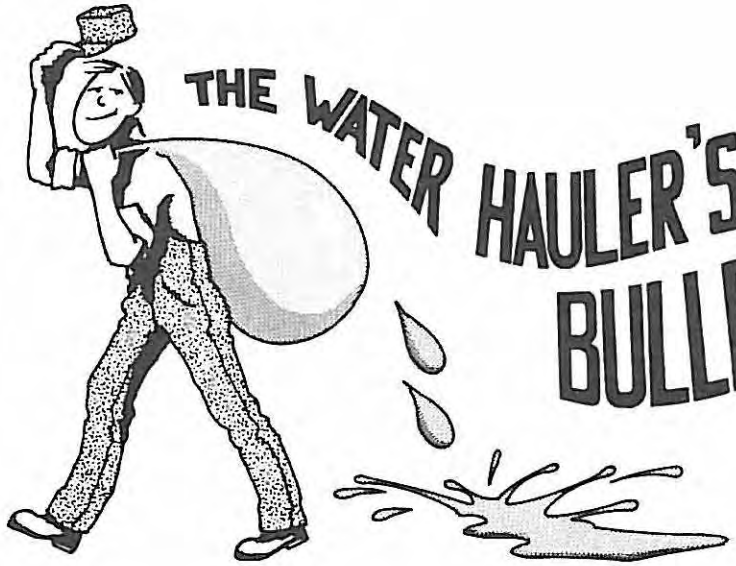

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R. L. FRANCIS RETIRES

After 37 short years of service in the irrigation field, Mr. Ronald Francis is retiring from Alberta Agriculture. From instrument man to Irrigation & Conservation Division Director, Ron has been involved in all facets of planning, design, and construction. "Mr. Irrigation" (title inherited from P. M. Sauder), as he is often called, pioneered in developing a method and procedure for installation of buried poly-ethylene canal liners, and in designing the precast drop structures. We could continue to list accomplishments this man has made for the Department, however, we would need all the Bulletin's space and then some. However, we would like to take this opportunity to express our appreciation for a "career well done" and to wish him every success in his new endeavors as a private consultant.

The Department is organizing his retirement party for January 20, 1984 at the Lethbridge Lodge Hotel. Anyone wishing to attend this social evening (dinner and dance) please contact Mr. Frank Gross at 329-5164.

* * *

ROBAR - IN THE IRRIGATION INDUSTRY

Robar Industries Ltd. produce a number of products with specific application in the Irrigation Industry. According to Gordon Hunter, Sales Manager in Calgary, "their products are manufactured from T304 Stainless Steel which are fully passivated (chemically treated) after welding to return the stainless steel to its original high corrosion resistance".

Figure #6626 Outlet Sleeve

The Robar 6626 Outlet Sleeve is a convenient and inexpensive method of providing a take off from a supply line. This procedure provides for placement of outlets at exact locations, without disturbing long sections of bedding, as would be the case when cutting in a tee; and the light weight Stainless Steel Shell offers support around the circumference of the pipe being tapped.

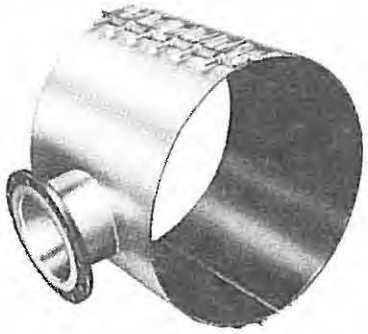


Figure #6626

The choice of Outlets adds to the versatility of this product. In addition to the Standard Flange, it is available with Plain End, Threaded (male and female), Offset Tangent and Angled outlets for installation of Air and Vacuum Valves, Flow Meters, Bypasses, as well as providing an access for video cameras. This Outlet Sleeve is suitable for installation on all types of watermain, with the exception of Concrete Cylinder Pipe. Robar does, however, manufacture a Tapping Sleeve for this specialized application. To date, the largest 6626 Sleeve supplied has been 630 mm (24") off 1000 mm (40"), and in that instance the outlet was fabricated on a 45° angle.

