SPECIFICATIONS

For the Repair

of the

SHERWOOD RESERVOIR DAM

LARIMER COUNTY

COLORADO

XXXXX

XXX

X
1. General

The Sherwood Reservoir Dam is located in the Northeast Quarter of Section 30, Township 7 North, Range 68 West, of the 6th Principal Meridian, in Larimer County, approximately 3 miles southeast of Fort Collins, Colorado.

2. Proposed Work

The proposed work will consist of the excavation of a cut-off trench near the downstream toe of the existing dam, and backfilling with compacted materials, and increasing the cross-sectional area and height of the present embankment with compacted materials to the sections shown on the plans.

3. Supervision

All construction shall be under the supervision of a qualified engineer employed by the Soil Conservation Service.

4. Quality Of Work

All work shall be completed in a workmanlike manner to the lines and grades shown on the plans. Adjacent areas and borrow pits shall be left neat and orderly.

5. Extra Work

Unless otherwise provided, no charge for extra work or materials will be allowed unless approved by the engineer and ordered in writing by the owner, with the price stated in such order.

6. Intent Of Plans And Specifications

Anything mentioned in the specifications and not shown on the plans or shown on the plans and not mentioned in the specifications shall be of like effect as if shown or mentioned in both. The contractor shall not take advantage of any errors, discrepancies or omissions which may exist in the plans and specifications but shall immediately call them to the attention of the engineer whose interpretation or correction thereof shall be conclusive.
1. Stripping

All areas upon which new embankment is to be placed shall be stripped of all vegetative materials and scarified prior to placing any materials in the embankment. Such strippings shall be wasted, or stockpiled separately, and used on the extreme outside slope of the new embankment, as directed.

2. Cut-off Trench

a. Excavation

A cut-off trench shall be excavated near the downstream toe of the present embankment, between station 13+00 and station 19+00, to the lines and grades as shown on the plans, or as directed by the engineer. Any material excavated that, in the opinion of the engineer, can be used in the embankment shall be stockpiled. Any material not suitable for use in the embankment shall be wasted, as directed.

Care shall be exercised in the vicinity of Station 16+50, so that no damage is done to the existing outlet conduit. Any disturbance or damage shall be corrected to the satisfaction of the engineer at the contractor's expense.

b. Backfill

The backfill of the cut-off trench shall be placed in nearly horizontal layers, not more than 3" in thickness, and compacted with a sheepsfoot roller until the desired density of materials is attained. The moisture-density relationship of the borrow material will be obtained by tests prior to construction. All backfill shall be compacted to obtain a density of 95 per cent of Standard Proctor as determined by tests of the borrow material. Backfill around the outlet conduit shall be placed by hand and compacted with mechanical tampers to an elevation two feet above the top of the conduit. Care shall be exercised not to damage the conduit.

3. Embankment

All embankment above the cut-off trench shall be placed in nearly horizontal layers not exceeding 3" in thickness and compacted with a sheepsfoot roller until the desired density of the fill materials is attained.
The density of the fill materials shall be not less than 95 per cent of Standard Proctor as determined by tests of the borrow materials.

The embankment shall be placed to the lines and grades as shown on the plans.

If any of the strappings are utilized in the embankment, they shall be placed along the extreme outside slope and shall not be more than one width of the hauling equipment used.

4. Clean-up

All borrow areas shall be smoothed off in a neat manner to the satisfaction of the landowner from which the borrow is obtained.

Any debris left at the site shall be disposed of as directed.

The top and slopes of the embankment shall present a neat and uniform appearance to the satisfaction of the engineer.

5. Estimated Quantities For Construction:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Estimated Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Embankment (including cut-off trench backfill)</td>
<td>9092</td>
<td>Cu. Yds.</td>
</tr>
</tbody>
</table>
1 copy - mail

to Mr. William Stover
(address from phone book)

I'll put a note in it.

Return these to... Sherwood Reservoir Co.

9-14-82

One copy mailed to Bill Stover, his request


Penner, B. G., Criswell, M. E., and B.
LAW OFFICES
WILLIAMS & STRAHALE
FIRST NATIONAL BANK BUILDING
FORT COLLINS, COLORADO

February 16, 1971

William H. Allen, Esq.
Attorney at Law
Savings Building
Fort Collins, Colorado

Dear Bill:

Enclosed herewith please find an original and one carbon
of a retyped agreement covering the use of Sherwood Reservoir.

In addition to the change in date, I have made a few
further changes, which I think only clarify the intent of the
parties, with one possible exception. The exception is Para-
graph No. 12. It occurred to me that the home owners' associa-
tion might be a corporate shell, substantially without assets.
Because I think we are entitled to expect to contract with
persons or organizations of some substance, I have provided
that the obligations of the second parties will continue, not-
withstanding assignment, until they are either released or a
new agreement is drawn. In this way, if the home owners' as-
sociation appears to be substantial, we can draw a new agree-
ment. If not, my clients will still be protected.

If you have problems with the agreement as we have drawn
it, please let me know. If not, please get the signatures of
your clients on the enclosures and return them to me. I will
get those of my clients.

Yours sincerely,

[Signature]

Ronald H. Strahle

jb
Enc.
cc: Harold H. Miller
    Norman A. Evans
    Calvin Johnson
AGREEMENT

THIS AGREEMENT, made and entered into this ___ day of ___________, 1971, by and between THE SHERWOOD RESERVOIR COMPANY, a mutual ditch corporation organized and existing under and by virtue of the laws of the state of Colorado, first party, and the Poudre Valley Construction Co., Inc., a Colorado corporation, ROBERT S. EVERITT and HAROLD H. MILLER, hereinafter referred to as second parties, WITNESSETH:

WHEREAS, the first party is the owner of the Sherwood Reservoir and the second parties are the owners of real property, all located in the NE 1/4 and the E 1/2 of the NW 1/4 of Section 30, Township 7 North, Range 68 West of the 6th P.M., in Larimer County, Colorado; and

WHEREAS, the second parties are developing said land into subdivisions known as the Lake Sherwood Subdivisions and desires to use said reservoir for fishing, small boats, and ice skating;

NOW THEREFORE, in consideration of the covenants hereinafter set forth, the first party grants to the second parties the right to use the surface of the Sherwood Reservoir for fishing, small boats and ice skating; said boats to be limited to sail boats and row boats. Said rights shall be automatically renewed from year to year so long as the covenants hereinafter contained to be performed by the second parties are performed, and the use granted is not detrimental to the first party.

1. The second parties agree to maintain the banks of the reservoir in a sanitary condition, and to prevent sloughing or erosion of any of said banks.
2. The second parties agree to provide adequate access to the first party, its agents and employees, for repairs, improvement, maintenance or any other purpose, to all parts of the reservoir and dam structure and all of the irrigation structures owned or maintained by first party, including, but not by way of limitation, the inlet, outlet, spillway, dam and ditches. The dam shall be available across the property owned by second parties or their successors in title and shall include an area at least 25 feet in diameter at either end of the dam for machinery and equipment being used in the maintenance of the said dam to turn around. First party shall not be liable to second parties or their successors in title for damage caused by the exercise of these rights, unless said damage was caused by the gross negligence or willful conduct of the first party, its agents or employees. This covenant shall run with the land of first party and their successors in title and shall continue in effect regardless of whether this contract is cancelled as hereinafter provided.

3. Second parties and their successors in title hereby waive any claim for damages to their persons or property caused by runoff over the dam or spillway, or seepage from the said reservoir, except such injury as may be caused by the gross negligence or willful conduct of first party, its agents or employees.

4. The parties of the second part agree to keep said reservoir free from trash and debris, and if necessary, to provide a new trash catcher at the outlet of the reservoir, and at all times to see that the trash outlet is kept clean and free from debris, so that water may freely run through the outlet.

5. The second parties further agree to carry liability insurance in the amount of at least $100,000.00/$300,000.00, with
the first party named as an insured on said policy, and to save
the first party harmless from any liability resulting from the
use of said reservoir. Second parties and their successors in
title expressly waive any claim for injury caused to themselves
or any of them resulting from their use or operation of the said
reservoir.

6. It is further understood and agreed that the second parties
may plant grass on the lands of the first party immediately
adjacent to said reservoir, but shall plant no other vegetation.

7. The second parties further agree to form a home owners'
association in connection with the development of their sub-
division, the members of which may be authorized to use the sur-
face of the reservoir for the purposes herein specified, and
which shall provide that said home owners' association shall be
subject to all of the obligations herein contained to be per-
formed by the second parties. Acceptance of membership in the
said home owners' association shall constitute an acceptance by
the respective members of the obligations, covenants and waivers
herein contained.

8. The first party further agrees that the second parties
may erect a small boat landing facility in one place on the North
side of said reservoir and in one place on the South side of said
reservoir, which erection shall in no way cause erosion of the
shoreline of the reservoir, and that small boats may be put in
or taken out of the reservoir only at said places.

Said facilities shall be constructed only after consultation
with first party and approval of the plans for the proposed
facility.
9. It is further agreed that second parties shall have the right to restrict the use of said reservoir to members of their home owners' association or to the stockholders, employees and officers of the first party and families of such persons. The second parties shall be entitled to call for and have exhibited to them in the event of such use written proof that the user qualifies under this paragraph.

10. The first party shall have no responsibility to provide any particular water level on the reservoir, and use by the second parties shall at no time interfere with irrigation rights of the first party. Second parties and their successors in title shall not introduce pollutants into the reservoir of such nature as to interfere with the use of water from the reservoir for domestic, agricultural or research purposes.

11. In the event of the failure by the second parties to perform the covenants herein contained, the first party may, at its discretion, cancel this agreement immediately; which cancellation shall be evidenced by written notice to the second parties.

12. It is further agreed that at such time as the second parties have formed a home owners' association which shall be responsible for all common areas in the contemplated subdivision, the rights and obligations of the second parties hereunder may be assigned to the said home owners' association; provided, however, that the second parties shall guarantee performance hereunder by the said home owners' association until such time as a mutually acceptable agreement is drawn and executed or until second parties are specifically released by first party.
13. This agreement shall extend to and be binding upon the heirs, executors, administrators, successors and assignors of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year hereinabove first written.

ATTEST: 

THE SHERWOOD RESERVOIR COMPANY

By 

Secretary 

President 

ATTEST: 

POUDRE VALLEY CONSTRUCTION CO., INC.

By 

Secretary 

President 

Robert S. Everitt 

Harold H. Miller
OFFICE MEMO

TO: FILES
FROM: N. A. Evans
SUBJECT: SHERWOOD RESERVOIR COMPANY

REMARKS:

Development of homes around the Sherwood Reservoir will lead to some problems of maintenance and ownership of land at the shore line. Historically, the shore line has tended to erode due to wave action. You should ask Straley (?) to be sure that this problem is adequately covered in the deed from Greenwald to the new owner.

NAE: mc

Spellway - right of way (?)
shore line maintenance

Dock access rights way to Headgate, park entrance

lease contract with termination date 5 yr.-10 yr term
land owner organization reg

Negotiate for deed to rights in Sherwood Camp

City water, can ft/ac?

Greenwald's ownership in Sherwood Reservoir

what water is attached to Shore of Reservoir
February 16, 1971

William H. Allen, Esq.
Attorney at Law
Savings Building
Fort Collins, Colorado

Dear Bill:

Enclosed herewith please find an original and one carbon of a retyped agreement covering the use of Sherwood Reservoir.

In addition to the change in date, I have made a few further changes, which I think only clarify the intent of the parties, with one possible exception. The exception is Paragraph No. 12. It occurred to me that the home owners' association might be a corporate shell, substantially without assets. Because I think we are entitled to expect to contract with persons or organizations of some substance, I have provided that the obligations of the second parties will continue, notwithstanding assignment, until they are either released or a new agreement is drawn. In this way, if the home owners' association appears to be substantial, we can draw a new agreement. If not, my clients will still be protected.

If you have problems with the agreement as we have drawn it, please let me know. If not, please get the signatures of your clients on the enclosures and return them to me. I will get those of my clients.

