June 9 2025 Agenda Item 9: For discussion only

PROVISIONAL

WRID Fee Schedule

Comparison with TCID and WRID proposed fees

	TCID	WRID
Printing/Copying		
Water Card (non-sale based)	$ 5.00	**$ 5.00**
Usage Statement (other than monthly mailing)	$ 0.50	**$ 0.50**
8.5"x11" Black & White (per page)	$ 0.50	**$ 0.25**
8.5"x11" Color (per page)	$ 0.95	**$ 0.50**
8.5"x14" or 11"x17" Black & White (per page)	$ 0.85	**$ 0.75**
8.5"x14" or 11"x17" Color (per page)	$ 0.95	**$ 1.00**
Water Right History Search		
At the request of a user or authorized representative, water right/water card history search request which consumes more than 1 hour of staff time will be billed to the requestor (per hour)	$ 60.00	**$ 45.00**
Ditch Company Document Search		
At the request of a user or autorized representative and/or a private ditch company to search for independent ditch company records, files, documents, etc. which consumes more than 1 hour of staff time will be billed to the requesting ditch company (per hour)	$ 60.00	**$ 45.00**
Meeting Moderation/Minute Taking		
Ditch companies who request WRID clerical staff to moderate meetings and/or take minutes will be charged and hourly rate	n/a	**$ 45.00**
Reserved Water Right Agreement		
New or updated reserved water right agreement- includes staff time, legal review, and recording fee	$ 400.00	**$ 500.00**
Update Ownership Records- non-sale based		
To update ownership records not related to a sale (per user # or entity #)	$ 60.00	**$ 50.00**
ITRC Metergate Site Design Report		
Each design will include a preliminary site survey and design discussion, construction drawings, and an as-built survey. Any modification to designs will incur additional fees. (per site)	n/a	**$ 4,000.00**
ITRC Flume Site Design Report		
Each design will include a preliminary site survey and design discussion, construction drawings, and an as-built survey. Any modification to designs will incur additional fees. (per site)	n/a	**$ 6,000.00**
Building Permit Site Plan Inspection Fee		
Applies to residential building permits only. Conditional Use Permits, Plan Review, Commercial Building, etc. are not included in this fee.	$ 300.00	**$ 50.00**
1' Staff Gauge		
	n/a	**$ 30.00**
2' Staff Gauge		
	n/a	**$ 35.00**
3' Staff Gauge		
	n/a	**$ 40.00**

**Note: WRID reserves the right to charge for costs incurred above the listed amounts. The costs will be charged at cost plus 10%.

WALKER RIVER IRRIGATION DISTRICT
Infrastructure Impact Application & Instruction Packet

This packet is intended to assist non-water right holder Applicants in working with Walker River Irrigation District (WRID). All non-water right holder entities or persons proposing projects within the WRID easement, or affecting WRID infrastructure, must obtain an Infrastructure Impact Agreement from WRID prior to accessing or performing work.

The Walker River Irrigation District (WRID, "District") owns and operates two reservoirs, several ditches/canals, and over 226 miles of irrigation drains within Smith and Mason Valleys. The Walker River Irrigation District begins at Bridgeport Reservoir in Mono County for the East Walker River and at Topaz Reservoir in Mono County for the West Walker River then continues to the confluence of both rivers in Mason Valley then extends south to Wabuska, east to the Mineral County Line, and west to the Douglas County line.

WRID prepares the canals for irrigation season and maintains the canal during the entire year.

WRID easements date back to the late 1800's and early 1900's and there are varying easement delineations throughout the system. Each application will need to be reviewed to verify those individual cases. Typically, the easements may range from 30 feet from centerline of the canal to around 100 feet from centerline of the canal encompassing up to 200 feet across.

Modifications to the canals, or projects that may affect the canals or infrastructure require an impact application and agreement. An Infrastructure Impact Agreement is a conditional license, with contractual rights and responsibilities for the licensee. It is not an easement or other real property interest. An Infrastructure Impact Agreement, or other agreement, must be signed before any site work including site preparation within the WRID easement begins.

Construction projects out of the WRID easement that have a potential for runoff to enter into the canal are not permitted. Flooding and serious legal consequences may result from unauthorized material discharge into the canal.

