



CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701-2724

Public Works Department

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March 6, 2003

Memorandum

Re: No. 03SR002 -11-6-19 SDCL Review of a public facility in a public place
Black Hills Polo and Soccer Grounds

Response to February 20, 2003 Staff Review issues:

Sprinkler System: The proposed system is a portable water reel system. The water reel will sit at six locations next to St. James St. and draw a single irrigation gun across the grounds. These locations will be fed by a 4 inch underground water main along the south edge of the property. This is in lieu of the agricultural-type side-roll system that was recently removed from the site. See attached information for more detail.

Fencing: The only fencing modifications proposed in the floodway is the relocation of the west slip-rod type breakaway rail fence that has prior approval at this site. This is necessary to accommodate the proposed parking improvements. This will result in an overall reduction of fencing in the floodway.

Accessory structures: The revised site plan (attached) shows all accessory structures (porta-potties, concessions, etc.) on the south end of the property, out of the floodway. The only proposed storage area is located south of St. James St., near Cambell St., also out of the floodway.

Manhole: The manhole located on the field area has the lid buried about six inches below grade. Since constructed, this manhole has and will continue to be operated in this manner. The lid can be located with metal detectors or from reference points, the sod stripped, and then returned to its original condition. This is similar to a manhole in the Sioux Park East Soccer Field Area.

Drainage: A drainage plan with a single discharge will be submitted from the survey drawings recently completed.

Lighting: The only proposed lighting would be on Cambell Field (south of St. James St.), the future indoor soccer center, and the adjacent parking lot. The field lighting would be



EQUAL OPPORTUNITY EMPLOYER

(Addressee)

(Date)

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50 footcandles maximum. This lighting level is similar to the Noordermeer Field Lighting in Sioux Park.

Indoor Soccer Facility: We would agree with a future 11-6-19 review for the future indoor soccer center since this is a future improvement and somewhat speculative. However, we do believe that this is an appropriate use for this area, is an integral part of the overall development of this complex and should be recognized as such.



Water-Reel® Irrigation



Kifco Water-Reels® are designed to make portable irrigation easy. The machines are simple to operate and provide efficient irrigation over a wide variety of applications. Water-Reels® are compact, highly mobile and offer many benefits. They are ideal for irrigation areas up to 35 acres.

THE WATER-REEL® ADVANTAGE

Water-Reels® will operate unattended, shut off automatically and require far less labor than conventional portable systems. They are an excellent low-cost alternative to built-in or solid set systems. They can often be operated from a municipal water supply without need for a pump.



B160 Operating in a stadium

BENEFITS

When natural rainfall fails to provide adequate water, irrigation will prove to be beneficial.

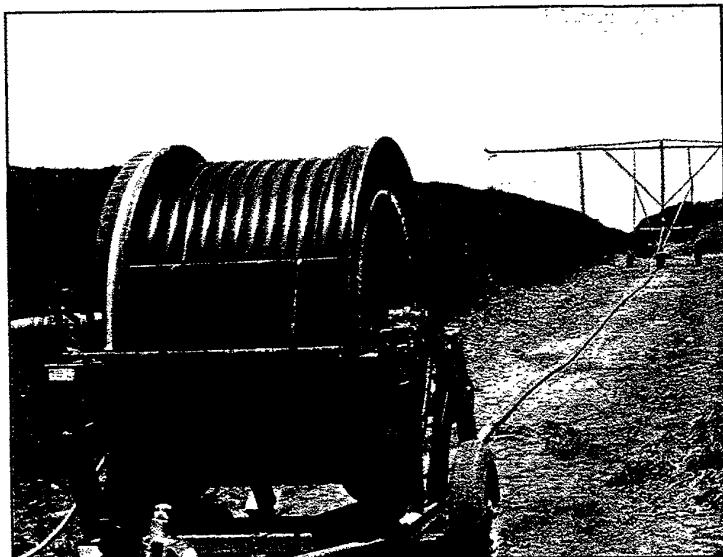
Vegetable Crops and **Fruits** will maintain constant growth, resulting in increased yields. Irrigated crops can be earlier into the marketplace and take advantage of higher prices.

Athletic Fields and **Golf Courses** will have a better looking and improved playing surface. The enhanced playing conditions will greatly reduce the risk of player injuries due to ground contact.

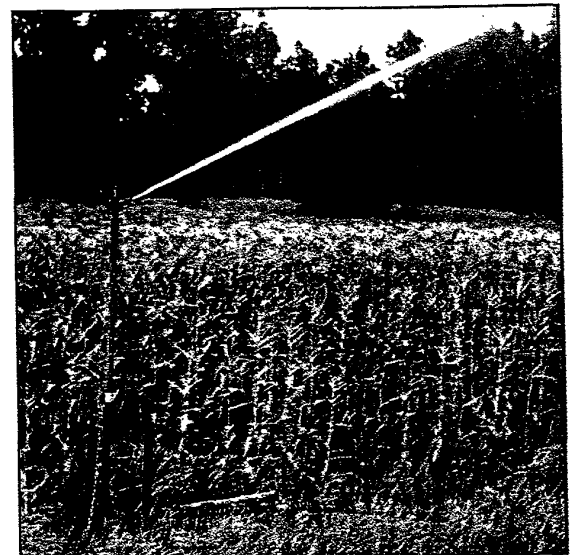
Landscaping, Cemeteries and **Parks** maintain their beauty and preserve the value of the landscaping.



