OFFICE OF THE
MAYOR
CITY OF SAN LUIS

Resolution

No. 2238

A RESOLUTION OF THE MAYOR AND CITY COUNCIL OF THE CITY OF SAN LUIS, ARIZONA, APPROVING AN INTERGOVERNMENTAL AGREEMENT WITH THE BUREAU OF RECLAMATION FOR SAN LUIS TO CONSTRUCT, INSTALL, OWN, USE, OPERATE AND MAINTAIN A DOWNTOWN PARK AND PARKING LOT IN THE CITY OF SAN LUIS UNDER B.O.R. CONTRACT NO. 21-07-34-L2075.

WHEREAS, the City of San Luis, Arizona ("City") submitted a transportation and utility systems and facilities federal land application to the United States Department of the Interior, Bureau of Reclamation ("B.O.R."); and

WHEREAS, the City requires federal land to construct a parking lot facility; and

WHEREAS, B.O.R. requires state or local governments to provide authorization to execute the license;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and City Council of the City of San Luis, Arizona:

Section 1: The Mayor and City Council deem that it is in the best interest of the City of San Luis' residents to enter into an intergovernmental agreement with the United States of America through the Department of the Interior, Bureau of Reclamation to permit the City to construct a downtown park and parking lot.

Section 2: A true copy of the intergovernmental agreement (B.O.R Contract No.21-07-34-L2075) is incorporated herein as though set forth again in full.

Section 3: The Mayor is authorized and directed to execute said agreement for and on behalf of the City of San Luis.

Section 4: City officers and employees are authorized and directed to perform all acts necessary or desirable to give effect to this Resolution.

[Intentionally left blank, signature page follows]

PASSED, ADOPTED, APPROVED, and RATIFIED by the Mayor and City Council of the City of San Luis, Yuma County, Arizona, this ___ day of November 2022.

Gerardo Sanchez, Mayor

ATTEST:

Sonia Cornelio, City Clerk

APPROVED AS TO FORM:

Kay Marion Macuil, City Attorney

DUPLICATE ORIGINAL

Contract No. 21-07-34-L2075

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
INTERIOR REGION 8: LOWER COLORADO BASIN
YUMA AREA OFFICE
YUMA, ARIZONA

YUMA PROJECT,
VALLEY DIVISION, ARIZONA

1. THIS CONSENT AGREEMENT (Consent) is given this 27th day of October, 2022, pursuant to provisions of the Reclamation Act of June 17, 1902 (32 Stat. 388); the Reclamation Project Act of August 4, 1939 (53 Stat. 1187), as amended August 18, 1950 (64 Stat. 463); and acts amendatory thereof or supplementary thereto; and the provisions of 43 CFR § 429, between the United States of America, acting through the Bureau of Reclamation, hereinafter referred to as "Reclamation," represented by the officer executing this Consent, hereinafter referred to as the "Area Manager," and the City of San Luis, hereinafter referred to as the "Consentee," with the concurrence of the Yuma County Water Users Association, hereinafter referred to as the "Association."

WITNESSETH THAT:

2. WHEREAS, pursuant to the provisions of the Fact Finders Act, dated December 5, 1924 (43 Stat. 704; 43 U.S.C. § 417), Reclamation reserved a perpetual right-of-way dated May 5, 1953, under Bureau of Land Management Serial No. AZAR 004859 for a 100-foot-wide right-of-way for Reclamation's 34.5kV Transmission Line and Facilities (Transmission Line); and

3. WHEREAS, Reclamation, on behalf of the United States, issued Contract No. 14-06-300-1317 dated November 15, 1962, to the Association for operation and maintenance responsibility of said Transmission Line related to the Yuma Boundary Pumping Plant, a necessary feature of the Yuma Project, Valley Division; and

4. WHEREAS, the Consentee seeks use authorization from Reclamation to construct, install, own, use, operate, and maintain a parking lot within and/or across portions of Reclamation's Transmission Line and/or rights-of-way; and

5. WHEREAS, the granting of this Consent by Reclamation and the exercise of such right-of-use by the Consentee under the terms and conditions herein provided shall be compatible with the purposes for which Reclamation lands and rights-of-way are administered by Reclamation on behalf of the United States.

6. NOW, THEREFORE, in consideration of the mutual agreements and covenants contained herein, Reclamation, on behalf of the United States, by this Consent Agreement hereby grants to the Consentee, except as otherwise provided herein, the following described authorization to construct, install, use, operate, and maintain Improvements, as described by the design plans entitled: "City of San Luis Master Plan Downtown Parks and Parking Lots" dated March 2018, hereinafter referred to as the "Improvements," which are located within, on, over, and/or across the Transmission Line rights-of-way to wit:

7. DESCRIPTION OF PREMISES:

Gila Salt River Meridian, Arizona
Township 11 South, Range 25 West
N½NW¼, section 12, portions of.

Said lands are more fully described by the map identified as Exhibit B, attached hereto and by this reference made a part hereof, and hereinafter shall be referred to as the "Premises."

(a) By accepting and signing this Consent, and by using the Premises described herein, the Consentee agrees to comply with and be bound by the terms and conditions described or referenced herein during all ownership, use, operation, maintenance, termination, and relocation (if required and as hereinafter provided) activities of said Improvements.

8. ADMINISTRATIVE COSTS AND USE FEES: In accordance with regulations found at 43 CFR § 429.26 (a)(9), consideration for this Consent shall be waived.

9. OWNERSHIP OF THE IMPROVEMENTS:

(a) The Consentee is the owner of the Improvements listed herein, as shown in Exhibit A.

(b) The Consentee shall at all times and at its sole expense, without any expense and/or liability whatsoever to the United States, Reclamation and/or the Association construct, install, own, operate, maintain, and make necessary repairs to or replacements of the Improvements in a manner so as not to interfere with the proper use and operation of or cause injury or damage to any property or waters of the United States, property of the Association, and/or any facilities or project works of Reclamation and/or the Association. The Consentee shall reimburse Reclamation and/or the Association for all injury or damage to said property, waters, facilities,

and/or project works arising out of the utilization of the rights granted pursuant to this Consent which is caused by the Consentee; and the Consentee shall promptly pay any invoice rendered therefore by Reclamation and/or the Association.

10. WATER: Nothing contained in this Consent shall be deemed to entitle the Consentee to, nor shall be construed as granting any rights to obtain water from the United States, and no wells shall be constructed or installed on the lands covered by this Consent.

11. TERM: This Consent, unless terminated sooner as provided by Article 12 hereof, shall terminate twenty-five (25) years from the date hereof. This Consent may, upon agreement of the parties, be extended for an additional twenty-five (25)-year period. Any application for extension shall be filed by the Consentee, in writing, with Reclamation not less than one hundred eighty (180) days prior to termination of this Consent.

12. TERMINATION:

(a) This Consent shall terminate, and all rights granted to the Consentee hereunder shall cease, and the Consentee shall quietly deliver to Reclamation possession of the Premises in like condition as when taken, reasonable wear and tear excepted:

(1) At the expiration of the term as provided in Article 11.

(2) For nonuse of the Premises by the Consentee for a period of two (2) years following the execution of this Consent, at the option of Reclamation.

(3) After failure of the Consentee to observe any of the conditions of this Consent, to include payment of any and all sums due to Reclamation as set forth herein, and on the tenth (10th) day following service of written notice on the Consentee of termination because of failure to observe such conditions. Any notice required by this Article shall be served by certified mail addressed to the respective post office addresses provided in Article 23, and the mailing of any such notice properly enclosed, addressed, stamped, and certified, shall be considered service.

(4) Reclamation may, at any time and at no cost or liability to the United States, terminate this Consent in the event of a natural disaster, a national emergency, a need arising from security requirements, or an immediate and overriding threat to public health and safety.

(5) Reclamation may, at any time and at no cost or liability to the United States, terminate any use authorization for activities other than existing authorized private exclusive recreational or residential use as defined under 43 CFR § 429.2 (2016) if Reclamation determines that any of the following apply:

(i) The use has become incompatible with authorized project purposes, project operations, safety, and security;

(ii) A higher public use is identified through a public process described at 43 CFR § 429.32(a)(1) (2016); or

(iii) Termination is necessary for operational needs of the project.

(6) Reclamation may, at any time and at no cost or liability to the United States, terminate this Consent if it determines that the Consentee has used this Consent for any purpose other than its intended purpose.

(7) Reclamation may, at any time and at no cost or liability to the United States, terminate this Consent if the Consentee fails to comply with all applicable Federal, State, and local laws, regulations, ordinances, Executive Orders, and Reclamation Laws, policies, and directives and standards, existing or hereafter enacted or promulgated, or terms and conditions of any use authorization, or to obtain any required permits or authorizations.

(8) Upon the expiration, termination, or revocation of this Consent, if all use fees and damage claims due Reclamation have been paid, the Consentee may be required, at the option of Reclamation, to remove any or all of the Improvements placed upon the Premises and shall restore the Premises to a condition satisfactory to the Area Manager. Should Consentee fail to remove the Improvements within 60 days of expiration, termination, or revocation of this Consent, the Area Manager may, on behalf of Reclamation, deny and prohibit any or all access to the Improvements and Premises. At the option of Reclamation, any remaining Improvements may become property of the United States or be removed at the expense of the Consentee. The Consentee shall promptly pay all expenses incurred by Reclamation for removal and restoration upon its receipt of an invoice for the same.

(9) Should this Consent be terminated, Reclamation, reserves the right to bar the Consentee from the authorization to use Reclamation withdrawn and acquired lands for a period of time, as determined by the Area Manager.

13. TERMINATION OF CONSENT BY THE CONSENTEE: This Consent may be terminated at any time by the Consentee upon sixty (60) days written notice to Reclamation. Should the Consentee exercise its option to terminate this Consent, all rights granted the Consentee hereunder shall cease, and the Consentee shall quietly deliver to Reclamation possession of the Premises in like condition as when taken, reasonable wear and tear excepted.

14. EXCEPTIONS AND RESERVATIONS:

(a) Reclamation and the Association reserve the right of their officers, employees, and agents to at all times have unrestricted access and ingress to, passage over, and egress from all of the Premises to make investigations of all kinds, dig test pits and drill test holes, to survey for, operate, and maintain existing Reclamation works and facilities, and to construct reclamation and irrigation works and other structures incident to Reclamation project needs and purposes. Reclamation and the Association shall have no obligation to restore the Improvements if Reclamation and the Association exercise their rights reserved herein. All costs, expenses, obligations, and duties, to restore any part of the Improvements shall be incurred by the Consentee.

(b) The rights granted hereunder shall not be exclusive in character and Reclamation and the Association reserve to themselves, their successors and assigns, the right against the Consentee to use any or all of the Premises, which are or may be crossed, or upon which irrigation and drainage facilities and works of Reclamation and the Association have been constructed, and to construct, reconstruct, operate and maintain therein and thereon dams, dikes, canals, waste ways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways and appurtenant irrigation and drainage structures which may be needed or useful in connection with or as a part of canals, laterals and other irrigation and drainage facilities without any payment by Reclamation and the Association, their successors or assigns for the exercise of such right. The Consentee agrees that if the construction, reconstruction, installation, operation or maintenance of any or all of such works of Reclamation and the Association, on or across the Premises described above, should be made more expensive by reason of the existence of the Improvements, such additional expense may be estimated by Reclamation and the Association whose estimate shall be final and binding upon the parties hereto, and within thirty (30) days after demand is made upon the Consentee for payment of any such sums, the Consentee shall make payment thereof to Reclamation and the Association their successors or assigns constructing such works across, over, under or upon the Premises.

(c) Reclamation and the Association reserve the right to inspect the Improvements under the terms of this Consent both during the progress of construction and upon completion thereof and anytime thereafter.

(d) Jurisdiction of and supervision by Reclamation over the Premises is not surrendered or subordinated by issuance of this Consent and Reclamation reserves the right to issue additional Consents or other agreements for compatible uses of the Premises.

15. TERMS AND CONDITIONS: In use of the Premises, the Consentee shall faithfully observe each of the following conditions:

(a) The Consentee, at its sole expense, shall own, use, operate, and maintain the Consentee's Improvements in conformity with all applicable Federal, State, and local laws, regulations, ordinances, Executive Orders, and Reclamation Laws, policies, and directives and standards, existing or hereafter enacted or promulgated, including but not limited to, those relating to pollution and environmental control.

(b) All construction, reconstruction, installation, use, operation, and maintenance activities undertaken pursuant to this Consent shall be in conformity with the specifications approved in advance by the Area Manager and the Association and shall be conducted by the Consentee at all times in a manner satisfactory to the Area Manager and the Association. It shall be incumbent upon the Consentee to obtain an encroachment license from the Association prior to undertaking such installation activities.

(c) During construction and use of the Premises, the Consentee shall carry out proper and efficient measures wherever and as often as necessary to reduce nuisance by dust, and to prevent dust which has originated from its operations from damaging any other properties or causing a nuisance to persons.

(d) The Consentee shall reimburse Reclamation and the Association for any and all costs and expenses incurred in the defense of any action which challenges the Consentee's use of the Premises.

(e) The rights granted by this Consent are subject to any and all applicable Federal, State, and local laws, regulations, ordinances, Executive Orders, and Reclamation Laws, policies, and directives and standards, existing or hereafter enacted or promulgated, and rights of Reclamation, the United States, and to existing rights in favor of the public or third parties. The Consentee agrees that it is its sole responsibility to make whatever arrangements as are necessary to obtain such rights as may be required of the Consentee from any other party or parties holding any other interests.

(f) The Consentee shall notify the Area Manager and Association within ninety (90) days of substantial completion of use, and within said ninety (90) days shall undertake customary and prudent measures to smooth, recontour, clean, remove debris, grade, scarify, repair, restore, or otherwise rehabilitate the lands, water, structures, and facilities of Reclamation that were disturbed to a condition of appearance and stability comparable to the surrounding undisturbed lands, to the satisfaction of the Area Manager and Association.

(g) The Consentee shall not issue or grant easements, rights-of-way, land rights, leases, licenses, permits, crossing agreements, recreational or special use agreements, and shall not allow commercial ventures on the Premises. Any such use instruments shall be issued by Reclamation only.

(h) The Consentee shall ensure the Premises and surrounding area are maintained in a sanitary condition at all times. All trash and debris shall be removed upon leaving the Premises.

(i) The Consentee shall not make any alteration of said Transmission Line within the Reclamation lands and/or reserved rights-of-way without prior written concurrence of Reclamation and the Association.

(j) The Consentee shall ensure that no unauthorized encroachment occurs, and no waste is committed, on Reclamation lands and rights-of-way under this Consent.

(k) The Consentee shall have the right to allow its agents, contractors, and subcontractors to use Reclamation lands and rights-of-way under this Consent for the purposes stated herein.

(l) The Consentee shall promptly reimburse Reclamation and/or the Association for all damages to Reclamation lands, waters, facilities, and/or project works, arising out of the construction, installation, operation, maintenance, use, replacement, termination, or removal by the Consentee of the Consentee's Improvements located on Reclamation lands and rights-of-way under this Consent, provided, however, that if Reclamation and/or the Association does not use the payment to repair such damages, Reclamation and/or the Association shall not recover additional payment for such damages at the time of termination of this Consent.

(m) The Consentee shall not use the Premises or permit the use thereof for any purposes except as set forth herein.

16. SPECIAL CONDITIONS:

(a) Upon termination of this Consent for any reason, the Consentee may be required, at the option of Reclamation, to remove said Improvements placed in or upon the Premises and shall restore the Premises to a condition satisfactory to Reclamation.

(b) Any use outside of the Reclamation's land and rights-of-way is not authorized by the United States, Reclamation, or this Consent.

(c) The Consentee shall remove any tall vegetation growth to include trees under the Transmission Line that could cause an overhead hazard.

(d) The Consentee shall coordinate any proposed pole relocations with Reclamation and the Association.

(e) The Consentee shall update the Master Plan to label, show, and identify Reclamation's Transmission Line.

(f) The Consentee shall be solely responsible for and ensure that, the use, operation, and maintenance of said Improvements is performed in accordance with Exhibit A, as approved by Reclamation.

(g) Any changes and/or improvements proposed by the Consentee to the approved details and/or use of the Improvements, as described on the Exhibit A attached hereto, shall require review and approval in advance by Reclamation and the Association.

(h) In the event that the Consentee removes itself and/or is removed as the owner, operator, and maintenance provider of the Improvements, it shall be the responsibility of the Consentee to notify Reclamation within 60 days prior to the change so that Reclamation may assign this Consent.

(i) The Consentee must follow Reclamation's requirements for crossings of Reclamation projects and facilities which are found in Reclamation's "Engineering and O&M Guidelines for Crossings Bureau of Reclamation Water Conveyance Facilities (Canals, Pipelines, and Similar Facilities)" as described and depicted on Exhibit C, attached hereto and by this reference made a part hereof.

(j) The Consentee shall ensure an overhead clearance of at least thirty-two (32) feet between the Improvements and the Transmission Line is maintained at all times.

(k) The Consentee shall be solely responsible for and ensure that Transmission Line is protected at all times during construction and use of the said Improvements. The Consentee accepts all liability for damage to the Transmission Line and will be liable for any costs associated with repairs of Reclamation facilities, if damaged due to said Improvements.

