

**Canal and Pipeline Rehabilitation Policy****1.0 POLICY PURPOSE**

The District established policy guidelines for the design and construction of canal and pipeline rehabilitation projects as follows:

2.0 FARM DELIVERY DESIGN

2.1 Flood Irrigation:

(a)	20 acres.....	1 cfs
(b)	40 acres.....	2 cfs
(c)	60 acres.....	3 cfs
(d)	80 acres.....	4 cfs
(e)	120 acres.....	5 cfs
(f)	>150 acres.....	6 cfs

2.2 Sprinkler Irrigation:

(a)	<40 acres.....	1 cfs (10 gal/min/acre)
(b)	80 acres.....	2 cfs
(c)	80 – 135 acres.....	3.0 cfs
(d)	135 – 250 acres.....	3.0 – 4.5 cfs (8 gal/min/acre)
(e)	>250 acres.....	(7 gal/min/acre)

2.3 The District will design the system to meet all active water delivery locations that are either in the original delivery location or that have been relocated with the District's consent.

Where an irrigator has run water from their turnout down a head ditch or drain system to an alternate or downstream location and/or pump site, the District will not guarantee to deliver to this location. For example, if the design of the rehabilitation is a pipeline and meeting the alternate delivery location would require water to be conveyed farther downstream, it may require an increased pipeline size and extended length, thus making the project cost-prohibitive.

2.4 Additional Turnouts

Where the landowner requests an additional turnout off a new pipeline to accommodate his irrigation where there is existing assessment (for example, a pivot corner and would like a 6" turnout, or a different flood field that would allow him to eliminate a head ditch, etc.):

- (a) the cost to the farmer for the additional turnout would be:
 - (i) 6" - \$3,000
 - (ii) 10" - \$5,000plus full cost of road crossing, if applicable.
- (b) If the landowner requests more than one additional turnout on a parcel:
 - (i) full cost would apply for materials and installation; and road crossing, if applicable.

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- (c) Where the landowner requests an additional turnout off an open canal to accommodate his irrigation (for example, eliminate a head ditch, etc.):
 - (i) the District will only grant this if there are more than 15 acres, and
 - (ii) the cost to the farmer will be 50%.

3.0 RURAL WATER USE / HOUSEHOLD TURNOUTS

- 3.1 A single 2" or 4" turnout, depending on available pressure will be provided for:

- (a) all existing yard sites that have water agreements, and
 - (b) all existing stock water dugouts that have agreements.

Any additional turnouts requested, whether 2" or 4", will be installed at full cost to the landowner.

- 3.2 Where livestock are watered out of an open canal that is being pipelined or lined and fenced, a turnout will be provided to fill a dugout, provided the dugout or water system is constructed; only 1 per parcel.

- (a) If additional turnouts are requested for livestock water, they must be approved by the District Engineer or the General Manager and the landowner will be charged full cost.

- 3.3 Where the District is relocating the canal, either pipelining or just relocating, and the landowner wishes to keep the habitat (trees) that are growing in or adjacent to the old canal and water them by filling the old canal with water:

- (a) the District will grant one turnout per parcel where they agree there is good habitat, and
 - (b) any additional turnout requests will be evaluated and approved by the District Engineer or General Manager and the landowner will be charged full cost.

- 3.4 Where the rehabilitation of a canal changes the alignment and the new canal or pipeline:

- (a) no longer passes through or adjacent to a parcel of land with an existing Household Purposes (HP) or Rural Water Use (RWU) agreement (Farmyard, Livestock, Agri-Business, Country Residential, Industrial, or Combination); or
 - (b) is adjacent or within the parcel, but farther away from the HP or RWU delivery,

the EID will supply and install a new pipeline to the landowner's chosen delivery point and cost-share (50% District and 50% landowner) to a maximum District contribution of \$15,000. Approval is required by resolution of the Board of Directors. Note: the maximum amount includes any right-of-way and/or land acquisition costs.

- 3.5 New delivery for new Rural Water Users or trees, swimming pool, etc:

- (a) landowner is charged full cost.

- 3.6 When the District is undertaking an infrastructure rehabilitation project and the pipeline or canal is on the opposite side of the road from an acreage or farmyard, the District will supply and install the infrastructure required across the road to provide the same service they had previous to the rehabilitation, at no cost.

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4.0 CANALS / DRAINS

4.1 Canal banks will be constructed with a minimum top width of 3.5 m and 600 mm freeboard but will be widened preferably to 5 – 6 m and back slopes flattened with waste excavation.