WRID, its engineers, and legal counsel are not responsible for design or construction of encroaching project facilities. WRID will review project designs and applications briefly, for the purposes of protecting the operation and maintenance of the WRID canals only. WRID duties regarding an encroachment are only to its constituents. Once an Infrastructure Impact Agreement is executed, a limited field review may be provided by WRID or the company engineer to verify that construction appears to be in accordance with the accepted design drawings and the Infrastructure Impact Agreement. The person or entity constructing an encroaching project, and their project engineers and contractors, maintain all responsibility for design and construction. No review or approval waives or modifies any Infrastructure Impact Agreement terms or gives WRID any responsibility for design or construction, to workers on site, or the public. It is the responsibility of the Applicant to provide WRID with accurate information so a reasonable determination can be made regarding the projects' compliance with WRID Standard, and assurance that the proposed project will not adversely affect WRID facilities.

This review process can be expedited by insuring the first submittal meets WRID standards, following careful review of the checklist that is provided in this packet. Which consists of:

1.0 The Permitting Process
2.0 Infrastructure Impact Agreement
3.0 WRID Standards Checklist

1.0 The Permitting Process

The following is an outline of the typical permitting process for an infrastructure impact application.

- **Step 1 – Project Kick off Meeting**
  - The Project Kick off meeting is required for most infrastructure impact applications. The Kick-off meeting has been found to save considerable time and effort for all parties involved.
  - Applicant will submit a Project kick-off meeting fee which will cover the costs of the WRID's representatives. The fee must be received in order to schedule the kick-off meeting.
  - WRID and applicant will have a kickoff meeting at which the applicant will present the concepts for the proposed encroachment.
  - WRID will give guidance as applicable to aid the applicant in infrastructure impact permitting process.

- **Step 2 –Infrastructure Impact Application Submission**
  - WRID receives the application, application fees, and construction documents.
  - WRID, its engineers, and legal counsel will perform a review of the drawings and in certain cases, a meeting will be held with WRID and the Applicant to discuss the project. A redline comment letter will be sent to the Applicant with a checklist of items that must be addressed prior to acceptance. The reviews will repeat as explained above until all items from the checklist have been addressed and plans are to WRID standards.
  - An Infrastructure Impact Agreement will be prepared between the Applicant and WRID. WRID's legal counsel will provide the finalized Infrastructure Impact Agreement pursuant to the payment of all application fees. The applicant will deliver three original copies of the agreement to the WRID.
  - Once the agreement has been executed by all parties, permission has been granted to the Applicant to begin the Lyon County building permit/conditional use permit process.

- **Step 3 - Construction Inspection**
  - The Applicant is required to notify WRID at least 72 hours before beginning construction on or near WRID facilities.
  - WRID may perform limited field inspection to verify that the construction appears to be in accordance with the accepted design drawings and the Infrastructure Impact Agreement. It is the responsibility of the Applicant to perform adequate construction review to ensure the facilities are constructed to WRID standards, and in accordance to their design drawings attached to the Infrastructure Impact Agreement.

Notes:

Costs incurred by WRID above the application and/or Kick off Meeting fee will be billed to the applicant at the cost plus a 10% administration fee. This includes but is not limited to attorney fees, engineering fees, and administrative wage fees during review and construction

This checklist is updated periodically, so downloading the most recent version of the packet for each new application is recommended. Any questions regarding the application process can be directed to Bert Bryan at WRID at 775-463-3523.

2.0 Application for Infrastructure Impact Agreement

Instructions and Application for Infrastructure Impact Agreement to Construct Within or Cross Ditch Easement

Generally, the Applicant must be the entity or utility that will eventually own, operate, and maintain the encroaching project facilities.

DRAIN: ☐ PIPE AND REDUCE EASEMENT ☐ PIPE CROSSING ☐ RELOCATE

CANAL: ☐ PIPE AND REDUCE EASEMENT ☐ BOX CULVERT ☐ TAKEOUT

EASEMENT: ☐ ROAD ☐ DRAIN ☐ CANAL ☐ REDUCE ☐ FENCE/GATE

1. Project Name: _____
2. Applicant for Infrastructure Impact Agreement (Applicant): _____

   Mailing Address: _____

   Contact Person: _____

   Telephone Number: _____

   Email: _____

3. Contact Person: _____

   Mailing Address: _____

   Telephone Number: _____

   Email: _____

4. Engineering Company: _____

   Mailing Address: _____

   Telephone Number: _____

   Contact Person: _____

   Email: _____

5. Brief Description of Proposed Construction:

   _____

   _____

   _____

   _____

Proposed Construction Start Date: _____

Proposed Construction End Date: _____

Project Location: _____

6. **Attach two (2) (11x17 size) copies of plans/design drawings for the proposed construction. In addition, provide an electronic set with the hard copies. This can be emailed or provided on a flash drive.** Plans shall be drawn to WRID standards. A Standards Checklist has been prepared to assist engineers in designing to WRID standards. **After construction is complete, applicant/engineer shall submit a record drawing.**