(l) The Consentee shall be solely responsible for, and ensure that, Reclamation and the Association have access to the Premises at all times during use, operation, maintenance, and termination activities of the Improvements. Nothing shall prevent Reclamation and/or the Association from construction, operation, maintenance, removal, expansion, improving, relocation and/or replacement of the Transmission Line and/or other Reclamation facilities, or the delivery of water through Reclamation facilities.

(m) Reclamation and the Association maintain the right to require that Consentee remove the Improvements if deemed necessary for maintenance or related activities performed within the Transmission Line, and/or other related facilities.

(n) The Consentee shall protect all properties owned and/or previously permitted by Reclamation, on behalf of the United States, on Reclamation lands and rights-of-way for the Transmission Line.

(o) The Consentee shall provide a construction schedule and seventy-two (72) hour notice to Reclamation prior to the start of any construction/maintenance activities. Said seventy-two (72) hour notice shall be provided to Reclamation's Technical Support Office, Construction Services Group Manager, Mr. Alex Belous, at telephone No. (928) 343-8314 and/or by electronic mail at abelous@usbr.gov, so that a Reclamation Inspector can attend any pre-construction meetings and be on-site during construction and installation activities.

(p) Within ninety (90) calendar days of the completion of the construction and installation of the Consentee's Improvements, the Consentee shall furnish Reclamation and the Association each with as-built drawings depicting the location, elevation, and depth and dimensions of said Improvements, as installed. Said drawings shall be provided to Reclamation and the Association to include one (1) 11x17 sized set of drawings, one copy in PDF format, and one electronic copy of the drawings in AutoCAD format or compatible. Electronic drawings shall be provided to Reclamation by e-mail to Ms. Anna Sander, Realty Technician at: asander@usbr.gov.

(q) All on-site personnel shall be personally instructed by the Consentee regarding the conditions outlined herein.

(r) This authorization to use the Transmission Line right-of-way will not be construed as a grant of any permanent right-of-way interest or as abandonment by Reclamation of any rights, including but not limited to, use and occupancy of the Transmission Line.

(s) The Consentee acknowledges and agrees that Reclamation and/or the Association may close the Premises for maintenance activities related to the Transmission Line and related appurtenances, with reasonable notice to the Consentee, as determined by Reclamation and/or the Association.

(t) Reclamation will accept no responsibility for the structural adequacy of the Improvements.

(u) This Consent shall not be construed as to limit, relinquish, abridge, or impair enjoyment of the existing easement rights held by Reclamation for Transmission Line.

(v) In case of emergency involving the Transmission Line, its lands and/or facilities, the Consentee shall immediately notify Reclamation at telephone No. (928) 343-8100 and the Association at telephone No. (928) 627-8824.

(w) Any provider intending to install or construct any utilities and/or other improvements on the Premises not specifically authorized by this Consent shall make separate application to Reclamation and the Association for authorization and right-of-use prior to any construction or installation.

(x) In the event the Consentee is not the underlying fee owners of the land encumbered by Reclamation's rights-of-way, it shall be incumbent on the Consentee to secure permission of the fee owner(s) for approval to enter upon, cross, or use the land, including the Reclamation rights-of-way.

GENERAL PROVISIONS

17. HOLD HARMLESS: The Consentee herby agrees as follows:

(a) Reclamation: The Consentee hereby agrees to indemnify and hold harmless Reclamation, its officers, employees, agents, and assigns, from any loss or damage and from any liability on account of personal injury, property damage, or claims for personal injury or death arising out of the Consentee's activities under this Consent. Additionally, except for acts of negligence, the Consentee releases Reclamation, its officers, employees, agents, and assigns, from any and all liability for damage arising from injury to persons or damage to structures, equipment, improvements, or works of the Consentee resulting from the construction, reconstruction, operation, or maintenance of any of the works of Reclamation. Provided, however, that nothing contained in this clause shall be deemed to modify or limit any liability which may be imposed by the Federal Tort Claims Act, 28 U.S.C. § 2671-2680.

(b) Association: The Consentee shall indemnify, defend, and hold harmless the Association its officers, directors, employees, agents, representatives, successors, and assigns, from and against all claims, costs, losses, damages, demands, liabilities, and expenses (including, but not limited to, all fees and charges of attorneys and other professionals, and all court or arbitration or other dispute resolution costs) of any kind or character arising out of or relating to:

(1) any act or omission by the Consentee or its representatives, to include its employees, agents, contractors, subcontractors, or any other persons directly or indirectly employed by any one of the foregoing, or reasonably under the control of any of the foregoing, or for whose acts any of the foregoing may be liable (collectively, "Representatives"), in connection with the rights granted to Consentee pursuant to this Consent;

(2) any violation or alleged violation by Consentee or its Representatives of any law or regulation now or hereafter enacted;

(3) any breach by Consentee of its obligations under this Consentee; and

(4) any enforcement by the District of any provision of this Consent; provided, however, the foregoing indemnification shall not apply to the extent any claim is ultimately established by a court of competent jurisdiction to have been caused by the gross negligence or willful misconduct of the District, its officers, directors, employees, agents, representatives, successors, and assigns.

18. DISCOVERY OF CULTURAL RESOURCES: The Consentee shall immediately provide a verbal notification to Reclamation of the discovery of any and all antiquities or other objects of archaeological, cultural, historic or scientific interest on Reclamation lands. The Consentee shall follow up with a written report of their finding(s) to Reclamation within forty-eight (48) hours. Objects under consideration include, but are not limited to, historic or prehistoric ruins, human remains, funerary objects, and artifacts discovered as a result of activities authorized under this Consent. The Consentee shall immediately cease the activity in the area of the discovery, make a reasonable effort to protect such discovery, and wait for written approval from Reclamation before resuming the activity. Protective and mitigative measures specified by Reclamation shall be the responsibility of the Consentee.

19. CLEAN AIR AND WATER: The Consentee agrees as follows:

(a) To comply with all Federal, State, and local requirements of the Clean Air Act (CAA) and the Clean Water Act (CWA); and

(b) To obtain written permission from Reclamation prior to conducting any activities that require permits, plans, or certificates under the CAA or the CWA; and

(c) To provide Reclamation with a copy of any correspondence between the Consentee and any regulatory agency concerning CAA or CWA compliance, including, but not limited to, copies of permit applications, permits, reports, notices of violation or enforcement actions; and

(d) To take immediate and effective action to correct any violation related to the CAA or the CWA. The Consentee shall provide Reclamation with a narrative description of the violation, the actions taken by the Consentee, the date the violation began, the date that the Consentee became aware of the violation and the date that the Consentee returned to compliance.

20. HAZARDOUS MATERIALS: In use of the Premises:

(a) The Consentee shall not allow contamination or pollution of lands, waters or project works of Reclamation for which the Consentee has the responsibility for care, operation and maintenance by its employees or agents and shall take reasonable precautions to prevent such contamination or pollution by third parties. Substances causing contamination or pollution shall include but are not limited to hazardous materials, thermal pollution, refuse, garbage, sewage effluent, industrial waste, petroleum products, mine tailings, mineral salts, misused pesticides, pesticide containers, or any other pollutants.

(b) The Consentee shall comply with all applicable Federal, State, and local law and regulations and Reclamation instructions, policies, directives, and standards, existing or hereafter enacted or promulgated, concerning any hazardous material that will be used, produced, transported, stored, or disposed of on or in lands, waters, structures, facilities, resources and project works of Reclamation.

(c) "Hazardous material" means any substance, pollutant or contaminant listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§9601-9675, as supplemented and amended, and the regulations promulgated pursuant to that Act.

(d) The Consentee shall initiate emergency measures to protect health and safety and the environment, if necessary, upon discovery of any event which may or does result in contamination or pollution of lands, waters or project works of Reclamation, and shall provide notice of such discovery with full details of the actions to Reclamation's Environmental Planning and Compliance Group Manager at telephone No. (928) 343-8100. Additionally, all spills regardless of size shall be reported to Reclamation's Environmental Planning and Compliance Group Manager. Such notice shall be within a reasonable time period but not to exceed twenty-four (24) hours from the time of discovery if it is an emergency, and the first working day if it is a non-emergency. An emergency is any situation that requires immediate action to reduce or avoid endangering public health and safety or the environment.

(e) Violation of any of the provisions of this Article, upon which the Consentee does not take immediate corrective action, may, as determined by Reclamation, constitute grounds for termination of this Consent and shall make the Consentee liable for the cost of full and complete remediation and/or restoration of any lands, waters, structures, facilities, resources, and project works of Reclamation that are adversely affected as a result of the violation.

(f) The Consentee agrees to include the provisions contained in paragraphs (a) through (e) of this Article in any subcontract or thirdparty contract it may enter into pursuant to this Consent.

(g) Reclamation agrees to provide information necessary for the Consentee using reasonable diligence to comply with the provisions of this Article.

21. PESTICIDE CONTROL: In use of the Premises:

(a) The Consentee shall not permit the use of any pesticides on Federal lands, waters, structures, facilities, resources, or project works of Reclamation without prior written authorization from Reclamation. The Consentee shall submit to Reclamation for approval an Integrated Pest Management Plan (IPMP) thirty (30) days prior to pesticide application.

(b) All pesticides used shall be in accordance with the current registration, label direction, or other directives regulating their use (State Department of Agriculture, Department of Ecology, OSHA, etc.) and with applicable Reclamation policy and directions and standards. Applicators will meet applicable State training or licensing requirements. Records maintenance shall be in accordance with State requirements, and furnished to Reclamation not later than five (5) working days after any application of a pesticide.

(c) Any equipment, tools, and machines used for pesticide application shall be in good repair and suitable for such use. Equipment shall be calibrated prior to the spraying season and as deemed necessary by Reclamation.

(d) Mixing, disposal, and cleaning shall be done where pesticide residues cannot enter storm drains, sewers, or other non-target areas.

(e) The Consentee shall initiate any necessary measures for containment and cleanup of pesticide spills. Spills shall be reported to Reclamation and District with full details of the actions taken. Reporting must be within a reasonable time period. A reasonable time period means within twenty-four (24) hours of the spill if it is an emergency or by the first working day if it is a non-emergency. An emergency is any situation that requires immediate action to reduce or avoid endangering public health and safety or the environment.

(f) Aerial application of pesticides is prohibited without prior written consent by Reclamation.

(g) The Consentee agrees to include the provisions contained in paragraphs (a) through (f) of this Article in any subcontract or third-party contract it may enter into pursuant to this Consent.

22. NONDISCRIMINATION: The Consentee herby agrees as follows:

(a) To comply with Title VI of the Civil Rights Act of 1964, § 601, Pub. L. No. 88-352, 78 Stat. 241, as supplemented and amended, which provides that "no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal financial assistance," and to be bound by the regulations of the Department of the Interior for the effectuation thereof, as set forth in 43 CFR § 17 (2016). For purposes of this subpart, "Federal financial assistance" shall have the meaning prescribed to it by 43 CFR § 17.202(h) (2016).

(b) To comply with the Rehabilitation Act of 1973, § 504, Pub. L. No. 93-112, 87 Stat. 355, as supplemented and amended, which is designed to eliminate discrimination on the basis of disability in any program or activity receiving Federal financial assistance. For purposes of this subpart, "Federal financial assistance" shall have the meaning prescribed to it by 43 CFR § 17.12(e) (2016).

(c) To comply with the Age Discrimination Act of 1975, as supplemented and amended, 42 U.S.C. §§ 6101-6107, and the general age discrimination regulations at 45 CFR § 90 (2016) which are designed to prohibit discrimination on the basis of age in programs and activities receiving Federal financial assistance, as set forth in 43 CFR § 17 (2016). For purposes of this subpart, "Federal financial assistance" shall have the meaning prescribed to it by 43 CFR § 17.303(h) (2016).

(d) To obligate its subcontractors, subgrantees, transferees, successors in interest, or any other participates receiving Federal financial assistance hereunder, to comply with the requirements of these provisions.

23. NOTICES:

(a) Any notice, demand, authorization, or request required to be made or given herein shall be served via hand delivery, with signed receipt of acceptance, or by certified mail addressed to the respective addresses given herein and the hand delivery or mailing of any such notice properly enclosed, addressed, stamped and certified, shall be considered service.

(b) Any notice, demand, authorization, or request required by this Consent to be made or given to or upon Reclamation shall be deemed properly given or made if delivered or mailed postage-prepaid, to the Area Manager, Yuma Area Office, Bureau of Reclamation, 7301 Calle Agua Salada, Yuma, Arizona 85364.

(c) Any notice, demand, authorization, or request required by this Consent to be made or given to or upon the Association shall be deemed properly given or made if delivered or mailed postage-prepaid, to Yuma County Water Users' Association, P.O. Box 5775, Yuma, Arizona 85366

(d) Any notice, demand or request required or authorized by this Consent to be given or made to or upon the Consentee shall be deemed properly given or made if delivered or mailed postage-prepaid, to the City of San Luis, P.O. Box 1170, San Luis, AZ 85365.

(e) The designation of the person to or upon whom any notice, demand, authorization, or request is to be given or made, or the address of such person may be changed at any time by notice given in the same manner as provided in this Article for other notices.

24. OFFICIALS NOT TO BENEFIT: No member of or delegate to Congress or Resident Commissioner, and no officer, agent or employee of the Department of the Interior, shall be admitted to any share or part of this Consent or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this agreement if made with a corporation or contractor for its general benefit.

25. COVENANT AGAINST CONTINGENT FEES: The Consentee warrants that no person or agency has been employed or retained to solicit or secure this Consent upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, excepting bona fide employees or bona fide established agencies maintained by the Consentee for the purpose of securing business. For breach or violation of this warranty, the United States and/or Reclamation shall have the right to annul this Consent without liability or in its discretion to require the Consentee to pay, in addition to the right-of-use consideration, if any, the full amount of such commission, percentage, brokerage or contingent fee.

26. ILLEGAL USE: Any activity deemed to be illegal on Reclamation lands, waters, project works, or facilities, shall be cause for immediate termination of this Consent.

27. EFFECT OF CONSENT: This Consent sets forth the intention of the parties as to the purposes set forth herein and Reclamation makes no other claim or warranty, expressed or implied, as to the extent or validity.

28. NO WARRANTY: Reclamation makes no warranty, expressed or implied, as to the extent or validity of the grant contained herein.

29. FURTHER ASSURANCES: The parties hereto shall execute, acknowledge, and deliver such other instruments and documents as may be necessary or appropriate to carry out the full intent and purpose of this Consent.

30. ARTICLE HEADINGS: The Article headings in this Consent are included only for convenience and reference and the parties intend that they shall be disregarded in interpreting this Consent.

31. EXHIBITS: Except as otherwise provided herein, all exhibits attached to this Consent are incorporated into this Consent by reference herein and made a part hereof.

32. SUCCESSORS AND ASSIGNS: This Consent is personal, revocable, and nontransferable and except as otherwise provided herein, shall not be construed as granting to the Consentee any permanent right, title, or interest in the Premises, facilities, or projects works of Reclamation. This Consent shall be binding upon and inure to the benefit of the successors and/or assigns of the parties hereto; provided, however, that no assignment or transfer of any of the rights of the Consentee hereunder shall be made without the prior written consent of Reclamation.

33. SEVERABILITY: Each provision of this use authorization shall be interpreted in such a manner as to be valid under applicable law, but if any provision of this use authorization shall be deemed or determined by competent authority to be invalid or prohibited hereunder, such provision shall be ineffective and void only to the extent of such invalidity or prohibition, but shall not be deemed ineffective or invalid as to the remainder of such provision or any other remaining provisions, or of the use authorization as a whole.

IN WITNESS WHEREOF, this Consent is given as of the date and year first-above written.

THE UNITED STATES OF AMERICA

By: Christopher M. Wallis

Christopher M. Wallis, Chief
Resource Management Office
Yuma Area Office
Interior Region 8: Lower Colorado Basin
Bureau of Reclamation

Date: 10/27/2022

ACCEPTANCE:

CITY OF SAN LUIS

By: [signature]

Title: Mayor

Date: August 25, 2022

Approved as to form
Kay Marion Macnil
City Attorney

CONCURRENCE:

YUMA COUNTY WATER USERS ASSOCIATION

By: [signature]

Title: Manager

Date: 9-20-22

NOTARIAL ACKNOWLEDGMENT

State of Arizona)

County of Yuma)

On this 25th day of August, 2022, before me, Francia G. Alonso a Notary Public in and for said County and State personally appeared Gerardo Sanchez, Name mayor Title of City of San Luis, known to me to be the person described in the foregoing instrument, and acknowledged to me that he executed the same on behalf of the City of San Luis, in the capacity therein stated and for the purpose therein contained.