Figure #306 Coupling Clamp

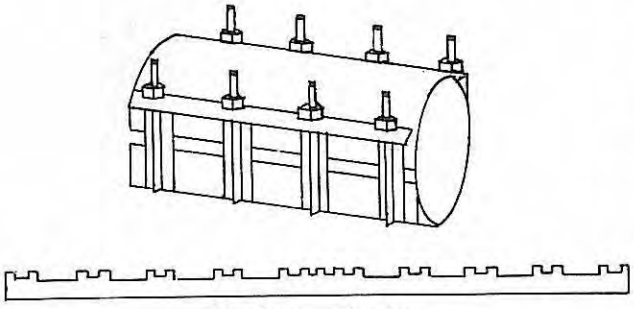


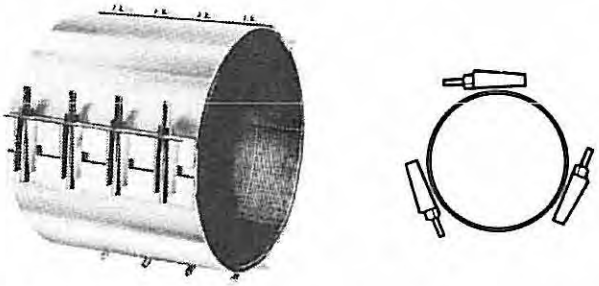
Figure #306

The Robar 306 Coupling Clamp is another all stainless steel product, and is used to provide a drip tight closure when joining Plain End pipe. When light walled plastic is being used, Robar recommends S. S. Liners or Inserts which provide the resistance to ensure a positive seal. In situations where the possibility of pull out exists, an external Restraint Clamp Assembly, manufactured by Robar, has been used very successfully. Recent developments, however, now make it possible to supply the 306 Coupling with an integral restraint feature.

The Robar 306 can be used as a Transition Coupling to join all types and makes of pipe with similar outside diameters. It is also utilized in connecting branch, or service lines, to the Plain End, Stainless Steel Outlets on the 6626 Tapping Sleeves.

Stainless Steel Repair Clamps

The Robar Repair Clamp was the first All Stainless Steel Clamp produced in North America, and has over twenty years of proven service in the field. It can be supplied in a variety of styles, lengths and sizes and is available with threaded Side Outlets.



When ordering all fabricated stainless steel fittings it is desirable you specify the make, class and outside diameter of the pipe involved. With this information Robar will supply your requirements promptly and correctly.

For more detailed information on all Robar Products call Grant Hunter - 240-2100 or Gordon Hunter - 242-2131 in Calgary.

* * *

REVISED LAND IRRIGABILITY STANDARDS

The Irrigation Council, at its meeting on October 12, 1983, approved the new revised Standards for land irrigability classification.

The revised Standards reflect several years of review and study. The previous Land Classification Standards have been in effect since 1969, and many changes in irrigation methods and in related fields have taken place since that date.