7. Application fees are listed below. For initial submittal, the fee below will begin the review process.

Select	Project Type	Application Fee	Kick off Meeting	Total Fee
	Development or Subdivision	$16,500	$1,500	$18,000
	Bridge or Box Culvert	$14,250	$1,500	$15,750
	Overhead Crossing (Structural)	$13,500	$1,500	$15,000
	Excavation of Canal or Realignment	$12,750	$1,500	$14,250
	Large Bore (24 inches or larger Dia.)	$11,250	$1,500	$12,750
	Turnout/Headgate	$8,250	$1,500	$9,750
	Small Boring or Directional Drilling	$7,500	$1,500	$8,000
	Overhead Crossing (Utility)	$6,000	$1,500	$7,500
	Retaining walls	$4,500	$1,500	$6,000
	Pipe or Construction Culvert Crossing	$4,500	$1,500	$6,000
	Temporary Access Permit *yearly	$1,500	$1,500	$3,000
	Other (list):	TBD	$1,500	TBD

Costs incurred by the WRID above the application and/or Kick off Meeting fee will be billed to the applicant at the cost plus a 10% administration fee. This includes but is not limited to attorney fees, engineering fees, and administrative wage fees during review and construction.

Application fees will be used by WRID for purposes of administration, coordination, engineer review, preparation of agreements, review during construction, legal guidance, and any other expenses incurred related to this application.

Please make all checks payable to: **Walker River Irrigation District**

8. Deliver or send application, plans, and application fee to:

Walker River Irrigation District
410 N Main St; PO Box 820
Yerington, NV 89447

9. Bonding-[This deposit/refund part of this may be too much of an auditing issue- too confusing, additional account needed, etc]

- The WRID bonding requirements are as follows: Bonding will be 110% of the total cost of the project. Upon completion of construction, approval by WRID, and successful delivery of water through the system, a portion of the bond equal to 100% of the total cost of the project will be released. One year after the project has been accepted and approved by WRID and pending no problems with the facilities as determined by WRID, the remaining portion of the bond equal to 10% of the total cost of irrigation facilities will be released. All bond releases are subject to approval by WRID. [NEED CLARIFICATION ON THIS PART]
- Easements for WRID must be recorded with the Lyon County Recorder. The recording will be done by the WRID at the Applicant's expense. [KEEP]
- Starting construction without prior written approval in the form of an Infrastructure Impact Agreement from WRID may result in an additional fee assessment of $5,000. This fee may be taken from the bond if the Applicant does not pay within 30 days upon receipt of a written invoice. [KEEP]
- If costs incurred by WRID are greater than the application fee, the Applicant will be responsible to reimburse WRID for the remainder of the expenses. These additional costs may be taken from the bond if the Applicant does not pay within 30 days upon receipt of a written invoice. If costs incurred by WRID are less than the application fee, a partial refund may be given back to Applicant, upon receipt by WRID of written request by Applicant at up to 15 days after the final bond is released. [MODIFY PENDING THE ABOVE ITEM]
- The review process will not begin until the application fee is paid. [KEEP]
- This application is valid for 6 months from the date it is submitted. The Infrastructure Impact Agreement must be signed within this 6-month period. Once the Infrastructure Impact Agreement is signed, the Applicant has one year to complete work on irrigation facilities. [KEEP]
- This application cannot be sold to other parties. If the Applicant chooses to sell the property associated with this application, the application and fees must be resubmitted. [KEEP]

10. Insurance

- WRID's Infrastructure Impact Agreement will require that WRID be named as a Certificate Holder and an additional insured for the commercial general liability, commercial auto liability. The amount of such liability insurance shall be not less than $5,000,000 combined single limit.
- Licensee shall provide, and shall require its contractors to provide, worker's compensation and employer's liability insurance coverage for no less than $1,000,000 for any individual who will be using the License Area in the manner authorized under the final agreement.