Yours sincerely,

Ronald H. Strahle

Ronald H. Strahle

jb
Enc.
cc: Harold H. Miller
Norman A. Evans
Calvin Johnson
AGREEMENT

THIS AGREEMENT, made and entered into this ___ day of ______________, 1971, by and between THE SHERWOOD RESERVOIR COMPANY, a mutual ditch corporation organized and existing under and by virtue of the laws of the state of Colorado, first party, and the Poudre Valley Construction Co., Inc., a Colorado corporation, ROBERT S. EVERITT and HAROLD H. MILLER, hereinafter referred to as second parties, WITNESSETH:

WHEREAS, the first party is the owner of the Sherwood Reservoir and the second parties are the owners of real property, all located in the NE 1/4 and the E 1/2 of the NW 1/4 of Section 50, Township 7 North, Range 68 West of the 6th P.M., in Larimer County, Colorado; and

WHEREAS, the second parties are developing said land into subdivisions known as the Lake Sherwood Subdivisions and desires to use said reservoir for fishing, small boats, and ice skating;

NOW THEREFORE, in consideration of the covenants hereinafter set forth, the first party grants to the second parties the right to use the surface of the Sherwood Reservoir for fishing, small boats and ice skating; said boats to be limited to sail boats and row boats. Said rights shall be automatically renewed from year to year so long as the covenants hereinafter contained to be performed by the second parties are performed, and the use granted is not detrimental to the first party.

1. The second parties agree to maintain the banks of the reservoir in a sanitary condition, and to prevent sloughing or erosion of any of said banks.
2. The second parties agree to provide adequate access to the first party, its agents and employees, for repairs, improvement, maintenance or any other purpose, to all parts of the reservoir and dam structure and all of the irrigation structures owned or maintained by first party, including, but not by way of limitation, the inlet, outlet, spillway, dam and ditches. The dam shall be available across the property owned by second parties or their successors in title and shall include an area at least 25 feet in diameter at either end of the dam for machinery and equipment being used in the maintenance of the said dam to turn around. First party shall not be liable to second parties or their successors in title for damage caused by the exercise of these rights, unless said damage was caused by the gross negligence or willful conduct of the first party, its agents or employees. This covenant shall run with the land of first party and their successors in title and shall continue in effect regardless of whether this contract is cancelled as hereinafter provided.

3. Second parties and their successors in title hereby waive any claim for damages to their persons or property caused by runoff over the dam or spillway, or seepage from the said reservoir, except such injury as may be caused by the gross negligence or willful conduct of first party, its agents or employees.

4. The parties of the second part agree to keep said reservoir free from trash and debris, and if necessary, to provide a new trash catcher at the outlet of the reservoir, and at all times to see that the trash outlet is kept clean and free from debris, so that water may freely run through the outlet.

5. The second parties further agree to carry liability insurance in the amount of at least $100,000.00/$300,000.00, with
the first party named as an insured on said policy, and to save
the firsty party harmless from any liability resulting from the
use of said reservoir. Second parties and their successors in
title expressly waive any claim for injury caused to themselves
or any of them resulting from their use or operation of the said
reservoir.

6. It is further understood and agreed that the second parties
may plant grass on the lands of the first party immediately
adjacent to said reservoir, but shall plant no other vegetation.

7. The second parties further agree to form a home owners'
association in connection with the development of their sub-
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which shall provide that said home owners' association shall be
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the respective members of the obligations, covenants and waivers
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shoreline of the reservoir, and that small boats may be put in
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with first party and approval of the plans for the proposed
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9. It is further agreed that second parties shall have the right to restrict the use of said reservoir to members of their home owners' association or to the stockholders, employees and officers of the first party and families of such persons. The second parties shall be entitled to call for and have exhibited to them in the event of such use written proof that the user qualifies under this paragraph.

10. The first party shall have no responsibility to provide any particular water level on the reservoir, and use by the second parties shall at no time interfere with irrigation rights of the first party. Second parties and their successors in title shall not introduce pollutants into the reservoir of such nature as to interfere with the use of water from the reservoir for domestic, agricultural or research purposes.

11. In the event of the failure by the second parties to perform the covenants herein contained, the first party may, at its discretion, cancel this agreement immediately; which cancellation shall be evidenced by written notice to the second parties.

12. It is further agreed that at such time as the second parties have formed a home owners' association which shall be responsible for all common areas in the contemplated subdivision, the rights and obligations of the second parties hereunder may be assigned to the said home owners' association; provided, however, that the second parties shall guarantee performance hereunder by the said home owners' association until such time as a mutually acceptable agreement is drawn and executed or until second parties are specifically released by first party.
13. This agreement shall extend to and be binding upon the heirs, executors, administrators, successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year hereinabove first written.

ATTEST:

[Signature]
Secretary

THE SHERWOOD RESERVOIR COMPANY

By
[Signature]
President

ATTEST:

[Signature]
Secretary

POUDRE VALLEY CONSTRUCTION CO., INC.

By
[Signature]
President

Robert S. Everitt

Harold H. Miller
OFFICE MEMO

Sent to:
D. Hervey, Exp. Stn.
R. Whitney, Agronomy
Calvin Johnson, A

TO: Norman A. Evans, Environmental Resources Center

FROM: Sherwood Reservoir Agreement with Harold Miller

SUBJECT: REMARKS:

The enclosed draft of subject agreement contains all the provisions we asked for in our meetings with Mr. Miller and his attorney. Mr. Strahle has prepared the draft and is satisfied that it protects our interests. Mr. Miller has agreed with the draft.

The agreement is therefore ready to be signed but I would like you to look it over before I sign it.

NAE:mc

enc.
THIS AGREEMENT, made and entered into this ___ day of February, 1971, by and between THE SHERWOOD RESERVOIR COMPANY, hereinafter referred to as the party of the first part, and POUDRE VALLEY CONSTRUCTION CO., INC., ROBERT S. EVERITT, and HAROLD H. MILLER, hereinafter referred to as the parties of the second part, WITNESSETH:

WHEREAS, the party of the first part is the owner of the Sherwood Reservoir located in the North Half (N1/2) of Section Thirty (30), Township Seven (7) North, Range Sixty-eight (68) West of the 6th P.M.; and

WHEREAS, the parties of the second part are the owners of the property which surrounds said reservoir; and

WHEREAS, the parties of the second part are developing said land into a subdivision, and desire to use said reservoir for fishing, small boats, and ice skating;

NOW THEREFORE, in consideration of the covenants hereinafter set forth, the party of the first part grants to the parties of the second part the right to use the surface of the Sherwood Reservoir for fishing, small boats and ice skating; said boats to be limited to sail boats and row boats. Said rights shall be automatically renewed from year to year so long as the covenants hereinafter contained to be performed by the parties of the second part are performed, and the use granted is not detrimental to the party of the first part.

1. The parties of the second part agree to maintain the banks of the reservoir in a sanitary condition, and to prevent sloughing or erosion of any of said banks.
2. The parties of the second part agree to provide adequate access to the party of the first part, its agents and employees, for repair, improvement, maintenance or any other purpose, to all parts of the said reservoir and all of the irrigation structures owned or maintained by first party, including, but not by way of limitation, the inlet, outlet, dam and ditches.

3. The parties of the second part agree to hold the party of the first part harmless from any run-off over the dams and spillway, and to be solely responsible that any run-off from said spillway does not cause injury to any construction by the parties of the second.

4. The parties of the second part agree to keep said reservoir free from trash and debris, and if necessary, to provide a new trash catcher at the outlet of the reservoir, and at all times to see that the trash outlet is kept clean and free from debris, so that water may freely run through the outlet.

5. The parties of the second part further agree to carry liability insurance in the amount of at least $100,000.00/$300,000.00, with the party of the first part named as an insured on said policy, and to save the party of the first part harmless from any liability resulting from the use of said reservoir.

6. It is further understood and agreed that the parties of the second part may plant grass on the lands of the party of the first part immediately adjacent to said reservoir, but shall plant no other vegetation.
7. The parties of the second part further agree to form a home owners' association in connection with the development of their subdivision, the members of which may be authorized to use the surface of the reservoir for the purposes herein specified, and which shall provide that said home owners' association shall be subject to all of the obligations herein contained to be performed by the party of the second part.

8. The party of the first part further agrees that the parties of the second part may erect a small boat landing facility in one place on the North said of said reservoir and in one place on the South side of said reservoir, which erection shall in no way cause erosion of the shoreline of the reservoir, and that small boats may be put in or taken out of the reservoir only at said places.

9. It is further agreed that the parties of the second part shall have the right to restrict the use of said reservoir to members in their home owners' association or to the stockholders of the party of the first part and their employees, with written authorization from the stockholder.

10. The party of the first part shall have no responsibility to provide any particular water level on the reservoir, and use by the parties of the second part shall at no time interfere with irrigation rights of the party of the first part.

11. In the event of the failure by the parties of the second part to perform the covenants herein contained, the party of the first part may, at its discretion, cancel this agreement immediately; which cancellation shall be evidenced by written notice to the parties of the second part.
12. It is further agreed that at such time as the parties of the second part have formed a home owners' association which shall be responsible for all common areas in the contemplated subdivision, the rights and obligations of the second parties hereunder may be assigned to the said home owners' association; provided, however, that the parties of the second part shall guarantee performance hereunder by the said home owners' association until such time as a new agreement is drawn or until the parties of the second part are specifically released by the party of the first part.

13. This agreement shall extend to and be binding upon the heirs, executors, administrators, successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year hereinabove first written.

ATTEST:                      ATTEST:

Secretary                                   Secretary
THE SHERWOOD RESERVOIR COMPANY

By                                     By
President                               President

POUDRE VALLEY CONSTRUCTION CO., INC.

Robert S. Everitt
Harold H. Miller
THIS AGREEMENT made and entered into on this _____ day of June, 1970, by and between SHERWOOD RESERVOIR COMPANY, hereinafter referred to as the party of the first part, and POUDRE VALLEY CONSTRUCTION CO., INC., ROBERT S. EVERITT, and HAROLD H. MILLER, hereinafter referred to as the parties of the second part, WITNESSETH:

WHEREAS, the party of the first part is the owner of the Sherwood Reservoir located in the N 1/2 of Section 30, Township 7 North, Range 68 West of the 6th P.M.; and

WHEREAS, the parties of the second part are the owners of the property which surrounds said reservoir; and

WHEREAS, the parties of the second part are developing said land into a subdivision, and desire to use said reservoir for fishing, small boats, and ice skating;

NOW THEREFORE, in consideration of the covenants hereinafter set forth, the party of the first part grants to the parties of the second part the right to use the surface of the Sherwood Reservoir for fishing, small boats, and ice skating; said boats to be limited to sail boats and row boats. Said rights shall be renewed from year to year so long as the covenants hereinafter contained to be performed by the parties of the second part are performed, and the use granted is not detrimental to the party of the first part.

1. The parties of the second part agree to maintain the banks of the reservoir in a sanitary condition, and to prevent sloughing of any of said banks.

2. The parties of the second part agree to provide adequate access to the inlet, outlet and dam used in connection with said reservoir.
3. The parties of the second part agree to hold the party of the first part harmless from any run-off over the dams and spillway, and to be solely responsible that any run-off from said spillway does not cause injury to any construction by the parties of the second part.

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10. The party of the first part shall have no responsibility to provide any particular water level on the reservoir, and use by the parties of the second part shall at no time interfere with irrigation rights of the party of the first part.

11. In the event of the failure by the parties of the second part to perform the covenants herein contained, the party of the first part may, at its discretion, cancel this agreement immediately; which cancellation shall be evidenced by written notice to the parties of the second part.

12. It is further agreed that at such time as the parties of the second part have formed a home owners' association who shall be responsible for all common areas in the contemplated subdivision, the obligations hereunder may be assigned to said home owners' association; provided, that the parties of the second part shall remain members thereof so long as any property therein is owned by the parties of the second part.

This agreement shall extend to and be binding upon the heirs, executors, administrators, successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year hereinabove first written.

SHERWOOD RESERVOIR COMPANY

By ____________________________

ATTEST:

POUDRE VALLEY CONSTRUCTION CO., INC.

By ____________________________ President

_____________________________  Robert S. Everitt
Secretary

_____________________________  Harold H. Miller
Duplicate pages not scanned

See originals in folder

Water Resources Archive
Colorado State University Libraries
February 24, 1970

Mr. Ronald Strahle  
Secretary-Treasurer  
Sherwood Reservoir Company  
First National Bank Building  
Fort Collins, Colorado

Dear Ron:

This will confirm my brief conversation with you about a meeting with Mr. Allen, Harold Miller, and others wishing to develop an agreement with the Sherwood Reservoir Company for use of the lake surface by residents in a subdivision being developed around the lake.