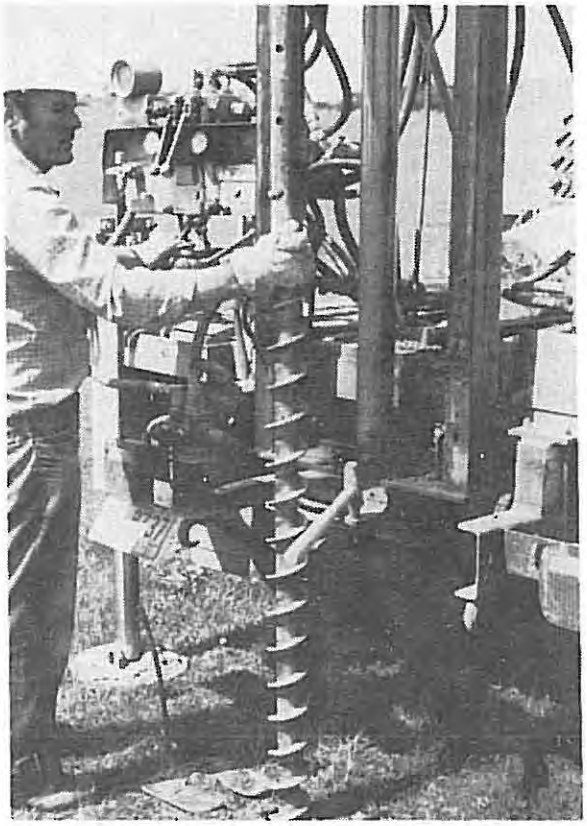
In conjunction with the revised Standards, a "Procedures Manual for Land Irrigability Classification in Alberta 1983", was prepared by the Land Classification Branch, Lethbridge. This Manual reflects changes in the Standards and it will be used by all land irrigability classifiers in the future. It is the first procedures manual available to assist in implementing Alberta land irrigability classification standards.

While the original Standards were appropriate at the time of their implementation, change-over to sprinkler irrigation, introduction of new irrigation equipment and recent research findings had rendered the 1969 Standards outdated. The revised Standards and the Procedures Manual are recognizing modern water management concepts and up to date technology.

In general, the revised Standards do not represent a radical change in the way land is being classified for irrigation. The new Standards are in a closer relationship to soil survey information and recognize the experience gained since the introduction of mandatory land irrigability classification in Alberta. The rating system is simpler and the Procedures Manual presents a comprehensive approach to land classification.

The basic soil characteristics - soil profile, geological deposit and soil texture - have been given renewed significance, while salinity, sodicity and hydraulic conductivity are modifying factors, and only when severe enough, change the soil rating to a non-irrigable class.

In the 1983 Standards four soil categories are recognized as compared to six in the 1969 Standards. Categories one to three are irrigable and category four is non-irrigable. Soil salinity (EC) and sodicity (SAR) limits remain essentially unchanged, but instead of these values being determined by soil horizons, they are determined by the soil depths (0 to 0.5 m, 0.5 to 1.0 m, 1 to 2 m). This approach is more practical and can be applied also in situations where there is no definite soil profile development. Salinity and sodicity at depth (1 to 2 m) is used to downgrade the geological deposit rating.



Drill Operator Jim O'Donnell checking for change in parent material within 4.5 m depth.

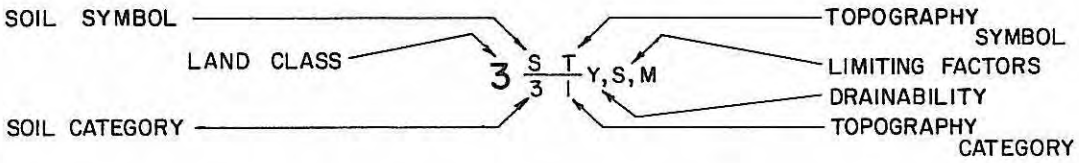
Drainability characteristics are identified as part of soil characteristics and do not constitute, as before, the third component of the land sub-class. The previously specified minimum hydraulic conductivity values and soil drainability limitations became modifying factors for soil ratings.

A low hydraulic conductivity alone does not make land non-irrigable because it can be partly compensated for by irrigation management. Other soil features must be considered. Drainability is indicated by the letters, X, Y and Z after the sub-classes formula.

Topography categories have undergone major changes. These were modified in consultation with the Farm Irrigation Services Branch and changes are consistent with the "Irrigation Design Manual for Border Irrigation, 1983". The maximum downfield slope for gravity irrigation was changed from four to two percent. Sprinkler irrigated lands can have as high as thirty percent slopes. This reflects current technology and the capability of modern irrigation equipment. It also recognizes that sprinkler irrigated land is not necessarily poorer land than surface irrigated land. There are four topography categories (before there were six). The first is surface irrigation category, two and three are sprinkler categories and the fourth is a non-irrigable category.