NOTES:

1. Starting construction without prior written approval from WRID may result in the irrigation company assessing an additional fee of $5,000.
2. If application costs exceed the fees paid, the Applicant will be responsible to reimburse WRID within 30 days upon receipt of an invoice.
3. The review process will not begin until the application fee is paid.
4. This application is valid for 6 months from the date it is submitted. The Infrastructure Impact Agreement must be signed within this 6-month period. Once the Infrastructure Impact Agreement is signed, the Applicant has 12 months to complete work of irrigation company facilities. A time extension request can be made in writing no less than 30 days prior to the agreement expiration and must be approved by WRID. A new application and fee must be submitted if these time frames are not met.
5. Other permits (i.e. City, County, etc.) are the responsibility of the Applicant. <u>This agreement **does not** replace or negate the requirement of a City or County permit.</u>

WRID, its engineers and legal counsel shall have no responsibility for design or construction of the facilities related to this application.

I have read, understand, and agree to the terms of this application.

Signed by (print name): _____

Title: _____

Signature: _____

Date: _____

3.0 WRID STANDARDS CHECKLIST

This checklist is intended to assist engineers in designing projects to WRID standards. All projects seeking acceptance by WRID must be designed to these standards. When used correctly, this checklist will expedite the review and Infrastructure Impact Agreement process. Not all items on this checklist will be applicable to every project.

Neither WRID nor its engineers or legal counsel will have responsibility for design, construction, or maintenance of the Applicant's facilities. It is the responsibility of the Applicant and its engineer to design the project to meet WRID standards at a minimum. No approval or acquiescence by WRID will operate as a waiver or modification of WRID standards.

In most instances, the Applicant will install, operate, maintain, inspect, repair, and replace the facilities that are constructed through the application process with no interruption of WRID delivery of water or operation, maintenance, repair or replacement of WRID facilities. WRID only takes responsibility for routine cleaning of facilities like culverts, etc. that may be required for the delivery of water.

Note: This checklist is updated when standards are amended. WRID reserves the right to make exceptions to the standards or impose other requirements, depending on the Applicant's project.

Infrastructure Impact Application Checklist

Applicant is required to fill out and sign checklist and submit to WRID once all items have been completed and construction documents are finalized for review.

Application Process:

☐ Submit Application form and Application Fee or Kick-off meeting fee to Walker River Irrigation District.:

- Application can be submitted via email to water@wrid.us
- Application can be submitted via mail at PO Box 820, Yerington, NV 89447
- Application can be submitted physically to 410 N Main St, Yerington, NV 89447
- **Checks must be payable to Walker River Irrigation District**

Design Plans Process:

☐ I have included the "Notes to include on plans" section of this document

☐ I have included the "Notes to include on plans" within the appropriate section of this document

☐ I have included the ditch's easement limits with dimensions.

Signed by (print name): _____

Title: _____

Signature: _____

Date: _____

Office Use Only:

☐ Impact Application Date Received: _____ Received By: _____

☐ Impact Checklist Date Received: _____ Received By: _____

☐ Kick off Meeting Fee $1500 ☐ Paid Receipt No._____
Method of Payment: ☐ Cash ☐ Check #_____ ☐ Card

☐ Application Fee $_____ ☐ Paid Receipt No._____
Method of Payment: ☐ Cash ☐ Check #_____ ☐ Card

WALKER RIVER IRRIGATION DISTRICT

GENERAL INFORMATION AND REQUIREMENTS

- □ Submit an "Application for Infrastructure Impact Agreement" and all application fees.
- □ WRID maintains its irrigation facilities by operating excavators, graders, dozers, backhoes, etc. in the canal, on the banks, and on the easement roads and, in some instances, burning vegetation prior to each irrigation season and as needed. This should be considered while designing your project. WRID generally only accepts concrete structures to be installed in its easement so they will not be damaged during maintenance. Any variance to structure material will need to be reviewed on a case-by-case basis and must have written approval from WRID.
- □ No landscaping or other changes in ground surfaces within WRID pipeline and canal/lateral ROW should be made without advance written permission of WRID through the application process. Landscaping changes that 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.
- □ Pipes, conduits, or other similar facilities are not allowed to be installed over the canal channel. Irrigation boxes, trees, or other facilities are not allowed to be installed in WRID easements. Turnouts, overhead power lines, etc. can be exceptions.
- □ All drawings must be stamped, signed, and dated by a licensed professional engineer. This can be completed after the project meets WRID standards and is ready for the Infrastructure Impact Agreement.
- □ Before submitting drawings to WRID for review, please verify that all notes, references, and labels are correct and accurate.
- □ WRID cannot verify the locations of underground facilities. Underground Service Alert (USA) North 811 or 1-800-642-2444 shall be called before digging.