The Board of Directors would be glad to hear any proposal this group would care to suggest. Our concern is for maintenance and upkeep of the lake. We are also concerned, however, with keeping a harmonious relationship with those who will reside around the lake and believe this can best be achieved by careful ground work at this time as to rights and responsibilities of property owners.

Several of the problems which we foresee are listed below:

1. Access to outlet works and dam for maintenance, repair, and operation.

2. Spillway maintenance and provision for discharge of substantial volumes of water through the watercourse below spillway.

3. Trash and debris which may plug outlet works. (I recommend that any agreement include installation of a trash rack at the outlet.)

4. A greatly fluctuating lake level will be an annoyance to property owners. This situation cannot be changed, however. Winter ice.

5. Shoreline erosion due to wind-driven waves will be a problem for property owners. (Property owner responsibility for erosion protection should be established.)

Body contact sports should not be permitted in the terms of any agreement. (Reference lake owners responsibility for meeting water quality standards.) No motor boats.

6. Trash & debris in outlet ditch & C. J. Johnson

7. Boat Docks - one place

8. Liability Insurance favor of Sherwood Co (100,000 - 300,000)

(?) 10 Surface run-off into ditches.
We believe that the best way to assure long-term responsibility and the most clear understanding with the property owners would be through legal organization of property owners. Agreements should be made with such an organization.

We looked at the alternatives available to us and find two: (1) isolate the lake from the surroundings by fence and prohibit all use of the surface, or (2) authorize a restricted use contingent upon the property owners self-policing. We have concluded the latter alternative to be the most effective and satisfactory approach.

The question of charges for lake use might be considered, but my feeling is that the land owners organization responsibility for shore maintenance and lake-use policing would be adequate compensation to the reservoir company. However, if unforeseen costs should develop because of use of the lake, provision should be provided for appropriate charges to the land owners.

Please arrange a meeting at your own convenience.

Yours truly,

Norman A. Evans  
President, Board of Directors

NAb:mc

Whitney
Bush.
Henvey
Tennell.
Thanks for the copy of your letter to Ron Strahle concerning the above subject. The 6 problems you raised cover the subject rather well.

In regard to item 4, "fluctuating lake level", we might add level of lake during the winter when ice damage may occur to lake dike.

Also, no mention was made about trash and debris in the surface outlet ditches which lead to our underground system and to Calvin Johnson's field.

RSW/hh

cc: T. E. Haus  
D. D. Johnson  
D. F. Hervey
TO: Dr. Norman A. Evans

FROM: John E. Bush

SUBJECT: Agreement between The Sherwood Reservoir Company and the Poudre Valley Construction Co., Inc.

With the pencilled changes made on page 2, the contract appears appropriate in form to me.

Encl.
2. The second parties agree to provide adequate access to the first party, its agents and employees, for repair, improvement, maintenance or any other purpose, to all parts of the said reservoir and all of the irrigation structures owned or maintained by first party, including, but not by way of limitation, the inlet, outlet, dam and ditches. The dam shall be available across the property owned by second parties or their successors in title and shall include sufficient room at either end of the dam for machinery and equipment being used in the maintenance of the said dam to turn around. First party shall not be liable to second parties or their successors in title for damage caused by the exercise of these rights, unless said damage was caused by the gross negligence or willfulness conduct of first party, its agents or employees. This covenant shall run with the land of first party and their successors in title and shall continue in effect regardless of whether this contract is cancelled as hereinafter provided.

3. Second parties and their successors in title hereby waive any claim for damages to their persons or property caused by run-off over the dam or spillway, or seepage from the said reservoir, except such injury as may be caused by the gross negligence or willfulness conduct of first party, its agents or employees.

4. The parties of the second part agree to keep said reservoir free from trash and debris, and if necessary, to provide a new trash catcher at the outlet of the reservoir, and at all times to see that the trash outlet is kept clean and free from debris, so that water may freely run through the outlet.

5. The second parties further agree to carry liability insurance in the amount of at least $100,000.00/$300,000.00, with
March 26, 1971

Ronald H. Strahle
United Bank of Fort Collins
Fort Collins, Co. 80521

Dear Ron:

Mr. Harold Miller brought me a copy of the agreement covering the use of Sherwood Reservoir. In looking it over, four questions are raised about which I would like your advice. They pertain to numbered covenants 2, 3, and 4 on page 2, and the cancellation terms.

2. Access for operation, repair and maintenance needs to be provided for heavy equipment such as a drag line, a truck, or a concrete mixer truck. The only points of access for such equipment to the top of the dam would be at each end of the embankment (unless other special provisions were made). The northwest end of the embankment might be entered from what is designated on the plat as "common area." The embankment actually terminates within one or more of the lots, access through which would obviously be impractical. Should the agreement specify the point of access to the top of the embankment at the northwest end, and, assuming that point is the common area, should ownership of the common area be determined and an easement be recorded? I am concerned about access because we regularly make repairs to the concrete face of the dam requiring heavy equipment and frequently have to repair leaks in the dam by excavating a trench from the top which is filled with concrete to form a cutoff wall. I assume these operations will continue to be necessary.

On the south end of the dam, a grassed spillway exists which might be used as an access from that end. I believe it is important to provide access at both ends for convenience in maneuvering heavy equipment. Turning around on top of the dam is not practical.

3. The spillway on the south end of the embankment is a vital part of the reservoir and must be kept in functioning condition at all times. It has spilled on numerous occasions, some due to heavy storm run-off at a time when the water level is high, and at other times because of the inability of the operator to be able to regulate inflows from Sherwood Ditch. With good luck, the ditch rider can arrange to waste water from the reservoir through the University system as a means of controlling water level. The probability of spillway operation for either or both of the foregoing reasons is high.
Once the spillway operates, the only means of water disposal is through the ditch leading toward the University farm. Spillage can be conveyed through the University system to waste or wasted on farm land east of the railroad track. If spillage exceeds ditch capacity, water will overtop the ditch and run to a low spot west of the railroad tracks where the railway embankment will retain it as a pond.

The parties of the second part most certainly must plan for spillway operation and waste disposal. The Sherwood Reservoir Company should do what it can to assure that adequate and functional spillway capacity is preserved and that it is provided in such a way as not to endanger the embankment by erosion. Also, damage to land of second party should be the responsibility of the second party. As a layman it seems to me our interests are protected by Item 3, but I felt it would be wise to state the circumstances in writing for your full information.

4. We considered trash and debris as the major problems related to use of the reservoir surface by surrounding residents. It occurs to me that liquid pollutants might be allowed to run into the reservoir from surrounding lots, and that it might be wise to cover this eventuality in the agreement. Chemicals used by home owners for cleaning purposes or other uses might be allowed to run into the lake and result in damage to crops or livestock. Such an eventuality would be a disaster to the research program carried out by the University. Could the developers be required to take some action which might obviate this possibility?

A final point of concern relates to cancellation of the agreement by the Sherwood Company. Can we cancel in case some circumstance arises which would dictate cancellation in our own best interest? This might be entirely unrelated to second parties' performance of the covenants.

I will certainly be completely satisfied if, in your judgment, our agreements adequately protect our interest in each of the three eventualities mentioned above.

Yours truly,

H.A. Evans
President
Sherwood Reservoir Company
April 27, 1976

Mr. C. L. Terrell, Secretary  
State Board of Agriculture  
Colorado State University  

Dear Mr. Terrell:

I have the following remarks about the proposed agreement with Lake Sherwood Venture. Numbers are marked in the margin of the draft.

1. We do object to the possible adverse consequences of disposing of subdivision runoff into Lake Sherwood and the reservoir company ought not be burdened with costs required to protect the subdivision from spillway discharge damage. Suggest delete this.

2. The engineers for party of second part will be selected from among faculty of Colorado State University. Delete reference to Evans.

General. This agreement does not relieve Sherwood Reservoir Company of liability for property damage which may result from storm runoff. This liability is created by the willful construction of homes in the floodway of the dam. Lake Sherwood Venture officials understood the hazard involved and acknowledged it through memorandum of agreement concerning rights to use of the lake surface. Should not the new agreement be used to gain protection from flooding damage liability?

Prior to subdivision the potential damage from spillway discharge was that done to crops. There is no channel through the railroad embankment except a ditch with limited capacity. Spillway discharge in excess of ditch capacity collects at the low area in a field next to the railroad embankment. The remedy will be a conduit through the embankment (substantial size) and provision for flood disposal on to the east. It will be expensive.

Yours truly,

Norman A. Evans  
Director

sm
AGREEMENT

THIS AGREEMENT, made and entered into this ____ day of ______________, 1976, by and between THE SHERWOOD RESERVOIR COMPANY, hereinafter referred to as "the party of the first part", and LAKE SHERWOOD VENTURE, a joint venture, hereinafter referred to as "the party of the second part", WITNESSETH:

THAT WHEREAS, the party of the first part is the owner of a reservoir located in the North half of Section 30, Township 7 North, Range 68 West of the 6th P.M., known as Lake Sherwood Reservoir; and

WHEREAS, the party of the second part is developing a portion of the North half of said Section 30 as a residential subdivision; and

WHEREAS, the City of Fort Collins, Colorado, has required the party of the second part to provide for a storm water run-off that will be caused by the development of said subdivision; and

WHEREAS, the party of the second part has no objection to said storm water being channeled into Lake Sherwood Reservoir; and

WHEREAS, under new statutes and regulations, the Office of the State Engineer is requiring the party of the first part to conduct surveys and make certain changes and improvements in the reservoir structure, flood water disposal and other facilities; and the land use change and the addition of storm water run-off from the above-mentioned development may increase the cost of complying with such requirements;

NOW, THEREFORE, it is agreed by and between the parties hereto that the party of the first part gives and grants to the party of the second part the right to channel its storm water from Eldorado Springs Third Filing, a subdivision located in the North half of Section 30, Township 7 North, Range 68 West of the 6th P.M., into Lake Sherwood Reservoir under the following terms and conditions:
1. The party of the second part shall provide adequate protection for the bank of Lake Sherwood Reservoir at such locations as the storm water is allowed to enter the reservoir, consisting of either cement ramps or pipe, so that the water does not erode any part of the banks of the reservoir.

2. In the event studies by engineers of both parties hereto determine that storm water to be generated by Eldorado Springs Third Filing shall increase in any way the cost of complying with the State Engineer's requirements, then the party of the second party shall pay all of such increased expenses including the additional cost of the studies. As an example, but without limitation thereto, such increased costs may be required for higher dam, increased capacity of spillway, and acquiring rights for ultimate disposal of such flood waters to the river. The engineers for the parties hereto shall jointly certify to the said parties such increased costs, if any, which party of the second part shall pay, promptly as such expenses are incurred. In the event of disagreement as to such costs between the engineers, then the facts evolved from the study by the said engineers shall be submitted to a qualified neutral engineering company or organization to be selected by the engineers for each party.

3. It is understood and agreed that James E. Stewart & Associates shall be the engineers for the party of the second part and the Engineering Department of Colorado State University through its Chairman, Norman Evans, shall be the engineers for the party of the first part.

4. The party of the second part shall be responsible for using every reasonable precaution to keep refuse and trash from entering the reservoir through the storm water channels.

5. In the event any of the said conditions are not met by the party of the second part, the party of the first part shall have the right to notify the party of the second part of its failure to comply with said conditions; and in the event the party of the second party has not remedied such failure within thirty (30) days of said notice, or if such compliance within
said thirty-day period is impossible, then within a reasonable period thereafter, the party of the first part may rescind this agreement and the party of the second part shall have no further right to channel storm water into Lake Sherwood Reservoir.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year hereinabove first written.

THE SHERWOOD RESERVOIR COMPANY

ATTEST:

By: ____________________________  President

Secretary

LAKE SHERWOOD VENTURE, a joint venture

ATTEST:

By: EVERITT ENTERPRISES, INC.,
geneneral partner

Secretary

By: ____________________________  President

STATE OF COLORADO ) ss.
County of Larimer )

The foregoing Agreement was acknowledged before me this day of ____________, 1976, by ____________________________, as President, and attested to by ____________________________, as Secretary, of THE SHERWOOD RESERVOIR COMPANY.

Witness my hand and official seal. My commission expires:

__________________________________________

(Seal)  Notary Public

STATE OF COLORADO ) ss.
County of Larimer )

The foregoing Agreement was acknowledged before me this day of ____________, 1976, by ____________________________, as President, and attested to by ____________________________, as Secretary, of EVERITT ENTERPRISES, INC., as general partner of LAKE SHERWOOD VENTURE, a joint venture.

