

UTAH POWER & LIGHT COMPANY

GRACE NO. 2 WOOD STAVE PIPELINE - 1950 CONSTRUCTION

CONSTRUCTION PHOTOGRAPHS

GRACE EAST INTAKE HOUSE

UTAH POWER & LIGHT COMPANY  
GRACE H E STATION  
FLOW LINE #1



Flow line #1. Collapsed while draining 7-14-48  
Protecting shed and straw mostly removed. Some  
shed studs standing or lying on sides. 7-16-48



Flow line No. 1 Collapsed while draining 7-14-48  
Shows distortion running out in foreground. 7-16-48



View along side of collapsed section showing  
"egg-shape" contour due to sucking in of top. 7-16-48

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GRACE H E STATION  
FLOW LINE #1



Collapsed section restored for filling. Note vertical braces with pillow blocks exerting pressure on sides thru tension rods top and bottom tightened with turn buckles to resist tendency to again flatten during filling. Filling started 7/27/48 1:50PM  
" completed " 7:05"



Tightening turnbuckled tension rods on protective bracing.  
7-27-48



Inspecting restored section during filling. 7-27-48

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GRACE H E STATION  
FLOW LINE #1



Steel section of Flowline 1 crossing over Flowline 2 after restoration and during filling. Note overflow from relief valve in front of irrigation flume crossing at center of picture. Also note vertical side braces with pillow blocks supporting pipe against distortion and egg shape of pipe at point of contact with pillow blocks. 7-27-48



Steel section of Flowline 1 crossing over Flowline 2 after filling. With 16 to 18 ft. static head steel rounded up, releasing pressure against side braces, and allowing them to tip over. Top tension rod prevented loosened sets from falling completely away from pipe. 7-27-48

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GRACE H E STATION  
FLOW LINE #1



Steel section of Flowline 1 crossing over Flowline 2 after filling. With 16 to 18 ft. static head steel rounded up, releasing pressure against side braces and allowing them to tip over and hang on top tension rod. 7-27-48



Portion of section collapsed 7-14-48 after restoration and filling and after replacing and tightening braces loosened in filling. Note rounded out appearance of top arc of pipe. It was this rounding out that pulled the egg shaped sides back to place and loosened the braces during last stages of filling. 7-28-48

UTAH POWER & LIGHT COMPANY  
GRACE HYDRO-ELECTRIC STATION  
RECONSTRUCTION OF 6000 LIN. FT. OF NO. 2 FLOWLINE  
ER 48-1218



7-20-50 39019 #F-1  
Erecting timber reinforcement on upper section of No. 2  
Flowline. Timbers removed from section to be rebuilt in  
1950. ER 48-1230.



7-30-50 39020 #F-2  
Installing steel bulkhead at Wye to permit use of lower  
section of flowline during reconstruction of the 6000  
lin. ft. just upstream from the Wye.

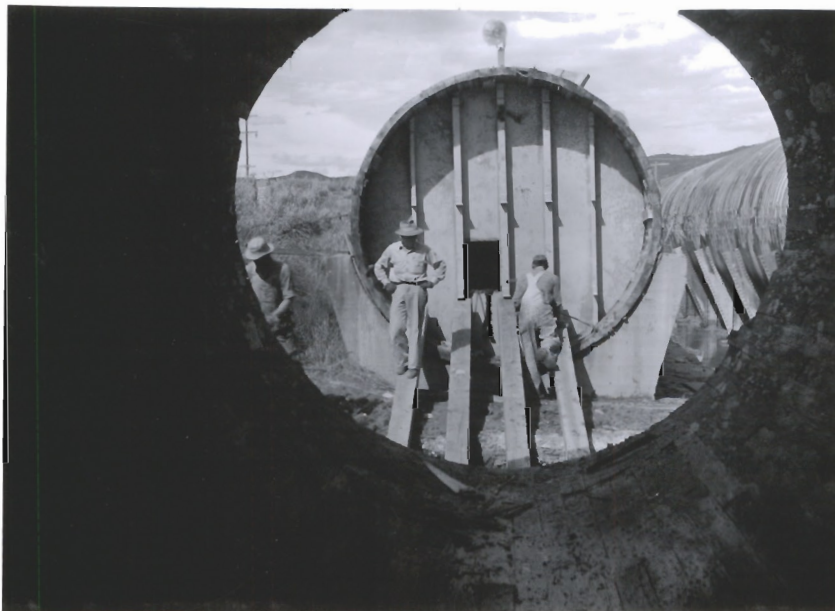
UTAH POWER & LIGHT COMPANY  
GRACE HYDRO-ELECTRIC STATION  
RECONSTRUCTION OF 6000 LIN. FT. OF NO. 2 FLOWLINE  
ER 48-1218