(Notary Seal) Francia G Alonso Notary Public - Arizona Yuma County Commission Number 592958 My Comm. Exp. 10/15/2024

Notary Public

Description of document this notarial certificate is being attached to:	
Type/Title	Consent Agreement, Contract No. 21-07-34-L2075
Date of Document	
Number of Pages	19 and Exhibits A, B, and C
Additional Signers (other than those named in the notarial certificate)	Bureau of Reclamation Yuma County Water Users Association

NOTARIAL ACKNOWLEDGMENT

State of Arizona)

County of Yuma)

On this 20 day of Sept, 2022 before me, Tamara R Stover, a Notary Public in and for said County and State personally appeared Tom W Davis (Name), Manager (Title) of Yuma County Water Users Association' (Association), known to me to be the person described in the foregoing instrument, and acknowledged to me that he executed the same on behalf of the Association in the capacity therein stated and for the purpose therein contained.

TAMARA R STOVER
NOTARY PUBLIC - ARIZONA
YUMA COUNTY
COMMISSION # 567356
MY COMMISSION EXPIRES
AUGUST 01, 2023

(Notary Seal)

Notary Public

Description of document this notarial certificate is being attached to:	
Type/Title	Consent Agreement, Contract No. 21-07-34-L2075
Date of Document	
Number of Pages	19 and Exhibits A, B, and C
Additional Signers (other than those named in the notarial certificate)	Bureau of Reclamation City of San Luis

TAMARA S STOVER
NOTARY PUBLIC - ARIZONA
YUMA COUNTY
COMMISSION # 567358
MY COMMISSION EXPIRES
AUGUST 01, 2023

City of San Luis
Master Plan for Downtown Parks and Parking Lots

Prepared by:
James Davey and Associates, Inc.
and
Thompson Design Architects

March 2018

Expires 9-30-2020

Expires 9/30/2018

City of San Luis
Master Plan for Downtown Parks and Parking Lots

Prepared by:
James Davey and Associates, Inc. and Thompson Design Architects

April 2018

The Downtown area of the City of San Luis, Arizona, has several larger properties that are under the federal land ownership. These properties include a powerline right-of-way that runs east to west across the Downtown Area between E Street and F Street and is used for a 34.5KV powerline operated and maintained by the Yuma County Water Users' Association. This powerline right-of-way along with adjacent E and F Streets is now used unofficially as a parking lot. Federal lands in Downtown San Luis also include land running from Main Street to the north and eat to Juan Sanchez Blvd. that was reserved by the United States for a future alignment of Highway 95. As there no longer is a plan to realign Highway 95, this land is now vacant except for parking uses. These federal lands are understood to be under the management of the U.S. Bureau of Reclamation and consists of over 11 acres, including some of the undeveloped E and F Street right-of ways.

To better use these federal properties in Downtown San Luis, the City hired James Davey and Associates and Thompson Design Architects to prepare a master plan for the use of the properties for park facilities and for parking lots. The master plan will be useful in obtaining federal approval for use of the lands, will provide a base line for budgeting for future capital improvements, and may also assist in applying for grants to assist in funding the projects. The park areas are to consist of a 'Main Street Park' located along the east side of Main Street from just north of C Street to E Street, and a 'West Park' area located south of the Post Office building and between Mesa Street and Archibald Street. The parking lot features are to be constructed primarily along the powerline right-of-way between Main Street and Fourth Avenue and along the old planned Highway 95 right-of-way north of F Street to Juan Sanchez Blvd. Parking and road improvements will also be provided for the West Park area. A pedestrian bridge is also proposed crossing Main Street to tie the facilities together, along with walking and bike paths throughout the area.

To be able to construct the proposed parks and parking lots, a land use contract will need to be obtained from the U.S. Bureau of Reclamation. Preliminary meetings were held with Reclamation to discuss this. In addition, permitting will be required by the Yuma County Water Users' Association to allow for use of the powerline right-of-way. Use of the powerline right-of-way will also require design coordination with the Water Users' to ensure no conflicts with their power line and if conflicts exist between the power line and the planned facilities, relocation of power poles may be necessary.

The total cost for constructing the park facilities and the parking lots is estimated at $6,566,000. The parks and parking lots are described in the following sections. A detailed cost estimate is included at the end of this report.

Parks

Four new developed park areas are proposed in this master plan concept. These park areas are linked by walking pathways and the pedestrian bridge to create one singular urban park in the downtown San Luis area. The parks consist of passive amenities such as:

- Covered Ramadas – Different sizes and shapes are proposed to fit different needs
- Bench Areas
- Recreational Play Field Areas
- Walking Paths – Serve to connect new proposed parking areas
- Street Crossings - Serve to link park areas across roadways
- Trees and Landscaping include shrubbery and grass areas

The parks also consist of active amenities such as:

- Splash Park – Consists of fountains and play pools
- Concert Pavillion – A raised covered stage area for performances and public gatherings
- Vendor Kiosks – Fixed kiosks may be rented to vendors during large Concert Pavillion events
- Restroom Facilities
- San Luis Police Department Substation to be used during large events
- Power and area lighting throughout the park areas

It is proposed that during large events the curve where D Street meets Main Street could be closed to vehicular traffic making the connecting parks a completely pedestrian venue crossing the roadway.

A raised pedestrian bridge connects the park areas across Main Street. The pedestrian bridge is proposed to also serve as an iconic welcoming element into the Downtown area.

Parking Lots

Following the Park exhibits are five exhibits showing the planned parking lot facilities. Altogether, if all planned parking lots are constructed, some 475 parking spaces will be created.

The parking lots are broken down into a central parking area, between Main Street and 1st Avenue, east parking areas between 1st Avenue and 4th Avenue, and an area of parking on roadway improvements around the West Park.

Common design elements for all parking lots include typical 10' x 20' parking spaces, handicap parking spaces as required, 24' drive aisle, multiple points of access for all parking lots to help ensure good traffic circulation, perimeter fencing to help provide security, and landscaped traffic islands and storm water retention areas. Parking lots will be paved with asphalt pavement and perimeter curbs will be provided to control traffic flows. Street lights will be provided throughout the parking lots.

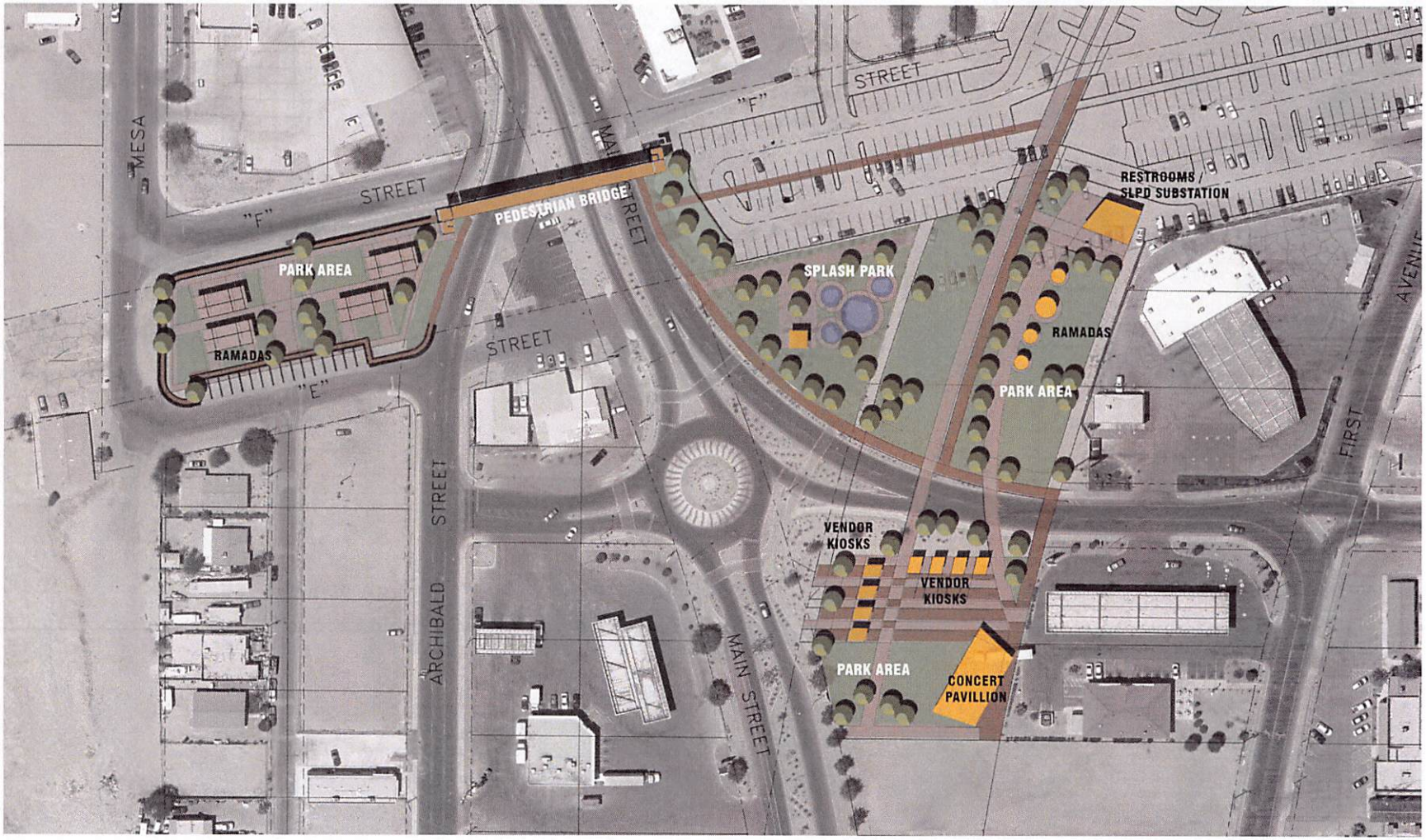
Central Parking Lot. For the central parking lot area, that area between Main Street and 1st Avenue and extending north to Juan Sanchez Blvd., two main were prepared. In the northeast corner of this area the Sunset Community Health Center is located and they have approached the City about using a portion of the available property for private parking. Therefore, one alternative makes full use of all available property with about 299 parking spaces provided, and one alternative leaves development of the area adjacent to Sunset Community Health Center for development by them.

The central parking lot area will also include a 12' walking path and a 10' bicycle path connecting the Main Street park to Juan Sanchez Blvd. and the parks and schools to the north of it, and an 8' wide walking path connecting 1st Avenue to Main Street and the pedestrian bridge to the West Park area.

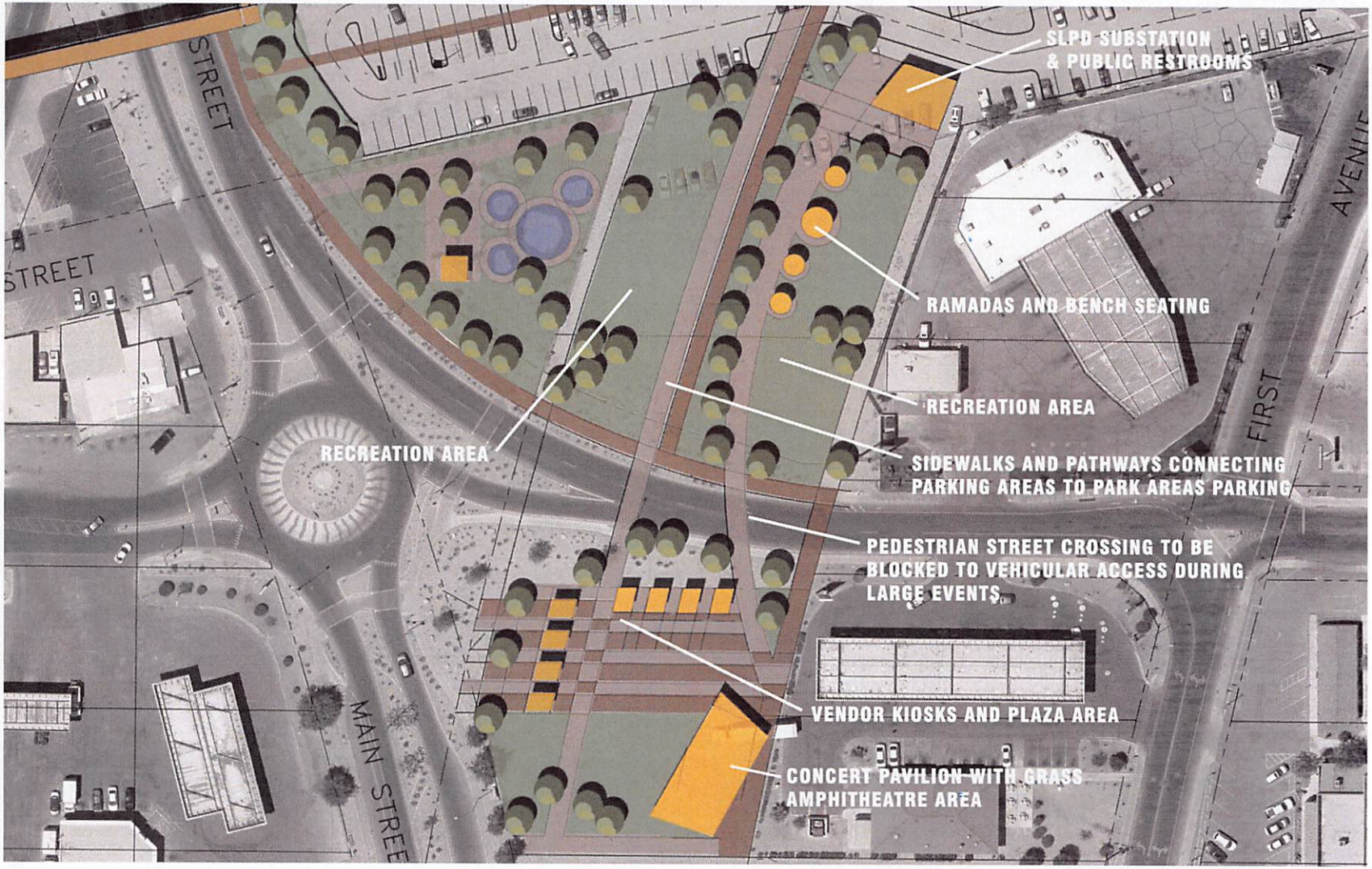
East Park Lots. The east parking lots consists of two similar parking lots, one between 1st Avenue and 3rd Avenue (Caesar Chavez Street) and one between there and 4th Avenue. The parking lots are planned for about 82 and 80 parking spaces, respectively. The parking lot property between Caesar Chavez Street and Fourth Avenue may also be partially used for a storm water retention basin and if so that will reduce the number of potential parking spaces.

The east parking lots are also planned to include bus lanes along E Street. The bus lanes will serve as staging areas and pickup and drop off areas for buses transporting workers to and from agricultural fields.

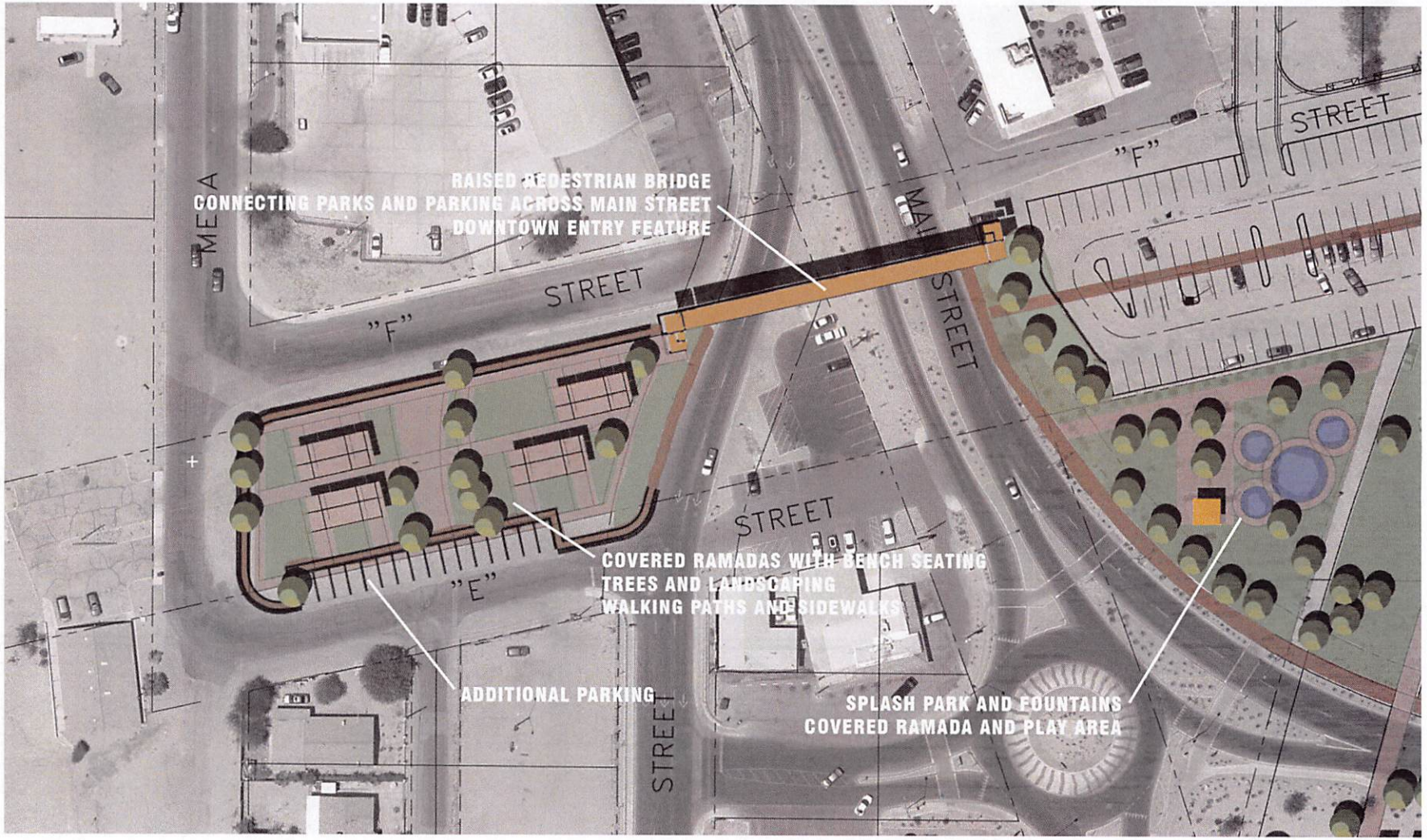
West Park Area Roadway and Parking Improvements. For the development of the park south of the Post Office, the adjacent streets will need to be further improved and some parking spaces provided. As only the north side of F Street is currently fully improved adjacent to the park area, roadway improvements are shown on the exhibits to include improving Mesa Street, E Street and F Street as 40' wide roadways with curb and gutter and sidewalks. In addition, some 16 parking spaces are planned along E Street for users of the park.



