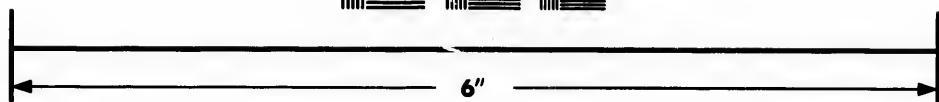
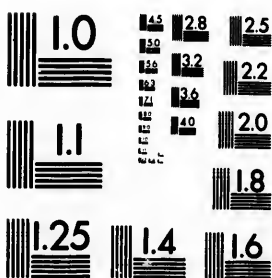
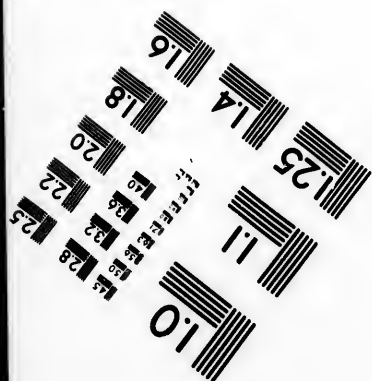


IMAGE EVALUATION TEST TARGET (MT-3)



6"



Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

**CIHM/ICMH
Microfiche
Series.**

**CIHM/ICMH
Collection de
microfiches.**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1986

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

- ☐ Coloured covers/
Couverture de couleur
- ☐ Covers damaged/
Couverture endommagée
- ☐ Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/
Le titre de couverture manque
- ☐ Coloured maps/
Cartes géographiques en couleur
- ☒ Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- ☐ Bound with other material/
Relié avec d'autres documents
- ☐ Tight binding may cause shadows or distortion
along interior margin/
La reliure serrée peut causer de l'ombre ou de la
distortion le long de la marge intérieure
- ☐ Blank leaves added during restoration may
appear within the text. Whenever possible, these
have been omitted from filming/
Il se peut que certaines pages blanches ajoutées
lors d'une restauration apparaissent dans le texte,
mais, lorsque cela était possible, ces pages n'ont
pas été filmées.
- ☐ Additional comments:/
Commentaires supplémentaires:

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- ☐ Coloured pages/
Pages de couleur
- ☐ Pages damaged/
Pages endommagées
- ☐ Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- ☒ Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- ☒ Pages detached/
Pages détachées
- ☐ Showthrough/
Transparence
- ☐ Quality of print varies/
Qualité inégale de l'impression
- ☐ Includes supplementary material/
Comprend du matériel supplémentaire
- ☐ Only edition available/
Seule édition disponible
- ☐ Pages wholly or partially obscured by errata
slips, tissues, etc., have been refilmed to
ensure the best possible image/
Les pages totalement ou partiellement
obscurcies par un feuillet d'errata, une pelure,
etc., ont été filmées à nouveau de façon à
obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

The copy filmed here has been reproduced thanks to the generosity of:

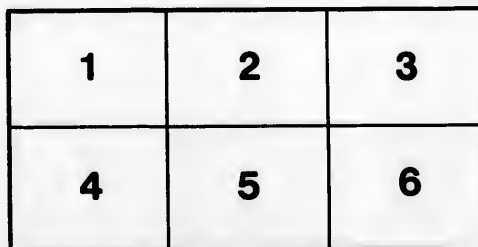
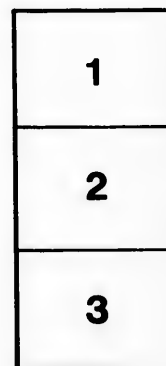
Metropolitan Toronto Library
Social Sciences Department

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol → (meaning "CONTINUED"), or the symbol ▼ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

Metropolitan Toronto Library
Social Sciences Department

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole → signifie "A SUIVRE", le symbole ▼ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