- (a) Waste excavation:
 - (i) will be used to widen the canal banks and flatten back slopes,
 - (ii) where canal banks exceed 10 m and 4:1 back slopes, is hauled away if the landowner requests, and
 - (iii) adjacent to roads, yard sites, existing dugouts, pump sites, well sites, etc. is hauled away.
- (b) Material that needs to be hauled away and wasted:
 - (i) will be spread in low areas adjacent to the canal, and
 - (ii) will be disposed of in the most cost effective way for the District.
- (c) All rocks larger than 100 mm will be picked.
- (d) Canal banks and back slopes will be seeded with a dryland pasture mix.

4.2 Where the landowner requests a drain/canal to be relocated as part of the District's rehabilitation program and the District feels the relocation is practical, the District will cost-share the construction of the relocated drain/canal. The costs will be calculated by determining the difference between rehabilitating the existing drain/canal versus the cost to construct the new relocated drain/canal. This cost difference will be the number used in the cost-share formula:

- (a) the excavation cost is to be included in the project cost;
- (b) dozing in of the old drain/canal with the banks that exist is to be included in the project cost;
- (c) hauling the material from the relocation drain/canal to backfill the old existing drain/canal will be the landowner's responsibility and cost;
- (d) must have Board approval prior to work being done;
- (e) work must be carried out or supervised by District staff;
- (f) cost-share for the landowner is 25% of the difference in project costs; and
- (g) maximum District contribution is \$50,000.

5.0 PIPELINES

5.1 Where pipelines are relocated from the existing canal:

- (a) the District will purchase 15 m of right-of-way and 15 m of working space on either side; additional if required,
- (b) topsoil will be stripped off the excavation area and replaced after backfill of pipeline is complete,
- (c) all rocks larger than 100 mm will be picked,
- (d) the District will seed the right-of-way where permanent crops exist, ie. alfalfa and pasture, and
- (e) if the landowner wishes to do the seeding he may do so and be paid the same rate as the District is paying its subcontractors for seeding.

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- 6.1 Where the District constructs a dugout for a landowner of 5,000 m³ or less, there will be no payment.
- 6.2 Where the District constructs a large dugout or landscape borrow pit, the landowner shall be paid \$1.50/m³.

7.0 FENCING

The District has determined that it is in the interests of the District, the irrigators and other users to protect the irrigation works from damage due to livestock, farming operations, soil and/or water erosion. Fencing of the irrigation works of the District may assist the operation, maintenance and administration of the irrigation works of the District.

- 7.1 The District shall construct a fence along any of its works where they deem it necessary to protect the works of the District.
- 7.2 Rehabilitation Projects

Fencing requirements to facilitate canal rehabilitation under the District's Capital Construction Program shall be as follows:

- (a) Where there is an existing fence, the District shall take down any existing fences, construct temporary fences if required and construct a permanent fence upon completion of the rehabilitation.
- (b) Where no fence exists, the District shall construct a temporary fence if required and construct a permanent fence only if the new canal is lined, armoured or where a fence is deemed necessary to protect the rehabilitated irrigation works.
- (c) In those instances where rehabilitation involves installation of a pipeline and the old canal was serving as a natural boundary, it will be the landowners' responsibility to construct the new fence unless there was a fence there previously.
- (d) All fences shall be constructed in accordance with Sections 7.5 and 7.6 of this policy.

7.3 Operations and Maintenance

Where the District needs to remove an existing fence in order to carry out normal operational functions or maintenance work such as cleaning, bank repair or weed control, and the fence is in good condition:

- (a) the District shall take down the existing fence, salvage the material, construct a temporary fence if required, and construct the permanent fence using new material. The temporary and permanent fence shall be constructed in accordance with Sections 7.5 and 7.6 of this policy.

7.4 The Landowner wishes to Construct the Fencing

If the landowner chooses to construct either or both the temporary fence and the permanent fence, he may do so. The fence must be constructed in accordance with Sections 7.5 and 7.6 of this policy. The landowner shall be paid in accordance with rates set by the District with contract fencers at the time the fence is constructed.