Witness my hand and official seal. My commission expires:

__________________________________________

(Seal)  Notary Public
THIS AGREEMENT, made and entered into on this ____ day of ______________, 1976, by and between SHERWOOD RESERVOIR COMPANY, hereinafter referred to as the party of the first part, and LAKE SHERWOOD VENTURE, a joint venture, hereinafter referred to as the party of the second part, WITNESSETH:

THAT WHEREAS, the party of the first part is the owner of a reservoir located in the North half of Section 30, Township 7 North, Range 68 West of the 6th P.M.; and

WHEREAS, the party of the second part is developing a portion of the North half of said Section 30 as a residential subdivision; and

WHEREAS, the City of Fort Collins has required the party of the second part to provide for a storm water run-off that will be caused by the development of said subdivision; and

WHEREAS, the party of the second part has no objection to said storm water being channeled into Lake Sherwood;

NOW THEREFORE, it is agreed by and between the parties that the party of the first part gives and grants to the party of the second part the right to channel its storm water from Eldorado Springs, Third Filing, a subdivision located in the North half of Section 30, Township 7 North, Range 68 West of the 6th P.M., into Lake Sherwood Reservoir under the following terms and conditions:

1. The party of the second part shall provide adequate protection for the bank of Lake Sherwood Reservoir at such locations as the storm water is allowed to enter the reservoir, consisting of either cement ramps or pipe, so that the water does not erode any part of the banks of the reservoir.

2. In the event the storm water to be generated from Eldorado Springs Third Filing should cause the State Engineer to require the party of the first part to increase the freeboard of said reservoir, over and above any amount otherwise required, the party of the second part shall be responsible for the costs.
incurred in increasing the freeboard of the reservoir in proportion to the total amount of additional freeboard required and that portion attributable to the aforesaid storm water.

3. The party of the second part shall be responsible for using every reasonable precaution to keep refuse and trash from entering the reservoir through the storm water channels.

4. In the event any of the said conditions are not met by the party of the second part, the party of the first part shall have the right to notify the party of the second part of its failure to comply with said conditions, and in the event the party of the second part has not remedied such failure within sixty (60) days of said notice, the party of the first part may rescind this agreement and the party of the second part shall have no further right to channel storm water into Lake Sherwood Reservoir.

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year hereinabove first written.

SHERWOOD RESERVOIR COMPANY
By __________________________

PARTY OF THE FIRST PART

LAKE SHERWOOD VENTURE, A JOINT VENTURE
By __________________________

PARTY OF THE SECOND PART
MEMO:

Mom - Bill Store and I would like you to look over this contract - we got them to change paragraph 4 as you see by the insert but we don't like to let them off without any liability. Just to change about the fish feed board. Will get back to you tomorrow if possible.

Cal 482-3664

Thanks Cal
AGREEMENT

THIS AGREEMENT, made and entered into on this _____ day of ___________, 1976, by and between THE SHERWOOD RESERVOIR COMPANY, hereinafter referred to as "the party of the first part", and LAKE SHERWOOD VENTURE, a joint venture, hereinafter referred to as "the party of the second part", WITNESSETH:

THAT, WHEREAS, the party of the first part is the owner of a reservoir located in the North half of Section 30, Township 7 North, Range 68 West of the 6th P.M., Larimer County, Colorado, known as Lake Sherwood Reservoir; and

WHEREAS, the party of the second part is developing a portion of the North half of said Section 30 as a residential subdivision; and

WHEREAS, the party of the second part, their successors and assigns, intend, in the future, to develop other lands with drainage necessarily flowing into said reservoir or its outlet; and

WHEREAS, the City of Fort Collins, Colorado, has required the party of the second part to provide for storm water run-off that will be caused by the development of such lands; and

WHEREAS, under new statutes and regulations, the Office of the State Engineer is requiring the party of the first part to conduct surveys and make certain changes and improvements in the reservoir structure, flood water disposal and other facilities; and the land use change and the addition of storm water run-off from the above-mentioned developments may increase the cost of complying with such requirements;
NOW, THEREFORE, it is agreed by and between the parties hereto that the party of the first part grants to the party of the second part the right to channel its storm water from Eldorado Springs Third Filing, a subdivision located in the North half of Section 30, Township 7 North, Range 68 West of the 6th P.M., into Lake Sherwood Reservoir under the following terms and conditions:

1. The party of the second part shall provide adequate protection for the banks of Lake Sherwood Reservoir at such locations as the storm water is allowed to enter the reservoir, consisting of either cement ramps or pipe, so that the water does not erode any part of the banks of the reservoir.

2. In the event studies by engineers of both parties hereto determine that storm water to be generated by Eldorado Springs Third Filing shall increase in any way the cost of complying with the State Engineer's requirements, then the party of the second part shall pay all of such increased expenses including additional cost of the studies. As an example, but without limitation thereto, such increased costs may be required for higher dam, increased capacity of spillway, and acquiring rights and building facilities for ultimate disposal of such flood waters to the river. The engineers for the parties hereto shall jointly certify to the said parties such increased costs, if any, which party of the second part shall pay, promptly as such expenses are incurred. In the event of disagreement as to such costs between the engineers, then the facts evolved from the study by the said engineers shall be submitted to a qualified neutral engineering company or organization to be selected by the engineers for each party for determination.

3. The party of the second part shall have the obligation to pay such costs as referred to in paragraph "2." above, not only
for the runoff attributable to the development of Eldorado Springs Third Filing, but any and all other future development by the party of the second part, its heirs and assigns, lying within the natural or created drainage area of Lake Sherwood Reservoir.

4. The party of the second part further agrees to hold harmless and relieve party of the first part from any and all liability for personal injury or property damage occurring from flooding or storm runoff, either into the reservoir or being discharged therefrom, which results or may result from any non-farm development by the parties of the second part above or below said reservoir, not the result of activities of first party. The party of the first part further agrees that except for that storm and flood water historically entering Sherwood Reservoir, no other storm water or flood water or a concentration of surface water caused by a change in the use of the land from agricultural to residential or commercial, shall be diverted into the reservoir without the prior written consent of the parties of the second part. The party of the first part further agrees to allow one foot of freeboard from the upper level of the lake to the top of the lowest spillway in the normal operations of the reservoir.

5. It is understood and agreed that James E. Stewart & Associates shall be the engineers for the party of the second part and engineers selected from the faculty of Colorado State University shall be the engineers for the party of the first part.
for the runoff attributable to the development of Eldorado Springs Third Filing, but any and all other future development by the party of the second part, its heirs and assigns, lying within the natural or created drainage area of Lake Sherwood Reservoir.

4. The party of the second part further agrees to hold harmless and relieve party of the first part from any and all liability for personal injury or property damage occurring from flooding or storm runoff, either into the reservoir or being discharged therefrom, which results or may result from any non-farm development by the parties of the second part above or below said reservoir, not the result of activities of first party. The party of the first part agrees that if it should allow storm and flood water or a concentration of surface water caused by a change in the use of any land West of the reservoir from agricultural to residential or commercial, to be diverted into the reservoir, except for that storm and flood water and surface water historically entering Sherwood Reservoir, without the consent of the party of the second part, the party of the second part shall be relieved from any liability provided in this agreement. The party of the first part further agrees to operate the reservoir so that the freeboard between the upper level of the lake and the top of the lowest spillway is maintained as it has been maintained historically.

5. It is understood and agreed that James E. Stewart & Associates shall be the engineers for the party of the second part and engineers selected from the faculty of Colorado State University shall be the engineers for the party of the first part.
6. The party of the second part shall be responsible for using every reasonable precaution to keep refuse and trash from entering the reservoir through the storm water channels.

7. In the event any of the said conditions are not met by the party of the second part, the party of the first part shall have the right to notify the party of the second part of its failure to comply with said conditions; and in the event the party of the second part has not remedied such failure within thirty (30) days of said notice, or if such compliance within said thirty-day period is impossible, then within a reasonable period thereafter, the party of the first part may rescind this agreement and the party of the second part shall have no further right to channel storm water into Lake Sherwood Reservoir.

8. In the event either of the respective parties hereto shall default in any of their covenants herein so as to require the party not in default to commence legal or equitable action against the defaulting party, the defaulting party agrees to pay all reasonable expenses of said litigation including attorneys fees.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year hereinabove first written.

THE SHERWOOD RESERVOIR COMPANY
By_________________________________ President

By_________________________________ Secretary
(SEAL)

LAKE SHERWOOD VENTURE, a joint venture
By: EVERITT ENTERPRISES, INC.,
general partner
By: ____________________________ President

By: ____________________________ Secretary
(SEAL)

ATTEST: ____________________________

By: ____________________________ President

By: ____________________________ Secretary
(SEAL)

ATTEST: ____________________________

By: ____________________________ Secretary
(SEAL)
STATE OF COLORADO  )
County of Larimer  )

The foregoing instrument was acknowledged before me this _______ day of __________, 1976, by _____________________________, as President, and _____________________________, as Secretary, of THE SHERWOOD RESERVOIR COMPANY.

Witness my hand and official seal.

My commission expires:

______________________________
Notary Public

STATE OF COLORADO  )
County of Larimer  )

The foregoing instrument was acknowledged before me this 1st day of June, 1976, by Robert S. Everett as President, and R. Robinson as Secretary, of EVERITT ENTERPRISES, INC., as general partner of LAKE SHERWOOD VENTURE, a joint venture.

Witness my hand and official seal.

My commission expires: February 1, 1978 ____________________________
[Signature] Notary Public

STATE OF COLORADO  )
County of Larimer  )

The foregoing instrument was acknowledged before me this ______ day of __________, 1976, by _____________________________, as President, and _____________________________, as Secretary, of ESL CORPORATION.

Witness my hand and official seal.

My commission expires:

______________________________
Notary Public
March 19, 1981

Mr. Alan E. Pearson, Chief
Design Review Unit
Colorado Division of Water Resources
1313 Sherman Street
Denver, CO 80203

SUBJ: Sherwood Dam - C-1555, Water Division 1, Water District 3

Dear Mr. Pearson:

This is to request your field inspection of the improved spillway on subject dam. The contractor will be available to meet your representative at the site whenever it is convenient for you. Please call Tom Stafford, Everitt Enterprises, Inc., at 226-1500 in Fort Collins to make the appointment. Mr. Stafford will meet you at the site.

I am writing at the request of Mr. William Stover, the Secretary for Sherwood Reservoir Company, owner of the dam and reservoir. His address is 110 East Oak Street, Fort Collins. Although I prepared the design for the spillway, I am not acting at this time as engineer for the owner. The consulting firm of James H. Stewart and Associates is handling the field construction (Mr. Phil Robinson, 482-9331).

Thank you for your assistance.

Yours truly,

Norman A. Evans
Director

bb

xc: Mr. Stover
    Mr. Stafford
Gentlemen:

On July 21, 1981, a final inspection of the construction work on the spillway on this structure was performed. The costs incurred for this inspection are as follow:

1. Salary for inspecting engineer:
   1 hour at $18.12 per hour .......................... $ 18.12

2. Travel expenses:
   20 miles at $0.20 per mile .......................... $ 4.00

3. Subsistence at actual cost not to exceed
   State of Colorado employees maximum
   subsistence limits ................................. $ 0.00

4. Any other extra ordinary expenses (itemized) ................ $ 0.00

5. TOTAL ........................................... $ 22.12

6. Maximum allowable: 1 day (s) @ $125/day ............. $125.00

In accordance with CRS 1973, 37-87-106 as amended, assessable charges for this inspection are: .................. $ 22.12 *

(* Lesser amount of 5 or 6)
Based on this inspection and a letter from Phillip Robinson, P.E., of James H. Steward and Associates, Inc., certifying that the spillway was constructed as shown on submitted "AS-BUILT" drawings, the approved construction work on this spillway will officially be accepted as complete when the above assessable charges are paid.

The "AS-BUILT" plans show a spillway width of 58 feet and a spillway freeboard of three (3) feet.

Acceptance of this structure in no way relieves the owner from liability in case of failure of the structure or from any other statutory obligations.

