except as expressly set forth herein, or in any other contemporaneous written agreement executed for the purposes of carrying out the provisions of this Contract. This Contract shall be construed and interpreted according to its plain meaning, and no presumption shall be deemed to apply in favor of, or against the party drafting this Contract. The parties acknowledge and agree that each has had the opportunity to seek and utilize legal counsel in the drafting of, review of, and entry into this Contract.
- 3.66. Assignment; Delegation. No right or interest in this Contract shall be assigned or delegated by Contractor without prior, written permission of the City, signed by the City Manager. Any attempted assignment or delegation by Contractor in violation of this provision shall be a breach of this Contract by Contractor.
- 3.67. Subcontracts. No subcontract shall be entered into by the Contractor with any other party to furnish any of the Materials, Services or construction specified herein without the prior, written approval of the City. The Contractor is responsible for performance under this Contract whether or not Subcontractors are used.
- 3.68. Rights and Remedies. No provision in this Contract shall be construed, expressly or by implication, as waiver by the City of any existing or future right and/or remedy available by law in the event of any claim of default or breach of this Contract. The failure of the City to insist upon the strict performance of any term or condition of this Contract or to exercise or delay the exercise of any right or remedy provided in this Contract, or by law, or the City's acceptance of and payment for Materials or Services, shall not release the Contractor from any responsibilities or obligations imposed by this Contract or by law, and shall not be deemed a waiver of any right of the City to insist upon the strict performance of this Contract.
- 3.69. Attorneys' Fees. In the event either party brings any action for any relief, declaratory or otherwise, arising out of this Contract or on account of any breach or default hereof, the prevailing party shall be entitled to receive from the other party reasonable attorneys' fees and reasonable costs and expenses, determined by the court sitting without a jury, which shall be deemed to have accrued on the commencement of such action and shall be enforced whether or not such action is prosecuted through judgment.
- 3.70. Notices and Requests. Any notice or other communication required or permitted to be given under this Contract shall be in writing and shall be deemed to have been duly given if (A) delivered to the party at the address set forth below, (B) deposited in the U.S. Mail, registered or certified, return receipt requested, to the address set forth below or (C) given to a recognized and reputable overnight delivery service, to the address set forth below:

If to the City: City of Avondale
 11465 West Civic Center Drive
 Avondale, Arizona 85323
 Attn: Charles A. Montoya, City Manager

With copies to: City of Avondale
 11465 West Civic Center Drive
 Avondale, Arizona 85323
 Attn: Jill Lin, Procurement Office

City of Avondale
11465 West Civic Center Drive
Avondale, Arizona 85323
Attn: City Attorney

If to Contractor: _____

Attn: _____

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

3.71. Overcharges by Antitrust Violations. The City maintains that, in practice, overcharges resulting from antitrust violations are borne by the purchaser. Therefore, to the extent permitted by law, the Contractor hereby assigns to the City any and all claims for such overcharges as to the goods and services used to fulfill this Contract.

3.72. Force Majeure. Except for payment for sums due, neither party shall be liable to the other nor deemed in default under this Contract if and to the extent that such party's performance of this Contract is prevented by reason of force majeure. The term "*force majeure*" means an occurrence that is beyond the control of the party affected and occurs without its fault or negligence. Without limiting the foregoing, force majeure includes acts of God; acts of the public enemy; war; riots; strikes; mobilization; labor disputes; civil disorders; fire; floods; lockouts, injunctions-intervention-acts, or failures or refusals to act by government authority; and other similar occurrences beyond the control of the party declaring force majeure which such party is unable to prevent by exercising reasonable diligence. The force majeure shall be deemed to commence when the party declaring force majeure notifies the other party, in accordance with Section 3.66, of the existence of the force majeure and shall be deemed to continue as long as the results or effects of the force majeure prevent the party from resuming performance in accordance with this Contract. Force majeure shall not include the following occurrences:

3.72.1. Late Delivery. Late delivery of equipment or materials caused by congestion at a manufacturer's plant or elsewhere, an oversold condition of the market, inefficiencies or similar occurrences.

3.72.2. Late Performance. Late performance by a Subcontractor unless the delay arises out of a force majeure occurrence in accordance with this Section 3.68.

Any delay or failure in performance by either party hereto shall not constitute default hereunder or give rise to any claim for damages or loss of anticipated profits if, and to the extent that such delay or failure is caused by force majeure. If either party is delayed at any time in the progress of the Work by force majeure, then the delayed party shall notify the other party in accordance with Section 3.66 and shall make a specific reference to this Section, thereby invoking its provisions. The delayed party shall cause such delay to cease as soon as practicable and shall notify the other party in writing. The time of Substantial Completion or Final Completion shall be extended by written Contract amendment for a period of time equal to the time that the results or effects of such delay prevent the delayed party from performing in accordance with this Contract.

- 3.73. Confidentiality of Records. The Contractor shall establish and maintain procedures and controls that are acceptable to the City for the purpose of ensuring that information contained in its records or obtained from the City or from others in carrying out its obligations under this Contract shall not be used or disclosed by it, its agents, officers, or employees, except as required to perform Contractor's duties under this Contract. Persons requesting such information should be referred to the City. Contractor also agrees that any information pertaining to individual persons shall not be divulged other than to employees or officers of Contractor as needed for the performance of duties under this Contract.
- 3.74. Records and Audit Rights. To ensure that the Contractor and its Subcontractors are complying with the warranty under Section 3.71 below, Contractor's and its Subcontractors' books, records, correspondence, accounting procedures and practices, and any other supporting evidence relating to this Contract, including the papers of any Contractor and its Subcontractors' employees who perform any Work or Services pursuant to this Contract (all of the foregoing hereinafter referred to as "Records"), shall be open to inspection and subject to audit and/or reproduction during normal working hours by the City, to the extent necessary to adequately permit (1) evaluation and verification of any invoices, payments or claims based on Contractor's and its Subcontractors' actual costs (including direct and indirect costs and overhead allocations) incurred, or units expended directly in the performance of Work under this Contract and (2) evaluation of the Contractor's and its Subcontractors' compliance with the Arizona employer sanctions laws referenced in Section 3.71 below. To the extent necessary for the City to audit Records as set forth in this Section, Contractor and its Subcontractors hereby waive any rights to keep such Records confidential. For the purpose of evaluating or verifying such actual or claimed costs or units expended, the City shall have access to said Records, even if located at its Subcontractors' facilities, from the effective date of this Contract for the duration of the Work and until three years after the date of final payment by the City to Contractor pursuant to this Contract. Contractor and its Subcontractors shall provide the City with adequate and appropriate workspace so that the City can conduct audits in compliance with the provisions of this Section. The City shall give Contractor or its Subcontractors reasonable advance notice of intended audits. Contractor shall require its Subcontractors to comply with the provisions of this Section by insertion of the requirements hereof in any subcontract pursuant to this Contract.
- 3.75. E-verify Requirements. To the extent applicable under ARIZ. REV. STAT. § 41-4401, the Contractor and its Subcontractors warrant compliance with all Federal immigration laws and regulations that relate to their employees and their compliance with the E-verify requirements under ARIZ. REV. STAT. § 23-214(A). Contractor's or its Subcontractors' failure to comply with such warranty shall be deemed a material breach of this Contract and may result in the termination of this Contract by the City.
- 3.76. Israel. For Contracts in excess of One Hundred Thousand (\$100,000) Dollars, Contractor certifies that it is not currently engaged in, and agrees for the duration of this Agreement that it will not engage in a "boycott," as that term is defined in ARIZ. REV. STAT. § 35-393, of Israel.
- 3.77. Right to Inspect Plant. The City may, at reasonable times, inspect the part of the plant or place of business of the Contractor or Subcontractor that is related to the performance of this Contract.
- 3.78. Warranties. Contractor warrants to the City that all Materials and equipment furnished shall be new unless otherwise specified and agreed by the City and that all Work shall be of first class quality, free from faults and defects and in conformance with this Contract. If at any time within one year following the date of Final Completion and acceptance of the entire Project (or such longer period as may be provided under warranties for equipment or Materials): (A) any part of the Materials furnished in connection with the Work shall be or become defective due to defects in either labor or Materials, or both, or (B) Contractor's Work or Materials, or both, are or were not in conformance with original or amended Plans and Specifications, or supplementary shop drawings, then the Contractor shall upon written notice from the City immediately replace or repair such defective or non-conforming Material or workmanship at no cost to the City. Contractor further agrees to execute any special guarantees as provided by this Contract or required by law. Contractor shall require similar guarantees from all vendors and from all its Subcontractors. Contractor further agrees, upon written

demand of the City and during the course of construction, to immediately re-execute, repair or replace any Work that fails to conform to the requirements of this Contract, whether caused by faulty Materials or workmanship, or both. In the event Contractor shall fail or refuse to make such change upon the City's written demand, the City shall have the right to have such Work re-executed, repaired or replaced, to withhold from or back charge to Contractor all costs incurred thereby.

- 3.79. Inspection. All Materials and/or Services are subject to final inspection and acceptance by the City. Materials and/or Services failing to conform to the Specifications of this Contract will be held at Contractor's risk and may be returned to the Contractor. If so returned, all costs are the responsibility of the Contractor. Upon discovery of non-conforming Materials or Services, the City may elect to do any or all of the following by written notice to the Contractor: (A) waive the non-conformance; (B) stop the Work immediately; or (C) bring material or service into compliance and withhold the cost of same from any payments due to the Contractor.
- 3.80. No Replacement of Defective Tender. Every tender of Materials shall fully comply with all provisions of this Contract. If a tender is made which does not fully conform, this shall constitute a breach of this Contract as a whole.
- 3.81. Shipment Under Reservation Prohibited. Contractor is not authorized to ship Materials under reservation and no tender of a bill of lading will operate as a tender of the Materials.
- 3.82. Liens. All Materials, Service or construction shall be free of all liens and, if the City requests, a formal release of all liens shall be delivered to the City.
- 3.83. Licenses. Contractor shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Contractor as applicable to this Contract.
- 3.84. Patents and Copyrights. All Services, information, computer program elements, reports and other deliverables, which may be patented or copyrighted and created under this Contract are the property of the City and shall not be used or released by the Contractor or any other person except with the prior written permission of the City.
- 3.85. Preparation of Specifications by Persons other than City Personnel. All Specifications shall seek to promote overall economy for the purposes intended and encourage competition and not be unduly restrictive in satisfying the City's needs. No person preparing Specifications shall receive any direct or indirect benefit from the utilization of Specifications, other than fees paid for the preparation of Specifications.
- 3.86. Advertising. Contractor shall not advertise or publish information concerning this Contract without prior, written consent of the City.

PART D - ALTERNATIVE DISPUTE RESOLUTION

- 3.87. Scope. Notwithstanding anything to the contrary provided elsewhere in the Contract Documents, except for subsection 3.86(G) below, the alternative dispute resolution ("ADR") process provided for herein shall be the exclusive means for resolution of claims or disputes arising under, relating to or touching upon this Contract, the interpretation thereof or the performance or breach by any party thereto, including but not limited to original claims or disputes asserted as cross claims, counterclaims, third party claims or claims for indemnity or subrogation, in any threatened or ongoing litigation or arbitration with third parties, if such disputes involve parties to contracts containing this ADR provision.
- 3.88. Neutral Evaluator, Arbitrators. The City will select a Neutral Evaluator to serve as set forth in this ADR process, subject to the Contractor's approval, which approval shall not be unreasonably withheld. In the event that the City and the Contractor are unable to agree upon a Neutral Evaluator, the neutral evaluation process shall be eliminated and the parties shall proceed with the binding arbitration process set forth in Section 3.86 below. The City and Contractor shall each select an arbitrator to serve as set forth in this ADR process. Each arbitrator selected shall be a member of the State Bar of the State of Arizona and shall have

experience in the field of construction law. None of the arbitrators nor any of the arbitrator's firms shall have presently, or in the past, represented any party to the arbitration.

- 3.89. Neutral Evaluation Process. If the parties have been unable to resolve the disputes after discussions and partnering, but the parties have agreed to a Neutral Evaluator, the following neutral evaluation process shall be used to resolve any such dispute.
- 3.89.1. Notification of Dispute. The City through its Engineer shall notify the Neutral Evaluator in writing of the existence of a dispute within 10 Days of the City or the Contractor declaring need to commence the neutral evaluation process.
- 3.89.2. Non-Binding Informal Hearing. The Neutral Evaluator shall schedule a non-binding informal hearing of the matter to be held within seven Days from receipt of notification of the existence of a dispute. The Neutral Evaluator may conduct the hearing in such manner as he deems appropriate and shall notify each party of the hearing and of its opportunity to present evidence it believes will resolve the dispute. The Neutral Evaluator shall require that each party submit a written outline of the issues and evidence intended to be introduced at the hearing and the proposed resolution of the dispute to the Neutral Evaluator before the hearing commences. Arbitrators shall not participate in such informal hearing or proceedings process. The Neutral Evaluator is not bound by the rules of evidence when admitting evidence in the hearing and may limit the length of the hearing, the number of witnesses or any evidence introduced to the extent deemed relevant and efficient.
- 3.89.3. Non-Binding Decision. The Neutral Evaluator shall render a non-binding, written decision as soon as possible, but not later than five Days after the hearing.
- 3.90. Binding Arbitration Procedure. The following binding arbitration procedure, except as provided in subsection 3.86.7 below, shall serve as the exclusive method to resolve a dispute if (A) the parties cannot agree to a Neutral Evaluator as set forth in Section 3.84 above or (B) any party chooses not to accept the decision of the Neutral Evaluator. The party requesting binding arbitration shall notify the Neutral Evaluator of a request for arbitration in writing within three business days' of receipt of the Neutral Evaluator's decision. If the Contractor requests arbitration or if Contractor rejects the City's selection of a Neutral Evaluator, it shall post a cash bond with the Neutral Evaluator in an amount agreed upon by the parties or, in the event of no agreement, the Neutral Evaluator shall establish the amount of the cash bond to defray the cost of the arbitration as set forth in subsection 3.86.13 and the proceeds from the bond shall be allocated in accordance with subsection 3.86.13 by the Arbitration Panel.
- 3.90.1. Arbitration Panel. The Arbitration Panel shall consist of three arbitrators: the City's appointed arbitrator, the Contractor's appointed arbitrator and a third arbitrator (or "Neutral Arbitrator") who shall be selected by the parties' arbitrators as set forth in subsection 3.86.2 If more than one consultant or contractor is involved in a dispute, the consultants and/or contractors shall agree on an appointee to serve as arbitrator. The Neutral Evaluator shall not participate in the proceedings.
- 3.90.2. Selection of Neutral Arbitrator. The parties' arbitrators shall choose the Neutral Arbitrator within five business days of receipt of notification of a dispute from the Neutral Evaluator. The Neutral Arbitrator shall have the same qualifications as those of the arbitrators set forth in Section 3.84. In the event that the selected arbitrators cannot agree on the Neutral Arbitrator as set forth above, the Neutral Arbitrator shall be the "Default Neutral Arbitrator," a person or entity jointly selected by the City and the Contractor. If the City and the Contractor cannot agree on a Default Neutral Arbitrator, the City and the Contractor shall each submit two names to an appropriate judge who shall select one person to serve as the Default Neutral Arbitrator."
- 3.90.3. Expedited Hearing. The parties have structured this procedure with the goal of providing for the prompt, efficient and final resolution of all disputes falling within the purview of this ADR process. To that end, any party can petition the Neutral Evaluator to set an expedited hearing. If the Neutral Evaluator determines that the circumstances justify it, the Neutral Evaluator shall contact the

selected Arbitration Panel and arrange for scheduling of the arbitration at the earliest possible date. In any event, the hearing of any dispute not expedited will commence as soon as practical but in no event later than 20 Days after notification of request for arbitration having been submitted. This deadline can be extended only with the consent of all the parties to the dispute, or by decision of the Arbitration Panel upon a showing of emergency circumstances.

- 3.90.4. Procedure. The Arbitration Panel will select a Chairman and will conduct the hearing in such a manner that will resolve disputes in a prompt, cost efficient manner giving regard to the rights of all parties. Each party shall supply to the Arbitration Panel a written pre-hearing statement which shall contain a brief statement of the nature of the claim or defense, a list of witnesses and exhibits, a brief description of the subject matter of the testimony of each witness who will be called to testify, and an estimate as to the length of time that will be required for the arbitration hearing. The Arbitration Panel shall review and consider the Neutral Evaluator decision, if any. The Chairman shall determine the nature and scope of discovery, if any, and the manner of presentation of relevant evidence consistent with deadlines provided herein and the parties' objective that disputes be resolved in a prompt and efficient manner. No discovery may be had of any materials or information for which a privilege is recognized by Arizona law. The Chairman, upon proper application, shall issue such orders as may be necessary and permissible under law to protect confidential, proprietary or sensitive materials or information from public disclosure or other misuse. Any party may make application to the Maricopa County Superior Court to have a protective order entered as may be appropriate to confirm such orders of the Chairman.
- 3.90.5. Hearing Days. In order to effectuate parties' goals, the hearing once commenced, will proceed from business day to business day until concluded, absent a showing of emergency circumstances.
- 3.90.6. Award. The Arbitration Panel shall, within 10 Days from the conclusion of any hearing, by majority vote, issue its award. The award shall include an allocation of fees and costs pursuant to subsection 3.86.13 herein. The award is to be rendered in accordance with this Contract and the laws of the State of Arizona.
- 3.90.7. Scope of Award. The Arbitration Panel shall be without authority to award punitive damages, and any such punitive damage award shall be void. The Arbitration Panel shall be without any authority to issue an award against any individual party in excess of 20% of the original Contract amount, but in no event shall any award exceed \$2,000,000, exclusive of interest, arbitration fees, costs and attorneys' fees. If an award is made against any individual party in excess of \$100,000, exclusive of interest, arbitration fees, costs and attorneys' fees, it must be supported by written findings of fact, conclusions of law and a statement as to how damages were calculated. Any claim in excess of 20% of the original Contract amount or in excess \$2,000,000 shall be subject to the jurisdiction of the Superior Court of Arizona, Maricopa County. Any party can contest the validity of the amount claimed if an action is filed in the Superior Court.
- 3.90.8. Jurisdiction. The Arbitration Panel shall not be bound for jurisdictional purposes by the amount asserted in any party's claim, but shall conduct a preliminary hearing into the question of jurisdiction upon application of any party at the earliest convenient time, but not later than the commencement of the arbitration hearing.
- 3.90.9. Entry of Judgment. Any party can make application to the Maricopa County Superior Court for confirmation of an award, and for entry of judgment on it.
- 3.90.10. Severance and Joinder. To reduce the possibility of inconsistent adjudications: (1) the Neutral Evaluator or the Arbitration Panel may, at the request of any party, join and/or sever parties, and/or claims arising under other contracts containing this ADR provision, and (2) the Neutral Evaluator, on his own authority, or the Arbitration Panel may, on its own authority, join or sever parties and/or claims subject to this ADR process as they deem necessary for a just resolution of the dispute, consistent with the parties' goal of the prompt and efficient resolution of disputes,

provided, however, that the Contractor, Architect/Engineer and Project professionals shall not be joined as a party to any claim made by a Contractor. Nothing herein shall create the right by any party to assert claims against another party not germane to this Contract or not recognized under the substantive law applicable to the dispute. Neither the Neutral Evaluator nor the Arbitration Panel are authorized to join to the proceeding parties not in privity with the City. Contractor cannot be joined to any pending arbitration proceeding, without Contractor's express written consent, unless Contractor is given the opportunity to participate in the selection of the non-City appointed arbitrator.

- 3.90.11. Appeal. Any party may appeal (1) errors of law by the Arbitration Panel if, but only if, the errors arise in an award in excess of \$100,000, (2) the exercise by the Chairman or Arbitration Panel of any powers contrary to or inconsistent with this Contract or (3) on the basis of any of the grounds provided in ARIZ. REV. STAT. § 12-1512, as amended. Appeals shall be to the Maricopa County Superior Court within 15 Days of entry of the award. The standard of review in such cases shall be that applicable to the consideration of a motion for judgment notwithstanding the verdict, and the Maricopa County Superior Court shall have the authority to confirm, vacate, modify or remand an award appealed under this Section, but not to conduct a trial, entertain the introduction of new evidence or conduct a hearing de novo.
- 3.90.12. Uniform Arbitration Act. Except as otherwise provided herein, binding arbitration pursued under this provision shall be governed by the Uniform Arbitration Act as codified in Arizona in ARIZ. REV. STAT. § 12-1501, *et seq.*
- 3.90.13. Fees and Costs. Each party shall bear its own fees and costs in connection with any informal hearing before the Neutral Evaluator. All fees and costs associated with any arbitration before the Arbitration Panel, including without limitation the Arbitration Panelists' fee, and the prevailing party's reasonable attorneys' fees, expert witness fees and costs, will be paid by the non-prevailing party, except as provided for herein. In no event shall any Arbitrator's hourly fees be awarded in an amount in excess of \$200 per hour and (1) costs shall not include any travel expenses in excess of mileage at the rate paid by the City, not to exceed a one way trip of 150 miles, and (2) all travel expenses, including meals, shall be reimbursed pursuant to the travel policy of the City in effect at the time of the hearing. The determination of prevailing and non-prevailing parties, and the appropriate allocation of fees and costs, will be included in the award by the Arbitration Panel. Fees for the Neutral Evaluator shall be divided evenly between the City and the Contractor.
- 3.90.14. Confidentiality. Any proceeding initiated under ADR shall be deemed confidential to the maximum extent allowed by Arizona law and no party shall, except for disclosures to a party's attorneys or accountants, make any disclosure related to the disputed matter or to the outcome of any proceeding except to the extent required by law, or to seek interim equitable relief, or to enforce an agreement reached by the parties or an award made hereunder.
- 3.90.15. Equitable Litigation. Notwithstanding any other provision of ADR to the contrary, any party can petition the Maricopa County Superior Court for interim equitable relief as necessary to preserve the status quo and prevent immediate and irreparable harm to a party or to the Program pending resolution of a dispute pursuant to ADR provided herein. No court may order any permanent injunctive relief except as may be necessary to enforce an order entered by the Arbitration Panel. The fees and costs incurred in connection with any such equitable proceeding shall be determined and assessed in ADR.
- 3.90.16. Change Order. Any award in favor of the Contractor against the City or in favor of the City against the Contractor shall be reduced to a Change Order and executed by the parties in accordance with the award and the provisions of this Contract.

- 3.90.17. Merger and Bar. Any claim asserted pursuant to this ADR process shall be deemed to include all claims, demands, and requests for compensation for costs and losses or other relief, including the extension of this Contract performance period which reasonably should or could have been brought against any party that was or could have been brought into this ADR process, with respect to the subject claim. The Arbitration Panel shall apply legal principles commonly known as merger and bar to deny any claim or claims against any party regarding which claim or claims recovery has been sought or should have been sought in a previously adjudicated claim for an alleged cost, loss, breach, error, or omission.
- 3.90.18. Inclusion in Other Contracts. The Contractor shall cooperate with the City in efforts to include this ADR provision in all other Project contracts. Subject to Contractor's reasonable agreement, the Contractor agrees that any modification to this ADR provision that is included in the construction or other contracts shall also apply to the Contractor. It is the intent of the parties that any changes to this ADR provision in later contracts will be evolutionary and designed to incorporate the terms of this ADR provision without material changes to the substance or procedure of this ADR provision.

EXHIBIT A
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[Specifications, Plans/Construction Drawings/Reference Documents]

See following pages.

CITY OF AVONDALE

CITY OF AVONDALE

MAYOR
KENNETH WEISE

VICE MAYOR
PAT DENNIS

COUNCIL MEMBERS

BRYAN KILGORE
VERONICA MALONE
MIKE PINEDA
TINA CONDE
CURTIS NIELSON

CITY MANAGER

CHARLES MONTOYA

CITY CLERK

CARMEN MARTINEZ

ENGINEER

GHD
CONTACT: KARL TOBIN, P.E.
4747 NORTH 22ND STREET, SUITE 200
PHOENIX, AZ 85016
PHONE: (602) 216-7200
FAX: (602) 216-7201
EMAIL: KARL.TOBIN@GHD.COM

OWNER

CITY OF AVONDALE
JEREMY ABBOTT, P.E.
(ASSISTANT PUBLIC WORKS DIRECTOR)
399 E. LOWER BUCKEYE RD.
AVONDALE, ARIZONA 85323
PHONE: (623) 333-4411
FAX: (623) 333-4470

SURVEYOR

GHD
CONTACT: RYAN SMITH
4747 NORTH 22ND STREET, SUITE 200
PHOENIX, AZ 85016
PHONE: (602) 216-7200
FAX: (602) 216-7201
EMAIL: RYAN.SMITH@GHD.COM

BENCHMARK

PT# 37216
INTERSECTION OF DYSART & JACKSON
MBCF--HH DN.65 AVONDALE CRS28742
N: 888828.253, E: 570539.061
PT# 37215
INTERSECTION OF DYSART & RILEY
MBCF--HH DN.7 AVONDALE CRS28743
N: 887506.000, E: 570538.564, ELEV: 971.948
PT# 37215
INTERSECTION OF DYSART & WESTERN
MBCF--HH DN.7 AVONDALE CRS28742
N: 886183.853, E: 570538.200
PT# 29250
INTERSECTION OF RILEY & ELISEO FELIX
MBCF--3 NOID F.S. 363 RLS 33307 2012
N: 887501.463, E: 571859.372

APPROVALS

CITY ENGINEERING DEPARTMENT _____ DATE _____
THE CITY APPROVES THESE PLANS FOR CONCEPT ONLY
AND ACCEPTS NO LIABILITY FOR ERRORS OR OMISSIONS

MARICOPA COUNTY ENVIRONMENTAL SERVICES _____ DATE _____

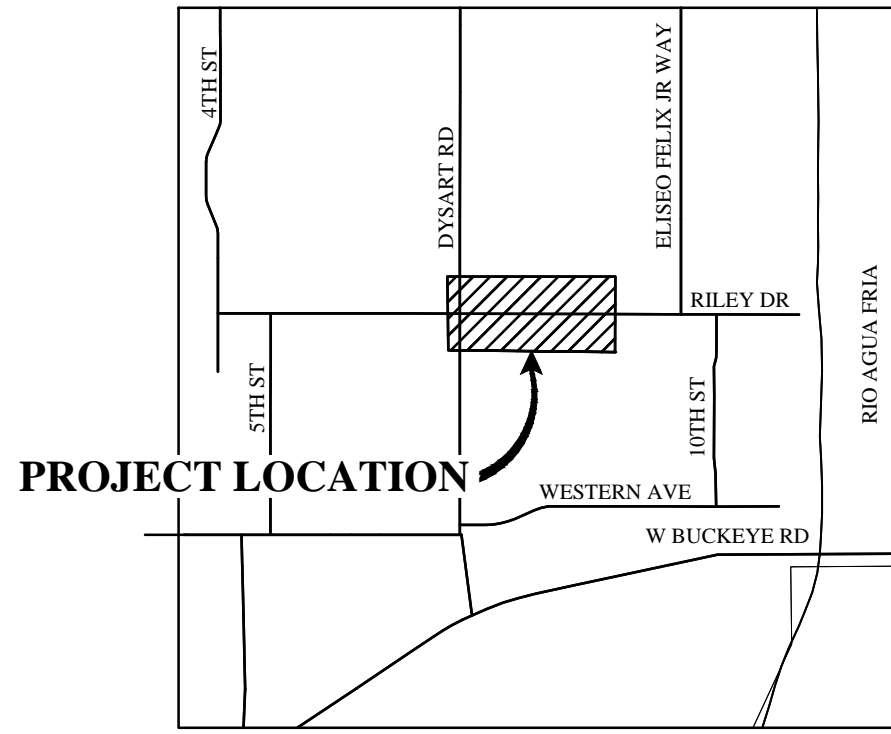
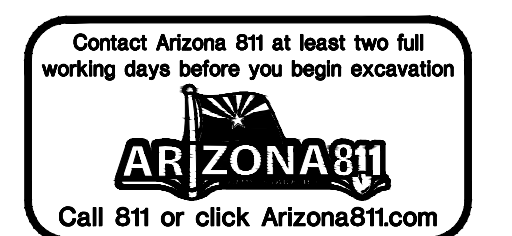
CITY OF AVONDALE FIRE DEPARTMENT _____ DATE _____

"AS-BUILT CERTIFICATION"

I HEREBY CERTIFY THAT THE "AS-BUILT" INFORMATION SHOWN HEREON
WAS OBTAINED UNDER MY DIRECT SUPERVISION AND IS CORRECT AND
COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

REGISTERED LAND SURVEYOR/ENGINEER _____ DATE _____

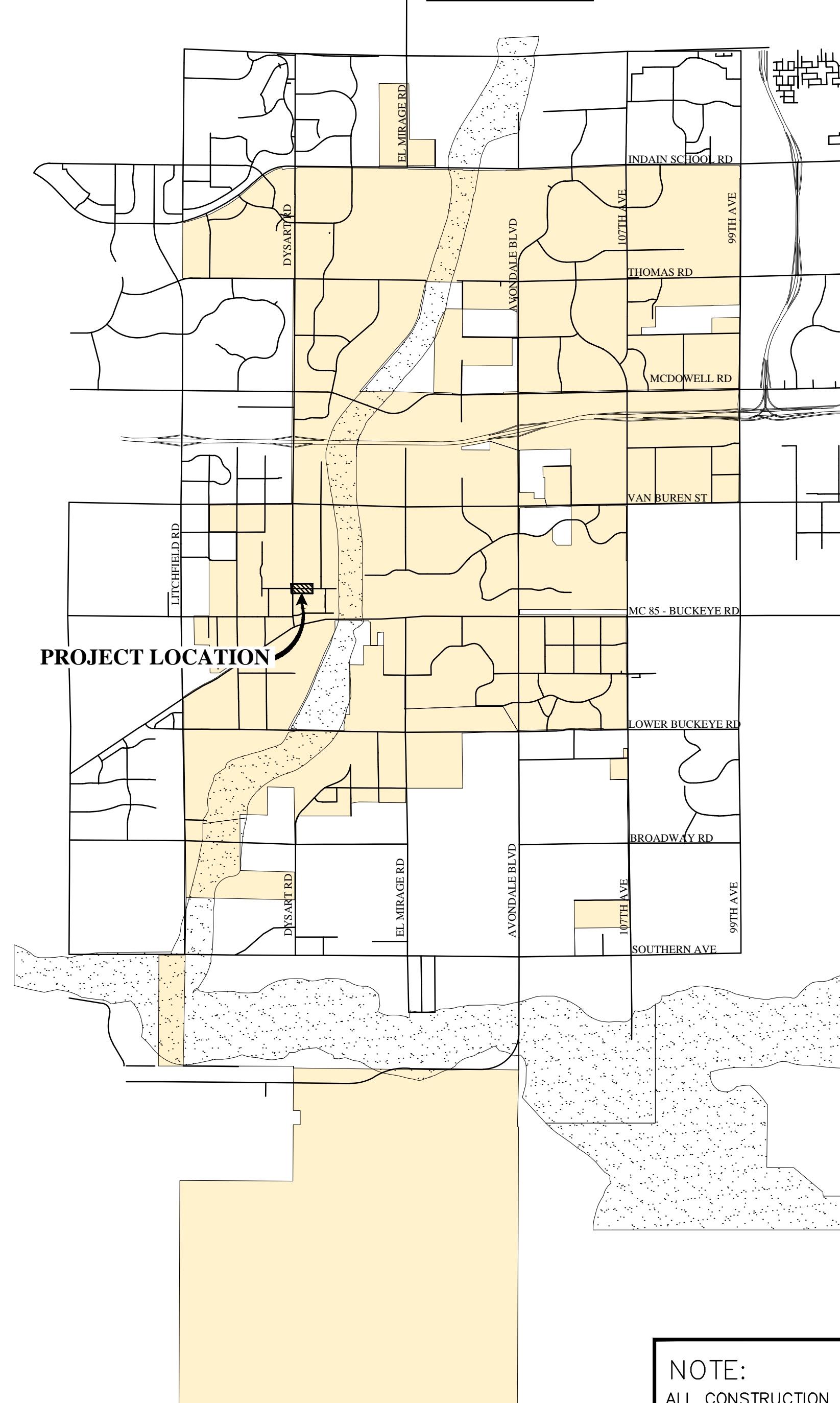
REGISTRATION NUMBER _____ DATE _____
COMPANY NAME: **90% SUBMITTAL FOR AGENCY REVIEW AND BIDDING PURPOSES ONLY**
ADDRESS: _____
PHONE NUMBER: _____



VICINITY MAP

RILEY LIFT STATION DESIGN CITY PROJECT NO. SW1391 SECTION 11, T1N R1W

AREA MAP



PROJECT LOCATION

NOTE:
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE CITY OF AVONDALE'S SUPPLEMENT TO M.A.G. SPECIFICATIONS AND STANDARD DETAILS CURRENTLY ON FILE AND AVAILABLE AT THE CITY OF AVONDALE'S ENGINEERING DEPARTMENT OR ONLINE AT THE CITY OF AVONDALE'S WEBSITE.

Utility Notification


THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES. WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED IN THE SPECIAL NOTES AND/OR AS OTHERWISE NOTED ON THESE PLANS. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.

	CONTACTED	REPLIED
CENTURY LINK PHONE NUMBER: 610-761-8524	RAY PERALES	DATE
ARIZONA PUBLIC SERVICE PHONE NUMBER: 602-493-4225	KRISTAL KROSS	DATE
COX COMMUNICATIONS PHONE NUMBER: 800-778-9140	DISPATCH CENTER	DATE
SOUTHWEST GAS PHONE NUMBER: 623-780-3350	LOCATING DISPATCH	DATE
WANRACK LLC PHONE NUMBER:	NATAHN DEAL	DATE

SHEET INDEX

SHEET NO.	DRAWING TITLE
GENERAL	
1	G1 COVER SHEET
2	G2 LEGEND, ABBREVIATIONS, & INDEX
3	G3 NOTES
CIVIL	
4	C1 EXISTING & DEMOLITION PLAN
5	C2 OVERALL SITE PLAN
6	C3 ENLARGED SITE & GRADING PLAN
7	C4 PLAN AND PROFILES
8	C5 CIVIL DETAILS
MECHANICAL	
9	M1 LIFT STATION PLAN AND SECTION
10	M2 MECHANICAL DETAILS
ELECTRICAL	
11	E1 LEGEND, ABBREVIATIONS, & NOTES
12	E2 ELECTRICAL SITE PLAN
13	E3 ELECTRICAL EQUIPMENT ELEVATIONS
14	E4 SINGLE LINE DIAGRAM
15	E5 CONDUIT RISER DIAGRAM
16	E6 PUMP CONTROL PANEL ELEVATION
17	E7 PUMP CONTROL PANEL SCHEMATIC
18	E8 PUMP CONTROL PANEL SCHEMATIC
19	E9 ELECTRICAL DETAILS
20	E10 ELECTRICAL DETAILS

PROJECT NO. SW1391
 PROJECT NAME: RILEY LIFT STATION
 SHEET NAME: COVER SHEET
 SHEET NUMBER: EN
 PROJECT NUMBER: SW1391
 PROJECT DATE: JUNE 2020
 LATEST REVISION DATE: _____
 SHEET NUMBER: 1 OF 20
 SHEET: G1
 PROJECT NUMBER: SW1391



GHD Inc.
 4747 North 22nd Street, Suite 200
 Phoenix, Arizona 85016 USA
 T: 602 216 7200 F: 602 216 7201 W: www.ghd.com

File Name: C:\Users\pauline\Documents\Projects\1204009 - Riley Lift Station\Sheets\1204009-020.dwg
 Plotted By: Pauline Esquivel
 Plot Date: 9 June 2020 - 9:45 AM

LEGEND	
	CONCRETE COLUMN
	CABLE TV RISER
	POWER POLE
	POWER POLE W/ LIGHT
	STREET LIGHT
	GUY WIRE
	ELECTRIC VAULT
	ELECTRIC BOX
	GAS VALVE
	GAS METER
	GAS MANHOLE
	IRRIGATION PULL BOX
	LANDSCAPE IRRIGATION CONTROL BOX
	POST GUARD
	LAMP POST
	STORM DRAIN MANHOLE
	STORM DRAIN CATCH BASIN GRATE
	SIGN
	MAIL BOX
	BLOW OFF
	AIR RELEASE VALVE
	WATER METER BOX
	WATER MANHOLE
	FIRE HYDRANT
	WATER VALVE
	BACK FLOW PREVENTER
	HOSE BIB
	REDUCER
	SANITARY SEWER MANHOLE
	SANITARY SEWER CLEANOUT
	TELEPHONE MANHOLE
	TELEPHONE RISER OR PEDESTAL
	BACKFLOW PREVENTER
	FLOW ARROW
	PK NAIL / MISC. SURVEY MARKER
	BRASS CAP IN HANDHOLE
	BRASS CAP
	CACTUS (UNKNOWN TYPE)
	PINE
	TREE, UNKNOWN SPECIES UNLESS SPECIFIED
	MESQUITE
	SAGUARO
	PALM TREE
	PALO VERDE
	BUSH
	OLEANDER
	FENCE
	BLOCK OR CONCRETE WALL
	WATERLINE WITH PIPE SIZE
	SANITARY SEWER LINE
	GAS LINE
	TELEPHONE LINE
	STORM DRAIN
	CABLE TELEVISION
	UNDERGROUND ELECTRIC
	DRAINAGE SWALE
	TOP OF SLOPE
	TOE OF SLOPE
	MONUMENT LINE / E
	ROW LINE
	PROPERTY LINE
	NEW WATERLINE
	EDGE OF PAVEMENT
	EDGE OF PAVEMENT, CURB, AND GUTTER
	PROPOSED CONTOURS
	EXISTING CONTOURS
	EXISTING CONTOURS
	COORDINATES
	CONCRETE
	CRUSHED STONE
	RIP-RAP

DETAIL DESIGNATION	SECTION DESIGNATION
<p>DETAIL DESIGNATIONS USE NUMBERS</p> <p>ON DRAWING WHERE DETAIL IS TAKEN: DETAIL DESIGNATION </p> <p>DRAWING NUMBER WHERE SHOWN </p> <p>ON DRAWING WHERE DETAIL IS SHOWN: DETAIL DESIGNATION </p> <p>DRAWING NUMBER WHERE TAKEN </p> <p>NOTE: DRAWING NUMBER SHOWN AS "X-501" IF TAKEN & SHOWN ON SAME SHEET.</p>	<p>SECTION DESIGNATIONS USE LETTERS</p> <p>ON DRAWING WHERE SECTION IS TAKEN: SECTION DESIGNATION </p> <p>DRAWING NUMBER WHERE SHOWN </p> <p>ON DRAWING WHERE SECTION IS SHOWN: SECTION DESIGNATION </p> <p>DRAWING NUMBER WHERE TAKEN </p> <p>NOTE: DRAWING NUMBER SHOWN AS "A-X-301" IF TAKEN & SHOWN ON SAME SHEET.</p>

PIPE DESIGNATION	
<p>DESIGNATION FOR NEW PIPING:</p> <p></p> <p>NOMINAL PIPE DIAMETER PIPE MATERIAL - SEE SPECIFICATIONS FOR EQUIVALENT REPLACEMENT FLOW STREAM IDENTIFIER</p>	<p>DESIGNATION FOR EXISTING PIPING (SCREENED):</p> <p></p> <p>PIPING SYSTEM DESIGNATIONS FOR EXISTING PIPE INDICATE TYPE OF SERVICE ONLY AND DO NOT IMPLY PIPE MATERIALS USED.</p>
<p>DESIGNATION FOR FUTURE PIPING (DASHED):</p> <p></p>	

FITTINGS	
SINGLE LINE	DOUBLE LINE
	FLANGED JOINT
	PLAIN OR GROOVED END MECHANICAL COUPLING
	PUSH ON, MECHANICAL, OR BALL AND SOCKET JOINT
	WELDED JOINT
	SOCKET WELDED JOINT
	SLEEVE TYPE MECHANICAL COUPLING
	RESTRAINED SLEEVE TYPE MECHANICAL COUPLING
	FLANGED COUPLING ADAPTER
	RESTRAINED FLANGED COUPLING ADAPTER
	GROOVED END ADAPTER FLANGE
	UNION
	ELASTOMER AND FABRIC EXPANSION JOINT
	EXPANSION JOINT (SEE SPECS FOR TYPE)
	FLEXIBLE METAL HOSE
	90° ELBOW
	90° ELBOW UP
	90° ELBOW DOWN
	45° ELBOW
	45° ELBOW UP
	45° ELBOW DOWN
	TEE
	TEE UP
	TEE DOWN
	CROSS
	LATERAL
	LATERAL UP
	LATERAL DOWN
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER

SINGLE LINE VALVES / FITTINGS	
	PROPOSED LINE
	EXISTING FEATURE
	PUMP
	BLIND FLANGE
	SILENT CHECK VALVE
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	CAP
	HARNESSED COUPLING
	GATE VALVE (NORMALLY OPEN)
	GATE VALVE (NORMALLY CLOSED)
	BALL VALVE (NORMALLY OPEN)
	BALL VALVE (NORMALLY CLOSED)
	BUTTERFLY VALVE
	GLOBE VALVE
	CHECK VALVE
	BALL CHECK VALVE
	FLOWMETER
	RESTRAINED COUPLING
	SAMPLE PORT
	DRAIN PORT
	HOSE BIBB
	PRESSURE AND VACUUM RELIEF VALVE
	VACUUM RELIEF VALVE
	PRESSURE RELIEF VALVE
	AIR RELEASE AND VACUUM VALVE
	PRESSURE REGULATING VALVE
	SOLENOID VALVE
	PIPE SUPPORT
	SAFETY RELIEF VALVE
	FLOW DIRECTION
	PRESSURE GAGE & SWITCH
	PRESSURE GAGE & TRANSMITTER
	PRESSURE SWITCH & AIR VALVE

DOUBLE LINE VALVES	
	PRESSURE REDUCING, PRESSURE RELIEF, OR CONTROL VALVE
	BALL VALVE
	BALL CHECK VALVE
	GATE VALVE W/ RISER
	BUTTERFLY VALVE
	PRESSURE RELIEF VALVE
	CHECK VALVE
	SOLENOID VALVE
	MOTORIZED VALVE
	PRESSURE CONTROL VALVE "y" = REGULATED SIDE
	AIR RELEASE AND VACUUM RELIEF VALVE
	GATE VALVE