7.5 Temporary Fencing Standards

All temporary fences shall be constructed as follows:

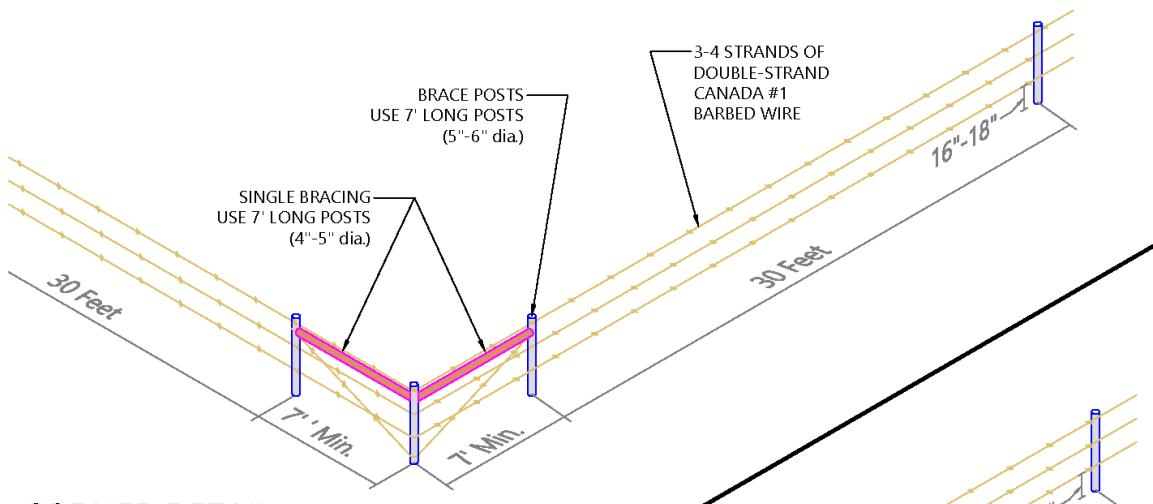
- (a) 3 or 4 strands of double-strand Canada #1 barbed wire,
- (b) salvaged posts where available and new when not, spaced approximately 30 feet apart,
- (c) all corners and gates shall be single braced on each side,
- (d) all brace posts must be a minimum of 7 feet long (5" – 6" diameter),
- (e) corner and gate braces must be a minimum of 7 feet long (4" – 5" diameter), and
- (f) bottom strand shall be 16" – 18" from ground level, to allow antelope passage; if the fence is installed on uneven terrain, the bottom strand may be as low as 14" above ground at high spots.

7.6 Permanent Fencing Standard

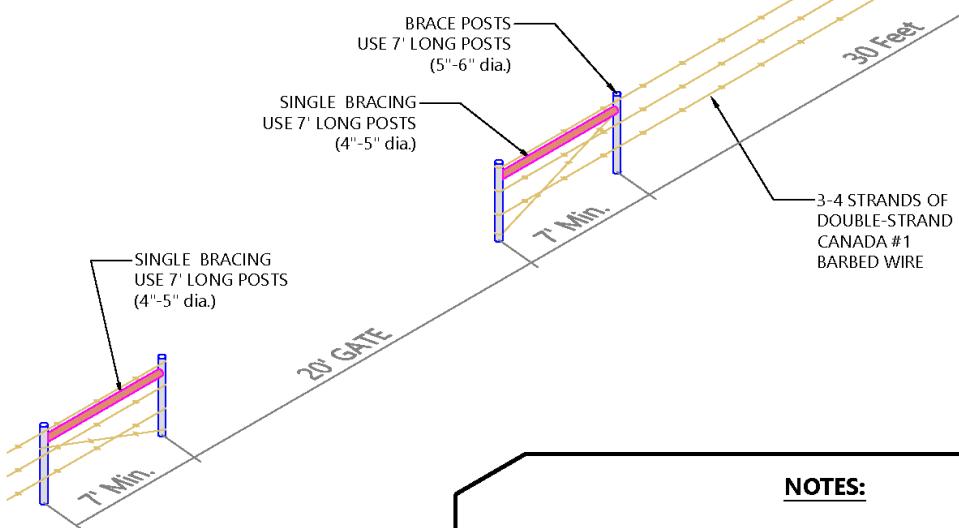
All permanent fences shall be constructed as follows:

- (a) 4 strands of double-strand Canada #1 barbed wire,
- (b) treated posts (4" to 5" diameter), or existing material, spaced every 16 feet,
- (c) all corners and gates shall be double braced on each side,
- (d) double braces must be installed for any spans greater than 1/4 mile,
- (e) all brace posts must be a minimum of 8 feet long (5" – 6" diameter),
- (f) corner and gate braces must be a minimum of 8 feet long (4" – 5" diameter),
- (g) bottom strand shall be 16" – 18" from ground level to allow antelope passage, if the fence is installed on uneven terrain, the bottom strand may be as low as 14" above ground at high spots, and
- (h) be placed a minimum of 8 m and preferably 10 m from the inside shoulder of the canal.