7-30-50 39021

#F-3

Installing steel bulkhead in lower end of section not to be rebuilt this year so that this section can be kept filled during reconstruction and prevent damaging drying out of the old pipe.



7-30-50 39022

#F-4

Installing steel bulkhead in lower end of section not to be built this year so that this section can be kept filled during reconstruction and prevent damaging drying out of the old pipe.

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GRACE HYDRO-ELECTRIC STATION

REHABILITATION OF SADDLE BASES  
UNDER NO. 2 - 11' WOOD STAVE  
FLOWLINE - SECTION RECONSTRUCTED  
IN 1937 and 1939.



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GRACE HYDRO-ELECTRIC STATION  
RECONSTRUCTION OF 6000 LIN. FT. OF NO. 2 FLOWLINE  
ER 48-1218



7-31-50 39023

#F-5

Shows demolition of old pipeline in progress.



7-31-50 39024

#F-6

Installing steel bulkhead in lower end of section not to be rebuilt this year so that this section can be kept filled during reconstruction and prevent damaging drying out of the old pipe. Shows upper bulkhead bracing nearing completion.

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GRACE HYDRO-ELECTRIC STATION  
RECONSTRUCTION OF 6000 LIN. FT. OF NO. 2 FLWOLINE  
ER 48-1218



8-8-50 39025  
Pipe erection in progress.

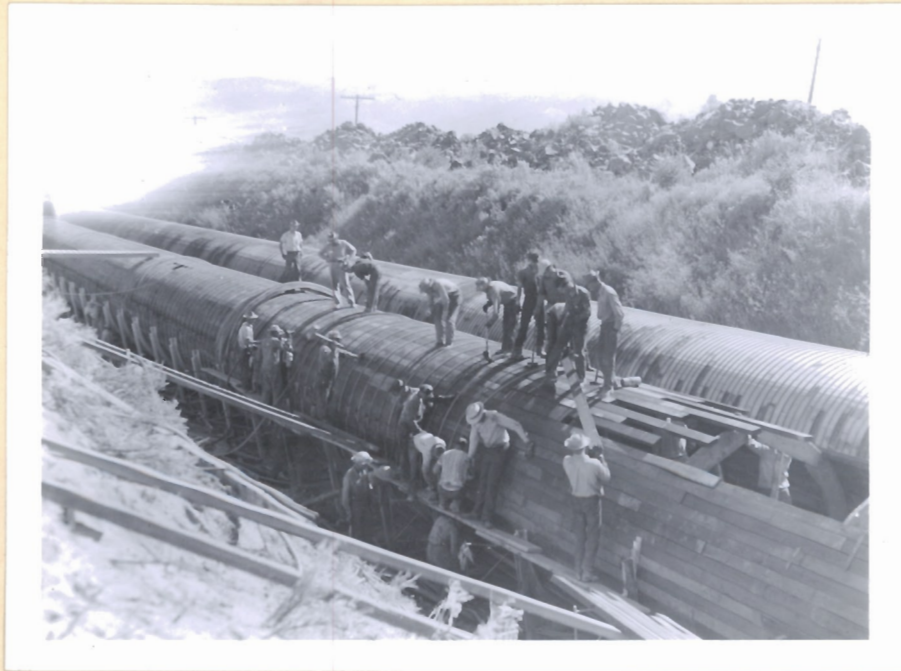
#F-7



8-8-50 39026  
Shows grade after removal of old saddles. Forming for  
new footings in progress.