The soil (S) and topography (T) categories are combined to form land classes. These are identified as follows:

Land Class Symbol



The revised Standards have six land classes. Classes one to four are irrigable and classes five and six are non-irrigable land classes. Land class five has normally some reclamation potential, while land class six would be impractical or impossible to reclaim. The new land classes reflect the relative capability of land for irrigation. This was not the case with the original classification system. The revised Standards have 16 land sub-classes compared to 56 in the former 1969 Standards.

Land classes have the following abbreviated definitions:

Class 1: Excellent capability with no significant limitations for irrigation.

$1\frac{ST}{11}$

Class 2: Good capability with moderate limitations for irrigation.

$2\frac{ST}{12}$ $2\frac{ST}{21}$ $2\frac{ST}{22}$

Class 3: Fair capability with moderately severe limitations for irrigation.

$3\frac{ST}{31}$ $3\frac{ST}{32}$

Class 4: Restricted capability requiring a special system design and/or special management.

$4\frac{ST}{13}$ $4\frac{ST}{23}$ $4\frac{ST}{33}$

Class 5: Non-irrigable - pending detailed investigation, implementation of an improvement and/or undergoing reclamation. Land within this class may be upgraded to an irrigable class or will be rated Class 6.

$5\frac{ST}{41}$ $5\frac{ST}{42}$ $5\frac{ST}{43}$

Class 6: Non-irrigable.

$6\frac{ST}{41}$ $6\frac{ST}{42}$ $6\frac{ST}{43}$ $6\frac{T}{4}$

Research data relating to southern Alberta soils has been incorporated in the revised classification system. We know more about water movement through glacial till soils, the significance of minimum hydraulic conductivity values and the changes, particularly the more even water supply, introduced by the sprinkler irrigation.

The revised Standards reflect better understanding of the complex processes taking place during irrigation and are expected to provide improved service to irrigated farming.

For further information please contact K. Pohjakas, Land Classification Branch Head at 329-5121.

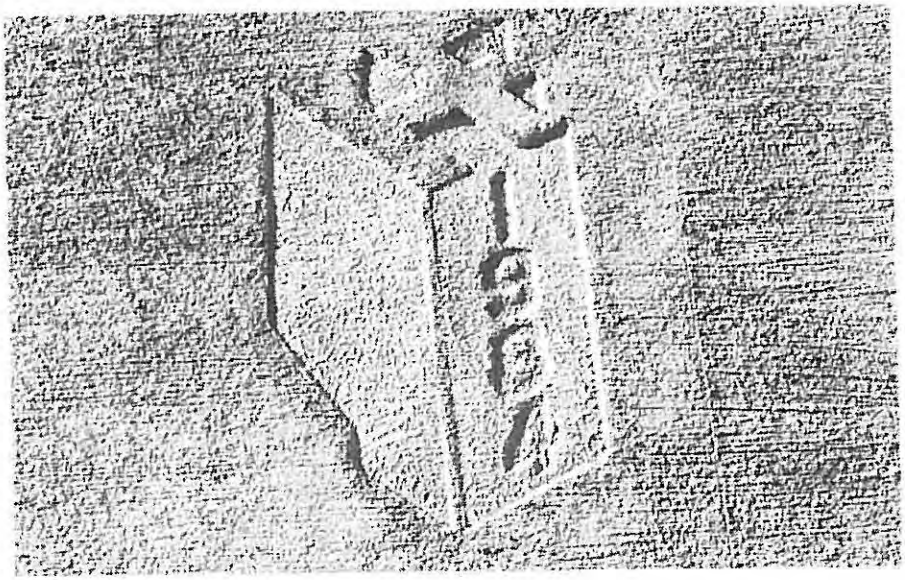
* * *

HERITAGE FUND LOGO

In order to clearly identify projects associated with the Alberta Heritage Savings Trust Fund, Irrigation Council has requested that the Heritage Fund logo be embossed on all I.C.W. structures in 1984. This three-dimensional logo is recognized by the initials HF on top, underlined by a stylized Alberta silhouette on the left and a supporting panel, showing year of construction, on the right.