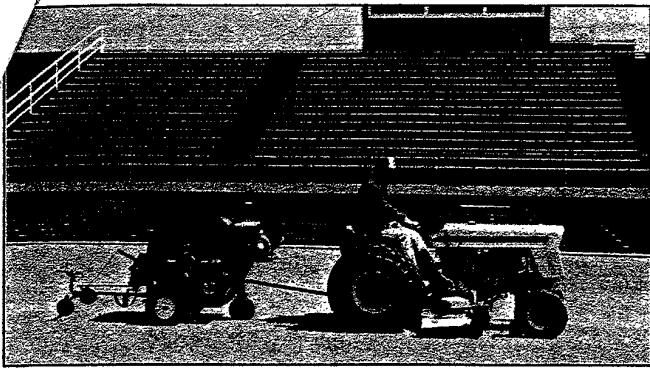
B130 Operating in a cemetery



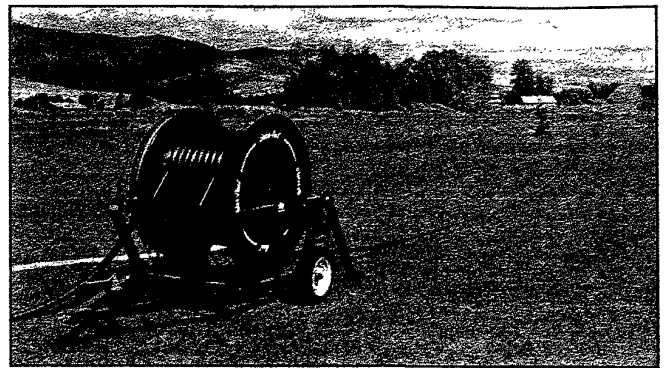
B200 Adding moisture to compost windrows



Tall Riser on B160 High Cart

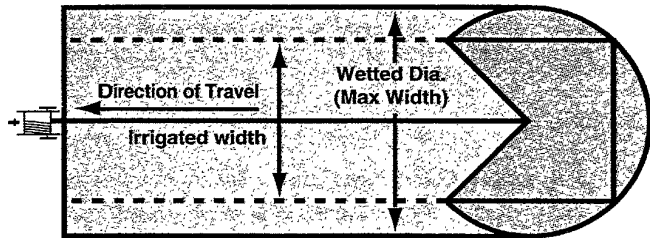


Machines are easily moved by a mower or small tractor. (B130 with a booster pump on a newly seeded field.)

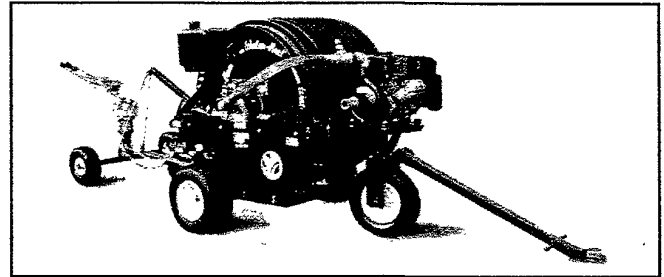


B180/B200/B210 Water-Reel®

Operating Layout Diagram



Note! The irrigated width shown in the diagram and Performance Guide chart is a general recommendation. This width is a factor of the maximum wetted diameter and should be adjusted to suit local conditions. For more information, consult your Kifco dealer.



B140P Water-Reel® with an integral booster pump



Kifco Water-Reel® Selection Chart

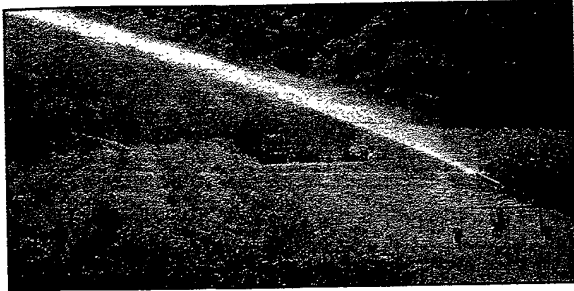
Machine Model	Sprinkler Model	Tube I/D (ins)	Tube Lgth(feet)	Flow (gpm)	Inlet pres.(psi)	Wetted Dia(feet)	*Irrigate Width (ft)
B100	P35	0.86	220	4-10	37-71	82-108	58-76
B100L	P35	0.86	280	4-10	39-75	82-108	58-76
B110	P65	1.10	200	9-30	45-92	112-152	78-106
B130	P65	1.30	390	10-25	49-65	114-136	80-95
B130	P85	1.30	390	30-50	68-112	146-168	100-118
B130X	P85	1.43	350	25-60	53-114	142-188	100-132
B140P	SR100TR	1.43	350	47-64	23-82	191-225	153-180
B160	P85	1.60	390	30-80	65-125	150-200	105-140
B180S	SR100TR	1.80	350	50-100	70-119	205-250	164-200
B180	SR100TR	1.80	600	50-95	73-135	205-246	164-196
B200	SR100TR	2.00	500	65-135	70-131	214-273	171-218
B210	SR100TR	2.10	320	100-165	70-114	240-286	192-228