ALL SUBMITTALS SHALL:

- □ Show the plan and profile view of the proposed facilities.
- □ Show all existing facilities in and around the project (i.e. canal O&M road, turnouts, pipes, box culverts, pipe outlets, etc.).
- □ Provide the location map, and a legal description of the proposed license area for use in the Infrastructure Impact Agreement with the attorney.
- □ Show the WRID canal easement on the drawings.
- □ Applicant is responsible for checking surrounding property and labeling WRID easement. If the land is owned, the actual ownership boundaries should be shown.
- □ Have a copy of this checklist completed by the Applicant or the Applicant's engineer.
- □ Provide a proposed date for start and completion of construction. The start date should reflect adequate time to complete the application process and secure an Infrastructure Impact Agreement.

<u>Notes to include on plans:</u>

- □ Notification must be given at least 72 hours prior to the beginning of construction work and re-notification of re-commencement of work following any cessation of work for more than 4 (four)

standard working days
    - Contact information: Bert Bryan, Walker River Irrigation District 775-463-3523
- □ Any changes in design drawings after the Infrastructure Impact Agreement has been executed must be reviewed and accepted by WRID prior to construction.
- □ Work cannot interfere with transportation of water at any time of year.
- □ All construction within the canal corridor must be completed to WRID standards.
- □ If disturbed, the canal O&M road must be returned to pre-construction state or better, following construction. The O&M road must be available for use by canal personnel year-round.
- □ Stormwater and Groundwater runoff enters the canal during storm events or at other unexpected times. It is the responsibility of the Contractor to protect the work site.
- □ Construction Best Management Practices (BMP's) shall be utilized to prevent stormwater runoff from the construction site.

BORING

For the purpose of this application packet, boring refers to the installation of a casing under the canal without excavating the canal itself. Also see the "Directional Drilling/Boring" section.

- □ All facilities (utilities, pipes, etc.) installed under the canal (even under box culverts) must be encased in a steel casing, designed for at least H-20 and required construction equipment loading. Calculations are required.
- □ In locations where steel casing pipe is used, soil tests for resistivity shall be completed by the Applicant and at the Applicant's expense. Test results shall be submitted WRID. Soils with a soil resistivity (ohm cm) of 2,500 or less shall have cathodic protection with a 25-year life or have cellular concrete placed in the annular space between the carrier pipe and casing pipe.
- □ Casings must have a minimum of 2 feet between the top of the casing and the bottom of the box culvert or concrete-lined canal, and a minimum of 4 feet between the top of the casing and the earthen canal bottom.
- □ The casing shall extend at least to the greater of (a) 5' beyond the outside edge of each canal embankment or (b) 15' beyond the outside edge of each canal bottom edge.
- □ Bore pits must be located outside of channel embankments.
- □ Bore pit compaction shall be 92-percent Modified Proctor density.
- □ Trench plugs are to be placed at each end of the casing.
- □ Trench plugs shall extend 12 inches radially from casing pipes and shall have a thickness of 24 inches.
- □ Trench plugs shall be a mixture of 10-percent bentonite and 90-percent clay.
- □ The carrier pipe must have steel-banded skids or equivalent pipe cradling system.
- □ Waterline pipes inside the casings shall have restraining joints.
- □ Adequate thrust blocks are required on all bends for DIP, PVC or PIP waterlines.

Notes to include on plans:

- □ Contractor to notify Bert Bryan of WRID 72 hours prior to trench plugs installation. Verification of trench plug completion must be performed by the applicant before backfilling. Bert can be reached at 775-463-3523.

DIRECTIONAL DRILLING/BORING

For the purpose of this application packet, directional drilling refers to the installation of a smaller casing for a utility (usually under 6 inches in diameter) installed by directional drilling.

