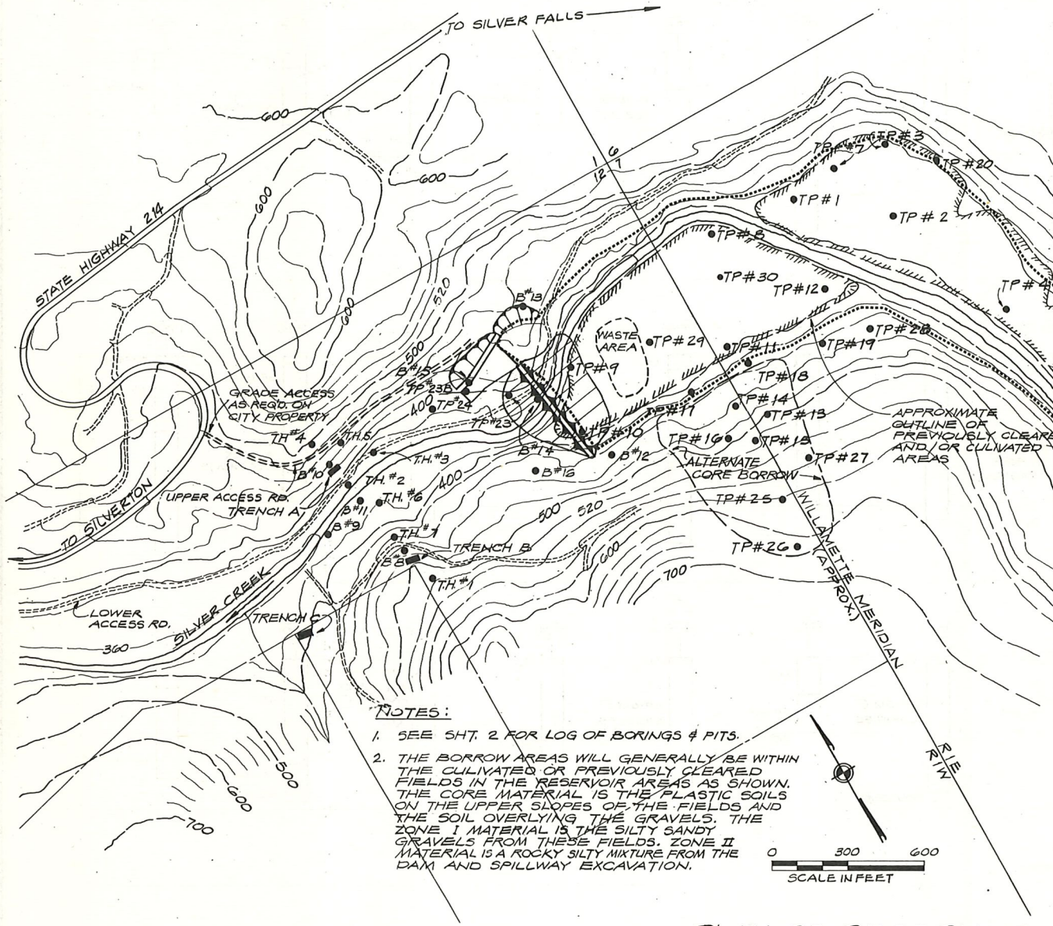
APPENDIX A

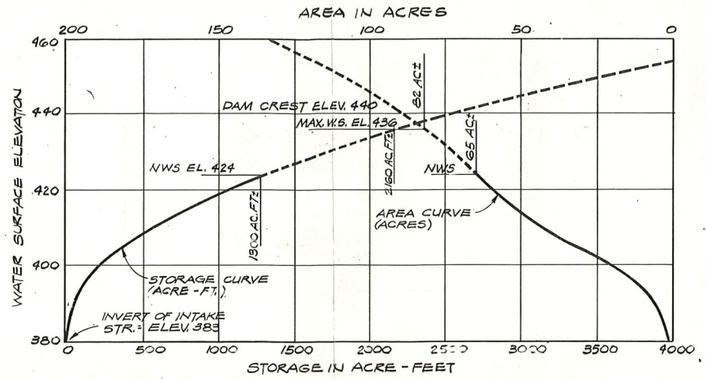
CONSTRUCTION PLANS



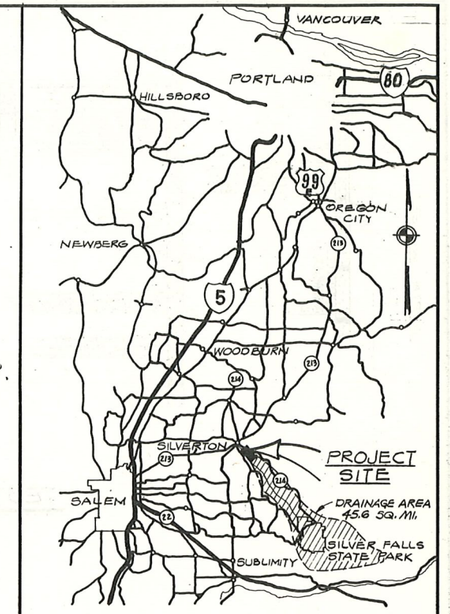
NOTES:

1. SEE SHT. 2 FOR LOG OF BORINGS & PITS.
2. THE BORROW AREAS WILL GENERALLY BE WITHIN THE CULIVATED OR PREVIOUSLY CLEARED FIELDS IN THE RESERVOIR AREAS AS SHOWN. THE CORE MATERIAL IS THE PLASTIC SOILS ON THE UPPER SLOPES OF THE FIELDS AND THE SOIL OVERLYING THE GRAVELS. THE ZONE I MATERIAL IS THE SILTY SANDY GRAVELS FROM THESE FIELDS. ZONE II MATERIAL IS A ROCKY SILTY MIXTURE FROM THE DAM AND SPILLWAY EXCAVATION.

PLAN OF RESERVOIR

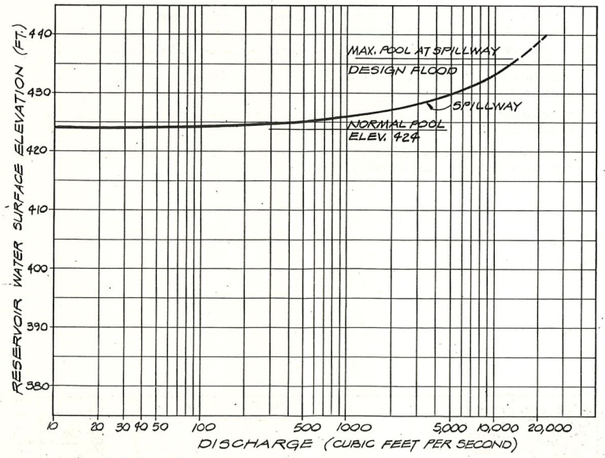


STORAGE-AREA CURVES



VICINITY MAP

1" = 8 MI.



SPILLWAY DISCHARGE CURVE

INDEX TO DRAWINGS

SHEET NO.	TITLE
1.	VICINITY MAP AND PLAN OF RESERVOIR
2.	SOILS DATA
3.	GENERAL PLAN
4.	DAM AND SPILLWAY PROFILES AND SECTIONS
5.	SPILLWAY AND FISHLADDER PLAN
6.	SPILLWAY AND FISHLADDER SECTIONS
7.	FISHLADDER DETAILS
8.	FISHLADDER DETAILS AND WALL SECTIONS
9.	RETAINING WALL SECTIONS
10.	MISCELLANEOUS FISHLADDER DETAILS
11.	INTAKE STRUCTURE PLAN AND DETAILS
12.	OUTLET PIPE DETAILS
13.	OUTLET PLAN AND DETAILS

THIS PRINT IS REDUCED TO ONE-HALF OF THE ORIGINAL SCALE
IF THE SCALE READS:
1"= 1'-0" USE ½"= 1'-0" OR 1"= 10' USE 1"= 20'

REGISTERED PROFESSIONAL ENGINEER 4484 OREGON OCT. 30, 1959 ROGER W. LINDQUIST

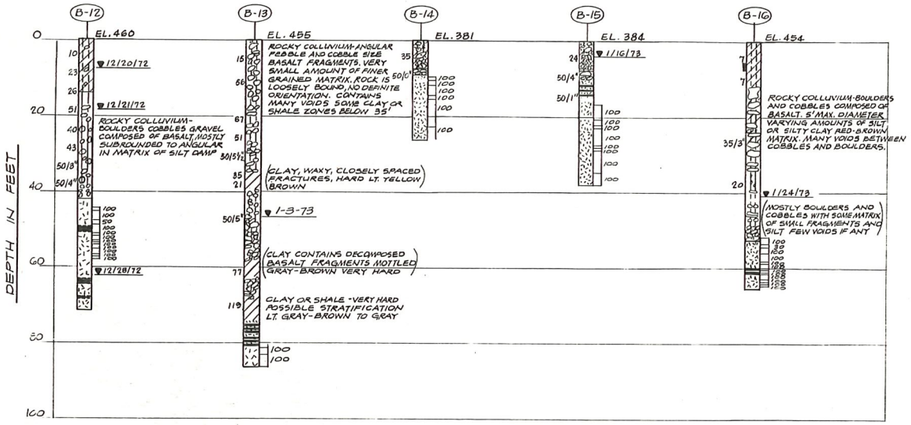
CH2M HILL
ENGINEERS PLANNERS ECONOMISTS

CORNELL HOWLAND HAYES & MERRYFIELD
CLAIR A. HILL & ASSOCIATES

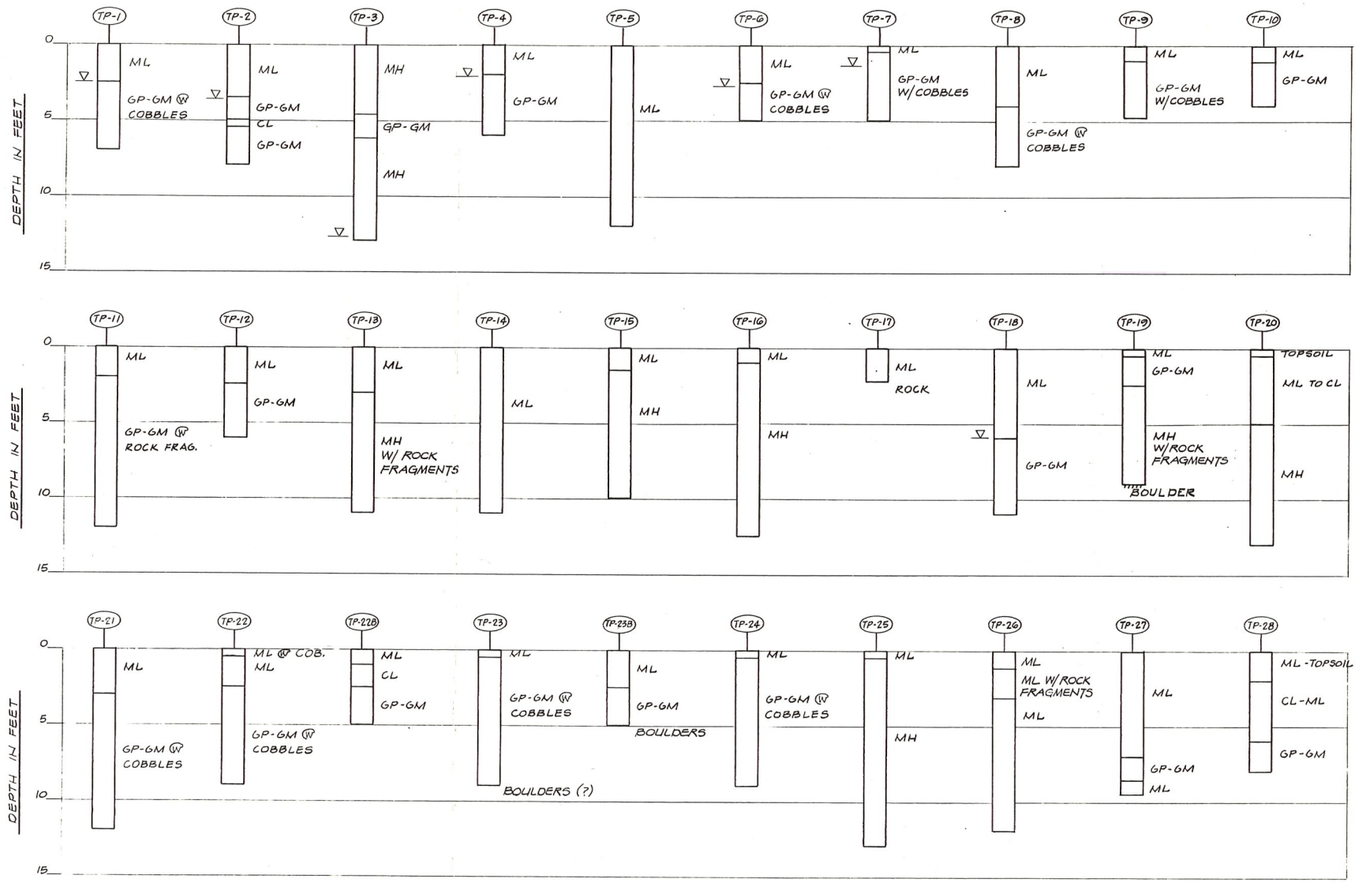
CITY OF SILVERTON, OREGON
SILVER CREEK DAM

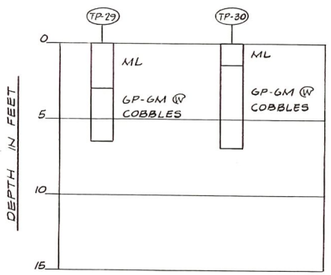
VICINITY MAP AND PLAN OF RESERVOIR

DES. WAW	SHEET 1
DR. DNB	OF 13
CK. RWL	DATE: MARCH 1973
RN C7521.1	SCALE: AS SHOWN
DRAWING NO. C 7521-1	



TEST HOLE LOG





ALL TEST PITS WERE EXCAVATED BETWEEN 20 DEC AND 28 DEC 1972. USING A RUBBER TIRED BACKHOE. HOLES WERE DUG AS DEEP AS POSSIBLE.
∇ = GROUND WATER ELEVATION. (THE PRESENCE OR ABSENCE OF GROUND WATER WAS NOT NOTED FOR ALL TEST PITS)

TEST HOLE LOG LEGEND

BASALT BEDROCK- DARK GRAY, HACKLY JOINTED, JOINTS CLOSELY SPACED, VERY DENSE. CONTAINS LESS DENSE INTERFLOW ZONES COMPOSED OF DARK RUSTY BROWN GRITTY OR SANDY SILT- CLAY MATERIAL.