SAN LUIS URBAN PARK - CONCEPT PLAN - JAMES DAVEY & ASSOC. / THOMPSON DESIGN ARCHITECTS

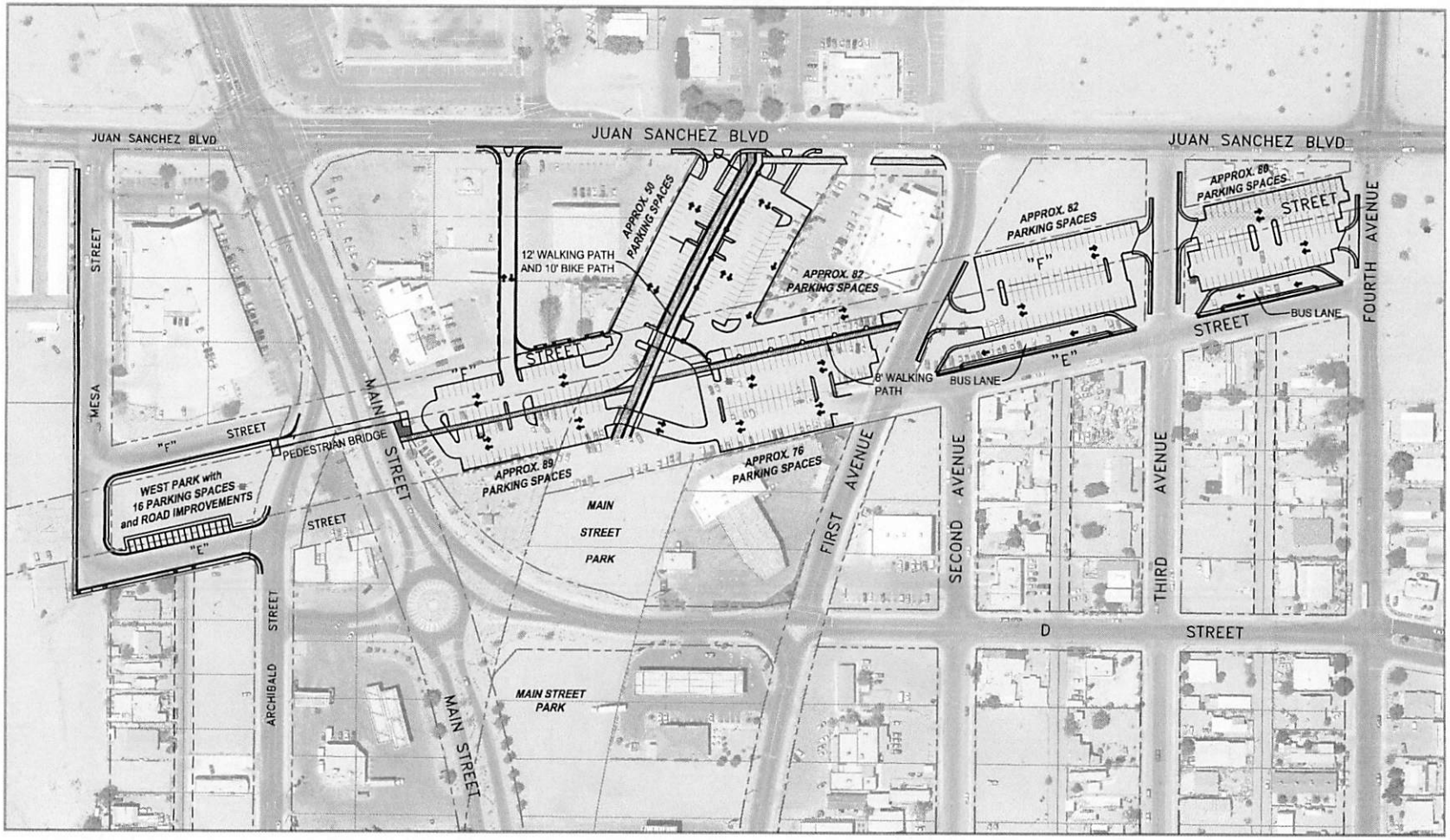


SAN LUIS URBAN PARK - CONCEPT PLAN - JAMES DAVEY & ASSOC. / THOMPSON DESIGN ARCHITECTS

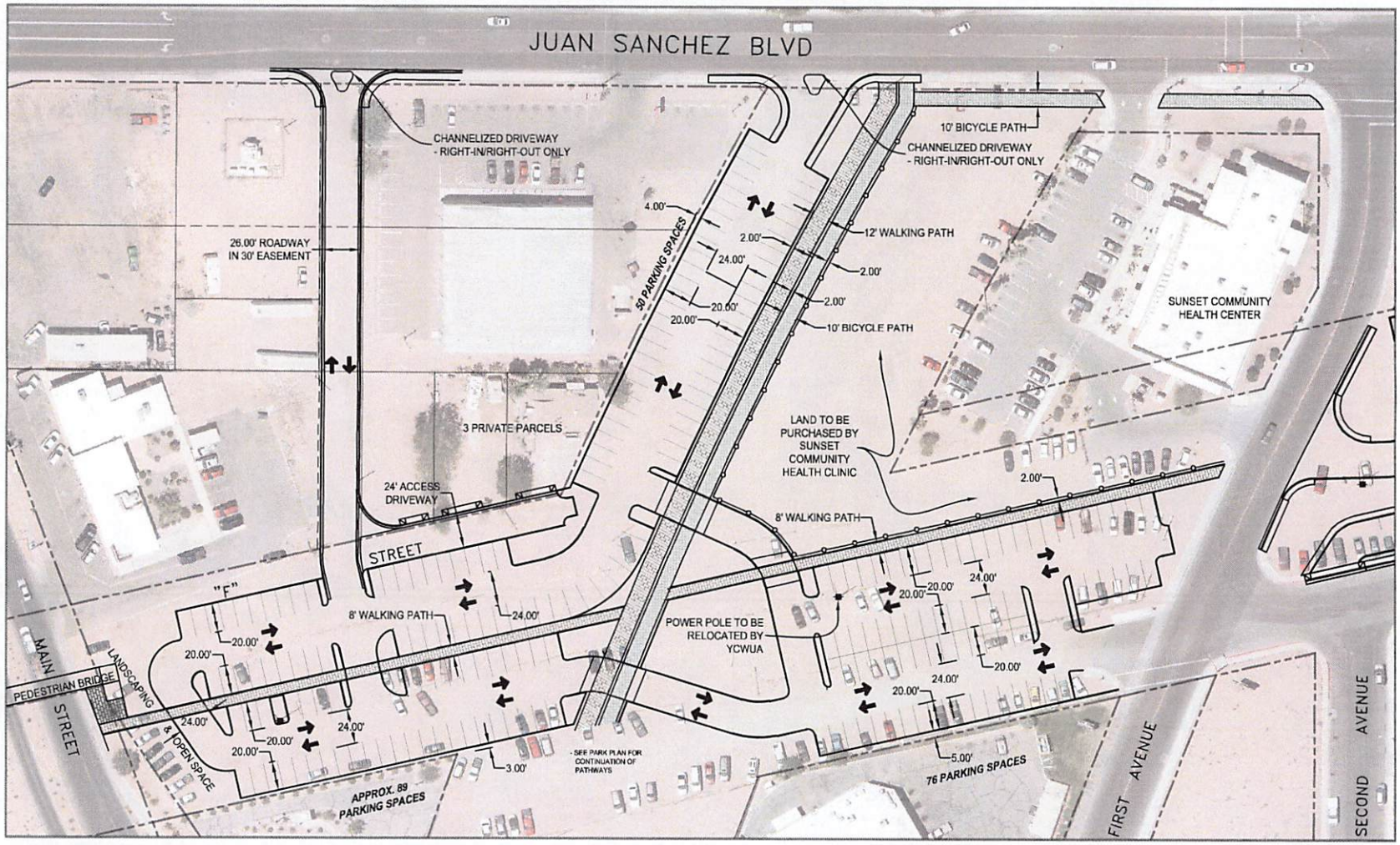


SAN LUIS URBAN PARK - CONCEPT PLAN - JAMES DAVEY & ASSOC. / THOMPSON DESIGN ARCHITECTS

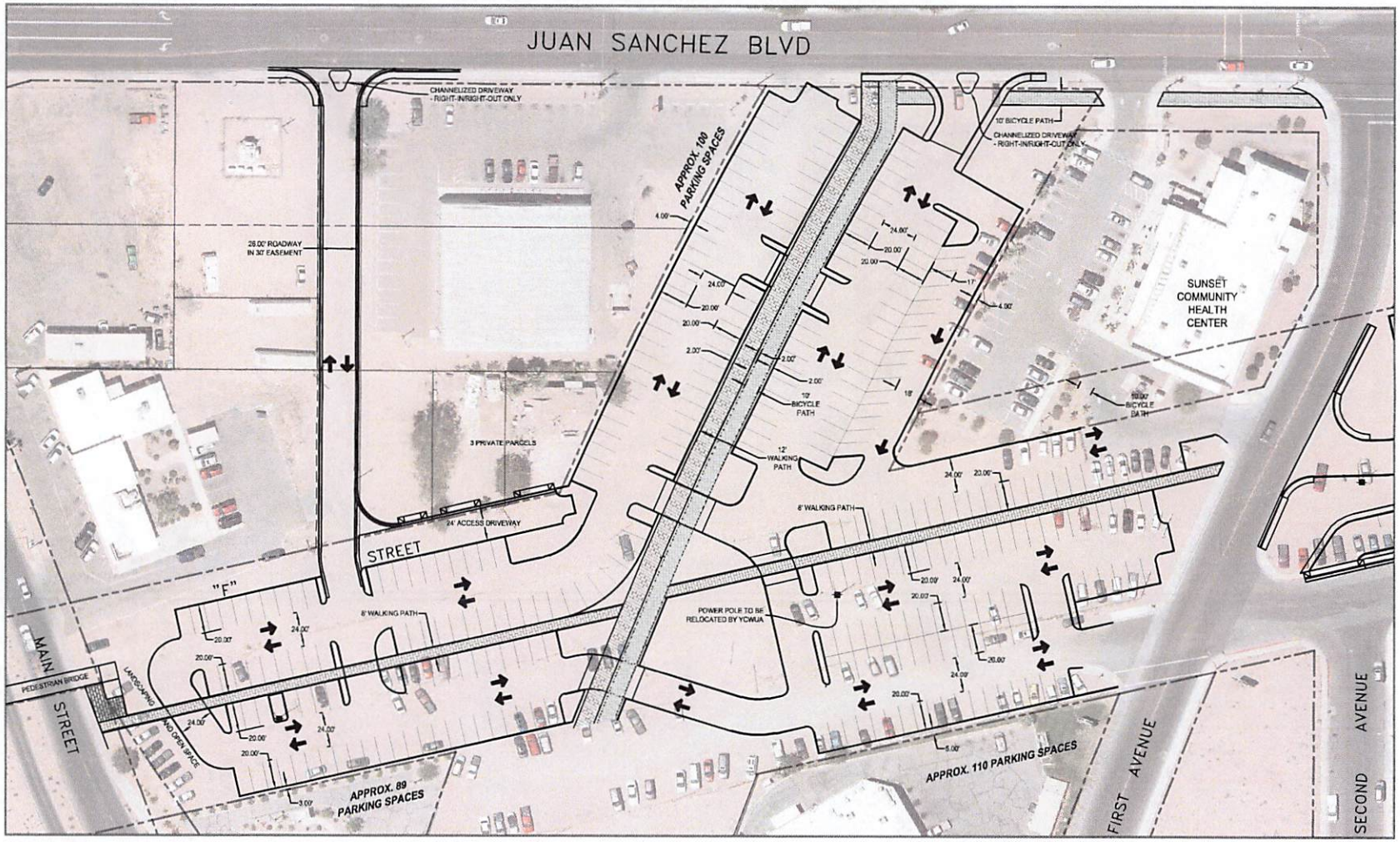
CITY OF SAN LUIS - DOWNTOWN PARKING MASTER PLAN
OVERVIEW
APPROXIMATELY 475 PLANNED PARKING SPACES



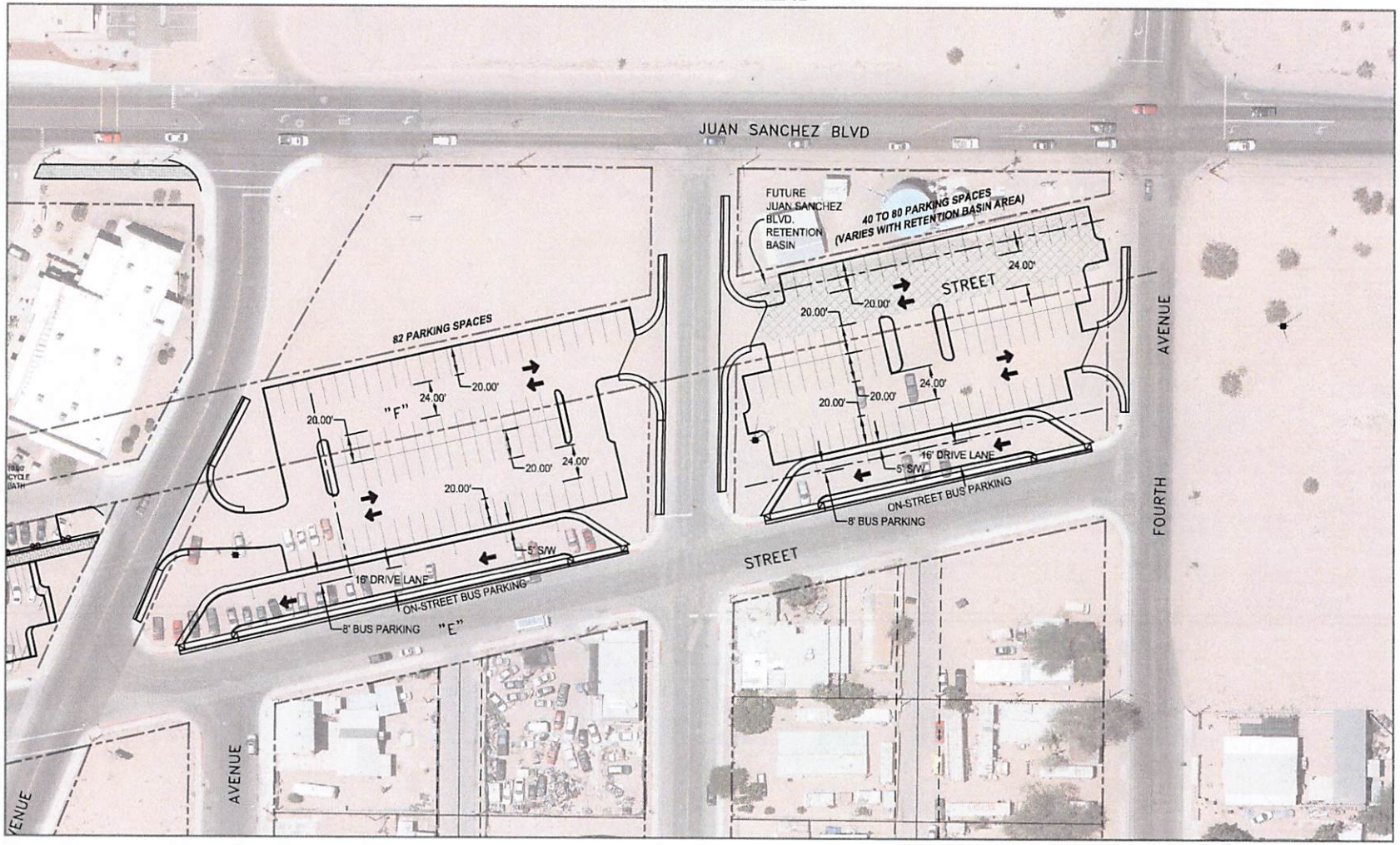
CITY OF SAN LUIS - DOWNTOWN PARKING MASTER PLAN
CENTRAL PARKING AREAS - ALTERNATIVE 1
(EXCLUDING PROPERTY ADJACENT TO SUNSET COMMUNITY HEALTH CENTER)