ire
détails
es du
modifier
er une
filmage

es

errata
to

peiture,
on à



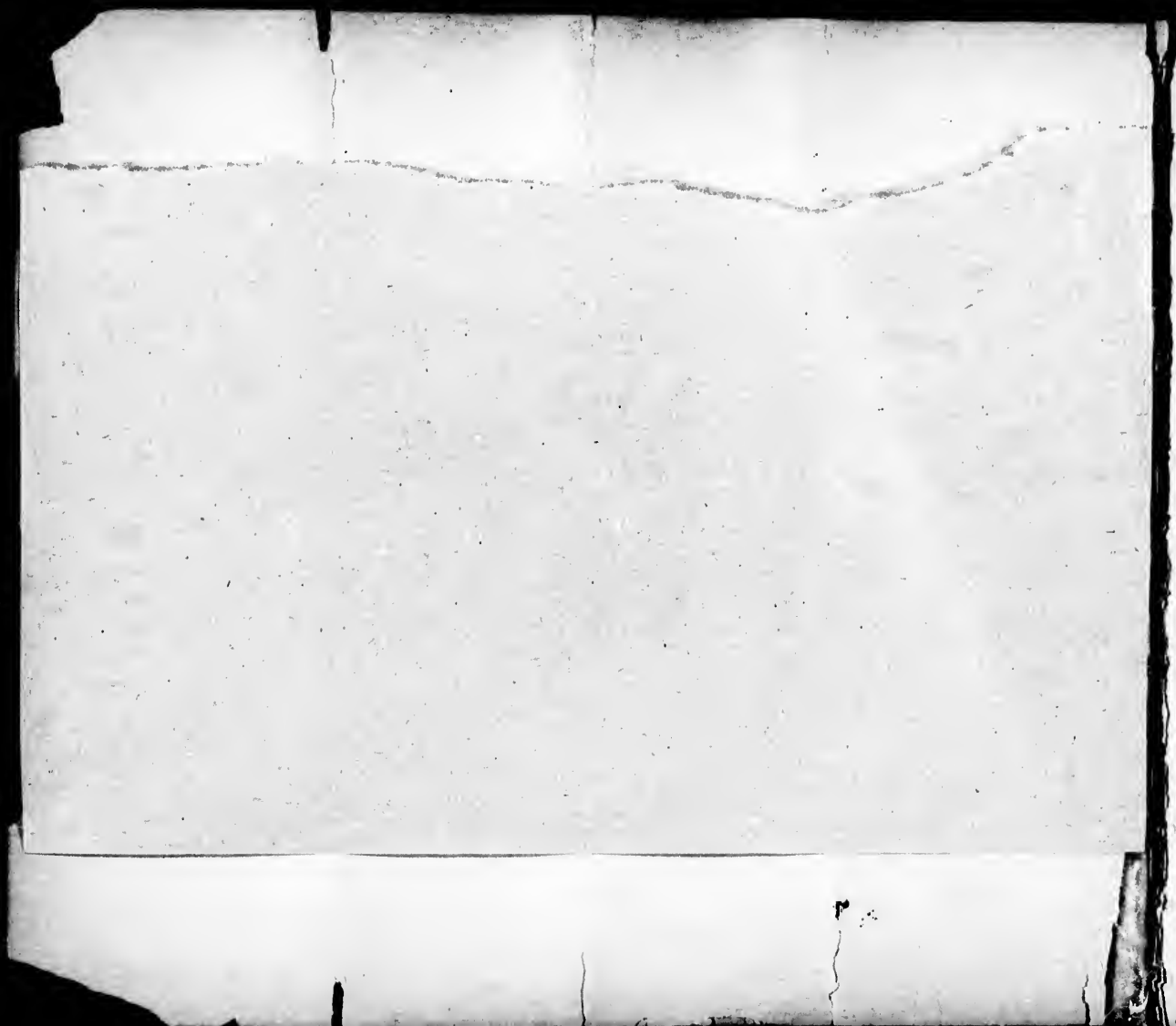
Power,

Light,

Electricity,

Heat,

Irrigation.



Y

an
ma
oth
we

is
in
lay
th
ne

The Welland Power and Supply Canal Company, Ltd.

THIS COMPANY was incorporated under special Act of the Dominion of Canada in 1894, for the purpose of utilizing the natural water supply of the Niagara and Welland Rivers, which are navigable streams, with the object of promoting manufacturing industries and inducing the establishment of manufactories and other business; and the works contemplated, were declared by Parliament, to be works for the general advantage of Canada.

The means by which it is intended to accomplish the objects of the Company, is the construction and operation of a canal and hydraulic race-way, from a point in the Welland River, within five miles of its mouth, across comparatively level land, to a point or points on the Niagara escarpment, with such enlargements of the natural water-courses in the Townships of Grantham and Niagara as may be necessary for carrying off the water from the power canal, to Lake Ontario.

Power, Etc.