ABBREVIATIONS			
ABC	AGGREGATE BASE COURSE	MJ	MECHANICAL JOINT
ABN	ABANDONED	ML or N	MONUMENT LINE
AC	ASPHALTIC CONCRETE	N	NORTH
ACP	ASBESTOS CEMENT PIPE	NC	NORMALLY CLOSED
AOF	OVER FLOW	NG	NATURAL GROUND
AV	AIR RELEASE / VACUUM VALVE	NIC	NOT IN CONTRACT
B/C	BACK OF CURB	NO.	or # NUMBER
B&C	BOX AND COVER	NPI	NON-PAY ITEM
BC	BRASS CAP FLUSH	NTS	NOT TO SCALE
BCHH	BRASS CAP IN HAND HOLE	OC	ON CENTER
BF	BLIND FLANGE	OD	OUTSIDE DIAMETER
BFP	BACKFLOW PREVENTION	OF	OUTFALL
BM	BENCH MARK	OHE	OVERHEAD ELECTRIC
BO	BLOW OFF	O&M	OPERATION AND MAINTENANCE
BYP	BYPASS	PC	POINT OF CURVE
CATV	CABLE TV	PI	PRESSURE INDICATOR
CHV	CHECK VALVE	PRC	POINT OF REVERSE CURVATURE
CIP	CAST IRON PIPE	PRV	PRESSURE REDUCING OR RELIEF VALVE
CL	CENTER LINE	PSV	PRESSURE SUSTAINING VALVE
CONC	CONCRETE	PT	POINT OF TANGENT
CONT	CONTINUOUS	PUE	PUBLIC UTILITY EASEMENT
D	DRAIN	PW	POTABLE WATER
DE	DRAINAGE EASEMENT	R or RAD	RADIUS
DEF	DEFLECTION	RED	REDUCER or REDUCING
DEG OR °	DEGREE	REQD	REQUIRED
DET OR DTL	DETAIL	REST	RESTRAINT
DI OR DIP	DUCTILE IRON PIPE	R/W	RIGHT OF WAY
DIA, DI, OR Ø	DIAMETER	R/W	RAW WATER
DP	DIFFERENTIAL PRESSURE	RT	RIGHT
DWG	DRAWING	S	SANITARY SEWER
DWY	DRIVEWAY	SD	STORM DRAIN
EA	EACH	SDE	STORM DRAIN EASEMENT
E	ELECTRIC OR EASEMENT	SE	SEWER LINE EASEMENT
EJ	EXPANSION JOINT	SECT	SECTION
EL	ELEVATION	SP	SAMPLE PORT
ELL	ELBOW	SW	SIDEWALK
EOP	EDGE OF PAVEMENT	SWE	SIDEWALK EASEMENT
EX	EXISTING	SPEC.	SPECIFICATION
FCV	FLOW CONTROL VALVE	SQ	SQUARE
FD OR FND	FOUND	SS	STAINLESS STEEL
FE	FLOW ELEMENT	STD	STANDARD
FF	FINISH FLOOR	T or TEL	TELEPHONE
FH	FIRE HYDRANT	TI	TOP OF
FIT	FLOW INDICATOR TRANSMITTER	TN	TOP OF NUT
FIFLG	FLANGE	TOFH	TOWN OF FOUNTAIN HILLS
FO	FIBER OPTIC	TP	TIE-POINT
FV	FLOW VALVE	TRANS	TRANSMISSION WATER MAIN
G	GAS	T.S.&V.	TAPPING SLEEVE AND VALVE
GAV	GATE VALVE	TYP	TYPICAL
HORZ	HORIZONTAL	UE	UNDERGROUND ELECTRIC
HP	HIGH POINT	UG	UNDERGROUND
ID	INSIDE DIAMETER	UNK	UNKNOWN
IE	INVERT ELEVATION	UNO	UNLESS NOTED OTHERWISE
INV	INVERT	V	VALVE
IRR	IRRIGATION	VCP	VITRIFIED CLAY PIPE
JNTS	JOINTS	VERT	VERTICAL
LP	LOW POINT	VNT	VENT
LT	LEFT	W	WATER
MAT	MATERIAL	WE	WATERLINE EASEMENT
MAX	MAXIMUM	W	WITH
MH	MANHOLE	W/O	WITHOUT
MIN	MINIMUM		

90% SUBMITTAL FOR AGENCY REVIEW AND BIDDING PURPOSES ONLY

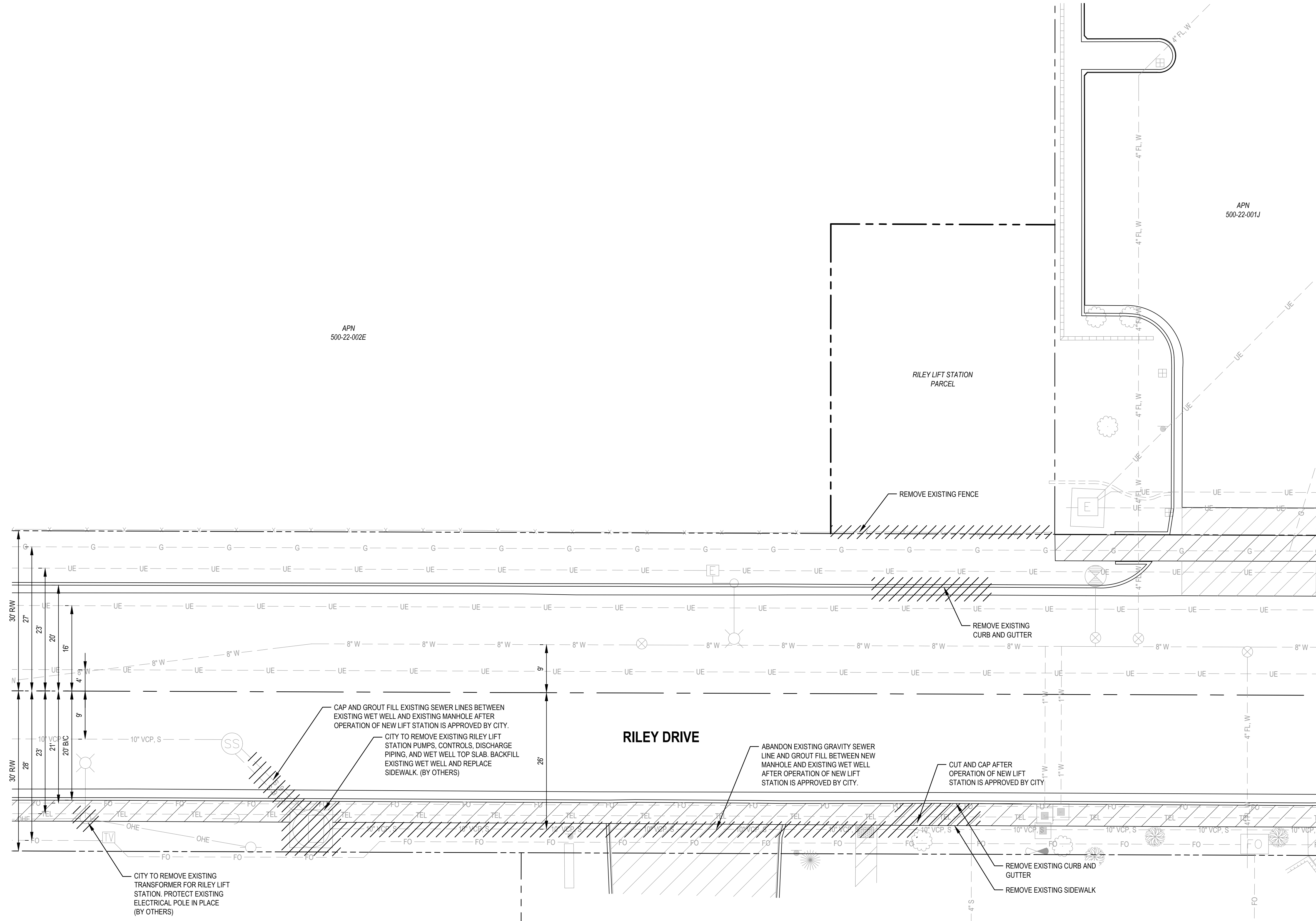
Contact Arizona 811 at least two full working days before you begin excavation

ARIZONA811
 Call 811 or click Arizona811.com

PROJECT TYPE CAPITAL IMPROVEMENT PROJECT	SHEET NAME RILEY LIFT STATION	PROJECT NUMBER SW1391
PROJECT NUMBER SW1391	LEGEND, ABBREVIATIONS, & INDEX	PROJECT NUMBER SW1391
ORIGINAL PLAN DATE JUNE 2020	LATEST REVISION DATE	SHEET NUMBER 2 OF 20
SHEET NUMBER 2 OF 20	SHEET G2	PROJECT NUMBER SW1391

GHD Inc.
 4747 North 22nd Street, Suite 200
 Phoenix, Arizona 85016 USA
 T: 602.216.7200 F: 602.216.7201 W: www.ghd.com

ENGINEER'S NOTES	ENGINEER'S NOTES (CONTINUED)	CORROSION PROTECTIVE COATING SYSTEM	CORROSION PROTECTIVE COATING SYSTEM (CONT.)	PROJECT INFORMATION
GENERAL NOTES: <p>1. THE CONTRACTOR SHALL INCLUDE FEES IN THEIR BID TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM PER THE DESIGN DRAWINGS AND CONTRACT DOCUMENTS. THE QUANTITIES PROVIDED ON THE BID SCHEDULE ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL INDEPENDENTLY DETERMINE QUANTITIES FOR THEIR BID. CONTRACTOR SHALL INCLUDE FEES FOR ALL WORK NECESSARY TO PROVIDE A COMPLETE PROJECT WHETHER OR NOT SPECIFICALLY LISTED IN THE SCHEDULE OF VALUES. NO SEPARATE PAYMENT WILL BE MADE FOR ITEMS OUTSIDE THE SCHEDULE OF VALUES. COMPENSATION FOR ALL SUCH SERVICES, ITEMS, AND MATERIALS SHALL BE INCLUDED IN THE PRICES LISTED IN THE SCHEDULE OF VALUES.</p> <p>2. CONTRACTOR SHALL SUBMIT PRODUCT SUBMITTALS AND SHOP DRAWINGS FOR ALL EQUIPMENT, MATERIALS, AND COATINGS WITHIN FOURTEEN (14) DAYS OF NOTICE TO PROCEED FOR OWNER REVIEW AND COMMENT.</p> <p>3. THE CONTRACTOR MUST LOCATE ALL EXISTING UTILITIES TO BE CONNECTED TO, UTILITIES CROSSING THE PROPOSED GRAVITY SEWER AND FORCE MAIN LINES, AND UTILITIES SURROUNDING THE PROPOSED MANHOLE, THROUGH NONDESTRUCTIVE VACUUM EXCAVATION WITHIN TWENTY-EIGHT (28) DAYS OF NOTICE TO PROCEED. CONTRACTOR TO NOTIFY OWNER IMMEDIATELY UPON DISCOVERY OF ANY CONFLICTS BETWEEN THE CONTRACTOR'S UTILITY LOCATING AND DESIGN DRAWINGS.</p> <p>4. CONTRACTOR SHALL CONTACT ALL UTILITIES IDENTIFIED THROUGH ARIZONA 811 AND INVITE REPRESENTATIVES FROM THOSE UTILITIES TO THE PRE-CONSTRUCTION MEETING.</p> <p>5. CONTRACTOR SHALL DOCUMENT EXISTING SITE CONDITIONS THROUGH VIDEO (DVD, INDEXED). CONTRACTOR SHALL SUBMIT DOCUMENTATION TO OWNER PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO PAVEMENT AND CONCRETE, AT NO ADDITIONAL COST.</p> <p>6. CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING SERVICES.</p> <p>7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL REQUIRED PERMITS AND TEMPORARY CONSTRUCTION WATER.</p> <p>8. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY FACILITIES AND SERVICES DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO WATER, POWER, SANITATION, AND SECURITY.</p> <p>9. THE EXISTING SITE HAS LIMITED SPACE FOR EQUIPMENT STORAGE. CONTRACTOR IS RESPONSIBLE FOR SECURING AND PAYING FOR A MARSHALLING YARD.</p> <p>10. CONTRACTOR'S WORK MUST ALLOW THE EXISTING LIFT STATION AND SEWER SYSTEM TO REMAIN OPERATIONAL AT ALL TIMES DURING CONSTRUCTION.</p> <p>11. CONTRACTOR SHALL PROVIDE THIRD PARTY MATERIALS TESTING PER CITY OF AVONDALE SUPPLEMENTS TO MAG SPECIFICATIONS SECTION 106. TRENCH COMPACTION TESTING FREQUENCY SHALL BE MODIFIED TO TWO (2) GROUPS OF TESTS FOR THE FORCE MAIN AND TWO (2) GROUPS OF TESTS FOR THE GRAVITY SEWER.</p> <p>12. TRAFFIC ACCESS AND BUSINESS ACCESS ALONG RILEY DRIVE MUST REMAIN OPEN AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL DURING CONSTRUCTION. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.</p> <p>13. CONTRACTOR SHALL PROVIDE START UP SERVICES FROM ALL EQUIPMENT REPRESENTATIVES TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM, AS DETERMINED BY THE OWNER.</p> <p>14. CONTRACTOR SHALL PROVIDE FOUR (4) HOURS EACH OF TRAINING SERVICES FROM A QUALIFIED REPRESENTATIVE FOR THE PUMPS, VALVES, AND ELECTRICAL EQUIPMENT. CONTRACTOR SHALL SCHEDULE THE TRAINING BASED ON OWNER'S AVAILABILITY.</p> <p>15. CONTRACTOR SHALL PROVIDE OPERATION AND MAINTENANCE (O&M) MANUALS FOR THE PUMPS, VALVES, AND ELECTRICAL EQUIPMENT TO THE OWNER FOR REVIEW PRIOR TO PROJECT COMPLETION. FINAL PAYMENT WILL NOT BE MADE UNTIL O&M MANUALS HAVE BEEN APPROVED BY THE OWNER.</p> <p>16. CONTRACTOR SHALL PROVIDE AS-BUILT RECORD DRAWINGS, SEALED BY AN ARIZONA REGISTERED LAND SURVEYOR, UPON COMPLETION OF THE PROJECT. FINAL PAYMENT WILL NOT BE MADE TO THE CONTRACTOR UNTIL THE SEALED AS-BUILTS HAVE BEEN APPROVED BY THE OWNER.</p> <p>17. THE WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT EDITION(S) OF THE FOLLOWING SPECIFICATIONS AND THESE PLANS. SHOULD TWO OR MORE OF THESE REQUIREMENTS CONFLICT, THE MORE RESTRICTIVE OPTION AS DETERMINED BY THE ENGINEER SHALL GOVERN.</p> <ul style="list-style-type: none">- CITY OF AVONDALE SUPPLEMENTS TO MAG STANDARD SPECIFICATION AND DETAILS- M.A.G. UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.- M.A.G. UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION.- A.D.H.S. (A.D.E.Q.) ENGINEERING BULLETINS NO. 11 (SEWAGE WORKS).- A.W.W.A. STANDARDS.- M.U.T.C.D. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. <p>18. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES PER UTILITY OWNERS' REQUIREMENTS. CONTRACTOR SHALL COORDINATE UTILITY WORK WITH UTILITY OWNERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING FOR ANY WORK REQUIRED BY THE UTILITY OWNERS TO PROTECT EXISTING UTILITIES.</p> <p>19. UNDERGROUND UTILITY AND STRUCTURE LOCATIONS, AS SHOWN ON THESE PLANS, WERE DETERMINED FROM FIELD MEASUREMENTS, CONSTRUCTION PLANS, RECORD PLANS, OR UTILITY MAPS FURNISHED BY OTHERS. LOCATIONS OF UNDERGROUND UTILITIES ARE TO BE REGARDED AS APPROXIMATE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH IN THE FIELD THE ACTUAL LOCATIONS OF ALL UNDERGROUND LINES WHICH MAY IN ANY WAY AFFECT THE WORK. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR MAKING COMPLETE AND ACCURATE ON-SITE DETERMINATIONS OF THE LOCATIONS OF ALL UTILITIES, STRUCTURES AND FIELD CONDITIONS, WHICH MAY AFFECT THE PROGRESS OF THE WORK.</p> <p>20. WHERE PLANS CALL FOR CONNECTING TO EXISTING UNDERGROUND PIPES OR STRUCTURES, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT SIZES, TYPES AND LOCATIONS OF EXISTING IMPROVEMENTS AND TO FURNISH MATERIALS AS NEEDED TO MAKE THE REQUIRED CONNECTIONS.</p> CONCRETE NOTES: <p>1. CONCRETE SHALL BE NORMAL WEIGHT (144 PCF) HAVING 28 DAYS COMPRESSIVE STRENGTH EXCEEDING 4000 PSI.</p> <p>2. USE POTABLE MIX WATER FREE FROM MATERIALS DELETERIOUS TO CONCRETE OR STEEL (ASTM C1602)</p> <p>3. PORTLAND CEMENT: CONFORM TO ASTM C 150, TYPE I/IV.</p> <p>4. FLY ASH: ACCEPTABLE FOR USE IN MIX DESIGN IF THE RATIO OF FLY ASH TO TOTAL CEMENT AND FLY ASH DOES NOT EXCEED 20 PERCENT BY WEIGHT. CONFORM TO ASTM C 618, TYPE F.</p> <p>5. AGGREGATE SHALL BE NORMAL WEIGHT CONFORMING TO ASTM C33</p> <p>6. DO NOT USE AGGREGATES CONTAINING SOLUBLE SALTS OR OTHER SUBSTANCES SUCH AS IRON SULFIDES, PYRITE, MARCASITE, OCHRE, OR OTHER MATERIALS THAT MAY CAUSE STAINS ON EXPOSED CONCRETE SURFACES.</p> <p>7. SLUMP OF CONCRETE SHALL NOT EXCEED 4". IF SUPERPLASTICIZERS ARE USED IN THE MIX DESIGN, THE MIX SHALL BE SLUMPED AT THE JOB SITE PRIOR TO ADDITION OF SUPERPLASTICIZER. PROVIDE COMPUTERIZED BATCH RECORDS WITH ALL LOADS.</p> <p>8. DO NOT PLACE CONCRETE IN CONTACT WITH ALUMINUM</p> <p>9. THE MAXIMUM FREE DROP OF CONCRETE IS 6'-0" WITHOUT A TREMIE PIPE TO PREVENT SEGREGATION. DEPOSIT CONCRETE AS NEAR AS POSSIBLE TO ITS FINAL POSITION. DO NOT EMPLOY PRACTICES CAUSING SEGREGATION.</p> <p>10. MECHANICALLY VIBRATE CONCRETE.</p> <p>11. WAIT 28 DAYS MINIMUM AFTER CONCRETE HAS BEEN PLACED BEFORE SAND BLASTING, WATER BLASTING OR OTHER SURFACE TREATMENT.</p> <p>12. DO NOT PLACE CONCRETE IN STANDING WATER.</p> <p>13. THE USE OF WATER OR "SPRINKLING" AS AN AID TO FINISHING UNFORMED SURFACES IS PROHIBITED.</p> <p>14. PROVIDE 3/4" X 3/4" CHAMFERS AT ALL EXPOSED CORNERS.</p> <p>15. CURE CONCRETE PER ACI 318 AND ACI 301 FOR 7 DAYS AFTER PLACEMENT. CURING COMPOUNDS SHALL INCLUDE A FUGITIVE DYE. ALL CURING COMPOUNDS SHALL BE COMPATIBLE WITH FUTURE TOPPING, PAINT, WATERPROOFING AND FINISHES. APPLY TWO HEAVY COATS OF CURING WITH A SHORT NAP ROLLER. CLEAN ALL NOZZLES AFTER EACH USE.</p>	<p>16. WALLS AND FOUNDATIONS: START CURING IMMEDIATELY UPON THE REMOVAL OF FORMS AND THE COMPLETION OF FINISHING WORK. FOUNDATION TOP SURFACES REQUIRE CURING COMPOUND.</p> <p>17. START CURING SLABS IMMEDIATELY ONCE THE CONCRETE IS SET ENOUGH TO WALK ON WITHOUT HARMING THE FINISH.</p> REINFORCING STEEL NOTES: <p>1. PLACE REINFORCEMENT IN CONFORMANCE WITH CONTRACT DRAWINGS AND ACI DETAILING MANUAL SP-66.</p> <p>2. SUBMIT SHOP DRAWINGS PER ACI DETAILING MANUAL SP-66 FOR ENGINEERS REVIEW.</p> <p>3. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A 615, GRADE 60.</p> <p>4. SECURELY TIE REINFORCING AND EMBEDDED ITEMS IN POSITION BEFORE PLACING CONCRETE OR GROUT.</p> <p>5. BAR SUPPORTS AND SPACERS SHALL BE IN ACCORDANCE WITH ACI 401.</p> <p>6. COVER FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH SHALL BE 3".</p> <p>7. COVER FOR CONCRETE CAST AGAINST FORMS AND PERMANENTLY EXPOSED TO EARTH, LIQUID, WEATHER OR BEARING ON A WORK MAT SHALL BE 2".</p> <p>8. REINFORCEMENT SHALL BE CONTINUOUS WITHOUT SPLICES.</p> <p>9. WELDING OF REINFORCING STEEL IS PROHIBITED.</p> POST INSTALLED ANCHOR AND DOWEL NOTES: <p>1. ANCHOR ROD MATERIAL SHALL BE PER ASTM F593 AISI TYPE 316 STAINLESS STEEL THREADED ROD WITH ASTM F594 STAINLESS STEEL NUTS.</p> <p>2. ADHESIVE FOR ANCHORS AND DOWELS IN CONCRETE SHALL BE HIT-HY 500 SD BY HILTI (ICC-ES REPORT ESR-2322).</p> DRAINAGE NOTES: <p>1. ADEQUATE DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES, BEST MANAGEMENT PRACTICES, AND/OR OTHER STORM WATER MANAGEMENT FACILITIES SHALL BE PROVIDED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION. DAMAGES TO ADJACENT PROPERTY AND/OR THE CONSTRUCTION SITE CAUSED BY THE CONTRACTOR'S FAILURE TO PROVIDE AND MAINTAIN ADEQUATE DRAINAGE AND EROSION/SEDIMENT CONTROL FOR THE CONSTRUCTION AREA SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.</p> SEWER NOTES: <p>1. ALL PROPOSED FORCE MAIN JOINTS SHALL BE RESTRAINED. ABOVE GRADE JOINTS SHALL BE FJ AND BURIED JOINTS SHALL BE RESTRAINED MJ OR RESTRAINED BELL AND SPIGOT JOINTS.</p> <p>2. THE MEGALUG SYSTEM OR AN APPROVED EQUIVALENT SHALL BE USED.</p> <p>3. PROPOSED DIP FORCE MAINS SHALL BE INSTALLED IN 18" STRAIGHT PIPE SEGMENTS WITH JOINT DEFLECTIONS LESS THAN TWO AND ONE HALF DEGREES (-2.5").</p> <p>4. SEWER FORCE MAIN PIPE SHALL BE PROTECTO 401 LINED DUCTILE IRON PRESSURE CLASS 350.</p> <p>5. SEWER FORCE MAIN FITTINGS SHALL BE PROTECTO 401 LINED DUCTILE IRON PRESSURE CLASS 250.</p> <p>6. THE INTERIOR OF ALL DUCTILE IRON PIPE SHALL BE LINED WITH PROTECTO 401 WITH A TOTAL DRY FILM THICKNESS OF 40 MILS. THE INTERIOR OF ALL DUCTILE IRON FITTINGS SHALL BE LINED WITH PROTECTO 401 PER MANUFACTURER RECOMMENDATIONS. WHEN BURIED, DUCTILE IRON PIPE AND FITTINGS EXTERIOR SHALL INCLUDE A STANDARD ASPHALTIC FACTORY COATING AND GREEN LOW DENSITY POLYWRAP. WHEN EXPOSED, EXTERIOR SHALL BE COATED WITH TNEPEC SERIES N69 H-BUILD EPOXOLINE II EPOXY APPLIED IN ONE COAT WITH A TOTAL DRY FILM THICKNESS OF 4-6 MILS. FINISH COAT SHALL BE TNEPEC 1075 ENDURA SHIELD II APPLIED WITH A DRY FILM THICKNESS OF 2.5-3 MILS. THE EXTERIOR OF DUCTILE IRON PIPE AND FITTINGS LOCATED WITHIN THE WET WELL SHALL BE COATED WITH TNEPEC CERAMIC EPOXY 431 IN ONE OR MORE COATS WITH A TOTAL DRY FILM THICKNESS OF 40 MILS. APPLICATION AND SURFACE PREPARATION FOR ALL COATINGS AND LININGS SHALL BE PER MANUFACTURER RECOMMENDATIONS. OWNER SHALL APPROVE FINAL EXTERIOR COATING COLOR PRIOR TO ORDERING.</p> <p>7. ALL BOLT, NUTS, WASHERS, AND OTHER ASSEMBLY HARDWARE SHALL BE 316 SS. PIPE AND FITTING GASKETS, RINGS, AND SEALS SHALL BE MANUFACTURED FOR USE WITH RAW WASTEWATER.</p> <p>8. FORCE MAIN TEST PRESSURE SHALL BE 90 PSI.</p> <p>9. GRAVITY SEWER SHALL BE (PVC) ASTM D-3034, SDR-26. INSTALL PER CITY OF AVONDALE SUPPLEMENTS TO MAG SPECIFICATION 615.</p> <p>10. ALL TRENCHING, BEDDING, BACKFILL, COMPACTION, AND PAVEMENT REPLACEMENT SHALL BE PER CITY OF AVONDALE SUPPLEMENTS TO MAG STANDARD SPECIFICATIONS AND DETAILS, SECTION 601. ALL PAVEMENT REPLACEMENT SHALL BE PER CITY OF AVONDALE STANDARD DETAIL A1131.</p> <p>11. AT LEAST 7 DAYS PRIOR NOTICE IS REQUIRED BEFORE INTERRUPTING EXISTING UTILITY SERVICE TO MAKE CONNECTIONS. CONNECTIONS MUST BE COORDINATED WITH OWNER AND AN OWNER REPRESENTATIVE MUST BE ON SITE DURING CONNECTIONS.</p> <p>12. THE CONTRACTOR WILL BE RESPONSIBLE FOR MINIMIZING AND CLEANING UP ALL SPILLS AND SOIL THAT COMES IN CONTACT WITH SEWAGE. ALL MATERIAL REMOVED DURING THESE OPERATIONS WILL BE DISPOSED AT AN APPROVED FACILITY.</p> SIGNAGE NOTES: <p>1. THE CONTRACTOR SHALL SUPPLY & INSTALL INFORMATION & SAFETY SIGNS THROUGHOUT THE SITE AS REQUIRED BY THE OWNER.</p> <p>2. INFORMATION SIGNS SHALL INCLUDE, BUT NOT BE LIMITED TO TWO SIGNS THAT LIST THE SITE ADDRESS, LIFT STATION NUMBER, & EMERGENCY PHONE NUMBERS. ONE WILL BE MOUNTED ON THE GATE AND THE OTHER WILL BE MOUNTED ON THE SITE WALL.</p> <p>3. SAFETY SIGNS SHALL INCLUDE, BUT NOT BE LIMITED TO WET WELL HATCH, EQUIPMENT, OPERATION, AND WARNING SIGNS.</p> <p>4. ALL SIGNS SHALL BE MADE OF MATERIALS SUITABLE FOR OUTDOOR USE AS REQUIRED BY THE SIGNS PROPOSED LOCATION.</p> <p>5. ALL SIGNS & SIGN LOCATIONS SHALL BE APPROVED BY OWNER PRIOR TO INSTALLATION.</p> WARRANTY NOTES: <p>1. THE CONTRACTOR SHALL GUARANTEE ALL WORK IN ACCORDANCE WITH MAG PART 100 CITY OF AVONDALE SUPPLEMENTS, GENERAL CONDITIONS, THE CONTRACT, & THE CONSTRUCTION PLANS & SPECIFICATIONS. SHOULD TWO OR MORE OF THESE GUIDELINES CONFLICT, THE MORE STRINGENT REQUIREMENT SHALL APPLY.</p> <p>2. THE WARRANTY PERIOD WILL BEGIN AFTER A WRITTEN ACCEPTANCE HAS BEEN ISSUED BY THE OWNER TO THE CONTRACTOR.</p> EARTHWORK NOTES: <p>1. THE CONTRACTOR SHALL PERFORM ALL EARTHWORK REQUIRED TO CONSTRUCT THE PROPOSED FACILITIES AS SHOWN ON PLANS.</p> <p>2. CONTRACTOR SHALL REMOVE ALL VEGETATION & DEBRIS WITHIN THE SITE.</p> <p>3. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE REMOVAL OF ALL SPOILS FROM THE CONSTRUCTION SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, COUNTY, & MUNICIPAL REQUIREMENTS.</p>	GENERAL: <p>1. PRIOR TO INSTALLING THE CORROSION PROTECTIVE COATING SYSTEM, THE CONTRACTOR SHALL CLEAN AND PREPARE THE NEW LIFT STATION WET WELL AND LID/COVER.</p> <p>2. COATING THE INTERIOR OF THE WET WELL AND COVER SHALL INCLUDE THE FOLLOWING ACTIVITIES:</p> <ul style="list-style-type: none">• CLEANING THE STRUCTURE AND PREPARING THE STRUCTURE FOR THE APPROVED COATING SYSTEM.• APPLYING THE APPROVED COATING SYSTEM, AS SPECIFIED.• TESTING THE FINISHED SURFACE COATING, AS REQUIRED HEREIN.• OTHER RELATED ACTIVITIES, AS NOTED HEREIN. <p>3. THE APPROVED COATING SYSTEM (AS SPECIFIED HEREIN) SHALL BE APPLIED TO ALL EXPOSED CONCRETE, GROUT, MORTAR, AND CEMENTIOUS SURFACES WITHIN THE STRUCTURE. THIS INCLUDES THE NEW WET WELL, COVER AND THE SURFACES OF ALL PENETRATIONS.</p> APPROVED COATING SYSTEMS FOR THE WET WELL AND COVER COATING: <p>1. THE APPROVED COATING/LINING SYSTEMS SHALL BE AS FOLLOWS:</p> <ul style="list-style-type: none">• SEWER SHIELD 150 EPOXY LINING WITH C120 CALCIUM ALUMINATE CEMENT UNDERLAYMENT.• PRE-APPROVED EQUAL <p>2. AIRLESS SPRAY OR TROWEL FORMULATIONS OF THE PRODUCTS LISTED ABOVE ARE ACCEPTABLE. IF APPLIED BY AIRLESS SPRAYER OR SPINCASTER, THE FINAL UNDERLAYMENT LAYER AND FINAL SURFACE COATING LAYER SHALL BOTH BE TROWEL FINISHED BEFORE SETTING. THE CONTRACTOR SHALL NOT REUSE OR APPLY REBOUND, SPILLED OR OVERSPRAYED MATERIAL.</p> COATING APPLICATORS: <p>1. THE COATING APPLICATOR SHALL HAVE A MINIMUM OF THREE (3) YEARS OF EXPERIENCE PERFORMING WASTEWATER SEWER STRUCTURE COATING WORK AND SHALL HAVE COMPLETED A MINIMUM OF FIVE (5) SUCH PROJECTS WITHIN THE LAST FIVE YEARS. USING THE APPROVED SYSTEM LISTED IN THIS SPECIFICATION, THE OWNER MAY REQUEST REFERENCES ON THESE PROJECTS AND HAS THE RIGHT TO REJECT THE PROPOSED APPLICATION.</p> <p>2. THE COATING APPLICATOR SHALL ALSO SUBMIT A CERTIFICATION LETTER FROM THE COATING MANUFACTURER THAT STATES THAT THE COATING APPLICATOR HAS BEEN TRAINED AND IS CERTIFIED TO APPLY THE COATING IN SEWER STRUCTURES.</p> <p>3. ALL COATING ACTIVITIES WILL OCCUR PRIOR TO THE PLACEMENT OF THE COVER ON THE WET WELL. ANY COATING DAMAGE THAT OCCURS WHEN THE COVER IS SET ON THE WET WELL SHALL BE REPAIRED IN ACCORDANCE WITH THESE NOTES, THE MANUFACTURER'S RECOMMENDATIONS, AND INSPECTOR'S DIRECTION.</p> CLEANING AND PREPARATION ACTIVITIES: <p>1. PRIOR TO APPLICATION OF THE APPROVED COATING, SURFACES SHALL BE CLEANED TO BARE CONCRETE BY ABRASIVE BLASTING, FOLLOWED BY WATER BLASTING. THE CONTRACTOR SHALL REMOVE ALL SAND OR OTHER ABRASIVE MATERIAL AND DEBRIS FROM THE SURFACE.</p> <p>2. THE ENGINEER SHALL APPROVE ALL CHEMICALS USED FOR THIS PROJECT PRIOR TO THEIR USE. CHEMICAL USE SHALL CONFORM TO LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS.</p> <p>3. THE EXPOSED SURFACE SHALL BE SUITABLY PREPARED FOR COATING AND SHALL HAVE ALL LOOSE MATERIAL REMOVED. THE SURFACE SHALL HAVE TEXTURE AT LEAST AS ROUGH AS COURSE (60 GRIT) SANDPAPER. THE INSPECTOR MAY USE OBSERVATION(S)/TEST(S) OF HIS CHOICE TO DETERMINE WHETHER THE STRUCTURE HAS BEEN PROPERLY CLEANED AND PREPARED.</p> <p>4. THE INSPECTOR SHALL HAVE THE AUTHORITY TO REQUIRE ADDITIONAL CLEANING EFFORT AND/OR INCREASED BLASTING PRESSURE AFTER OBSERVATION(S)/TEST(S).</p> <p>5. AFTER THE SURFACE IS CLEANED AND PREPARED, THE CONTRACTOR SHALL INSTALL A 3/8-INCH DIAMETER STAINLESS STEEL EXPANSION BOLT 2-INCHES INTO OR NEAR THE LID. A MINIMUM OF 1-INCH LENGTH OF THE BOLT AND ITS HEX-HEAD WILL BE EXPOSED AFTER THE FINISHED COATING SYSTEM IS INSTALLED FOR SPARK TESTING. THE INSPECTOR WILL DIRECT THE CONTRACTOR WHERE TO INSTALL THE BOLT IF REQUIRED.</p> <p>6. THE TIME BETWEEN CLEANING AND PREPARATION ACTIVITIES AND APPLICATION OF THE FIRST COATING LAYER SHALL NOT EXCEED 2 HOURS WITHOUT REPEATING WATER RINSING.</p> <p>7. DISPOSAL OF ALL DEBRIS SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS AND SHALL NOT INVOLVE DISPOSAL WITHIN THE SEWER SYSTEM.</p> UNDERLAYMENT NOTES: <p>1. THE CONTRACTOR SHALL FILL ALL VOIDS AND CREATE AN EVEN AND UNIFORM SURFACE PROFILE USING UNDERLAYMENT.</p> <p>2. THE CONTRACTOR SHALL EMPLOY WHATEVER MEANS NECESSARY (E.G., HUMIDITY CONTROL, TEMPERATURE CONTROL, ADDITIONAL BLASTING, MECHANICAL SURFACE PREPARATION, ETC.) TO ENSURE PROPER ADHESION AND CURING OF THE UNDERLAYMENT.</p> <p>3. THE UNDERLAYMENT SHALL BE FREE OF TROWEL MARKS AND IRREGULARITIES.</p> <p>4. THE UNDERLAYMENT SHALL BE APPLIED ACROSS THE ENTIRE COVER AT A MINIMUM 1/2-INCH TOTAL CURED THICKNESS</p> <p>5. AFTER THE UNDERLAYMENT LAYER HAS CURED FOR A MINIMUM OF 4 HOURS, THE CONTRACTOR SHALL TEST THE UNDERLAYMENT LAYER FOR PROPER ADHESION. IF THE UNDERLAYMENT LAYER DOES NOT PASS THE ADHESION TEST (OR TESTS), THE CONTRACTOR SHALL PERFORM REMEDIAL AND RE-TESTING STEPS.</p> SURFACE COATING APPLICATION: <p>1. THE SURFACE COATING THAT IS APPLIED SHALL BE FROM THE SAME COATING SYSTEM AS THE UNDERLAYMENT THAT IS USED.</p> <p>2. THE SURFACE COATING SHALL BE MIXED IN A CLEAN, DRY CONTAINER.</p> <p>3. THE CONTRACTOR SHALL EMPLOY WHATEVER MEANS NECESSARY (E.G., HUMIDITY CONTROL, TEMPERATURE CONTROL, ADDITIONAL BLASTING, MECHANICAL SURFACE PREPARATION, ETC.) TO ENSURE STRONG ADHERENCE OF THE SURFACE COATING LAYER(S) TO ANY UNDERLYING AND OVERLYING LAYERS. IF THE SURFACE COATING IS APPLIED IN TWO OR MORE LAYERS, THE TIME BETWEEN APPLICATION OF THE VARIOUS LAYERS SHALL BE CONTROLLED.</p> <p>4. FOR ALL COATINGS, TROWEL MARKS AND OTHER SURFACE IRREGULARITIES SHALL BE REMOVED BY USING A SHORT NAP MOHAIR PAINT ROLLER DAMPENED WITH WATER AND SHAKEN OFF PRIOR TO USE.</p> <p>5. THE REQUIRED TOTAL CURED THICKNESS FOR THE SURFACE COATING LAYER FOR ALL COATING SYSTEMS SHALL BE 1/8-INCH.</p> <p>6. COMPOUND THAT HAS BEGUN TO SET SHALL NOT BE RECOVERED BY ADDING ADDITIONAL LIQUID. IT SHALL BE DISCARDED.</p> <p>7. DO NOT ALLOW FLOWING WATER, CHEMICALS OR OTHER LIQUIDS ON THE APPROVED, APPLIED COATING FOR A MINIMUM OF 4 HOURS AFTER INSTALLATION.</p> ADHESION/BOND TESTING: <p>1. ADHESION TESTING WILL BE PERFORMED AT TWO DIFFERENT STAGES OF THE WORK: 1) ADHESION OF THE UNDERLAYMENT LAYER TO THE UNDERLYING SUBSTRATE SHALL BE TESTED BEFORE THE SURFACE COATING LAYER(S) ARE APPLIED. 2) LATER, AFTER THE SURFACE COATING LAYER(S) HAVE BEEN APPLIED, THE ADHESION OF ALL APPLIED LAYERS IN THE COATING SYSTEM TO ONE ANOTHER AND TO THE UNDERLYING SUBSTRATE SHALL BE TESTED.</p> <p>2. THE COVER SHALL BE GIVEN ONE UNDERLAYMENT ADHESION TEST AND ONE FINISHED COATING SYSTEM ADHESION TEST.</p> <p>3. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF AN INDEPENDENT THIRD PARTY NACE CERTIFIED INSPECTOR TO TEST THE LAYERS FOR PROPER ADHESION TO THE UNDERLYING SUBSTRATE AND TO ONE ANOTHER, IN ACCORDANCE WITH ASTM STANDARD D-4541.</p> <p>4. THE CONTRACTOR SHALL SUPPLY THE EQUIPMENT AND MATERIALS TO PERFORM ADHESION TESTING.</p>	<p>5. THE CONTRACTOR SHALL TEST DOLLIES FOR ADHESION TO THE SURFACE BY PULLING ON IT BY HAND. IF IT FAILS, THE CONTRACTOR SHALL RE-ADHERE THE DOLLY, USING DIFFERENT GLEUE IF NECESSARY. THE CONTRACTOR SHALL THEN CORE DRILL THE STRUCTURE SURFACE AROUND THE PERIMETER OF THE DOLLY 1/8-INCH INTO THE UNDERLYING SUBSTRATE. THE DIAMETER OF THE DRILLED CIRCLE SHALL MATCH (1/8-INCH +/-) THE DIAMETER OF THE TEST DOLLY.</p> <p>6. EACH TEST LOCATION SHALL BE TESTED TO A MINIMUM PULLING STRESS OF 80 PSI. THE CONTRACTOR SHALL VERIFY THE STRESS EQUATION WITH THE TESTING EQUIPMENT MANUFACTURER.</p> <p>7. IF DELAMINATION OR ANY OTHER FAILURE OCCURS BETWEEN OR WITHIN ANY OF THE LAYERS (INCLUDING THE UNDERLAYMENT CONCRETE SUBSTRATE) PRIOR TO THE APPLICATION OF THE FULL, SUSTAINED TEST PULLING OF 80 PSI, THE TEST SHALL BE CLASSIFIED AS "NOT PASSED". TO AVOID DAMAGING THE TEST EQUIPMENT, DO NOT CONTINUE THE TEST BEYOND 160 PSI.</p> <p>8. THE INSPECTOR MAY REQUIRE ADDITIONAL TESTING AND/OR REMEDIAL ACTION. REMEDIAL ACTION MAY INCLUDE REMOVING THE ENTIRE COATING SYSTEM FROM THE ENTIRE SEWER STRUCTURE, RE-CLEANING OF THE STRUCTURE, RE-APPLICATION OF THE COATING SYSTEM TO ALL REQUIRED SURFACES, AND RE-TESTING.</p> <p>9. AFTER TESTING, THE CONTRACTOR SHALL MECHANICALLY GRIND DOWN THE TEST LOCATION TO THE UNDERLYING SUBSTRATE AND REAPPLY THE UNDERLAYMENT AND/OR COATING SYSTEM. THE CONTRACTOR SHALL NOT USE CHEMICALS TO DISSOLVE THE UNDERLAYMENT OR COATING SYSTEM.</p> SPARK TESTING: <p>1. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF AN INDEPENDENT THIRD PARTY NACE CERTIFIED INSPECTOR TO SPARK TEST THE COATED SURFACE IN ACCORDANCE WITH ASTM D-4787. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND MATERIALS NECESSARY TO PERFORM TESTING.</p> <p>2. TESTING SHALL BE WITH A MINIMUM TEST VOLTAGE OF 100 VOLTS PER MIL (WHERE 1 MIL=1/1000-INCH) OF FINISHED SURFACE COAT THICKNESS. FOR EXAMPLE, A MINIMUM OF 12,500 VOLTS SHALL BE USED FOR A SURFACE COAT THICKNESS OF 1/8-INCH (125 MILS).</p> <p>3. TO CHECK THE SPARK TESTING EQUIPMENT, THE INSPECTOR MAY REQUIRE THE CONTRACTOR TO DRILL A HOLE THROUGH THE COATING SYSTEM INTO THE UNDERLYING SUBSTRATE AND "FIND" THE HOLE.</p> <p>4. THE ENTIRE COATED SURFACE SHALL THEN BE SPARK TESTED. ANY IMPERFECTIONS FOUND SHALL BE GROUND AND REFILLED. USE OF A CHEMICAL SOLVENT SHALL NOT BE PERMITTED. REPAIRED AREAS SHALL BE RE-TESTED.</p> <p>5. THE CONTRACTOR SHALL PROVIDE CERTIFICATION FOR THE PROJECT STATING THAT THE COATING IS FREE OF HOLES OR OTHER IMPERFECTIONS.</p> CLEAN-UP: <p>1. ANY SPILLED OR OVERSPRAYED MATERIAL MUST BE CLEANED UP PRIOR TO CURING. AFTER CURING HAS OCCURRED, CLEAN UP MAY BE ACCOMPLISHED BY CHIPPING OR BLASTING.</p> MATERIALS: <p>1. MATERIALS SHALL BE DELIVERED TO THE SITE IN FACTORY SEALED AND LABELED CONTAINERS. DATE OF MANUFACTURE SHALL APPEAR ON EACH CONTAINER. MATERIALS SHALL BE HANDLED AND STORED ACCORDING TO THE STRICTEST REQUIREMENTS OF THE MANUFACTURER.</p> MILESTONES: <p>1. THE INSPECTOR SHALL INSPECT AND ACCEPT EACH STEP OF THE COATING WORK INCLUDING CLEANING AND SURFACE PREPARATION, ALL VOID-FILLING AND UNDERLAYMENT APPLICATION, ADHESION TESTING OF THE UNDERLAYMENT LAYER, SURFACE COATING INSTALLATION, ADHESION TESTING OF THE FINISHED COATING SYSTEM, SPARK TESTING, AND FINAL CLEAN UP.</p> WARRANTY: <p>1. THE CONTRACTOR SHALL PROVIDE A WRITTEN (BUT NOT BONDED) WARRANTY TO COVER WORKMANSHIP AND MATERIALS FOR THE LIFT STATION REHABILITATION FOR A PERIOD OF NOT LESS THAN FIVE (5) YEARS FROM THE DATE OF FINAL ACCEPTANCE OF THE PROJECT.</p>	<p>PROJECT NO. 1204009-033</p> <p>PROJECT NAME: CAPITAL IMPROVEMENT PROJECT</p> <p>SHEET NUMBER: EN</p> <p>PROJECT NUMBER: SW1391</p> <p>DATE: 06/06/2020</p> <p>TIME: 9:45 AM</p> <p>PRINTED BY: Pauline Ekueki</p> <p>SCALE: AS SHOWN</p> <p>DESIGNED BY: PE</p> <p>CHECKED BY: KRT</p> <p>DATE: 06/06/2020</p> <p>TIME: 9:45 AM</p> <p>PROJECT LOCATION: RILEY LIFT STATION</p> <p>PROJECT NUMBER: SW1391</p> <p>DATE: 06/06/2020</p> <p>TIME: 9:45 AM</p> <p>PRINTED BY: Pauline Ekueki</p> <p>SCALE: AS SHOWN</p> <p>DESIGNED BY: PE</p> <p>CHECKED BY: KRT</p> <p>DATE: 06/06/2020</p> <p>TIME: 9:45 AM</p> <p>PROJECT LOCATION: RILEY LIFT STATION</p> <p>PROJECT NUMBER: SW1391</p> <p>DATE: 06/06/2020</p> <p>TIME: 9:45 AM</p> <p>PRINTED BY: Pauline Ekueki</p> <p>SCALE: AS 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<p>DATE: 06/0</p>



EXISTING & DEMOLITION PLAN
 SCALE: 1" = 10'

SHEET GENERAL NOTES

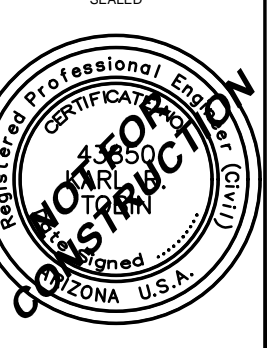
- EXISTING LIFT STATION, SHALL REMAIN OPERATIONAL UNTIL THE NEW LIFT STATION HAS BEEN TIED INTO EXISTING DISCHARGE MANHOLE AND OPERATED USING IMPORTED WATER OR DIVERTED WASTEWATER TO THE CITY'S SATISFACTION.
- CITY TO REMOVE EXISTING LIFT STATION AFTER OPERATION OF NEW LIFT STATION IS APPROVED BY CITY. CONTRACTOR TO COORDINATE WITH CITY ON CONTRACTOR'S START UP AND CITY'S DEMOLITION OF THE EXISTING LIFT STATION.