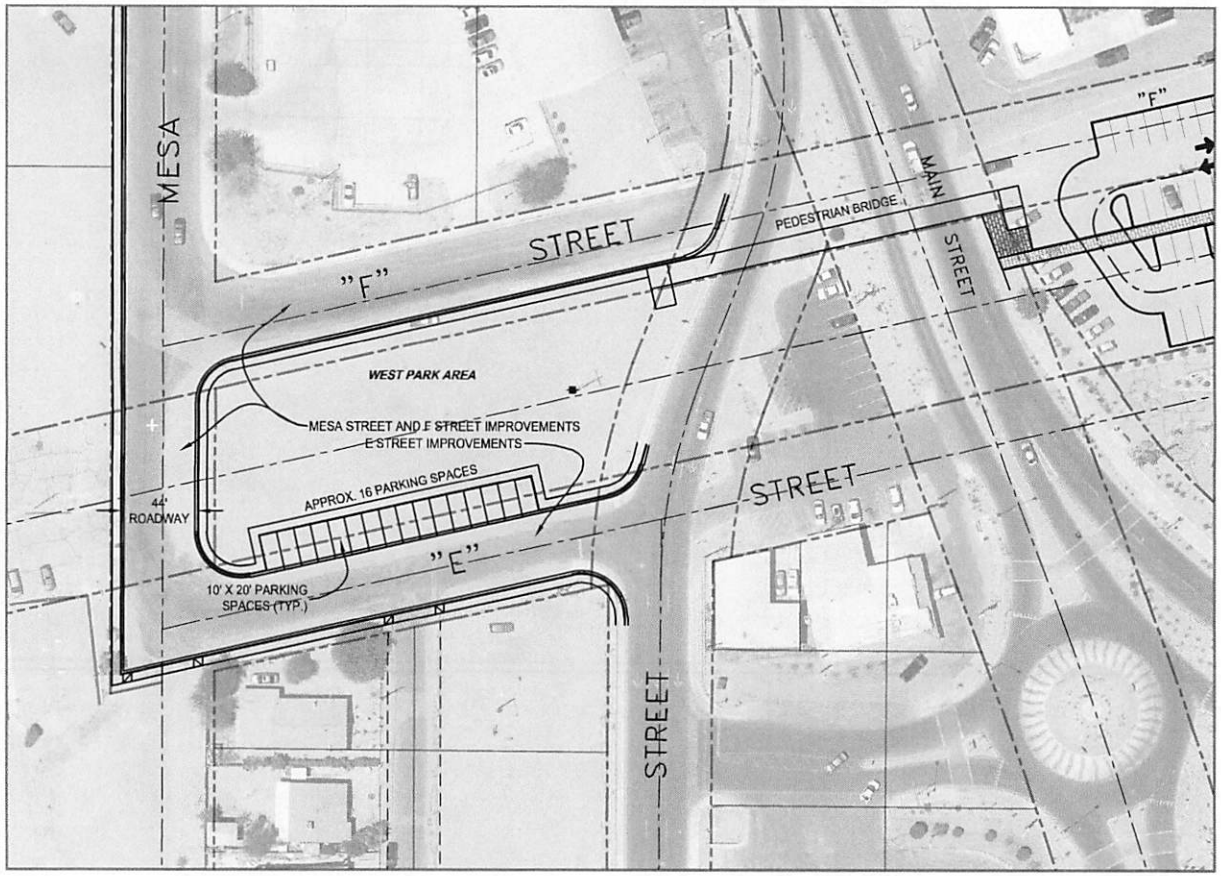
CITY OF SAN LUIS - DOWNTOWN PARKING MASTER PLAN
CENTRAL PARKING AREAS - ALTERNATIVE 2
(FULL USE OF U.S.A. PROPERTY)



CITY OF SAN LUIS - DOWNTOWN PARKING MASTER PLAN
EAST PARKING AREAS



CITY OF SAN LUIS - DOWNTOWN PARKING MASTER PLAN
WEST PARKING AND ROADWAY IMPROVEMENTS



City of San Luis
Master Plan for Downtown Parks and Parking Lots
Conceptual Construction Cost Estimate

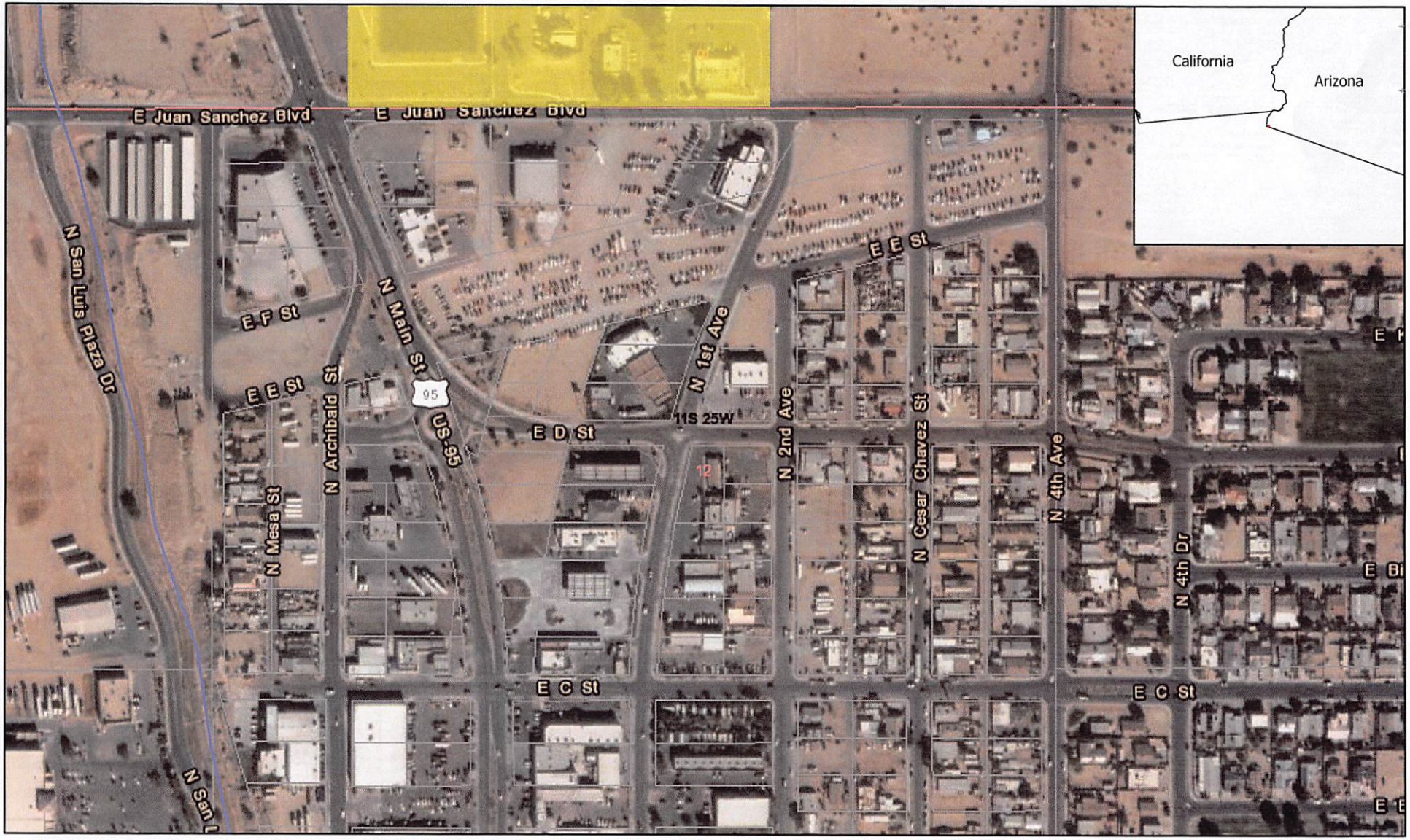
March 2018

Item No.	Description	Unit	Quantity	Unit Price	Subtotal
PARKING LOTS					
Central Parking Lot					
1	Site Grading	SY	38000	$3	$114,000
2	Asphalt Pavement (2-1/2" AC/6" ABC)	SY	15300	$25.00	$382,500
3	Vertical Curb & Gutter	LF	1100	$14.00	$15,400
	Single Curb	LF	4020	$10.00	$40,200
4	Sidewalks	SF	1500	$4.00	$6,000
5	12' Walking Path	LF	500	$48.00	$24,000
6	10' Bicycle Path	LF	730	$40.00	$29,200
7	8' Walking Path	LF	800	$32.00	$25,600
8	Signing and Striping	LS	1	$12,000.00	$12,000
9	Site Work and Landscaping	LS	1	$60,000.00	$60,000
10	Street Lights	EA	48	$4,000	$192,000
11	Fencing	LF	2500	$60.00	$150,000
				Subtotal	*$1,050,900*
				Contingency at 30%	*$315,000*
				Total Cost for Central Parking Lot	*$1,365,900*
East Parking Lots					
1	Site Grading	SY	11000	$3	$33,000
2	Asphalt Pavement (2-1/2" AC/6" ABC)	SY	6800	$25.00	$170,000
3	Vertical Curb & Gutter	LF	1370	$14.00	$19,180
	Single Curb	LF	1730	$10.00	$17,300
4	Sidewalks	SF	6850	$4.00	$27,400
8	Signing and Striping	LS	1	$7,000.00	$7,000
9	Site Work and Landscaping	LS	1	$30,000.00	$30,000
10	Street Lights	EA	21	$4,000	$84,000
11	Fencing	LF	1446	$60.00	$86,760
				Subtotal	*$474,640*
				Contingency at 30%	*$142,000*
				Total Cost for East Parking Lots	*$616,600*

West Roadway Improvements and Parking					
1	Site Grading	SY	4000	$3.00	$12,000
2	Asphalt Pavement (3" AC/8" ABC)	SY	2700	$29.00	$78,300
3	Vertical Curb and Gutter	LF	1050	$14.00	$14,700
4	Sidewalks	SF	5250	$4.00	$21,000
5	Cross Gutter	SF	1300	$7.00	$9,100
6	Signing and Striping	LS	1	$2,000.00	$2,000
7	Street Lights	EA	8	$4,000	$32,000
				Subtotal	*$169,100*
				Contingency at 30%	*$51,000*
				Total Cost for West Roadway Improvements and Parking	*$220,100*
PARKS					
West Park (between Archibald and Mesa Streets)					
1	Site Work and Landscaping	LS	1	$100,000	$100,000
2	Ramadas	EA	4	$30,000	$120,000
East Park (between Main St. and 1st Ave., north and south of D Street)					
1	Site Work and Landscaping	LS	1	$250,000	$350,000
2	Splash Park	LS	1	$175,000	$200,000
3	Restrooms/Police Substation	SF	1500	$200	$300,000
4	Ramadas	EA	5	$30,000	$150,000
5	Vendor Kiosks	EA	8	$30,000	$240,000
6	Concert Pavillion	SF	3500	$150	$525,000
Pedestrian Bridge					
1	Pedestrian Bridge	LS	1	$675,000	$675,000
				Subtotal	*$2,660,000*
				Contingency at 30%	*$798,000*
				Total Cost for Parks and Pedestrian Bridge	*$3,458,000*
				Subtotal - Construction Cost - Parking Lots and Roadway Improvements	**$5,660,600**
				Design Services at 8%	$452,800
				Construction Administration at 8%	$452,800
				Total Cost Estimate - Parking Lots and Roadway Improvements	***$6,566,200***

BUREAU OF RECLAMATION

21-07-34-L2075 Aerial Map



Legend

- Canal
- inactive
- Withdrawals Lands_LCB Region 8
- Area Office Boundaries

PLSS National (BLM, CadNSDI)

- PLSS Intersected
- PLSS Section
- PLSS Township

BLM_Natl_PLSS_CadNSDI_1646

- PLSS Intersected
- PLSS Section
- PLSS Township

0 0.07 0.15 mi

N

DISCLAIMER: This map and data are provided as-is and are intended for general reference only. None of the parties involved in preparing the map or data contained herein warrant or represent the data to be complete and accurate.

Date: 9/22/2021

Exhibit B
21-07-34-L2075

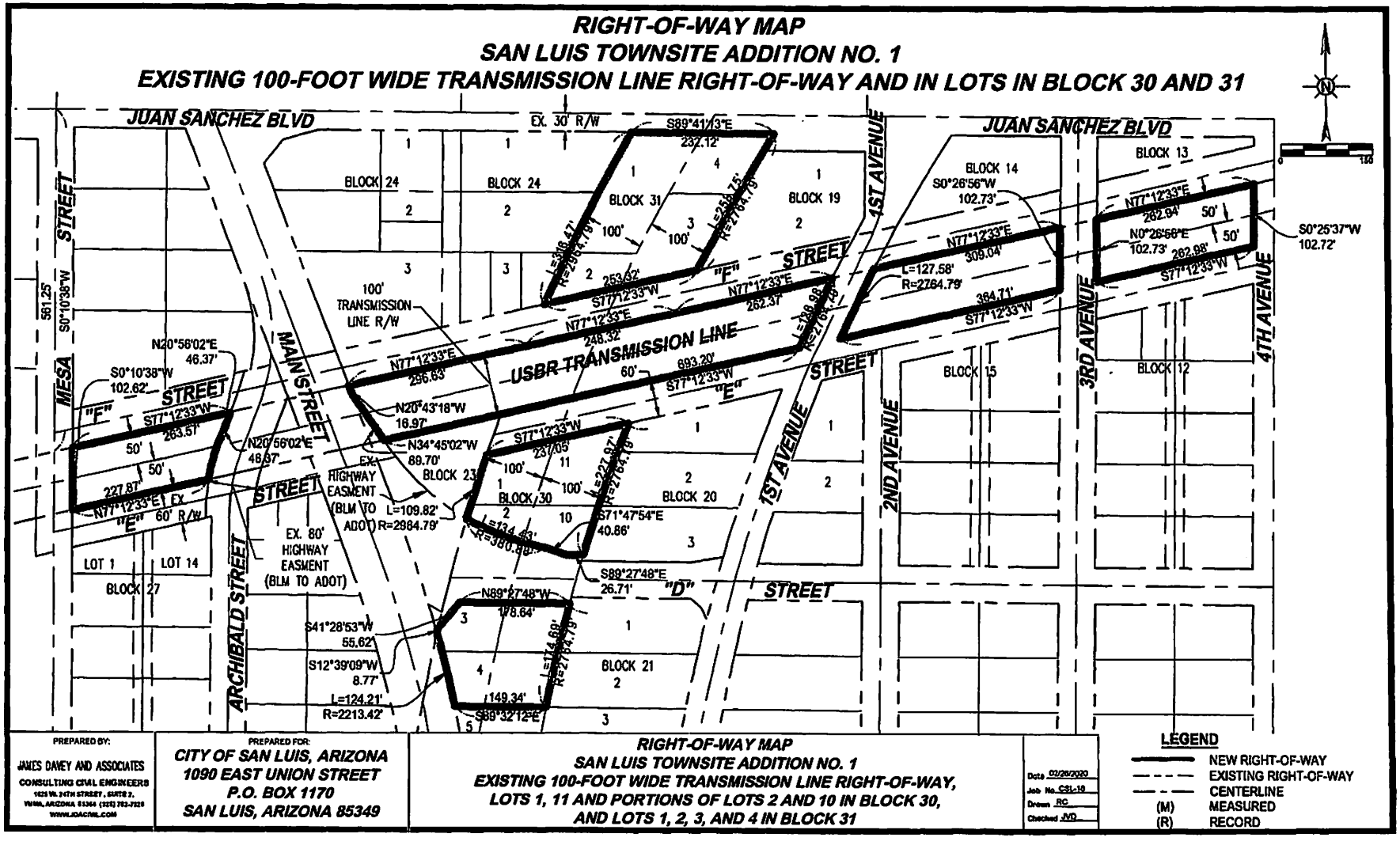


Exhibit B
21-07-34-L2075
Page 2 of 2

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Engineering and O&M Guidelines for Crossings

Bureau of Reclamation Water Conveyance Facilities (Canals, Pipelines, and Similar Facilities)

Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Official
AOE	authorized operating entity
AWWA	American Water Works Association
CFR	Code of Federal Regulations
CPS	cathodic protection system
DOT	Department of Transportation
HDD	horizontal directional drilling
kV	kilovolt(s)
MERL	Materials Engineering and Research Laboratory
O&M	operations and maintenance
Reclamation	Bureau of Reclamation
ROW	right-of-way
WB-67	67-foot wheelbase

Contents

1.0 PURPOSE

These are general guidelines for Bureau of Reclamation (Reclamation) offices to follow when reviewing the engineering and operations and maintenance (O&M) factors in outside entity requests for authorization to cross (encroach upon) Reclamation lands that contain project features such as levees, canals, pipelines, or other water conveyance facilities owned or administered by Reclamation. These guidelines include a general overview of the permitting process administered by Reclamation Lands Groups for allowing a particular use on lands where Reclamation holds a fee or an easement right-of-way interest. These engineering and construction recommendations are minimum guidelines for engineers to use in reviewing and evaluating these portions of the applications.