#F-8

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GRACE HYDRO-ELECTRIC STATION  
RECONSTRUCTION OF 6000 LIN. FT. OF NO. 2 FLOWLINE  
ER 48-1218



7-29-50 39028

#F-9

View of pipe erection showing method of placing staves over templates in construction of upper half of barrel and also banding and pipe "rounding" operation.



8-9-50 39027

#F-10

View downstream showing silt deposit between saddles.

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RECONSTRUCTION OF 6000 LIN.FT. OF NO. 2 FLOWLINE  
ER 48-1218



Shows workmen repairing section of pipe below highway bridge (1947 pipe construction) which collapsed due to vacuum created when pipe was drained to remove lower bulkhead of steel Wye (150 construction).

9-7-50 39031

#F-11



Foreman Leo Adams directing placing of templates in repair of collapsed pipe.

9-7-50 39030

#F-12

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RECONSTRUCTION OF 6000 LIN. FT. OF NO. 2 FLOWLINE  
ER 48-1218



9-7-50 39032 #F-13  
Crane used to place upper segment of template inside collapsed portion of pipeline.



9-7-50 39029 #F-14

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RECONSTRUCTION OF 6000 LIN. FT. OF NO. 2 FLOWLINE  
ER 48-1218



9-22-50 39039

#F-15

View west. Shows M-K motor crane tipped over.



9-22-50 39033

#F-16

View of M-K Lorraine motor crane which tipped over due to bank collapsing. Minor damage to one saddle ring and bent boom on crane.

GRACE FLOWLINE \_ ROCK WALL



U.P.R.R. CO. Bridge over Grace Flowline, showing dry masonry  
No. side and pipe looking upstream

9-22-52





Title #2 UPRRCO. Bridge over Grace Flowline showing dry masonry wall east side of RR - No. side of pipe looking upstream - View from RR bridge.

9-22-52



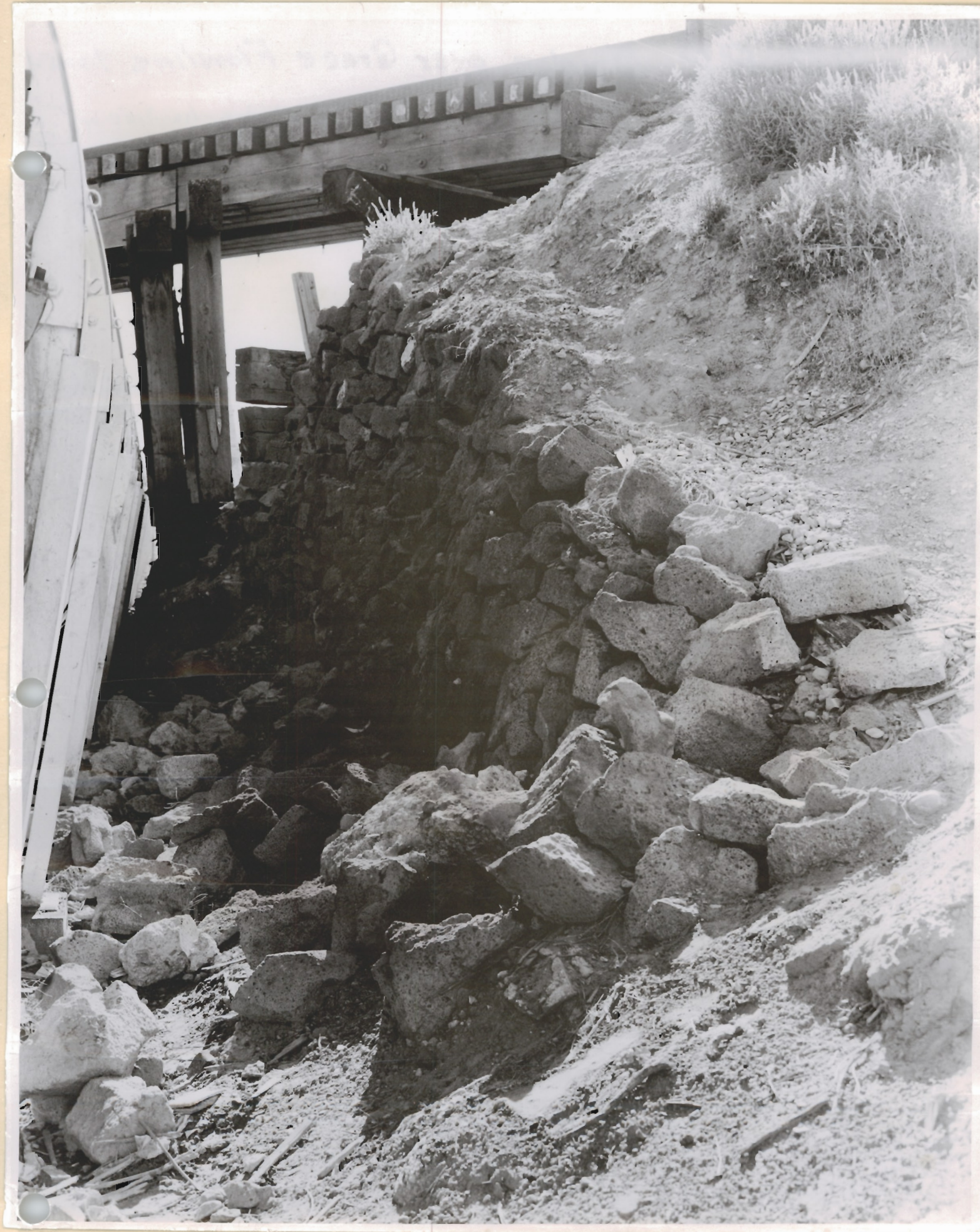
#3 UPRRCO. Bridge over Grace Flowline showing dry masonry wall east side of RR. No. side of pipe looking down stream.