DESIGNED BY	PE
CHECKED BY	KRT
CONTRACT NO.	WDR
DATE	
SCALE	AS SHOWN

GHD Inc.
 4747 North 23rd Street, Suite 200
 Phoenix, Arizona 85016 USA
 T: 602.216.7200 F: 602.216.7201 W: www.ghd.com

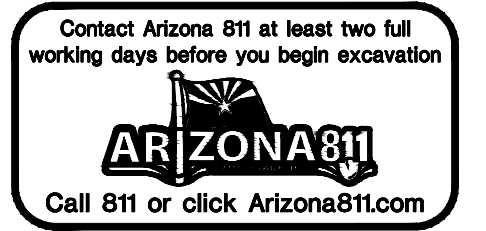
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 SHEET NAME: EXISTING & DEMOLITION PLAN
 PROJECT NUMBER: SW1391
 SHEET NUMBER: EN

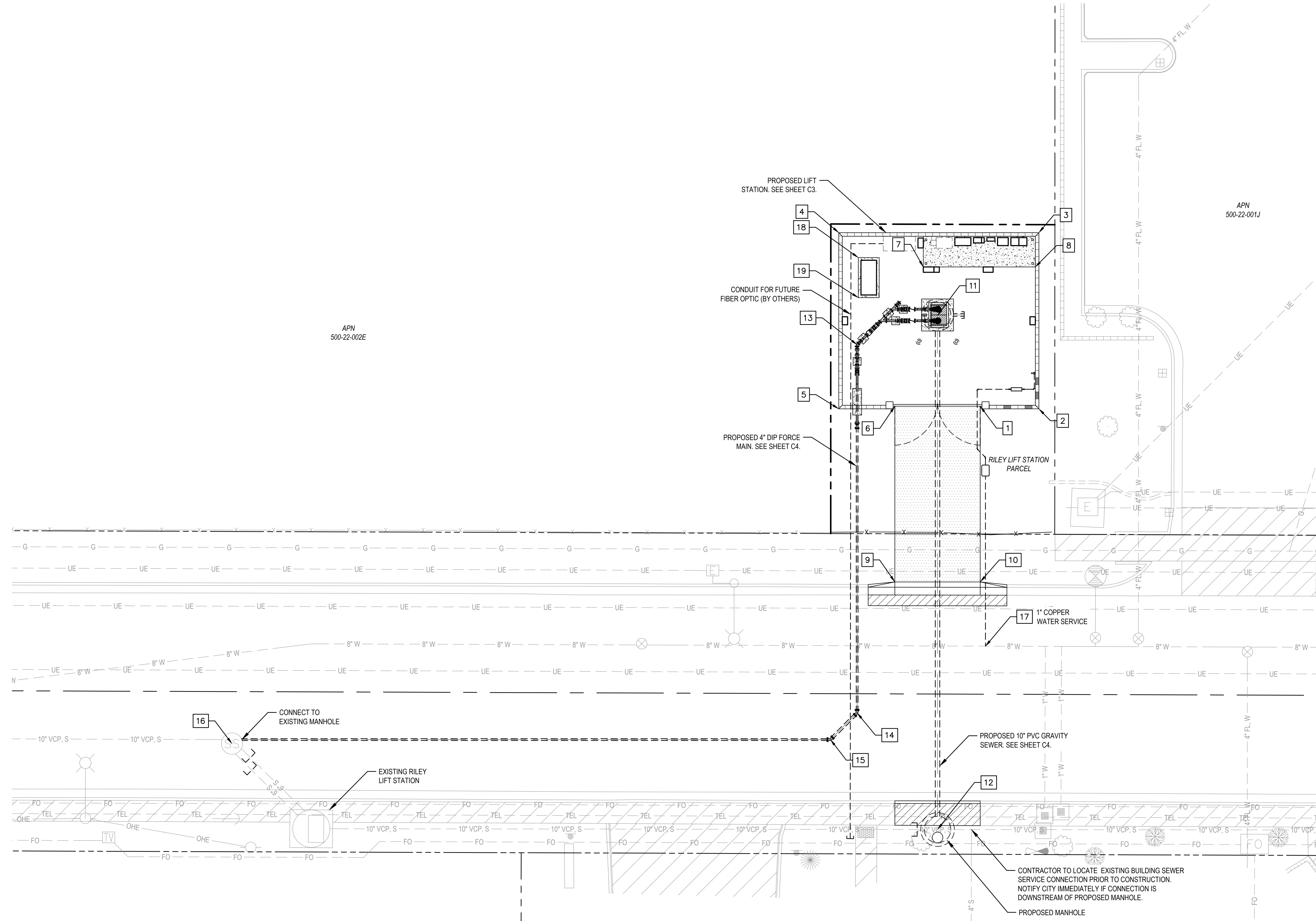
PROJECT NAME: CAPITAL IMPROVEMENT PROJECT
 SHEET NAME: EXISTING & DEMOLITION PLAN
 PROJECT NUMBER: SW1391
 SHEET NUMBER: EN



ORIGINAL PLAN DATE	JUNE 2020
LATEST REVISION DATE	
SHEET NUMBER	4 OF 20
SHEET	C1
PROJECT NUMBER	SW1391

90% SUBMITTAL FOR AGENCY REVIEW AND BIDDING PURPOSES ONLY





COORDINATE TABLE			
POINT	NORTHING	EASTING	DESCRIPTION
1	887558.63	570924.58	DRIVEWAY
2	887558.13	570935.58	WALL CORNER
3	887591.13	570935.58	WALL CORNER
4	887591.13	570898.07	WALL CORNER
5	887558.13	570898.07	WALL CORNER
6	887558.63	570908.58	DRIVEWAY
7	887584.71	570913.91	ELECTRICAL PAD
8	887584.71	570934.91	ELECTRICAL PAD
9	887525.71	570908.58	DRIVEWAY
10	887525.70	570924.58	DRIVEWAY
11	887575.63	570916.58	WET WELL
12	887479.32	570916.58	MANHOLE
13	887570.15	570901.51	4" 90° BEND
14	887501.16	570901.51	4" 45° BEND
15	887496.16	570896.51	4" 45° BEND
16	887495.39	570784.32	EX. MANHOLE
17	887513.67	570925.57	1" WATER SERVICE
18	887586.46	570901.73	GENERATOR PAD
19	887578.96	570901.73	GENERATOR PAD

APN
500-21-013A

APN
500-21-014G

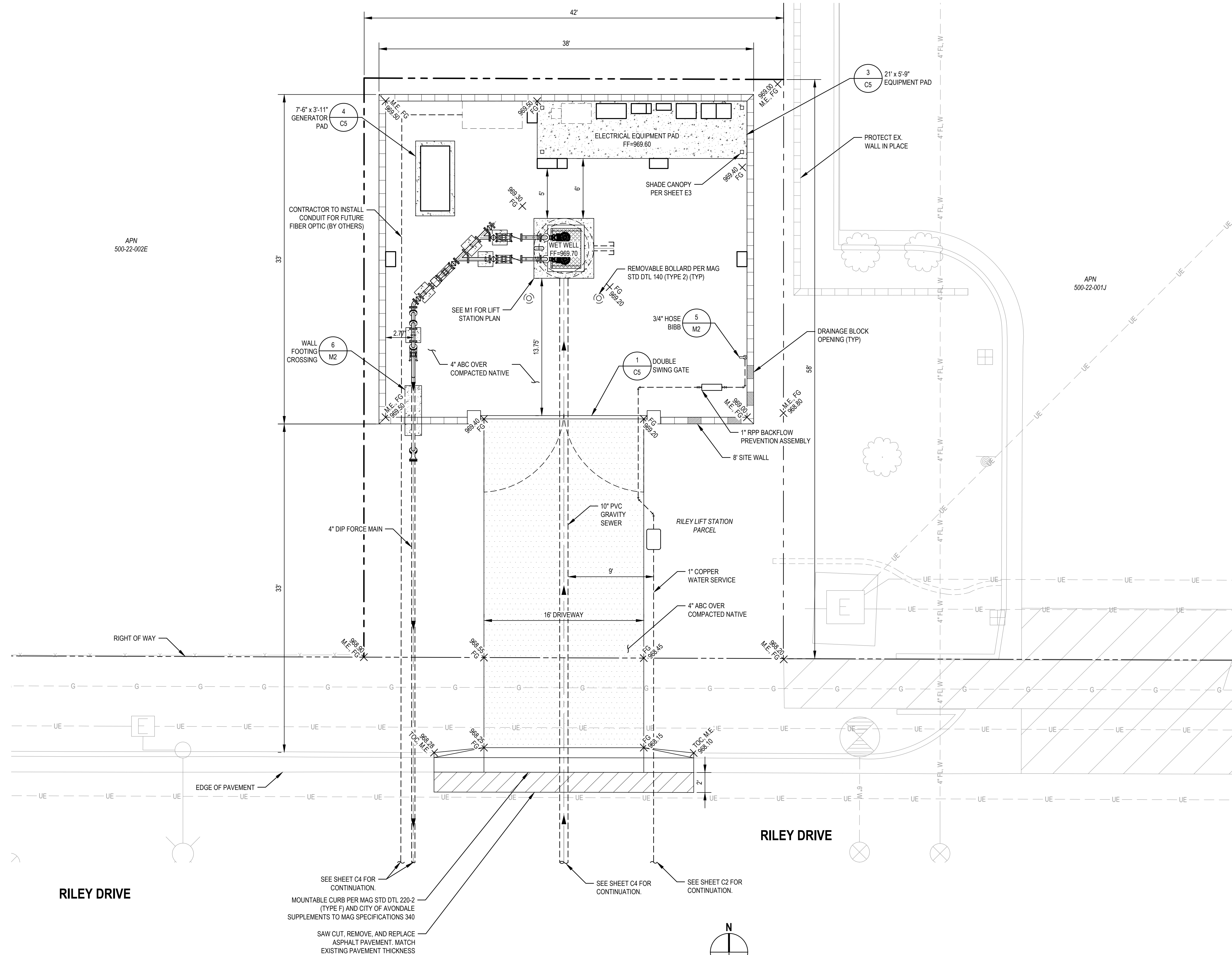
**90% SUBMITTAL FOR
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PROJECT TITLE CAPITAL IMPROVEMENT PROJECT	SHEET NAME RILEY LIFT STATION	SHEET NUMBER SW1391	PROJECT NUMBER EN
PROJECT LOCATION RILEY LIFT STATION			
PROJECT NUMBER SW1391			
PROJECT TITLE CAPITAL IMPROVEMENT PROJECT			
SHEET NAME RILEY LIFT STATION			
SHEET NUMBER SW1391			
PROJECT NUMBER EN			

ORIGINAL PLAN DATE	JUNE 2020
LATEST REVISION DATE	
SHEET NUMBER	5 OF 20
SHEET:	C2
PROJECT NUMBER	SW1391

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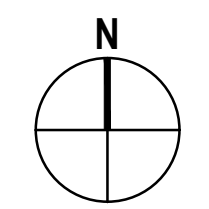
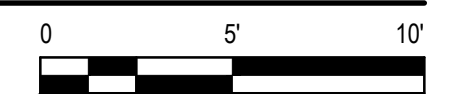


RILEY DRIVE

RILEY DRIVE

ENLARGED SITE & GRADING PLAN

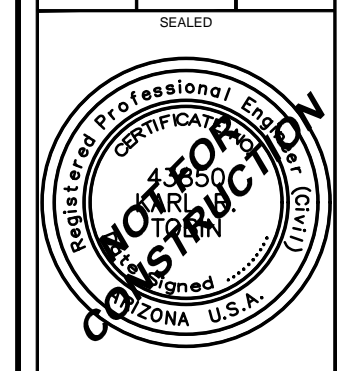
SCALE: 1" = 5'



DESIGNED BY	PE	REVIEWED	DATE
PROJECT NO.	KRT		
CONTRACT NO.	WDR		
DATE			
SCALE			AS SHOWN

GHD Inc.
 4747 North 23rd Street, Suite 200
 Phoenix, Arizona 85016 USA
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PROJECT TYPE	CAPITAL IMPROVEMENT PROJECT
PROJECT NAME	RILEY LIFT STATION
SHEET NUMBER	EN
PROJECT NUMBER	SW1391

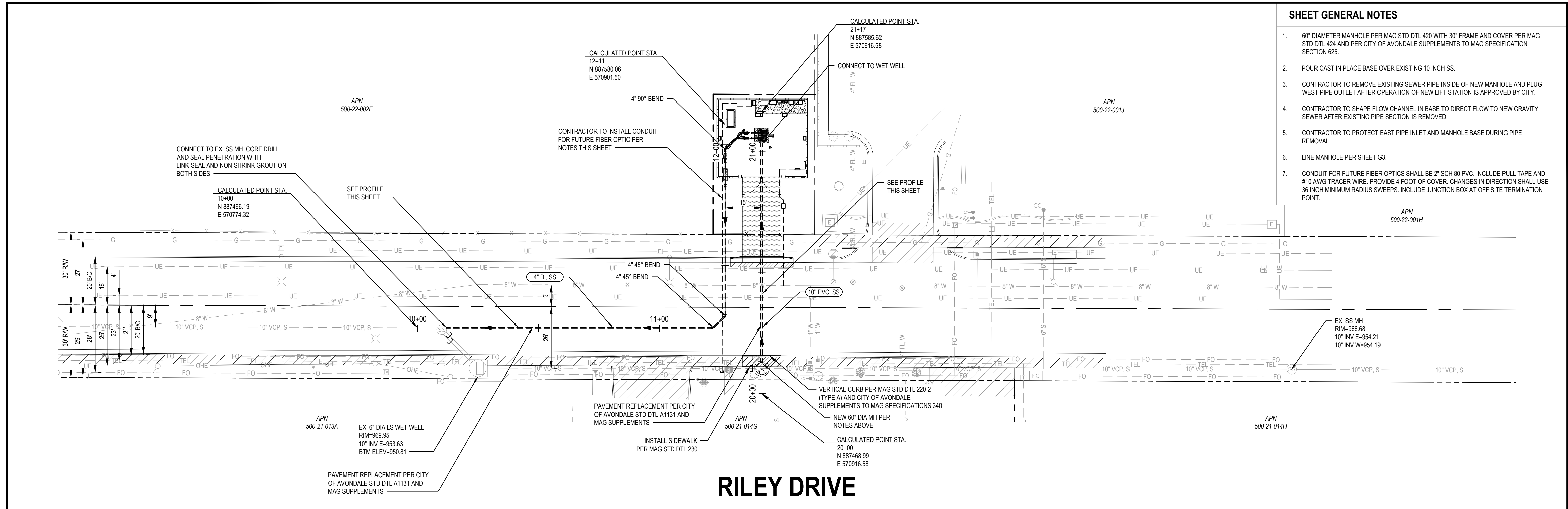


ORIGINAL PLAN DATE	JUNE 2020
LATEST REVISION DATE	
SHEET NUMBER	6 OF 20
SHEET	C3
PROJECT NUMBER	SW1391

90% SUBMITTAL FOR AGENCY REVIEW AND BIDDING PURPOSES ONLY

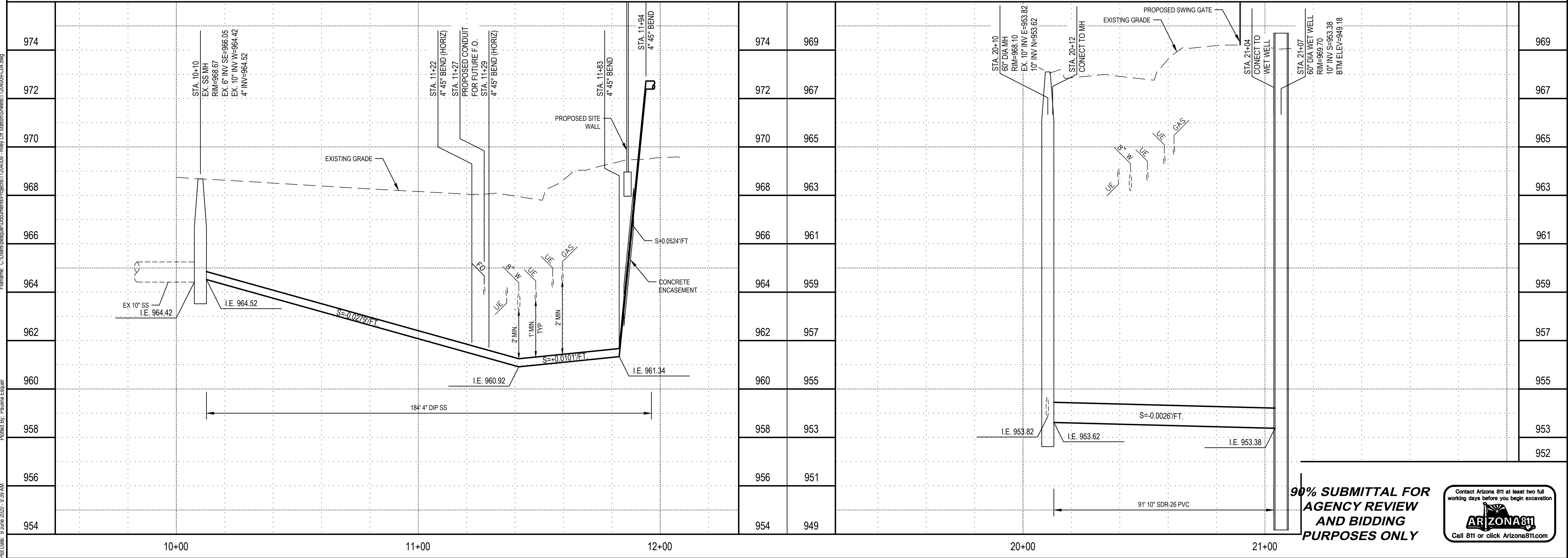
Contact Arizona 811 at least two full working days before you begin excavation

Call 811 or click Arizona811.com



RILEY DRIVE

- ### SHEET GENERAL NOTES
- 60" DIAMETER MANHOLE PER MAG STD DTL 420 WITH 30" FRAME AND COVER PER MAG STD DTL 424 AND PER CITY OF AVONDALE SUPPLEMENTS TO MAG SPECIFICATION SECTION 625.
 - POUR CAST IN PLACE BASE OVER EXISTING 10 INCH SS.
 - CONTRACTOR TO REMOVE EXISTING SEWER PIPE INSIDE OF NEW MANHOLE AND PLUG WEST PIPE OUTLET AFTER OPERATION OF NEW LIFT STATION IS APPROVED BY CITY.
 - CONTRACTOR TO SHAPE FLOW CHANNEL IN BASE TO DIRECT FLOW TO NEW GRAVITY SEWER AFTER EXISTING PIPE SECTION IS REMOVED.
 - CONTRACTOR TO PROTECT EAST PIPE INLET AND MANHOLE BASE DURING PIPE REMOVAL.
 - LINE MANHOLE PER SHEET G3.
 - CONDUIT FOR FUTURE FIBER OPTICS SHALL BE 2" SCH 80 PVC. INCLUDE PULL TAPE AND #10 AWG TRACER WIRE. PROVIDE 4 FOOT OF COVER. CHANGES IN DIRECTION SHALL USE 36 INCH MINIMUM RADIUS SWEEPS. INCLUDE JUNCTION BOX AT OFF SITE TERMINATION POINT.



PROJECT TITLE: CAPITAL IMPROVEMENT PROJECT
 SHEET NAME: RILEY LIFT STATION
 PROJECT NUMBER: SW1391

PLAN AND PROFILES

EN

PROJECT NUMBER: SW1391
 SHEET NUMBER: 7 OF 20
 SHEET: C4
 PROJECT NUMBER: SW1391

90% SUBMITTAL FOR AGENCY REVIEW AND BIDDING PURPOSES ONLY

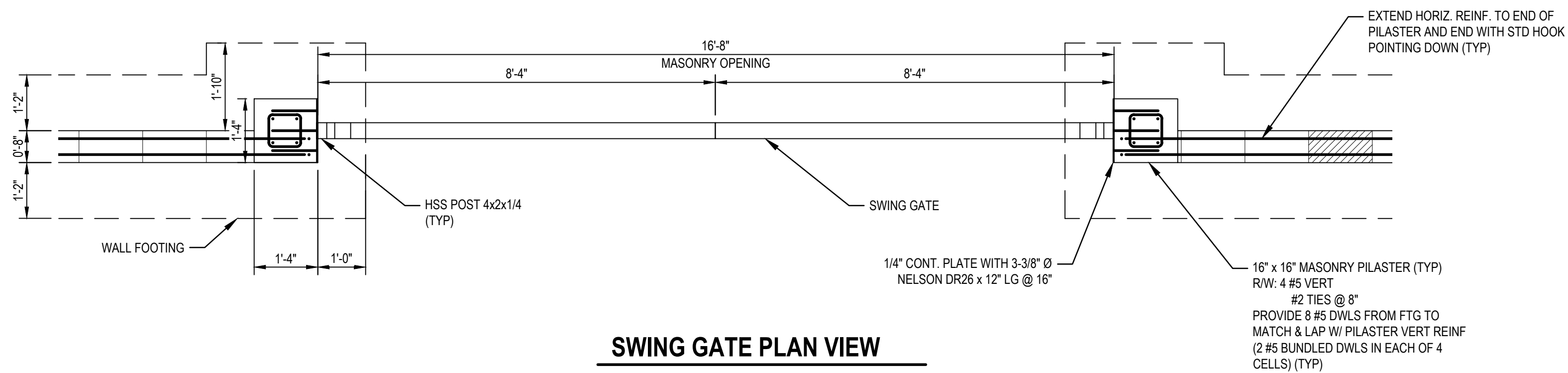
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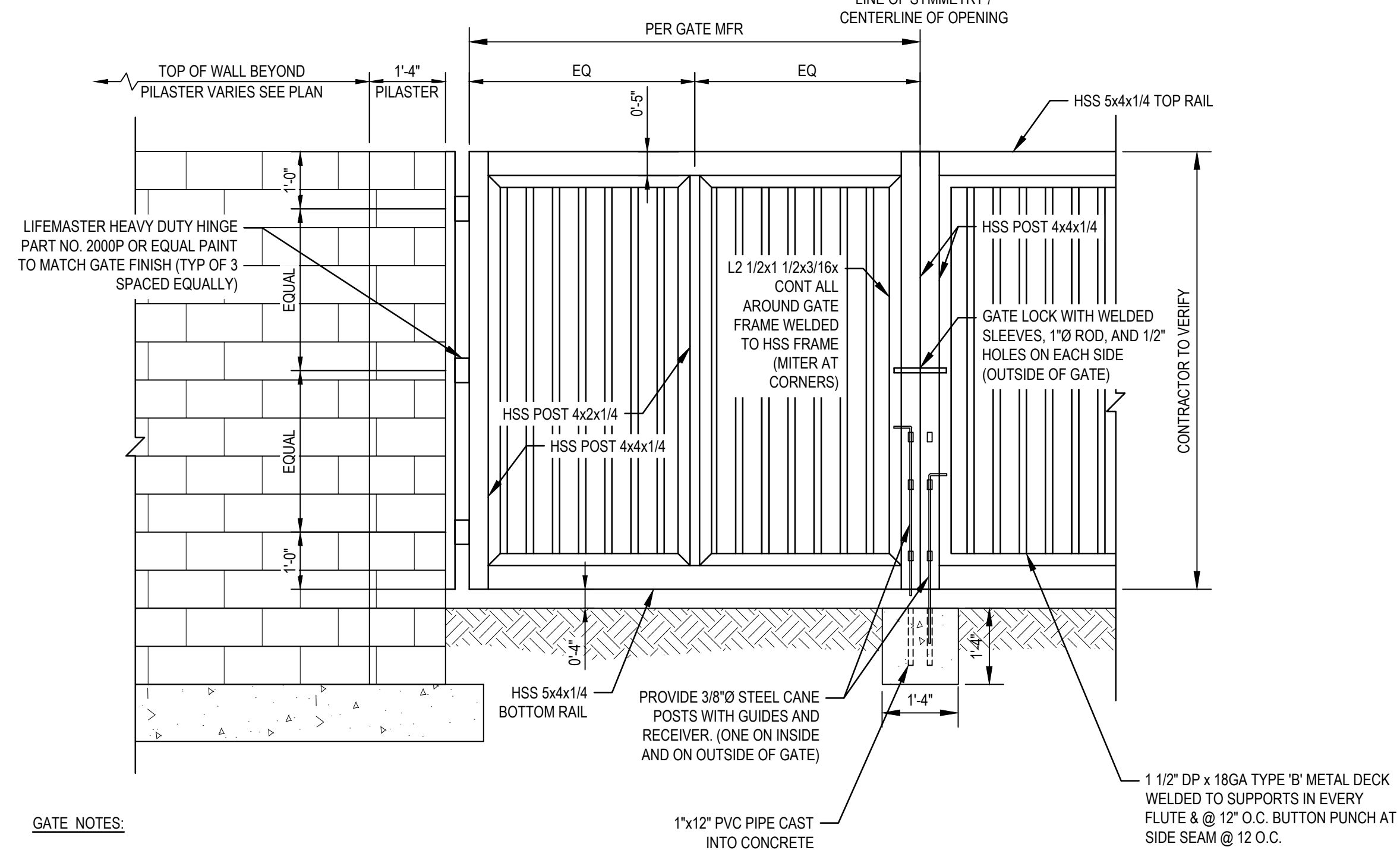
SEAL

ORIGINAL PLAN DATE: JUNE 2020
LATEST REVISION DATE:

FILENAME: C:\Users\pauline\Documents\Projects\1250309 - Riley Lift Station\Sheets\1250309_C04.dwg
 PLOT DATE: 9 June 2020 - 9:39 AM
 PLOTTED BY: Pauline Esquivel



SWING GATE PLAN VIEW

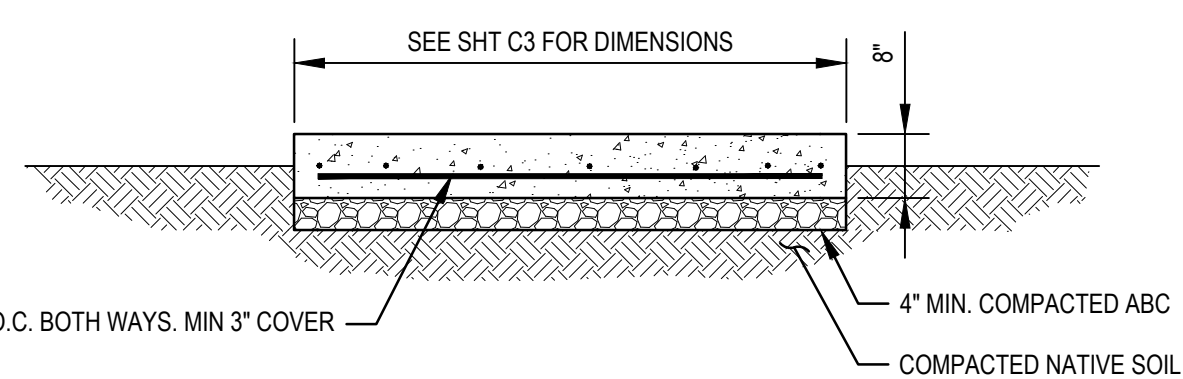


SWING GATE ELEVATION

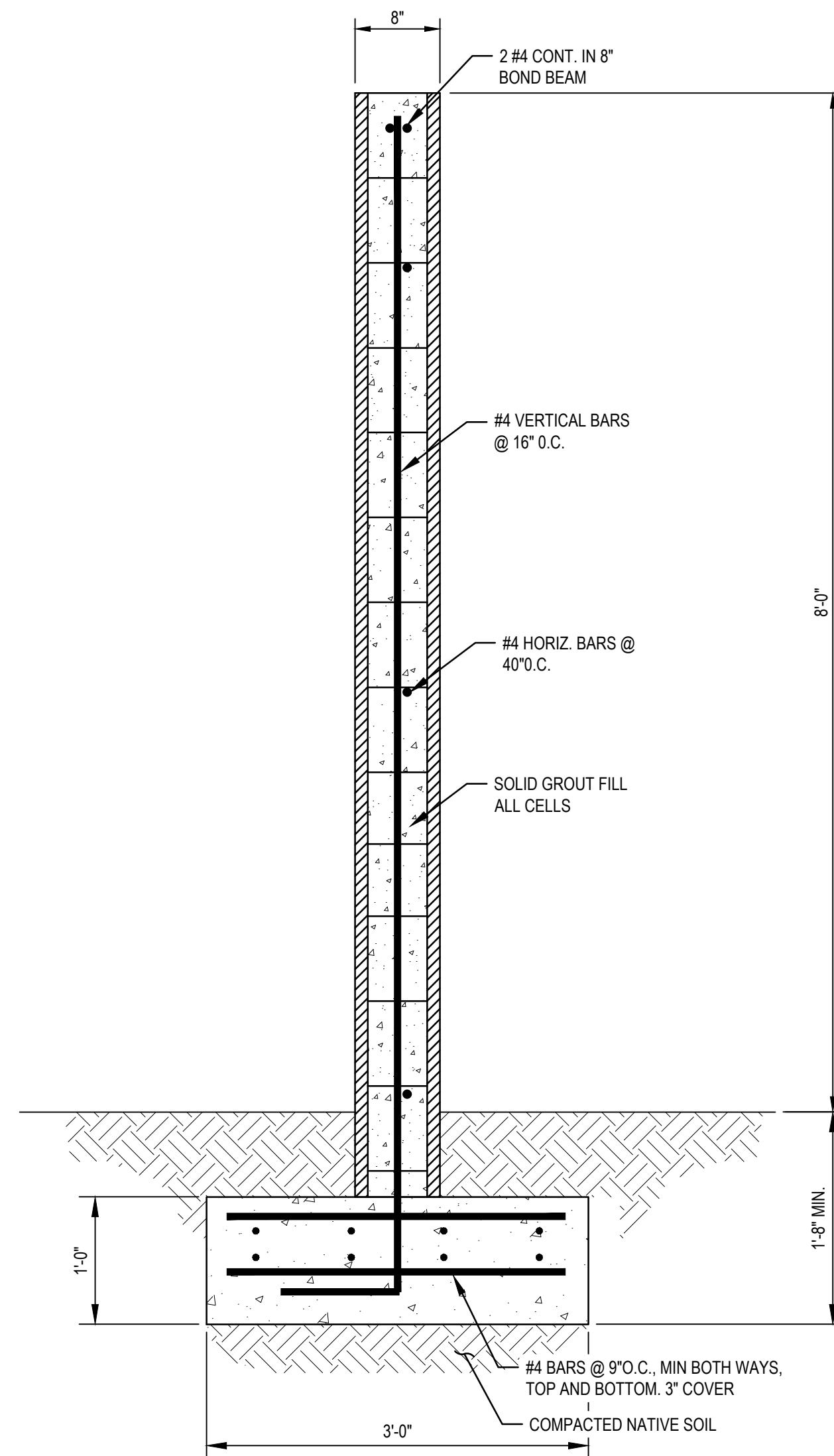
GATE NOTES:

1. SIZE, NUMBER AND SPACING OF POSTS TO BE VERIFIED BY GATE MANUFACTURER.
2. GATE FINISH COLOR SHALL BE APPROVED BY OWNER PRIOR TO ORDERING.
3. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR GATE FOR REVIEW AND APPROVAL PRIOR TO ORDERING.

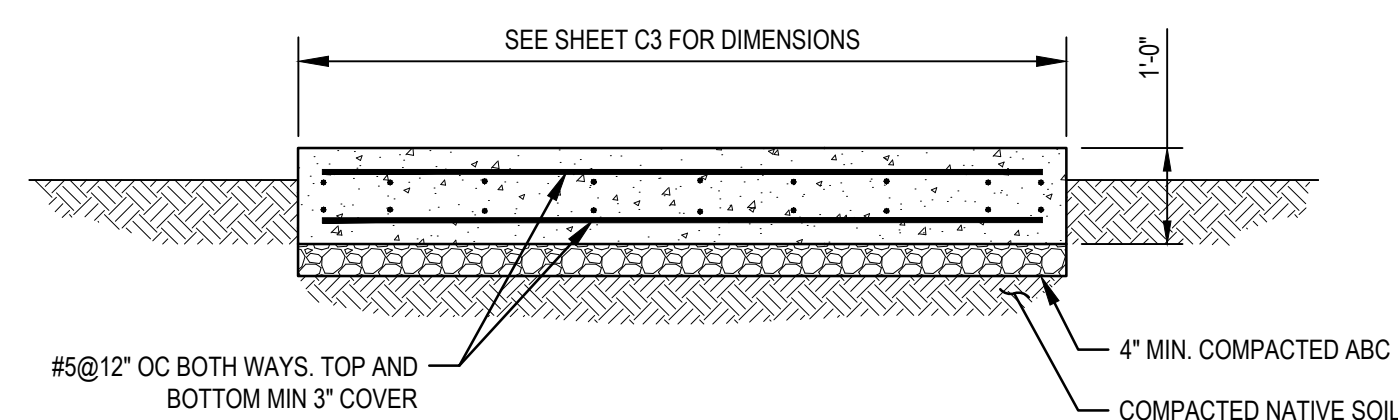
1 SWING GATE DETAIL
SCALE: NTS



3 EQUIPMENT PAD SECTION
SCALE: 1/2" = 1'-0"



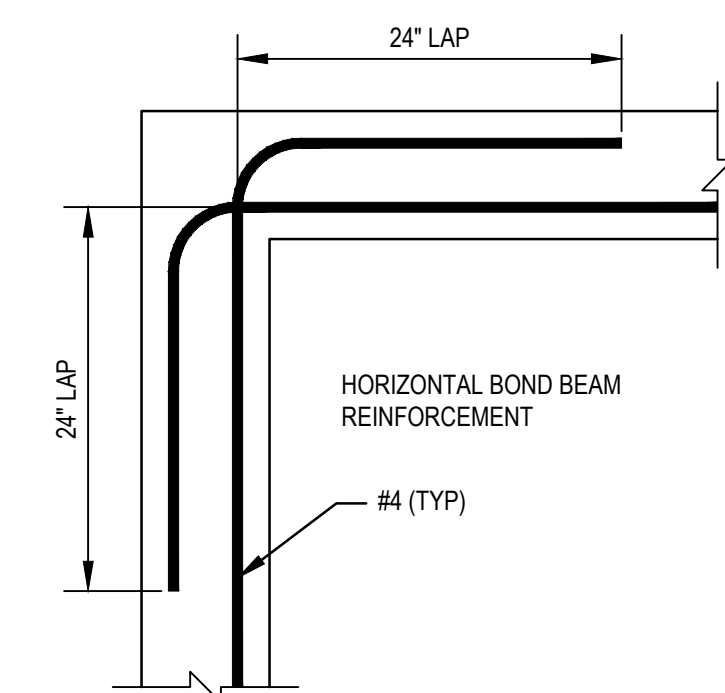
2 PERIMETER WALL SECTION
SCALE: 1" = 1'-0"



4 GENERATOR PAD SECTION
SCALE: 1/2" = 1'-0"

WALL AND PAD NOTES:

1. GRADE 60 REBAR
2. TYPE "N" CMU, Fm = 1500 PSI
3. TYPE "S" MORTAR, Fc = 1800 PSI
4. GROUT Fc = 2000 PSI
5. SOLID GROUT ENTIRE PERIMETER WALL
6. CONCRETE Fc = 4000 PSI
7. REINFORCEMENT INSPECTION REQUIRED
8. WALL SECTIONS SHALL INCLUDE CONTROL JOINTS 24'-0" O.C. AND NO MORE THAN 12'-0" FROM CORNERS.
9. CONCRETE PADS SHALL INCLUDE CONTROL JOINTS 16'-0" O.C.
10. CONTRACTOR TO PROVIDE CONTROL JOINT LAYOUT SUBMITTALS PRIOR TO CONSTRUCTION.



WALL CORNER DETAIL

File Name: C:\Users\pauline\Documents\Projects\1204009 - Riley Lift Station\Sheets\1204009-005.dwg
 Plotted By: Pauline Esquivel
 Plot Date: 9 June 2020 - 9:39 AM

DESIGNED BY	PE	REVIEWED	DATE
CHECKED BY	KRT		
CONTRACT NO.	WDR		
DATE			
SCALE			AS SHOWN

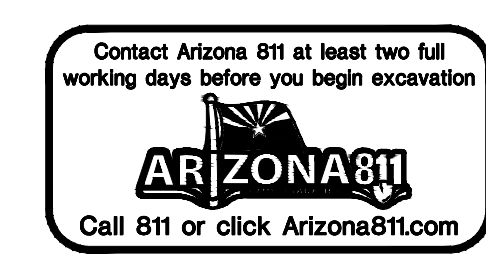
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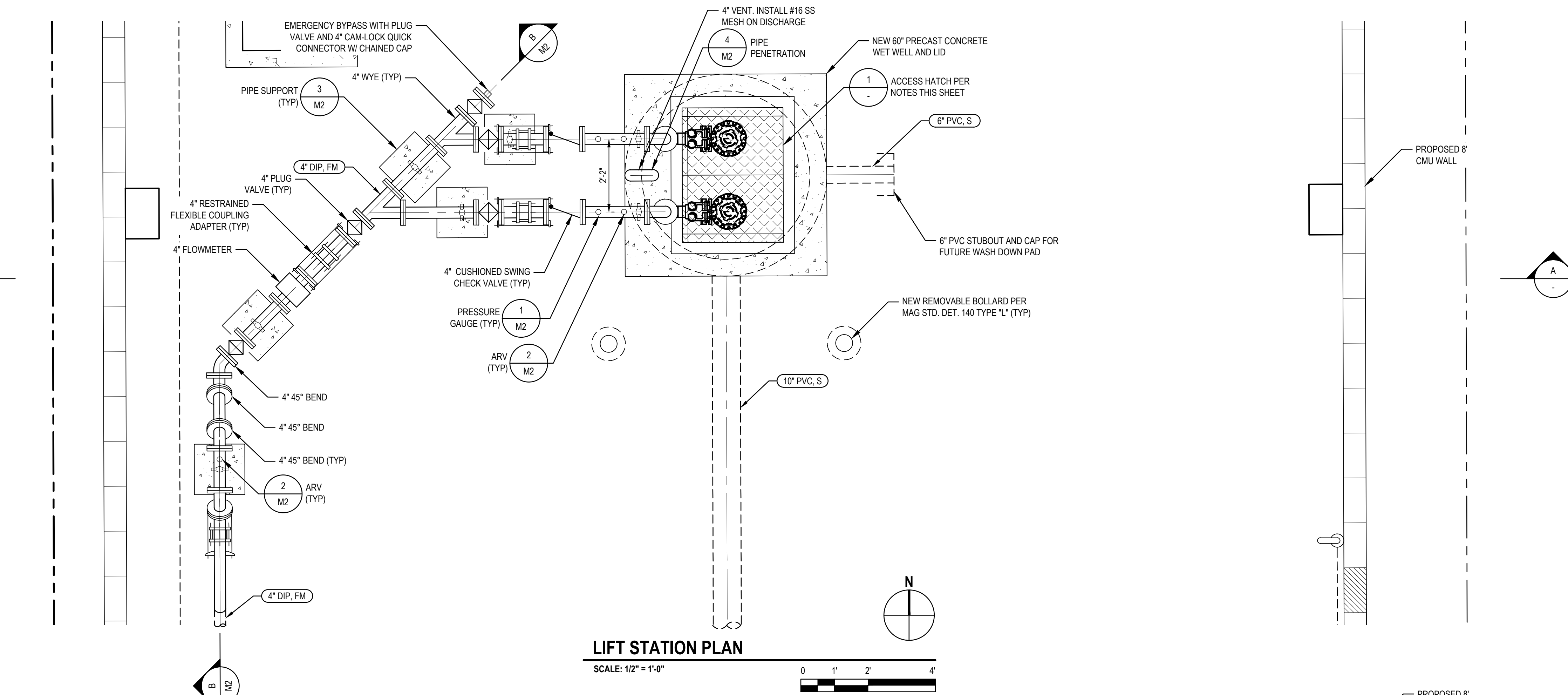
PROJECT TITLE: CAPITAL IMPROVEMENT PROJECT
 PROJECT NAME: RILEY LIFT STATION
 SHEET NUMBER: SW1391
 CIVIL DETAILS
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ORIGINAL PLAN DATE: JUNE 2020
 LATEST REVISION DATE:
 SHEET NUMBER: 8 OF 20
 SHEET: C5
 PROJECT NUMBER: SW1391

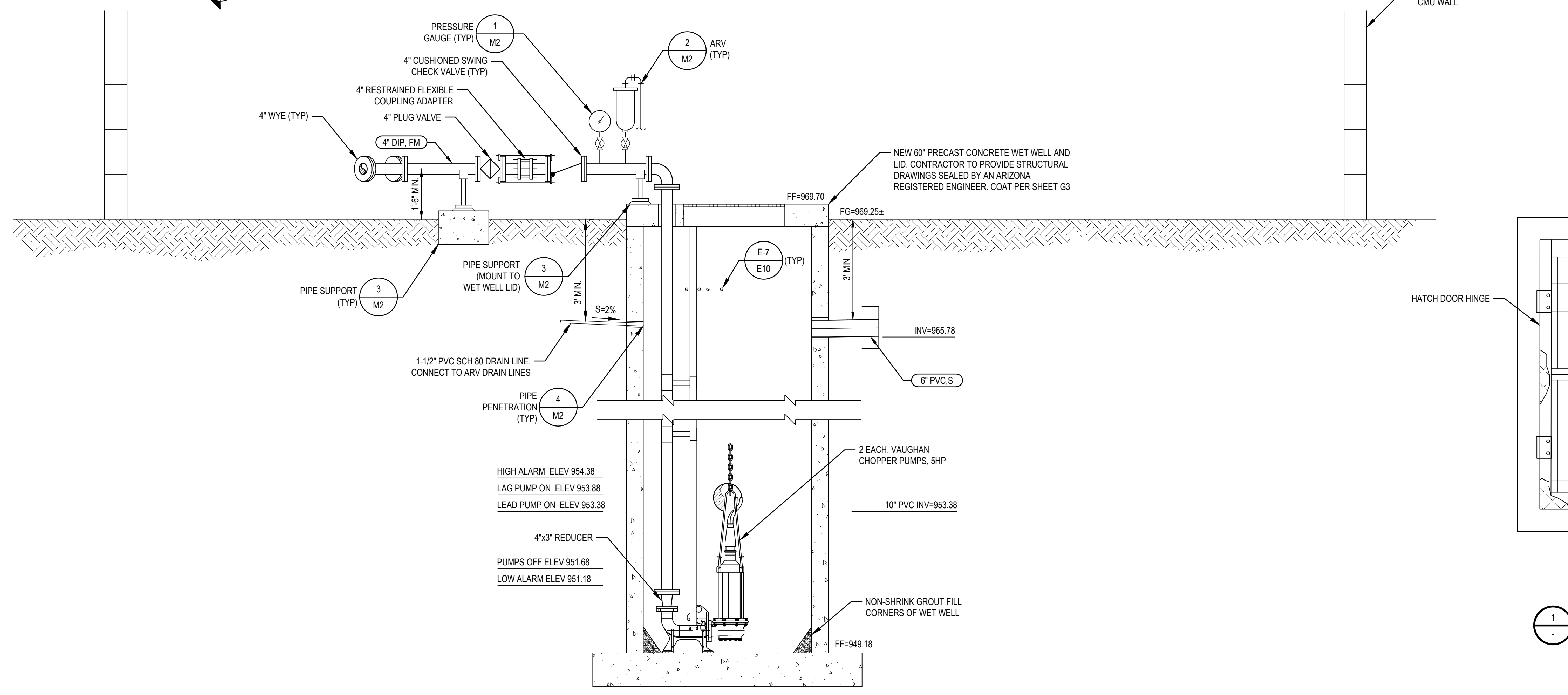


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LIFT STATION PLAN
SCALE: 1/2" = 1'-0"