2.0 GENERAL PERMIT INFORMATION

Applicants requesting to cross any Reclamation land, facility, or water body must obtain a written land use authorization from Reclamation. Requirements for obtaining a use authorization to cross Reclamation project land and water surfaces are in the Code of Federal Regulations (CFR) at 43 CFR 429 and Reclamation Manual LND 08-01. The applicant must complete the *Standard Form (SF) 299*, "**Application for Transportation and Utility Systems and Facilities on Federal Lands**," or similar forms in use at the local Reclamation office. The form can be obtained by contacting the involved Reclamation office, or it can be accessed electronically at Reclamation's Web site at: <http://www.usbr.gov/pmts/lands>.

Applicants can contact their local Reclamation office to discuss their proposed use before filing an application for a use authorization.

3.0 ENGINEERING AND O&M REVIEW CONSIDERATIONS

3.1 Introduction

Technical review of the crossing evaluates impacts on any existing Reclamation facility and **does not determine the adequacy of the crossing design for the applicant's intended purpose.**

The use authorization or consent document specifies criteria which, if followed, would not be deemed unreasonable interference. These review guidelines are strictly limited to those criteria which:

- Protect Reclamation's facility and/or appurtenant facility from damage
- Ensure unrestricted flow and quality of water in Reclamation's facility
- Do not diminish the ability to perform O&M of Reclamation's facility, including access
- Prevent any burden of liability

These guidelines are provided as recommendations that apply to most Reclamation facilities. Each Reclamation office and/or authorized operating entity (AOE) should apply these guidelines using **sound engineering judgment** that best applies to their facilities and existing conditions. Additional Reclamation guidelines for specific locations (e.g., Central Arizona Project Reach 11 Basin Guidelines) may also apply and may be provided to applicants when necessary. These guidelines are minimums, and local conditions may be more stringent depending on the direct impacts to facilities and lands. AOEs may have additional requirements.

Uses that may be deemed reasonable within Reclamation pipeline easements include greenbelts, asphalt roadways, flexible pavement parking lots, transverse curbs and gutters, and sidewalks. Canals and pipelines may have overhead power and telephone lines (but not their supporting poles), transverse fences with gated openings (no walls), and similar surface and overhead structures.

3.2 General

The following individual items should be addressed by the applicant and evaluated by Reclamation and/or AOE as they may affect the Reclamation facility's engineering and O&M aspects. If unusual conditions are proposed for the encroaching structure or unusual field conditions within a Reclamation facility right-of-way (ROW) are encountered, Reclamation reserves the right to impose more stringent criteria than prescribed in these guidelines.

1. Structures that should not be constructed on Reclamation pipeline or canal ROW (whether fee owned or easement) include foundations, buildings, garages, carports, trailers, street light standards, supports for large signs, walls, longitudinal fences (except security/safety fences), power or telephone poles, and similar surface structures.

2. Prior to construction, a joint inspection should be conducted and the condition of existing facilities documented. Reclamation's ROW should be restored to pre-existing conditions following completion of work.

3. When applications are requesting public use of trails and maintenance roads adjacent to or crossing Reclamation canals, these facilities should be fenced for safety to separate them from open canal water, except when Reclamation's ROW is used as a greenbelt and the applicant accepts legal hazard responsibility. Trails and maintenance roads should be fenced on an as-needed basis whenever such fencing is warranted for public safety, restricted access, security, etc. If a fence is allowed within Reclamation's ROW, Reclamation should approve the fence materials. Any gates allowed within Reclamation's ROW should be at least 16 feet wide. Reclamation will be provided with full access through any fences or gates.

4. Prior to construction of any structure that encroaches within a Reclamation pipeline or canal ROW, a "pothole excavation" should be made to determine the locations of any existing Reclamation and non-Reclamation facilities and their appurtenant features that may be affected. Potholing is the practice of digging test holes to expose underground utilities to determine the horizontal and vertical location of the utility.

   All work within 18 inches of the facility should be done using hand-held tools only. The excavation should be made by or in the presence of Reclamation and/or AOE personnel. The presence of a Reclamation and/or AOE inspector may be required throughout the excavation process, but this presence in no way relieves the applicant or their contractor of responsibility.

   The resultant elevation information should be delineated on the profile view and labeled as:

   POTHOLED ELEVATION XX.X
   Surface Elevation XX.X

   The pothole excavation should be filled in, or a safety fence installed, prior to departing the site each day.

5. If Reclamation facilities need to be modified to avoid adverse impacts from the applicant's crossing facility, the applicant should be responsible for the cost of such modifications.

6. A temporary permit may be required for visual inspections, ground and aerial surveys,[1] or potholing that requires physical entrance onto a Reclamation facility. **A use authorization or consent document issued by Reclamation and/or AOE should be obtained prior to entering or crossing Reclamation's ROW for any activity.**

7. Applications should include a project description, calculations, specifications, and detailed construction plans showing plan views, profiles and sections, and grading plans of proposed work within or adjacent to Reclamation's ROW. Plans should show an easily recognizable boundary (tied to a known corner) and Reclamation's ROW and Reclamation stationing or mile post designation.

   All Reclamation facilities should be shown and labeled (e.g., "Centerline of xx-inch Reclamation Pipeline," "Reclamation Communication and Control Cable," etc.) The type and weight of the construction equipment crossing Reclamation pipelines, roads, and bridges as well as the crossing locations should be included. Additional information, as identified in following individual specific feature sections of these guidelines, should also be included with the application for review.

   Any engineering or land survey drawing should contain the appropriate registered engineer's or land surveyor's stamp and signature. A construction schedule outlining the anticipated duration of the construction should be submitted. A minimum of two[2] copies of the application (including calculations, specifications, and plans) should be submitted to Reclamation and/or AOE for review and approval.

8. For crossings of all Reclamation facilities, Reclamation and/or AOE personnel familiar with the facilities (including cathodic protection systems) will obtain and provide copies of existing files showing information about existing buried facilities (center of pipeline, depth of cover, size of pipe, class of pipe, etc.) to the applicant.

9. Existing Reclamation facilities (e.g., canal lining, canal check structure, turnout structure, etc.) and appurtenances (e.g., existing blow-offs, air valves, vents, manholes, and/or cathodic protection test stations) and existing non-Reclamation facilities on Reclamation's ROW (e.g., petroleum pipelines, natural gas pipelines, communications lines, powerlines, water lines, sewer lines, storm drain lines, etc.) **should be protected** in place prior to and during construction.

[1] Aerial surveys require placing on-the-ground survey control markers.
[2] Revise per local Reclamation office and/or AOE practice.

The applicant and/or their contractor may be liable for all damages to Reclamation facilities and appurtenances as a result of construction and for any other damages or losses suffered by Reclamation or its water contractors, including power, irrigation, municipal and industrial water supply, and communication losses.

10. Trench excavation should comply with the most current Occupational Safety and Health Administration standards or Reclamation Health and Safety Standards, whichever are more stringent. Trench backfill should be placed in 4- to 6-inch lifts if hand compacted or no more than 8-inch lifts if power compacted. Trench backfill within Reclamation's ROW should be compacted to 95 percent relative compaction (ASTM D 698, Standard Proctor) (or 90 percent of ASTM D 1557). Mechanical compaction using heavy equipment (greater than 2,000 pounds) should not be used within 18 inches of the Reclamation pipeline. Flowable fill (or controlled low strength material) should be substituted for compacted pipe embedment under canals and may be used when crossing pipelines.

11. Erosion control measures, including re-vegetation, should be implemented after completing construction.

12. If existing drainage features are to be modified during construction, detailed drawings showing the proposed drainage replacement/ restoration should be submitted with the application for review and approval. The applicant is responsible for the care and handling of storm water runoff both during and after construction.

13. The applicant should not divert surface runoff[3] toward Reclamation canal or canal embankments. The 100-year storm[4] surface runoff should use detention basins outside of Reclamation's ROW. Lined drainage channels should be designed to transfer flow from the detention basins to the existing cross drainage facilities that drained the original area. Also refer to "4.4 Storm Water Cross Drainage."

14. Proposed temporary or permanent modifications to the existing cover over Reclamation pipelines should be subject to review and approval by Reclamation and/or AOE. Design parameters for roadway, parking lot, and driveway crossings over the pipe should also be subject to review and approval by Reclamation and/or AOE.

[3] Subdivision or commercial development on the uphill side of canals that pave large areas and have large roof areas will greatly increase peak storm runoff—most city development requires retention basins. Applicants should provide the same retention basins that are required for similar development projects.

[4] Revise per Reclamation field office for specific canal if a higher storm frequency is required.

15. When a Reclamation pipeline system being crossed has pipe with an "A" cover pipe designation (less than 5 feet of earth), the applicant is to analyze the crossing to show "A" pipe load carrying capability exists to meet their carrying requirements or replace the "A" pipe with pipe of sufficient load carrying capability.

16. Reclamation's ongoing O&M activities should not be disrupted during construction. The primary or secondary operating road should be kept available for Reclamation and/or AOE use at all times.

17. Detectable warning tape may be required over below-ground utilities. Refer to "3.3 Detectable Warning Tape."

18. The points where the proposed utilities enter and exit Reclamation's ROW should be plainly and permanently marked by sign posts extending 5 feet above grade. Applicants should provide sign posts directly above their utilities and at all angle points within Reclamation's ROW. The distance between adjacent sign posts should not exceed 500 feet. Sign posts should contain the name of owner/operator, contents of the pipeline, utility identification, and emergency contact telephone number. Sign posts for angle points that lie within roads or canals should be offset and have a reference noted. The locations of the sign posts should be shown on the plans.

19. Following completion of work, applicants should provide as-built drawings of their facilities on Reclamation's ROW. Reclamation as-built drawings are to be updated by the appropriate Reclamation office and/or AOE to reflect the crossing. As-built drawings may be maintained by the AOE, but should remain accessible to Reclamation upon request.

3.3 Detectable Warning Tape

Detectable warning tape may be required over below-ground utilities situated within Reclamation's ROW and should be a minimum of 18 inches above the utility and between 18 and 30 inches below the ground surface. Warning tapes should conform to the following specifications:

a. For potable water lines, the warning tape should be a 3-inch-wide blue detectable tape imprinted with "**CAUTION BURIED POTABLE WATER LINE.**"

b. For nonpotable water lines, the warning tape should be a 3-inch-wide purple detectable tape imprinted with "**CAUTION BURIED NONPOTABLE WATER LINE.**"

c. For sewer and storm drain lines, the warning tape should be a 3-inch-wide green detectable tape imprinted with "**CAUTION BURIED (type) LINE.**"

d. For gas, oil, and steam chemical lines, the warning tape should be a 3-inch-wide yellow detectable tape imprinted with "**CAUTION BURIED (type) LINE.**"

e. For telecommunications, telephone, and television conduit(s), the warning tape should be a 3-inch-wide orange detectable tape imprinted with "**CAUTION BURIED (type) CONDUIT.**"

f. For electrical, street lighting, and traffic signal conduit(s), the warning tape should be a 3-inch-wide red detectable tape imprinted with "**CAUTION BURIED (type) CONDUIT.**"

4.0 SPECIFIC FEATURE REVIEW GUIDELINES

4.1 Bridges

1. New bridge crossings (vehicular, pedestrian, and utility) should be perpendicular (between 70 and 90 degrees) to the centerline of the water conveyance facility and at locations approved by Reclamation and/or the AOE. Exceptions to the policy may be considered on an individual basis.

2. Public use bridges in urban areas should be spaced no closer together than 1/3 mile (about 4 blocks or 1,700 feet) apart. This is to ensure O&M operations are not overly restricted.

3. Bridge crossings should be of free span design. Consideration of any anticipated (known or ongoing) canal subsidence issues, anticipated raising of the canal lining, or anticipated increases in the canal's high water level should be made. The minimum vertical clearance between the bottom of the superstructure and the top of the canal lining should be 3 feet. For unlined canals, the vertical clearance may be measured to the high water level. If this minimum clearance is reduced by subsidence or by future Reclamation modifications to the canal lining, the minimum clearance should be re-established at the applicant's expense. The minimum horizontal clearance from the face of the abutment to the top of the canal lining should be 5 feet. For unlined canals, the horizontal clearance may be measured to the high water level.

These clearances are suggested to minimize impact on the canal section during construction and future inspections and O&M. Applicants may request to re-construct a canal section if Reclamation's operations are impacted by close construction during periods when the canal is normally unwatered. If so, vertical clearances may be reduced to 1 foot and horizontal clearance to 3 feet.

4. Canal O&M roads should intersect public roads at bridges at right angles for proper visibility. This may require the applicant to acquire additional ROW for use if the existing canal ROW is not sufficient. American Association of State Highway and Transportation Official (AASHTO) criteria for sight distances at the intersection of O&M roads and roadways at new bridges should be met to allow O&M vehicles to cross them safely.

5. Driving piles at concrete-lined canals should not be permitted. Any abutment foundation support piles, at concrete-lined canals, should be drilled and cast-in-place.

   At a minimum, the applicant's drilling and piling plan should include:

   - Drilling methods and equipment
   - Methods for preserving existing foundation material
   - Methods and equipment to determine the presence of quick soil conditions or scouring and caving
   - The proposed method for casing installation and removal if casings are used
   - Methods and equipment for accurately determining the depth of concrete and actual or theoretical volume placed

   At a minimum, the applicant's contingency plan should include:

   - Means to repair in a certain time
   - Minimum flows after event
   - Review of geotechnical conditions surrounding the pile locations
   - Assessment of how the proposed mitigations will address geotechnical conditions
   - Methods for restoring foundation material

- A list of material, equipment, and personnel with qualifications to be used during mitigation work

- A seal from a Professional Engineer on all relevant plans and drawings

6. The submitted plan drawings for the bridge should contain the following information:

    a. Superstructure, abutments, railings, embankments, and drainage, including details and sections

    b. Type of materials (concrete, steel, timber, etc.) used for different members

    c. Details of cast-in-place foundation piles, if any, on both sides of the canal

    d. The elevation of the bottom of the superstructure and the clearance between the top of the canal lining (or high water level if unlined canal) to the superstructure or bottom of deck slab, whichever is lowest

    e. Design loadings

    f. Design standards on which the bridge is based (AASHTO, etc.)

7. The calculations and specifications for the bridge should be submitted to Reclamation and/or AOE for review.

8. The right lane turn radius from the new road onto a Reclamation operating road should comply with the provisions of a 67-foot wheelbase[5] (WB-67) truck turning template in the AASHTO manual on Geometric Design of Highway and Streets.

9. Details of any proposed utilities to be attached to an existing bridge include:

    a. Anchor bolt locations should not intercept the critical reinforcing steel of the bridge.

[5] The field office should adjust these provisions according to anticipated needs.

b. Utilities should be placed and anchored under bridge decks and through utility openings, if they are present. The utility should be placed off center in the utility opening, if possible, to allow for future utility additions.

c. If an expansion joint is used in the pipeline, the joint should be placed near the bridge deck expansion joint.

d. Holes through bridge concrete or abutment and retaining walls for passage of utilities should be allowed by core drilling. The annular space between the utility and core hole surface should be completely filled with an elastomeric sealant to prevent loss of material or water piping from behind the wingwalls and abutments.

e. Submit calculations showing the effects of the weights of the proposed utilities on the load carrying capacity of the bridge for Reclamation review.

f. Intermediate supports for the utility should withstand the same seismic load considerations as the bridge.

g. Load limit signs should be placed adjacent to the bridge, as required under AASHTO criteria.

h. Beam guardrails should be installed at bridges and bridge approaches, as required under AASHTO criteria.

10. The applicant will be responsible for changes to Reclamation existing ROW; bridge O&M approach roads; existing fencing, gates, and signs; and the addition of new fencing, O&M gates, cattle guards, signs, etc.

4.2 Landscaping

1. No landscaping or other changes in ground surfaces within Reclamation pipeline and canal/lateral ROW should be made without advance written permission of Reclamation through the application process. Landscaping changes may (1) limit, prevent, or hamper O&M access; (2) increase the costs of operations and maintenance of the facility; (3) impact facility reliability; or (4) create a public nuisance or liability issue.

2. Open space with natural hiking trails and walkways may be permitted if vehicle access to Reclamation pipeline and appurtenant facilities for patrol and maintenance is provided.

3. The following may apply within Reclamation's ROW:

    a. The easement may be used as a greenbelt upon Reclamation approval.

    b. Ground cover and shrubs are permitted upon Reclamation approval.

    c. Trees and vines should not be allowed. See Appendix B of *Review of Operation and Maintenance Program Field Examination Guidelines* (reproduced as appendix B at the end of these guidelines).