9-22-52



#1 UPRR Co. Bridge over Grace Flowline showing bridge footings

9-22-52



#5 UPRR CO. Bridge over Grace Flowline showing dry masonry wall east

9-22-52



#6 UPRRCO. Bridge over Grace Flowline showing bridge footings  
east side of RR bridge - No. side of pipe looking down stream.

9-22-52



#7 UPRRCO. Bridge over Grace Flowline showing dry rock masonry wall  
West side of RR bridge - No. side of pipe looking upstream.

9-22-52



#8 Pipe removed from under OSL RR Bridge.



#9 RR Bridge over Grace #2 Flowline

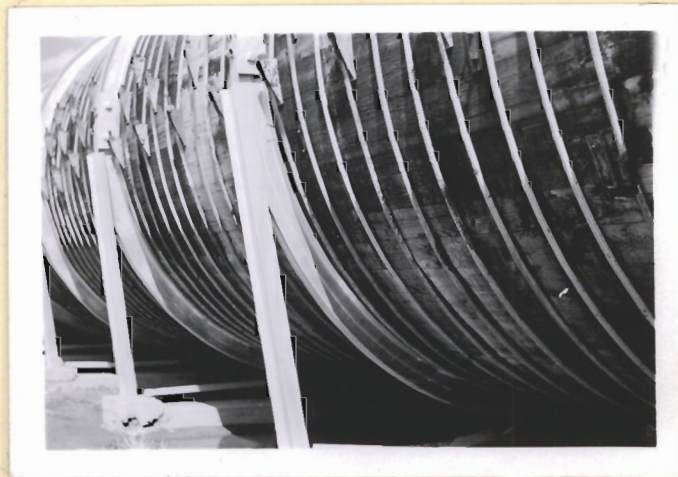


#10 RR Abutment over Grace #2 Flowline.