- □ Label the conduit material and thickness. Verification that the conduit specifications are sufficient is the responsibility of the Applicant.
- □ Conduit shall have a minimum of 2 feet between the top of the conduit and the bottom of a box culvert or concrete-lined canal, and 4 feet between the top of the conduit and the earthen canal bottom.
- □ The conduit shall extend at least to the greater of (a) 5’ beyond the outside edge of each canal embankment or (b) 15’ beyond the outside edge of each canal bottom edge.
- □ Bore pits must be located outside of channel embankments.
- □ Fill bore pits with a mixture of native material and 10-percent bentonite powder to create a seal that will prevent water from following the new conduit.
- □ Bore pit compaction shall be 92-percent Modified Proctor Density.

OCCUPYING EXISTING BLANK CONDUIT/CASING

This section is used when an existing blank conduit is in place under the canal and the Applicant wishes to occupy the conduit. It is common for conduits to be installed at the same time as a box culvert; however, the placement of these conduits does not give permission for the utility to be installed in the conduit. An application, drawings, and fee need to be submitted and an Infrastructure Impact Agreement signed before the conduit is occupied. Drawings from the original conduit placement can be used if the Applicant can provide them.

- □ Show the plan and profile view of the existing blank conduit.
- □ Specify the existing conduit material and thickness.
- □ Show or note the details of the utility to be installed in the blank conduit.
- □ Show where and how the conduit will be accessed to install the utility.
- □ Show the canal corridor.

OPEN CUT OF CANAL CHANNEL or REALIGNMENT

- □ Open cuts through the ditch may require a concrete liner at the WRID’s discretion.
- □ All facilities (utilities, pipes, etc.) installed under the canal must be encased in a steel casing, rated for H-20 loadings. Calculations are required.
- □ In locations where steel casing pipe is used, soil tests for resistivity shall be done and submitted to WRID. Soils with a soil resistivity (ohm cm) of 2,500 or less shall have cathodic protection with a 25-year life or have cellular concrete placed in the annular space between the carrier pipe and casing pipe.

- □ Casings must have a minimum of 2 feet between the top of the casing and the bottom of the box culvert or concrete-lined canal, and 4 feet between the top of the casing and the earthen canal bottom.
- □ Canal cross section shall be shaped to match existing canal prism.
- □ Realignment of the canal shall match existing canal slope. Change in slope will require WRID and J- U-B approval along with calculation summary.
- □ Unless specifically approved by WRID casings shall extend outside the canal easement
- □ Trench plugs are to be placed at each end of the casing.
- □ Trench plugs are to extend the width of trench, 12 inches above and below casing pipes, and with a thickness of 24 inches.
- □ Trench plugs shall be a mixture of 10-percent bentonite and 90-percent clay.
- □ The carrier pipe must have adequate steel-banded skids.
- □ Waterline pipes inside the casings shall have restraining joints.
- □ Adequate thrust blocks are required on all bends for DIP, PVC or PIP waterlines.
- □ Bedding material must be shown, as appropriate for the design.

Notes to include on plans (earthen canal):

- □ The canal floor and embankment material removed for excavation shall be replaced with a 12-inch minimum thickness of 10-6 cm/sec permeability clay material, in 6-inch maximum lifts.
- □ All replaced materials shall be compacted to 96-percent Modified Proctor Density.
- □ Canal embankment shall be shaped to match the existing canal prism.
- □ Compaction test results must be submitted to WRID. All failed material shall be removed and compacted to specifications. Testing must be performed by a licensed soils laboratory.
- □ Open-cut trenches shall be cut at a minimum of 2 horizontal to 1 vertical so that backfill can be properly compacted.
- □ Contractor to notify Bert Bryan of WRID 72 hours prior to trench plugs installation. Verification of trench plug completion must be performed by applicant's contractor before backfilling. Bert can be reached at 775- 463-3523.