Many irrigation districts now have the plastic molds necessary to imprint this logo on either cast-in-place structures or precast concrete panels. The large mold used on cast-in-place structures is designed to be nailed onto the inside of the form before the concrete is poured. A smaller mold for precast panels is meant to be stamped in a visible location after the concrete is poured into the forms.

For further information regarding Heritage Fund molds, please contact Jack Ganesh at 329-5164.



Closeup of new Heritage Logo on Consolidated Concrete's precast panel.

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FABRIFORM HOLDING ITS OWN

In the 1981 Summer edition of the Water Hauler's, we reported on the use of Fabriform in spillways where water is draining out of the upper ground throughout the winter months and running down or forming huge ice blocks. Since the time of writing, more Fabriform chutes have been constructed, bringing the total to seven in four irrigation districts.

We were impressed with the effectiveness of the Fabriform chute in dissipating energy and handling winter flows but because of our inexperience with it we had reservations about its durability. We reasoned that it would last a very long time but could not be specific. Some specific concerns we had were how long would the nylon fabric last being exposed to ultra-violet rays? Would it matter if the nylon fabric wore out? Would the unreinforced concrete remain uncracked and an integral unit? If the unreinforced concrete cracked, would the structure start to break up after the nylon fabric deteriorated?

E.I.D.'s Imperial Spillway & photogenic Keith Strong.

We have been monitoring these Fabriform chutes for an overall evaluation and hopefully will find answers to the above concerns. The nylon fabric is showing only minor signs of deterioration. There is the odd stranding or small hole in the fabric but on the whole it is holding very well.

Except for some minor maintenance required at the downstream of two of them, the Fabriform chutes are functioning as well as when they were constructed. Soil disturbed during construction has settled back and is covered with vegetation, blending well with the environment.

As time passes, we are becoming more confident that Fabriform chutes are a viable alternative. The Project Planning Branch will continue to monitor these structures and keep you informed.

* * *

DITCHRIDER'S COURSE ANYONE?

The Lethbridge Community College (LCC), Irrigation Projects Association and the Resource Planning Division are jointly sponsoring a five day Ditchrider training course from February 13 to 17, 1984. Anyone interested in participating in this short course should contact the LCC at 320-3323 immediately.

* * *

IRRIGATION COUNCIL REQUEST FOR FIVE YEAR PLAN - 1985-1990

The Alberta Heritage Savings Trust Fund allocation of $100 million made by Alberta in August 1980, to the irrigation districts expires at the end of March 1985. At this point in time there is no commitment or guarantee of any funding beyond March 31, 1985. It is the hope of the districts and Irrigation Council that the rehabilitation program, which is well underway now, will continue beyond this time frame.

Irrigation Council has requested that the thirteen districts examine their priorities and submit to the Council a priorized list of projects to be completed in the next five years commencing with 1985-86. In prior-izing their projects, the districts are requested to "put particular emphasis on completing on-going projects and, where applicable, district commitments under the Ditch Rehabilitation Plan filed under Section 178 of the Irrigation Act".

There has been no indication on the part of the Government to retain the present 86-14% formula, or any particular level of funding that may be expected.

The Alberta Irrigation Projects Association is being encouraged to promote a study on the economic benefits of irrigation to the local area, the Province, and Canada, as a follow-up to the ARDA studies done in the mid 1960's and completed in 1967.

If requested, the Project Planning Branch will assist any irrigation district in the preparation of their new five year (1985-1990) rehabili-tation program proposal. Please contact Wes Wankel at 329-5170.

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THE WATER HAULER'S BULLETIN

Designed to provide the operation and management personnel of Irrigation Districts with items of interest in their line of work. Comments are welcome. Please contact Duncan Lloyd at 329-5164, Lethbridge.