UTAH POWER & LIGHT COMPANY  
Grace No. 2 Flowline



Looking Upstream. Showing bent lower member  
of saddle and fractured pad. 6--22-53



Showing bent lower member of saddle and fractured  
pad. 6-22-53



Showing bent saddle legs. 6-22-53



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GRACE HYDRO-ELECTRIC STATION  
No. 2 FLOWLINE BRIDGE OVER BEAR RIVER



5-22-51

1. Showing deteriorated condition of concrete superstructure. Downstream pilaster on south side.



2. Showing deteriorated condition of concrete superstructure. 5-22-51

UTAH POWER & LIGHT COMPANY  
GRACE HYDRO-ELECTRICSTATION  
No. 2 FLOWLINE BRIDGE OVER BEAR RIVER



3. Showing deteriorated condition of concrete superstructure. 5-22-51



4. Showing deteriorated condition of concrete superstructure. 5-22-51

UTAH POWER & LIGHT COMPANY  
GRACE HYDRO-ELECTRIC STATION  
NO. 2 FLOWLINE BRIDGE OVER BEAR RIVER



5. Showing deteriorated condition of concrete superstructure. 5-22-51



6. Showing deteriorated condition of concrete superstructure. 5-22-51

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GRACE HYDRO-ELECTRIC STATION  
No. 2 FLOWLINE BRIDGE OVER BEAR RIVER



7. Showing deteriorated condition of concrete superstructure. 5-22-51



8. Showing deteriorated condition of concrete superstructure. 5-22-51

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GRACE HYDRO-ELECTRIC STATION  
NO. 2 FLOWLINE BRIDGE OVER BEAR RIVER



9. Showing deteriorated condition of concrete superstructure. 5-22-51  
8th pilaster upstream on north side.

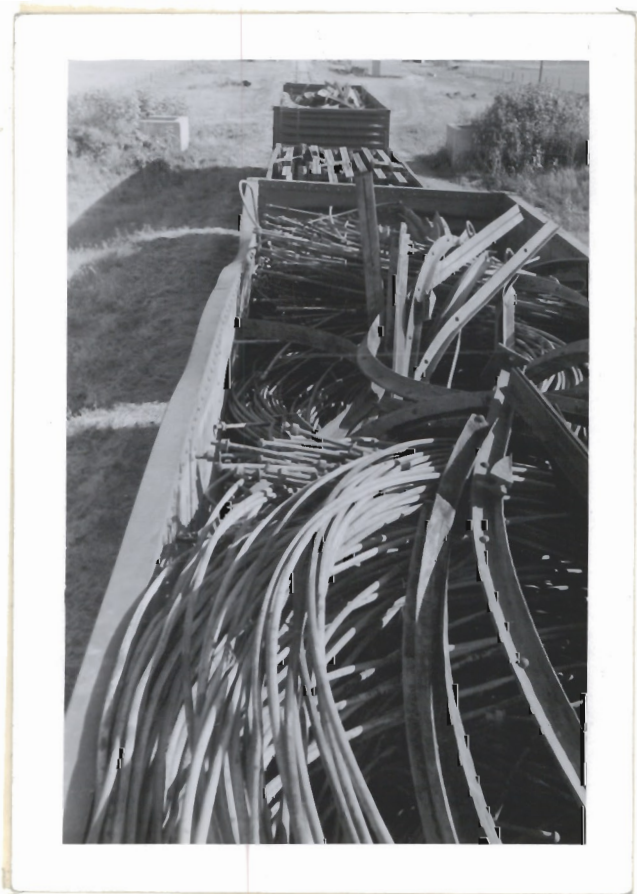


10. Showing deteriorated condition of concrete superstructure. 5-22-51

GRACE H E PLANT  
#2 FLOWLINE



View of debris in river bottom downstream from pipe crossing. Looking NW 8-7-52



Grace RR Siding. RR cars loaded with scrap steel ready to ship to Salt Lake. 8-8-52

GRACE H E PLANT  
#2 FLOWLINE



RR cars loaded with scrap steel ready to ship to Salt Lake.  
8-8-52



GRACE H E PLANT  
#2 FLOWLINE



Pier #6 Right tangent - formed and ready for concrete. 8-12-52



View of #2 pipe showing distance between upper ring segment and staves before being pulled down into place. Taken just upstream from Turner bridge. 8-14-52