Notes to include on plans (concrete-lined canal):

- □ The existing concrete section must be sawcut to give a clean edge for the replacement section.
- □ The trench through the canal may be cut as little as ¼ horizontal to 1 vertical to minimize the amount of concrete liner that needs to be removed. It is the responsibility of the Applicant to verify that compaction will not be affected.
- □ Embankment material shall be compacted to a minimum of 92-percent Modified Proctor Density. Native material may be used.
- □ Compaction test results must be submitted to WRID. All failed material shall be removed and compacted to specifications. Testing must be performed by a licensed soils laboratory.
- □ Canal embankment shall be shaped to match the existing canal prism.
- □ Rebar shall be a minimum of #4 bar at 12 inches on center. Rebar shall tie into existing concrete with epoxy.
- □ Contractor to notify Bert Bryan of WRID 72 hours prior to trench plugs installation. Verification of trench plug completion must be performed by applicant's contractor before backfilling. Bert can be reached at 775- 463-3523.

BOX AND PIPE CULVERTS

- □ If extending an existing box culvert, WRID recommends that the Applicant perform a reasonable inspection of the existing culvert to make a determination of whether it should be replaced instead of extended.
- □ Applicant is responsible to verify that culvert design will not negatively impact the hydraulics of the canal, including other existing structures in the area.
- □ A plan view is required of the culvert showing the centerline of the canal, the top of banks, and the WRID corridor boundaries.
- □ Show the elevation and location of the top of the banks, bottom of the banks, and the canal prism, as well as new structures including box culvert and wing walls.
- □ Trench detail is required showing bedding, backfill material, and compaction requirements.
- □ The dimensions and type of culvert must be labeled.
- □ Label the culvert with loading information and rebar details. Loading shall be determined by the Applicant.
- □ All concrete used in the construction shall have a minimum compressive strength of 4,000 psi and be specified by a professional engineer.
- □ The culvert wing walls should flare at a 45-degree angle then a 90-degree angle into the canal banks, a minimum of 2 feet perpendicular to the canal banks. Placement of the wing walls cannot interfere with the O&M road. The top of the wing walls shall be a minimum of 12 inches above the high-water mark in the canal.
- □ Wing walls shall be tied into the canal banks in a manner that provides a smooth transition from the canal into the culvert, and back out of the culvert on the outlet side.
- □ If using a pre-cast wing wall/end section, the wing walls, apron, and cutoff wall must be one piece.
- □ If cast-in-place concrete is placed next to pre-cast, Waterstop RX or an approved equivalent shall be placed to prevent seepage between the surfaces.
- □ PVC water stop, or equivalent, is required in all joints of cast-in-place concrete.
- □ If extending an existing box culvert, Waterstop RX, Swellstop, or an approved equivalent, shall be placed between the old culvert and the new culvert to prevent seepage. Mastic is not acceptable.
- □ A concrete apron shall be between the wing walls.
- □ Concrete cut-off walls are required on the inlet and outlet, a minimum of 2 feet below the bottom of the concrete slab (apron). These cutoffs are required to extend into the banks to the ends of the wing walls.
- □ The structure must be able to handle the maximum flow capacity of the canal. The Applicant is responsible for verifying maximum flows in the specific canal reach and designing appropriately. The culvert shall not cause water to backup upstream of the proposed facility.
- □ Detail should show rip rap, appropriately designed to protect the banks and structure:
- □ Rip rap sized for velocities.
- □ Appropriate length and location for rip rap. Rip rap not generally required on inlet.
- □ Rip rap shall be placed up to the high-water mark in the canal.
- □ Top of rip rap to be level with top of concrete apron.

- □ State on the plans the backfill material and methods for filling and compacting around the box and wing walls. Backfill around the box culvert shall meet manufacturer's specifications for compaction and materials, or a minimum of 92-percent Modified Proctor Density.
- □ Place a minimum of 24 inches of clay material behind wing walls, compacted to a minimum of 96-percent Modified Proctor Density.
- □ All other backfill material around head walls and in open canal channel to be compacted to a minimum of 96-percent Modified Proctor Density.
- □ A 6-foot chain-link fence or 4-foot parapet wall is required on all box culverts that carry pedestrian traffic. Exceptions may occur where local ordinances note otherwise, and upon approval by WRID.
- □ Access to canal O&M road shall be installed with curb cuts at drive approaches and thickened concrete at sidewalks.
- □ Casings under the culvert must be shown on the plan and profile view
- □ Identify existing conduits and utilities under the canal.
- □ Identify each new conduit being placed under the canal.
- □ If the conduit owner/occupier is known, label as such.
- □ If the conduit is to remain empty, label as such.