RIVER ALLUVIUM- BOULDERS, COBBLES, GRAVEL WITH CLAYEY, SILTY SAND, LARGER MATERIAL PREDOMINANTLY ROUNDED DENSE TO VERY DENSE, WET.

FINE GRAINED COLLUVIUM- SILTY CLAY TO CLAYEY SILT SOFT TO VERY STIFF, RED BROWN WITH OCCASSIONAL BASALT COBBLE OR FRAGMENT.

NOTE: DESCRIPTION OF OTHER MATERIAL ACCOMPANIES THE INDIVIDUAL LOG. THE LOGS OF TH 1, 2, 3, 4, 5, 6 AND 7 (DRILLED IN 1966) AND B-8, B-9, B-10 AND B-11 (DRILLED IN 1972) ARE NOT SHOWN BUT ARE AVAILABLE FROM THE ENGINEER.

TEST HOLE LOG LEGEND

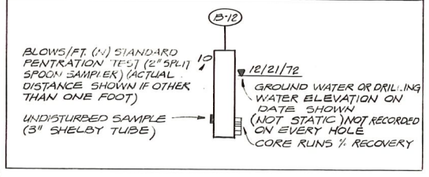


TABLE OF SOILS DATA

TEST PIT NUMBER (SAMPLE DEPTH)	U.S.C.S. CLASS. OF TEST SOIL	AVERAGE NATURAL MOISTURE CONTENT (%)	COMPACTION TEST (AASHO T-99)		ATTERBURG LIMITS	
			OPT. MOIST. CONTENT (%)	MAX. DRY DENSITY (PCF)	PLASTIC (%)	LIQUID (%)
2 (3'±)	MH	42 (DEC. '72)	—	—	85	60
3 (3'±)	MH	40 (DEC. '72)	—	—	40	56
3 (10'±)	MH	38 (DEC. '72)	—	—	38	60
5 (5'±)	ML	36 (DEC. '72)	27.8	95.2	30	48
13 (2'±)	MH	39 (DEC. '72)		—	36	59
13 (10'±)	MH	47 (DEC. '72)	35.0	85.0	50	66
19 (3'±)	MH	62 (DEC. '72)	—	—	42	75
25 (3'±)	MH	42 (DEC. '72)	36.0	85.0	46	58
25 (10'±)	MH	44 (DEC. '72)	—	—	46	63
2 (6'±)	GP-GW (1/4" MINUS TESTED)	—	28.0	94.0	3	—

UNIFIED SOIL CLASSIFICATION

SYMBOL	DESCRIPTION
GP	POORLY GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES, ALSO CONTAINS COBBLES OR BOULDERS OR ROCK FRAGMENTS.
GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES, ALSO CONTAINS COBBLES OR BOULDERS OR ROCK FRAGMENTS.
ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS

TEST PIT LOGS

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REGISTERED PROFESSIONAL ENGINEER 4484 OREGON OCT. 30, 1951 ROGER W. LINDQUIST

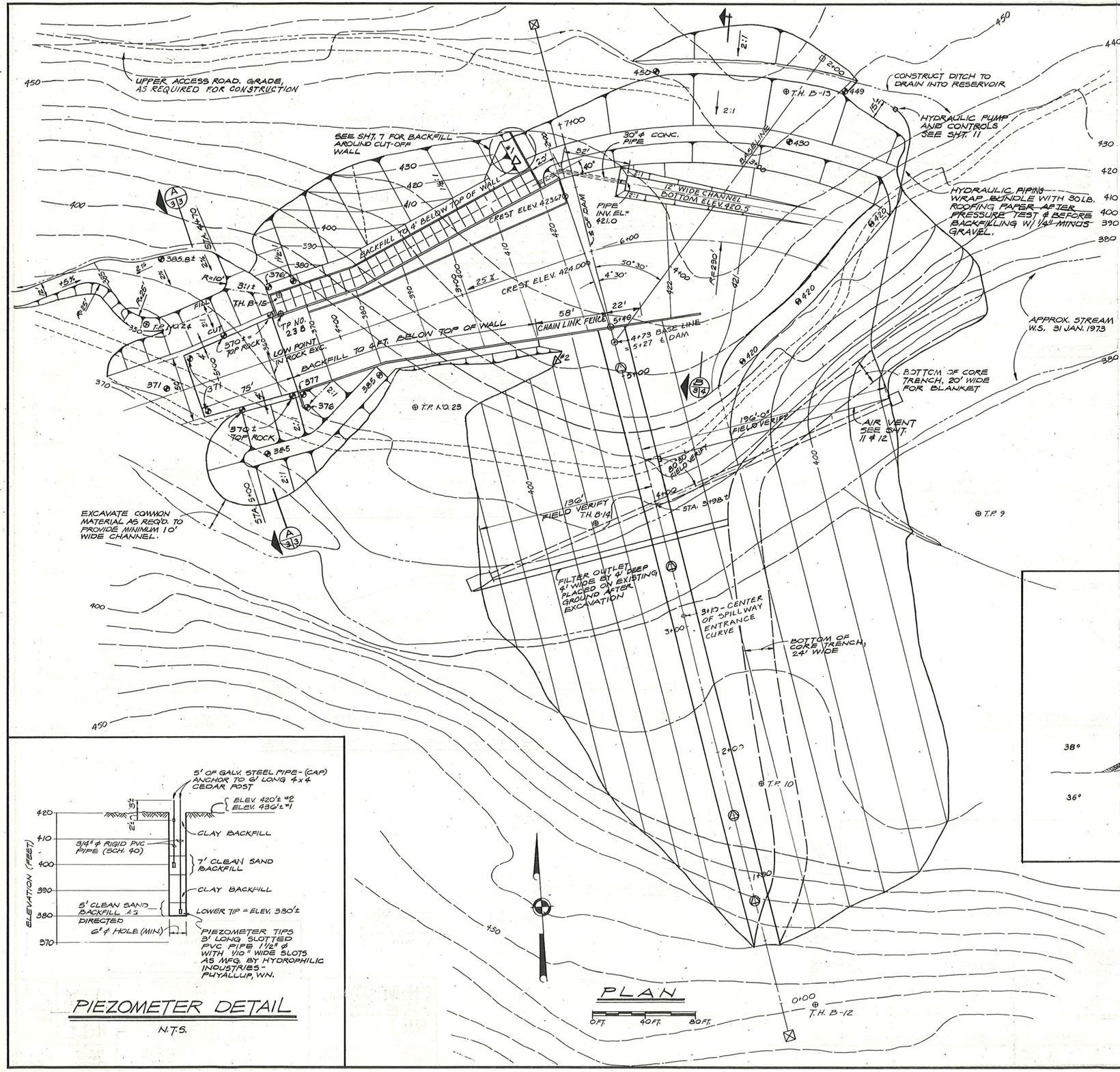
CH2M HILL
ENGINEERS PLANNERS ECONOMISTS

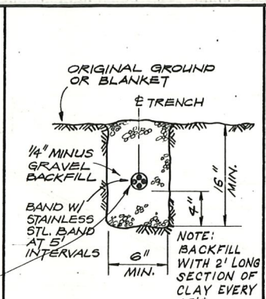
CORNELL HOWLAND HAYES & MERRYFIELD
CLAIR A. HILL & ASSOCIATES

CITY OF SILVERTON, OREGON
SILVER CREEK DAM

SOILS DATA

DES. RLN	SHEET 2
DR. KVR	OF 13
CK. RWL	DATE: MARCH 1973
RN C7521.1	SCALE: AS SHOWN
DRAWING NO. C 7521-1	



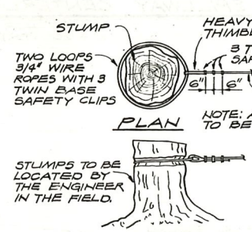


TUBING BUNDLE TRENCH DETAIL

N.T.S.

LEGEND

- 400 — EXISTING CONTOURS
- 400 — FINISH CONTOURS
- ⊕ T.P. 9 — TEST PIT LOCATION
- ⊕ T.H. B-12 — TEST HOLE LOCATION
- ⊕ 420 — SPOT FINISH ELEVATION
- ⊠ — SURVEY MONUMENTS TO BE SET BY THE CONTRACTOR. (EXACT LOCATION TO BE DETERMINED IN THE FIELD.) BRONZE DISC IN 8-INCH DIAMETER BY 3-FEET DEEP CONCRETE, FLUSH WITH GROUND. (2 REQ'D.) SET AFTER CONSTRUCTION OF DAM IS COMPLETE.
- △ — PIEZOMETER – 2 REQUIRED, SEE DETAIL THIS SHT. EXACT LOCATION TO BE DETERMINED IN THE FIELD.
- ⊙ — SETTLEMENT MONUMENT, 4 REQUIRED. EXACT LOCATION TO BE DETERMINED IN THE FIELD. 1" STEEL ROD 3-FT LONG SET IN CONCRETE 3' DEEP, 8" DIA.

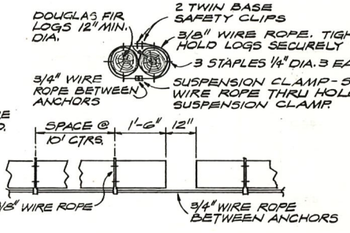


PLAN

SECTION

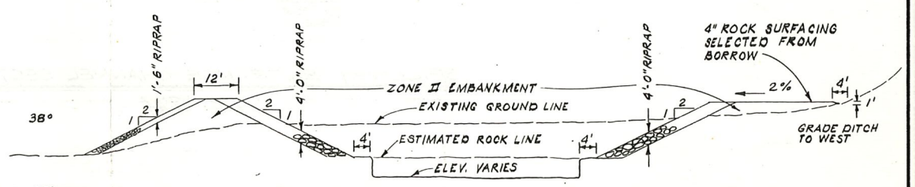
LOG BOOM ANCHOR

N.T.S.



LOG BOOM DETAILS

N.T.S.



SPILLWAY SECTION (A 3|3)

SCALE 1"=20' H & V

PIEZOMETER DETAIL

N.T.S.

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REGISTERED PROFESSIONAL ENGINEER 4484 OREGON OCT. 30, 1959 ROGER W. LINDQUIST