The world in general, acknowledging the limits of electricity to be unbounded, is turning, and rightly so, wondering and expectant eyes toward Niagara and the enormous efforts there being made to develop power, and whilst also acknowledging those efforts to be founded and dependent upon the magnificent supply of water and its peculiar position; seems to be totally blind to the fact, that the whole of this great supply of water may be practically turned aside and utilized to greater advantage elsewhere than in or near its natural channel for the production of this much sought for and greatly to be desired power, which scientists tell us is here, in such quantity as if harnessed would literally shake the universe.

There can be no doubt as to the desirability of developing this great power, if it can be done cheaply enough, for in this question of first cost lies all the future of long distance transmission, and the bringing of the benefits of this grand supply of power within the broadest limits. Tesla tells us that "power may be trans-

mitted 100 or 1000 miles as easily as one mile." It is therefore a question of commercial, not scientific, limit, and it behooves us to look first to the primary cost of converting this immense flow of water into power. With this idea therefore before us, it is the desire of the Company to draw attention to its peculiar and advantageous position and plans, for developing this power more cheaply than can be done under any other known proposition.

Supply of Water: How Obtained, Etc.

A sufficient supply of water in the Niagara River being an admitted fact, we will endeavor to set forth the plans of the Company, in such detail as may suffice to give a clear general understanding of how that water is to be utilized.

The Company is empowered by its charter, to deepen and widen the Welland River, if necessary, from its mouth to the point of intersection with the proposed canal, thence by a straight open cut through clay, the water will be brought to the escarpment and run into a reservoir in rock, built at right angles to the canal along the brow, and which reservoir can be extended east and west as

frequently as the demands for power arise, thence by use of gates and penstocks, the water will be carried to wheels placed 150 feet below; the wheels being above ground and of easy access, thence by using one or more of the natural water-courses, the water will flow to such points and be used at such heads, as may be found most desirable, until the full head of 320 feet has been utilized.

Head of 320 Feet: How Obtained and Compared with Niagara Falls.

When viewing the Falls, it is seldom one stops to consider that the cataract proper represents but the lesser proportion, in the descent of the waters of Lake Erie to Lake Ontario; that whilst the aggregate descent is 330 feet, the Falls proper cover only 155 feet of it, the greater portion being included in the various rapids of the rivers. The accompanying blue print diagram shows this, and also how it is proposed to use this great head of 320 feet, being total difference between the Lakes, less 10 feet, the descent on the Niagara to the mouth of the Welland River.

The Canal to be Built and the Amount of Power to be Developed.

Right along side the proposed power canal, lies the Welland Navigation Canal, the dimensions of which are 100 x 160 x 15 feet, and in the building of which were encountered no insuperable difficulties, even for the crude facilities obtainable when most of the work was under construction. It is proposed to duplicate the navigation canal between the River and escarpment, if the prospective market for power warrant the dimensions, and such a water-course will give the Company at three miles per hour flow, 975 h. p. per foot of fall, producing in the main or first head nearly 150,000 h. p. and in the total head over 300,000 h. p. Thus, this immense amount of power will be attained simply by the digging of a race-way, the cutting out of a reservoir, the placing of wheels, etc., on the surface of the ground and the straightening of natural water-courses; which work will all be readily accessible and done under the unusual circumstance of having along side of it a similiar work completed successfully though involved by ad-

ditional engineering and working difficulties peculiar to the building of locks, weirs, etc., necessary to a navigational canal.

Advantages of the Location, Etc.

This enterprise is situated in the garden of Canada, the widely-celebrated Niagara fruit belt, whose equable and mild climate, owing to its semi-insular position between the Lakes and the Niagara River, is fully evidenced by the fruit products of the territory and which climate with an unbounded supply of the best water, and unrivalled drainage possibilities, makes the location an unequalled one for the placing of a large population, drawn by manufactories using the cheapest power on earth. From the utilitarian point of view, the location is in like manner unequalled, lying as it does along side the Welland Canal, the greatest artificial highway of the continent, capable of passing in one bottom 100,000 bushels of grain, and which, on the completion of the lower canals to the 14 foot depth now under construction and the development of cheap elevator facilities, will undoubtedly control the traffic of the Lakes to the sea-board.

The peninsula is crossed from east to west by six lines of railway, and from north to south by two lines, which give connection with the great trunk lines of the continent, thus affording communication to all parts of the country; in short for the location of manufactories, there can be found elsewhere, no situation giving equal lake and rail transportation. The great bulk of all shipments from the west to the seaboard and return, via New York by rail, have always gone through this district, whilst the Welland Canal is the natural, shortest and best route to the sea-board, commanding (if not handicapped as in the past) the whole of the through Lake traffic.