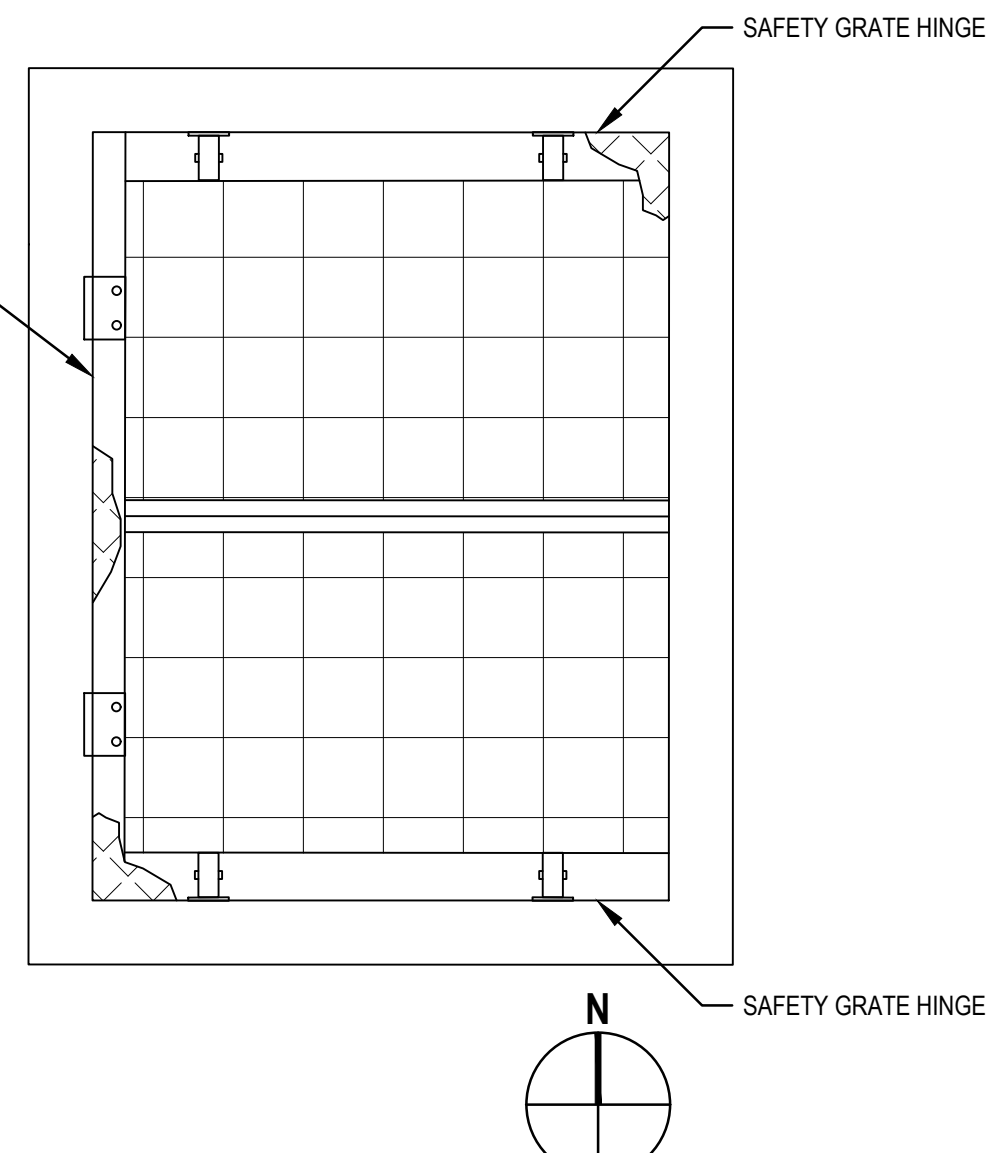
SECTION
SCALE: 1/2" = 1'-0"

SHEET GENERAL NOTES

- USE ALL 316 SS HARDWARE. CONTRACTOR MAY SUBMIT TO THE OWNER / ENGINEER FOR APPROVAL AND ALTERNATIVE MATERIAL FOR ALL HARDWARE ABOVE GROUND.
- ANY CONNECTIONS BETWEEN DISSIMILAR METALS REQUIRE A DIELECTRIC GASKET OR TAPE.
- PLUG VALVES SHALL BE VAL-MATIC. VALVE INTERIOR SHALL BE COATED WITH 8 MILS OF TNE MEC 141 EPOXY. INSTALL VALVE HORIZONTALLY SO THE PLUG ROTATES UP 90° TO OPEN AND THE PLUG SEAT IS FACING DOWNSTREAM WHEN CLOSED.
- CUSHIONED SWING CHECK VALVES SHALL BE VAL-MATIC. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- ACCESS HATCH SHALL BE 48"x36" ALUMINUM DIAMOND PLATE WITH 316 SS HARDWARE BY U.S.F. FABRICATION, WITH A MINIMUM CLEAR OPENING OF 42"x34". HATCH SHALL INCLUDE:
 - WATERTIGHT, NON SLAMMING COVER
 - RECESSED DROP HANDLE
 - 90° LOCK OPEN
 - HINGED ALUMINUM FALL THROUGH SAFETY GRATE
 - 3 WAY BARRIER PROTECTION IN OPEN POSITION. CLEAR OPENING ON EAST FACE
 - RECESSED HEX BOLT OR RECESSED PAD LOCK
- POSITION PUMPS AND HATCH TO ALLOW REMOVAL OF PUMPS.
- CONTRACTOR TO PROVIDE WET WELL LID, HATCH, PUMP AND PIPE FIT LAYOUT DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

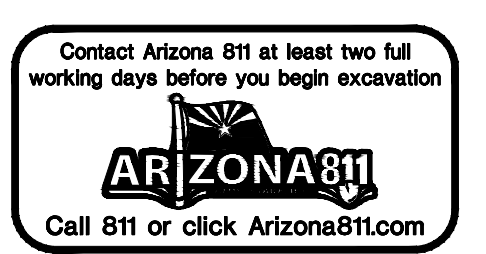
CHOPPER PUMP NOTES:

- PROVIDE TWO (2) VAUGHAN MODEL SE3F-060 SUBMERSIBLE CHOPPER PUMPS RATED FOR 200 GPM AT 28' TDH.
- CAST DUCTILE IRON CASING AND BACK PULL-OUT PLATE WITH 3" CLASS 125 ANSI RATED DISCHARGE FLANGE.
- CAST STEEL IMPELLER, CUTTER NUT, CUTTER BAR, AND UPPER CUTTER HEAT TREATED TO MINIMUM 60 ROCKWELL C HARDNESS.
- BUNA N ELASTOMERS.
- DRIVE: 5 HP, 17525 RPM, 208 VOLT, 3 PHASE, 60 HZ, 1.15 SF, EXPLOSION PROOF (CLASS 1, GROUP C & D) SUBMERSIBLE MOTOR WITH TANDEM MECHANICAL SEALS, MOISTURE SENSORS, INTERNAL THERMOSTATS, 15 MINUTE IN AIR DUTY, MANUFACTURED BY RELIANCE. CONTRACTOR TO DETERMINE LENGTH OF POWER CORD PRIOR TO ORDERING.
- FINISH: SSSPC-SP6 COMMERCIAL SANDBLAST (EXCEPT MOTOR) AND A TWO COATS OF TNE MEC PERMA-SHIELD PL SERIES 431 EPOXY (MINIMUM 40 MDFT), (EXCEPT MOTOR)
- INCLUDE GUIDE RAIL SYSTEM CONSISTING OF:
 - 3' BASE ELBOW WITH MOUNTING FEET, CAST DUCTILE IRON (MOUNT TO WET WELL BASE)
 - 3' GUILD BRACKET, CAST DUCTILE IRON
 - TOP MOUNTING AND CHAIN HOLDER BRACKET, 316 STAINLESS STEEL
 - TWO (2) INTERMEDIATE STIFFENER BRACKETS, EQUALLY SPACED, 316 STAINLESS STEEL
 - TWO (2) 316 STAINLESS STEEL GUIDE RAILS.
 - 316 STAINLESS STEEL LIFTING CHAIN



HATCH DETAIL
SCALE: 1" = 1'-0"

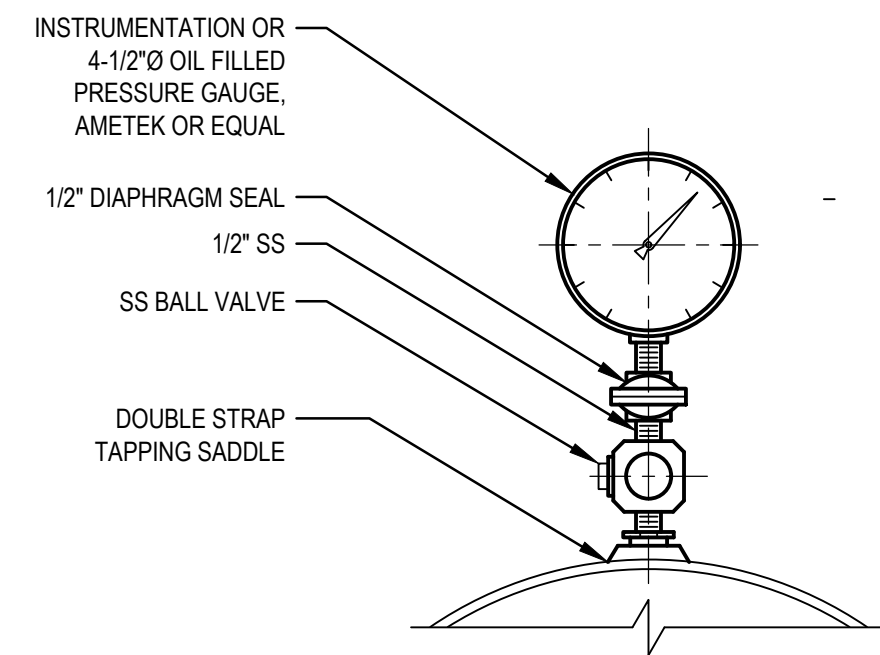
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PROJECT NO. CAPITAL IMPROVEMENT PROJECT	SHEET NAME RILEY LIFT STATION	PROJECT NUMBER SW1391	SHEET NUMBER 9 OF 20	SHEET M1	PROJECT NUMBER SW1391
ORIGINAL PLAN DATE: JUNE 2020 LATEST REVISION DATE:					

DESIGNED BY KRT	CHECKED BY PE	DATE PE	DATE KRT	DATE PE	DATE KRT
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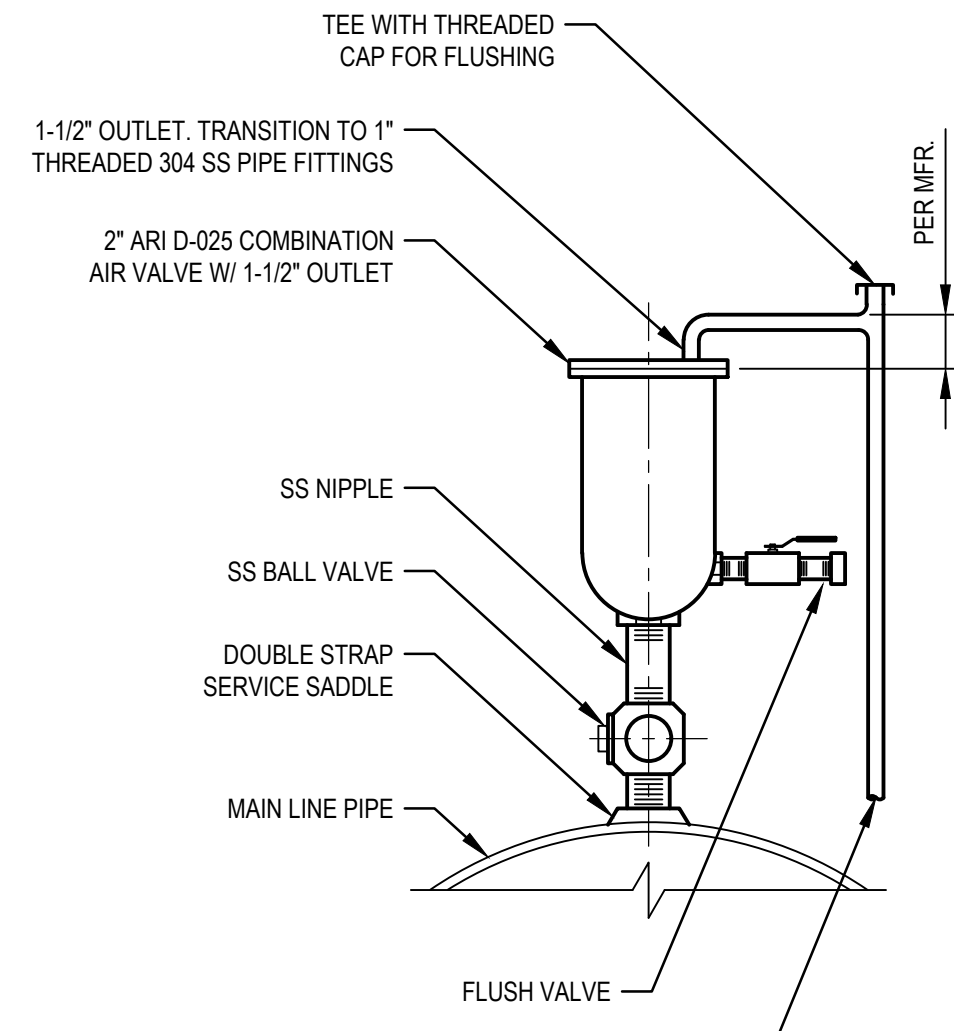
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- NOTES:
- FOR S.S., GALV., AND PVC 2 1/2" AND SMALLER, USE A BUSHING IN A TEE.
 - MAX INDICATING RANGE ON SCALE SHALL NOT EXCEED 2x OF NORMAL MAX OPERATION PRESSURE.
 - GAUGE SHALL INCLUDE SILICONE OIL, STAINLESS STEEL WETTED COMPONENTS AND MICRO-ADJUSTMENT SCREWS.
 - PROVIDE SNUBBER IF REQ. TO STABILIZE READINGS.

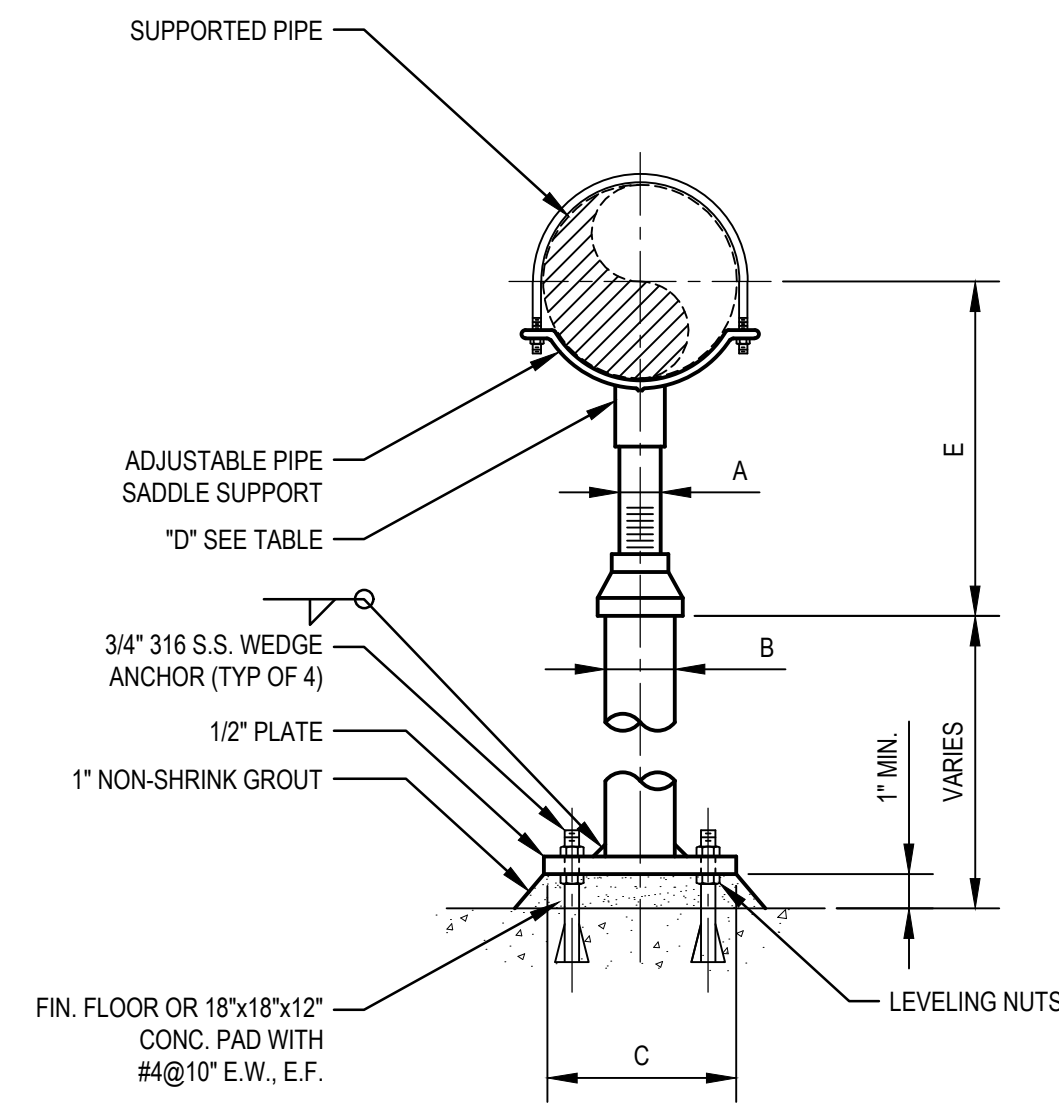
1 PRESSURE GAUGE OR INSTRUMENTATION DETAIL

SCALE: NTS



2 SEWER COMBINATION AIR VALVE

SCALE: NTS



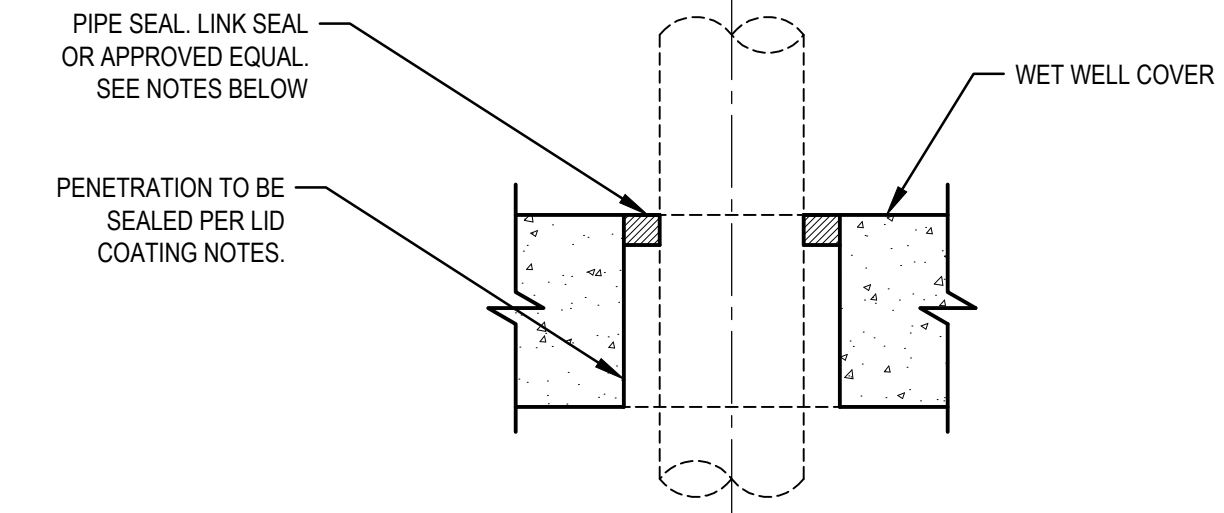
3 PIPE SUPPORT DETAIL

SCALE: NTS

DIMENSION TABLE (INCHES)

PIPE SIZE	A	B	C	D	E	
					MIN	MAX
2 1/2	1 1/2	2 1/2	9	3 1/2	8	13
3	1 1/2	2 1/2	9	3 3/4	8 1/4	13 1/4
3 1/2	1 1/2	2 1/2	9	4	8 1/2	13 1/2
4	2 1/2	3	9	4 1/4	9 1/4	14
5	2 1/2	3	9	4 7/8	10	14 3/4
6	2 1/2	3	9	5 1/2	10 1/2	15 1/4
8	2 1/2	3	9	6 7/8	11 3/4	16 1/2
10	2 1/2	3	9	8 1/2	13 1/2	18 1/4
12	2 1/2	3	9	9 15/16	15	19 3/4
14	3	4	11	10 15/16	16 1/4	20 3/4
16	3	4	11	12 3/8	17 3/4	22 1/4
18	3 1/2	6	13 1/2	13 7/8	19 1/2	24
20	3 1/2	6	13 1/2	15 3/8	21	25 1/2
24	4	6	13 1/2	17 15/16	21 1/4	28 1/4
30	4	6	15	21 5/16	27	31 1/2
32	4	6	18	22 1/2	28 1/4	32 3/4
36	4	6	18	24 1/2	30 1/4	34 3/4

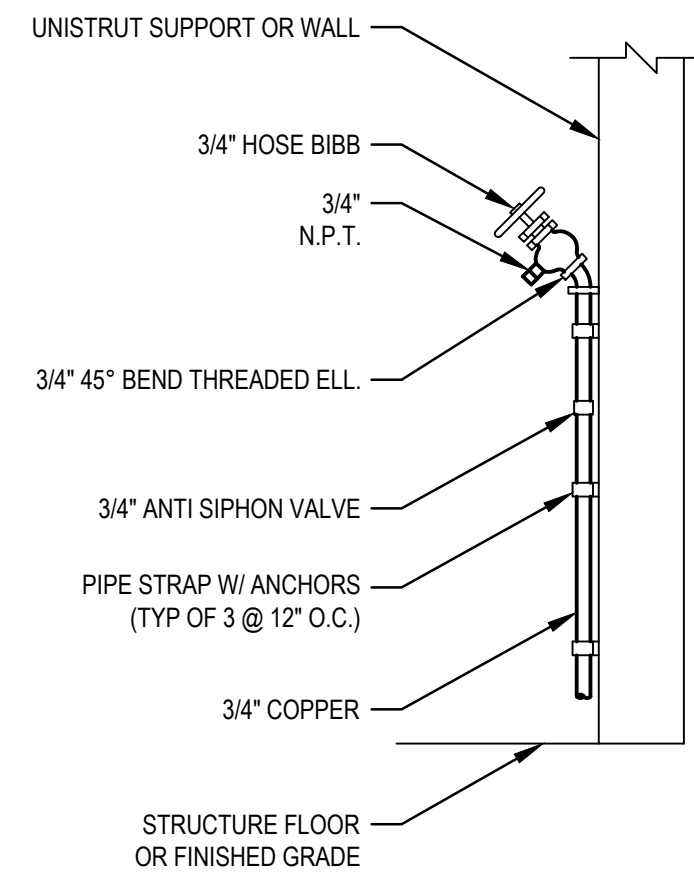
- NOTES:
- PIPE SADDLE WITH U-BOLT, ANVIL FIG. 265 OR EQUAL.
 - PIPE STANCHION SADDLE DESIGNED FOR PIPE 4"-36". PIPE LARGER THAN 36" SHALL BE SUPPORTED BY A STANCHION SADDLE DESIGNED BY THE MANUFACTURER.
 - PROVIDE 5/8" BOLT HOLE (TYP OF 4) 1-1/2" OFF EDGE OF BEARING PLATE.



- NOTES:
- COVER PENETRATION SHALL BE LARGE ENOUGH TO ACCOMMODATE FORCE MAIN FLANGES. SUPPLY AND INSTALL LINK SEAL PER MANUFACTURER RECOMMENDATIONS.

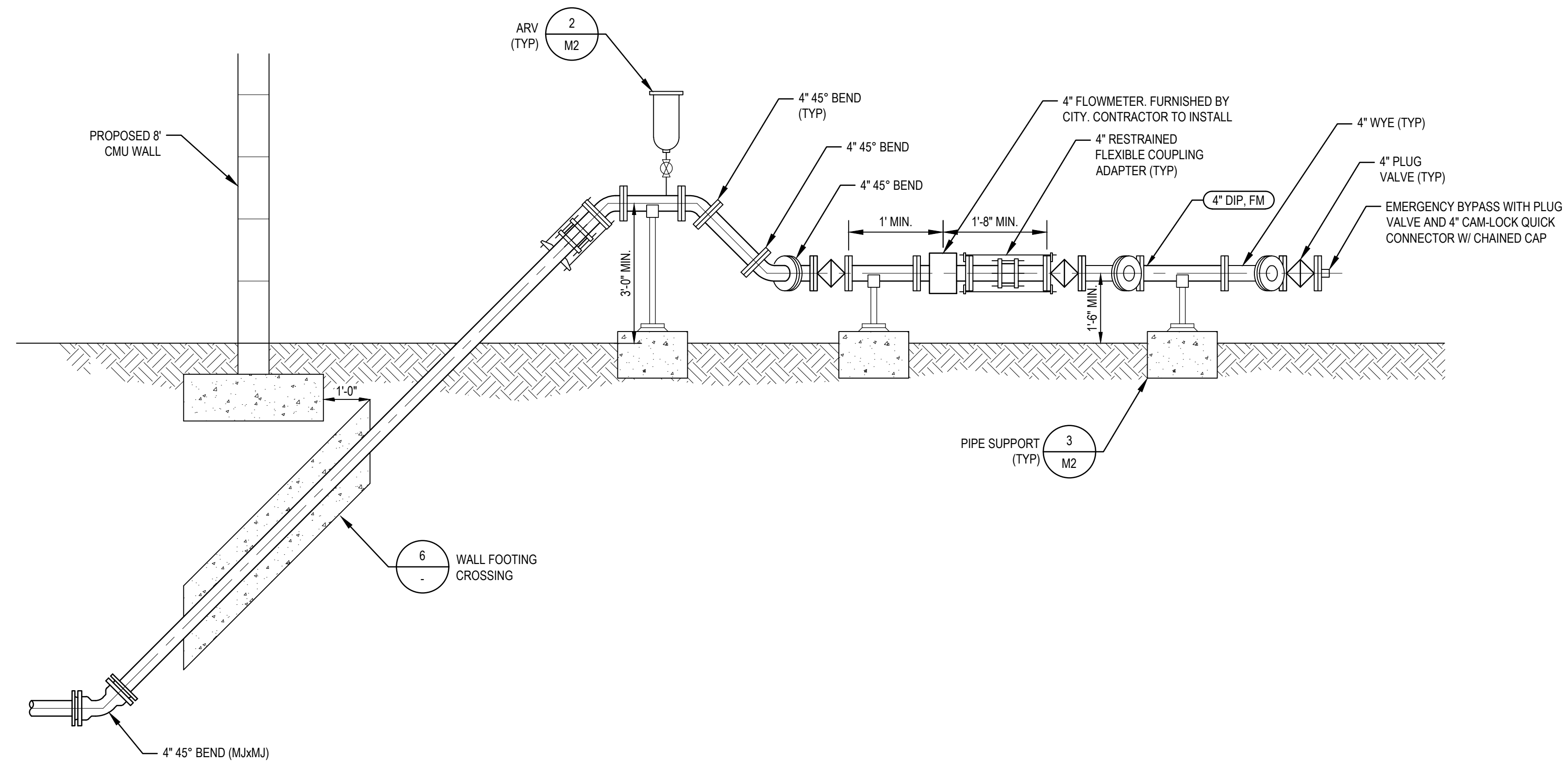
4 PIPE PENETRATION

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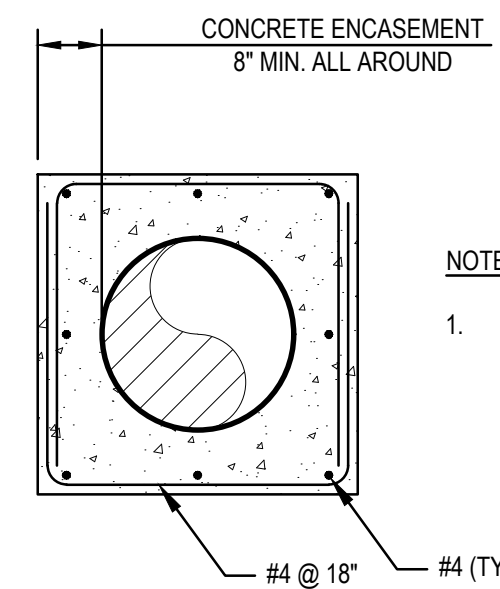
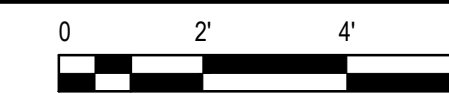
5 HOSE BIBB

SCALE: NTS



SECTION

SCALE: 1/2" = 1'-0"



- NOTES:
- PROVIDE 1 1/2" THICK COMPRESSIBLE EXPANSION JOINT MATERIAL ALL AROUND ENCASED PIPING.

6 WALL FOOTING CROSSING

SCALE: NTS

PROJECT: CAPITAL IMPROVEMENT PROJECT
 SHEET NAME: RILEY LIFT STATION DETAILS
 PROJECT NUMBER: SW1391

DATE: JUNE 2020

SCALE: AS SHOWN

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DATE: JUNE 2020

SCALE: AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
 STATE OF ARIZONA
 NO. 12345
 PAULINE ESQUIER
 ARIZONA U.S.A.

ORIGINAL PLAN DATE: JUNE 2020
 LATEST REVISION DATE:
 SHEET NUMBER: 10 OF 20
 SHEET: M2
 PROJECT NUMBER: SW1391

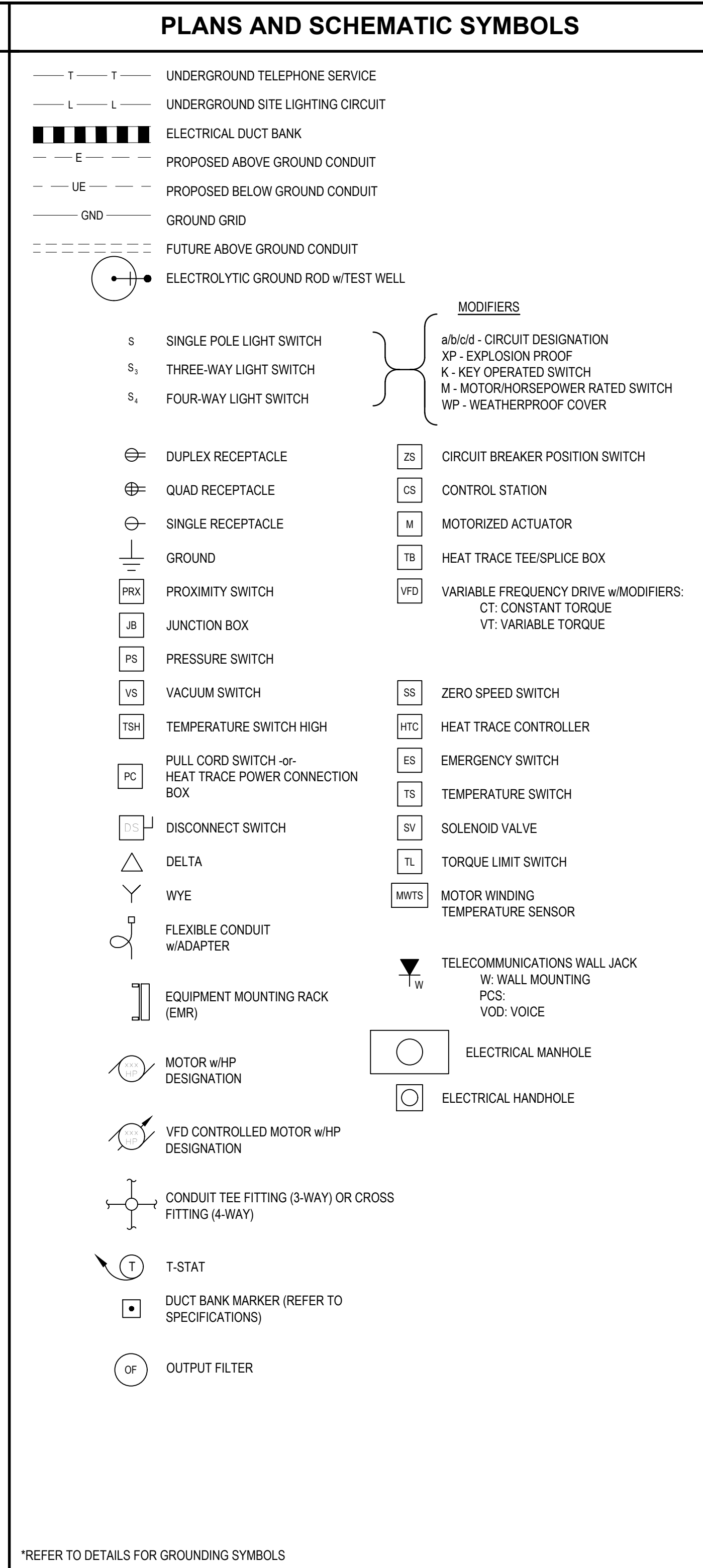
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Contact Arizona 811 at least two full working days before you begin excavation

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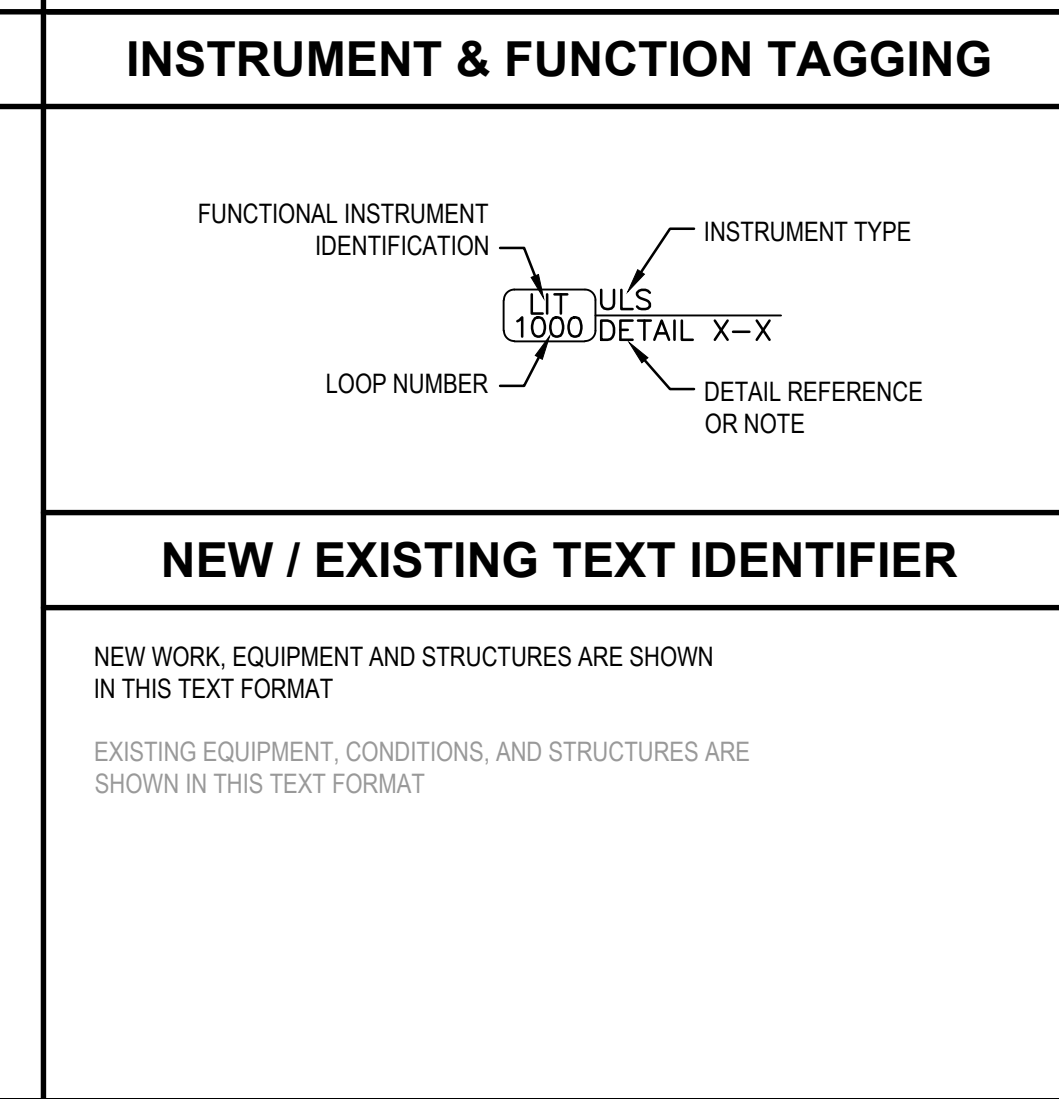
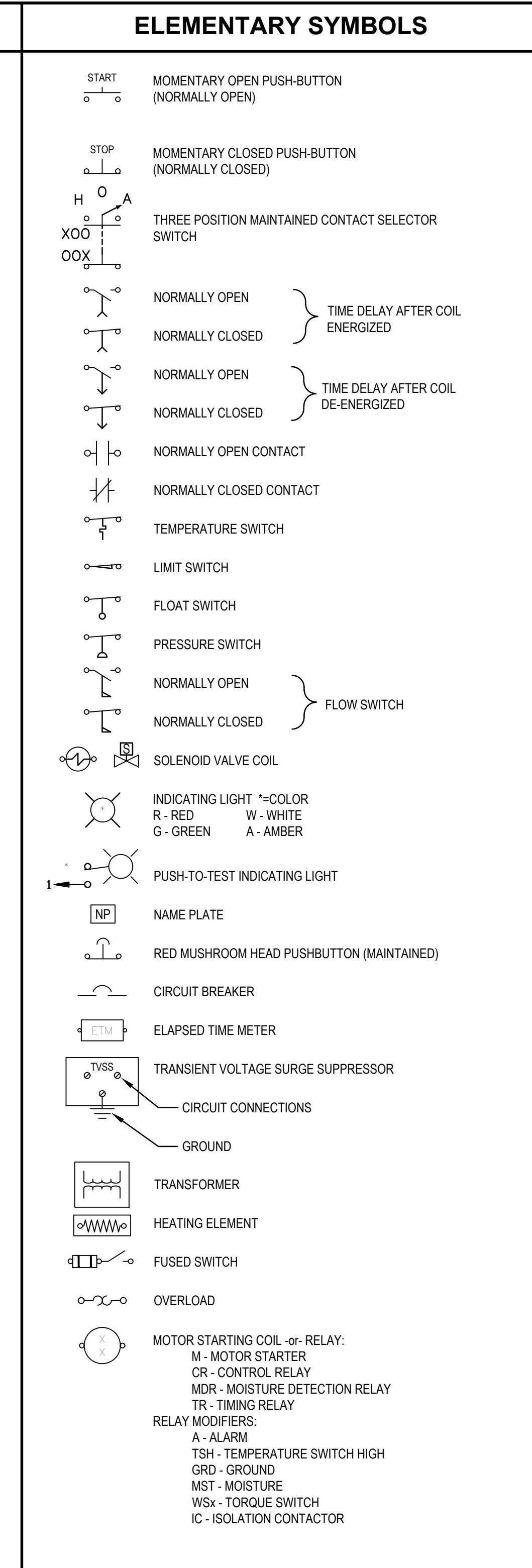
ABBREVIATIONS