TEMPORARY FENCING



CORNER DETAIL



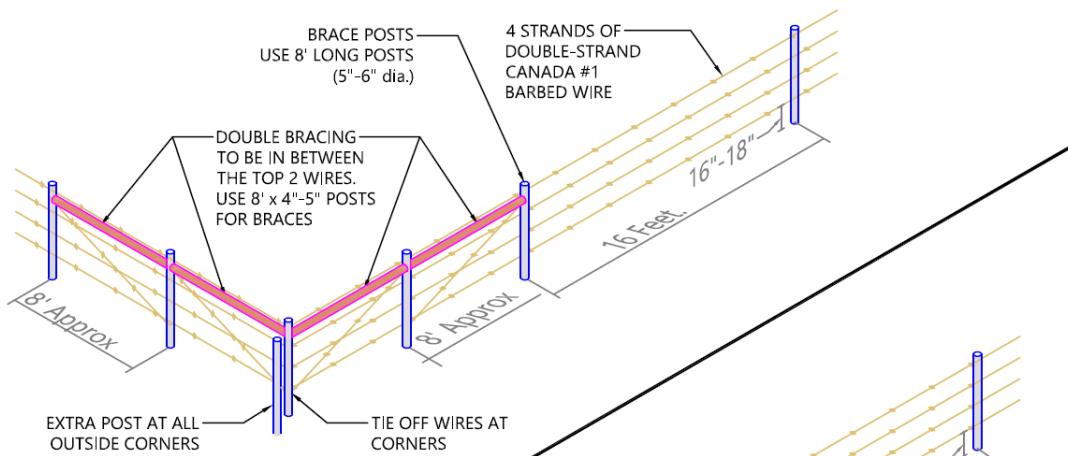
GATE DETAIL

NOTES:

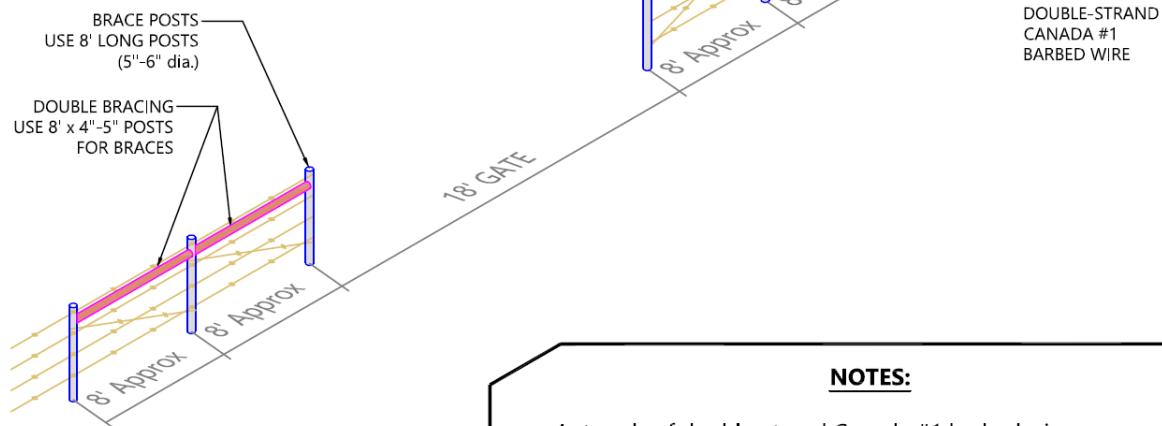
- 3 or 4 strands of double-strand Canada #1 barbed wire.
- Salvaged posts where available and new when not, spaced approximately 30 feet apart.
- All corners and gates shall be single braced on each side.
- All brace **POSTS** must be a minimum of 7 feet long (5" - 6" diameter).
- Corner and gate **BRACES** must be a minimum of 7 feet long (4" - 5" diameter).
- Bottom strand shall be 16" - 18" from ground level, to allow antelope passage; if the fence is installed on uneven terrain, the bottom strand may be as low as 14" above ground at high spots.



PERMANENT FENCING



CORNER DETAIL



GATE DETAIL

NOTES:

- 4 strands of double-strand Canada #1 barbed wire.
- Treated posts (4" to 5" diameter) or existing material, spaced every 16 feet.
- All corners and gates shall be double braced on each side.
- Double braces must be installed for any spans greater than 1/4 mile.
- All brace **POSTS** must be 8 feet long (5" - 6" diameter).
- Corners and gate **BRACES** must be 8 feet long (4" - 5" diameter).
- Bottom strand shall be 16" - 18" from ground level to allow antelope passage, if the fence is installed on uneven terrain, the bottom strand may be as low as 14" above ground at high spots.
- Fences should be placed a minimum of 8 m and preferably 10 m from the inside shoulder of the canal.