4. All temporary or permanent changes in ground surfaces within Reclamation pipeline and canal ROW are considered encroaching structures and are handled as such. Earthfills and cuts on adjacent property should not encroach onto Reclamation pipeline and canal ROW. Excavations of adjacent property (even property not within Reclamation's purview) within the projection of the Reclamation embankment line may impact embankment stability and should be evaluated.

5. Permanent landscaping structures should not be allowed within the exterior limits of a Reclamation linear facility ROW (fee owned or easement).

6. Pressurized lawn and park sprinkler irrigation lines (3-inch maximum size) and isolation valves within Reclamation easements that run parallel to a Reclamation pipeline should be installed at least 15 feet from the edge of the Reclamation pipeline.

    Irrigating lawns and flower beds along canal embankments should not overwater the area or threaten the embankment stability.

4.3 Roadway Crossing

Note: This type of encroachment also includes parking areas and recreational trails.

1. The applicant should submit a grading plan as part of the application.

2. If the roadway crosses a Reclamation pipeline system that has a cover pipe designation of "A," refer to "3.2 General."

3. If the applicant intends to modify existing drainage features during construction, detailed drawings showing the proposed drainage replacement/restoration should be submitted with the application for review and approval. (Refer to "3.2 General.")

4. If the proposed roadway includes a bridge crossing over a Reclamation canal or pipeline, Reclamation and/or AOE should review and approve the vertical clearance and location of the abutments. (Refer to "4.1 Bridges.")

5. Streets, roads, or parking areas crossing Reclamation pipeline easements are permissible. All streets, roads, and parking surfaces are to be asphalt or other flexible pavement. Depressed curbs or driveways should be provided for Reclamation vehicular access when new roads cross Reclamation pipelines or canals.

6. Roadway ditch drainage should not be allowed to flow into the canal. Drainage should be retained and released in a controlled way to maintain peak discharges that are less than any peak historical runoff rate before these modifications. Applicants should direct drainage to an original sub-basin cross drainage culvert or overchute. (Refer to "3.2 General" and "4.4 Storm Water Cross Drainage.")

7. If existing roadway embankments are to be widened, the work should be conducted in accordance with the provisions of construction in the applicable State Department of Transportation (DOT) Standard Specifications.

4.4 Storm Water Cross Drainage

1. Upslope development impacts historic natural drainage volumes and peak flow rates. Development re-grades and revises drainage sub-basins. Revised ground cover from constructing roads, parking areas, and buildings may result in the need to change the cross drainage features (culverts and/or overchutes) along Reclamation canals.

2. A hydrologic study should accompany all plans that modify the existing drainage across and/or along Reclamation facilities. The study or report should show the proposed flows of the canal and the associated crossings. The drainage study or report should show that the downstream system can accept the flows without creating any flooding to properties adjacent to or downstream of the canal.

3. All drainage crossings, whether existing or proposed, should carry the peak runoff of a 100-year event while preventing any storm water from entering the canal and/or ponding against the canal embankment.

4. Urban runoff should not be allowed to enter into, or drain onto, Reclamation's land. All flows generated outside Reclamation's ROW should enter the storm drain system prior to entering Reclamation's ROW. Piped connections are preferred, but concrete-lined channels may be acceptable upon Reclamation's review.

5. The new crossing under a canal should be designed with 3 feet vertical clearance from the top of the cross drainage structure to the bottom of the canal (or liner). The structure should extend completely across Reclamation's ROW.

6. New overcrossings of the canal should have 2 feet of vertical clearance from the top of the liner and 2 feet of horizontal clearance from the support abutments to the outside edge of the canal lining. The O&M road crossing of the cross drainage structure should be structurally capable of withstanding highway-legal vehicle loadings and provide at least 1 foot of cover in the roadway.

7. Pipe crossing barriers should be installed on all pipe overcrossings.

8. All drainage flow should be discharged to a downstream storm drainage system owned, operated, and maintained by a public agency (such as a city or county) or into areas such as channels, roadways, parks, wetland basins, or other non-private lands that can accept the concentrated flows from the drainage crossing.

9. All drainage from upland property should be collected by the applicant's installed system of curbs and inlets within their property and discharged into a non-Reclamation public agency's drainage system.

10. New drainage system designs will not use ponding against the existing canal embankment for temporary detention of storm runoff that will not immediately pass through existing or new crossings.

    Proposed permanent detention facilities adjacent to Reclamation's property should include engineered fill beyond the canal ROW to provide, at a minimum, a fill-width maintenance access roadway between the canal property and the basin. The applicant shall submit a geotechnical report verifying that the canal embankments can perform as detention basin embankments. The design should provide for sufficient freeboard to contain the 100-year event within the proposed basin adjacent to Reclamation's property and shall have adequate protection from seepage and erosion.

    The ownership and related O&M of the embankments shall be the responsibility of the applicant requesting the crossing.

11. When grading operations upstream of existing canal drainage crossings are scheduled to take longer than a normal construction season to complete, temporary basins shall be installed. These temporary basins should be designed to detain the 100-year event, capture silt from the disturbed area, and meter the flows across the existing drain crossings without spilling flows into the canal.

12. Unless Reclamation specifies otherwise, the applicant should remove or plug and abandon existing drainage crossings that are not used by the development unless they are shown to provide an additional measure of safety for the canal by reducing the likelihood of spill into the canal caused by extreme runoff flows. Otherwise, these crossings should remain in place for Reclamation's benefit and will not require ownership transfer to a public agency.

    These crossings must discharge into the non-Reclamation public agency's storm drainage systems or into areas such as channels, roadways, parks, wetland basins, or other nonprivate lands that can accept the concentrated flows from the drainage crossing in the case of an extreme runoff event.

    Grading in Reclamation property should be preserved or revised to direct extreme runoff flows into these unused drainage crossings without allowing said flows to enter into the canal until the crossings reach their capacity.

4.5 Subdivision

Urban developments are reaching Reclamation's lands and ROWs. These are general guidelines for accommodating development in subdivisions (refer to "3.2 General" and "4.4 Storm Water Cross Drainage").

1. Permanent structures should not be permitted within Reclamation fee-owned linear ROWs.

2. Open space with natural hiking trails and vegetation may be allowable.

3. Where subdivision development is adjacent to a canal, fencing should include these characteristics:

    a. Temporary chain link fences must be installed prior to removing any portion of existing fences.

b. Upon completion of grading for drainage and other work, fencing should be installed along the subdivision's boundary length of the adjacent ROW plus 150 feet beyond the development's property boundary. The fence should be per project standards and at the applicant's expense.

c. The new fence should be located 1 foot outside of Reclamation's ROW. The fence location should be shown on the improvement plans.

4. Use of Reclamation pipeline easements as part of residential subdivision lots should not be allowed. Pipeline easements may be included within the subdivision greenbelt or similar use areas.

5. Drawings should include all proposed improvements (i.e., streets, utilities, landscaping, etc.) within, and adjacent to, Reclamation's ROW.

6. Trees or vines should not be allowed within a Reclamation pipeline or canal ROW. See Appendix B of *Review and Operation and Maintenance Program Field Examination Guidelines* (reproduced as appendix B at the end of these guidelines).

7. Streets, roads, or parking areas using Reclamation easements may be permissible. All streets, roads, and parking surfaces should be asphalt or other flexible pavement. Depressed curbs or driveways should be provided for Reclamation vehicular access when new roads cross Reclamation pipelines or canals.

8. Where fencing is proposed within Reclamation easements, a minimum 16-foot-wide gate should be provided for Reclamation access.

9. Pipelines containing sewage, oil, gasoline, natural gas, or hazardous materials should only cross perpendicular (between 70 and 90 degrees) to the Reclamation pipeline or canal and be installed with the necessary safety measures and separation clearance as required in "4.6 Utility Crossing."

10. Electroliers, posts, etc., should be installed at the maximum distance possible from the edge of the pipeline or canal.

11. If crossing a Reclamation pipeline system that has "A" cover pipe designation, refer to recommendations in "3.2 General."

4.6 Utility Crossing

Note: All pipelines, electrical, and communication lines and conduits are referred to as "utilities" in these guidelines.

4.6.1 Casings

The Reclamation Materials Engineering and Research Laboratory's (MERL) position is to avoid using casing pipes around metallic carrier pipelines (steel, ductile iron, cast iron, reinforced concrete, pretensioned concrete cylinder, etc.) whenever possible. The experience of the corrosion community in general is that these casings often cause corrosion-control problems. Furthermore, dielectric (plastic, fiberglass, etc.) casings, or even dielectrically coated casings, should not be used. They can shield the carrier pipe from receiving cathodic protection current.

Cathodic protection to a buried metallic pipeline is more trouble free and more certain without a casing pipe. MERL recommends relying on effective corrosion control measures on the carrier pipeline rather than relying on a casing pipe (which may shield cathodic protection current) to direct a leak away from Reclamation property.

4.6.2 Overhead Line Crossing

1. Overhead wires across Reclamation pipeline and canal ROWs should be at least 32 feet above all ground levels in the Reclamation ROW. For electrical powerlines of 69 kilovolts (kV) or higher voltage, the minimum clearance should be 40 feet plus 0.25 inch per kV of line-to-line voltage above 450 kV. In any case, the minimum clearance is to be that determined to be needed with an ambient temperature of 120 degrees Fahrenheit.

2. Reclamation has the following requirements for overhead crossings:

    a. Poles or towers should not be allowed within Reclamation's ROW.

    b. Overhead electrical and communication lines should cross perpendicular (between 70 and 90 degrees) to the centerline of the Reclamation facility.

    c. If necessary, fence grounding is to be provided for existing fence lines, especially under power transmission lines.

3. A marker warning sign should be provided that shows the clearance and electrical line voltage. The warning sign should face oncoming traffic and state, "**DANGER, HIGH VOLTAGE OVERHEAD.**"

4.6.3 Utility Crossing Reclamation's Canal

Utility crossings include open ditch laterals, subsurface and surface drains, levees, and similar facilities.

General Requirements:

1. Utilities crossing Reclamation canals should be designed to cross perpendicular (between 70 and 90 degrees).

2. Pier construction in the canal for new utility crossing(s) should not be allowed. New utility crossings should be free span design.

3. Open cut crossings of Reclamation canals and ditches, when allowed, should require replacing linings to re-establish the original construction style and materials (i.e., disturbed concrete lining panels should be removed in their entirety and replaced, membrane lining and earth or concrete protective cover should be re-constructed, gravel and canal under-drainage systems should be re-established to full working order, etc.) Proposals should be submitted for approval with the crossing permit application.

4. For trench excavation and backfill requirements, refer to "3.2 General."

5. Boring and jacking of a utility through canal embankments or protective levees should not be permitted. Boring and jacking of a utility should be constructed through the embankment foundation materials. Applicants should make special design and construction considerations with bored crossings under canals containing water during construction. Among these should be using proper bentonite slurry to seal the annulus space between the utility conduit and the boring cavity from canal seepage. Refer to appendix A for more details to be considered.

   The applicant's drilling plan should cover:

   a. Drilling methods and equipment

   b. Methods for preserving existing foundation material

   c. Methods and equipment to determine the presence of quick soil conditions or scouring and caving

d. Proposed method for casing installation and removal if casings are used

e. Methods and equipment for accurately determining the depth of concrete and actual or theoretical volume placed

The applicant's contingency plan should cover:

a. Means to repair in a certain time

b. Minimum flows after event

c. Review of geotechnical conditions surrounding the pile locations

d. Assessment of how the proposed mitigations will address geotechnical conditions

e. Methods for restoring foundation material

f. List of material, equipment, and personnel with qualifications to be used during mitigation work

g. A seal from a Professional Engineer on all relevant plans and drawings

6. When horizontal directional drilling (HDD) or other trenchless methods are used, canal seepage conditions may be aggravated by the collapse of the canal foundation material into the annular void between the bore and pipe. Penetration through the top stratum of fine-grained materials may concentrate seepage at those locations. Pipe installed with trenchless methods should proceed only after completion of a comprehensive evaluation of the following:

(a) Comprehensive understanding of the subsurface soil and groundwater conditions to a minimum depth of 20 feet below the lowest pipe elevation

(b) Locations of the HDD pipe penetration entry and exit

(c) Construction procedure

(d) Allowable uplift pressures

(e) Onsite quality control and quality assurance monitoring during construction operation

(f) Grouting of the pipe annulus

(g) Backfilling of any excavated areas

(h) Repair and reinstatement of the construction staging areas

A geotechnical report should be submitted with the application for review prior to approval of the proposed utility crossing.

Directional drilling under a canal may be considered if a minimum clearance of 25 feet to the bottom of the canal lining is maintained for utilities with less than a 24-inch outside diameter. Larger utility crossings should be considered on an individual basis and may require additional clearance from the bottom of the canal lining.

7. Cut and cover constructed utilities under Reclamation canals should have a minimum cover of 36 inches when within Reclamation's ROWs. Bored construction utilities should have a minimum of 3 diameters cover.

8. Reclamation's ongoing O&M activities should not be disrupted during crossing construction. The primary or secondary operating road should be kept available for Reclamation use at all times.

9. Canal embankments should be re-built or repaired with materials and standards equal to or better than the existing embankments.

10. Drawings should be stamped and signed by a Professional Engineer and contain the following information:

    a. Canal milepost or station at each proposed crossing, utility size and location, and type of utility or material transported

    b. Maximum utility operating pressure, type of pipe, joints, wall thickness, maximum test pressure, and description of test procedures

    c. Type of sleeve/casing (when allowed) including diameter, joints, and wall thickness

    d. For utilities attached to a bridge or an overchute, details showing the structure name, superstructure, abutments, embankments, protective dikes, method of attachment, spacing of utility supports on the structure, location of other attached utilities, and structural calculations

e. Protective coatings and corrosion control measures

f. Method of handling pipeline expansion and contraction

g. Location of nearest shutoff valve on each side of the crossing

h. Location and details of thrust restraint

i. Design code(s) used for the utility crossing

j. Location, including depth, of the buried pipeline communication and control cables

k. Other existing utility easements in the immediate vicinity

Hazardous Material Carrier Requirements:

1. Pipelines carrying hazardous material or pollutants (e.g., oils, gasoline, sewage, contaminated waters, and nonpotable waters) should be designed for a reduced risk of failure in the portion within Reclamation's ROW. The design should require either:

    a. Designing the crossing pipeline with an additional 50 percent working pressure factor

    or

    b. Using secondary containment (casing pipe) for all hazardous material pipelines

2. To minimize the amount of any hazardous material entering the canal, Reclamation may require the installation of a block (gate) valve and or a check valve on each side of the canal between the ROW boundary and the embankment. When selecting the type of the valves, take into the account the flow direction and the terrain.

3. A final hazardous material spill contingency plan and an emergency response plan should be approved by Reclamation prior to start of construction.

4. A monitoring program and/or Supervisory Control and Data Acquisition System alarm may be required depending on the hazardous material transported. This applies to all "overcrossings" and "undercrossings" when the hydraulic grade line is within 60 inches of the canal liner or when local geology would promote this requirement.

Attaching Utilities to Bridges and Overchutes:

Note: Reclamation does not guarantee the long-term availability of bridges or overchutes as support devices for utility crossings because they may require structural modifications or alterations to accommodate widening, repairs, subsidence offsets, etc., to such an extent that service may be interrupted or stopped. Reclamation may determine the bridge is no longer required and may remove it. In that event, the owner/operator of each utility attached to a bridge or an overchute may be required to re-locate or permanently remove their utility at their own expense.

Specific details for attaching utilities to bridges are:

a. Utilities should not be placed on the bridge deck.

b. Anchor bolt locations should not intercept the critical reinforcing steel of the bridge.

c. Utilities should be placed and anchored under bridge decks between girders and through utility openings, if they are present. The utility should be placed off center in the utility opening, if possible, to allow for future utility additions.

d. If an expansion joint is used in the pipeline, it should be placed near the bridge deck expansion joint.

e. Holes through bridge concrete or abutment and retaining walls for passage of utilities may be allowed and should be core drilled. The annular space between the utility and core hole surface should be completely filled with an elastomeric sealant to prevent loss of material or water piping from behind the wingwalls and abutments.

f. Calculations showing the effects of the weights of the proposed utilities on the load carrying capacity of the bridge should be submitted for Reclamation review.

g. Intermediate supports for the utility should withstand the seismic conditions of the bridge.

4.6.4 Utility Crossing Reclamation's Underground Pipelines

1. The applicant should submit the procedures, excavation plans, schedules, as well as type and weight of the construction equipment to be used for crossing the Reclamation pipeline.

2. High voltage, direct current powerlines should not be permitted to encroach on the Reclamation pipeline ROW, except in unusual circumstances and with proper cathodic protection considerations.

3. For proposed metallic pipelines, refer to "5.0 Cathodic Protection Requirements."

4. For utilities crossing above or under the Reclamation pipeline, the vertical clearance between the utility and Reclamation pipeline should be a minimum of 12 inches.

5. The location of the Reclamation pipeline and the communication and control cables throughout the area of the proposed construction should be shown on the plans. Prior to Reclamation and/or AOE issuing a use authorization or consent document, the pipeline and the cable(s) should be located and exposed by potholing. The pothole locations should be shown on the drawings. The pothole elevations should be referenced to Reclamation stationing or milepost. (Refer to "3.2 General.")