A or AMP	AMPERE, AMPS	MPC	MINI POWER CENTER
AC	ALTERNATING CURRENT	MS	MOTOR STARTER
AE	ANALYZER ELEMENT	MSCP	MOTOR STARTER CONTROL PANEL
AF	AMPERE FRAME SIZE	MSH	MOTOR SPACE HEATER
AFG	ABOVE FINISHED FLOOR	MSS	MOTOR STARTING SWITCH
AFG	ABOVE FINISHED GRADE	MTG	MOUNTING
AI	ANALOG INPUT	MTR	MOTOR TIMING RELAY
AIC	AMPS INTERRUPTING CURRENT	MWTP	MOTOR WINDING THERMAL PROTECTION
AIT	ANALYSIS INDICATING TRANSMITTER	MWTS	MOTOR WINDING TEMPERATURE SENSOR
ANN	ANNUNCIATOR	Mx	MOTOR CONTACTOR AUXILIARY CONTACT
AO	ANALOG OUTPUT		
AP	ANNUNCIATOR PANEL	N	NEUTRAL
APPROX	APPROXIMATELY	N/A	NOT AVAILABLE-or-NOT APPLICABLE
ASV	AIR SOLENOID VALVE	NC	NORMALLY CLOSED
AT	AMPERE TRIP RATING	NCTO	NORMALLY CLOSED TIMED OPEN
AUX	AUXILIARY	NEC	NATIONAL ELECTRICAL CODE
AWG	AMERICAN WIRE GAUGE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
		NFPA	NATIONAL FIRE PROTECTION ASSOC.
BC	BYPASS CONTACTOR	NO	NORMALLY OPEN
BKR	BREAKER	NOTC	NORMALLY OPEN TIMED CLOSED
BLDG	BUILDING	NP	NAMEPLATE
C or COND	CONDUIT OR CONDUCTOR	OC	ON-CENTER
CB	CIRCUIT BREAKER	OF	OUTPUT FILTER
CC	CONTROL CIRCUIT	OD	OUTER DIAMETER
CEP	CONCRETE EQUIPMENT PAD	OIT	OPERATOR INTERFACE TERMINAL
CKT	CIRCUIT	OL	OVERLOAD RELAY
COMP	COMPARTMENT	φ	PHASE
CP	CONTROL PANEL		
CS	CONTROL STATION		
CPT	CONTROL POWER TRANSFORMER	P	POLE
CPU	CENTRAL PROCESSING UNIT	PB	PUSHBUTTON OR PULL BOX
CR	CORROSION RESISTANT	XX-PB-##	PULL BOX (w/AREA AND # DESIGNATION)
CR-##	CONTROL RELAY (w/# DESIGNATION)	PC	POWER & CONTROL
CT	CURRENT TRANSFORMER	PCS	PROCESS CONTROL SYSTEM
		PF	PULLING FITTING or POWER FEED
		PLC	PROGRAMMABLE LOGIC CONTROLLER
DB	DUCT BANK	PMT	PAD MOUNTED TRANSFORMER
DC	DIRECT CURRENT	PNL	PANEL
DI	DIGITAL INPUT	POT	POTENTIOMETER
DIA	DIAMETER	PPXX	POWER PANELBOARD (w/AREA DESIGNATION)
DIV	DIVISION	PR	PAIR
DO	DISCRETE OUTPUT/DISSOLVED OXYGEN	PRM	PRIMARY
DP	DIFFERENTIAL PRESSURE	PS	PRESSURE SWITCH or POWER SUPPLY
DPM	DIGITAL POWER MONITOR	PT	POTENTIAL TRANSFORMER
DS	DISCONNECT SWITCH	PTC	POSITIVE TEMPERATURE COEFFICIENT THERMISTOR
DWG	DRAWING	PVC	POLYVINYL CHLORIDE
EA	EACH	QTY	QUANTITY
EL	ELEVATION		
ELEC	ELECTRICAL	RCT	REPEAT CYCLE TIMER
EMR	EQUIPMENT MOUNTING RACK	RECEPT	RECEPTACLE
ENET	ETHERNET MODULE	RGS	RIGID GALVANIZED STEEL
ES	EMERGENCY SWITCH	RP	RELAY PANEL
ESTOP	EMERGENCY STOP	RTD	RESISTANCE TEMPERATURE DETECTOR
EX	EXISTING	RV-AT	REDUCE VOLTAGE AUTO TRANSFORMER
FACP	FIRE ALARM CONTROL PANEL	SA	SURGE ARRESTOR
FE	FLOW ELEMENT	SCFS	SUPPLEMENTAL CARBON FEED SYSTEM
FF	FINISHED FLOOR	SCR	SILICON CONTROLLER RECTIFIER
FIT	FLOW INDICATING TRANSMITTER	SEAL	SEAL FAILURE
FLEX	FLEXIBLE	SEC	SECOND or SECONDARY
FO	FIBER OPTIC	SIL	STOP/LOCKOUT SWITCH
FOPP-XX	FIBER OPTIC PATCH PANEL (w/AREA DESIGNATION)	SN	SOLID NEUTRAL
FS	FLOW SWITCH	SELorSELSW	SELECTOR SWITCH
FSW	FUSED SWITCH	SP	SPEED
FVNR	FULL VOLTAGE NON REVERSING	SS	STAINLESS STEEL
FVR	FULL VOLTAGE REVERSING	SSRV	SOLID STATE REDUCED VOLTAGE
G OR GRD	GROUND	S/S	STOP/START PUSH BUTTON
GBT	GRAVITY BELT THICKENER	STR	STRANDED
GBTCP	GRAVITY BELT THICKENER CONTROL PANEL	SV	SOLENOID VALVE
GEC	GROUNDING ELECTRODE CONDUCTOR	SW	SWITCH
GEN	GENERATOR	SWD	SWITCHING DUTY
GF	GROUND FAULT	SWSV	SEAL WATER SOLENOID VALVE
GFCl	GROUND FAULT CIRCUIT INTERRUPTER	TC	TERMINAL CABINET OR TIMED CLOSED
GFI	GROUND FAULT INTERRUPTER	TDR	TIME DELAY RELAY
GGCC	GROUND GRID CONNECTING CONDUCTOR	TEL	TELEPHONE
		TERM	TERMINAL
HOA	HAND-OFF-AUTO SELECTOR-SWITCH	TL	TORQUE LIMIT SWITCH
HP	HORSEPOWER	TR	TIMER
HPU	HYDRAULIC POWER UNIT	TS	TEMPERATURE SWITCH
HS	HAND SWITCH	TSP	TWISTED SHIELDED PAIR
HTC-##	HEAT TRACE CONTROLLER (w/# DESIGNATION)	TST	TWISTED SHIELDED TRIAD
Hz	HERTZ	T-STAT	THERMOSTAT
		TTC	TELEPHONE TERMINATION CABINET
IAP	INSTRUMENT AIR PANEL	TP	TELEPHONE TERMINATION PANEL
IC	ISOLATION CONTACTOR	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
IL	INDICATING LIGHT	TYP	TYPICAL
IO	INPUT/OUTPUT		
ISC	INTRINSICALLY SAFE CIRCUIT	XX-UH-##	UNIT HEATER (w/AREA AND # DESIGNATION)
ISR	INTRINSICALLY SAFE RELAY	ULS	ULTRASONIC LEVEL SENSOR
J or JB	JUNCTION BOX	UPS	UNINTERRUPTIBLE POWER SUPPLY
		UTP	UNSHIELDED TWISTED PAIR
kCMIL	THOUSANDS CIRCULAR MILS	V	VOLTS
kV	KILOVOLT	VA	VOLT-AMPERES
kVA	KILOVOLT AMPERES	VD	VOICE/DATA
kW	KILOWATT	VFD	VARIABLE FREQUENCY DRIVE
kWhr	KILOWATT HOUR	VM	VOLTMETER
		VS	VOLTMETER SWITCH OR VACUUM SWITCH
LA	LIGHTING ARRESTOR	W	WITH
LAN	LOCAL AREA NETWORK	WE	WEIGHT ELEMENT
LC	LIGHTING CIRCUIT	WIT	WEIGHT INDICATOR TRANSMITTER
LE	LEVEL ELEMENT	WP	WEATHERPROOF, WATERPROOF
LIT	LEVEL INDICATING TRANSMITTER	WS	WORKSTATION
LOC	LOCATION		
LO	LOCKOUT		
LPXX	LIGHTING PANELBOARD (w/AREA DESIGNATION)	XP	EXPLOSION-PROOF
LS	LIMIT SWITCH/LEVEL SWITCH	XFMR	TRANSFORMER
LSH	HIGH-LEVEL LEVEL SWITCH		
LSL	LOW-LEVEL LEVEL SWITCH		
LT	LIGHTING TRANSFORMER (w/# DESIGNATION)		
XX-LV-##	LOUVER (w/AREA AND # DESIGNATION)		
mA	MILLIAMPS		
MAG	MAGNETIC		
MAX	MAXIMUM		
MCC-XX	MOTOR CONTROL CENTER (w/AREA DESIGNATION)		
MCP	MOTOR CIRCUIT PROTECTOR		
MECH	MECHANICAL		
MFR	MANUFACTURER		
MIN	MINIMUM		
MMS	MANUAL MOTOR STARTER		
XX-MOD-##	MOTOR OPERATED DAMPER (w/AREA AND # DESIGNATION)		

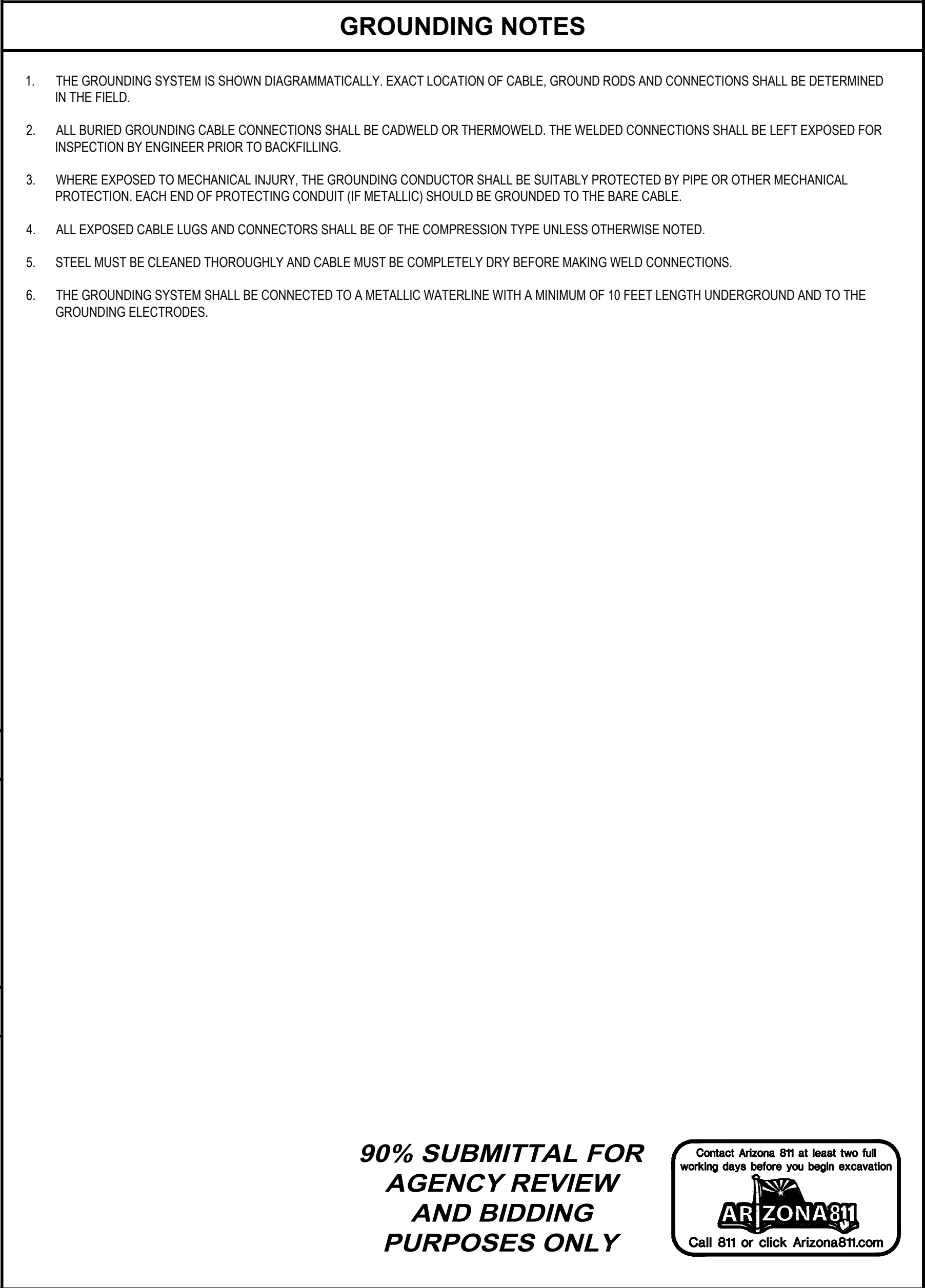


GENERAL CIRCUIT/CONDUIT TAG IDENTIFICATION

TAG	CONDUIT SIZE	CONDUCTORS
G P2	3/4"	2-#12, 1-#12G
G P3	3/4"	3-#12, 1-#12G
G Cx	3/4" (x=2 THRU 18) 1" (x=19 THRU 30) 2" (x=31 THRU 100)	x-#14, 1-#12G
G TSP-x	3/4" (x=1,2) 1" (x=3,4) 2" (x=5 THRU 16)	x-#16 TWISTED SHIELDED PAIR
G DB-XX [XX] w/CIRCUIT		REFER TO SHEET E2 FOR REQUIREMENTS
G CAT6-x	3/4" (x=1 THRU 4) 1" (x=5 THRU 8)	x-CATEGORY 6 ENHANCED NETWORK CABLE
G PRO-x	3/4" (x=1,2) 1" (x=3,4)	x-2-WIRE PROFIBUS NETWORK CABLE
G MPC-X		SEE PANELBOARD MPC-100 SHEET E4 FOR CONDUIT AND CONDUCTOR SEE



- GENERAL NOTES
- CONTRACTOR SHALL COORDINATE FINAL CONCRETE EQUIPMENT PAD (CEP) DIMENSIONS WITH FINAL DIMENSIONS OF EQUIPMENT AND OTHER STRUCTURES TO BE MOUNTED ON PADS. REFER TO INTERIOR AND EXTERIOR EQUIPMENT PAD DETAILS FOR ADDITIONAL INFORMATION. CEPs SHALL BE SIZED TO ACCOMMODATE FUTURE EQUIPMENT/SECTIONS WHERE SPACE IS RESERVED AS SHOWN ON THE DRAWINGS. EXTERIOR CEP SHALL MAINTAIN 4'-0" IN FRONT OF ELECTRICAL PANELS AND 6" ON SIDES.
 - ENCLOSURE DIMENSIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE DIMENSIONS. ENCLOSURES SHALL BE SIZED TO ACCOMMODATE EQUIPMENT, CONTROLS AND COMPONENTS AS SHOWN, SPECIFIED AND REQUIRED FOR AN OPERABLE SYSTEM.
 - EQUIPMENT, FEEDERS, AND BRANCH CIRCUITS ON THE DOWNSTREAM SIDE OF THE PANELBOARDS ARE NOT SHOWN ON THE ONE-LINE AND SCHEMATIC DIAGRAMS. REFER TO THE PANELBOARD SCHEDULES AND THE PLANS FOR RELATED INFORMATION.
 - EVERY EFFORT HAS BEEN MADE TO IDENTIFY REMOTE ITEMS TO BE CONNECTED BY THE ELECTRICAL CONTRACTOR, EITHER IN THE ELEMENTARIES OR IN THE SCHEDULES. HOWEVER, NOT ALL OF THE REMOTE DEVICES MAY HAVE BEEN SHOWN ON THE ELECTRICAL PLAN DRAWINGS. REFER TO THE DRAWINGS OF RESPECTIVE TRADES TO LOCATE OR CONFIRM EQUIPMENT LOCATIONS.
 - GROUNDING: ELECTRICAL SYSTEMS SHALL BE GROUNDED AS SPECIFIED AND SHOWN ON THE CONTRACT DRAWINGS. WORK SHALL ALSO BE PERFORMED IN ACCORDANCE WITH ARTICLE 250 OF THE MOST RECENT REVISION OF THE NATIONAL ELECTRIC CODE. REFER TO DETAILS FOR GROUNDING SCHEMATICS AND FOR GENERAL GROUNDING REQUIREMENTS OF ELECTRICAL EQUIPMENT. GROUND GRID CONNECTIONS SHOWN ON THE INDIVIDUAL PLANS ARE MINIMUM REQUIREMENTS. ALL REQUIRED CONNECTIONS ARE NOT SHOWN ON PLANS FOR BREVITY. CONTRACTOR SHALL COORDINATE NEW CONNECTIONS TO THE EXISTING GROUND GRIDS AS NECESSARY. REFER TO GROUNDING NOTES BELOW AND ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION.
 - CONTRACTOR SHALL PROVIDE POWER SUPPLY AND CONTROL WIRING TO HEATING AND VENTILATION COMPONENTS AS SHOWN ON THE CONTRACT DRAWINGS. HEATING/VENTILATION CONTROL EQUIPMENT SHALL BE PROVIDED BY MANUFACTURER AS INDICATED.
 - LIGHTING CIRCUITS ARE SHOWN DIAGRAMMATICALLY; EXACT LOCATION OF CONDUIT RUNS SHALL BE DETERMINED BY THE ELECTRICAL INSTALLER IN THE FIELD, UNLESS SPECIFICALLY DIMENSIONED ON THE PLANS. CONDUIT AND WIRE INFORMATION CAN BE FOUND ON THE PLANS, EQUIPMENT SCHEDULES AND SCHEMATICS.
 - EXACT EQUIPMENT CONDUIT CONNECTIONS ARE TO BE DETERMINED BY THE ELECTRICAL INSTALLER BASED UPON THE ACTUAL FIELD LOCATION OF EQUIPMENT. INSTALL CONDUIT IN ACCORDANCE WITH SPECIFICATIONS.
 - EQUIPMENT MOUNTING RACK (EMR): THE FINAL LOCATION OF THE EMR'S SHALL BE COORDINATED IN THE FIELD TO AVOID INTERFERENCE WITH ACCESS TO THE PROCESS EQUIPMENT. REFER TO DETAILS E-5, SHT. E9 AND E-3, SHT. E10 FOR REQUIREMENTS.
 - ELECTRICAL PLANS: CONTRACTOR SHALL REFER TO ONE-LINES, SCHEMATICS, CONDUIT RISER DIAGRAMS AND DUCT BANK SECTIONS TO COORDINATE CONDUIT AND CIRCUIT REQUIREMENTS FOR EACH SYSTEM.
 - CONDUIT PENETRATIONS: WHERE CONDUITS ARE TOO LARGE FOR TERMINATION INTO CABINETS, CONTROL PANELS, INSTRUMENT ENCLOSURES OR OTHER ENCLOSURES DUE TO STANDARD KNOCK OUTS, THE CONTRACTOR SHALL PROVIDE AN INTERMEDIATE PULL BOX IN ORDER TO COORDINATE A TRANSITION IN CONDUIT SIZE. THIS SHALL BE COORDINATED WITH THE ENGINEER IN THE FIELD ON A CASE BY CASE BASIS.
 - SPARE WIRING: WHERE SPARE POWER AND CONTROL WIRING IS REQUIRED PER THE DRAWINGS AND/OR SPECIFICATIONS, SPARE WIRE SHALL BE PROVIDED WITH SUFFICIENT LENGTH TO EXTEND TO THE FURTHEST TERMINAL BLOCK/BUCKET/AREA OF THE ENCLOSURE BEING SERVED.



Printed By: Paulina Esquivel
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Plot Date: 9 June 2020 - 9:40 AM

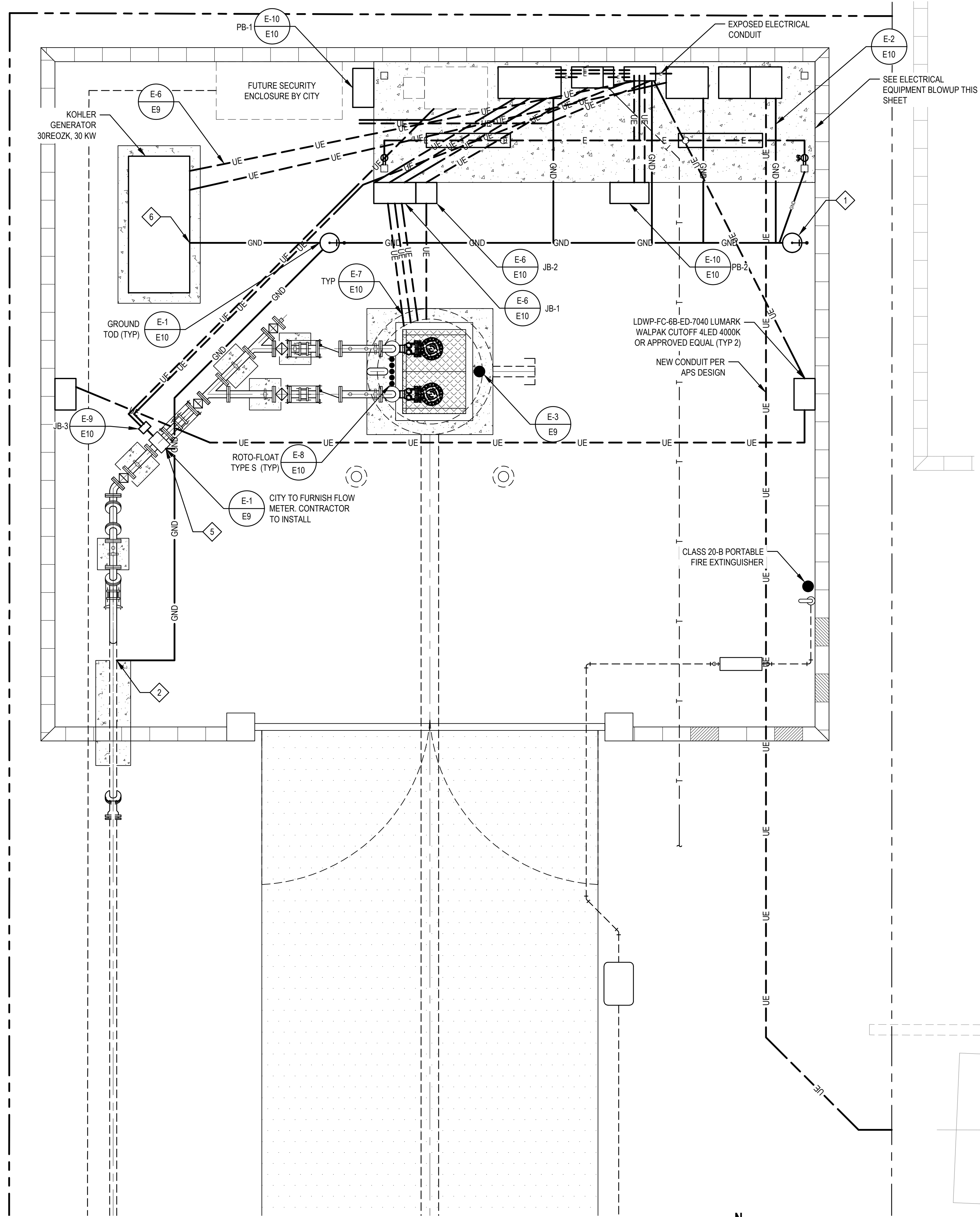
CAPITAL IMPROVEMENT PROJECT
PROJECT NAME: RILEY LIFT STATION
PROJECT NUMBER: SW1391

GHD Inc.
4747 North 22nd Street Suite 200
Phoenix, Arizona 85016 USA
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AS SHOWN
EN

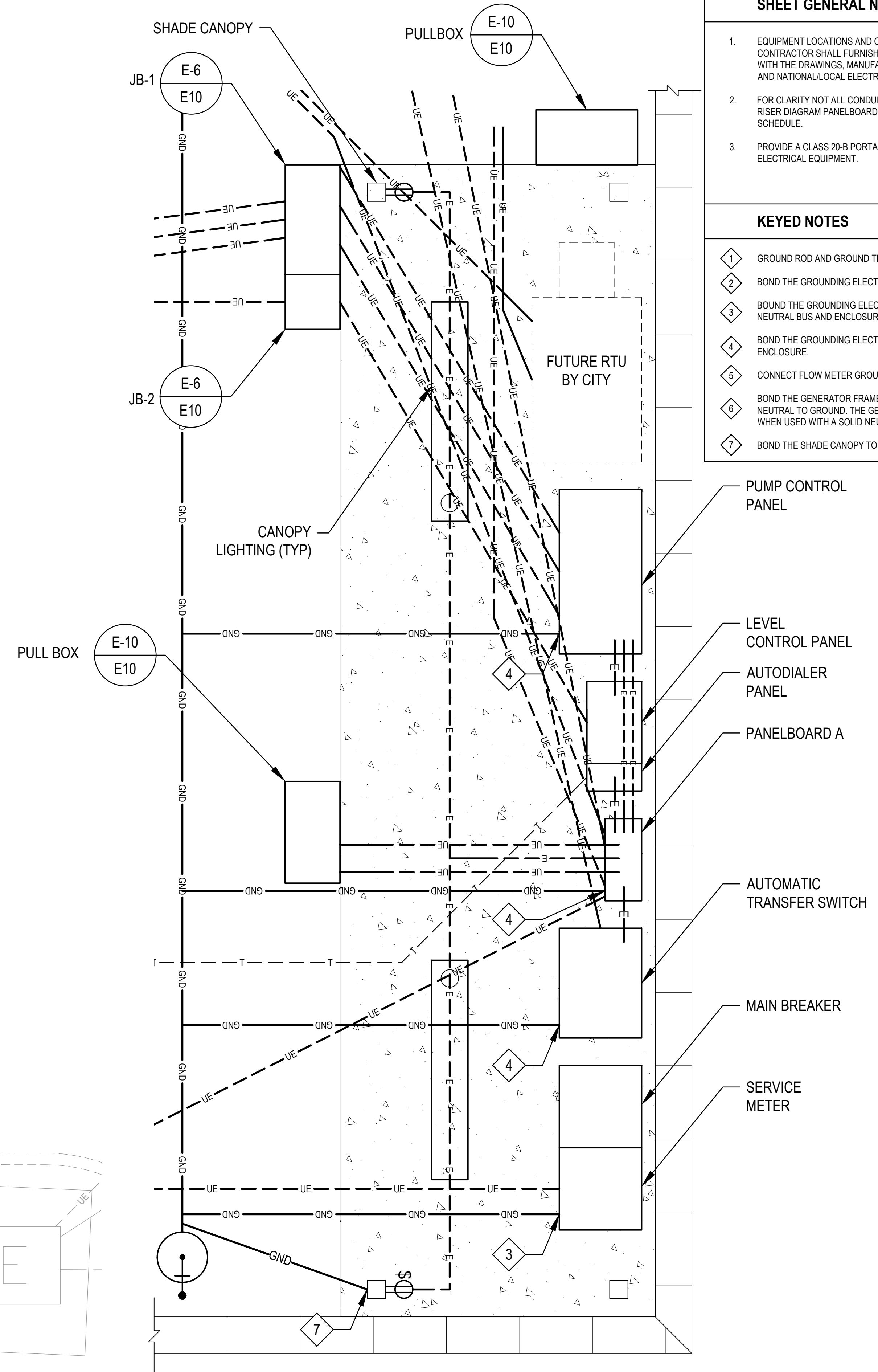
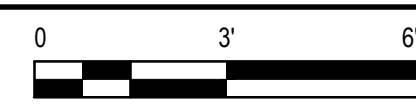
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LATEST REVISION DATE:

SHEET NUMBER: 10 OF 20
SHEET: E1
PROJECT NUMBER: SW1391



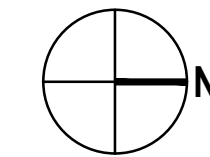
SITE PLAN

SCALE: 1" = 3'



ELECTRICAL EQUIPMENT BLOWUP

SCALE: 1" = 2'



SHEET GENERAL NOTES

1. EQUIPMENT LOCATIONS AND CONDUIT ROUTINGS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL FURNISH AND INSTALL REQUIRED MATERIALS IN ACCORDANCE WITH THE DRAWINGS, MANUFACTURER AND/OR UTILITY COMPANY REQUIREMENTS AND NATIONAL/LOCAL ELECTRICAL CODES.
2. FOR CLARITY NOT ALL CONDUIT AND CONDUCTORS ARE SHOWN. REFER TO CONDUIT RISER DIAGRAM PANELBOARD SCHEDULES AND CONDUIT AND CONDUCTOR SCHEDULE.
3. PROVIDE A CLASS 20-B PORTABLE FIRE EXTINGUISHER, MOUNTED 10'-50" AWAY FROM ELECTRICAL EQUIPMENT.

KEYED NOTES

1. GROUND ROD AND GROUND TEST WELL PER TYPICAL DETAIL 10 ON E5.
2. BOND THE GROUNDING ELECTRODE TO METALLIC WATER PIPE.
3. BOND THE GROUNDING ELECTRODE TO THE SERVICE ENTRANCE SECTION NEUTRAL BUS AND ENCLOSURE.
4. BOND THE GROUNDING ELECTRODE TO THE EQUIPMENT NEUTRAL BUS AND/OR ENCLOSURE.
5. CONNECT FLOW METER GROUNDING RINGS TO GROUND GRID.
6. BOND THE GENERATOR FRAME TO GROUND. DO NOT BOND THE GENERATOR NEUTRAL TO GROUND. THE GENERATOR IS NOT A SEPARATELY DERIVED SYSTEM WHEN USED WITH A SOLID NEUTRAL AUTOMATIC TRANSFER SWITCH.
7. BOND THE SHADE CANOPY TO THE GROUND GRID.

- ◆ PUMP CONTROL PANEL
- ◆ LEVEL CONTROL PANEL
- ◆ AUTODIALER PANEL
- ◆ PANELBOARD A
- ◆ AUTOMATIC TRANSFER SWITCH
- ◆ MAIN BREAKER
- ◆ SERVICE METER

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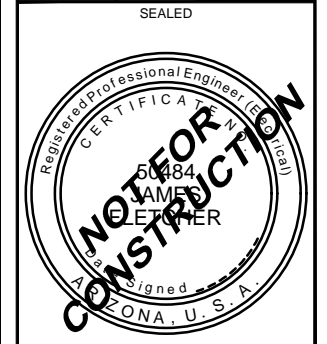
Contact Arizona 811 at least two full working days before you begin excavation.

Call 811 or click Arizona811.com

DESIGNED BY:	PAULINE ESQUIVEL
CHECKED BY:	KRT
DATE:	06/09/2020
SCALE:	AS SHOWN

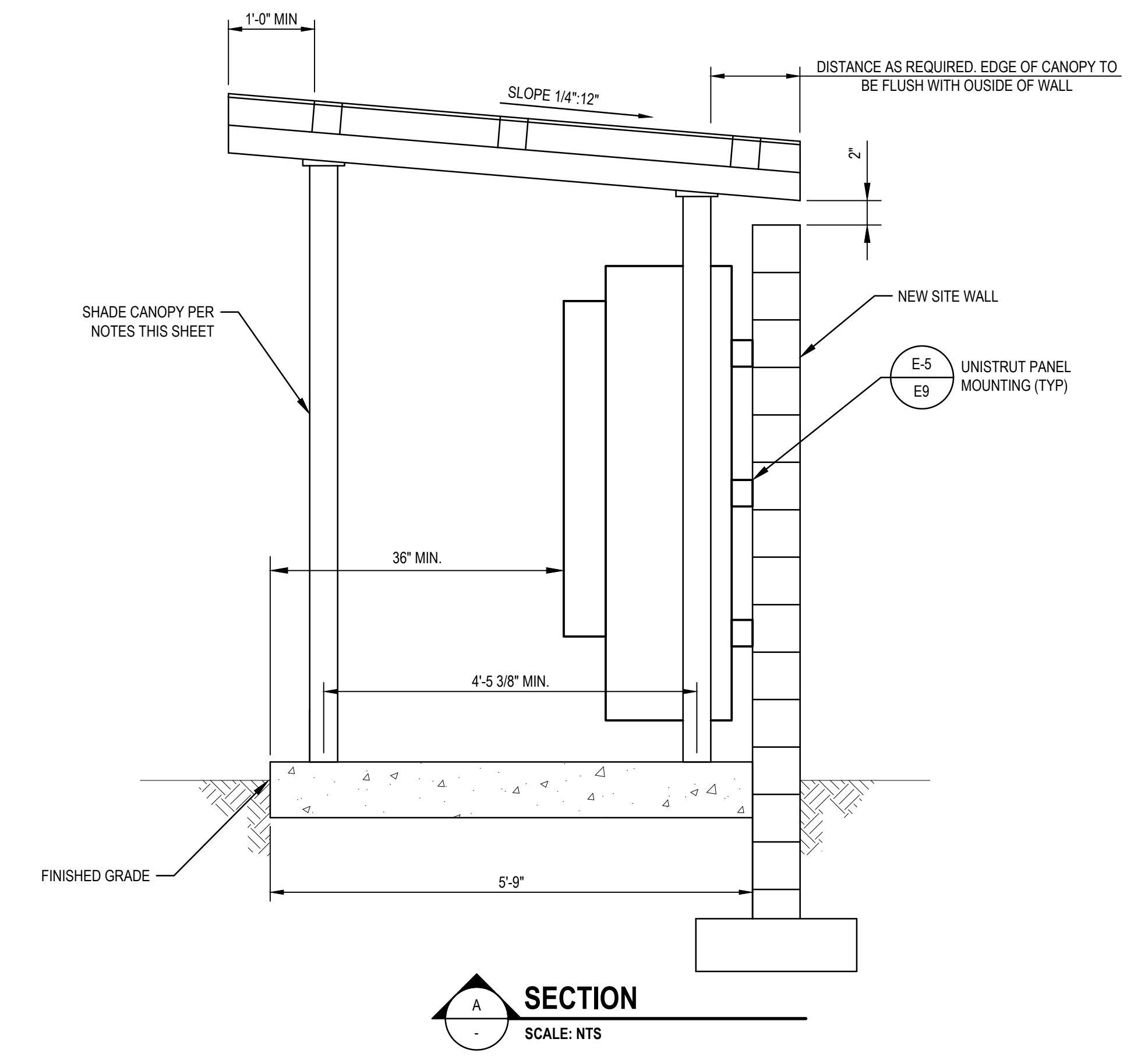
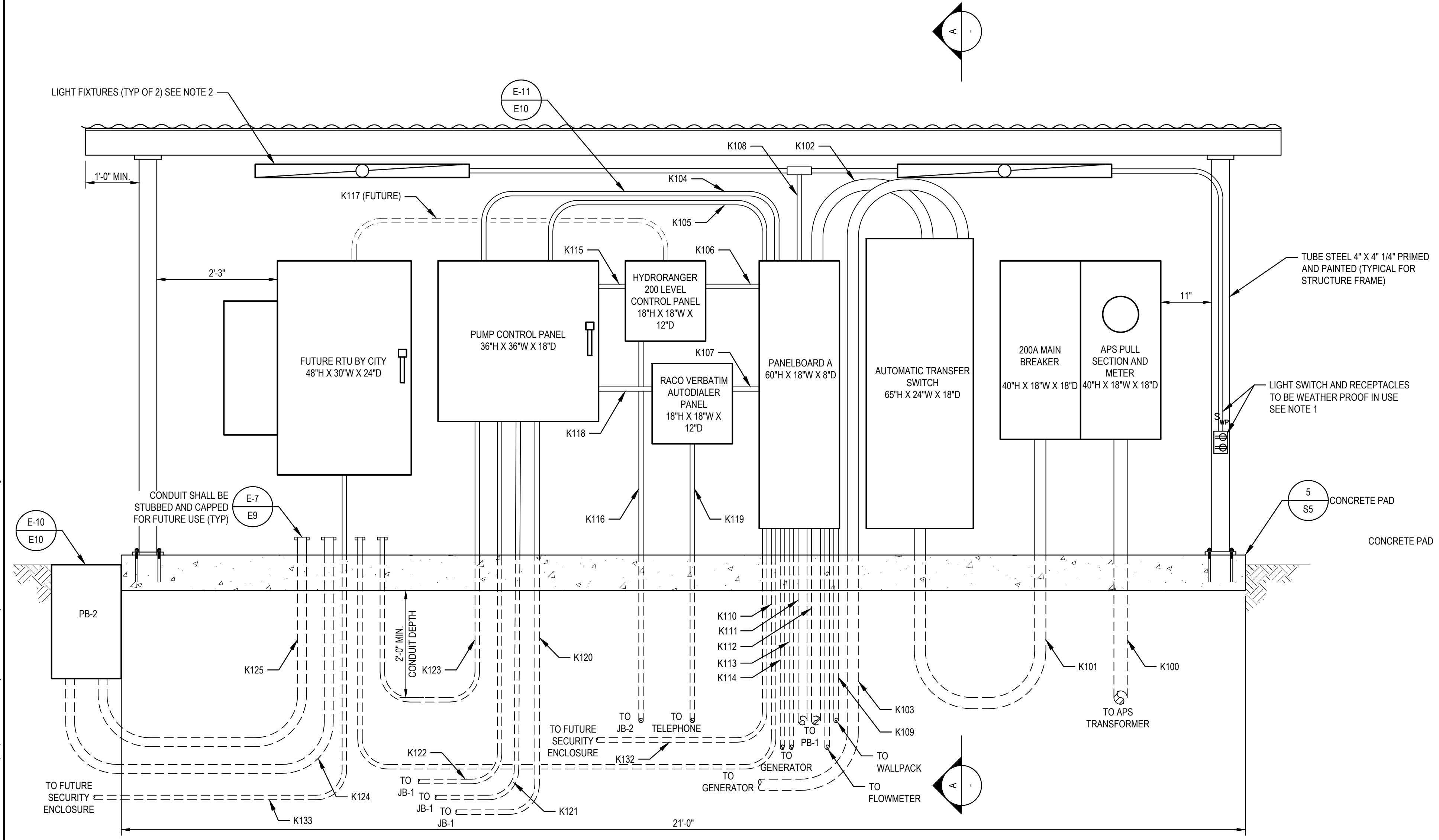
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PROJECT NAME:	CAPITAL IMPROVEMENT PROJECT
SHEET NAME:	ELECTRICAL SITE PLAN
PROJECT NUMBER:	SW1391
REVISION NUMBER:	EN



ORIGINAL PLAN DATE:	JUNE 2020
LATEST REVISION DATE:	
SHEET NUMBER:	11 OF 20
SHEET:	E2
PROJECT NUMBER:	SW1391

- ### GENERAL NOTES
- PROVIDE A 20A, 120V DUPLEX OUTLET, WP, MOUNTED TO SHADE STRUCTURE FRAME 24" AFF.
 - LIGHTING SHALL COMPLY WITH THE FOLLOWING CRITERIA:
 - DAMP/WET LOCATION ENCLOSED INDUSTRIAL
 - RATING: UL LISTED FOR WET LOCATIONS
 - APPROXIMATE SIZE: 50"x8"
 - LIGHT SOURCE: (2) 18W LED T5 REPLACEMENT
 - VOLTAGE: 120-277VAC, 1P, 60HZ
 - HOUSING: IMPACT RESISTANT, UV STABILIZED, REINFORCED POLYESTER FIBERGLASS HOUSING
 - LENS: HIGH-IMPACT POLYCARBONATE
 - MOUNTING STYLE: CEILING
 - OPTIONS: STAINLESS STEEL LATCHES
 - MANUFACTURER: CROUSE-HINDS FPS-2L-T-EM2 OR APPROVED EQUAL
 - THE CONCRETE EQUIPMENT PADS SHALL BE SIZED TO EXTEND 18 INCHES TO THE REAR AND SIDES OF THE ENCLOSURES, AND 36 INCHES IN FRONT OF THE ENCLOSURES. STRUCTURAL DETAILS OF THE SHADE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW, AND SHALL BARE THE SEAL OF A REGISTERED STRUCTURAL ENGINEER IN THE STATE OF ARIZONA.
 - PANELS SHALL BE WALL MOUNTED USING UNISTRUT. UNISTRUT SHALL BE BOLTED TO SOLID GROUTED WALL AND PANEL SHALL BE BOLTED TO UNISTRUT.



- ### SHADE CANOPY NOTES
- CONTRACTOR TO PROVIDE PRE-ENGINEERED SHADE CANOPY WITH CORRUGATED METAL ROOF BY ALUMA-LINE OR APPROVED EQUAL.
 - CONTRACTOR TO PROVIDE CANOPY DRAWINGS AND CALCULATIONS SEALED BY AN ARIZONA REGISTERED PROFESSIONAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING.
 - PRE-ENGINEERED CANOPY SUBMITTAL SHALL INCLUDE ANCHORAGE DETAILS.
 - CONTRACTOR SHALL COORDINATE WITH SHADE CANOPY MANUFACTURER TO INSTALL MOUNTING CHANNEL AT PROPER LOCATIONS TO SUPPORT SHADE CANOPY LUMINAIRES.
 - FINISH COATING COLOR SHALL BE APPROVED BY OWNER PRIOR TO ORDERING.

EQUIPMENT SHADE STRUCTURE AND GEAR ELEVATION

SCALE: NTS

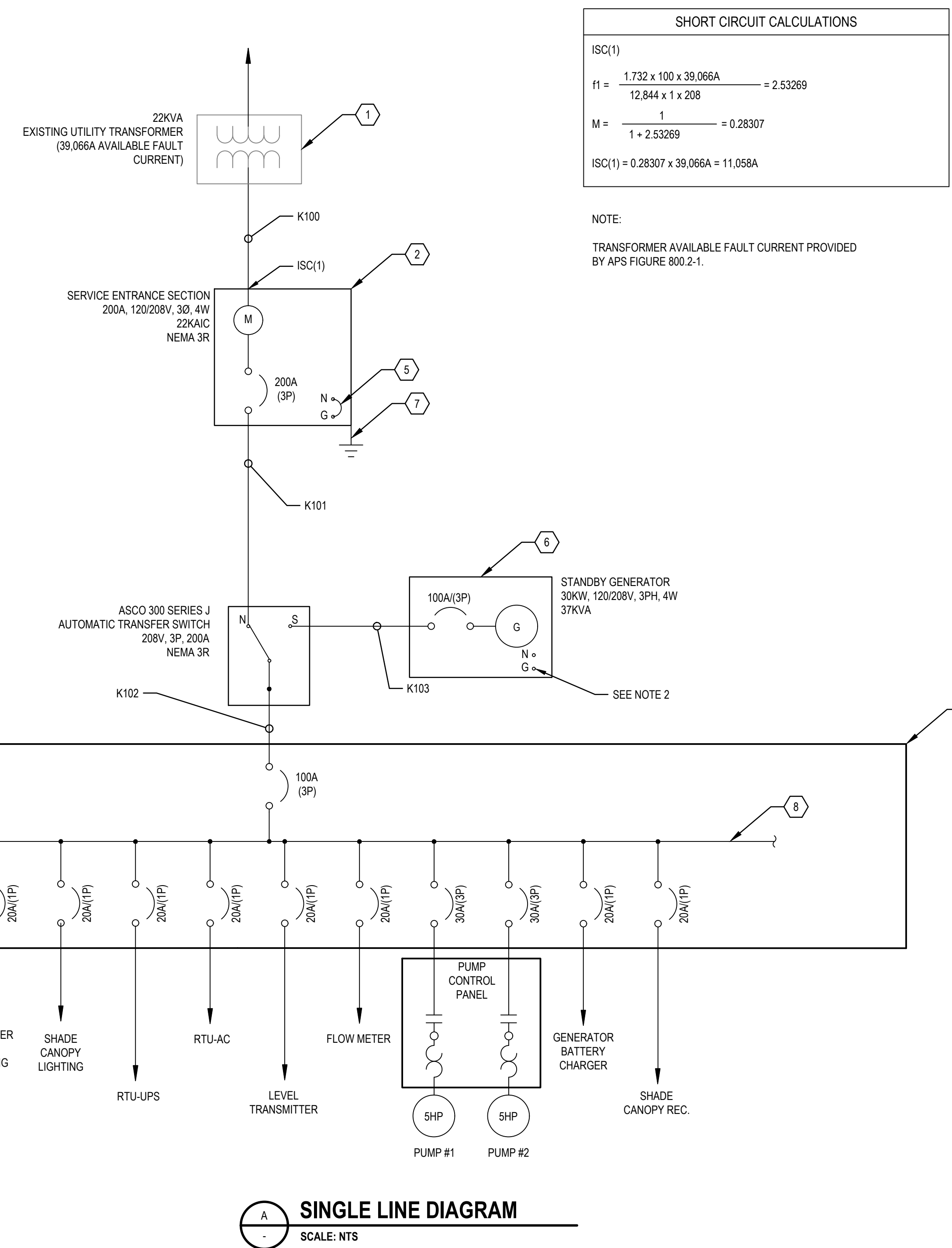
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 Plotted By: Pauline Esquivel
 Plot Date: 9 June 2020 - 11:32 AM

 GHD Inc. 4747 North 23rd Street, Suite 200 Phoenix, Arizona 85016 USA T: 602.216.7200 F: 1.602.216.7201 W: www.ghd.com	ELECTRICAL EQUIPMENT ELEVATIONS SHEET NUMBER EN	PROJECT NUMBER SW1391	PROJECT NAME RILEY LIFT STATION	PROJECT TYPE CAPITAL IMPROVEMENT PROJECT
ORIGINAL PLAN DATE JUNE 2020				
LATEST REVISION DATE				
SHEET NUMBER 12 OF 20				
SHEET: E3				
PROJECT NUMBER SW1391				

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 Contact Arizona 811 at least two full working days before you begin excavation

SHORT CIRCUIT CALCULATIONS	
DEFINITIONS	FORMULAS
L = LENGTH OF CONDUCTOR (FEET)	$f = \frac{1.732 \times L \times I}{C \times n \times VL-L}$
C = CONSTANT FROM TABLE OF "C"	
M = MULTIPLIER	$M = \frac{1}{1+f}$
f = SHORT CIRCUIT FACTOR	
n = NUMBER OF CONDUCTORS PER PHASE (ADJUSTS C VALUE FOR PARALLEL RUNS)	
I = AVAILABLE SHORT CIRCUIT CURRENT IN AMPERES AT BEGINNING OF CIRCUIT	$IS.C.secondary = \frac{V_{primary}}{V_{secondary}} \times M \times IS.C.primary$
V = VOLTAGE OF CIRCUIT	
V _{L-L} = LINE TO LINE VOLTAGE (VOLTS)	
V _P = PRIMARY VOLTAGE	
V _S = SECONDARY VOLTAGE	
%Z = TRANSFORMER % IMPEDANCE	

DISTRIBUTION PANEL A																
LOCATION: ELECTRICAL EQUIPMENT PAD					PHASE A: 5,000					FED FROM: ATS						
MAIN BUS RATING: 200A, 120/208V, 3PH, 4WIRE					PHASE B: 5,000					INCOMING FEED: ATS						
MINIMUM SCIR RATING: 22KAIC					PHASE C: 5,000					ENCLOSURE: NEMA 3R/BACK MOUNTED						
MAIN BREAKER TRIP: 100A					ESTIMATED CONNECTED LOAD: 48A					TVSS/SURGE PROTECTION: INTERNAL						
NOTES: SEE PANELBOARD SCHEDULE NOTES																
DESCRIPTION	NOTES	LOAD	CONDUIT SIZE	4/N SIZE	G SIZE	CB	CKT	ABC	CKT	CB	CONDUIT SIZE	4/N SIZE	G SIZE	LOAD	NOTES	DESCRIPTION
PERIMETER WALL LIGHTS		100	1"	12	12	20A/1P	1	1	2	20A/1P	1"	12	12	360		RTU CABINET (BY OTHERS)
SHADE CANOPY LIGHTS		100	1"	12	12	20A/1P	3	4	4	20A/1P	1"	12	12	720		RTU A/C UNIT (BY OTHERS)
SHADE CANOPY RECEPTACLE		180	1"	12	12	20A/1P	5	6	6	20A/1P	1"	12	12	2005		
LEVEL TRANSMITTER		150	1"	12	12	20A/1P	7	8	8	30A/3P	1"	10	10	2005		PUMP 1
FLOW METER		150	1"	12	12	20A/1P	9	10	10	20A/1P	1"	12	12	2005		
GENERATOR BATTERY CHARGER		1200	1"	12	12	20A/1P	11	12	12	20A/1P	1"	12	12	2005		
GENERATOR BLOCK HEATER		1200	1"	12	12	20A/1P	13	14	14	30A/3P	1"	10	10	2005		PUMP 2
AUTOSOLAR		150	1"	12	12	20A/1P	15	16	16	20A/1P	1"	12	12	2005		
SECURITY ENCLOSURE RECEPTACLE		180	1"	12	12	20A/1P	17	18	18	20A/1P	1"	12	12	2005		SPARE
SPARE RECEPTACLE		180	1"	12	12	20A/1P	19	20	20	20A/1P	1"	12	12	2005		SPARE
FUTURE SECURITY ENCLOSURE		720	1"	12	12	20A/1P	21	22	22	20A/1P	1"	12	12	2005		SPARE
SPARE						20A/1P	23	24	24	20A/1P	1"	12	12	2005		SPARE
							25	26	26							
							27	28	28							
							29	30	30							
							31	32	32							
							33	34	34							
							35	36	36							
							37	38	38							
							39	40	40							
							41	42	42							



NOTES:
1. CIRCUITS IDENTIFIED AS DP-A ON WIRING DIAGRAM.