CH2M HILL — ENGINEERS PLANNERS ECONOMISTS

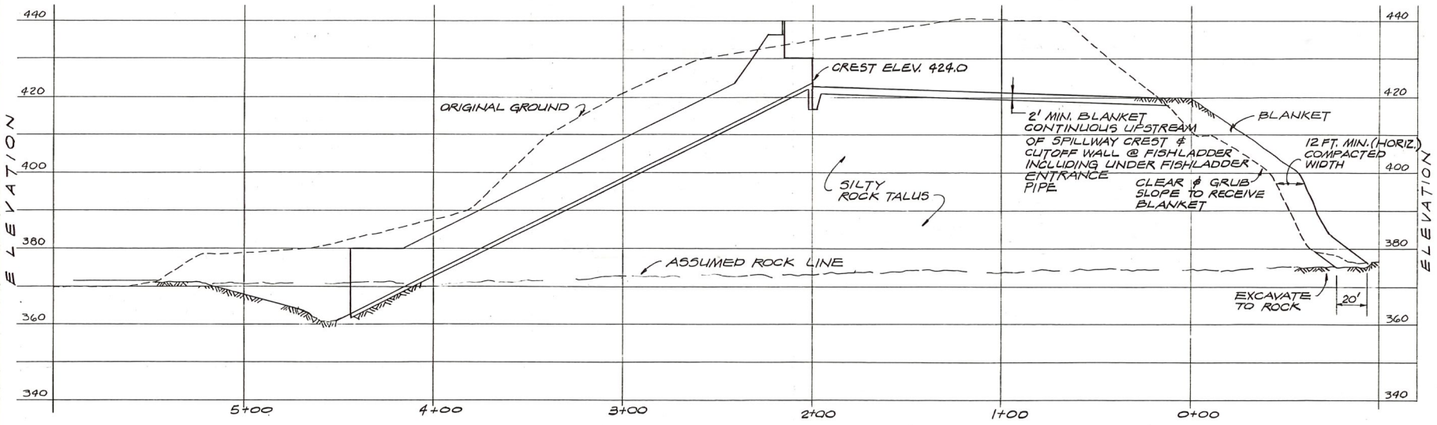
CORNELL HOWLAND HAYES & MERRYFIELD

CLAIR A. HILL & ASSOCIATES

CITY OF SILVERTON, OREGON
SILVER CREEK DAM

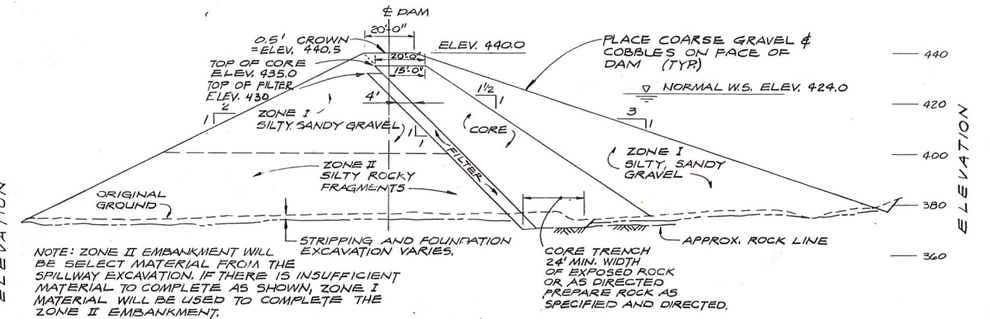
GENERAL PLAN

DES	JKF	SHEET	3
DR	KJR	OF	13
CK	RWL	DATE:	MARCH 1973
RN	C7521.1	SCALE:	AS SHOWN
DRAWING NO.	C 7521-1		



SPILLWAY CENTERLINE PROFILE

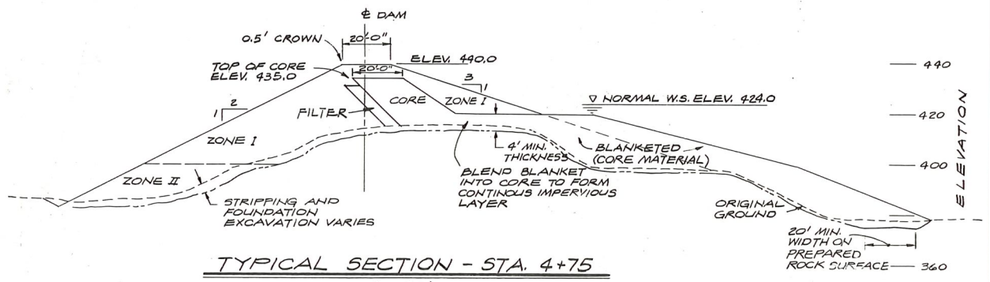
1" = 40' HORIZ.
1" = 20' VERT.



NOTE: ZONE II EMBANKMENT WILL BE SELECT MATERIAL FROM THE SPILLWAY EXCAVATION. IF THERE IS INSUFFICIENT MATERIAL TO COMPLETE AS SHOWN, ZONE I MATERIAL WILL BE USED TO COMPLETE THE ZONE II EMBANKMENT.

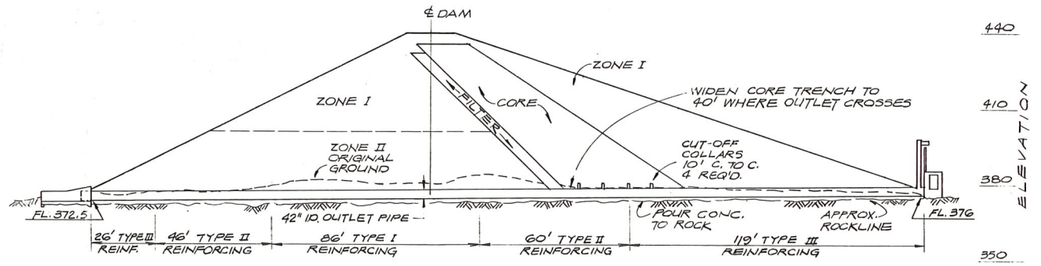
TYPICAL SECTION (STA. 3+50)

1" = 30'



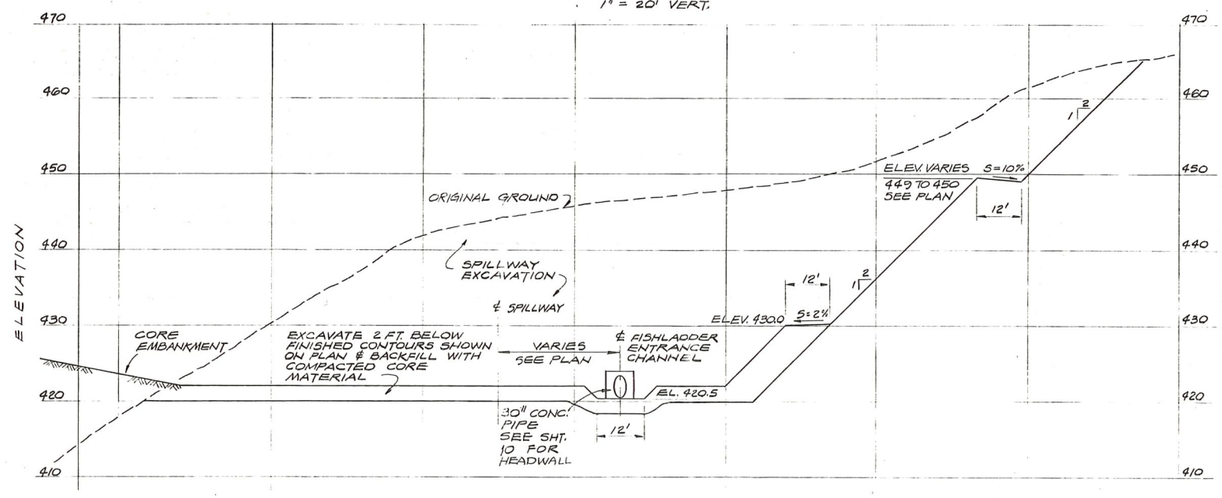
TYPICAL SECTION - STA. 4+75

1" = 30'



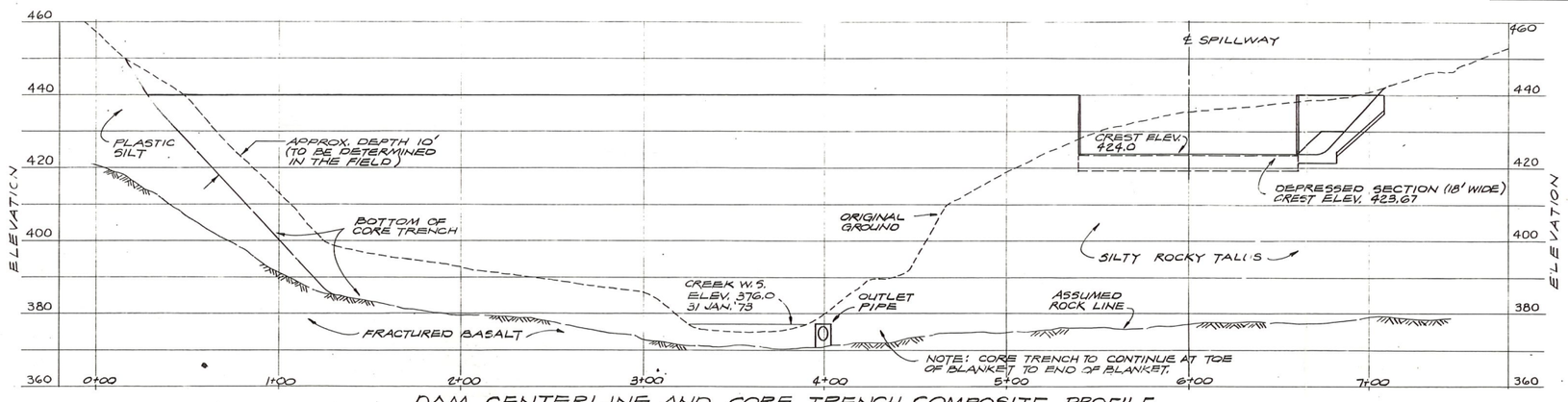
SECTION THROUGH OUTLET PIPE

1" = 30'



SPILLWAY ENTRANCE CHANNEL SECTION (B 3/4)

1" = 20' HORIZ.
1" = 10' VERT.



DAM CENTERLINE AND CORE TRENCH COMPOSITE PROFILE

1" = 40' HORIZ.
1" = 20' VERT.

REGISTERED PROFESSIONAL ENGINEER 4484 OREGON OCT 30, 1973 Roger W. Lindquist

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CH2M HILL
ENGINEERS PLANNERS ECONOMISTS

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CLAIR A. HILL & ASSOCIATES

CITY OF SILVERTON, OREGON
SILVER CREEK DAM

DAM AND SPILLWAY PROFILES AND SECTIONS

DES JKF	SHEET 4
DR KJR	OF 13
CK RWL	DATE: MARCH 1973
RN C7521.1	SCALE: AS SHOWN
DRAWING NO. C 7521-1	

NOTE:
NUMBERS SHOWN IN FISHLADDER ARE ELEVATIONS @ BOTTOM OF 1'-0" WIDE SLOTS IN 8" DIVIDER WALLS.

STA. 4+40
STA. 3+73 ANGLE PT. @ I.F. OF SPILLWAY WALL
8'-0" 8'-0" 8'-0" 8'-0" 8'-0" 8'-0" 8'-0" 8'-0" 3'-0"
℄ 8" DIVIDER WALL (TYP.)
℄ 8" DIVIDER WALL
12' WALL
1'-4"
1'-4"
1'-4"
1'-4"
℄ 8" WALL
WALL EXP. JOINT
WALL EXP. JT.
ELEV. TOP OF WALL 380.00
FL. 375± SEE DET. 3/5|5
6" PERFORATED CONC. PIPE CONT. THIS SIDE
SEE DET. 3/5|10
SEE DET. 3/5|10
A 5|6
C 5|7
ELEV. TOP OF 12" WALL = 380.00
1'-0" WIDE x 4'-0" HIGH ORIFICE BOTT. ELEV. 366.00
ELEV. TOP OF SPILLWAY WALL 380.00 FROM STA. 4+16.00 TO LOWER END OF SPILLWAY
PROVIDE DRAIN OPENING TO INSIDE OF SPILLWAY SEE SEC. D 5|6
FOR LONGITUDINAL CONSTR. JOINT BETWEEN STA. 4+09.33 & STA. 4+44.00 SEE DETAIL 1/5|5
2'-0"
4'-0"
8'-0"
4'-0"
10'-0"
4'-0"
ELEV. 368.00
FL. 370± (10'-0" TYP.)
8'-0" 8'-0" 8'-0" 6'-0"
8'-0"± (TYP.)
2'-0"
STA. 4+44.00 END OF CONC. SPILLWAY
STA. 4+09.33 SLAB JOINT
ELEV. TOP OF SLAB @ JT. = 371.67±
PROVIDE CONSTR. JT. W/ CONT. REINF. SIMILAR TO DET. 1/5|5 BTWN. STA. 3+77.33 & STA. 4+09.33
STA. 3+77.33 SLAB JOINT
18-#11 ROCK ANCHORS
54 #9 ROCK ANCHORS SPACED AS SHOWN
E 5|8
E 5|8
G 5|9
A 5|6
FL. 378±
FL. 386±
FL. 378±
6" PERFORATED CONC. PIPE
FL. 394±
FL. 386±
FL. 402±
FL. 410±
FL. 394±
FL. 402±
ELEV. TOP OF SLAB @ JT. 379.67±
D 5|6
FL. 378±
FL. 386±
LONGITUDINAL SLAB JOINTS SEE SECTION A 5|6
FL. 394±
FL. 402±
℄ SPILLWAY
STA. 3+11.25± SLAB JT.
STA. 3+42.76± SLAB JOINT
STA. 2+79.72± SLAB JOINT
STA. 2+48.19± SLAB JOINT
TRANSVERSE SLAB JOINTS; SEE SECT. C 5|7
DISCHARGE PERFORATED PIPE INTO SPILLWAY SEE TYP. DET. 3/5|5
INSTALL PIPE W/ PERFORATIONS UP ALONG WALL (TYP.)
A 5|6
ELEV. TOP OF WALL @ 10'-0" ABOVE TOP OF SPILLWAY SLAB
BACKFILL ELEV. @ WALL JOINT = 418.00± SLOPE UP TO WING WALL, SEE SHT. 7
LIMIT OF CHAIN LINK FENCE
TOP OF WALL @ JT. 5'-0" ABOVE SLAB
TOP OF WALL ELEV. 440.00
SEE SHT. 7 FOR LARGER PLAN OF THIS AREA
SLOPE TOP OF WALL UNIFORMLY
436.00
ORIFICE CONTROLLED POOLS, SEE SHT. 7
30'ϕ PIPE, INVERT ELEV. 421.00
PLUG ENDS OF DRAIN PIPES (TYP.)
ELEV. 430.5
I.F. SPILLWAY WALL
1'-4"
8'-0"
LEVEL AREA ELEV. 423.67
17 POOLS @ 8'-0" = 136'-0"
1'-0" WIDE x 6" HIGH CURB
℄ 8" DIVIDER WALL
SLOPE TOP OF WALL UNIFORMLY
TOP OF WALL @ JT. 10'-0" ABOVE TOP OF SLAB
ELEV. 436.0
4' CHAIN LINK FENCE
SLOPE TOP OF SPILLWAY SLAB UNIFORMLY PARALLEL TO ℄ @ 25% (4:1)
FL. 421±
STA. 2+00
ELEV. 424.00
FL. 410±
6" ϕ PERFORATED CONC. DRAIN PIPE
STA. 2+00 @ END OF SPILLWAY
℄ DAM
INSTALL PIPE W/ PERFORATION DOWN UNDER SLAB
M 5|9
M 5|9
60'-0"
25'-0"
15'-0"
60'-0"
430
36'-0"
FL. 418±
SLOPE TOP OF WALL UNIFORMLY
10'-0"
10'-0"
℄ DAM STA. 5+40 = 40' LEFT SPILLWAY STA. 2+00
TOP OF WALL ELEV. 423.00 SLOPE UNIFORMLY UP TO ELEV. 440.50
54'-0"
TOP OF WALL ELEV. 440.50
KEY WALL 3 REQ'D. SEE SHT. 9
WALL FTG. EXTENSION VARIES FROM 10'-0" TO 3'-0"
10'-0" WALL FTG. EXTENSION
FL. 420±
B 5|3
GRANULAR BACKFILL
EARTH BACKFILL
INTERSECTION PT. @ I.F. OF SPILLWAY WALL
SPILLWAY ENTRANCE WALL SEE SHT. 9

SPILLWAY & FISHLADDER PLAN
3/32" = 1'-0"

12" MIN. SLAB POURED ON ROCK
EXTEND REINF. THRU CONSTRUCTION JOINT & LAP 2'-0" MIN.