Sincerely,

[Signature]

Janis A. Danielson
State Engineer

JAD/EWW:pkr

cc: James Clark, Div. Eng.
    John W. Neutze, Water Commissioner
    Philly Haas, Accounting
    Phillip I. Robinson, P.E., & L.S.
    Tom Stafford
    William C. Stover, Esq.
MANUAL OF
RULES AND REGULATIONS
FOR FILING CLAIMS
TO WATER
AND
PLANS AND SPECIFICATIONS
FOR THE
CONSTRUCTION OF
RESERVOIR DAMS

DIVISION OF WATER RESOURCES
OFFICE OF THE
STATE ENGINEER
OF COLORADO

1967
Rules and Regulations Concerning the Filing of Claims of Appropriation of Water, and Plans and Specifications for the Construction of Reservoir Dams in the Office of the State Engineer of Colorado.

No filings can be accepted by the office of the State Engineer unless the same comply with the following requirements and are accompanied by the fees required by law.

FILINGS

The laws of Colorado relating to the appropriation and use of the public waters of the State require that all claims thereto shall be filed in the office of the State Engineer and shall be prepared in accordance with the following rules and regulations.

The Supreme Court of Colorado has held that the term "natural stream" is "intended to include all tributaries and streams draining into other streams"; also that "the word 'tributary' as used in the statutes relating to water districts, includes all sources of supply which go to make up the natural stream, and that percolating waters finding their way to a stream are tributary thereto." Again, the Supreme Court has held that "waters seeping from a reservoir or other works of an appropriator, and which in their natural course flow to the stream and mingle therewith, are from the moment of their escape, as much a part of the stream as after they have reached it."

Maps and Drawings relating to claims of appropriation of the public waters of Colorado.

Chapter 148-4-1 of the Colorado Revised Statutes, 1963, provides that —

"Every person, association or corporation constructing or enlarging any reservoir or constructing, changing the location of, or enlarging any ditch, canal or feeder for any ditch or reservoir, for the purpose of furnishing a supply of water for domestic, irrigation, power, storage, or for any other beneficial use, taking water from any natural stream, within sixty days after commencement of such construction, change of location, or enlargement, shall make a filing in the office of the State Engineer for each specific claim, in such form as shall seem sufficient and satisfactory to the State Engineer, and accompanied by the proper fees, as provided by statute."

The period of sixty days above mentioned may date from the beginning of surveys or of actual construction.

All maps and drawings must be prepared on a good quality of tracing linen. Translucent "Age Proof Drafting Film" (approximately 0.003 inches in thickness) or its equivalent will be acceptable. However, any filing deemed not to be of a permanent nature will not be acceptable. A margin of 2 inches on the lefthand end and a margin of ½ inch on the other three sides must be provided, making the available space for the map 23 x 33½ inches. All maps and drawings must be made of this size irrespective of the size of the reservoir, dam or the ditch shown.

(Required Size of Map)

36" Top

← Border line to be placed 2" from left side and ½" from other 3 sides.

Left Side

Right Side 24"

Bottom

Space must be left in the lower right hand corner for placing thereon the filing number.

The scales used in preparing the maps or drawings are not herein fixed, but should be sufficient to clearly show each bearing or course and distance and all other needful information. In the case of reservoir maps, it is desirable that a scale of approximately 400 feet to the inch be used to properly show the proposed works. In case the magnitude of surveys or plans, is too extensive to be incorporated on one sheet, two or more sheets may be used, in which event, each sheet should be marked "Sheet No. 1 of .......... sheets; sheet No. 2 of .......... sheets," etc. In such event, each sheet should bear the general title used. No ad-
ditional fee is charged when a filing consists of more than one sheet.

Black waterproof ink must be used in preparing all maps, drawings and plans and statements thereon and in affixing all signatures, dates, etc.

Statements of claims and signatures must be placed upon all maps and drawings and not upon detached sheets. Where more than one sheet is required, place such statements and signatures upon the first or last sheet only.

It is necessary that the form of statements and affidavits as herein provided, be followed.

A person may sign statements as an agent for others, and authority for so doing shall be a power of Attorney duly executed and recorded in the office of the County Clerk and Recorder of the County where the project is located. Such statement properly authenticated must accompany all maps but must not be attached thereto.

All maps should be prepared by, or under the direction of a Registered Professional Engineer or Land Surveyor, who must impress their official seal immediately following their signature. The seal of the notary taking acknowledgement of the engineer or surveyor, must likewise be impressed upon the map or drawing and not attached thereto in the form of a wafer.

All statements must be signed by the claimant or claimants. When the claimant is a Corporation, the name thereof and that of the official authorized to act for the Corporation together with his official title should be subscribed and attested to by the Secretary thereof and the corporate seal impressed upon the map.

Maps which have been folded or creased in any way, will not be accepted for filing. For transmission to this office, the same should be rolled on a stick and securely wrapped, or placed in a substantial pasteboard tube with the ends properly sealed.

With respect to maps covering filings for ditches, it is necessary that the survey for the same start at the point where the water is to be diverted from the source of supply or, in the case of a reservoir, from one end of the dam at high water line. The map must show by Section, Township and Range, the general location or place of the use of the water claimed or appropriated.

After a map has been accepted for filing, a print of the same will be furnished the consignee without cost. Such print must be filed in the office of the Clerk and Recorder of the County in which the headgate of the proposed ditch or the reservoir is located, within ninety days after the commencement of such work.

If a negative of a map which requires payment of a filing fee is desired the same will be furnished free of charge, if requested, when the map is transmitted to this office.

In the case of Amended filings where no additional water is claimed, only the regular charges for prints and negatives will be made.

No filings will be accepted until the maps or drawings are received in correct form and payment of all required fees have been made. Maps and drawings returned for correction, are not considered as having been filed.

All maps and drawings must be prepared in a neat and workmanlike manner and all lettering thereon, together with signatures, must be entirely legible.

A specific claim shall be made from each separate source of supply for each reservoir, ditch or canal.
FORM OF TITLE
(To be placed on each sheet)
Map of the

.................................. (Ditch or) Reservoir
.................................. County, Colorado

Irrigation Division No. ..................
Water District No. ..................
Courses Referred to (True Mer., or Mag.,
Mer., Public Land Survey).
Scale ................................ ft.
(Do not mention in the title, the names of
ditches or reservoirs for which no specific
claim is made.)
(A ditch or reservoir is considered to be
in the water district in which its source of
supply is located, and must be so stated on
the map.)

FORM OF STATEMENT FOR DITCH,
CANAL OR PIPELINE.

Know all men by these presents: That the
undersigned ..................... claimant(s), whose postoffice address is
................................... ha....
caused to be located the ................................
................................... Ditch (Canal, or Pipeline)
as hereinafter mentioned, ha.... made
these several statements relative thereto,
and filed the same in compliance with the
laws of the State of Colorado. The accompa-
nying map shows the location of said
ditch, (canal or pipeline) and forms a part
of this filing.

First: The headgate is located at a point
on the .................................. bank of
(name of stream, spring or seepage area)
.................................................. from
which it derives its supply of water, whence
the ................................... corner of Section
Township ............. Range ............. of the
............. Meridian, bears (course and dis-
tance) ....

(In naming the source of supply, if tribu-
tary to another stream, give also the name
of the latter stream in the statement.)

Second: The depth of said ditch at high
water line is ............... feet.
The width of said ditch at high-water line
is ............... feet.
The bottom width of said ditch is ............... feet.
The grade of said ditch is ............... feet per 1,000 feet.
The length of said ditch is ............... feet.
(If a pipe line is used, the foregoing state-
ment should be changed to include char-
acter of pipe, diameter and gradient which
determine its capacity.)

Third: The carrying capacity of said ditch
(or pipe) is ............... cubic feet per second
of time, for which claim is hereby made
for ............... purposes.

Fourth: The estimated cost is $..........
Fifth: Work was commenced by survey
(or actual construction) on the .............
day of ................................ 19..........

Sixth: Claimant's signature.
The filing map for a ditch should show the
following:

First: The location of the headgate, by
course and distance, to a corner of the
public land surveys or, if upon unsurveyed
land, to two or more natural objects of per-
manent character which should be clearly
described.

Where a ditch has two or more separate
sources of supply, it is considered as having
two or more headgates, and ties between
each headgate and a legal corner must be
shown. A definite and specific claim to
water from each source of supply must be
made.

Second: The name and general course of
the stream or streams.
Third: The route of the ditch by courses and distances. Where a portion of a natural stream is used as a ditch or conduit, ties must be given to the points where the water claimed, enters and leaves the natural stream or streams involved and their direction of flow indicated. Also, a small sketch must be placed on the map showing the general location of the ditch or canal and of the natural stream or streams used as a carrier. Use of a stream as a carrier is allowed by statute where water is diverted from one drainage area to another area or as a carrier of reservoir water.

Fourth: All legal or lesser subdivisions and designations thereof and the ownership of land crossed by the ditch or canal.

Fifth: The true north and magnetic declination should be indicated by arrows.

Sixth: Each map must plainly show the proper Section, Township, Range and Meridian.

SEEPAGE DITCHES

Filing maps for seepage ditches should show ties between the upper ends or branches of each ditch and a legal corner of the public land surveys. Each branch constitutes a separate source of supply for which a separate and specific claim of appropriation must be made.

The statement should give the size, grade, carrying capacity, length, etc., as required for other ditches. The source of supply for seepage ditches must be given in substantially the following form:

"The headgate is located at a point in a seepage area tributary to ...................... (Name of natural stream), from which it derives its supply of water, etc." The general form of statement as given for other ditches should be used.

Where a spring is the source of supply, the statement should show that the intake or headgate of the ditch or pipe line is located at the spring which is tributary to ............... (stream), and from which spring it derives its supply of water, and from which point the ............... corner, Section ............... Township ............... Range ............... of the ............... Meridian bears (course and distance) ............... 

FORM OF STATEMENT FOR RESERVOIRS.

Know all men by these presents: That the undersigned ............... claimant(s), whose postoffice address is ............... caused to be located The ............... Reservoir as hereinafter mentioned, ha........ made these several statements relative thereto, and filed the same in compliance with the laws of the State of Colorado. The accompanying map shows the location of said reservoir, and forms a part of this filing:

First: Maximum height of dam is ............... feet.

(Note.—Height of dam is the distance from the lowest point of the valley floor to the lowest point in the crest of the dam.)

Second: The initial point of survey of the high-water line of the reservoir is located at a point whence the ............... corner of Sec. ............... Twp. ............... Range ............... of the Meridian bears (course and distance) ............... 

(Do not make tie to a corner located within the high-water area of the reservoir.)

Third: The following table gives the area in sq. ft. and the total capacity of said reservoir in cubic feet and in acre feet for
each foot in depth, from the bottom of the outlet tube at the upper end thereof, up to and including the high-water line.

<table>
<thead>
<tr>
<th>Depth in Feet From Bottom From</th>
<th>Total Area in Sq. Ft.</th>
<th>Total Capacity in Cu. Ft.</th>
<th>Total Acre Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(High-water line)

For reservoirs having a capacity in excess of 1,000,000 cubic feet, the total capacity need be shown only in acre feet in this tabulation.

Fourth: The total capacity of said reservoir is ______________ acre feet for which claim is hereby made for ______________ purposes.

Fifth: The source of supply for said reservoir is (name of stream) ______________

Sixth: The estimated cost is $____________

Seventh: Work was commenced by (survey or construction) on the ______________ day of ______________, 19___.

Eighth: Claimant's signature ______________

The filing map for a reservoir shall show the following:

First: The location of the initial point of survey by course and distance to a corner of the public land surveys or to two or more natural objects, if upon unsurveyed land. The initial point of survey should be on the high-water line at one end of the proposed dam.

Second: The high-water line of the reservoir by courses and distances and the location of the proposed dam. It is required that the contours at five foot intervals above the bottom of the outlet of the reservoir be shown. These contours must be determined by actual field surveys and the correct elevations thereof shown on the map.

Third: The stream upon which the reservoir is located, together with the name and direction of flow of same, shall be shown.

Fourth: Ditches leading to and from a reservoir with names thereof, together with courses and distances, grade, section of water prism and capacity of same in cubic feet per second, must be shown. Where a natural stream is used as a carrier, the ditch must be shown from the point of diversion thereon, to the point of use.

Fifth: The 40-acre tracts and other legal subdivisions together with the ownership of the land on which the reservoir is located, or through which the inlet and outlet ditches pass.

Sixth: The north direction indicated by an arrow. All sections and section corners, townships, ranges and meridian, must be shown by proper numbers and names.