6. Drawings should contain the following information:

    a. Reclamation milepost or station at each proposed crossing, pipeline size and location, and type of utility or material transported.

    b. Maximum utility operating pressure, type of pipe and joints, maximum test pressure and description of test procedures, wall thickness, and utility pipe classification.

    c. Type of sleeve/casing pipe (when allowed) including diameter, joints, and wall thickness.

    d. Protective coatings and corrosion control measures.

    e. Location of nearest shutoff valve on each side of the crossing.

    f. Location and details of thrust restraint.

    g. Design code(s) used for utility crossing.

    h. Location, including depth of the Reclamation pipeline and the communication and control cables.

    i. Other existing utility easements in the immediate vicinity.

7. Detectable warning tape may be required over trenched utilities. (Refer to "3.3 Detectable Warning Tape.")

8. For trench excavation and backfill requirements, refer to "3.2 General."

9. Embankments should not be permitted within Reclamation's ROW where underground pipeline exists.

4.6.5 Utility Crossing Under Reclamation's Roadways

1. The applicant should supply typical cross sections that show existing ground surface elevations, utility trench invert elevations, and utility details.

2. For trench excavation and backfill requirements, refer to "3.2 General."

3. Conduits with diameters up to 24 inches should be bored and jacked underneath pavements. Larger conduits may be considered on an individual basis. Pavement or road surfaces should not be cut unless an acceptable detour, if required, is approved. The cover over the conduit(s) when within Reclamation's ROWs should be a minimum of 36 inches. (Refer to "3.2 General.")

4. Unless otherwise approved, the applicant should replace existing Reclamation roads and parking surfaces that are removed or damaged by the applicant's construction activities in accordance with provisions in the latest edition of the applicable State DOT Standard Specifications.

5. If existing road embankments are to be widened, the work should be conducted in accordance with the provisions of embankment construction in the applicable State DOT Standard Specifications.

6. Detectable warning tape may be required over buried utilities. (Refer to "3.3 Detectable Warning Tape.")

5.0 CATHODIC PROTECTION REQUIREMENTS

5.1 Cathodically Protected Metallic Pipelines

Unless approved in writing by Reclamation, metallic pipelines or those containing metallic reinforcement (e.g., reinforced concrete) installed within Reclamation's ROW should have a suitable bonded dielectric coating (see "5.2 Protective Coatings for Corrosion Control") and be cathodically protected. Impressed current cathodic protection rectifiers and deep-well anode systems should not be

permitted within Reclamation facilities without prior approval from MERL's Corrosion Technology Group. All submittals should include details of the cathodic protection system (CPS) and its appurtenances.

1. All existing Reclamation cathodic protection test stations, cables running to these stations, rectifiers, anode beds, and any other appurtenances should be located prior to any grading or excavation. The test stations should be staked and flagged. The test stations, cables running to these stations, any anode beds, etc., should be suitably enclosed or protected during construction to prevent damage. No re-location or modification of the test stations, cables, anode beds, etc., is allowed without prior approval from MERL's Corrosion Technology Group.

2. Generally, the CPS to the proposed pipeline should be the sacrificial anode type unless the proposed installation continues an existing pipeline that uses impressed current type of cathodic protection.

3. A means of monitoring the effectiveness of the CPS on the proposed pipeline should be provided within Reclamation's ROWs. The number of anodes and test stations will differ with each project. Test stations should be located at every anode bed connection and should not be more than 1,000 feet apart. A test station should also be located where any metallic pipeline crosses over or under a metallic Reclamation pipeline, metallic fence, other metallic structure embedded in the ground, or comes within 20 feet of a Reclamation structure on or embedded in the ground. Both the proposed cathodically protected pipeline and the Reclamation pipeline should be monitored regularly using these test stations. Monitoring results should be reported to MERL's Corrosion Technology Group. In addition, the owner of the proposed crossing pipeline should investigate and mitigate any adverse potential shift caused by the proposed pipeline on the Reclamation pipeline. Owners of proposed crossing pipelines should return Reclamation pipelines to their original electrochemical potentials or to more benign potentials. Mitigation measures should be approved by MERL's Corrosion Technology Group. The effectiveness of mitigation measures should be confirmed in the presence of a Reclamation representative following installation.

   For those pipelines under DOT regulation, the application and monitoring of the CPS should conform to Title 49 CFR, Part 195, any special provisions of this guideline, and the provisions of NACE International RP 0169, in that order. For other pipelines, any special provisions of this guideline should take precedence, followed by the provisions of NACE RP 0169.

5.2 Protective Coatings for Corrosion Control

1. *Atmospheric Exposed Pipe*

   The coating should be a high build modified aluminum epoxy mastic primer and top coated with a high build aliphatic urethane. The type of coating should be listed in the submitted plans and specifications. Information should include the surface preparation and the thickness of the coating to be applied.

2. *Buried Pipe*

   The type of coating may vary from project to project due to geology and soil corrosivity and should be considered on an individual basis. The type of coating should be listed in the submitted plans and specifications. Information should include the surface preparation and the thickness of the coating to be applied.

REFERENCES

Application for Transportation and Utility Systems and Facilities on Federal Lands, <http://www.ntia.doc.gov/FROWsite/SF-299_2006.pdf>.

Application for Use of Reclamation Project Land and Water Surfaces, <http://www.usbr.gov/pmts/lands/>.

Bureau of Reclamation Right-of-Use Application, <http://www.usbr.gov/pmts/lands/FINAL7-2540-5-06ExpDate03312009.pdf>.

California Department of Water Resources - Encroachment Permit Guidelines.

Central Arizona Project, Reach 11 Guidelines.

GP Region Billings MT – Standard Crossing & Clearance Requirements, Utility Lines and Cables, drawing 40-600-51. The office also uses a Preliminary Project Description Form and a Special Use Permit.

NACE, International RP 0169, "Standard Recommended Practice – Control of External Corrosion on Underground or Submerged Metallic Piping Systems."

PN Region Burley ID – Overhead and underground crossing clearances.

Policy on Geometric Design of Highway and Streets, American Association of State Highway and Transportation Officials (AASHTO), Fifth Edition, 2004.

Reclamation, 2005. Preliminary drawing 103-D-1700 that provides general requirements for installation of crossings, June 2005.

Reclamation Manual, Directive and Standards LND 08-01, Land Use Authorizations, <http://www.usbr.gov/recman/lnd/lnd08-01.pdf>.

Title 29 CFR, Part 195.

U.S. Army Corps of Engineers – Engineering and Design, Design and Construction of Levees EM 1110-2-1913, 30 Apr 2000, CECW-EG Washington, DC 20314-1000.

GLOSSARY

Bored and jacked – This terminology is a general way of referring to a family of trenchless methods.

Bridge, class A – Vehicular bridge used by the public. May or may not be owned by the Bureau of Reclamation.

Consent Document Permit – Permit required across fee-owned lands.

Detention basin – An artificial flow control structure used to contain flood water for a limited period of a time, thereby providing protection for areas downstream. Detention basins provide a way to reduce storm peak flows, while retention basins hold water for an extended period of time. These basins are generally a part of a larger engineered flood water management system.

Electroliers – A branching frame, often of ornamental design, used to support electric illuminating lamps.

Pothole excavation – See potholing.

Potholing – The practice of digging test holes to expose underground utilities (e.g., cables) to determine the horizontal and vertical location of these utilities.

Trenchless methods – Procedures for installing pipe without using traditional trench cut and cover methods. These trenchless methods may be referred to as bore and jack, tunneling, horizontal directional drilling, and microtunneling, among others.

Water conveyance facility – Canal, ditch, pipeline, drain, levee, open or closed laterals, and similar facilities and their associated appurtenant features.

Appendix A

General Requirements for Installing Bored and Jacked Pipe Undercrossings

Bored and Jacked Under the Canal – This terminology is a general way of referring to a family of trenchless technologies. Similar guidance to the requirements listed below should be followed no matter what method is used for installation.

1. Installing a lone carrier pipe (without casing) is encouraged. Refer to "4.6 Utility Crossing," and "4.6.1 Casings" for information on cautions of using casings around metallic carrier pipe.

2. Plans must show carrier/casing pipe type, diameter, and thickness. Casing pipes should be steel pipe (American Water Works Association [AWWA] C-200) and have 1/4-inch minimum wall thickness. Applicants should provide the type of carrier pipe and appropriate bell dimensions for said carrier pipe to verify annular clearances.

3. When installing pipe while the canal is unwatered, a minimum of 3 pipe diameters or 60 inches of clearance (whichever is greater) between the top of the pipe and the bottom of the canal must be maintained. However, 72 inches or more clearance is recommended.

4. Provide a minimum of 3 inches of clearance between the carrier and casing pipes at all points (including bells).

5. A bulkhead or effective sealing device should be provided at both ends of each casing pipe to seal the annular space between the two pipes. Vent pipe should be included to allow ventilation and reduce the risk of condensation buildup and flooding.

6. As a result of the installation process, an annular void is usually created around the outside of the casing pipe. Provisions should be made to pressure grout or effectively seal (e.g., bentonite slurry) this void space.

7. Requirements below are provided to establish minimums for determination of the length of pipe to be installed. It is strongly recommended that pipes be installed perpendicular (between 70 and 90 degrees) to the canal alignment. Regardless, the pipe must extend completely through the Bureau of Reclamation's (Reclamation) right-of-way (ROW). Theses minimums do not relieve the applicant's engineer from performing an onsite investigation or other work to determine local conditions that may require additional pipe length.

   Jacking pit configuration, location, and length of pipe to be installed should be based on the following parameters:

   a. One operating road shall remain open to vehicular traffic at all times.

b. The minimum operating road embankment top width to be maintained during construction should be either 14 feet wide, the width of the existing embankment, or as required by Reclamation.

c. As a minimum, jacking pit excavations should not be within:

(1) A line drawn from the outside edge of the operating road embankment extended downward and away from the canal at a slope of 3/4 horizontal to 1 vertical.

(2) A line drawn from the outside edge of the top of the concrete lining extended downward and away from the canal at a slope of 1 horizontal to 1 vertical.

d. To contain the slurry during installation, jacking pits should be constructed so that natural ground or a compacted dike is entirely around the pit to an elevation at least 1 foot above the top of the canal lining.

e. All excavations should be in compliance with Occupation Safety and Health Administration regulations and Reclamation's Health and Safety Standards.

f. If the contractor elects to install shoring in the jacking pits, all shoring designs should be prepared by a Professional Engineer knowledgeable in said type of work. A copy of the shoring designs should be submitted to Reclamation.

8. Jacking pits should be backfilled with native material and mechanically compacted to 95 percent of the maximum dry density per ASTM D-698.

9. The contractors should be responsible for any damage to the canal section during the construction of a crossing, and the contractor shall repair the damage at their own expense.

10. If an emergency situation develops during construction, the contractor should immediately notify appropriate contacts with Reclamation. Reclamation must approve further work at that point.

11. The minimum distance between two jacked pipes should be 10 feet.

12. Any pressure lines installed within Reclamation's ROW must have adequate thrust restraint at bends and valves. Specified design pressures and thrust restraint calculations shall be provided to Reclamation to confirm the design configuration.

Appendix B

Guidelines – Removal of Trees and Other Vegetative Growth from Earth Dams, Dikes, and Conveyance Features

Excerpted from: Review of Operation and Maintenance Program Field Examination Guidelines

APPENDIX B

GUIDELINES
REMOVAL OF TREES AND OTHER VEGETATIVE GROWTH FROM EARTH DAMS, DIKES, AND CONVEYANCE FEATURES*

Growth of trees and other significant vegetation on or adjacent to earth dams, dikes, and conveyance features, should be prevented from becoming established for the following reasons:

1. To allow proper surveillance and inspection of the structures and adjacent areas for seepage, cracking, sinkholes, settlement, deflection, and other signs of distress.
2. To allow adequate access for normal and emergency Operation and Maintenance (O&M) activities.
3. To prevent damage to the structures due to root growth, such as shortened seepage paths through embankments; voids in embankments from decayed roots or toppled trees; expansion of cracks or joints of concrete walls, canal lining, or pipes; and plugging of perforated or open-jointed drainage pipes.
4. To discourage animal/rodent activity (by eliminating their food source and habitat), thereby preventing voids within embankments and possible shortened seepage paths.
5. To allow adequate flow-carrying capability of water conveyance channels (e.g., spillway inlet and outlet channels; open canals, laterals, and drains).

The growth of trees and potentially detrimental vegetation should be prevented during its early stages as part of the operating office or entity's normal O&M program. Early control is generally the most cost effective means of avoiding potential adverse effects on these structures from their continued growth. Control efforts may consist of applying herbicides, spraying, cutting, and/or removing the trees or undesirable vegetation.

Suggested clearance zones (areas of control) adjacent to these structures are provided within these guidelines. Concerted efforts should be made to maintain these clearance zones. However, site-specific conditions, such as landscaping, accessibility, erosion susceptibility of material in the area, type of abutment material, original construction clearance zone, right-of-way easement, etc., may influence the necessity or success of these control efforts.

Should trees and/or other significant vegetation become established, proper O&M of earth embankment dams, dikes, and conveyance features, may require their discriminate removal. During the Review of Operation and Maintenance examination for the facility or system, the examiners should use these guidelines, along with their experience and professional judgment, to evaluate the need for removal of such established growth.

If trees and other significant growth are identified by the examination team in locations delineated by these guidelines, a determination should be made regarding their need for removal. If the identified vegetation is deemed to be in location such that its existence is not considered to be detrimental and therefore does not require removal, sufficient justification should be provided during the examination and included within the associated report to support that determination.

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* Enclosure to memorandum dated April 26, 1989, from Manager, Project Operation Services Staff, to all Regional Directors, Subject: Revised Guidelines — *Removal of Trees and Other Vegetative Growth From Earth Dams, Dikes, and Conveyance Features.*

When, in the opinion of an Review of Operation and Maintenance examination team, such established growth requires removal, specific followup procedures should be addressed as part of the examination. Such procedures may include the need for right-of-way easement determination; the need for an assessment for potential environmental impacts (any impact assessments should be coordinated with designated regional or project office environmental staff); whether removal of the root system is necessary and to what extent; the method of removal and recompaction of material within the void created; and the need for any erosion stabilization measures.

National Environmental Policy Act compliance is required relative to such tree and vegetation removal. Additionally, the application of herbicides should comply with applicable provisions of the Endangered Species Act. The determination of appropriate procedures to be followed in assessing potential environmental impacts and mitigation (including those to wildlife and its habitat) will be the responsibility of each regional and/or project office. This will include the preparation of an appropriate National Environmental Policy Act document and an assessment of the need for mitigation prior to the onset of removal activities. Appropriate National Environmental Policy Act compliance may include a Categorical Exclusion Checklist, an environmental assessment followed by a Finding of No Significant Impact, or an Environmental Impact Statement.

The following guidelines and associated clearance zones should be used for all Reclamation earth dams, dikes, and conveyance features. They are not considered "policy;" rather, they are guides which should be used with reasonable judgment and practicality.

1. Trees and detrimental vegetative growth should be prevented from becoming established on the surface of all earth dam, dike, and conveyance feature embankments. A small amount of shallow-rooted vegetation may be acceptable to aid in erosion protection and slope stabilization. Mowing of grass and other small vegetation is desirable and may be necessary to allow proper surveillance of the surfaces and observation of animal/rodent activity.

2. A clearance zone of 25 feet beyond each contact (groins and toe) of earth dam embankments and dikes should be maintained of all trees and detrimental vegetation. Similarly, a clearance zone of 15 feet should be maintained beyond the outside toe of all fill sections/embankments for open canals and laterals. These clearance zones may need to be extended for seepage areas or other conditions where proper surveillance or access may be warranted.

3. Earth dam, dike, and conveyance feature (open canal and lateral) embankments have large tree growth or stumps from previously cut trees on or near them should be evaluated, usually in conjunction with an Review of Operation and Maintenance examination, for any necessary future action, (i.e., monitor, excavation and backfill, rebuild, etc.). Generally, sizable old root systems of large trees should be grubbed out and the embankment replaced and compacted to prevent the development of piping action or erosion. Likewise, any sizable voids resulting from animal/rodent burrowing activity should be filled and compacted. Seeding may be necessary for protection from surface erosion.

4. Spillway inlet and outlet channels, outlet works discharge channels, and other open conveyance channels (open canals, laterals, and drains) should be free of vegetative growth that could significantly impede water flow or reduce design capacity.

5. A clearance zone of 25 feet adjacent to all concrete structures associated with such facilities should be maintained of all trees and detrimental vegetative growth to prevent damage from root growth, to allow proper surveillance, and to allow adequate O&M access.

6. Associated cut slopes adjacent to open canals and laterals should be kept clear of vegetation which, if toppled and/or uprooted, could affect operations or O&M access.

7. For pipe conveyance systems (such as siphons, aqueducts, discharge lines, perforated or open-jointed drains, etc.), to provide O&M access and to prevent root encroachment, a clearance zone should be maintained 15 feet from each side of the pipeline. However, in some cases, farming of annual crops over pipelines may be permissible.

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