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7.7 Right-of-Way

Where the District has registered title to the right-of-way, or a registered easement along a canal, drain or water body boundary, the District will construct a fence on the legal boundary. This fence position may be waived if the adjoining landowner acknowledges the District's ownership and leases the land from the District. In such instances the fence location shall be as per Section 7.6 of this policy.

7.8 Access to Water

Where there has been a condoned practice of livestock watering in a canal and the District wishes to cease the practice by fencing out access, the District shall install a turnout to allow for the delivery of water. The landowner shall be responsible for digging the dugout for this water unless the District can dig the dugout and use the material for rehabilitation of the canal.

7.9 Maintenance of Fence

The maintenance, ownership and eventual replacement of the fence shall be the landowner's responsibility. Where the landowner does not maintain the fence and cattle are allowed onto and damage works of the District, the District shall repair all damages to their works, repair the fence and invoice the landowner for all costs.

7.10 Cross Fences

- (a) No cross fences that obstruct flow in the works of the District are allowed.
- (b) If cross fences are required, the landowner must make sure they do not obstruct the flow of water.
- (c) If cross fences are obstructing flow, the landowner shall be contacted and asked to remove the obstruction. If the landowner does not remove the obstruction the District shall remove it.
- (d) No cross fence shall be constructed so as to prevent access along the canal.

8.0 GUIDELINES FOR RIGHTS-OF-WAY, EASEMENTS

The District has established criteria for the purchase and/or acquisition of lands as rights-of-way and/or easements as follows:

8.1 Construction Easement

- (a) to be taken on all projects where the existing right-of-way or easement is not adequate to allow for the rehabilitation and/or construction of the new canal,
- (b) the construction easement will include lands approximately 15 m wider than the estimated permanent right-of-way on each side of the canal,
- (c) payments are only for lands in excess of those included within the present easement or right-of-way, and
- (d) payment is made according to the following schedule and paid following the signing of the construction agreement documents.



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8.2 Permanent Easement or Right-of-Way

- (a) to be taken on all projects,
- (b) surveyed right-of-way plans and land purchase will be taken where the District presently has a surveyed right-of-way plan and where the canal capacity is greater than 200 cfs,
- (c) an easement or surveyed right-of-way plan will be taken on canals whose capacity is smaller than 200 cfs,
- (d) the permanent easement for pipelines will be 15 m,
- (e) the permanent easement or right-of-way will extend at a minimum 7 m out from the inside shoulder on both sides of the canal or drain,
- (f) payments are only for lands in excess of those included within the present easement or right-of-way, and
- (g) payment for permanent easements or rights-of-way is made according to the following schedule and paid following the registration of the final agreements with the Land Titles Office, with the final price paid under the construction easement subtracted for those acres outside of the present easement or right-of-way, but included in the new permanent easement or right-of-way.

8.3 Schedule of Approved Fees

Easement Type	Dryland Grass Acres	Dryland Cultivation Acres or Terminable Acres	Irrigated Acres	Industrial & Residential Acreages
Construction Easement [Working Space]	\$600	\$1,000	\$2,000	1/4 Market Value
Permanent Easement or Right-of-Way [Canal]	\$2,500	\$4,000	\$10,500	Market Value
Permanent Easement or Right-of-Way [Pipeline]	\$1,500	\$2,250	\$5,500	2/3 Market Value

8.4 Limitation on Additional Acres Purchased under Schedule of Fees

- (a) Where the additional lands required for easements and/or rights-of-way within a single parcel exceed an additional 20 acres, the District shall negotiate a price for the lands, which price must be approved of by resolution of the Board.
- (b) Where lands are acquired by the District from a landowner for any purpose other than for canals, drains and pipelines, the District shall negotiate a price for the lands, which price must be approved of by resolution of the Board.

8.5 Disposition of Abandoned Canals

- (a) Where a canal or drain has been relocated resulting in the abandonment of irrigation works, the lands so occupied will be returned to the adjacent landowner,
- (b) Where the abandoned irrigation works formed the legal boundary between two or more landowners, the lands will be returned to the adjacent landowner from whom the lands for the relocated canal or



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drain has been constructed, or the lands occupied by the abandoned irrigation works will be returned to each of the parties providing they pay the legal survey costs to permit the transfer,

(c) Where the abandoned canal was held under surveyed right-of-way plan, the lands will be amalgamated to the balance of the title.