120/208V PANEL SCHEDULE
SCALE: NTS

CIRCUIT/DESCRIPTION	KVA	HP	CONNECTED LOAD FLA
MOTOR LOADS			
LIFT STATION PUMP 1		5	16.7
LIFT STATION PUMP 2		5	16.7
NON-MOTOR LOADS			
PANEL A SINGLE PHASE LOADS			14.5
SUBTOTAL			47.9
+25% OF LARGEST MOTOR			4.175
TOTAL AMPS @ 480V/3PHASE			52.11
SERVICE SIZE (AMPS)			200

LOAD CALCULATIONS
SCALE: NTS

CONSTRUCTION NOTES

- UTILITY TO UTILIZE EXISTING 22.5KVA 120/208VAC 3PHASE 4W WYE TRANSFORMER ADJACENT TO SE CORNER OF PROPERTY. TERMINATE CONDUIT 4 FEET FROM TRANSFORMER.
- NEW 120/208V 3PHASE, 4W WYE SERVICE ENTRANCE SECTION AND METER PER APS REQUIREMENTS.
- NEW 120/208V 3 POLE ASCO 300 SERIES J FRAME AUTOMATIC TRANSFER SWITCH WITH SOLID NEUTRAL RATED FOR 200A.
- NEW 120/208V 3 PHASE, 4W WYE DISTRIBUTION PANEL A.
- MAIN BONDING JUMPER, #6 AWG.
- NEW 100A 3 POLE LSIG GENERATOR BREAKER.
- #4 COPPER GROUND TO 10' X 3/4" COPPER GROUND ROD.
- SPARE BREAKERS NOT SHOWN. SEE PANEL SCHEDULE FOR REQUIRED SPARE BREAKERS.

CONDUIT SCHEDULE				
CIRCUIT NO.	CONDUCTORS	SIZE	ROUTING	
			FROM	TO
K100	(4) #3/0 AND (1) #6 GND	4"	APS TRANSFORMER	SERVICE ENTRANCE
K101	(4) #3/0 AND (1) #6 GND	2-1/2"	SERVICE ENTRANCE	TRANSFER SWITCH
K102	(4) #3/0 AND (1) #6 GND	2-1/2"	TRANSFER SWITCH	DISTRIBUTION PANEL A
K103	(4) #3 AND (1) #8 GND	2"	TRANSFER SWITCH	STANDBY GENERATOR

GENERAL NOTES

- CONTRACTOR SHALL PROVIDE ELECTRICAL SYSTEM COORDINATION INCLUDING FAULT CURRENT, ARC FLASH, AND CIRCUIT BREAKER TRIP TIME ANALYSES OF ELECTRICAL COMPONENT SUBMITTALS.
- DO NOT BOND THE GENERATOR NEUTRAL TO GROUND. THE GENERATOR IS NOT A SEPARATELY DERIVED SYSTEM WHEN USED WITH A SOLID NEUTRAL AUTOMATIC TRANSFER SWITCH.

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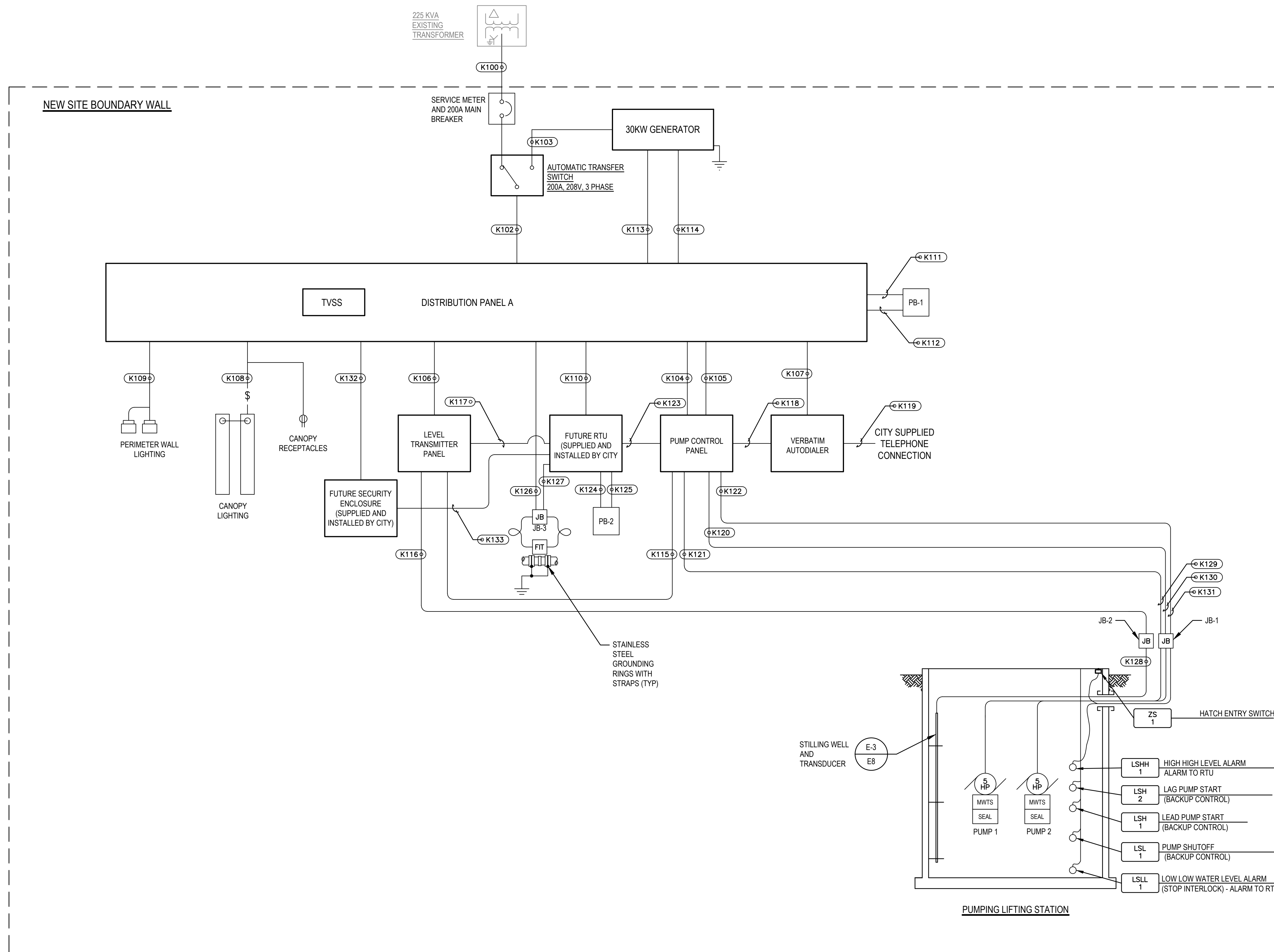


PROJECT TITLE: CAPITAL IMPROVEMENT PROJECT
PROJECT NAME: RILEY LIFT STATION
SHEET NUMBER: SW1391
SHEET: E4
PROJECT NUMBER: SW1391

DATE: JUNE 2020
LATEST REVISION DATE:

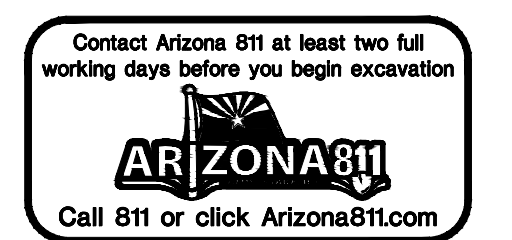
CONTRACTOR: KRT
DESIGNED BY: PE
CHECKED BY: WDR
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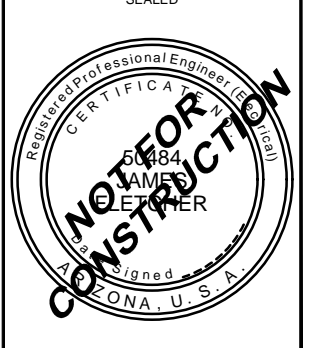


CONDUIT SCHEDULE					
CIRCUIT NO.	CONDUCTORS	SIZE	ROUTING		
			FROM	TO	
K100	(4) #3/0 AND (1) #6 GND	4"	APS TRANSFORMER	SERVICE ENTRANCE	
K101	(4) #3/0 AND (1) #6 GND	2-1/2"	SERVICE ENTRANCE	TRANSFER SWITCH	
K102	(4) #3/0 AND (1) #6 GND	2-1/2"	TRANSFER SWITCH	DISTRIBUTION PANEL A	
K103	(4) #3/0 AND (1) #8 GND	2"	TRANSFER SWITCH	STANDBY GENERATOR	
K104	(3) #10 AND (1) #12 GND	1"	DISTRIBUTION PANEL A	PUMP CONTROL PANEL	PUMP 1 CKT 6, 8, 10
K105	(3) #10 AND (1) #12 GND	1"	DISTRIBUTION PANEL A	PUMP CONTROL PANEL	PUMP 2 CKT 12, 14, 16
K106	(2) #12 AND (1) #12 GND	1"	DISTRIBUTION PANEL A	LEVEL CONTROL PANEL	CKT 7
K107	(2) #12 AND (1) #12 GND	1"	DISTRIBUTION PANEL A	AUTODIALER PANEL	CKT 15
K108	(4) #12 AND (1) #12 GND	1"	DISTRIBUTION PANEL A	CANOPY LIGHTING AND RECEPTACLES	CKT 3 & 5
K109	(2) #12 AND (1) #12 GND	1"	DISTRIBUTION PANEL A	WALLPACK LIGHTING	CKT 1
K110	EMPTY	1"	DISTRIBUTION PANEL A	FUTURE RTU PANEL	CKT 2 & 4
K111	EMPTY	2"	DISTRIBUTION PANEL A	PULLBOX 1	SPARE
K112	EMPTY	2"	DISTRIBUTION PANEL A	PULLBOX 1	SPARE
K113	(2) #12 AND (1) #12 GND	1"	DISTRIBUTION PANEL A	TO GENERATOR	CKT 11
K114	(2) #12 AND (1) #12 GND	1"	DISTRIBUTION PANEL A	TO GENERATOR	CKT 13
K115	(1) TSP AND (1) #12 GND	1"	LEVEL CONTROL PANEL	PUMP CONTROL PANEL	
K116	(1) TSP AND (1) #12 GND	1"	LEVEL CONTROL PANEL	JUNCTION BOX 2	LEVEL TRANSDUCER
K117	(1) TSP AND (1) #12 GND	1"	LEVEL CONTROL PANEL	FUTURE RTU PANEL	TO BE INSTALLED BY OTHERS
K118	(8) #12 AND (1) #12 GND	1"	AUTODIALER	PUMP CONTROL PANEL	
K119	RJ11	1"	AUTODIALER	TELEPHONE RISER	
K120	(3) #10 AND (1) #12 GND	1"	PUMP CONTROL PANEL	JUNCTION BOX 1	PUMP 1 POWER
K121	(3) #10 AND (1) #12 GND	1"	PUMP CONTROL PANEL	JUNCTION BOX 1	PUMP 2 POWER
K122	(10) #12 AND (1) #12 GND	1"	PUMP CONTROL PANEL	JUNCTION BOX 1	FLOATS
K123	EMPTY	1"	PUMP CONTROL PANEL	FUTURE RTU PANEL	
K124	EMPTY	1"	FUTURE RTU PANEL	PULL BOX 2	
K125	EMPTY	1"	FUTURE RTU PANEL	PULL BOX 2	
K126	(2) #12 AND (1) #12 GND	1"	DISTRIBUTION PANEL A	JUNCTION BOX 3	FLOW METER CKT 9
K127	(1) TSP AND (1) #12 GND	1"	FUTURE RTU PANEL	JUNCTION BOX 3	FLOW METER
K128	MFR CABLE	1"	LEVEL TRANSDUCER	JUNCTION BOX 2	
K129	MFR CABLE	2"	JUNCTION BOX 1	WET WELL	PUMP 1
K130	MFR CABLE	2"	JUNCTION BOX 1	WET WELL	PUMP 2
K131	(5) MFR CABLES	2"	JUNCTION BOX 1	WET WELL	FLOATS
K132	EMPTY	1"	PANELBOARD A	FUTURE SECURITY ENCLOSURE	DP-A CKT 17, 19, 21
K133	EMPTY	1"	FUTURE RTU	FUTURE SECURITY ENCLOSURE	

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PROJECT TYPE: CAPITAL IMPROVEMENT PROJECT
 PROJECT NAME: RILEY LIFT STATION
 SHEET NUMBER: SW1391
 SHEET NAME: CONDUIT RISER DIAGRAM
 SHEET NUMBER: EN
 PROJECT NUMBER: SW1391
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ORIGINAL PLAN DATE	JUNE 2020
LATEST REVISION DATE	
SHEET NUMBER	14 OF 20
SHEET:	E5
PROJECT NUMBER	SW1391

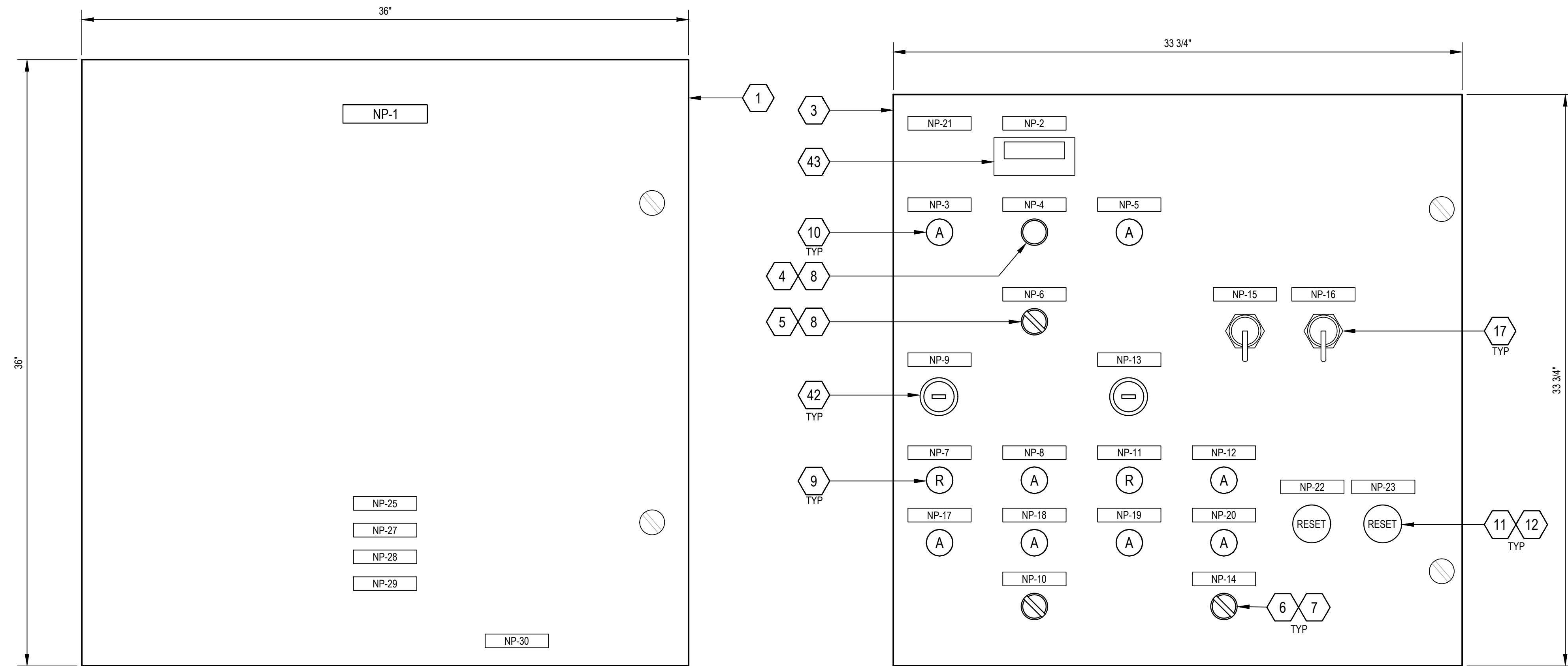
NAMEPLATE SCHEDULE						
ALL NAMEPLATES: BLACK TEXT ON WHITE BACKGROUND (UNLESS NOTED OTHERWISE), ADHESIVE BACKGROUND W/ SS SCREWS						
NP#	SIZE AND TEXT	FIRST LINE	SECOND LINE	THIRD LINE	FOURTH LINE	
1	2" X 7"	1/2" TEXT	PUMP	CONTROL PANEL		
2	1.5" X 3"	3/16" TEXT	WETWELL LEVEL	(FEET)		
3	1.5" X 3"	3/16" TEXT	HIGH LEVEL	ALARM		
4	1.5" X 3"	3/16" TEXT	LEVEL ALARM	RESET		
5	1.5" X 3"	3/16" TEXT	LOW LEVEL	ALARM		
6	1.5" X 3"	3/16" TEXT	AUTO	PUMP 1 PUMP 2		
7	1.5" X 3"	3/16" TEXT	PUMP NO.1	RUNNING		
8	1.5" X 3"	3/16" TEXT	PUMP NO.1	OVERLOAD		
9	1.5" X 3"	3/16" TEXT	PUMP NO.1	RUN TIME		
10	1.5" X 3"	3/16" TEXT	PUMP NO.1	OFF	HAND AUTO	
11	1.5" X 3"	3/16" TEXT	PUMP NO.2	RUNNING		
12	1.5" X 3"	3/16" TEXT	PUMP NO.2	OVERLOAD		
13	1.5" X 3"	3/16" TEXT	PUMP NO.2	RUN TIME		
14	1.5" X 3"	3/16" TEXT	PUMP NO.2	OFF	HAND AUTO	
15	1.5" X 3"	3/16" TEXT	PUMP NO.1	MAIN DISCONNECT		
16	1.5" X 3"	3/16" TEXT	PUMP NO.2	MAIN DISCONNECT		
17	1.5" X 3"	3/16" TEXT	PUMP NO.1	OVERTEMP		
18	1.5" X 3"	3/16" TEXT	PUMP NO.1	LEAKAGE		
19	1.5" X 3"	3/16" TEXT	PUMP NO.2	OVERTEMP		
20	1.5" X 3"	3/16" TEXT	PUMP NO.2	LEAKAGE		
21	1.5" X 5"	1/8" TEXT	120VAC CONTROL POWER IS STILL PRESENT	WHEN BOTH DISCONNECTS ARE OFF	TURN OFF THE DISCONNECT FEEDING	THIS PANEL BEFORE SERVICING
22	.75" X 3"	3/16" TEXT	PUMP NO.1	OVERLOAD RESET		
23	.75" X 3"	3/16" TEXT	PUMP NO.2	OVERLOAD RESET		
24	NOT USED					
25	1.5" X 3"	1/8" TEXT	WARNING	MULTIPLE POWER SOURCES	DISCONNECT ALL POWER	BEFORE SERVICING
26	1.5" X 3"	1/8" TEXT	INTRINSICALLY SAFE	FIELD WARNING TERMINALS		
27	1.5" X 3"	1/8" TEXT	WARNING - SUBSTITUTION OF COMPONENTS	FIELD WIRING TERMINALS		
28	1-1/2" X 6"	1/8" TEXT	PROVIDES INTRINSICALLY SAFE CIRCUIT EXTENSIONS FOR USE IN	CLASS I, II, AND III. DIVISION 1. GROUPS: A-G	HAZARDOUS LOCATIONS WHEN CONNECTED PER INSTALLATION	INSTRUCTIONS - PHX CONTACT 2865434 & RDC DRAINING PMP-03-SCH
29	1.5" X 3"	1/8" TEXT	WARNING - TO PREVENT IGNITION OF FLAMMABLE OF COMBUSTIBLE	ATMOSPHERES. DISCONNECT POWER BEFORE SERVICING		
30	1.5" X 3"	1/8" TEXT	INTRINSICALLY SAFE	FIELD WIRING TERMINALS		

NAMEPLATE SCHEDULE

SCALE: NTS

SHEET GENERAL NOTES

- PUMP CONTROL PANEL BY RDC.



FRONT ELEVATION

SWING PANEL ELEVATION

PUMP CONTROL PANEL

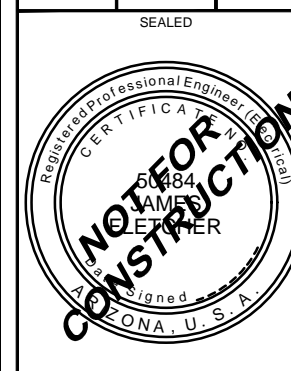
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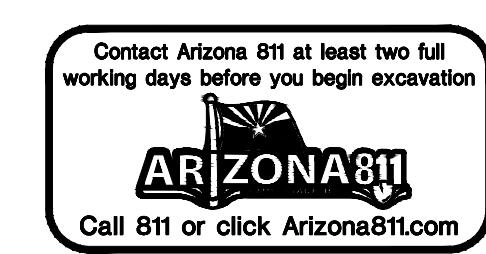
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 PROJECT NAME: RILEY LIFT STATION
 SHEET NAME: PUMP CONTROL PANEL ELEVATION
 SPECIFICATION NUMBER: EN

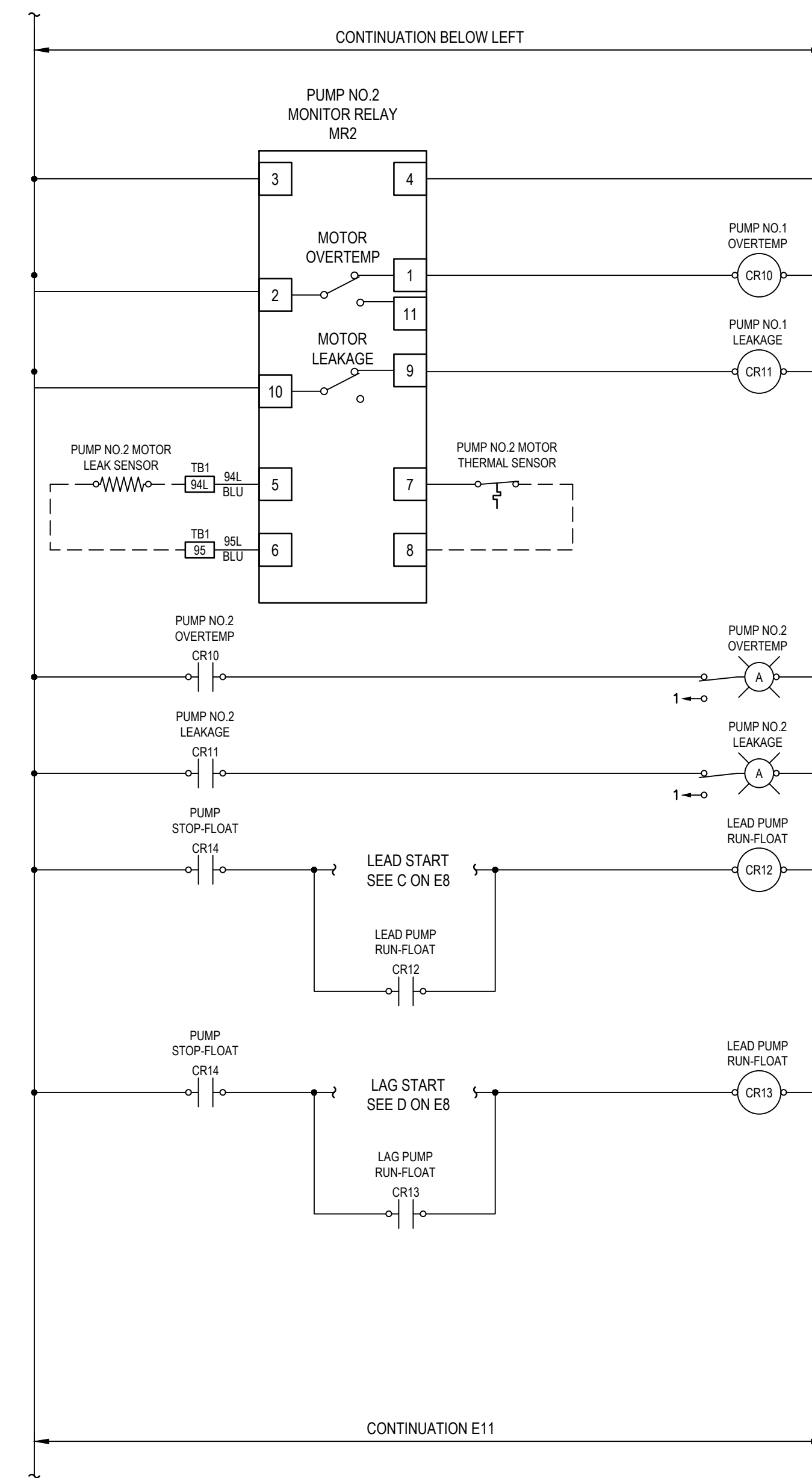
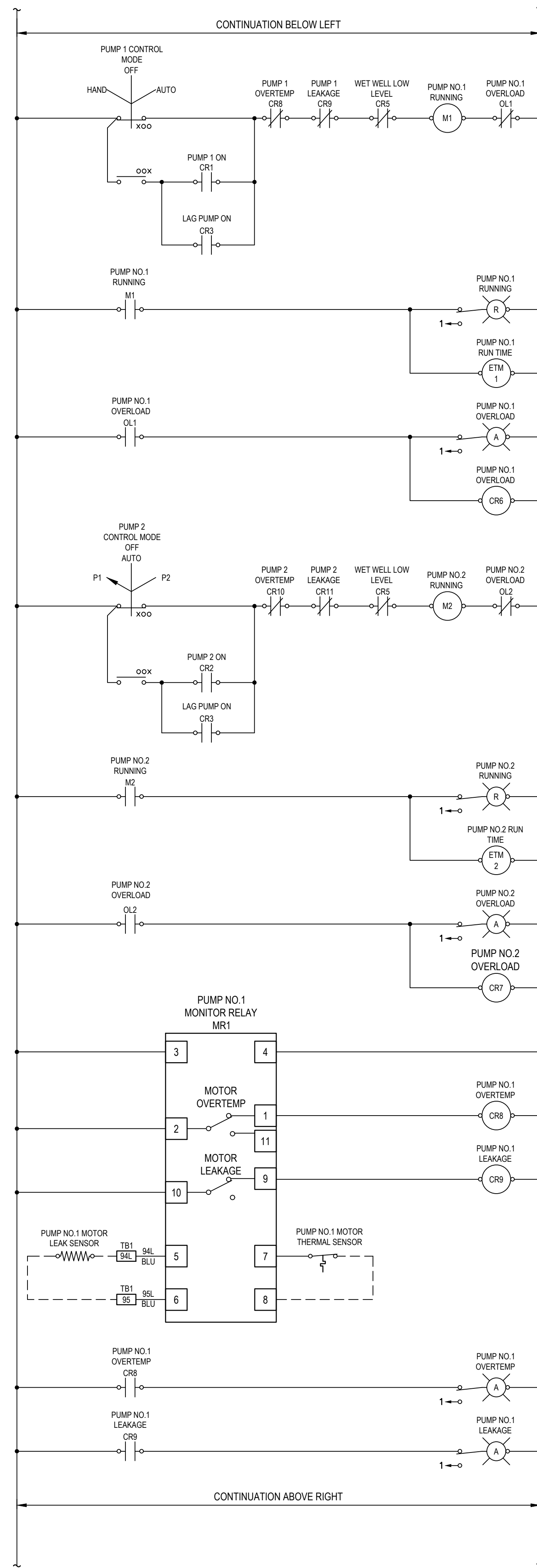
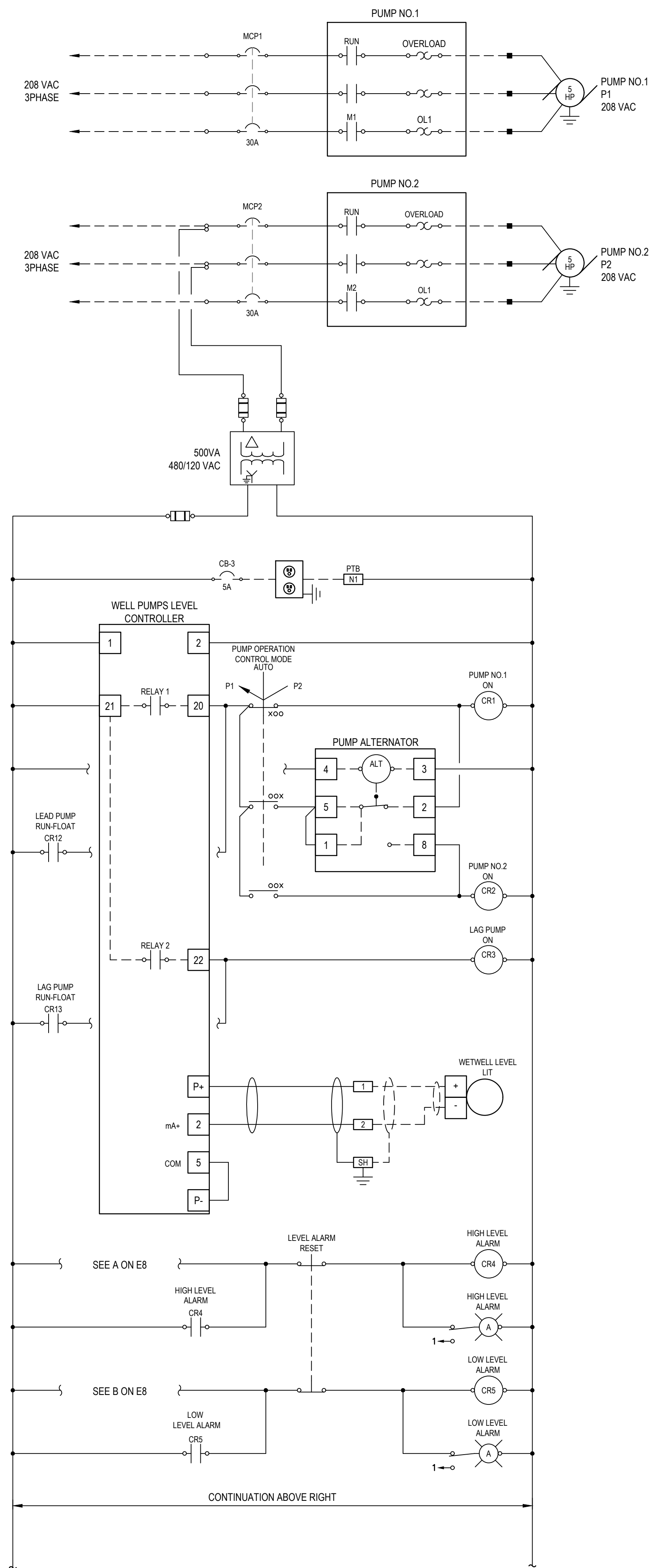
PROJECT NUMBER: SW1391



ORIGINAL PLAN DATE	JUNE 2020
LATEST REVISION DATE	
SHEET NUMBER	15 OF 20
SHEET: E6	
PROJECT NUMBER	SW1391

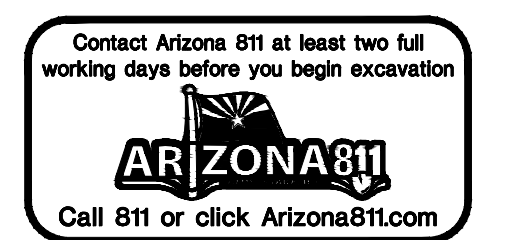
90% SUBMITTAL FOR AGENCY REVIEW AND BIDDING PURPOSES ONLY





CONTROL SCHEMATIC
 SCALE: NTS

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 AGENCY REVIEW
 AND BIDDING
 PURPOSES ONLY**



PROJECT TYPE CAPITAL IMPROVEMENT PROJECT	SHEET NAME RILEY LIFT STATION	PROJECT NUMBER SW1391	SHEET NUMBER 16 OF 20	SHEET E7	PROJECT NUMBER SW1391
PROJECT NAME RILEY LIFT STATION					
PROJECT NUMBER SW1391					
SHEET NAME PUMP CONTROL PANEL SCHEMATIC					
SHEET NUMBER E7					
PROJECT NUMBER SW1391					

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 Phoenix, Arizona 85016 USA
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PROJECT TYPE
 CAPITAL IMPROVEMENT PROJECT

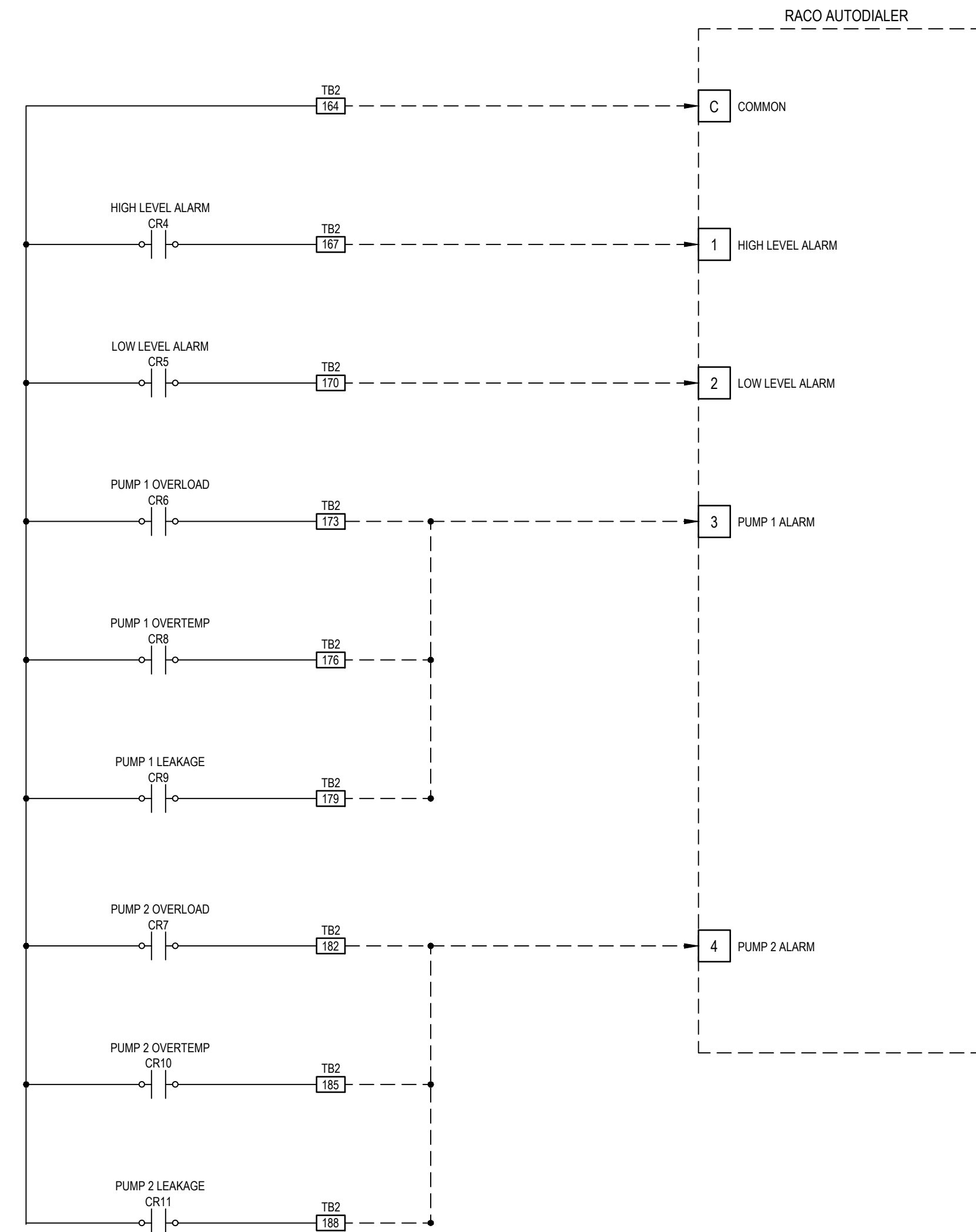
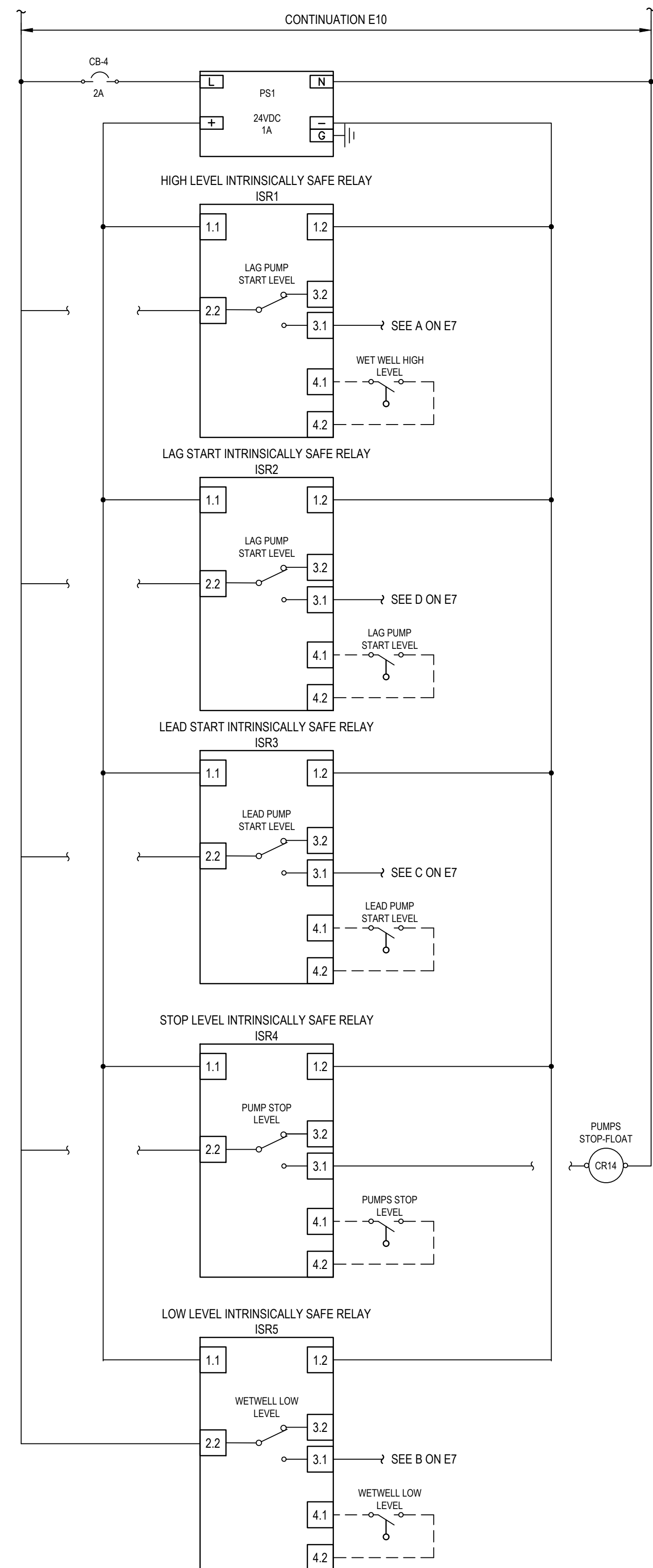
SHEET NAME
 RILEY LIFT STATION

PROJECT NUMBER
 SW1391

SHEET NUMBER
 16 OF 20

SHEET
 E7

PROJECT NUMBER
 SW1391



CONTROL SCHEMATIC

SCALE: NTS

**90% SUBMITTAL FOR
AGENCY REVIEW
AND BIDDING
PURPOSES ONLY**

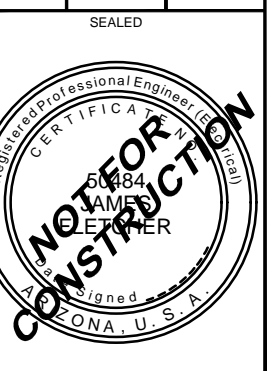


DESIGNED BY	WDR
CHECKED BY	KRT
DATE	PE
REVISION	
DATE	
BY	
DATE	
SCALE	AS SHOWN

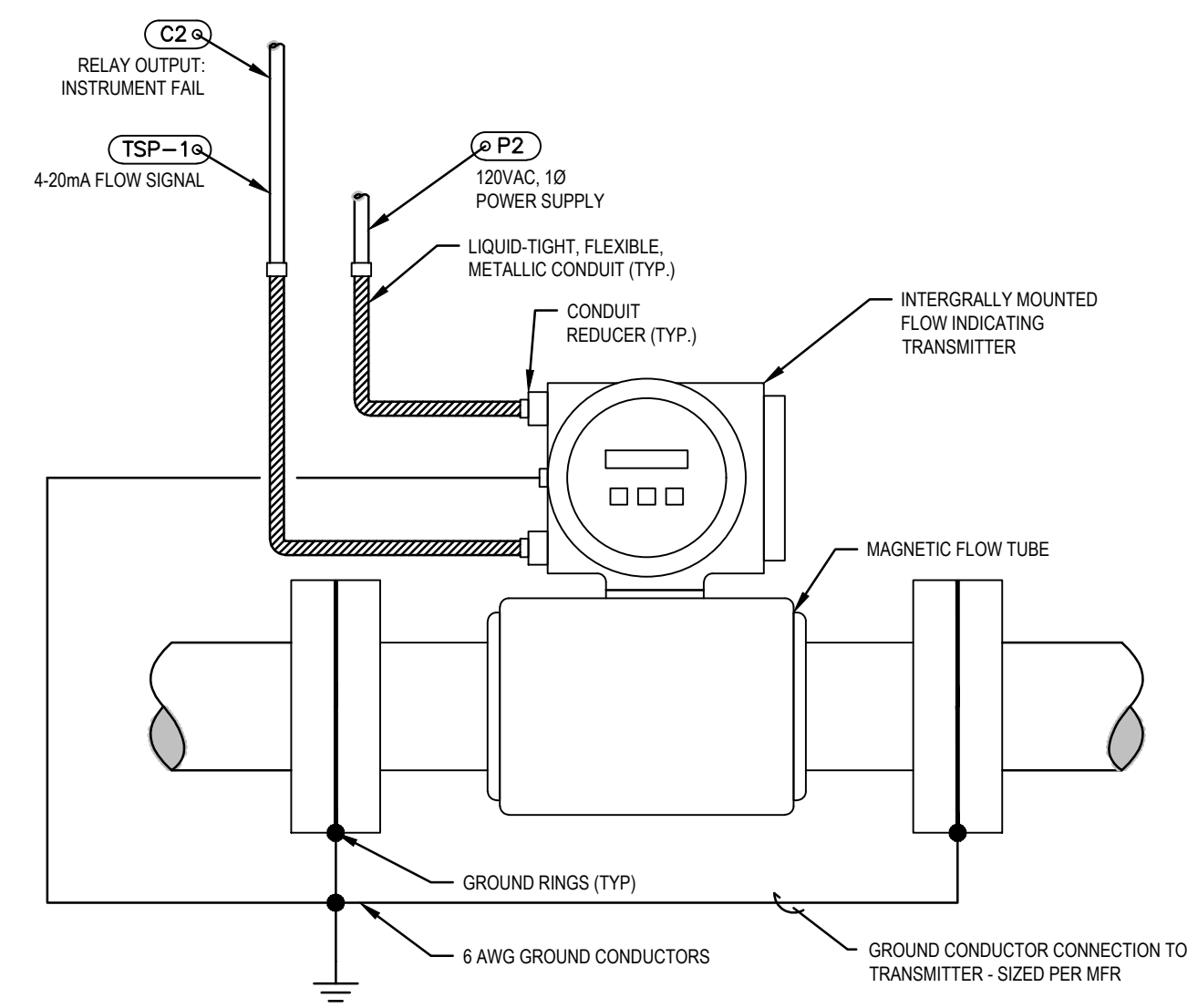
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PROJECT TYPE: CAPITAL IMPROVEMENT PROJECT
PROJECT NAME: RILEY LIFT STATION
PROJECT NUMBER: SW1391

SHEET NAME: PUMP CONTROL PANEL SCHEMATIC
SHEET NUMBER: EN

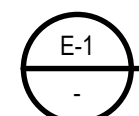


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LATEST REVISION DATE	
SHEET NUMBER	17 OF 20
SHEET:	E8
PROJECT NUMBER	SW1391

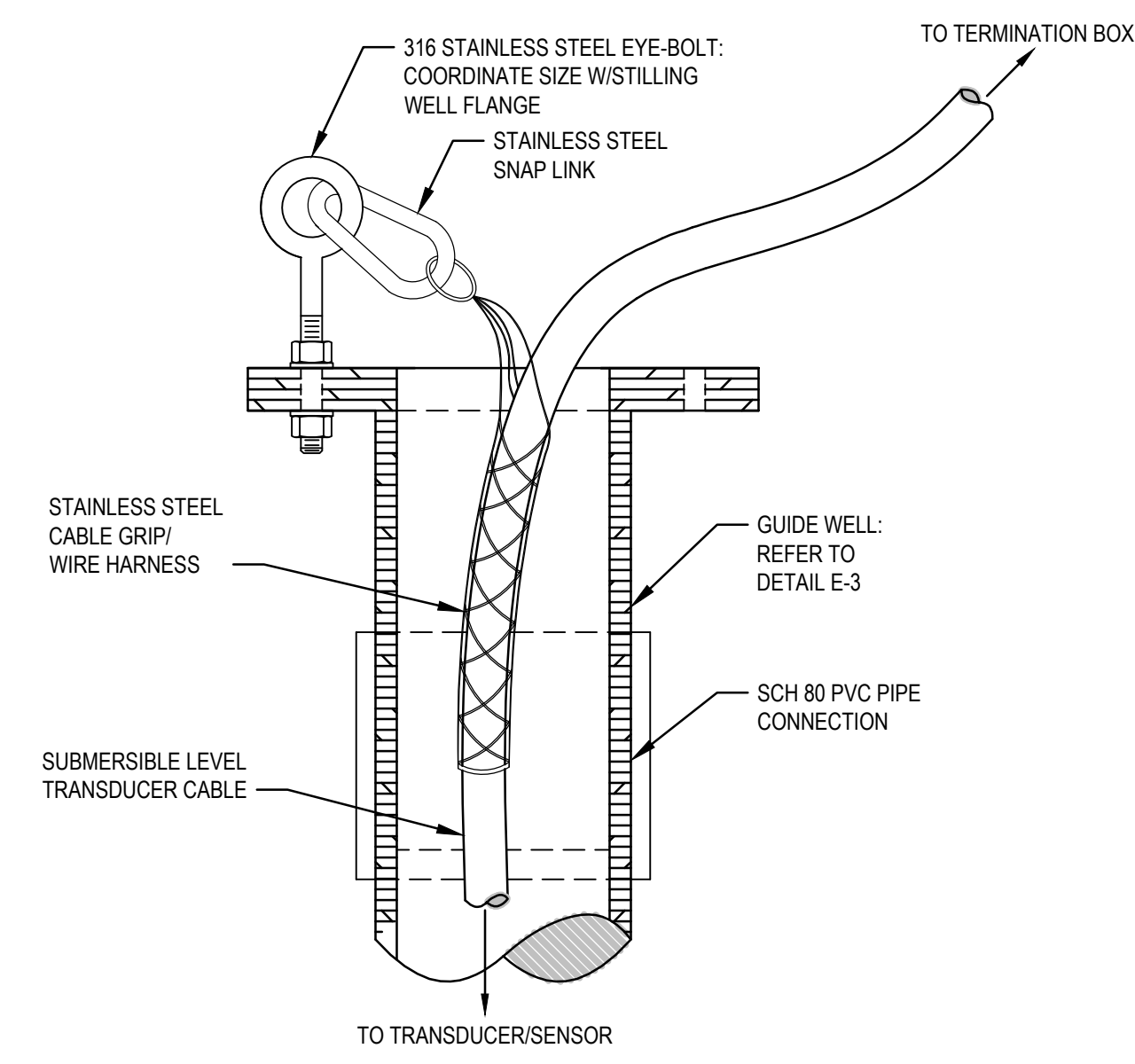


DETAIL NOTES:
 1. ROUTE COIL CABLE AND ELECTRODE CABLES IN SEPARATE CONDUITS AS REQUIRED BY THE FLOWMETER MANUFACTURER.
 2. FLOW TUBE SHALL BE SUBMERGENCE RATED.