**FORM OF THE ENGINEER'S OR LAND SURVEYOR'S STATEMENT**

STATE OF COLORADO

County of ______________

____________________, being duly sworn on his oath, deposes and says that he is the engineer (or land surveyor) of the ______________

____________________ Ditch (or Reservoir); that the survey of the same and the map thereof were made by him (or under his supervision and instructions) and that such survey is
accurately represented upon this map; that he has read the statements thereon and that the same are true of his own knowledge.

(Seal) Engineer or Surveyor

Subscribed and sworn to before me this day of .........., A.D. 19......
My Commission expires ........................................
(Seal) Notary Public

The following form of certificate is to be placed on each and every sheet near the lower right hand corner of the tracing:

"Accepted for filing in the Office of the State Engineer of Colorado on the ............
day of ......................, 19........

State Engineer

By: ................................................................. Deputy

ENLARGEMENTS OR EXTENSIONS

In case of enlargements or extensions of any ditch, the map must show the changes resulting in the enlargement or extension. The statement must give the depth, widths, grade and length in feet and carrying capacity of the ditch in cubic feet per second before and after the enlargement. The time of commencement of work on the enlargement or extension and the estimated cost thereof.

Where filings are made for extensions of existing ditches, a proper tie between the lower end of the existing ditch, which is the initial point of the extension, and a legal corner must be shown. A sketch showing the general location of the original ditch together with a tie from the original headgate to a legal corner must also be shown.

In case of enlargements of reservoirs, the map must show the high-water line, by courses and distances, and the five-foot contours of the reservoir as enlarged or changed, and the elevations thereof with respect to the bottom of the upper end of the outlet conduit, and a complete capacity table indicating the original high-water line and original capacity of same on the table.

DO NOT CONFUSE FILINGS FOR ENLARGEMENTS WITH THOSE FOR AMENDMENTS

In making filings for enlargements, claims of appropriation of water should be made only for the difference in capacity before and after enlargement.

AMENDED FILINGS

Whenever it is desired to amend a filing, after the same has been accepted by the State Engineer, it will be necessary to file a new map and statement on tracing cloth of the regulation size. This map must be complete in itself, and conform to the standard requirements for filings. The amended filing should show thereon the original location of the ditch or reservoir and a resumé of the original statement of claims therefor, and all amendments thereto.

PRELIMINARY FILINGS

The following is a quotation from the statute permitting preliminary filings:

"Whenever, through the necessity for extended surveys requiring long periods of time, it shall be impracticable for the
claimant to file a complete map or statement within sixty days, as required in Section 148-4-1, a map and statement as complete as can be prepared within sixty days shall be filed, and with a further statement that a complete map and statement will be filed later, and upon the completion of such survey a full and detailed map and statement amending those first filed shall be offered for examination and acceptance in the same manner as herein provided for the original filing."

The reasons for filing a preliminary map should be included in the statement.

The engineer or surveyor making a preliminary map shall make every effort, using all information available, to produce a filing meeting legal requirements for the protection of his client. The engineer or surveyor shall inform his client that a final filing must be made and submitted within a reasonable length of time.

**LIST OF FILING FEES REQUIRED BY LAW**

(Remittances should be by check, bank draft, post office or express money order.)

(The State and all legal subdivisions thereof, and municipalities are exempted from the payment of filing fees.)

1. For the examination and filing of each map and statement of claim of appropriation of water for direct use, the fee is $20 if the amount of water claimed does not exceed twenty (20) cubic feet per second of time, and an additional $1 for each cubic foot per second of time claimed in excess of twenty (20); provided, however, that the maximum fee shall not exceed $150 for any one claim.

Each claim is for one ditch or reservoir deriving its supply from one stream. Two claims will consist of two ditches or reservoirs deriving their supply of water from one source, or one reservoir or one ditch deriving its supply of water from two different sources, etc.

Where a ditch or a reservoir obtains its supply of water from two or more separate sources, it is necessary to make specific claims for a definite amount of water from each source.

2. For the examination and filing of each map and statement of claim of appropriation of water for storage, $20 for each one thousand (1000) acre feet or fraction thereof, of the storage capacity claimed; provided, however, that the maximum fee shall not exceed $150 for any one claim.

3. For filing each judicial decree ordering the transfer of a water right or change in point of diversion, $2.

4. For filing of a record of transfer of ownership or claim to water, $1.

5. For each certificate requiring official signatures and seal, $2.

6. For the examination and filing of each set of plans and specifications for a reservoir dam, $2 for each $1,000 or fraction thereof of the estimated cost, provided however, that the maximum fee shall not exceed $200.

7. For copies of maps or other records, $2 for each hour or fraction thereof necessary for the preparation of the same.

8. For each print or sepia negative of a filing or tracing forming a public record, $2 per sheet.

9. For copies of records, fifty (50) cents per folio.
10. For photostatic copies of maps and records, cost plus 10 per cent.

Fees for preliminary water filings are based upon the amount of water claimed.

Fees for enlargement of ditches and reservoir filings are based upon the additional amount of water claimed; that is, the amount claimed in excess of the original claims.

A filing for the extension of a ditch is an enlargement in the sense that it involves an enlarged use of water and the fee is based upon the additional amount claimed for the extension.

Filings made to rectify errors in original filings or to show proposed changes, are considered to be amended filings, and where no additional water is claimed over the original filing, no additional fee is required; however, the regulation charge for blueprints or negatives is made.

Instructions for the Preparation and Filing of Plans and Specifications for the Construction, Enlargement or Repair of Dams.

GENERAL

Chapter 148-5-5, Colorado Revised Statutes, 1963, relating to the construction of, and supervision over dams in Colorado, provides that “No reservoir of a capacity of more than one thousand acre-feet or having a dam or embankment in excess of ten feet in vertical height, or having a surface area at high-water line in excess of twenty acres shall hereafter be constructed in this state except that the plans and specifications for the same shall have first been approved by the State Engineer and filed in his office. The State Engineer shall act as consulting engineer during the construction thereof, and shall have authority to require the material used and the work of construction to be done to his satisfaction. No work shall be deemed complete until the State Engineer shall furnish to the owners of such structures a written statement of the work of construction and the full completion thereof, together with his acceptance of the same, which statement shall specify the dimensions of such dam and capacity of such reservoir.”

The above reference to the vertical height of a dam is taken to mean the vertical distance between the crest of the dam and the lowest point in the valley floor beneath the same.

Chapter 148-5-6, Colorado Revised Statutes, 1963, provides that “The owners of such reservoirs shall pay to the State Engineer his actual expenses incurred in making personal inspection, and shall pay to
any deputy appointed by him to attend to such supervision not to exceed ten dollars per day and actual expenses for each and every day necessarily employed for such purposes."

The foregoing provisions of law have been constructed by the Attorney General as applying to the repair and maintenance of dams in the interest of public safety, as well as to the original construction thereof.

Chapter 148-5-7, Colorado Revised Statutes, 1963, provides that "The State Engineer shall annually determine the amount of water which it is safe to impound in the several reservoirs within this state and it shall be unlawful for the owners of any reservoir to store in said reservoir water in excess of the amount so determined by the State Engineers to be safe."

All plans and specifications must be prepared by, or under the supervision of, a registered professional engineer who shall sign and certify to the statements shown therein.

The type of dam suitable for the purposes intended and for the site selected is left to the discretion of the engineer of the owner, subject however, to the approval of the State Engineer.

Plans and specifications must be sent to this office sufficiently in advance of the commencement of construction to allow ample time for their review, for the examination of the dam site, and for any necessary alterations or amendments which may be required by the State Engineer.

The title, which should be identical on both the plans and specifications should include the name of the dam, the county in which the dam is located, the irrigation division and the water district. If the work is composed of the repair, enlargement, or other major change or alteration, this should also be stated in the title proper.

Plans and specifications shall include provisions for measuring devices above and below the reservoir, and shall also provide for the installation of a permanent gage rod near the outlet of the reservoir, which shall be plainly marked in feet and tenths of feet. The zero of the gage rod must be placed at the same elevation as the invert at the upper end of the outlet conduit. In the case of a masonry structure with a vertical upstream face, the gage rod may be placed with appropriate numbers on the face of the structure.

A print or sepia negative of the approved plans, together with one or more sets of the specifications when approved, will be furnished the consignee free of cost if a filing fee has been paid. If the consignee has been exempted from said filing fee, the standard charges for any of these types of prints will be made.

**PLANS FOR DAMS**

Plans for the construction or repair of all dams coming under the supervision of the State Engineer must be prepared on sheets of a good grade of tracing linen trimmed to an overall size of 24 x 36 inches. A margin of 2 inches must be left at the left-hand edge for binding, and a margin of ½ inch should be left on the other three sides, making the available space for the drawing 23½ inches long by 23 inches wide.

The following forms of certificates are to be placed near the lower right-hand corner of each sheet:

I hereby certify that these Plans for the construction (or the repair) of the ............. ........................................... dam, were prepared by me (or under my direct supervision) for
the owners thereof.

(Signature) Registered Engineer

I, ................................................................., owner, whose postoffice address is ................................................................., do hereby accept and approve these Plans for the construction (or repairs thereto) of the ................................................................. dam.

.................................................................

Owner

"Approved on the ................................... day of ................................................................., 19..........

.................................................................

State Engineer

By: .................................................................

Deputy

Space should also be left in the lower right-hand corner for placing thereon the filing number of this office.

(Required Size of Map)

36" Top

← Border line to be placed 2" from left side and ½" from other 3 sides.

20

The general design of the dam and of each structure, together with all details, must be shown in plan, side and end elevations. All drawings must show dimensions and elevations, location and sizes of reinforcing steel, etc. A small inset map should also show the location of the drainage area tributary to the reservoir, the area thereof in square miles, the location of the reservoir and capacity in acre-feet at spillway level. In addition, the plans must show the following:

1. A topographic map of the dam site showing sections, township and range on which should be shown the location of the proposed dam, spillway with dimensions thereof and outlet works; also all borings, test pits, borrow pits, bonding and cutoff trenches or walls and drainage system. In other words, a plan of the proposed construction work.

2. A cross-section of the dam site showing the location, elevations, depth of borings or test pits, together with the different kinds and thicknesses of materials encountered below the surface.

3. A maximum cross-section of the dam showing the elevation and width of crest, slopes of upstream and downstream faces, thickness or riprap, location of the cutoff and bonding trenches, elevation, size and type of outlet conduit, valves and operating mechanism.

4. Detail drawings showing plan, cross and longitudinal sections of the outlet conduits, valves and means for operating the same, and of the trash racks. A curve or table showing discharge capacity in second feet for each foot of Head over the center-line of the inlet to the outlet structure, and the formula or method used in making such determinations.
5. A curve showing the discharge capacity in second feet, of the spillway for each foot in depth up to the estimated high-water line, and the formula used in making such determinations.

6. Detail plans of spillway structures, cross-section of the channel leading to and from the spillway and spillway profile.

7. The initial point of survey of the dam must be tied to a recognized legal section corner, quarter corner, H.E.S. corner, as set forth in the requirements for a filing map and statement.

Seepage through or under an earth dam will generally occur. The safety of the structure will largely depend upon the location of the line of saturation through the dam, the control of which must be given serious consideration.

Such control may be effected by various means, such as increasing the flatness of the slopes of the faces of the dam, use of porous and stable material in the downstream section of the dam, and/or by means of drainage systems incorporated within and under the downstream third of the dam.

In no instances should borrow pits be located closer than 200 feet of either toe of an earth dam nor below the high-water line of the reservoir except with the written approval of the State Engineer. Borrow pits should be provided with outlet drains.

The Plans should be prepared in sufficient detail so that a reasonably accurate cost estimate and evaluation of the adequacy of the proposed works may be made.

SPECIFICATIONS

The Specifications must be prepared at least in triplicate on a good grade of white bond paper, 8½ x 11 inches in size, and in sufficient detail to assure that the works will be properly executed. This requirement involves numerous items relating not only to design, but also to the character and placing of materials which will be used in the construction. Two copies of the approved specifications will be retained by this office and all other copies will be returned to owner or his agent.

The following forms of certificates are to be placed near the front of the specifications:

I hereby certify that these Specifications for the construction or repair of the .......... Dam were prepared by me (or under my direct supervision) for the owners thereof.

(SEAL) Registered Engineer

I, ........................................ owner, whose postoffice address is .......................... do hereby accept and approve these Specifications for the construction (or repair) of the .......... dam.

Owner

Approved on the ...................... day of ............, 19........