GRACE H E PLANT  
#2 FLOWLINE



#6 Pier Rt. Tan. looking SE. Formed, ready  
for concrete. 8-12-52

GRACE H E PLANT  
#2 FLOWLINE

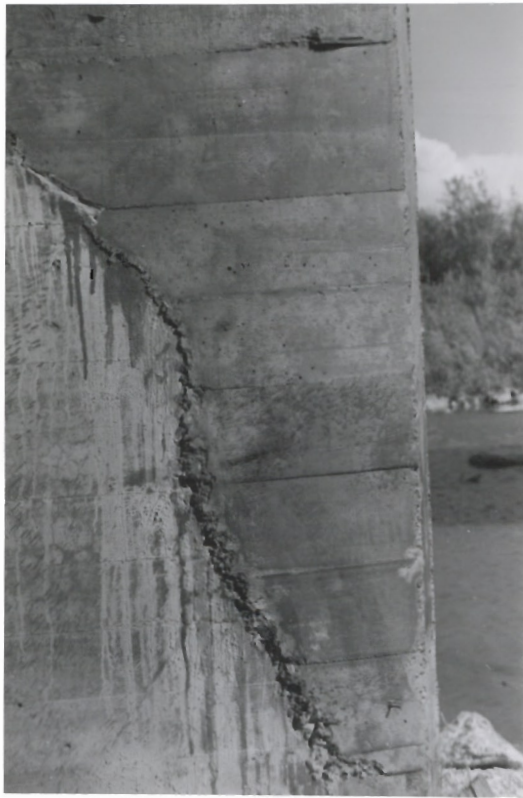


Pier #12 right tangent - Deteriorated concrete partially  
chipped away. 8-15-52



7

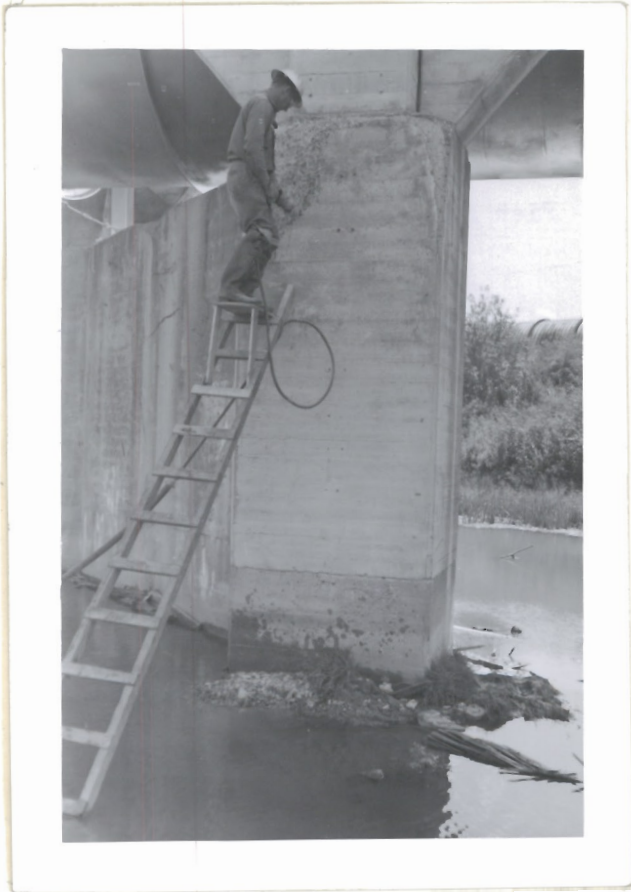
GRACE H E PLANT  
#2 FLOWLINE



Pier #6 right tangent. Repairs complete. Note poor appearance due to faulty placement of forms. 8-14-52



GRACE H E PLANT  
#2 FLOWLINE



Pier #5 right tangent. Chipping away deteriorated concrete. 8-8-52



Pier #5 left tangent. Base deteriorated concrete chipped away, ready for forming. 8-10-52