MAGNETIC FLOWMETER WITH INTEGRAL TRANSMITTER DETAIL

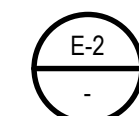


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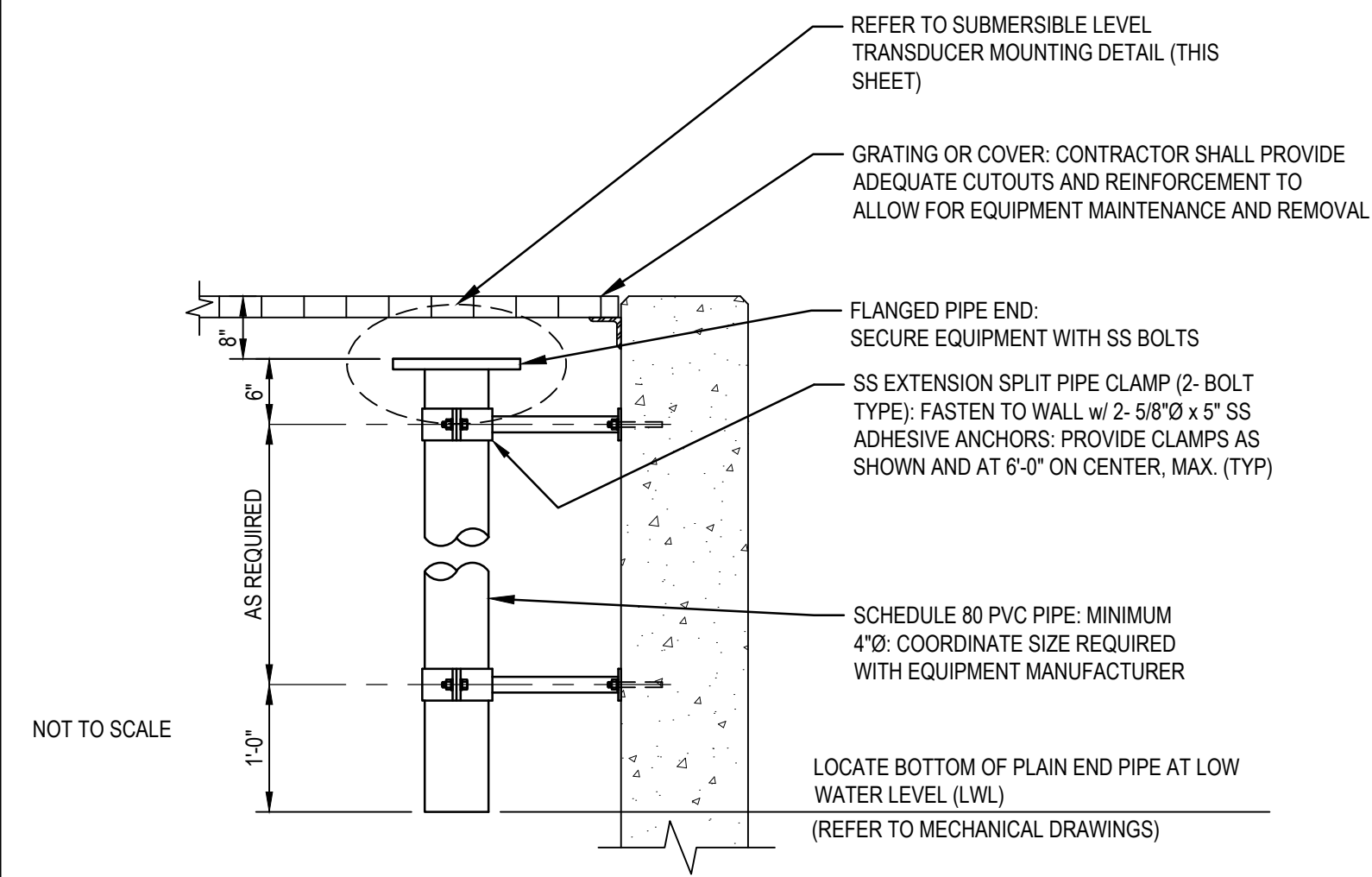


NOTES:
 1. COORDINATE FINAL DEPTH OF SUBMERSIBLE TRANSDUCER/SENSOR AND BOTTOM OF THE STILLING WELL WITH SUBMERSIBLE TRANSDUCER/SENSOR MANUFACTURER.

SUBMERSIBLE LEVEL TRANSDUCER MOUNTING DETAIL

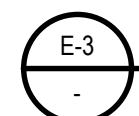


SCALE: NTS



NOTES:
 REFER TO SUBMERSIBLE LEVEL TRANSDUCER MOUNTING DETAIL (THIS SHEET)
 GRATING OR COVER: CONTRACTOR SHALL PROVIDE ADEQUATE CUTOUTS AND REINFORCEMENT TO ALLOW FOR EQUIPMENT MAINTENANCE AND REMOVAL
 FLANGED PIPE END: SECURE EQUIPMENT WITH SS BOLTS
 SS EXTENSION SPLIT PIPE CLAMP (2-BOLT TYPE): FASTEN TO WALL w/ 2- 5/8"Ø x 5" SS ADHESIVE ANCHORS. PROVIDE CLAMPS AS SHOWN AND AT 6'-0" ON CENTER, MAX. (TYP)
 SCHEDULE 80 PVC PIPE: MINIMUM 4"Ø. COORDINATE SIZE REQUIRED WITH EQUIPMENT MANUFACTURER
 LOCATE BOTTOM OF PLAIN END PIPE AT LOW WATER LEVEL (LWL) (REFER TO MECHANICAL DRAWINGS)

SUBMERSIBLE LEVEL STILLING WELL DETAIL

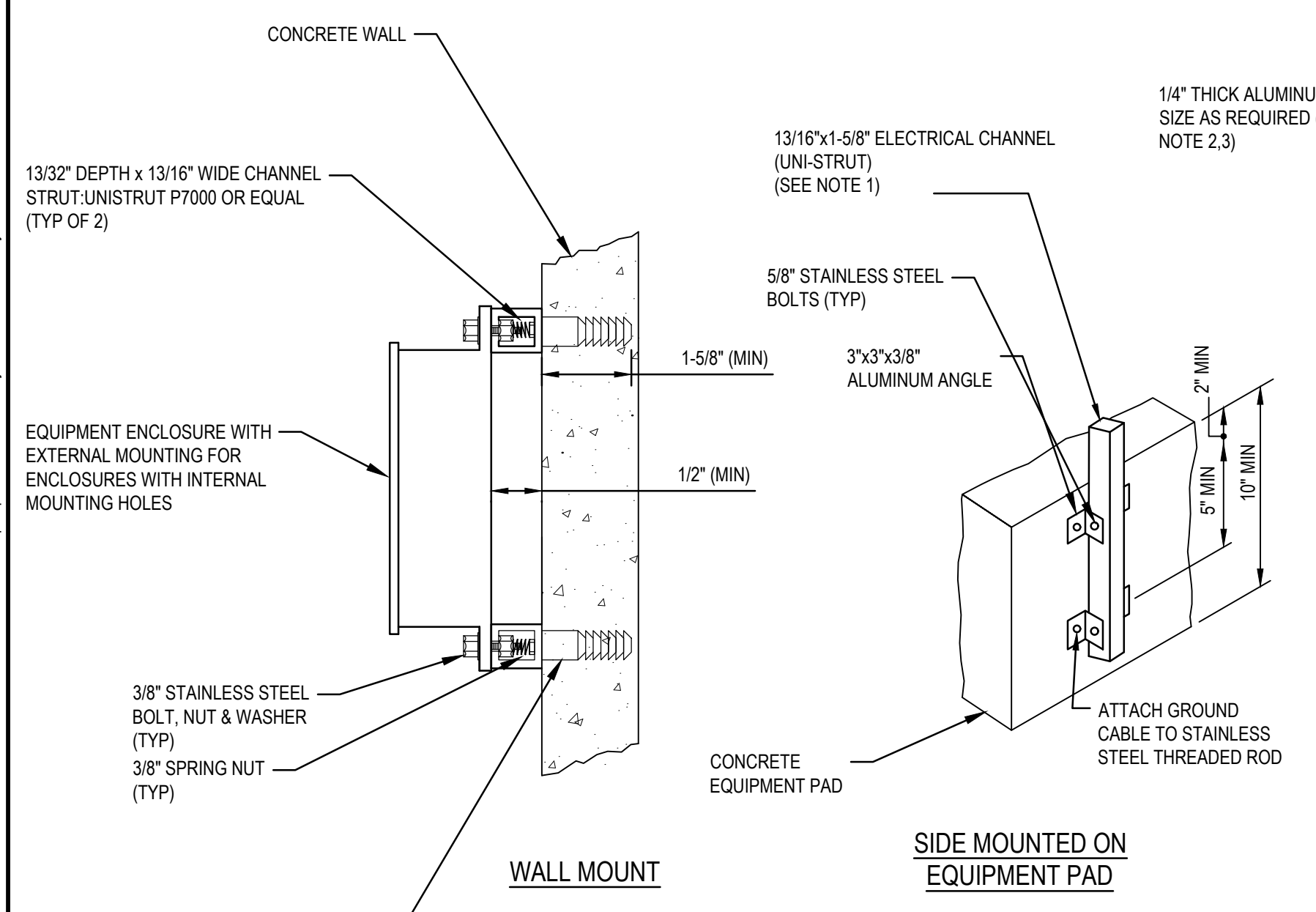


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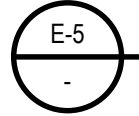


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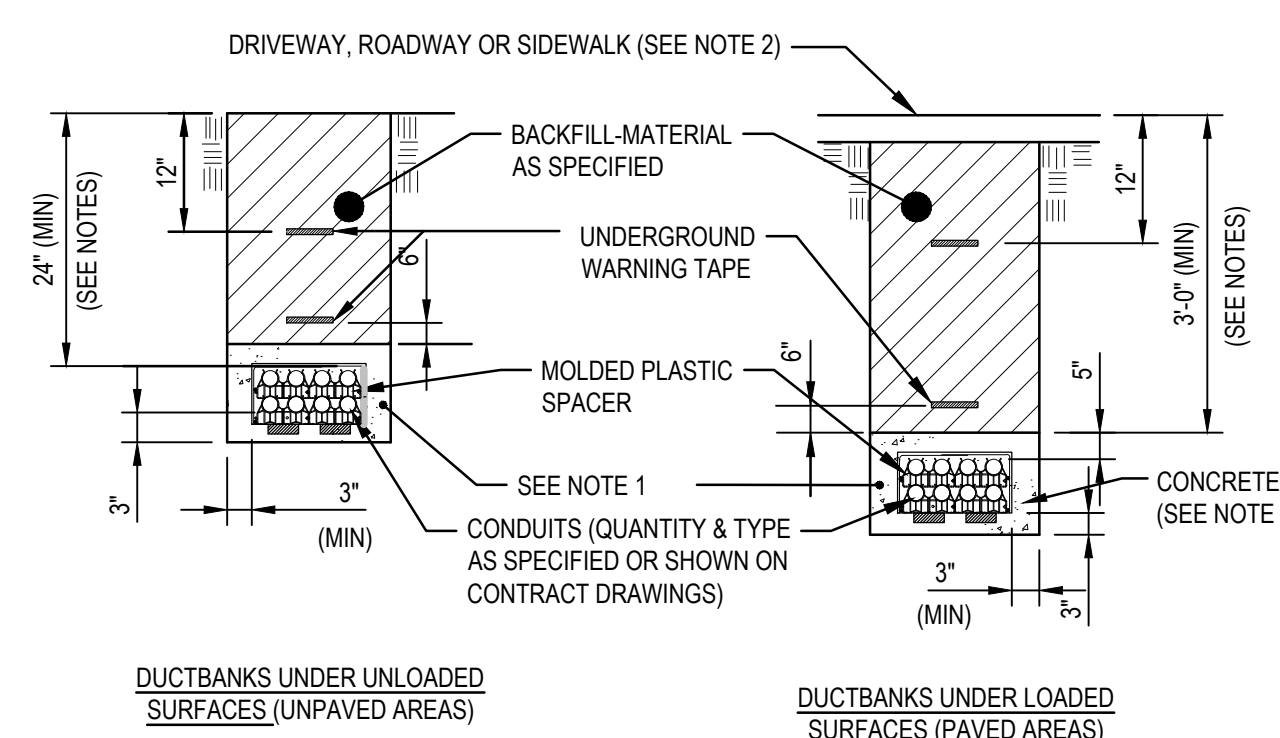


NOTES:
 1. PROVIDE TWO SUPPORTS FOR ENCLOSURES/EQUIPMENT WIDER THAN 8".
 2. ALUMINUM MOUNTING PLATES SHALL BE 2" GREATER ON EACH SIDE THAN DIMENSION OF THE ENCLOSURE(S)/EQUIPMENT. ROUND ALL CORNERS AND EDGES.
 3. ANCHOR ALUMINUM PLATE TO ANGLE POST WITH 3/8"Ø STAINLESS STEEL FASTENERS.

EQUIPMENT MOUNTING RACK DETAILS

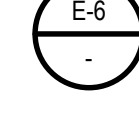


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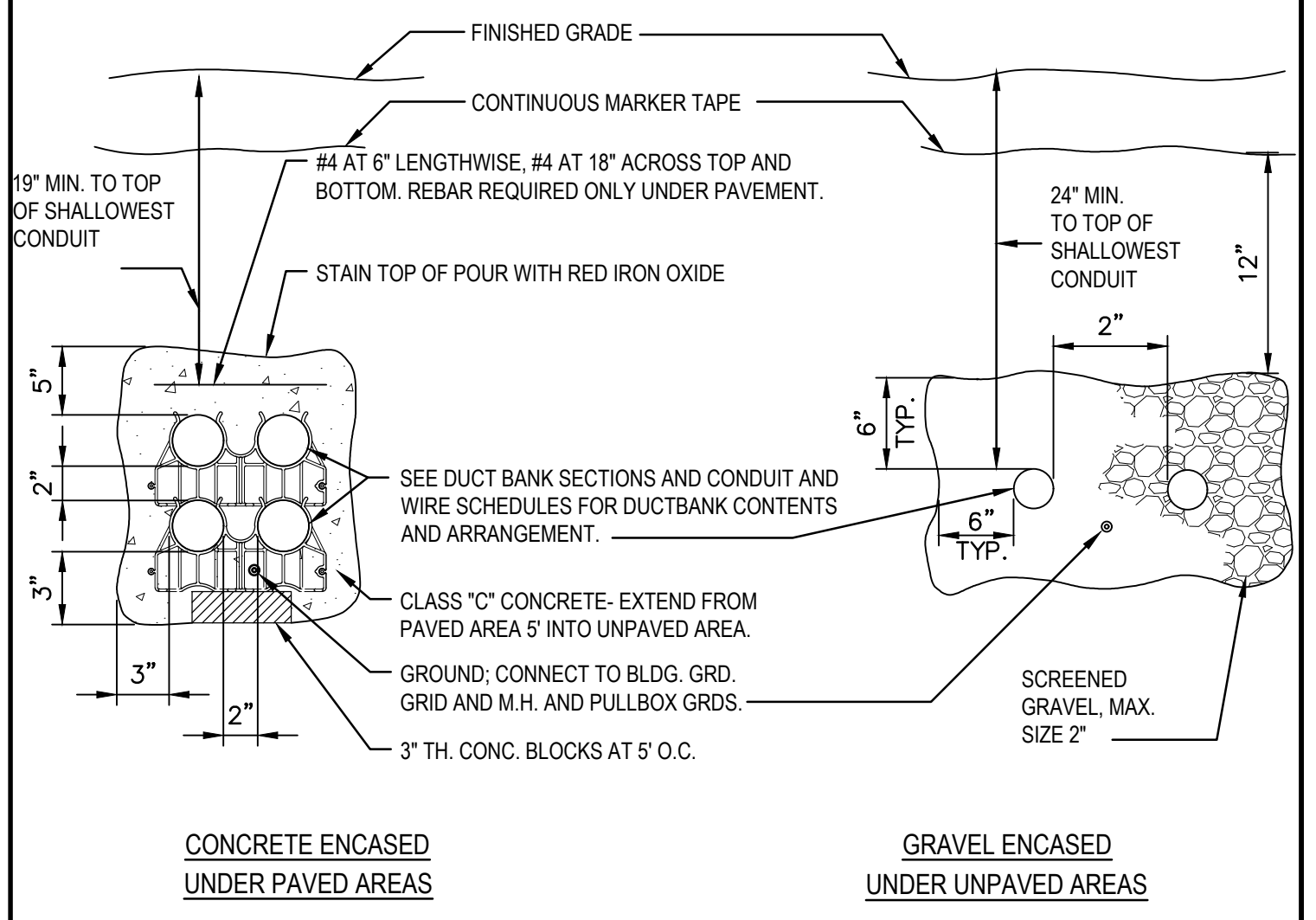


NOTES:
 1. REFER TO "DUCT BANK DETAIL", THIS SHEET, FOR INSTALLATION REQUIREMENTS FOR CONCRETE ENCASED DUCT BANKS. COMMUNICATIONS DUCT BANKS SHALL CONSIST OF PVC COATED RIGID STEEL CONDUIT.
 2. FOR DUCT BANKS INSTALLED IN EXISTING PAVED AREAS, CUT EXISTING DRIVEWAY, ROADWAY OR SIDEWALK 6" WIDER THAN REQUIRED TRENCH WIDTH (TYP EACH SIDE OF TRENCH).
 3. DUCT BANK DEPTH SHALL BE COORDINATED WITH MANHOLE/HANDHOLE PENETRATIONS.
 4. STAIN CONCRETE w/RED IRON OXIDE DUST.

DUCT BANK COVER DETAIL



SCALE: NTS

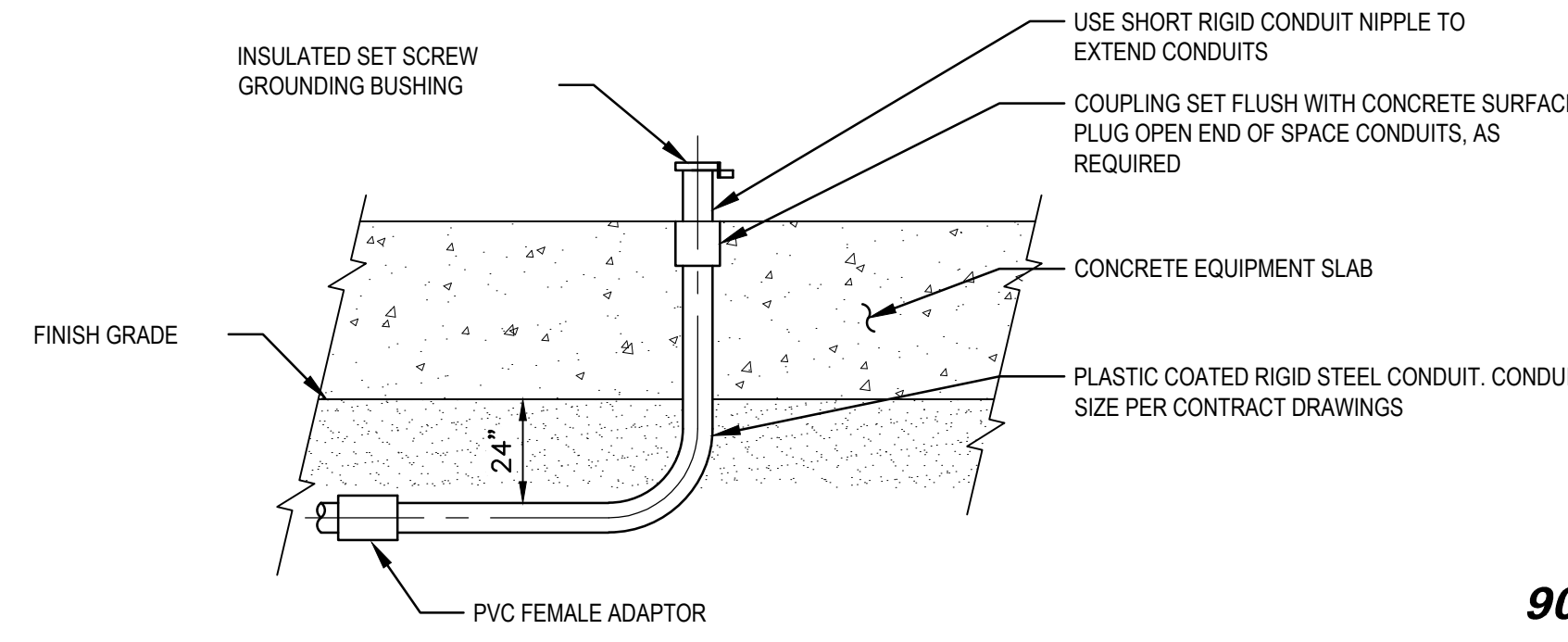


NOTES:
 1. WHERE CONDUITS ARE INSTALLED IN A CONCRETE SLAB, THE 24" DIMENSION DOES NOT APPLY. CONDUITS SHALL BE INSTALLED BETWEEN REBAR MATS OR UNDER A SINGLE REBAR MAT.

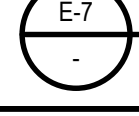
DUCT BANK DETAIL



SCALE: NTS

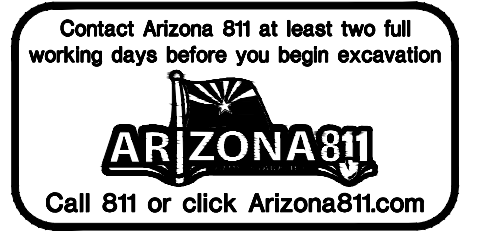


CONDUIT PENETRATION DETAIL



SCALE: NTS

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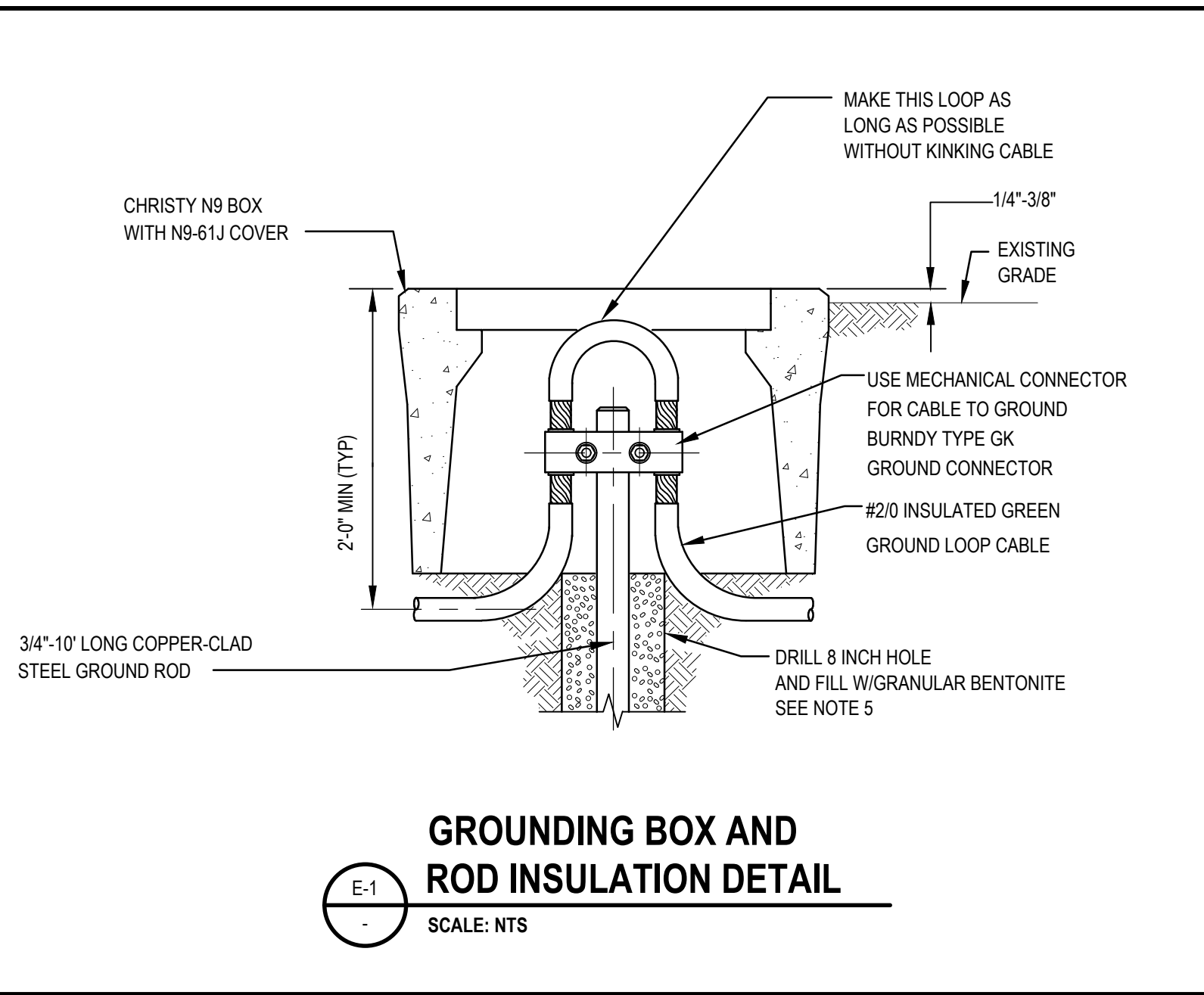


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 Plotted By: Pauline Eskuri
 Plot Date: 9 June 2020 - 9:43 AM

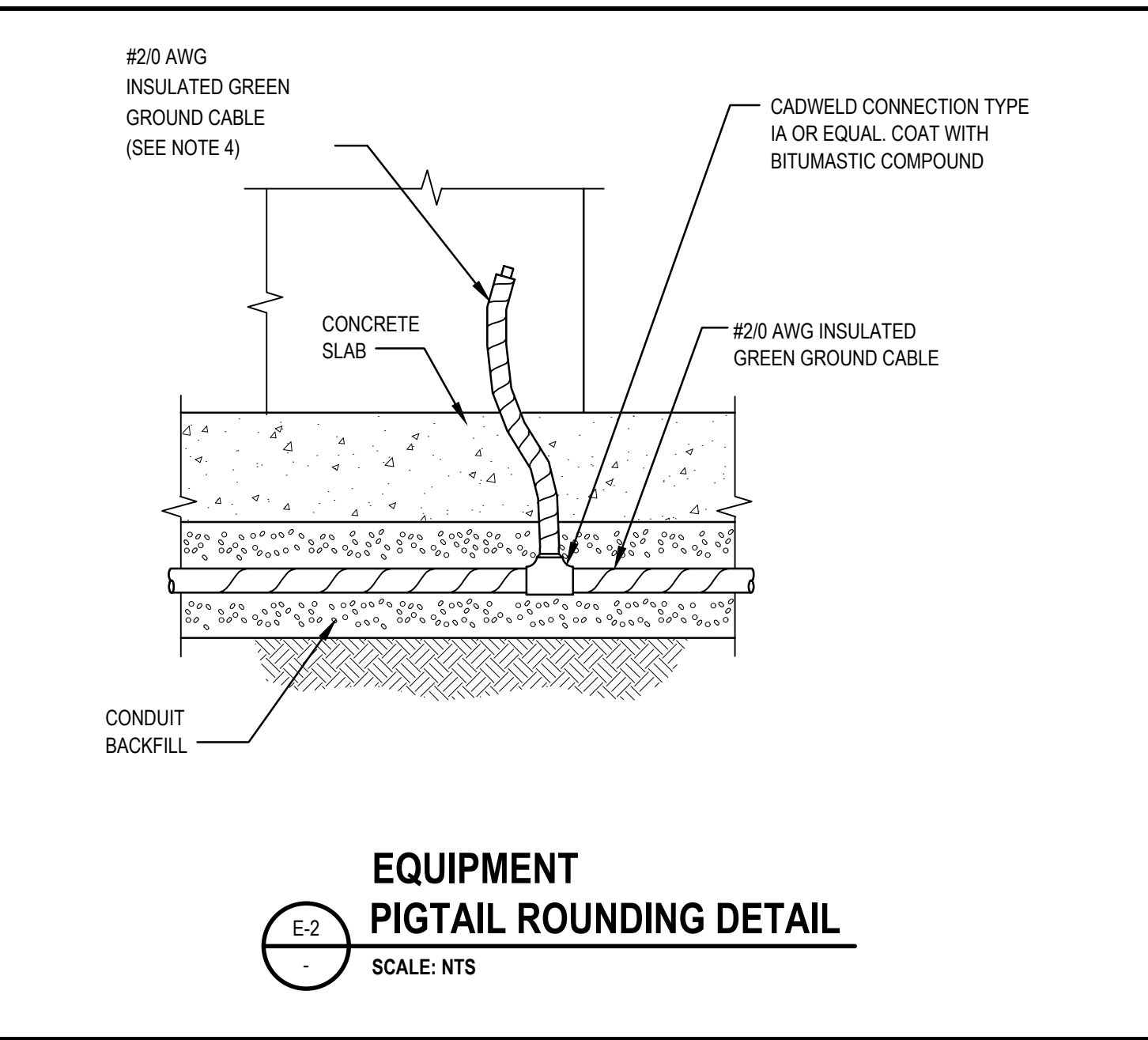
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PROJECT NAME	CAPITAL IMPROVEMENT PROJECT
SHEET NUMBER	RILEY LIFT STATION
PROJECT NUMBER	SW1391
DATE	JUNE 2020
REVISION	18 OF 20
PROJECT NUMBER	SW1391

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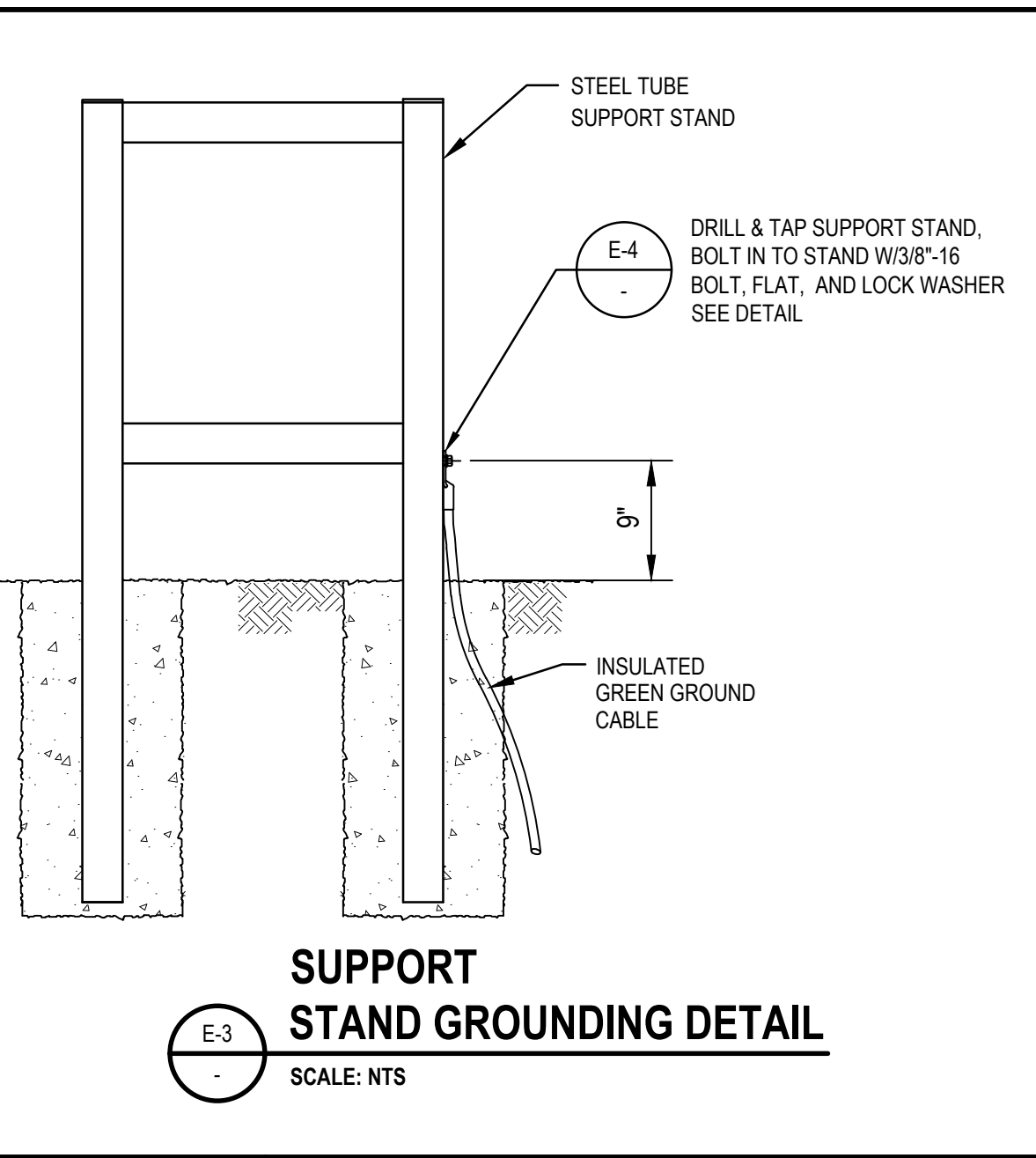
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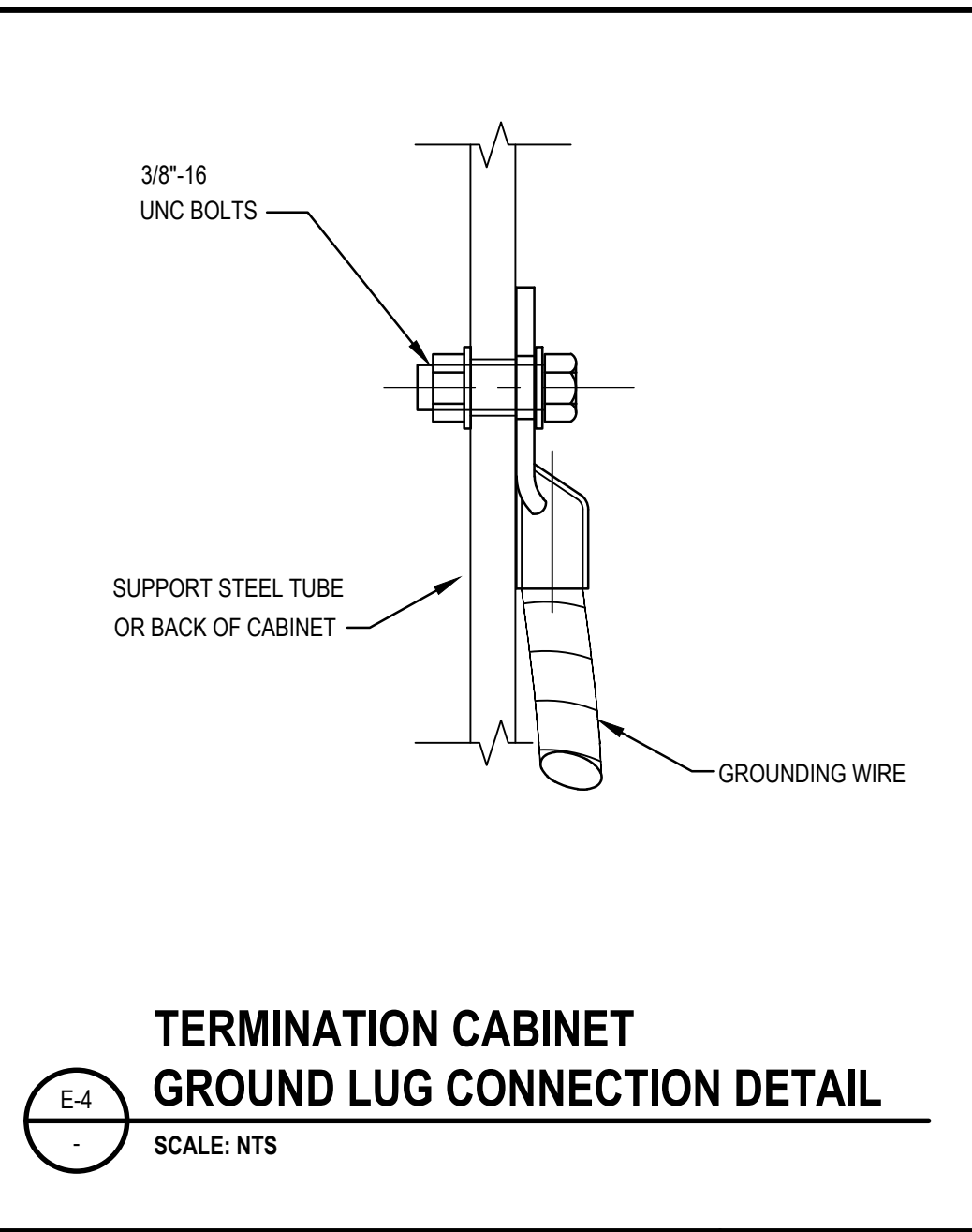
GROUNDING BOX AND ROD INSULATION DETAIL
SCALE: NTS



EQUIPMENT PIGTAIL ROUNDING DETAIL
SCALE: NTS



SUPPORT STAND GROUNDING DETAIL
SCALE: NTS



TERMINATION CABINET GROUND LUG CONNECTION DETAIL
SCALE: NTS

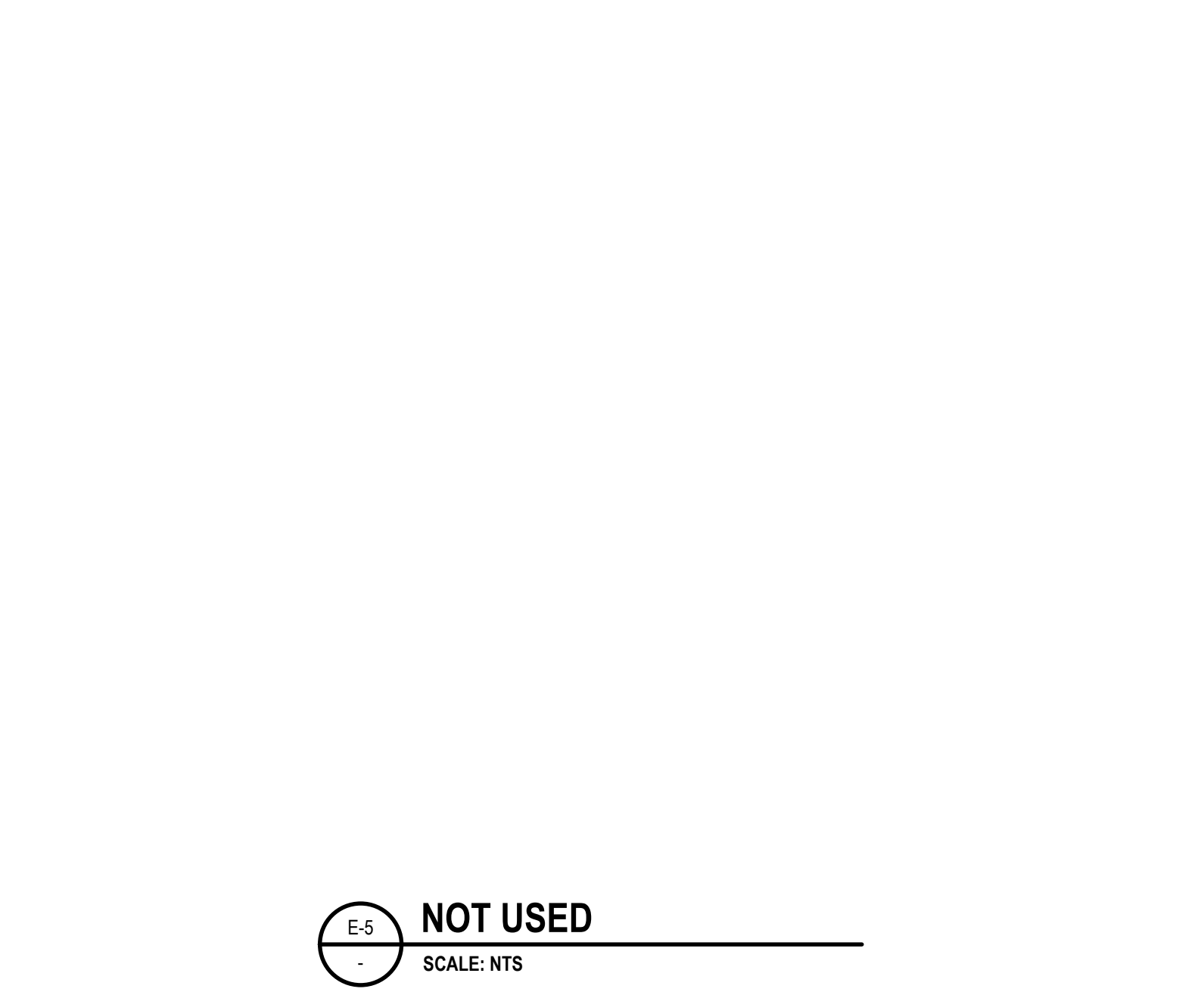
NOTES

- GROUND SYSTEM SHALL BE TESTED BY THREE ELECTRODE METHOD OF MEASURING RESISTANCE AND VERIFYING THAT IT IS LESS THAN 5 OHMS.
- ALL GROUND CABLE IS INSULATED #2/0 AWG COPPER WITH GREEN INSULATION UNLESS SHOWN OTHERWISE.
- LOCATE GROUNDING CONDUCTORS SO AS NOT TO INTERFERE WITH THE MOUNTING OF THE EQUIPMENT.
- ROUTE GROUNDING PIGTAIL AND CONNECT TO EQUIPMENT GROUND BUS WITH MECHANICAL CONNECTOR. EXPOSED CONNECTIONS BETWEEN DIFFERENT METALS SHALL BE TREATED WITH NO-OXIDE PAINT GRADE A OR APPROVED EQUAL.
- WHEN BACKFILLING, FILL HOLE WITH WATER 1/3 DEPTH POUR GRANULAR GRADE BENTONITE SLOWLY INTO HOLE. ALTERNATE WATER WITH BENTONITE WHILE HOLE IS FILLED. WHEN BENTONITE IS MIXED IN THIS MANNER IT WILL INCREASE TO 6X ITS DRY VOLUME.
- AT ALL BOXES, EQUIPMENT, AND SWITCHGEAR, PROVIDE INSULATION THROAT TYPE METALLIC GROUNDING BUSHINGS FOR METALLIC CONDUITS. BOND TOGETHER ALL CONDUITS TO PROVIDE CONTINUITY OF EQUIPMENT GROUNDING SYSTEM. SIZE BONDING CONDUCTOR IN ACCORDANCE WITH CODE REQUIREMENTS.