........................................ State Engineer

By: ........................................ Deputy

The Specifications shall include provisions for adequate supervision by the engineer of the owner during the period of construction, and for inspection by the Office of the State Engineer. The owner's engineer shall notify the State Engineer of
the date of completion of construction, and certify that the work was in compliance with the Plans and Specifications on file.

They should also contain a provision to the effect that the Plans and Specifications may not be materially changed in any particular, except with the prior written consent of the State Engineer, and also that the works cannot be considered as having been completed until the State Engineer has approved the same in writing.

In general, the Specifications should include the following items:

First: PREPARATION OF THE FOUNDATION UPON WHICH THE STRUCTURE AND APPURTENANT WORKS WILL REST. With respect to earth dams such preparation contemplates the removal of all unstable materials, vegetation and perishable matter, porous sand pockets or lenses; the proper provisions for the draining away of any seepage or springs located beneath the dam, the installation of a tile, gravel or rock drainage system beneath the downstream one-third of the dam; the excavation of one or more cutoff or bonding trenches beneath the structure and the thorough plowing of the foundation parallel with the axis.

Second: THE SELECTION, CLASSIFICATION, GRADING AND MIXING OF MATERIALS ENTERING INTO THE DAM. In an earth dam, the materials should be graded as the same reach the dam by placing the more pervious materials in the upstream and downstream thirds, and the more impervious materials in the upstream middle-third of the structure. The latter materials, where possible, should consist of a blending of clay and sand or gravel. The placing and compaction of such materials is one of vital importance. The Specifications should provide that all materials be placed in layers not exceeding eight inches in thickness, after which they should be sprinkled, if need be, to provide the necessary amount of moisture for proper compaction, following which, the same should be thoroughly blended and then compacted by means of a standard sheep-foot roller or other accepted compaction equipment. The efficiency of the compaction should be determined by accepted test methods. The earth fill should be brought up in substantially horizontal planes so as to provide a slight slope toward the reservoir, but the center portion of the fill should, at all times, be maintained somewhat higher than the ends adjacent to the abutments. The embankments must be carried up the full width thereof and no side dumping on the slopes permitted. Placing materials on smooth, hard or frozen surfaces or on unstable areas will not be permitted.

The Specifications should show in the following sequence:

1. The location of the proposed dam by Section, Township, Range and Meridian.
2. Name of the stream on which the reservoir is located.
3. Approximate altitude of the dam above sea level.
4. Area in square miles of the drainage area above the dam.
5. Character of topography, geology, vegetative and forest cover.
6. Records of peak steam flow at or near the dam site or an estimate based on records of runoff per square mile from drainage areas of comparable characteristics affecting runoff.
7. A tabulation showing the discharge capacities in second feet of the outlet
conduit or conduits for each foot of depth above the center of the valves, and the formula used in making such determinations.

The capacity of the outlet conduit, under 10 feet of head, must be sufficient to pass the inflow plus all demands for storage release.

8. A tabulation showing the discharge capacity in second feet of the spillway for each foot in depth up to the estimated high-water line, and the formula used in making such determinations.

9. An estimate in sufficient detail to establish the approximate cost of work shall be submitted with one set of specifications. This estimate may be on a separate sheet to be filed with the specifications after bid opening.

All structures in or through the dam, must be placed in excavations in the original formations or where unavoidable upon thoroughly compacted embankments. The material around all such structures should be thoroughly compacted by means of mechanically operated tampers. No large stones, clods or frozen material should be placed in any earth embankments or backfill areas.

The completed embankment should provide for a settlement of from 3 to 5 per cent of the height.

Outlet conduits should be provided with an ample number of cutoff collars to prevent water percolating along the pipe.

Control gates or valves must be located at the upstream end of the outlet conduit or in a concrete or masonry tower located at the upstream shoulder of the crest of the dam. If located at the latter point, the conduit should be subjected to a hydrostatic pressure test equivalent to double that under which the conduit will be expected to operate.

The upper end of the conduit must be provided with trash racks of ample proportions and strength to resist the maximum hydrostatic head to which the same may be subjected, and with sufficient area of openings to limit velocities through same to about one foot per second.

The water face of earth dams must be provided with a blanket of loose or hand-placed stone riprap 15 inches or more in thickness, laid over a blanket of well graded coarse gravel or spalls. The stones forming the riprap, if hand-placed, should be set with the greatest dimension of the stone at right angles to the slope of the face of the dam.

In the case of masonry dams, the preparation of foundations should include the removal of all loose, decayed and unstable materials, pressure grouting of all cavities and seams and provisions for a drainage system under the base of the structure. Also for the thorough cleansing of bedrock formations prior to the placing of any materials thereon, and the use of a proper mixture of hydraulic cement mortar to provide a perfect contact between bedrock and the base of the structure.

The Specifications should require proper qualities of materials, classification and mixtures of aggregates and hydraulic cement and for proper placing, compacting and protecting the same; also for the placing of reinforcing steel, valves, conduits and appurtenant structures.

The Specifications should designate the required crushing strength of the concrete, based upon 28-day tests, upon which the design of the structure is based. The con-
crete mixture shall be designed in accordance with the latest accepted methods.

In all concrete structures, provision must be made for contraction joints, grouting requirements, and drainage facilities.

In the case of loose rock-fill dams or structures of the earth and rock-fill type, the Specifications should show the characteristics of the materials, the methods by which they are to be placed, the maximum allowance for voids and other features affecting the probable settlement and stability of the structure.

Spillway Plans and Specifications must show in full detail, the location, shape, dimensions, maximum elevation of invert, and capacity of all spillways, based upon a careful study of the probable maximum or peak inflow to the reservoir, especially if of small capacity. Where it is not possible to locate such structures in rock or other stable formations, ample provision must be made to prevent erosion through the spillway and at the lower end thereof. Spillways must be of sufficient length and so located as to prevent any possibility of back-wash or erosion which might endanger the dam. In no instance shall the vertical distance between the highest point in the floor of the spillway and the lowest point in the crest of the dam be less than 5 feet except with the written approval of the State Engineer.

Spillways consisting of pipes or comparatively small conduits, especially in connection with earth or rock-fill dams, will not be approved.

Where required, the owner shall furnish chemical, screen or mechanical analyses, crushing strengths and porosity tests of material to be used in any dam, and of the foundation material upon which such dams are to be located. And where, during the period of construction, such materials do not appear to be suitable, the State Engineer may require a change in the location of the dam or the borrow pits, quarries, etc., so as to provide suitable foundation and materials.

In general, screens, flashboards or other obstructions will not be permitted in spillways. Where screens are absolutely necessary in the interest of fish propagation, the required minimum freeboard heretofore mentioned, shall be taken as the vertical distance between the top of the screens and the lowest point in the crest of the dam.

**THE SPECIFICATIONS SHOULD INCLUDE ONLY THAT PERTINENT INFORMATION RELATIVE TO THE ACTUAL CONSTRUCTION OF THE DAM PROPER, AND SHOULD NOT CONTAIN CONTRACT DOCUMENTS, METHODS OF PAYMENT, OR ANY OTHER NON-ESSENTIAL MATERIAL.**
SHERWOOD RESERVOIR IMPROVEMENT
STUDY AND SPECIFICATIONS
(aka Nelson Reservoir or
Baker Reservoir)

February, 1979
SHERWOOD RESERVOIR IMPROVEMENTS STUDY
aka NELSON RESERVOIR or BAKER RESERVOIR

February, 1979

Prepared By
COLORADO STATE UNIVERSITY
SHERWOOD RESERVOIR IMPROVEMENTS STUDY

Sherwood Reservoir, also known as Nelson Reservoir and Baker Reservoir, is situated in the N 1/2 of Section 30, T7N, R68W of the 6th P.M. in Fort Collins, Colorado. The reservoir was filed with the State of Colorado on October 17, 1906 under filing #3091, District #3, Division #1, Larimer County; entitled "Sherwood Reservoir Company." The reservoir was constructed in 1906-1907 and encompasses approximately thirty acres. The purpose of the reservoir is to regulate irrigation waters, not to store water for any extended period of time.

The primary water source is the reservoir headgates at the Cache la Poudre River northwest of Fort Collins and is conveyed through Arthur's Ditch and Sherwood Ditch draining into Sherwood Reservoir. The remaining inflow is drainage and seepage waters from the tributary areas.

Since construction of the reservoir, ownership and operation has been controlled by the Sherwood Reservoir Company. Current stockholders are:

<table>
<thead>
<tr>
<th>Stockholder</th>
<th>Shares</th>
<th>%</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnson</td>
<td>80</td>
<td>17</td>
<td>President</td>
</tr>
<tr>
<td>Greenwalt</td>
<td>70</td>
<td>15</td>
<td>Vice-Pres.</td>
</tr>
<tr>
<td>Colorado State University</td>
<td>320</td>
<td>68</td>
<td>Sec.-Treas.</td>
</tr>
</tbody>
</table>

Present Conditions

The reservoir operated as built from 1906 until the mid 1960's with minor alterations to the structure. Then in 1967, the Soil Conservation Service improved the reservoir embankment by raising the dam crest.
approximately 1 1/2 feet and widened the top to approximately fourteen feet. The upstream face of the dam was also improved by placing a grout facing along the 850 foot length of the embankment. Since the SCS improvements, various alterations have been made to the embankment and spillway to include the filling of the downstream slope of the dam (slope 12:1) and placing an additional grout layer over the previous upstream facing.

During the spring of 1976, the reservoir was drained and a new concrete valve well and 24 inch gate valve were installed adjacent to the old valve well. Also, a 30 inch steel pipe was installed extending the inlet 30 feet beyond the well into the reservoir. The existing 20 inch tile outlet pipe spanning the dam was inspected and repaired where necessary.

The embankment, in its present condition, is about 16 feet above the natural drainage bed. However, over the past seventy years; erosion, siltation and sloughing have elevated the bottom of the reservoir floor. The spillway has been altered from its original construction of 30 feet in width at the crest and 2 feet below the embankment crest to its existing state of a "V" shape channel with invert of 2.25 feet below the dam crest. During flooding conditions, the peak discharge through the spillway is estimated to be 300 cfs before overtopping of the dam would occur.

**Drainage Basin**

The tributary basin to Sherwood Reservoir is situated west of the reservoir and is comprised of approximately 310 acres, as depicted in Figure 1, of which fifty-five percent is developed into primarily single family and multi-family residences. Although forty-five percent of the basin is in an undeveloped or agricultural state, the area is planned/
zoned to be fully developed. The drainage basin is bounded on the west near College Avenue, on the north by Drake Road and along the south varying about East Swallow Street.

**Hydrology**

To enable an adequate evaluation spillway requirements for Sherwood Reservoir, a hydrologic analysis was performed in accordance with the procedures outlined in the U. S. Bureau of Reclamation publication *Design of Small Dams*, second edition, 1973. Because of the nearby developments, a moderate hazard flood analysis was performed rather than a low hazard analysis. The residential development existing northeast of the embankment lies in an historical ponding area while the lands east of the reservoir are planned as residential properties. In both cases, spillage from the reservoir would cause flood damage to the adjacent properties but without danger to loss of life.

The design rainfall for the analysis was the Probable Maximum Precipitation (PMP) for lands west of the 105th meridian. Both the 6-hour PMP General-Type Storm and the 1-hour PMP Thunderstorm were computed for a moderate hazard condition. Table #1 presents the hydrologic parameters utilized to compute the inflow hydrographs into the reservoir for each storm. The flood hydrographs were calculated based upon the assumption that the drainage basin will be completely developed into primarily residential dwellings with open space considered to be grassed. The resulting peak inflow rates are 1330 cfs and 2250 cfs for the General-Type Storm and Thunderstorm respectively. Because the PMP Thunderstorm generates a significantly higher discharge than does the General-Type Storm, the Thunderstorm hydrograph will be used for the reservoir and spillway analysis. The Probable Maximum Flood (PMF) will thereby
contribute in excess of 188 acre feet of runoff to the reservoir from the storm. Utilizing the reservoir's maximum allowable capacity, a peak discharge of 950 cfs will flow from the reservoir spillway. The peak discharge is based upon the reservoir water surface being at the spillway crest without overflow, before the storm event.