- □ <u>Notes to include on plans:</u>
- □ Canal floor and embankment material removed for excavation (between apron and undisturbed canal) shall be replaced with a 12-inch minimum thickness of 10-6 cm/sec permeability clay material in 6-inch maximum lifts.
- □ Compaction around the box culverts to meet manufacturer requirements or a minimum of 92-percent Modified Proctor Density.
- □ All other replaced materials shall be compacted to 96-percent Modified Proctor Density.
- □ Canal embankment shall be shaped to match the existing canal prism.
- □ Compaction test results shall be submitted to WRID. All failed material shall be removed and compacted to specifications. Testing shall be performed by a licensed soils lab.
- □ Open-cut trenches shall be cut at a minimum of 2 horizontal to 1 vertical so that backfill can be properly compacted.
- □ Conduits shown on these drawings do not give permission for the conduit to be occupied by an entity other than the original Applicant. Each entity crossing the canal must apply for and receive an agreement from the canal company.
- □ Signs must be placed at each entrance to the canal O&M road that state:
    - No Trespassing. Warning: Canal Maintenance Road, Authorized Personnel Only. No Swimming or Tubing.

DUMP/SPILLWAY/TURNOUT

The turnout structure being proposed shall at all times be subject to rights reserved by WRID to reasonably use, operate, maintain, inspect, repair, replace and improve the canal. The turnout structure to be built by the Applicant pursuant to the Agreement shall be the sole responsibility of the Applicant for purposes of ongoing maintenance and repair, but the canal shall continue to be used exclusively by WRID for its ongoing delivery of water to its shareholders. Any future repairs, excavation, removal or other work on the weir/turnout structure shall be subject to advanced review and approval by WRID.

□ Submit an "Application for Infrastructure Impact Agreement".

Turnout Gate & Headwall

□ Provide specifications for the turnout gate. A water-tight Waterman gate, or equivalent, is required.
□ Canal banks shall be tied into the wing walls in a manner that provides a smooth transition around the headwall.
□ The headwall should be placed in a manner so that the structure does not extend into the canal or the O&M road.
□ The inlet structure shall be placed on undisturbed soils.
□ The bottom of the pipe opening should be a minimum of 2 inches off the bottom of the canal floor.
□ Rebar details are required on the submitted drawings. The rebar design must be appropriate for the proposed site and conditions.

Pipe from Turnout

□ Open-cut trenches shall be cut at a minimum of 2 horizontal to 1 vertical so that the backfill can be properly compacted.
□ Bedding material must be shown, as appropriate for the design.
□ Specify the pipe size and class, professional engineer to ensure H20 load compliance.
□ A trench plug is required behind the headwall. Trench plug to be placed in location shown for width of trench, 12 inches above and below the pipe, and a thickness of 24 inches.
□ Trench plugs shall be a 10-percent bentonite and 90-percent clay mixture.

OVERHEAD CROSSING (STRUCTURAL)

□ Provide a cross section showing the elevation of the overhead crossing and the elevation of the canal invert and banks.
□ Show the location of power poles and any permanent structures in relation to the canal and toe of the canal embankment. Structures shall not be located closer than 20 feet from the canal bank and shall not interfere with the O&M road.
□ Overhead structures shall provide a minimum of 14 feet of vertical clearance from top of canal bank or top of access road.
□ A marker warning sign shall be provided on the O&M road that shows the clearance and electrical line voltage. The warning sign shall face both ways and state, "DANGER, HIGH VOLTAGE OVERHEAD."

OVERHEAD CROSSING (UTILITIES)

□ Overhead electrical and communication lines should cross perpendicular (between 70 and 90 degrees) to the centerline of the WRID Canal.
□ Overhead wires across the WRID easement shall be at least 32 feet above all ground levels in the right of way. 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 determined to be needed with an ambient temperature of 120 degrees Fahrenheit.

- □ Provide a cross section showing the elevation of the overhead crossing and the elevation of the canal invert and banks.
- □ Show the location of power poles and any permanent structures in relation to the canal and toe of the canal embankment. Structures shall not be located closer than 25 feet from the canal bank and shall not interfere with the O&M road.
- □ A marker warning sign shall be provided on the O&M road that shows the clearance and electrical line voltage. The warning sign shall face both ways and state, “DANGER, HIGH VOLTAGE OVERHEAD.”