DETAIL 1/5|5
3/8" = 1'-0"

4'-0"
FINISH GRADE
6" PERFORATED CONC. DRAIN PIPE, PERFORATIONS UP
10'-0"
5'± AT DISCHARGE POINT

DETAIL 3/5|5
3/8" = 1'-0"

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IF THE SCALE READS:
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REGISTERED PROFESSIONAL ENGINEER 4438 OREGON DEC. 30, 1973 GEORGE F. DOTSON

CH2M HILL
ENGINEERS PLANNERS ECONOMISTS

CORNELL HOWLAND HAYES & MERRYFIELD
CLAIR A. HILL & ASSOCIATES

CITY OF SILVERTON, OREGON
SILVER CREEK DAM

SPILLWAY AND FISHLADDER PLAN

DES GFD	SHEET 5
DR JRB	OF 13
CK PWL	DATE: MARCH 1973
RN C7521.1	SCALE: AS SHOWN
DRAWING NO. C 7521-1	

STA. 4+71.00

STA. 4+57.00

STA. 4+44.00 END OF WALL & CONC. SPILLWAY SLAB

STA. 4+16.00

STA. 4+09.33 JOINT

TOP OF WALL ELEV. 380.00

NOTE:
REINFORCING STEEL FOR SPILLWAY, 12" WALL & FISH LADDER, 10" EXTERIOR WALL BETWEEN STA. 4+09.33 & STA. 4+44.00 IS SIMILAR TO REINF. IN 12" FISH LADDER WALL @ LOWER END, SEE SECTION S 6 8

TOP OF FISH LADDER INTERIOR 8" WALLS

PLACE 1'-6" WIDE CONC. SECTION OVER DRAIN PIPE @ LOCATIONS SHOWN ON PLAN

2-#5 BARS
#5 @ 12" BARS, 2" CLR.

10'-0"

#6 @ 12" E.W. T&B

#6 @ 12" BENT BARS BEND 1'-6" @ TOP OF SLAB

12" MIN.

1'-6" MIN.

℄ ROCK ANCHORS

3'-4" ±

4'-0"

APPROX. ROCK LINE ELEV. 370.0 AT EA. SIDE, FIELD VERIFY

SLOPE TOP OF ROCK UP TO 371.00 DOWN-STREAM

ELEV. 366.00

1'-0" 1'-0"

4'-0"

ELEV. 366.00

#6@12" E.W. TOP & BOTTOM, 2" CLR. TOP, 3" CLR. BOTTOM. STAGGER LAP SPLICES IN EA. LAYER, BEND TOP BARS DOWN 2'-0" EA. END

4 / 1

12" MIN. THICKNESS

6" HIGH x 12" CURB

1'-0"

4'-#7 CONT. BARS FULL WIDTH OF SPILLWAY & FISH LADDER

3'-0" MIN. FULL WIDTH OF SLAB

1'-0" MIN. @ ROCK LINE @ EA. ANCHOR

COMPACTED FILTER GRAVEL TO UNDIST. EARTH, UNDER SPILLWAY SLAB, 6" MIN. (TYP.)

APPROX. TOP OF ROCK LINE @ ELEV. 370 FIELD VERIFY

LOW POINT ELEV. 360.00

4 / 1

ELEV. 363.00

3'-0" MIN.

#6@12"

1'-6"

1'-0" MIN.

#9 REINF. BAR ROCK ANCHOR @ 8'-0" O.C. EA. WAY, SEE SHT. 5 BEND #9 BARS 3'-0" @ TOP OF SLAB. DRILL HOLE 10'-0" IN ROCK & FILL W/GROUT AS SPECIFIED. TEST AS SPECIFIED.

#6 @ 12" 1'-6" 2'-0"

EXCAVATE TO UN-DISTURBED ROCK, REMOVE ALL DIRT & LOOSE ROCK & WASH SURFACE PRIOR TO PLACING CONC. EXCAVATE TO ALLOW THE MIN. SLAB THICKNESS SHOWN.

6" ℄ PERFORATED CONC. DRAIN PIPE W/A MIN. OF 6" THICKNESS OF FILTER GRAVEL ALL AROUND AS SPECIFIED. SEE PLAN SHT. 5 FOR DRAIN PIPE LAYOUT. EXTEND SOLID CONC. PIPE & FITTINGS UP & BEND HORIZ. TO FACE DOWNSTREAM

18-# 11 REINF. BAR ROCK ANCHORS SPACED AS SHOWN ON PLAN, BEND # 11 BARS MIN. 4'-0" @ TOP OF SLAB. PLACE CONC. AROUND TOP OF BAR DOWN TO ROCK LINE AS SHOWN. DRILL HOLE 12'-0" MIN. INTO ROCK & FILL W/GROUT

EXCAVATE ROCK DOWN-STREAM OF CONCRETE SPILLWAY TO THE APPROX. ELEVATIONS SHOWN

EXCAVATE TO MIN. DIMENSIONS SHOWN, FILL ALL ROCK EXCAVATION W/CONCRETE REGARDLESS OF EXTENT OF EXCAVATION

SECTION D 5 6

3/8" = 1'-0"

GRANULAR BACKFILL, FINISH GRADE VARIES, SEE PLAN, SHT. 3

#5@12" STOP @ WALL JOINTS

#5@12" VERT. E.F. LAP 1'-6" W/ DOWELS

1½" CLR. 1½" CLR.

10'-0"

#9 DOWELS @12" O.F. 4'-9"

ADD 2-EXTRA #5 BARS E.F. 3'-8" 4'-9"

#8@12" DOWELS I.F.

2" CLR. 2" CLR.

#6@12" E.W. 1½" CLR. @ TOP OF SLAB. CONT. @ JOINTS (TYP.)

3" CLR. @ BOTT. OF SLAB (TYP.)

3'-0" 1'-0" VARIES 4'-0"

LONGITUDINAL 6" ℄ PERFORATED CONC. DRAIN - CONNECT TO EA. TRANSVERSE DRAIN @ EA. SLAB TRANSVERSE JOINT KEY, ELEV. VARIES SEE SHT. 5

NOTE:
SPILLWAY & FISH LADDER SLAB IS 10" MIN. THICKNESS EXCEPT THAT IT IS 12" MIN. THICKNESS BELOW STATION 3+77.33.

#6@12" E.W. 1½" CLR. @ TOP OF SLAB CONT. EXCEPT @ JOINTS (TYP.)

#4@12" BENT BARS (TYP.)

#4@12" E.W. CONT. @ BOTT. OF SLAB, 3" CLR., STOP @ JOINTS (TYP.)

2'-0" 1'-0" 1'-0" 2'-0" 15'-0"

½" x 5" PREMOLDED JOINT FILLER CONT. EMBED 8d NAILS @ 1'-0" INTO CONC. @ ONE SIDE

3" ½" 5" 8" 5" 2"

KEY

PAINT HORIZ. SURFACES W/ BOND BREAKER

℄ SPILLWAY

PLASTIC WATERSTOP 6" x 3/8" x 3/4" CENTERBULB CONT. SPLICE @ ALL INTERSECTIONS. CTR 3" CLR. FROM TOP OF SLAB (TYP.)

ELEV. OF TOP OF SPILLWAY SLAB @ 25% (4:1) SLOPE SEE PLAN

LOCATION OF JOINTS VARY, SEE PLAN

2-#5

1'-0" CURB

VARIES 18'-0" TO 4'-0"

#5 @ 12"

ADD 2-EXTRA #5 E.F.

2'-0" 1'-0" 1'-0" 2'-0" 26'-0"

VARIES FROM 120'-0" TO 60'-0"

PAINT SURFACES OF KEY W/BOND BREAKER PRIOR TO POURING CLOSURE SLAB TO ALLOW SOME SLAB MOVEMENT @ JT. POUR SLAB SECTIONS W/WALL FIRST.

#6@12" E.F. ADD 2-EXTRA E.F. NEAR BOTT. OF WALL, STOP @ JOINT

#5@12" VERT. E.F. 1½" CLR., LAP 1'-6" W/ DOWELS

#6@12" VERT. E.F. LAP 1'-6" W/ DOWELS

10'-0"

#6@12" CONT. E.F. STOP @ WALL JOINTS

3"x3" DRAIN OPN'GS (TYP.)

#8@12" DOWELS E.F. 4'-9"

2" CLR.

#9@12" DOWELS I.F. 4'-9" 2'-0"

#6@12" TOP OF SLAB 1½" CLR. SPACE PERPENDICULAR TO ℄ FISH LADDER. EXTEND 1'-6" INTO SPILLWAY SLAB

#5@12"

#4@12" LAP W/#8@12" DOWELS @ SPILLWAY WALL

4'-0" TYP. @ 10'-0" WALL

60' (TYP.)

1½ / 1

GRANULAR BACKFILL AS SPECIFIED

6" ℄ PERFORATED CONC. DRAIN PIPE W/ MIN. 6" FILTER MATERIAL ALL AROUND (TYP.) - ELEV. VARIES SEE SHT. 6

ELEV. VARIES

10"

#9@12" DOWELS O.P., 2" CLR. 4'-9"

5" CLR. (TYP.)

1'-0" 7'-8" 8' 7'-8" 10' 1'-6"

19'-4" @ 90° TO FISH LADDER ℄

COMPACTED FILTER GRAVEL TO UNDISTURBED EARTH, 6" MIN. (TYPICAL)

SECTION A 6 5 6

3/8" = 1'-0"

THIS PRINT IS REDUCED TO ONE-HALF OF THE ORIGINAL SCALE
IF THE SCALE READS:
1" = 1'-0" USE ½" = 1'-0" OR 1" = 10' USE 1" = 20'

REGISTERED PROFESSIONAL ENGINEER — OREGON — OCT. 30, 1956 — GEORGE T. DITTOM

CH2M HILL — ENGINEERS PLANNERS ECONOMISTS

CORNELL HOWLAND HAYES & MERRYFIELD

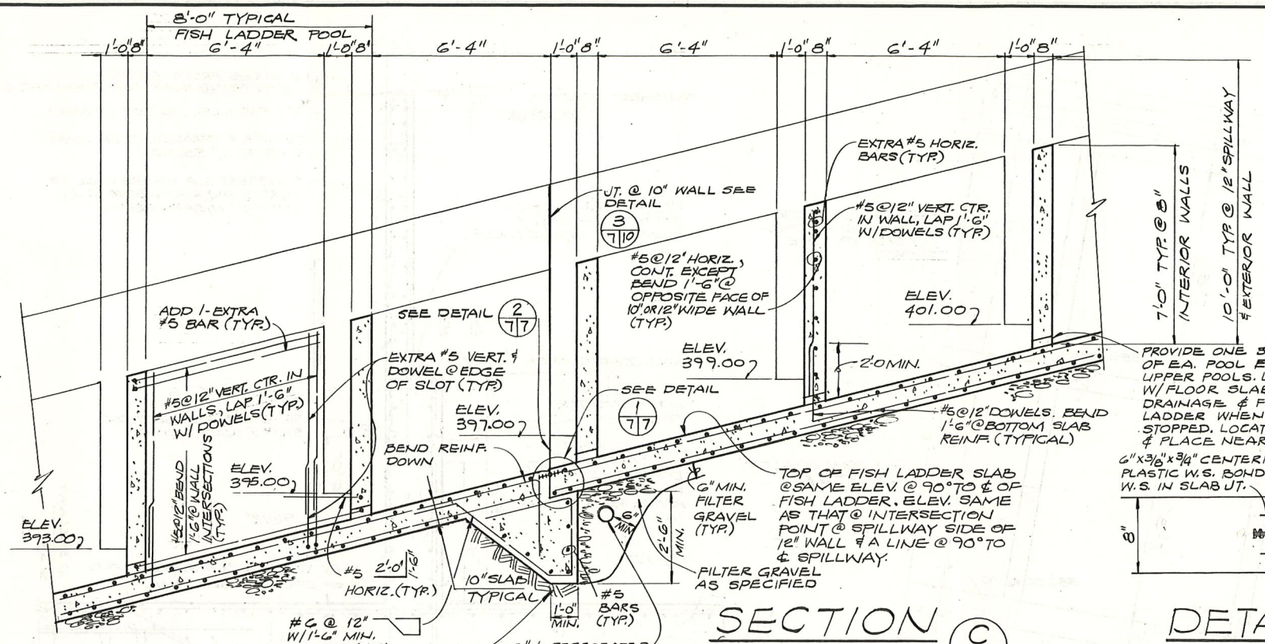
CLAIR A. HILL & ASSOCIATES

CITY OF SILVERTON, OREGON
SILVER CREEK DAM

SPILLWAY AND FISHLADDER SECTIONS

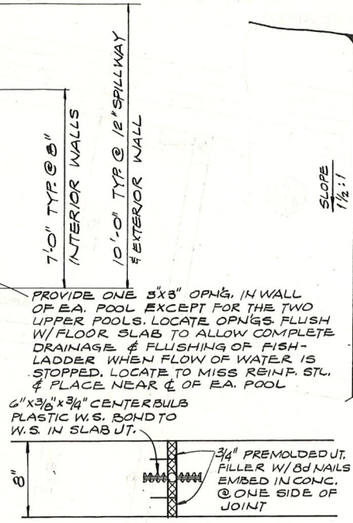
DES. GFD	SHEET 6
DR. JRB	OF 13
CK. RWL	DATE: MARCH 1973
RN C7521.1	SCALE: AS SHOWN
DRAWING NO. C 7521-1	