Water Supply for Irrigation, Farm Uses, Etc.

We have now to touch upon a subject, which the past season has demonstrated to be one well worth the attention of every farmer, fruit and vegetable grower, namely, that of an adequate supply of water at all times available, which would make the growers independent of weather such as has lately been experienced. In the fruit belt lie 100,000 acres of the finest of soil, which, with the labor con-

sequent upon its working, is liable at any time, owing to deficient rainfall, to prove unproductive, and yet we continue blind to the fact that by raising our eyes from any one of these scorched acres, we may see an unlimited supply of 6,000 cubic miles of water lying only just above us, awaiting the hand of someone to tap it.

The Company have it in view to supply this growing want, and having cut through the natural dam and brought the water to the brow of the escarpment, will under authority of their charter, distribute water throughout the fruit lands, thereby insuring to the grower his annual return for labor and enhancing the value of his lands from 200 to 300 per cent., as has been the case with the irrigated lands of California and Colorado and as also has been the case with those fortunate ones in this district, who either by use of windmills or otherwise have been enabled to use water for irrigating.

Riv
any
rece
and
pany
Lak
Nias
than
by a

sche

Extracts from the Press.

The Niagara Falls (N. Y.) Journal 30th June, 1894:

"For the consideration of those who are trying to make a corner on Niagara River water it will be well to inform them that neither the State of New York or any of its chartered companies are masters of the situation, but that a company recently formed in Canada can dry up Niagara River and make the great cataract and Niagara gorge a dry and dreary waste any time they see fit. A Water Company has been chartered in Canada, to build a power canal from Lake Erie to Lake Ontario. Through this route all the water that now flows through the Niagara River channel can be diverted if this Company sees fit, and much easier, than enough water to interfere with the beauty of Niagara Falls, can be diverted by all the projects now under way or talked of in this State."

The Buffalo Courier, under heading "Stealing Niagara River" says:

"Certain newspapers in the States are exercised over what they term a scheme to "steal Niagara River," by which reference is made to the project of one

of the Canadian companies that have been organized for the purpose of utilizing the Niagara water power, namely, The Welland Power and Supply Canal Co'y, which was incorporated at the last session of the Dominion Parliament, and whose aim is not only the utilization of power but also to supply water to irrigate the peninsular fruit belt. "The charter of the Company," the Philadelphia Record observes, "permits it to draw unlimited water from the Niagara River. The Company is empowered to deepen or widen the Chippawa Creek from its mouth to the point of intersection of the proposed canal, four and one-half miles west, and it is said there is nothing in the charter to prevent the Company from diverting the course of the Niagara River to Thorold, Ontario."

A correspondent to the St. Catharines Journal writing in regard to the Smelting of Ores, says:

"Coal is the great article required for such work, and much was expected from the discovery of natural gas, but as electricity appears to be fast succeeding both, for power, light and heat, if it can be successfully used for smelt-

ing
it.

poss
is co
or T
paris
posse

of sto
and S
tons
duct.

when
whic

utilizing
nal Co'y,
and whose
rigate the
ia Record
ver. The
mouth to
est, and it
erting the

ing iron ore, then this section of the country should have a bright prospect before it. With such an advance, is it not well that the latent wealth of which we are possessed should be presented more fully to the world? More especially when it is considered that should a coal mine be discovered in the townships of Stamford or Thorold, capital would immediately offer itself to develop them. Yet in comparison with the water power for generating electricity which both townships possess, a coal mine would be a mere bagatelle.

It is known that three pounds of coal are required to obtain one horse-power of steam. Then say that 300,000 horse-power is produced by the Welland Power and Supply Canal Company. This would be equal to the production of 3,240,000 net tons of coal per annum of 300 days, at \$2 per ton, \$6,480,000 would be the product. Surely a great future awaits us.

Basing the fact on the statement that iron ore is now smelted by electricity, where in the whole Dominion is there a spot equal to the said townships, through which, as our American friends say, will flow the whole of the Niagara River?

utilizing
nal Co'y,
and whose
rigate the
ia Record
ver. The
mouth to
est, and it
erting the

the Smelt-

was ex-
to be fast
for smelt-

Talk of Columbian gold mines, or nickle mountains in Ontario, or coal beds in Nova Scotia, whose yields are never certain, while the water—the electric producing power—rolls on forever.”



eds in
rodue-



McCOMB BROTHERS
PRINTERS,
ST. CATHARINES, ONT.