Published quarterly by the Evaluation & Management Section, Project Planning Branch, Resource Planning Division, Alberta Agriculture, Agriculture Center, Lethbridge, Alberta T1J 4C7.

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LET'S NOT FORGET THE FARMER

(The following is an excerpt from the recent presentation made to Alberta Agriculture's Executive Committee by Wally R. Chinn, Irrigation Specialist in Taber, on behalf of the Irrigation and Conservation and Resource Planning Divisions, addressing agriculture needs and concerns in southern Alberta.)

Southern Alberta agriculture is unique in its development and its production from the rest of the province. Its semi-arid climate and related consequential factors, have forced the utilization of the limited soil and water resources available to near maximum, to facilitate development of viable farming operations through management practices, intensification of production and diversification in cropping. It is irrigation that plays a large role in the singularity of the agricultural community in southern Alberta and in the efforts of Alberta Agriculture's prime emphasis on farm viability in consort with resource development and conservation.

Southern Alberta's setting for the largest irrigation developments in this country, has, over the years, provided much focus of attention and funding from all levels of government. The benefits to the south and the viability of our agricultural, rural and urban communities rests with the stability that irrigated agriculture has provided, both locally and province wide. Major emphasis has been placed on rehabilitation of irrigation distribution works, water storage, seepage control, surface and sub-surface drainage and salinity control, as well as, developmental research work in all these areas.

With all these "goings-on" perhaps proper attention is sometimes shifted away from the most important resource itself, the one for which we are primarily here, to guide and assist ... the irrigation farmer. Particularly, even with all the expenditures on capital works structures and sophisticated control procedures, etc., irrigation itself does not take place until the farmer takes the water and applies it to the crop. No matter how much effort has been placed in on-stream or off-stream storage, water conveyance systems, district operation improvements, etc., the key to successful and profitable irrigation rests with the individual farmer.

He operates a costly, specialized, highly-intensive, complex operation in order to benefit his operation's viability through increased production and diversification. However, the expenditures involved, the operational demands, as well as, the risks taken in an on-farm irrigation development are many and ones that cannot be taken lightly. The farmer who is developing a new irrigated operation or one who is revising or replacing an older system, needs careful guidance, assistance and special servicing to ensure that whatever action he takes, it is in his best long-term interests, and also in the long-term interests in conserving and making the best use of the soil and water resource.

It is to be noted as well that some 20% of the total irrigated area in this province is developed outside of organized irrigation districts by private, individual farmer-owned schemes and these operators too should realize developmental assistance in some form.

Even when a farmer has a properly developed irrigation system in place, and when adequate water is available to him at his farm gate, the success of that irrigation project still depends upon that farmer's ability to manage the system and water application effectively and efficiently. He still requires management guidance in the areas of system operation and water application in order to achieve the best and most practical results. The expertise required in overall irrigation development work is specialized and not so common a commodity as to be picked-up just anywhere. Technology transfer, particularly in the area of irrigation management must continue.

The Department, through the direct assistance and servicing to the individual on-farm developments, over a period of the last few decades, has been a leader in promoting effective and maximizing use of the soil and water resources available, while emphasizing wise-use founded upon good conservation practices. Without this stabilizing influence and the associated technical expertise provided, the added costs to individual on-farm projects could have been prohibitive, or resulted in uneconomic, ineffective systems that were also inefficient users of the soil and water resources. The ever-increasing complexity of on-farm irrigation developments warrants continued access to this type of supportive assistance.

The demands for increased production, both to feed a "hungry world" and to maintain viable production units in the face of the present cost/price squeeze born by our producers, has challenged us in the farming community to utilize the productive capability of available resources to near their exhausted limit. The task at hand is to complement the on-going development and resource utilization with a conservation minded foundation of effective and efficient resource management, for higher production on the farm today and continued stability and confidence in optimum production capability for future generations ahead.