Table 1. Hydrologic Parameters

<table>
<thead>
<tr>
<th>Storm Duration (hr)</th>
<th>PMP (in)</th>
<th>Tc (hr)</th>
<th>Soil Group</th>
<th>SCS CN</th>
<th>Peak Inflow</th>
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</thead>
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<tr>
<td>6-hour General-Type</td>
<td>6</td>
<td>11.3</td>
<td>0.8</td>
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<td>85</td>
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<tr>
<td>1-hour Thunder</td>
<td>3</td>
<td>12.0</td>
<td>0.8</td>
<td>III</td>
<td>C</td>
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</table>

*The Soil group classification and SCS curve number are based upon full subdivision development of the basin.*

**Improvements**

**Spillway:**

The present emergency spillway is situated adjacent to the dam's southern abutment. The improved spillway will be located in the same area, but the spillway dimensions will be significantly increased. The crest of the spillway will be a minimum of three feet below the dam crest (elev. 4956.00) at an elevation of 4953.00 feet. The spillway is designed to pass the peak flow from the PMF of 950 cfs at a water surface elevation of 4955.90 feet. The spillway crest will be lengthened to a finished bottom width of 70 feet and a top width of 82 feet with bank side slopes of 2:1. The maximum spillway capacity as computed by the general equation for a broad crested weir \(Q=CLH^{3/2}\) is approximately
1000 cfs using a C of 2.60. The spillway discharge will flow through a spillway channel, slope of 0.0027, the bottom of which is to be sodded with bluegrass (n=0.30). Using the Manning Equation, the maximum velocity is calculated as 4.67 feet per second which is within the maximum allowable velocity of 5 feet per second. In order to compensate for curvature of the spillway and to allow adequate freeboard during peak discharges, spillway banks are to be a minimum of 3.5 feet above the floor of the spillway channel. Riprap will be hand-placed on the interior spillway banks for erosion protection.

Facing:

The concrete facing along the upstream side of the embankment shows only minor deterioration and appears to be in no danger of failing. However, a series of shallow depressions due to sloughing and settling exist directly behind the concrete facing and must be filled. The depressions are to be compacted and filled with a sand and gravel mixture to support the facing as well as to drain storm waters. See specifications.
GENERAL INFORMATION AND
SPECIFICATIONS
FOR IMPROVEMENTS TO
SHERWOOD RESERVOIR
(NELSON RESERVOIR)

February, 1979

PREPARED BY
COLORADO STATE UNIVERSITY
GENERAL INFORMATION

LOCATION:
Sherwood Reservoir is located in the N 1/2 of Section 30, T7N, R68W of the 6th P.M. in Fort Collins, Colorado.

SOURCE:
The primary water source for Sherwood Reservoir is the Sherwood Ditch which delivers water from a headgate on the Cache la Poudre River.

DAM ELEVATION:
The embankment crest is approximately elevation of 4956.00 feet.

TRIBUTARY AREA:
The reservoir covers approximately 30 acres and has a tributary area of nearly 310 acres or .48 sq. mi.

TOPOGRAPHY:
The drainage basin is approximately 55% developed into single and multi-family housing with 45% of the basin being agricultural lands soon to be subdivided. The basin is about 7800 feet in length with a drop of 70 feet in elevation resulting in a slope of .009 ft./ft.

REGULAR INFLOWS:
The peak discharge from the Sherwood Ditch into Sherwood Reservoir is recorded as 20 cfs. A drain tile discharges a constant flow of approximately 1.0 cfs into the reservoir.

PIPE OUTLET:
A 20" concrete pipe outlet through the dam discharges a peak of 37 cfs.
Discharge is based on submerged tube with all losses combined in coefficient of discharge in equation: \(Q = CA \sqrt{2gH} \), with \(C = 0.64\).

<table>
<thead>
<tr>
<th>Water Surface Elevation (ft.)</th>
<th>Peak Discharge (cfs)</th>
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<tbody>
<tr>
<td>4943</td>
<td>0</td>
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<tr>
<td>4945</td>
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<td>4947</td>
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<tr>
<td>4956</td>
<td>37.2</td>
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**SPILLWAY CAPACITY:**

Spillway capacity based upon computations by the broad crested weir equation is approximately 1000 cfs. \(C = 2.60\).

<table>
<thead>
<tr>
<th>Water Surface Elevation (ft.)</th>
<th>Peak Discharge (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4953.0</td>
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<tr>
<td>4953.5</td>
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<td>755</td>
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<tr>
<td>4956.0</td>
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**COST:**

The estimated cost for the structural improvements specified in the following section is $17,700.
ITEMS OF WORK AND SPECIFICATIONS

All specified work items shall be supervised by a Registered Engineer representative of The Sherwood Reservoir Company, in collaboration with a representative of the Office of the State Engineer.

SPILLWAY CONSTRUCTION

1. The spillway center line will begin 50 feet south of the south end of the concrete dam facing and extend northeasterly 221 feet where it is to blend into the present park. Cut approximately 860 c.y. of soil along the spillway location to 0.2 feet below final channel grade (to allow for topsoil replacement). The 221 foot cut will be 74 feet wide at the channel base with a maximum slope along the channel center line of .0027 ft/ft.

2. Place soil for spillway channel banks in no more than 8 inch lifts. Fill should be compacted to within 95 percent of the laboratory and maximum dry density (ASTM-698) minimum moisture to be not less than 2 percent below optimum. Interior channel wall side slopes are to be 2:1 while exterior side slopes are to be at least 5:1. Minimum height from the top of bank to channel bottom at center line is 3.5 feet with a minimum bank top width of 10 feet.

3. A 0.20 foot layer of topsoil (approximately 115 cy) is to be distributed over the entire spillway channel bottom to bring channel to specified grade. The spillway crest is to be level at elevation 4953.0 feet.

4. Place approximately 107 cubic yards of riprap along the inside face of both spillway embankments for erosion
protection. Riprap will be placed along each wall of the 221 foot channel to a minimum of 3.5 feet in height and 2.0 feet in thickness; and on adverse slope of spillway entrance.

Quality: Individual rock fragments should be dense, sound and resistant to abrasion and shall be free from cracks, seams and other defects that would tend to increase unduly their destruction by water and frost action.

Placement: Riprap need not be compacted but shall be placed to grade in a manner to insure that the larger rock fragments are uniformly distributed and the smaller rock fragments serve to fill the space between the larger fragments as will result in densely placed, uniform layers of riprap.

Size: Riprap shall be angular, reasonably well graded with average thickness of 12 inches or more and sufficient smaller stones to fill the spaces between the larger pieces.

5. The spillway channel bottom, outside banks and immediate area are to be sodded with a high quality Marian Kentucky bluegrass.

FACING REPAIR

1. All depressions behind concrete facing where embankment has been eroded are to be located and plainly marked by contractor and inspected by owner prior to repair.

2. The existing soil in each depression is to be well compacted along and behind the facing with a rod having a minimum diameter of one inch, and must be roddeed a minimum of 25 times per linear foot. Mechanical roddeing equipment
may be used.

3. A sand and gravel mixture of 50% sand and 50% gravel (by volume) is to be placed into each depression in layers of twelve inches and rodded a minimum of 25 times per layer until the depression is filled. The materials are to be well mixed before placement.

The gravel material shall be selected angular rock fragments, reasonably well graded, of dimensions 1/2 inch to 1 inch. The rock shall contain not more than five percent (by weight) of material passing a U. S. Standard No. 200 sieve. The sand material shall consist of particles of rock that will pass the No. 4 U. S. Standard sieve with no more than five percent (by weight) passing the No. 200 sieve.
I hereby certify that these Specifications for the repair of the Sherwood Reservoir Dam were prepared by me (or under my direct supervision) for the owners thereof.

Norman A. Evans
Registered Engineer

I, Sherwood Reservoir Company, owner, whose post office address is P.O. Box 523, Fort Collins, CO. 80522, do hereby accept and approve these Specifications for the repair of the Sherwood Reservoir Dam.

Sherwood Reservoir Company
By: [Signature]
President/Owner

Approved on the ______ day of ________________, 19__.

[Signature]
State Engineer

By: [Signature]
Deputy

1
Physical Plant Department  
April 30, 1979  

Mr. Earl Stafford  
Everitt Enterprises, Inc.  
3000 S. College Avenue  
Fort Collins, CO  80525  

Re: Lake Sherwood Irrigation Line  

Dear Mr. Stafford:  

First, this is to confirm our meeting this morning at the site of the Lake Sherwood irrigation pipe connection to the Ridgen Farm irrigation system. Bob Strohman will turn water into the system Tuesday morning, May 1 and he plans to complete their irrigation the same day. He will cut off the water Tuesday night. If the weather stays normal, he will need to irrigate again the following Monday morning, May 7. Of course, if it should rain during the week in sufficient amount he would be able to delay his irrigation a day or two. This will allow you to make the physical connection of the two pipe systems during the period of May 2 to May 7.  

Just as a matter of interest, between February 6 and March 7 I had several conservations with Phil Robertson from James Stewart’s office in which we discussed CSU’s need to have irrigation water by about April 1. Due to the late rains, this has not been necessary until now.  

Second, last week I checked this line and found it to be installed in accordance with the original plans prepared by James H. Stewart and Associates. Several of us at CSU had reservations about this design.  

On February 28, we had a meeting of the water sub-committee and you were present for one of the sessions. Enclosed is a copy of our minutes.  

Third, no one at CSU has received any written documentation concerning the installation of a concrete pipe instead of the open ditch for the Lake Sherwood lateral. This work has proceeded without any official approval by CSU.  

Fourth, would you prepare the necessary documents for the changes that have been made in this irrigation system; what you intend to do regarding the changes in the design that are so listed in the attached minutes; and that CSU will be held harmless from any damages that might arise due to the changes in the system that have been made. Furthermore,
Lake Sherwood Irrigation Line
April 30, 1979
Page two

let me reiterate that many of the research plots that are being irrigated have a long life span and the consequences could be quite severe in the event the irrigation system failed for one reason or another. This in no way can be compared to a typical farming operation.

Cordially,

L. Terry Suber

Enclosure

cc: E. J. Early
    N. A. Evans
    G. A. Greathouse
    D. L. McClintock
    E. V. Richardson
    James H. Stewart & Associates
Special Meeting: Wednesday Morning, February 28, 1979

Attendees: E. V. Richardson, Chairman; N. A. Evans, G. A. Greathouse, J. Early and L. T. Suber

Comments: The meeting was called to discuss a proposed pipeline to replace the open ditch between Lake Sherwood and Rigden Farm. The committee discussed various aspects of the technical, legal and political problems of replacing the open ditch from Lake Sherwood and the Rigden Farm with a pipe. The area through which the ditch now flows is being converted to home sites by developer Everitt Enterprises. Everitt Enterprises through their consulting engineers proposed a 30 inch pipe through their property from below the railroad tracks to connect up to an existing 30 inch pipe that goes to Rigden Farm. The committee was not satisfied with this arrangement and discussed two alternatives. One alternative would be a pressure pipe connected directly to the outlet from the lake. The other was a gravity flow pipe. This gravity flow pipe is to start just downstream from the dam, connect to an existing 30 inch pipe underneath a road and another 30 inch pipe underneath the railroad track and continue through Everitt's property to connect to the 30 inch pipe going to the farm. For various reasons the committee decided the third alternative would be the most suitable. It was decided to meet that afternoon with the consulting firm and the developers to see if we could finalize a solution.

Special Meeting: Wednesday Afternoon, February 28, 1979

Attendees: E. V. Richardson, Chairman; N. A. Evans, G. A. Greathouse, J. Early and L. T. Suber

Comments: The committee, comprised of the above, Mr. Jim Stewart of Stewart and Associates, a Mr. Earl Spafford of Everitt Enterprises and D. L. McClintock, Office of Vice President for Finance. The developer was very cooperative and the committee was to be able to reach a meeting of the minds on what needed to be done. He agreed that it would be a better solution for both Everitt and CSU to put the ditch into pipe from just downstream of the dam to CSU's pipe rather than a pipe from just below the railroad track. Everitt will move the measuring flume to this area and fence it. In addition they will put an additional man hole in for cleaning and inspection of the pipe. Mr. Stewart will prepare the final plans and specifications. They will also write Mr. McClintock a letter requesting approval when the plans are finished. Mr. Stewart will need some design information which will be furnished by Norm Evans or Terry Suber. This information concerns the discharge through an 18 inch overflow pipe and allowable head that can be placed on the downstream section of the pipe. With this information, Stewart and Associates will be able to complete the design.
Oversized documents not scanned

See originals in folder

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