THIS PRINT IS REDUCED TO ONE-HALF OF THE ORIGINAL SCALE
IF THE SCALE READS:
1"= 1'-0" USE ½"= 1'-0" OR 1"= 10' USE 1"= 20'



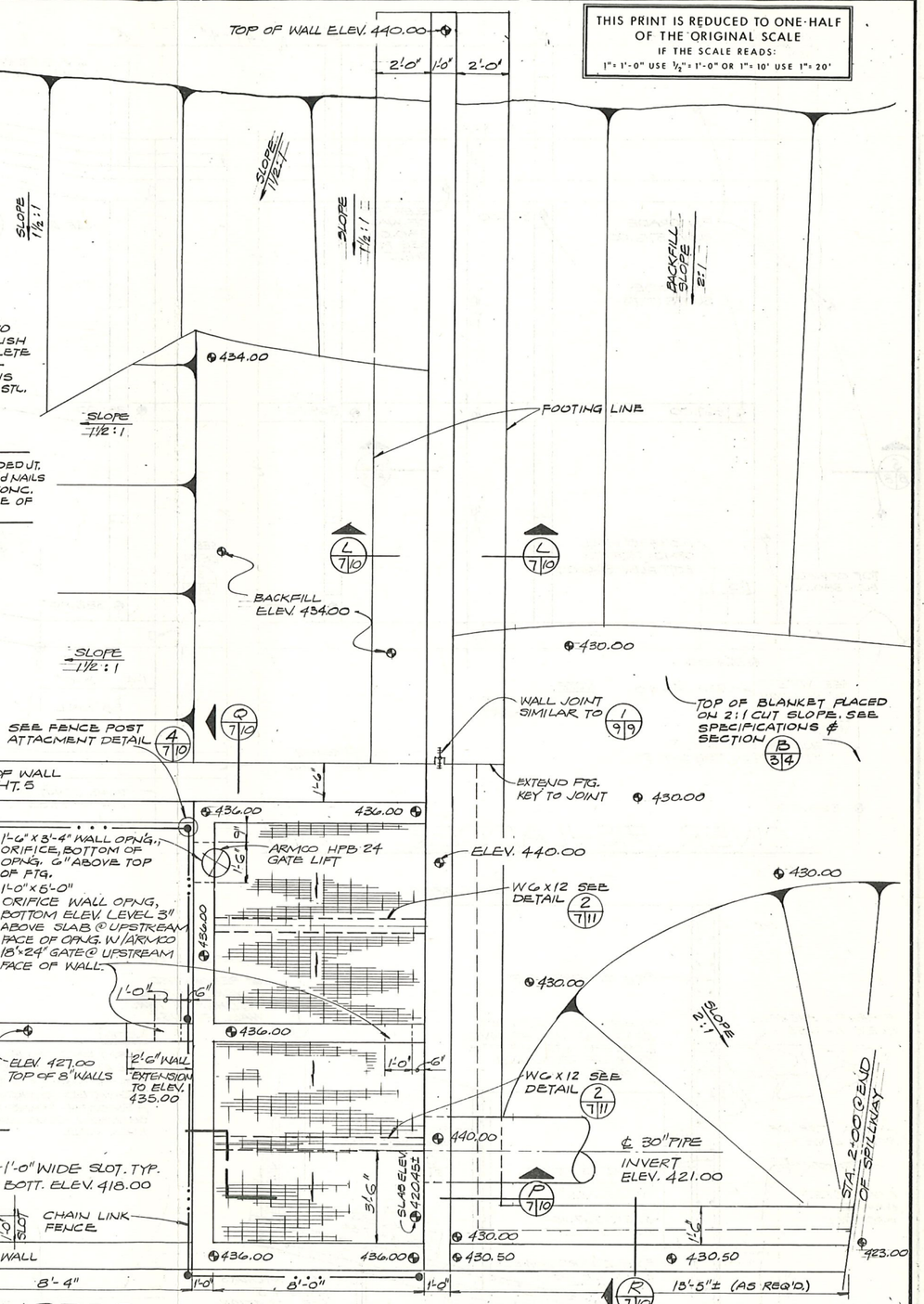
SECTION C/5/7
3/8"= 1'-0"

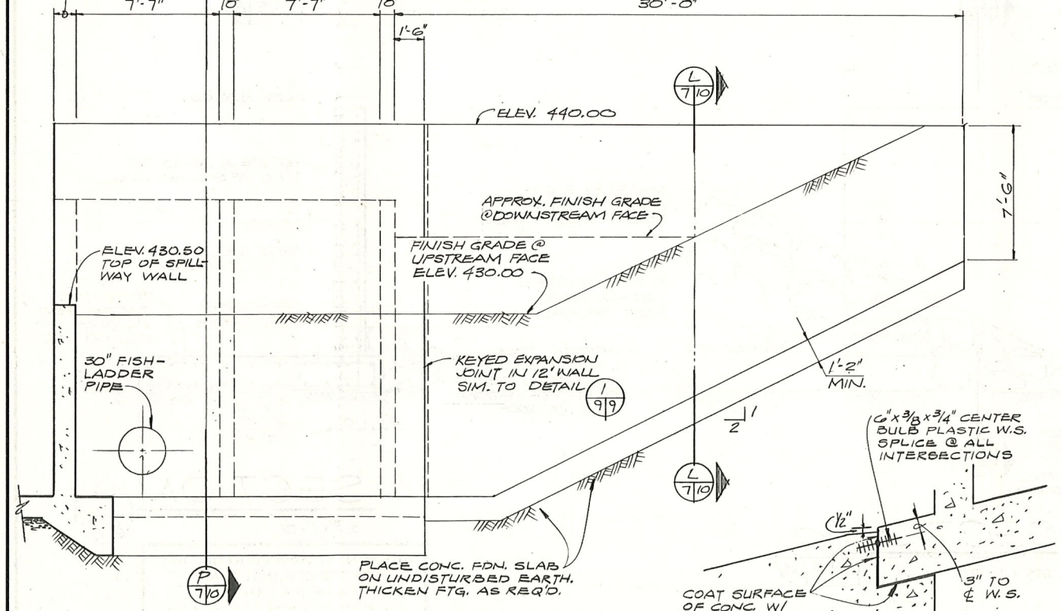
NOTE:
TRANSVERSE JT. KEY & REINF. TYP. AT ALL TRANSVERSE JTS. EXCEPT LOWER JT. ON ROCK.



DETAIL 2/7/7
1½"= 1'-0"

NOTE:
SLOPE BACKFILL DOWN TO 6'-0" ABOVE TOP OF SLAB @ WALL JOINT SEE SHT. 5





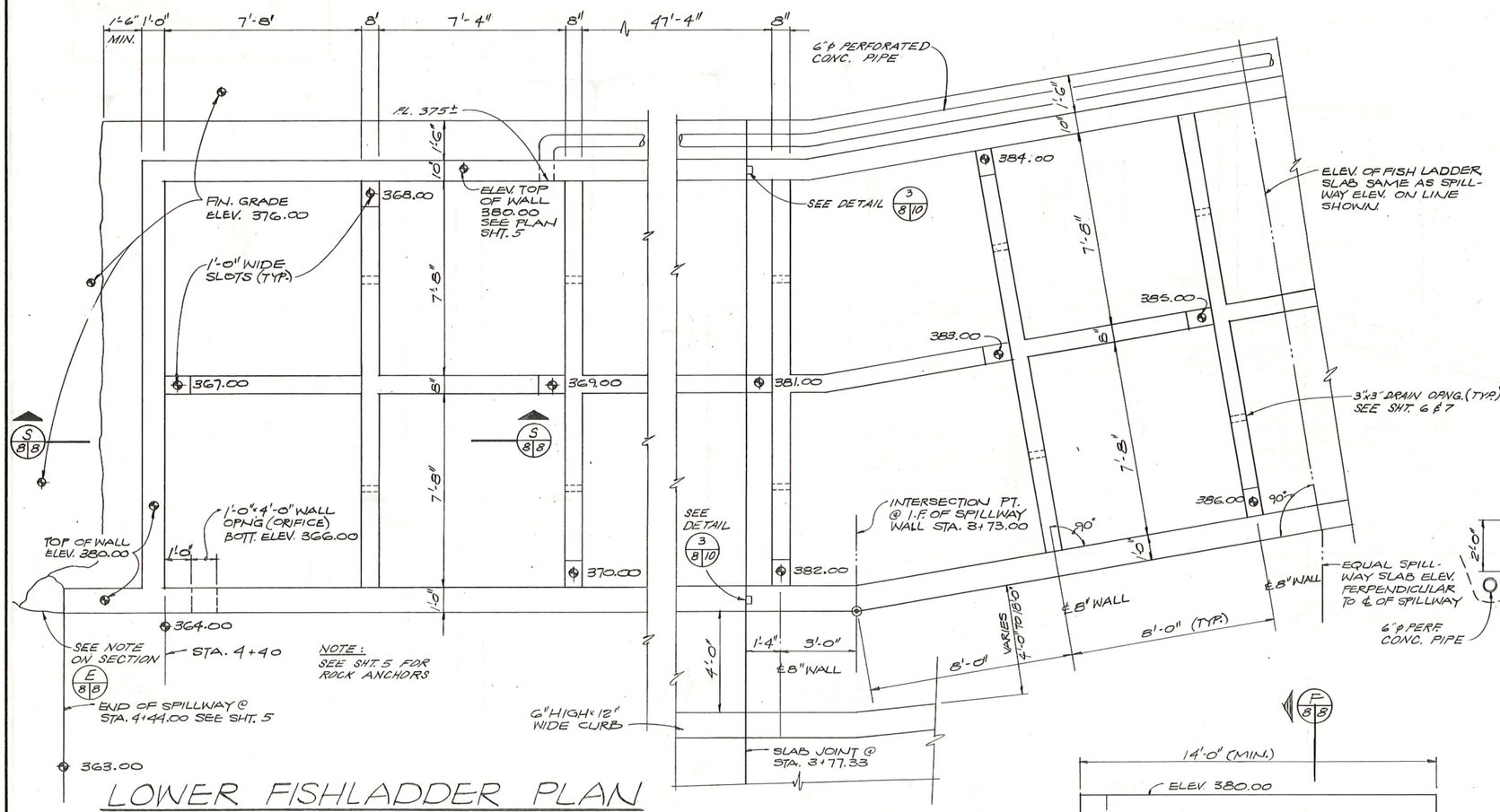
ELEV. VIEW OF UPSTREAM END OF FISHLADDER
¼"= 1'-0"

DETAIL 1/7/7
¾"= 1'-0"

PARTIAL PLAN @ UPPER END OF FISH LADDER
3/8"= 1'-0"

REGISTERED PROFESSIONAL ENGINEER 4478 OREGON OCT. 30, 1973 GEORGE F. DOTSON

CH2M HILL ENGINEERS PLANNERS ECONOMISTS	CORNELL HOWLAND HAYES & MERRYFIELD CLAIR A. HILL & ASSOCIATES	CITY OF SILVERTON, OREGON SILVER CREEK DAM FISHLADDER DETAILS	DES. GFD DR. JRB CK. RN. C7521.1 DRAWING NO. C 7521-1
			SHEET 7 OF 13 DATE: MARCH 1978 SCALE: AS SHOWN



LOWER FISHLADDER PLAN

3/8" = 1'-0"

SECTION S 6 8 8

3/8" = 1'-0"

SECTION E 5 8 8

3/8" = 1'-0"

SECTION B 5 8

3/8" = 1'-0"

SECTION F 8 8

3/8" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER 4478 OREGON OCT. 30, 1973 GEORGE F. DOTSON