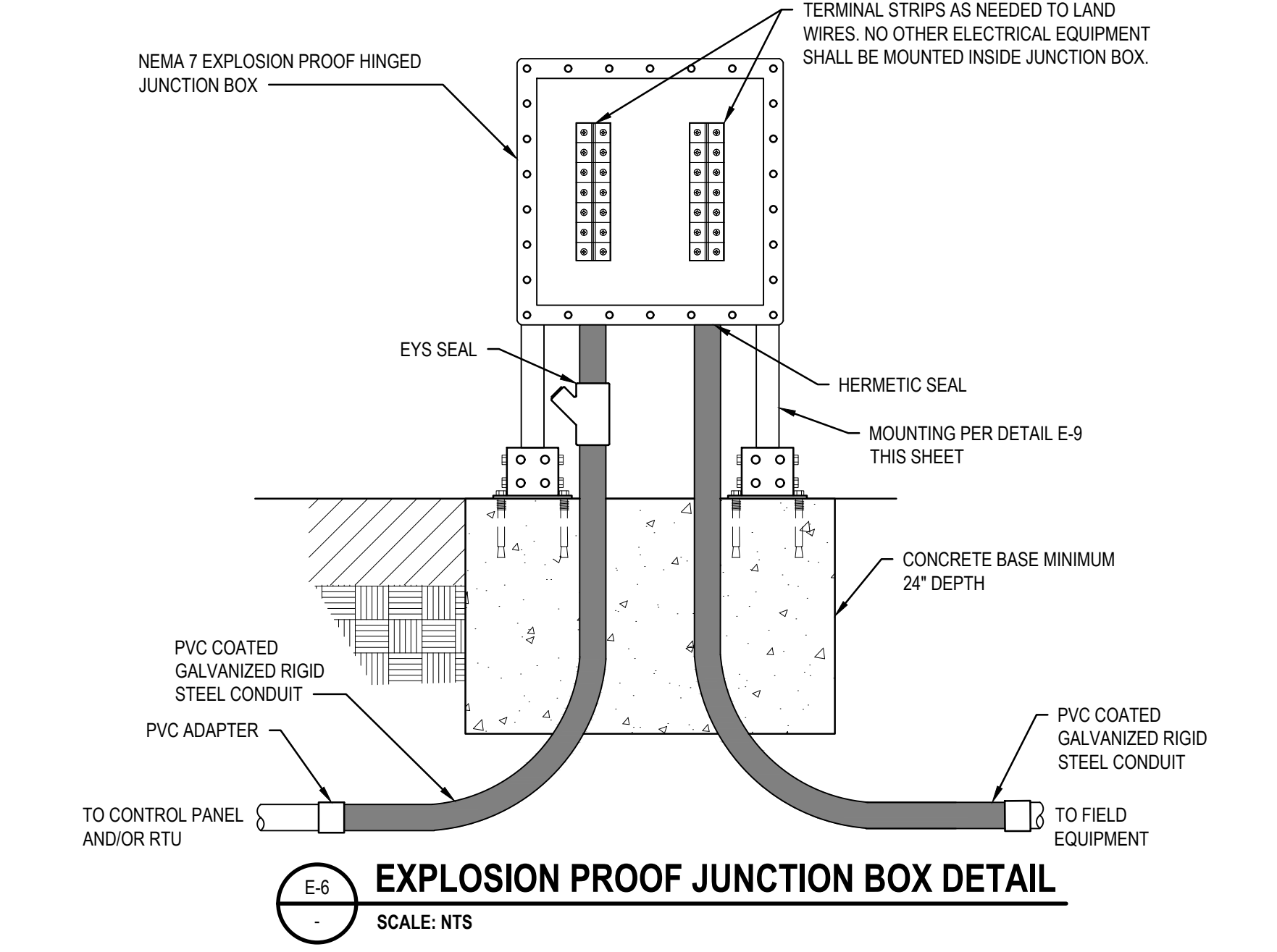
PROJECT NAME: CAPITAL IMPROVEMENT PROJECT
SHEET NAME: RILEY LIFT STATION
PROJECT NUMBER: SW1391



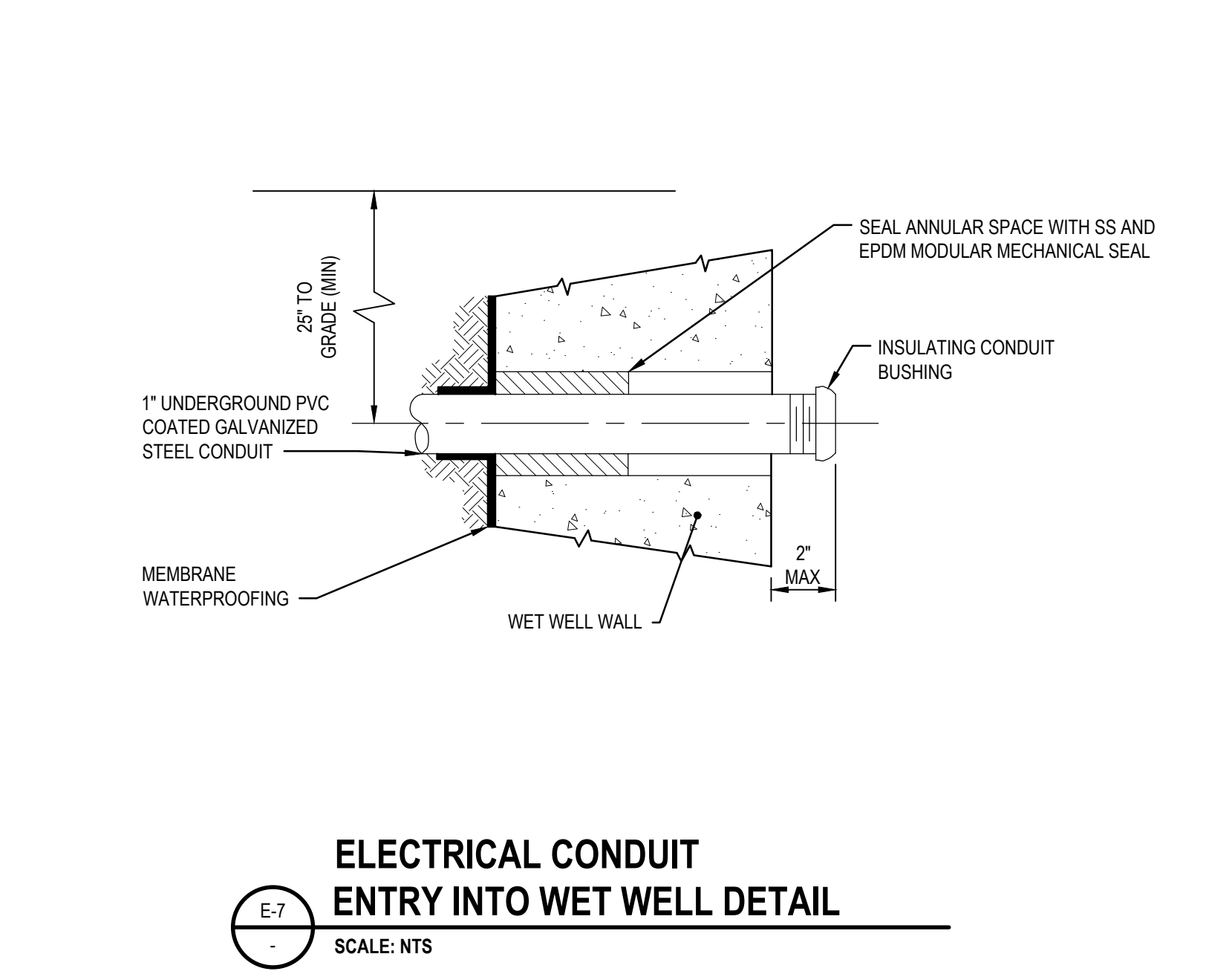
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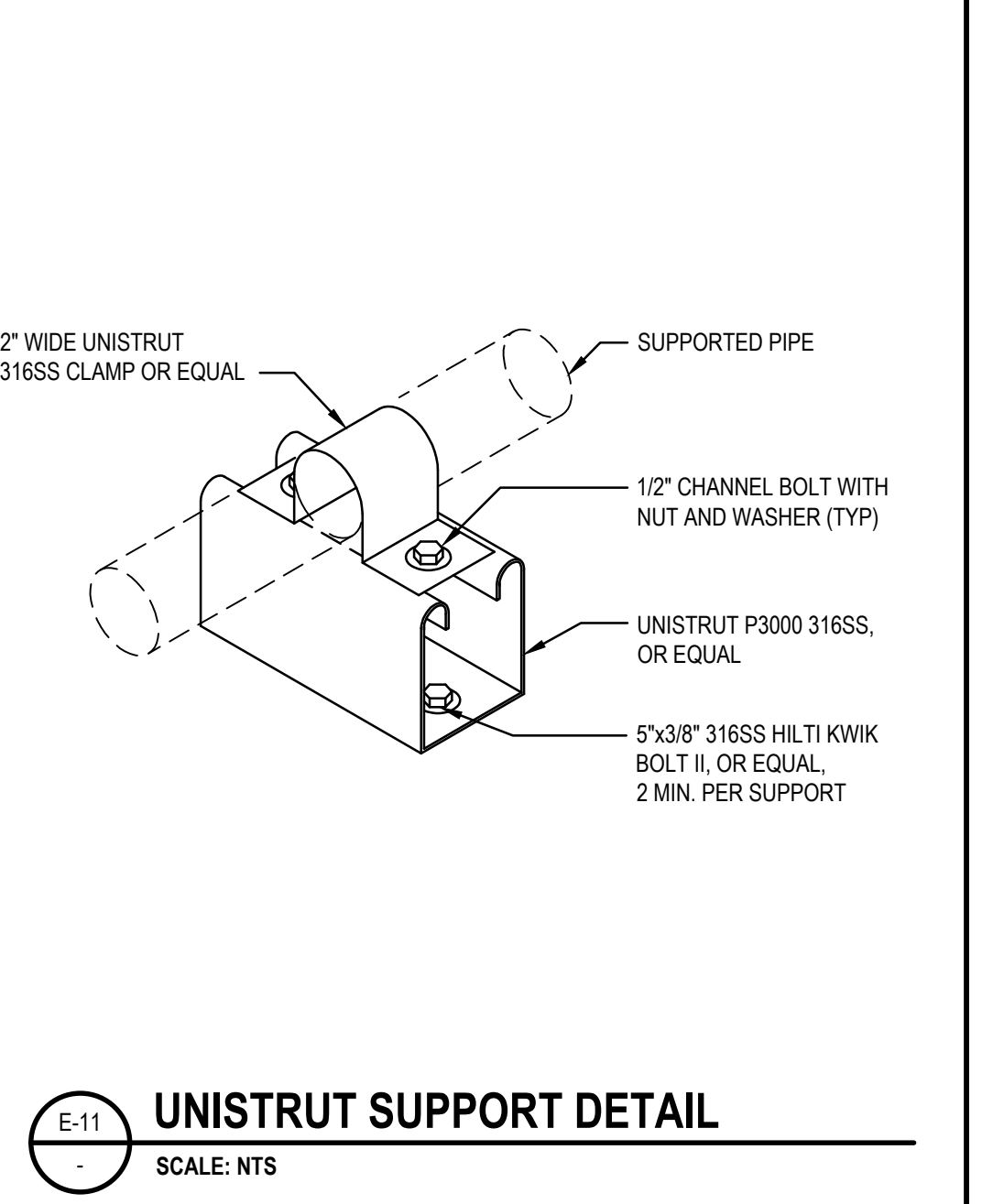
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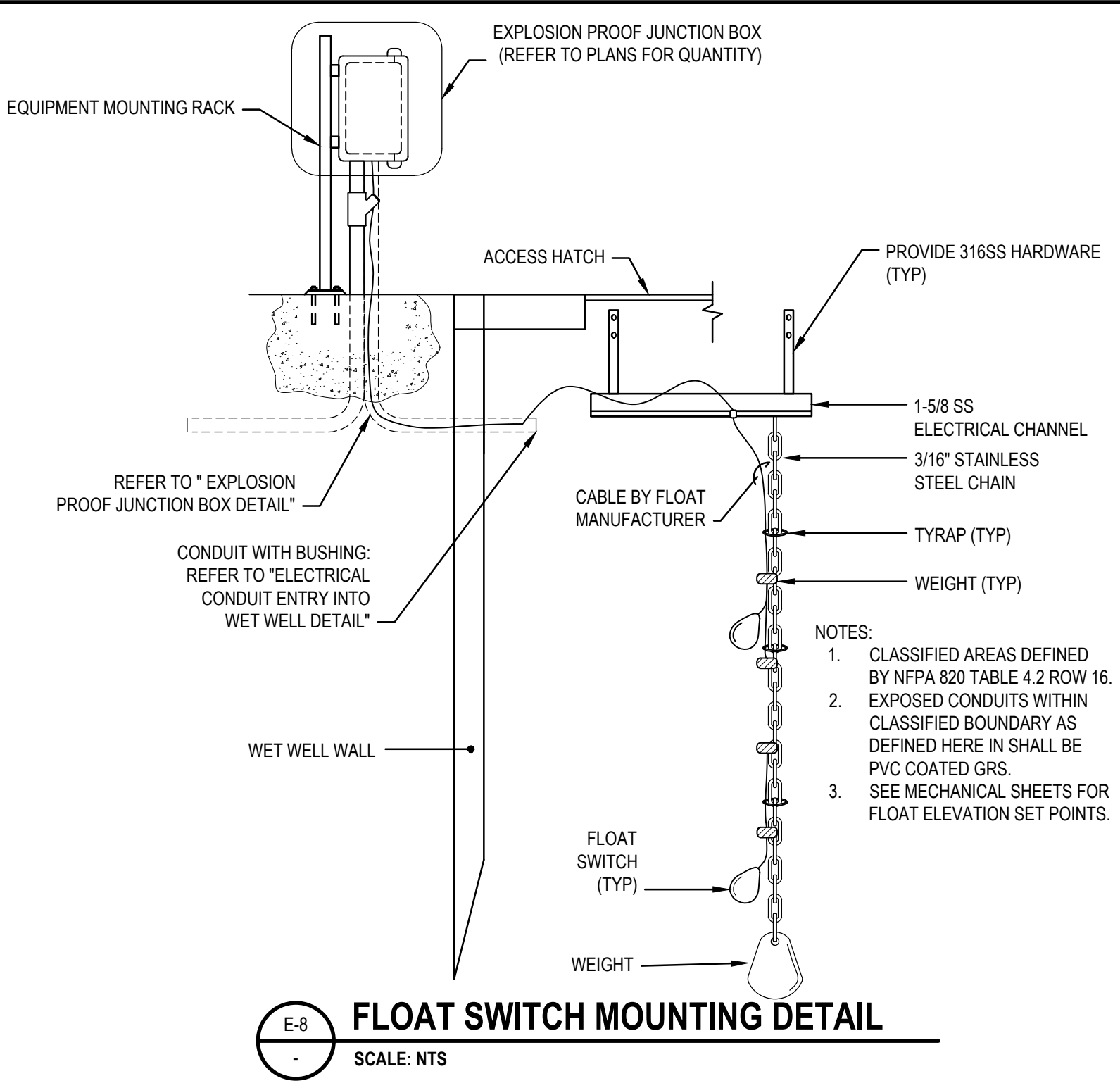
EXPLOSION PROOF JUNCTION BOX DETAIL
SCALE: NTS



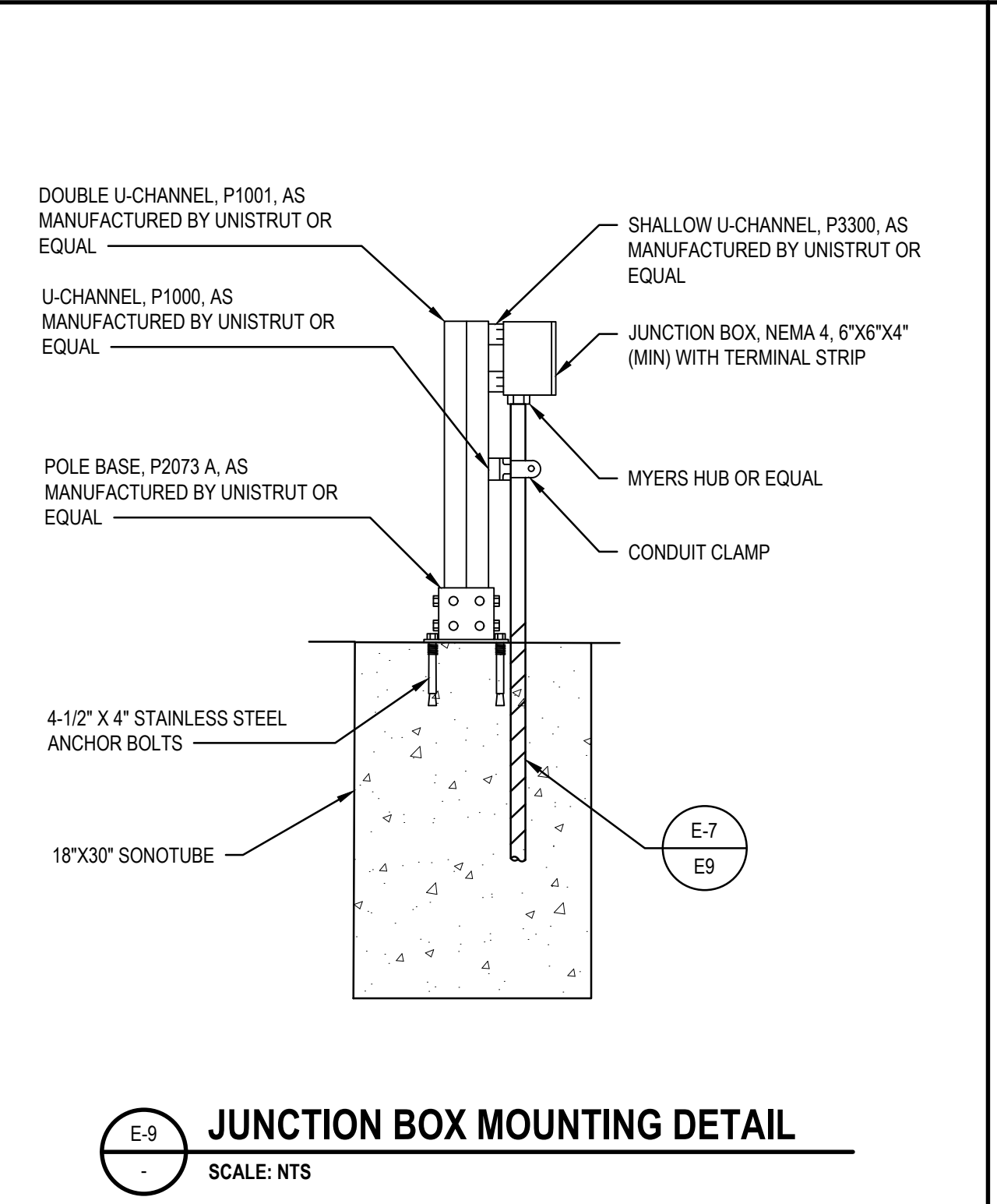
ELECTRICAL CONDUIT ENTRY INTO WET WELL DETAIL
SCALE: NTS



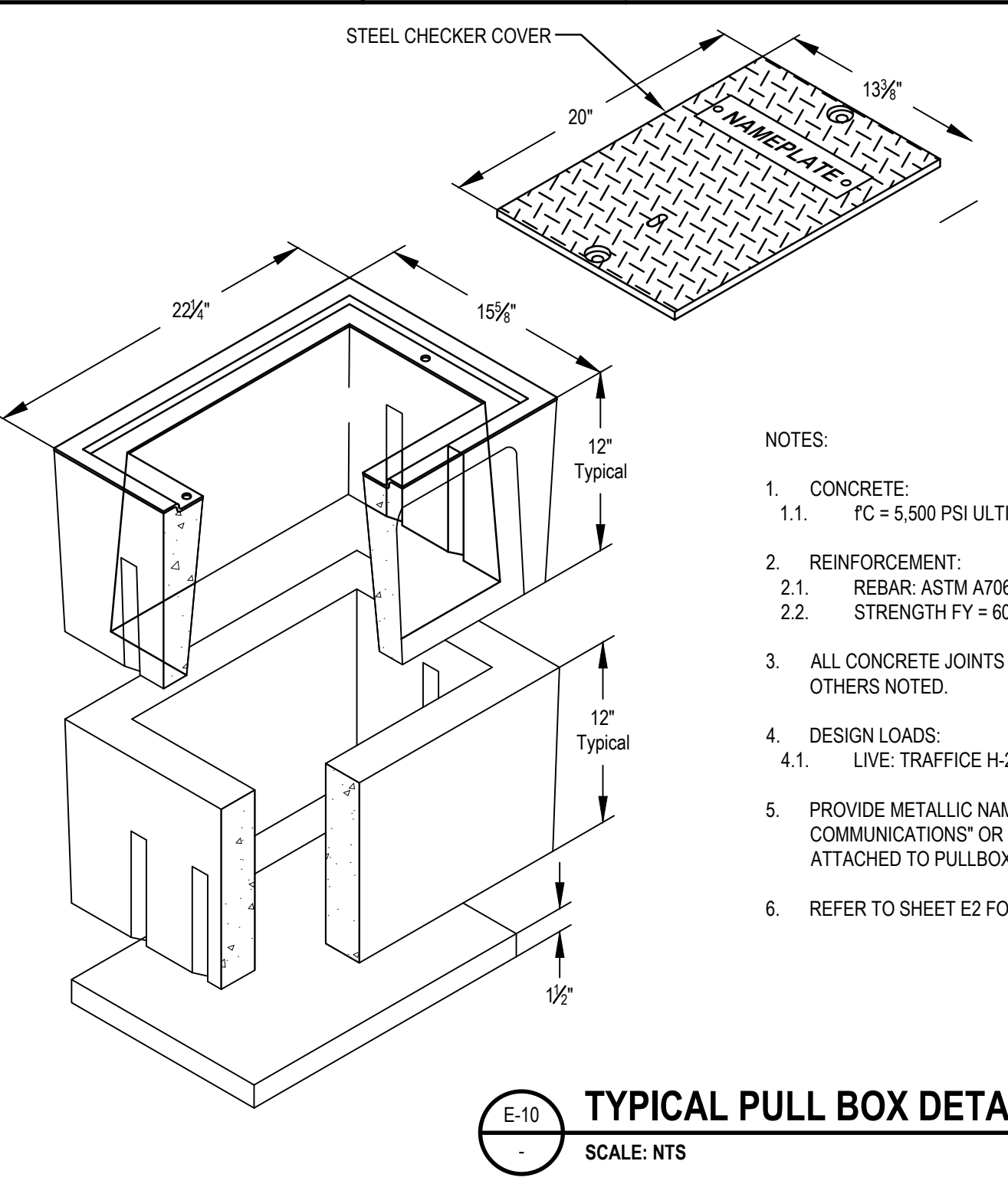
UNISTRUT SUPPORT DETAIL
SCALE: NTS



FLOAT SWITCH MOUNTING DETAIL
SCALE: NTS



JUNCTION BOX MOUNTING DETAIL
SCALE: NTS



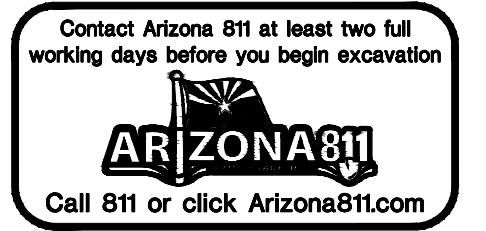
TYPICAL PULL BOX DETAIL
SCALE: NTS

ORDERING CODE	ITEM	DESCRIPTION
B1017BOX	BOX	B1017 UTILITY BOX (10-5/8\"/>
B1017-61JH	COVER	STEEL CHECKER PLATE, H20, BOLT DOWN
B1017X12	EXTENSION	12\"/>
B9SL	SLAB	REINFORCED CONCRETE (13-1/4\"/>

NOTES:

- CONCRETE:
 - FC = 5,500 PSI ULTIMATE COMPRESSIVE STRENGTH IN 28 DAYS.
- REINFORCEMENT:
 - REBAR: ASTM A706, GRADE 60
 - STRENGTH FY = 60,000 PSI
- ALL CONCRETE JOINTS TO BE SEALED USING APPROVED JOINT SEALANT UNLESS OTHERS NOTED.
- DESIGN LOADS:
 - LIVE: TRAFFICE H-20 LOADING PER ASTM C-857 (16,000 lb. WHEEL LOAD).
- PROVIDE METALLIC NAMEPLATE WITH 1-INCH EMBOSSED LETTERING TO READ "COMMUNICATIONS" OR "480 VOLT ELECTRICAL" AS APPROPRIATE PERMANENTLY ATTACHED TO PULLBOX COVER.
- REFER TO SHEET E2 FOR PULLBOX DESIGNATION

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PROJECT NAME: CAPITAL IMPROVEMENT PROJECT
SHEET NAME: RILEY LIFT STATION
PROJECT NUMBER: SW1391

ORIGINAL PLAN DATE: JUNE 2020
LATEST REVISION DATE:

SHEET NUMBER: 19 OF 20
SHEET: E10
PROJECT NUMBER: SW1391

File Name: C:\Users\pauline\Documents\Projects\1250409 - Riley Lift Station\Sheets\1250409-E10.dwg
 Plotted By: Pauline Esquivel
 Plot Date: 9 June 2020 - 9:44 AM

REFERENCE DOCUMENTS

THE WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT EDITION(S) OF THE FOLLOWING SPECIFICATIONS AND PLANS. SHOULD TWO OR MORE OF THESE REQUIREMENTS CONFLICT, THE MORE RESTRICTIVE OPTION AS DETERMINED BY THE ENGINEER SHALL GOVERN.

- CITY OF AVONDALE SUPPLEMENTS TO MAG STANDARD SPECIFICATION AND DETAIL
- M.A.G UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- M.A.G UNIFORM STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION.
- A.D.H.S. (A.D.E.Q) ENGINEERING BULLETINS NO. 11 (SEWAGE WORKS).
- A.W.W.A STANDARDS
- M.U.T.C.D MANUAL NO UNIFORM TRAFFIC CONTROL DEVICES

EXHIBIT B
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[Substitution/Equal Request Form]

See following pages.

SUBSTITUTION/EQUAL REQUEST FORM

INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

Bidder _____ hereby submits for City’s consideration the following product, instead of the specified item, for the above Project.

1.	<u>Section</u>	<u>Page</u>	<u>Paragraph/Line</u>	<u>Specified Item</u>
_____	_____	_____	_____	_____

Proposed Substitution: _____

Statement indicating why specified product, fabrication or installation cannot be provided, if applicable:

(NOTE: See Article II – Bid Process; Bid Award, Section 2.4(C), Approval of Substitutions, or Section 2.4(D), Use of Equals, as applicable, for additional criteria concerning prior approval for substitutions or use equals of material and equipment.)

2. Attach complete product description, drawings, photographs, performance and test data, and other information necessary for evaluation, indicating by highlighting all comparable data between specified item and proposed substitution or equal. Identify specific model numbers, finishes, options, etc.

A. Will changes be required to Project design (architecturally, structurally, mechanically or electrically) in order to properly install proposed substitution? Yes ____ No ____ If Yes, explain:

B. Will the undersigned pay for changes to the Project design, including engineering and drawing costs, caused by requested substitution? Yes ____ No ____

C. List differences between proposed substitution and specified item. Include annotated copy of applicable Specification Section.

<u>Specified Item</u>	<u>Proposed Substitution</u>
_____	_____
_____	_____

D. Does substitution affect Drawing dimensions? Yes ____ No ____ If Yes, explain:

E. What effect does substitution have on other trades? _____

F. Does manufacturer’s warranty of proposed substitution differ from that specified?
Yes ____ No ____ If Yes, explain: _____

**CITY OF AVONDALE
PUBLIC WORKS DEPARTMENT
PW20-058**

G. Will substitution affect progress schedule? Yes ____ No ____ If Yes, explain:

H. Will substitution require more license fees or royalties than specified product?
Yes ____ No ____ If Yes, explain: _____

I. Will maintenance and service parts be locally available for substitution?
Yes ____ No ____ If Yes, explain: _____

J. Will substitution be compatible with all adjacent material and/or applications to or on the proposed substitution? Yes ____ No ____ If no, explain what material substitutions will be required to make your proposed substitution compatible: _____

List materials that will be required to provide compatibility: _____

3. The undersigned hereby assumes all responsibility for all provisions indicated herein and agrees that, if adequate comparable information is not provided as required by Section 2.4(C), Approval of Substitutions, or Section 2.4(D), Use of Equals, as applicable, and this Form, the proposed substitution or equal shall be subject to rejection.
4. The undersigned understands and agrees that the substitution requested, including all supporting data, will only be considered if it is submitted to the City Representative 10 full Days prior to the Bid Deadline. Telegraphic (facsimile) or electronic (email) copies will **not** be considered.

Submitted by:

For City's Use Only:

Signature

Accepted

Print Name

Rejected

Title

Remarks: _____

Company Name

Address

Signature

City, State, Zip Code

Print Name

Date

Telephone No.

Date

EXHIBIT C
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[Price Sheet]

See following pages.

PRICE SHEET

NOTE: Pricing shall be all-inclusive such as permits, overhead, profit, design, taxes, equipment, labor and material., All pricing blanks must be filled in. Incomplete or unfilled spaces in the Bid Price Sheet shall result in a determination that a Bid is non-responsive.

Item #	Description	Unit	Quantity	Unit Price	Total
1	Mobilization/demobilization	LS	1	\$	\$
2	Utility locating (vacuum excavation)	LS	1	\$	\$
3	Materials testing (concrete & compaction testing)	LS	1	\$	\$
4	Traffic control	LS	1	\$	\$
5	Construction staking	LS	1	\$	\$
6	As-builts	LS	1	\$	\$
7	Cap and grout fill ex. sewer lines	LS	1	\$	\$
8	Remove existing curb and gutter	LF	52	\$	\$
9	Remove and replace existing sidewalk	SF	104	\$	\$
10	Remove and replace existing AC pavement	SY	132	\$	\$
11	Remove existing fence	LF	42	\$	\$
12	Mountable Curb	LF	26	\$	\$
13	Vertical curb and gutter	LF	26	\$	\$
14	Safety bollard	EA	2	\$	\$
15	Clearing and grubbing	LS	1	\$	\$
16	Site grading	LS	1	\$	\$
17	Excavation, shoring, backfill, & hauling	LS	1	\$	\$
18	ABC driveway and site ground cover (4")	CY	21	\$	\$
19	Steel reinforced, cast-in-place concrete pad, electrical equipment	CY	3	\$	\$
20	Steel reinforced, cast-in-place concrete pad, generator	CY	2	\$	\$
21	Precast 5-ft diameter wet well and cover	EA	1	\$	\$
22	Precast 5-ft diameter sewer manhole	EA	1	\$	\$
23	Connect to existing manhole	EA	1	\$	\$
24	8' CMU wall	LF	125	\$	\$
25	Double swing gate	EA	1	\$	\$

**CITY OF AVONDALE
PUBLIC WORKS DEPARTMENT
PW20-058**

Item #	Description	Unit	Quantity	Unit Price	Total
26	Wet well hatch	EA	1	\$	\$
27	Pipe & equipment coating	LS	1	\$	\$
28	Wet well & manhole coating	LS	1	\$	\$
29	Electrical shade canopy	LS	1	\$	\$
30	Chopper pump assembly	EA	2	\$	\$
31	4" DIP force main	LF	256	\$	\$
32	10" PVC gravity sewer	LF	91	\$	\$
33	6" PVC wet well stubout	LF	5	\$	\$
34	1" Copper service, meter, BFP & hose bib	LS	1	\$	\$
35	4" DIP Wye	EA	2	\$	\$
36	4" DIP 90 Bend	EA	2	\$	\$
37	4" DIP 45 Bend	EA	7	\$	\$
38	4" Plug Valve	EA	5	\$	\$
39	4" Restrained flexible coupling	EA	4	\$	\$
40	4" Check valve	EA	2	\$	\$
41	4"x3" Reducer	EA	2	\$	\$
42	Install City furnished 4" flow meter	EA	1	\$	\$
43	4" Wet well vent	EA	1	\$	\$
44	1-1/2" PVC drain lines from ARV's to wet well	LS	1	\$	\$
45	Pipe support	EA	7	\$	\$
46	Combination air release valve	EA	3	\$	\$
47	2" PVC conduit for future fiber optic	LF	120	\$	\$
48	Electrical Improvements (all electrical improvements per Plan Sheets E1-E10)	LS	1	\$	\$
49	Instrumentation Improvements (all instrumentation improvements per Plan Sheets E1-E10 and M1-M2)	LS	1	\$	\$
50	(Allowance) - New APS Electrical Service	LS	1	\$ 20,000	\$ 20,000
51	(Allowance) Force Account	LS	1	\$ 50,000	\$ 50,000
BASE BID TOTAL (Items 1 - 50)					\$

**CITY OF AVONDALE
PUBLIC WORKS DEPARTMENT
PW20-058**

Item #	Description	Unit	Quantity	Unit Price	Total
DEDUCTIVE BID ALTERNATES					
52	The Contractor shall provide a deductive bid alternate for removing the standby generator and generator pad from the project, and for replacing the automatic transfer switch with a manual transfer switch and quick connects.	LS	1	\$	\$
53	The Contractor shall provide a deductive bid alternate for changing the material of the below ground portion of the force main to 4" HDPE DR17, PE4710 (DIPS Sizing). Joining shall be per butt fusion and Contractor shall include all required fittings, adapters, thrust restraints. Contractor to provide fusion machine data logger quality control reports daily.	LF	172	\$	\$

*** ALL BIDS ARE PRESUMED TO INCLUDE ALL APPLICABLE TAXES. PLEASE BE ADVISED THAT ARIZ. REV. STAT. § 42-5075(P) APPLIES TO THE PROJECT CONTEMPLATED WITHIN THIS CONTRACT. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL WORK CONTEMPLATED BY THE PLANS FOR THE PROJECT IS BID ON THE PRICE SHEET.**

Company Name: _____ Date: _____

ACCEPTANCE OF OPTIONAL ITEMS

ALT. No. 51 Yes _____ No _____ Authorized By: _____

ALT. No. 52 Yes _____ No _____ Authorized By: _____ 2

*** ALL BIDS ARE PRESUMED TO INCLUDE ALL APPLICABLE TAXES. PLEASE BE ADVISED THAT ARIZ. REV. STAT. § 42-5075(P) APPLIES TO THE PROJECT CONTEMPLATED WITHIN THIS CONTRACT. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL WORK CONTEMPLATED BY THE PLANS FOR THE PROJECT IS BID ON THE PRICE SHEET.**

Company Name: _____ Date: _____

EXHIBIT D
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[Licenses; DBE/WBE Status]

See following page.

LICENSES; DBE/WBE STATUS

INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

1. Business License

Most business that are located or doing business in the City of Avondale are required to obtain and maintain City of Avondale business license. If you have a City of Avondale Business License, please provide or please explain why a business license is not applicable. If the City of Avondale determines that a business license is required, you will be required to obtain a business license as a condition to award of any procurement.

Not applicable. Please explain:

2. Arizona Transaction Privilege (Sales) Tax License (TPT License)

Most businesses:

- 2.1. located in Arizona
- 2.2. located outside of Arizona with Nexus
- 2.3. located outside of Arizona without Nexus that meet minimum
 - 2.3.1. A marketplace facilitator has economic nexus if it facilitates, for remote seller(s) or also on its own behalf, a gross amount of more than \$100,000 in sales.
 - 2.3.2. A remote seller has economic nexus if in the previous or current year, the gross sales generated from direct sales into Arizona is more than:
 - 2.3.2.1. \$200,000 (2019)
 - 2.3.2.2. \$150,000 (2020)
 - 2.3.2.3. \$100,000 (2021 and beyond)

are required to obtain and maintain TPT license. If you have a TPT License, please provide or please explain why a business license is not applicable. If the City of Avondale determines that a Transaction Privilege Tax license is required, you will be required to obtain a TPT license as a condition to award of any procurement.

Not applicable. Please explain:

3. DBE/WBE STATUS

Has your firm been certified by any jurisdiction in Arizona as a minority or woman owned business enterprise? Yes, No.

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

EXHIBIT E
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[References]

See following page(s).

REFERENCES

INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

Provide the following information for three clients for whom Bidder has successfully completed similar projects as set forth in Section 2.15 within the past 60 months. Failure to provide three accurate and suitable references will result in disqualification. Bidder may also attach another sheet with additional references.

1. Company: _____
Address _____
City/State/Zip Code _____
Contact: _____
Telephone Number: _____
Date of Contract _____
Date of Contract _____
Final Project Cost: _____
Project Description: _____

2. Company: _____
Address _____
City/State/Zip Code _____
Contact: _____
Telephone Number: _____
Date of Contract _____
Date of Contract _____
Final Project Cost: _____
Project Description: _____

3. Company: _____
Address _____
City/State/Zip Code _____
Contact: _____
Telephone Number: _____
Date of Contract _____
Date of Contract _____
Final Project Cost: _____
Project Description: _____

EXHIBIT F
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[Bid Bond]

See following page.

BID BOND

INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

KNOW ALL PERSONS BY THESE PRESENTS:

THAT, _____ (hereinafter called Principal), as Principal, and _____, a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, (hereinafter called the Surety), as Surety, are held and firmly bound unto the City of Avondale, (hereinafter called the Obligee) in the penal sum of Ten Percent (10%) of Bid Amount, _____ (Dollars) (\$ _____) lawful money of the United States of America, to be paid to the order of the City of Avondale, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents and in conformance with A.R.S. Section 34-201.

WHEREAS, the Principal has submitted a bid/proposal for: _____.

NOW, THEREFORE, if the Obligee accepts the proposal of the Principal and the Principal enters into a Contract with the Obligee in accordance with the terms of the proposal and gives the Bonds and Certificates of Insurance as specified in the Standard Specifications with good and sufficient surety for the faithful performance of the Contract and for the prompt payment of labor and materials furnished in the prosecution of the Contract, or in the event of the failure of the Principal to enter into the Contract and give the Bonds and Certificates of Insurance, if the Principal pays to the Obligee the difference not to exceed the penalty of the Bond between the amount specified in the proposal and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by the proposal then this obligation is void. Otherwise it remains in full force and effect provided, however, that this Bond is executed pursuant to the provisions of Section 34-201, Arizona Revised Statutes, and all liabilities on this Bond shall be determined in accordance with the provisions of the section to the extent as if it were copied at length herein.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the Court.

Witness our hands this _____ day of _____ 20_____.

Principal Seal

By: _____

Surety Seal

By: _____

Agency of Record

EXHIBIT G
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[Key Personnel/Subcontractor Listing]

See following page.

KEY PERSONNEL/SUBCONTRACTOR LISTING

INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

Key Personnel and Subcontractors listed herein shall be utilized on this Project.

Category:	Personnel/ Subcontractor Name, Contact Information:
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_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

EXHIBIT H
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[Performance Bond]

See following page.

PERFORMANCE BOND

Riley Drive Wastewater Lift Station

KNOW ALL PERSONS BY THESE PRESENTS:

THAT, _____ (hereinafter called Principal), as Principal, and _____, a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____ (hereinafter called the Surety), as Surety, are held and firmly bound unto the City of Avondale (hereinafter called the Obligee) in the amount of _____ (Dollars) (\$_____), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the _____ day of _____ 20____, for the material, service or construction described as _____ is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of the Contract during the original term of the Contract and any extension of the Contract, with or without notice to the Surety, and during the life of any guaranty required under the Contract, and also performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of all duly authorized modifications of the Contract that may hereafter be made, notice of which modifications to the surety being hereby waived, the above obligation is void. Otherwise it remains in full force and effect.

PROVIDED, however, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the extent as if it were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the Court.

Witness our hands this _____ day of _____ 20____.

Principal Seal

By: _____

Surety Seal

By: _____

Agency of Record

EXHIBIT I
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[Payment Bond]

See following page.

PAYMENT BOND

Riley Drive Wastewater Lift Station

KNOW ALL PERSONS BY THESE PRESENTS:

THAT, _____ (hereinafter called Principal), as Principal, and _____, a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____ (hereinafter called the Surety), as Surety, are held and firmly bound unto the City of Avondale (hereinafter called the Obligee) in the amount of _____ (Dollars) (\$ _____), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the _____ day of _____ 20____, for the material, service or construction described as _____ which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all monies due to all persons supplying labor or materials to the Principal or the Principal's Subcontractors in the prosecution of the Work provided for in the Contract, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, however, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if they were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as a part of the judgment reasonable attorney fees that may be fixed by a judge of the Court.

Witness our hands this _____ day of _____, 20____.

Principal Seal

By: _____

Surety Seal

By: _____

Agency of Record

EXHIBIT J
TO
INVITATION FOR BIDS NO. PW 20-058
Riley Drive Wastewater Lift Station

[Acknowledgments of Addenda received]

See following page(s).