4  
GRACE H E PLANT  
#2 FLOWLINE



Pier #5 right tangent. Chipped & ready for forms.  
8-9-52



Pier #4 right tangent. Repairs complete. 8-14-52

GRACE H E PLANT  
#2 FLOWLINE



Downstream abutment right tangent. Shows spalled concrete  
before chipping. 8-15-52



Pier #5 left tangent. Top repairs completed. 8-14-52

GRACE EAST INTAKE HOUSE

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GRACE EAST INTAKE HOUSE



View of East wall and stack

6-29-57



View of South wall

6-29-57



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GRACE EAST INTAKE HOUSE



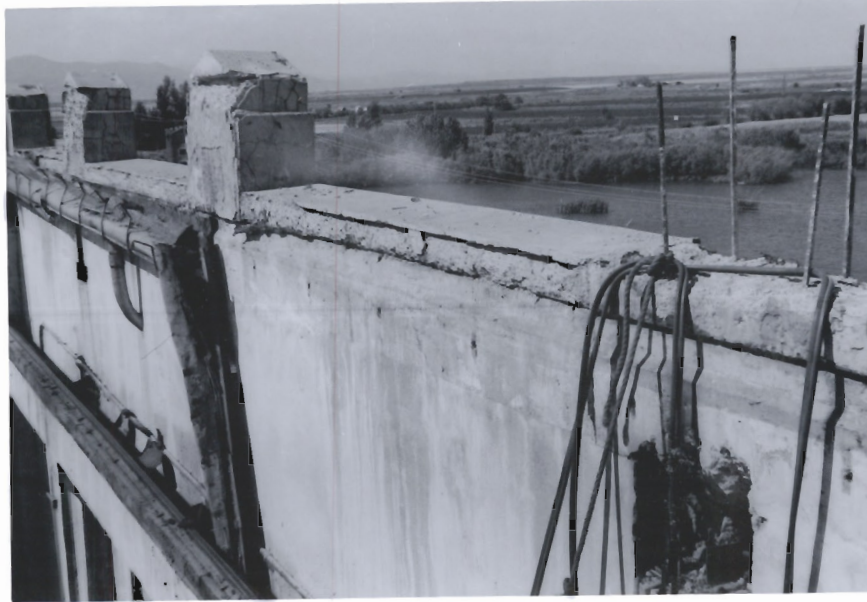
View of North wall

6-29-57

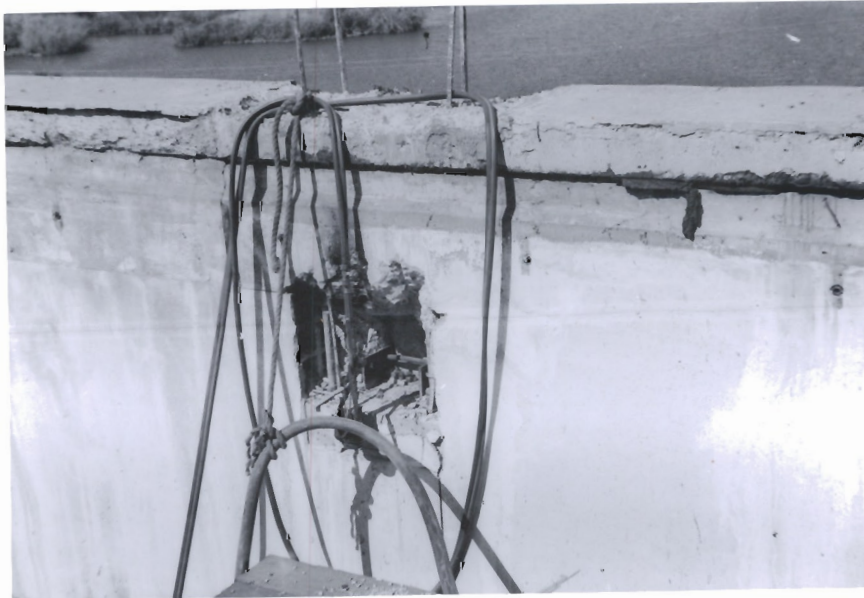


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GRACE EAST INTAKE HOUSE