CH2M HILL
ENGINEERS PLANNERS ECONOMISTS

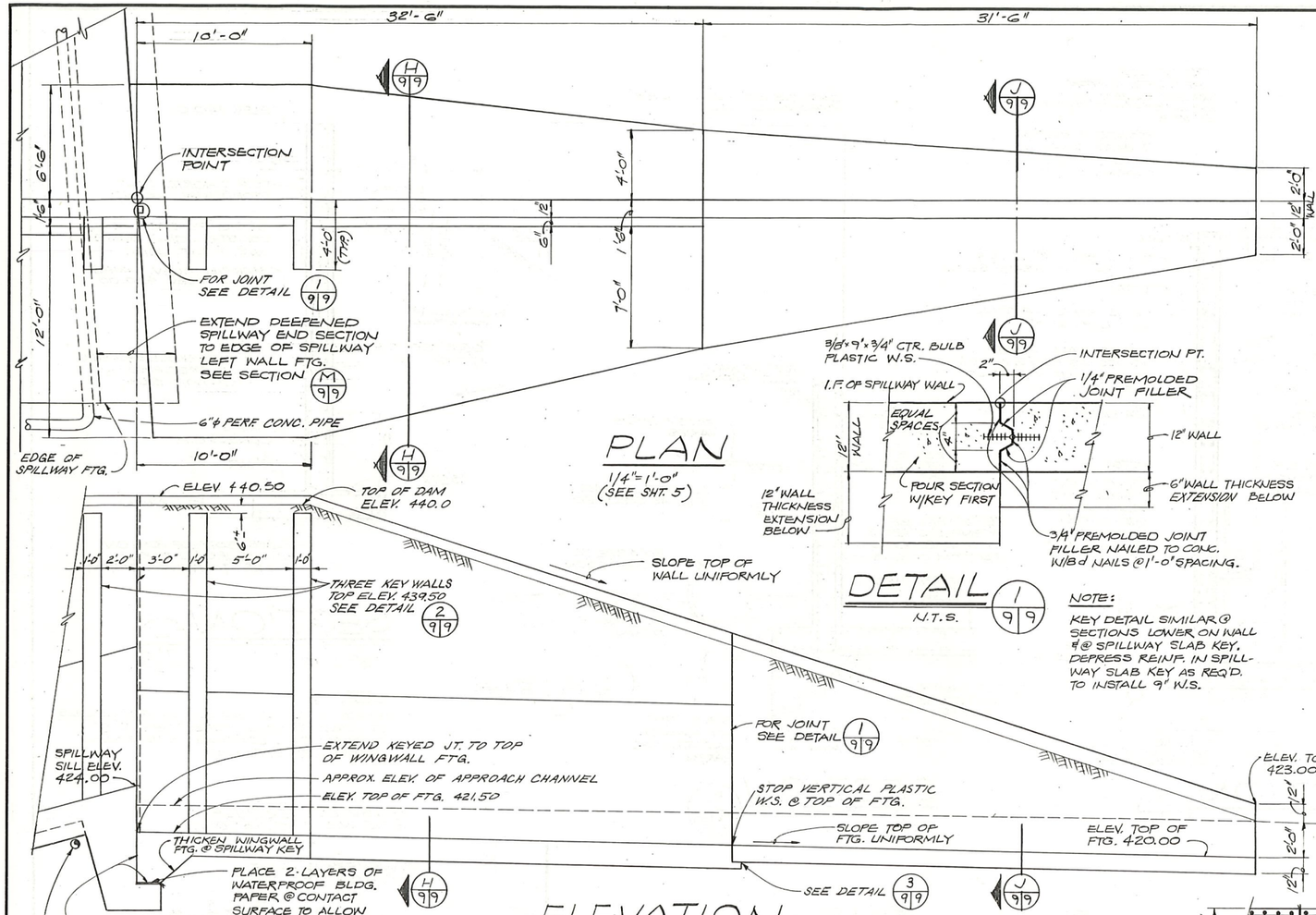
CORNELL HOWLAND HAYES & MERRYFIELD

CLAIR A. HILL & ASSOCIATES

CITY OF SILVERTON, OREGON
SILVER CREEK DAM

FISHLADDER DETAILS AND WALL SECTIONS

DES GFD	SHEET 8
DR JRB	OF 13
CK RWL	DATE: MARCH 1973
RN C7521.1	SCALE: AS SHOWN
DRAWING NO. C 7521-1	



PLAN

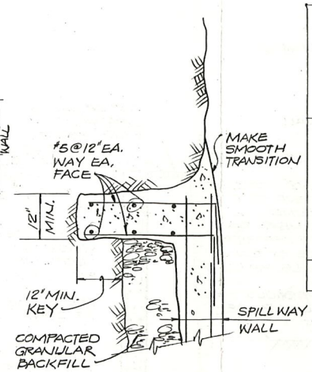
1/4"=1'-0"
(SEE SHT. 5)

DETAIL 1/9

N.T.S.

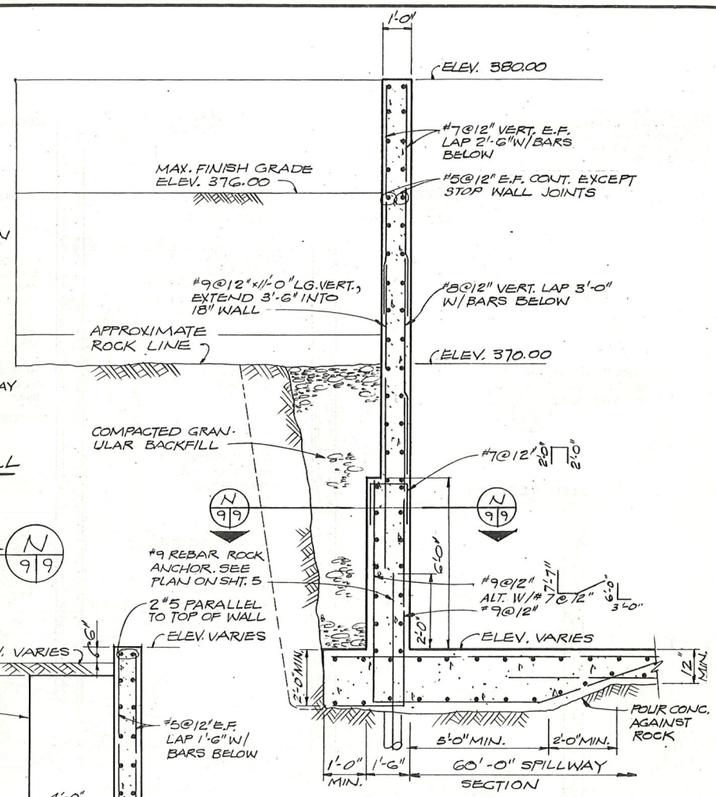
NOTE:

KEY DETAIL SIMILAR @ SECTIONS LOWER ON WALL # @ SPILLWAY SLAB KEY. DEPRESS REINF. IN SPILLWAY SLAB KEY AS REQ'D. TO INSTALL 9" W.S.



BELOW WINGWALL FOOTING SECTION N/9

N.T.S.



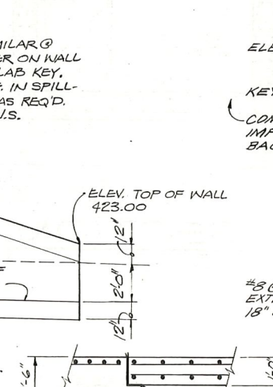
SECTION G/5 8 9

3/8"=1'-0"

ELEVATION

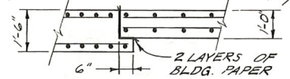
SPILLWAY ENTRANCE RETAINING WALL

1/4" = 1'-0"



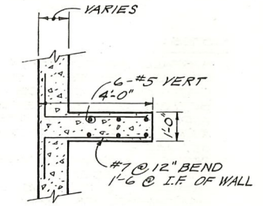
SECTION H/9

3/8" = 1'-0"



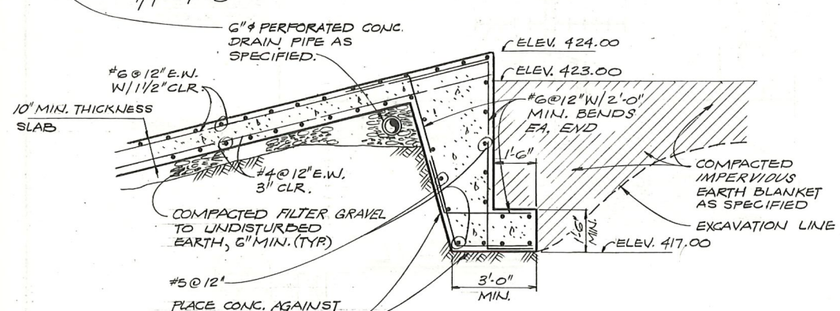
DETAIL 3/9

3/8"=1'-0"



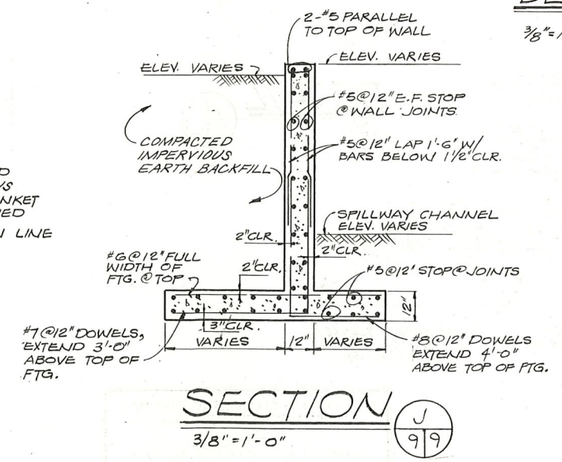
DETAIL 2/9

3/8"=1'-0"



SECTION M/9

3/8" = 1'-0"



SECTION J/9 9

3/8" = 1'-0"

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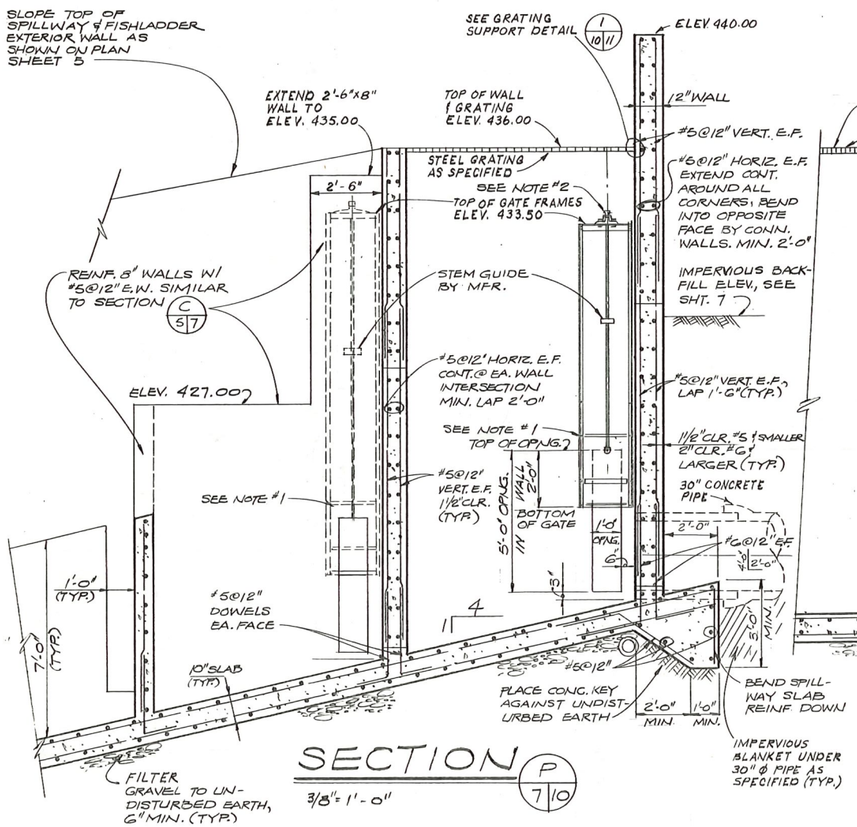
CH2M HILL
ENGINEERS PLANNERS ECONOMISTS

CORNELL HOWLAND HAYES & MERRYFIELD
CLAIR A. HILL & ASSOCIATES

CITY OF SILVERTON, OREGON
SILVER CREEK DAM

RETAINING WALL SECTIONS

DES. GPD	SHEET 9
DR JRB	OF 13
CK RWL	DATE: MARCH 1973
RN C7521.1	SCALE: AS SHOWN
DRAWING NO. C 7521-1	



SECTION P 7/10
3/8"= 1'-0"

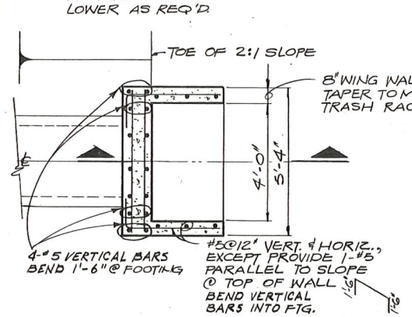
SECTION Q 7/10
3/8"= 1'-0"

SECTION R 7/10
3/8"= 1'-0"

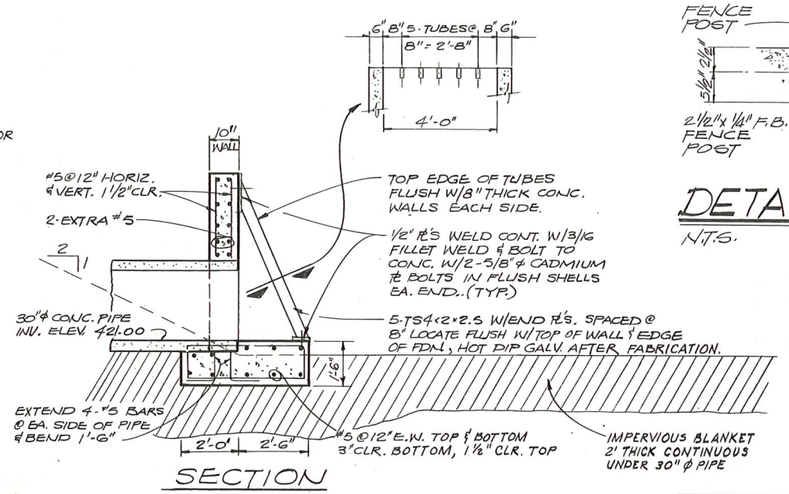
SECTION L 7/10
3/8"= 1'-0"

NOTE:
*PLACE BACKFILL EVENLY ON BOTH SIDES OF WALL TO AVOID MORE THAN 2'-0" DIFFERENTIAL LOADING UNTIL FINAL GRADES ARE OBTAINED.

NOTES:
1. INSTALL ARMCO 18x24-5-00 SLIDE GATE WITH FRAME @ UPSTREAM SIDE OF 2-WALLS SHOWN. CTR. GATE OVER 1'-0" WIDE OPENING. SET FRAME TO ALLOW BOTTOM OF GATE TO EXTEND 2'-0" BELOW TOP OF 1'-0" WIDE BY 5'-0" HIGH OPENING AND TO ALLOW GATE TO RISE TO CLR. TOP OF OPENING. LENGTH OF FRAME AS REQ'D, SEE ABOVE.
2. PROVIDE A FRAME W/OPERATING NUT AND STOP NUT @ TOP OF STEM AS REQ'D. PROVIDE 1-6'-0" LONG OPERATING ROD OR WRENCH W/A HANDWHEEL OR CRANK THAT WILL ALLOW STEM TO RISE OR LOWER AS REQ'D.