* The irrigated width is a 70%-80% factor of the wetted dia. See individual brochures or consult your Kifco dealer for more information. The factor may be adjusted to suit local conditions.

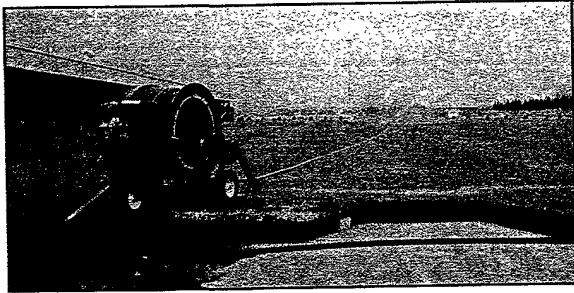
Ask about additional Water-Reels®. Machines with longer tubes and machines for larger areas are also available.



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 Phone 309/543-4425 FAX 309/543-4945
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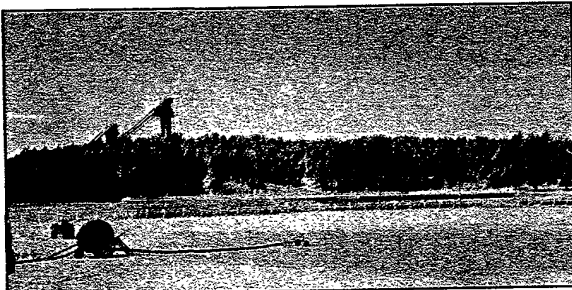
B160 with a row crop cart irrigating fruit trees.



B160 w/Booster Pump. Irrigating turf modules to be used in the Pontiac Silver Dome for the '94 World Cup Soccer.



B100 (B110 similar) ideal for residential lawns, parks, horse arenas, sportsfields, etc.



'B' Series machines on an Equestrian Training Center Arena. Used to maintain ideal surface conditions and control dust.



'B' Series machines irrigating fairways.

WATER-REEL® OPERATION AND SET-UP

The machines are compact and very easy to maneuver. They are easily transported from one area to another by towing with a mower or other small utility vehicle. Models B100 thru B180S can be moved short distances by hand.

To operate the Water-Reel®, it should be set at the end of the field with the stabilizer legs down. Connect the sprinkler cart to a mower or small vehicle and tow it to the other end. Turn on the water supply and leave the machine to operate automatically.

AUTOMATIC SHUT-DOWN

Kifco Water-Reels® are equipped with a unique automatic shut down system which operates at the completion of each run. The water motor will automatically stop when the sprinkler cart arrives at the machine. By operator choice, the sprinkler will also shut down automatically.

BELLOWS DRIVEN WATER MOTOR

The rubber bellows or actuator is the heart of the water motor and drives the ratchet mechanism. It does not have any seals or sliding parts to wear out, which insures outstanding reliability. The bellows drive used on Kifco Water-Reels® does **not** take pressure from the water to operate the drive. Whereas other drives, such as a turbine drive, will absorb pressure that may be critical to the sprinkler performance.

BOOSTER PUMPS

Booster Pump Kits are available for the models B130 thru' B210. The B140P is fitted with a booster pump as standard equipment. Booster pumps are primarily used for the following reasons:

1. To raise inadequate pressure to permit the use of a Water Reel®.
2. To raise the pressure to enhance the machine performance. For example, with adequate pressure, a B140P or larger machine will irrigate a regulation size football field with a single pass down the centerline.

POLYETHYLENE TUBE

The medium density polyethylene tube has a thick wall and is specially made for irrigation. It's built to resist wear, to withstand repeated coiling and to resist the brittling effect of ultra violet rays. It can be repaired and is inexpensive to replace.

WATER APPLICATION DEPTHS

The depth of water applied is controlled by regulating the speed at which the machine rewinds the polyethylene tube. The speed is regulated by a control valve located on the Water Reel®.

WATER SOURCES AND QUALITY

The water motor is designed to work with fresh water. The source can be a municipal supply, a well, or surface water, such as, from a river or pond. A filter on the machine insures that clean water enters the bellows drive system.

SPRINKLER CART

The standard sprinkler cart is the 'Stadium' style. In this case the sprinkler is usually close to the ground. For models B160 thru' B210 an alternate 'Row Crop' style cart is available.