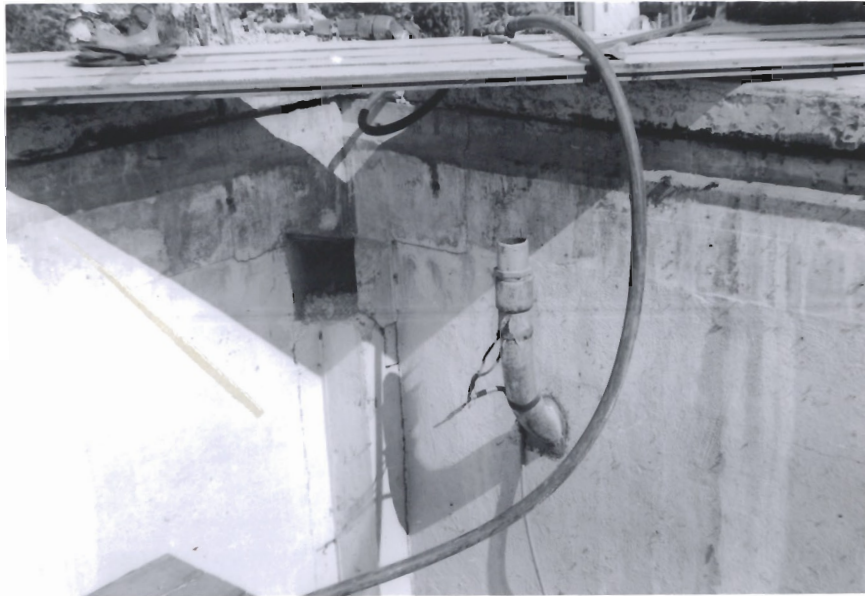
Top of North wall inside, Shows deteriorated concrete in coping and pillaster tops 9-26-57



Top of pillaster removed - View northerly 9-26-57

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GRACE EAST INTAKE HOUSE



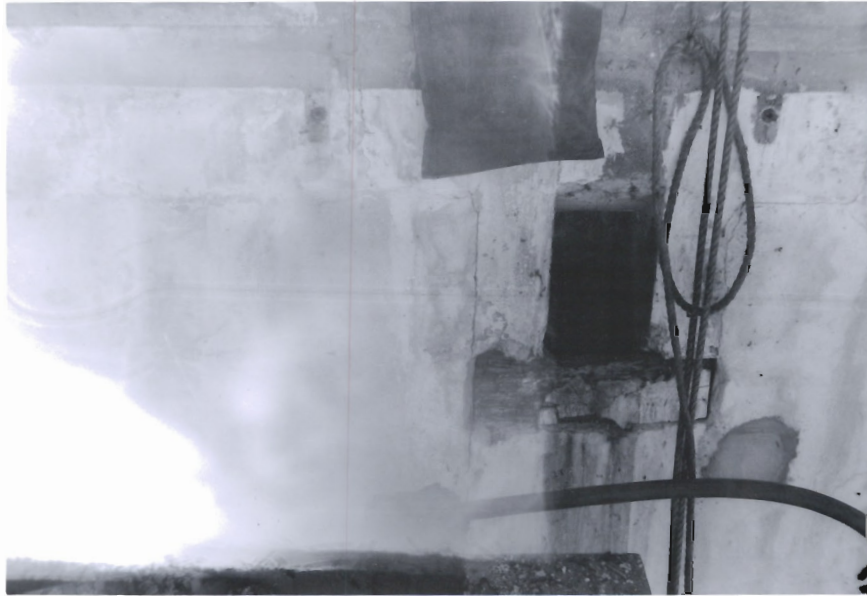
Roof and trusses removed. Shows wall support for truss brace also roof drain into hollow tile wall. View NE 9-26-57



South wall inside after roof removal. Note deteriorated concrete. 9-26-57

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GRACE EAST INTAKE HOUSE



Old roof truss removed, shows socket support in pillaster  
for truss. View South

9-26-57



Movable work

platform built on top of  
crane carriage from which  
work of removing old roof  
was conducted.

9-26-57