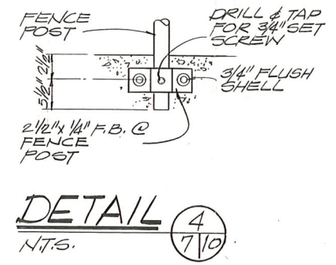
PLAN



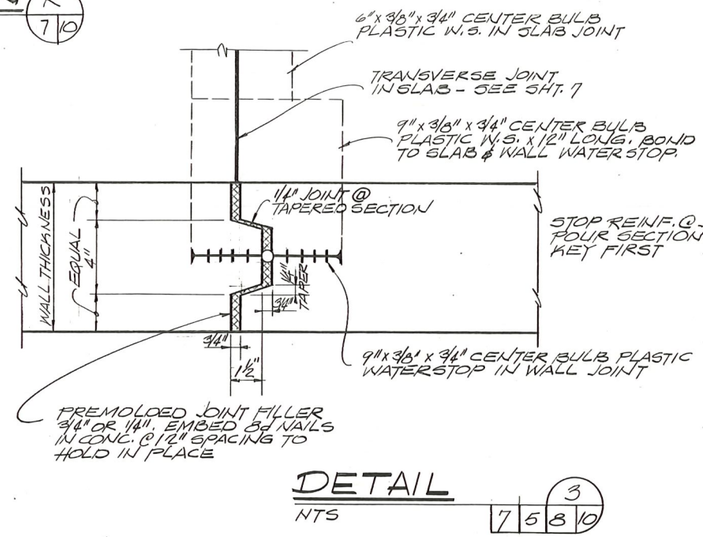
SECTION

FISHLADDER TRASH RACK

3/8"= 1'-0"



DETAIL 4 7/10
N.T.S.



DETAIL 3 7/5/8/10
NTS

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REGISTERED PROFESSIONAL ENGINEER 4478 OREGON

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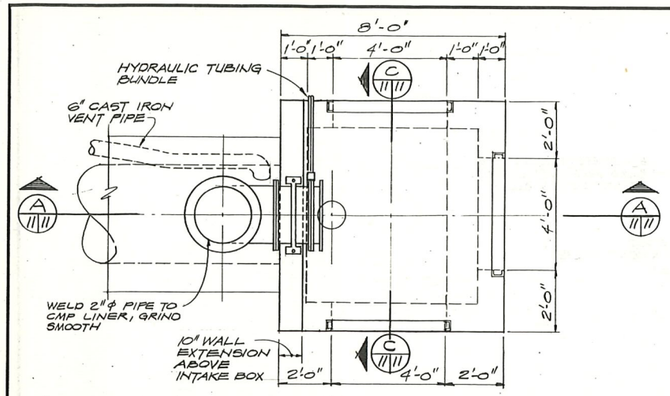
CITY OF SILVERTON, OREGON
SILVER CREEK DAM

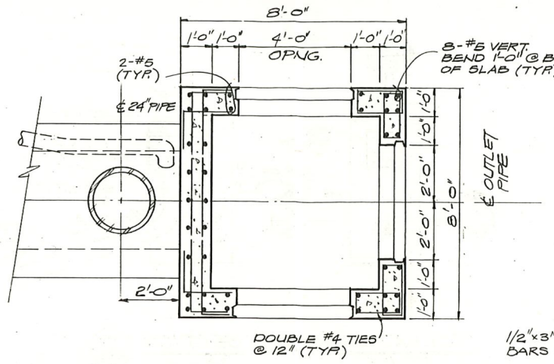
MISCELLANEOUS FISHLADDER DETAILS

DES. GFD	SHEET 10
DR. JRB	OF 13
CK. RWL	DATE: MARCH 1973
RN C7521.1	SCALE: AS SHOWN
DRAWING NO. C 7521-1	



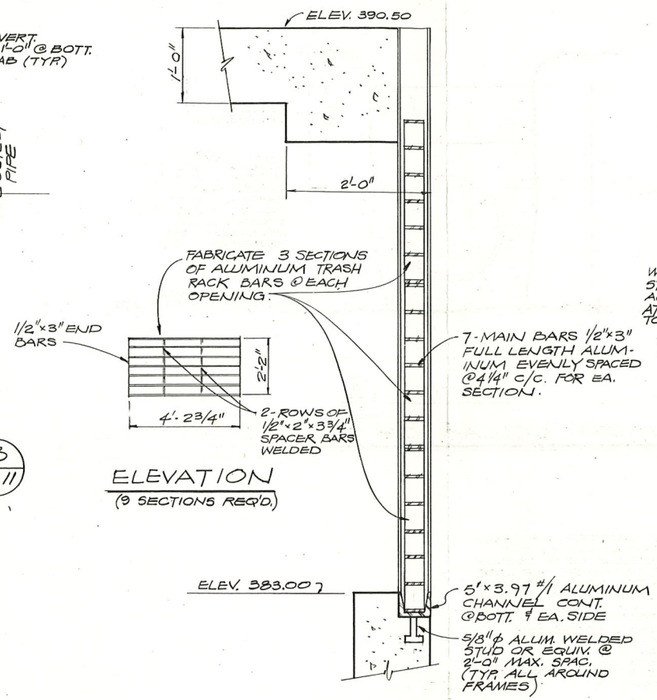
INTAKE STRUCTURE - PLAN

3/8"= 1'-0"



SECTION

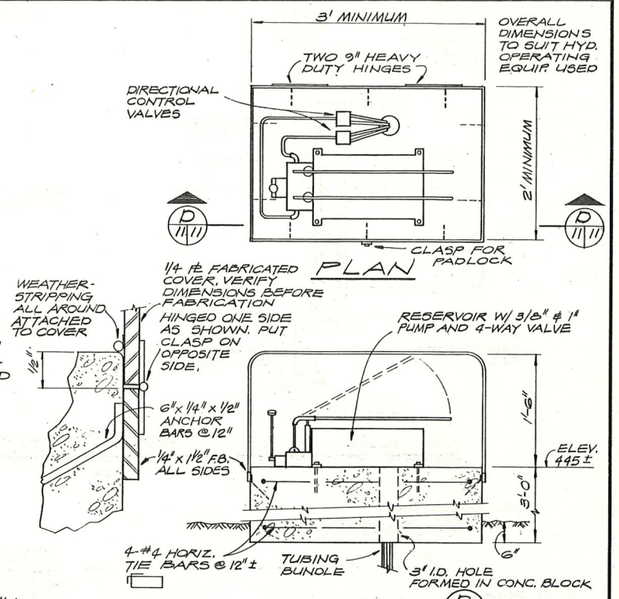
3/8"= 1'-0"



ELEVATION
(9 SECTIONS REQ'D.)

TRASH RACK DETAIL

1"= 1'-0"

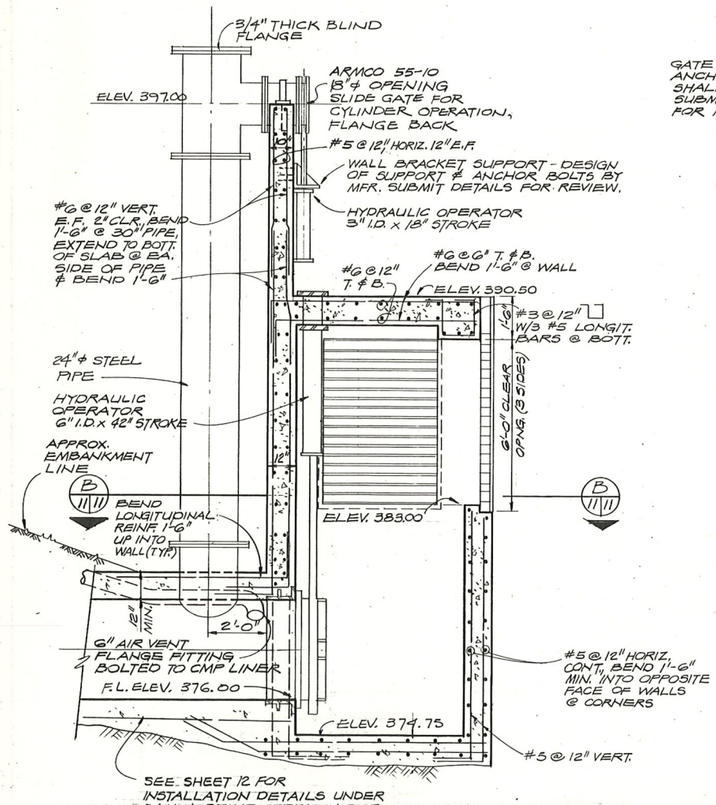


PLAN

SECTION

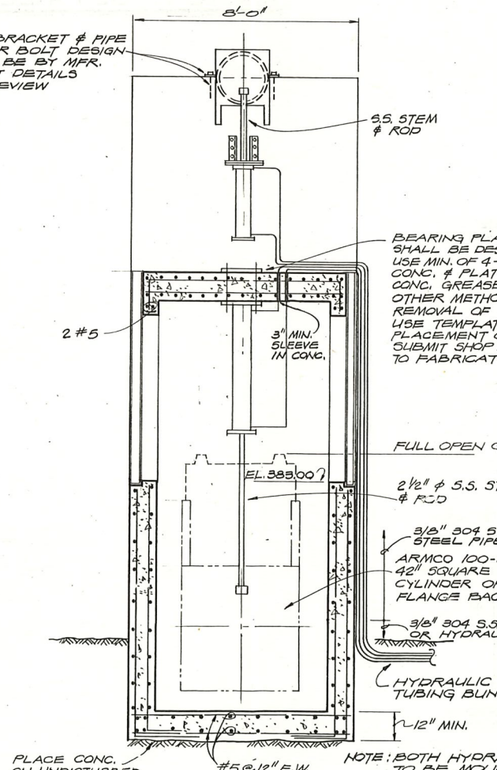
HYDRAULIC CONTROLS DETAIL

1" = 1'-0"



SECTION

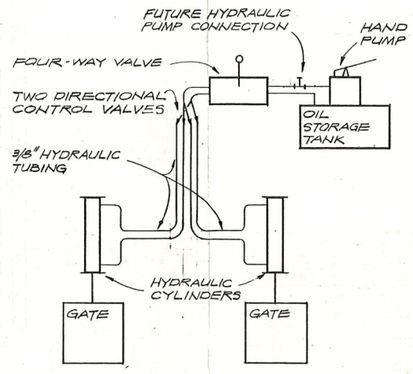
3/8"= 1'-0"



NOTE: BOTH HYDRAULIC CYLINDERS ARE TO BE MOUNTED AND ADJUSTED SO THE CYLINDER ROD IS FULLY EXTENDED WHEN THE GATE IS PROPERLY SEATED IN THE CLOSED POSITION.

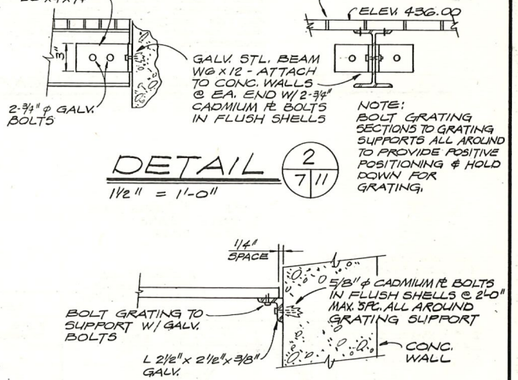
SECTION

3/8"= 1'-0"



TYPICAL HYDRAULIC SCHEMATIC

NO SCALE



DETAIL 2/7/11
1 1/2" = 1'-0"

DETAIL 1/10/11
1 1/2" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER 4484 OREGON OCT. 30, 1973 ROGER W. LINDQUIST

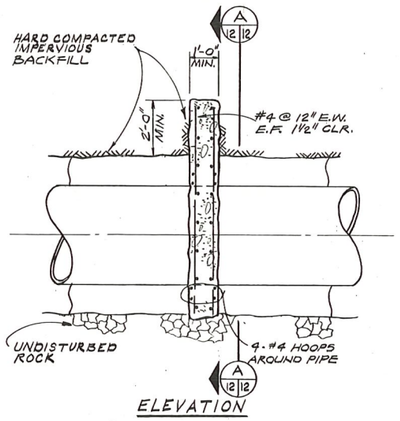
CH2M HILL
ENGINEERS PLANNERS ECONOMISTS

CORNELL HOWLAND HAYES & MERRYFIELD
CLAIR A. HILL & ASSOCIATES

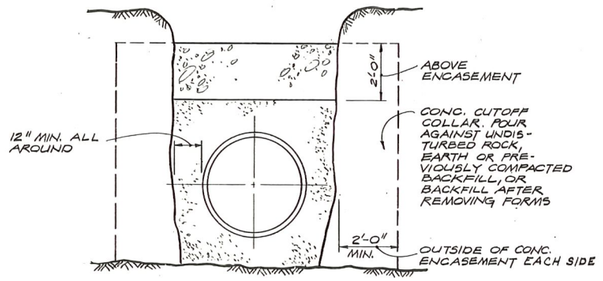
CITY OF SILVERTON, OREGON
SILVER CREEK DAM

INTAKE STRUCTURE PLAN AND DETAILS

DES. RWL	SHEET 11
DR JRB/KJR	OF 13
CK GFD	DATE: MARCH 1973
RN C7521-1	SCALE: AS SHOWN
DRAWING NO. C7521-1	



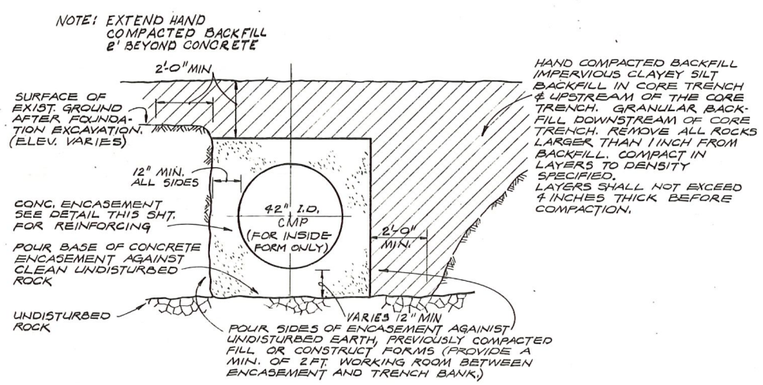
ELEVATION



SECTION A 12|12

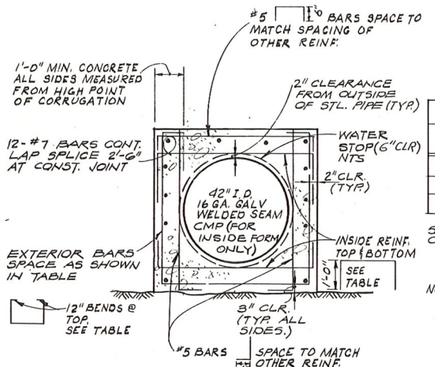
OUTLET PIPE CONCRETE CUT-OFF COLLAR DETAIL

3/8" = 1'-0"



OUTLET PIPE TRENCH AND BACKFILL DETAIL

3/8" = 1'-0"



REINFORCING TABLE		
TYPE REINFORCING	EXTERIOR BARS ☐	INSIDE REINF. TOP & BOTTOM ☐
1	#7 @ 10"	#8 @ 10"
2	#6 @ 10"	#7 @ 10"
3	#6 @ 12"	#7 @ 12"

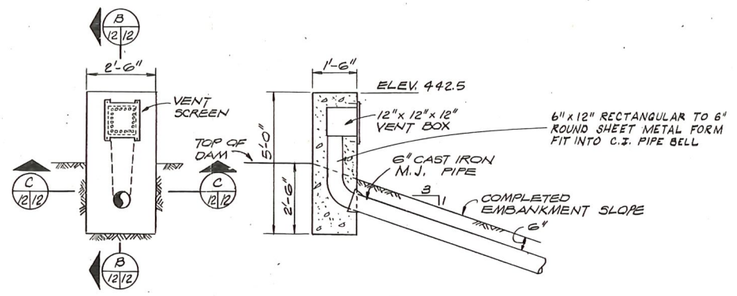
SEE SHT. 4 FOR LOCATION OF REINFORCING TYPES.

NOTE: CLEARANCE FROM OUTSIDE OF CORRUGATED PIPE IS FROM HIGH POINT OF CORRUGATION.

CAST-IN-PLACE CONCRETE OUTLET PIPE DETAILS

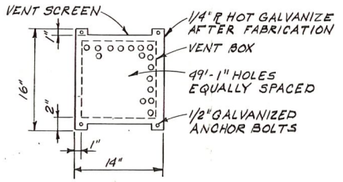
3/8" = 1'-0"

NOTES:
1. CONSTRUCTION JOINT SPACING 30' MAX., POUR ALTERNATE SECTIONS, ALLOW 7 DAYS BETWEEN ADJACENT POURS.
2. LONGITUDINAL STEEL CONTINUOUS THROUGH JOINT.
3. 6" x 3/8" x 3/4" BULB, PLASTIC W.S. CONT. SPLICE AT JOINT.

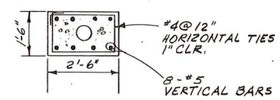


ELEVATION 3/8" = 1'-0"

SECTION B 12|12 3/8" = 1'-0"

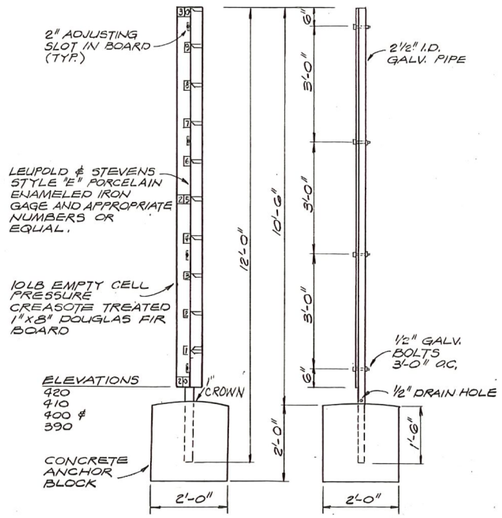


SCREEN DETAIL 1" = 1'-0"



SECTION C 12|12 3/8" = 1'-0"

AIR VENT DETAILS



NOTE: STAFF GAGE LOCATIONS TO BE DETERMINED IN FIELD SO THEY ARE READILY VISIBLE FROM THE HYDRAULIC GATE CONTROLS.

STAFF GAGE DETAIL

1/2" = 1'-0" 4 REQ'D.

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IF THE SCALE READS:
1"= 1'-0" USE ½"= 1'-0" OR 1"= 10' USE 1"= 20'

REGISTERED PROFESSIONAL ENGINEER 4484 OREGON OCT. 30, 1972 ROGER W. LINDQUIST

CH2M HILL ENGINEERS PLANNERS ECONOMISTS

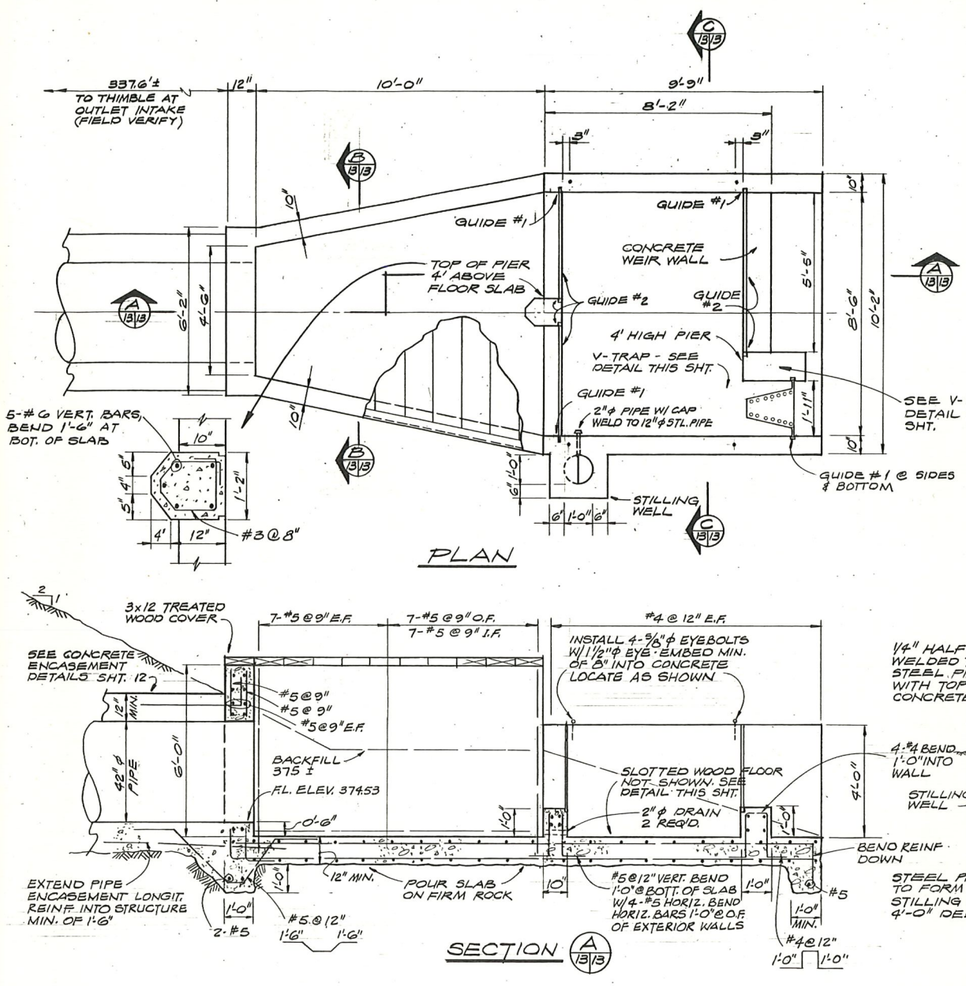
CORNELL HOWLAND HAYES & MERRYFIELD

CLAIR A. HILL & ASSOCIATES

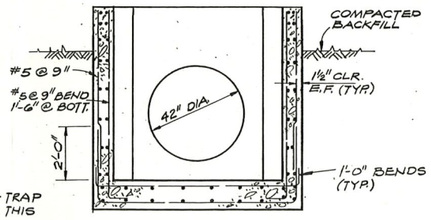
CITY OF SILVERTON, OREGON
SILVER CREEK DAM

OUTLET PIPE DETAILS

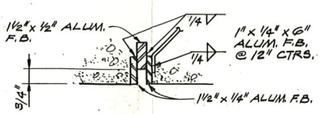
DES RWL	SHEET 12
DR KJR	OF 13
CK JKF/RWL	DATE: MARCH 1973
RN C7521.1	SCALE: AS SHOWN
DRAWING NO. C7521-1	



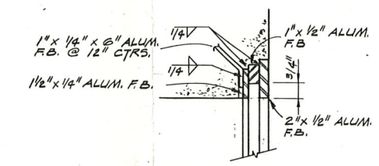
PLAN



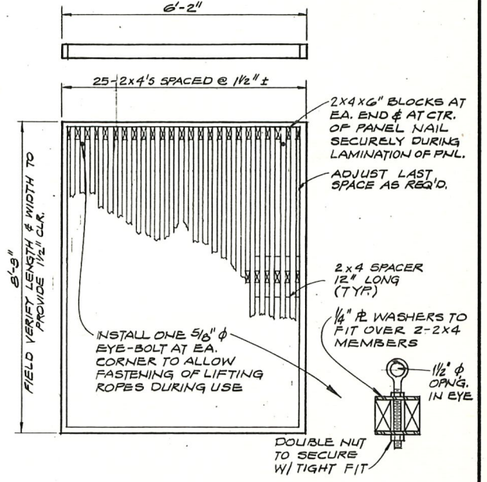
SECTION B 13/13



GATE GUIDE NO. 1



GATE GUIDE NO. 2



WOOD FLOOR DETAIL

½" = 1'-0"

SECTION A 13/13

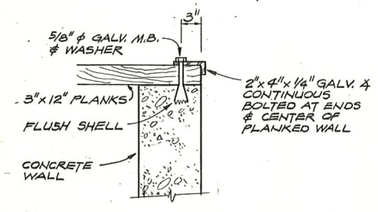
SECTION C 13/13

OUTLET DETAILS

3/8" = 1'-0"

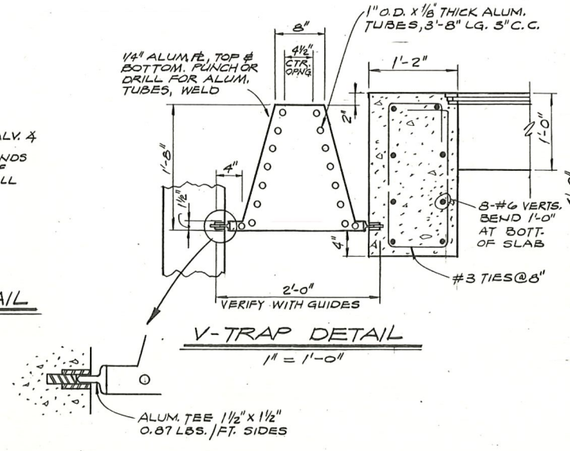
FISH BARRIER DETAIL

1" = 1'-0"



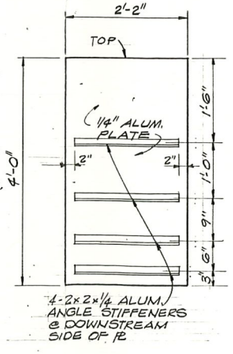
COVER CONNECTION DETAIL

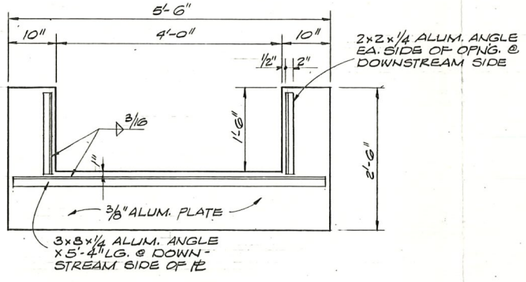
1" = 1'-0"



V-TRAP DETAIL

1" = 1'-0"





WEIR DETAILS

3/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER 4484 OREGON Oct. 31, 1972 ROGER W. LINDQUIST

CH2M HILL
ENGINEERS PLANNERS ECONOMISTS

CORNELL HOWLAND HAYES & MERRYFIELD
CLAIR A. HILL & ASSOCIATES

CITY OF SILVERTON, OREGON
SILVER CREEK DAM

OUTLET PLAN AND DETAILS

DES. RWL	SHEET 13
DR. KJR	OF 19
CK. GFD	DATE: MARCH 1973
RN C7881-1	SCALE: AS SHOWN
DRAWING NO. C 7521-1	