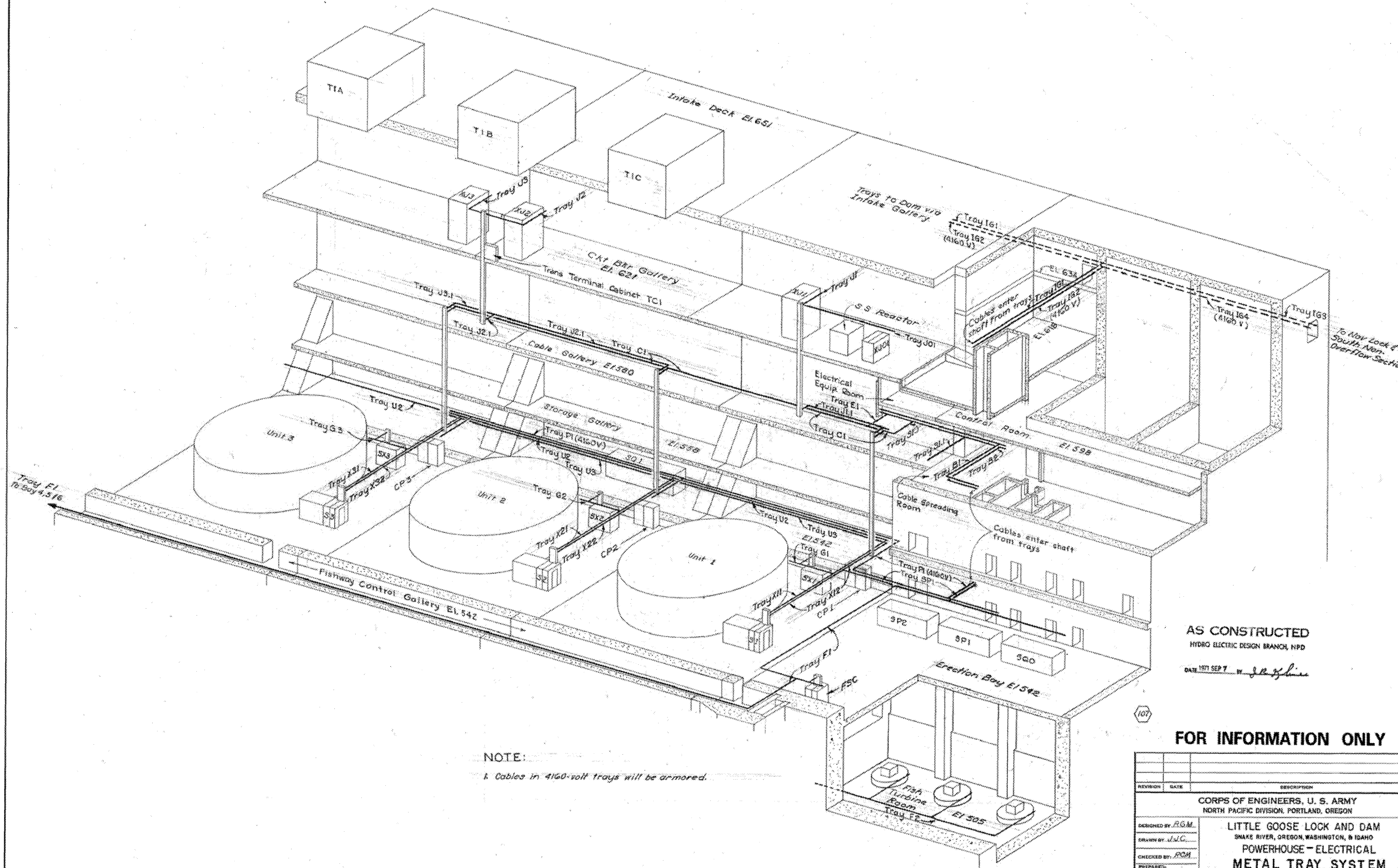

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 SEP 7 BY [signature]

127

NOTE:
1. Cables in 4160-volt trays will be armored.

FOR INFORMATION ONLY

REVISION	DATE	DESCRIPTION	BY

CORPS OF ENGINEERS, U. S. ARMY
NORTH PACIFIC DIVISION, PORTLAND, OREGON

DESIGNED BY RGM
DRAWN BY JJC
CHECKED BY PCM
PREPARED: [signature] HEAD, ELECTRIC SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON, & IDAHO
POWERHOUSE – ELECTRICAL
METAL TRAY SYSTEM
SCHEMATIC DIAGRAM

SUBMITTED: [signature] CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV ENGINEER [signature] DATE 23 Jan 68
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN
SPEC. NO.
INV. NO. DACW68-68-B-0029
SHEET 127
LGP-11-6-1A11/1

No Scale

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
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SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-001.dgn
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

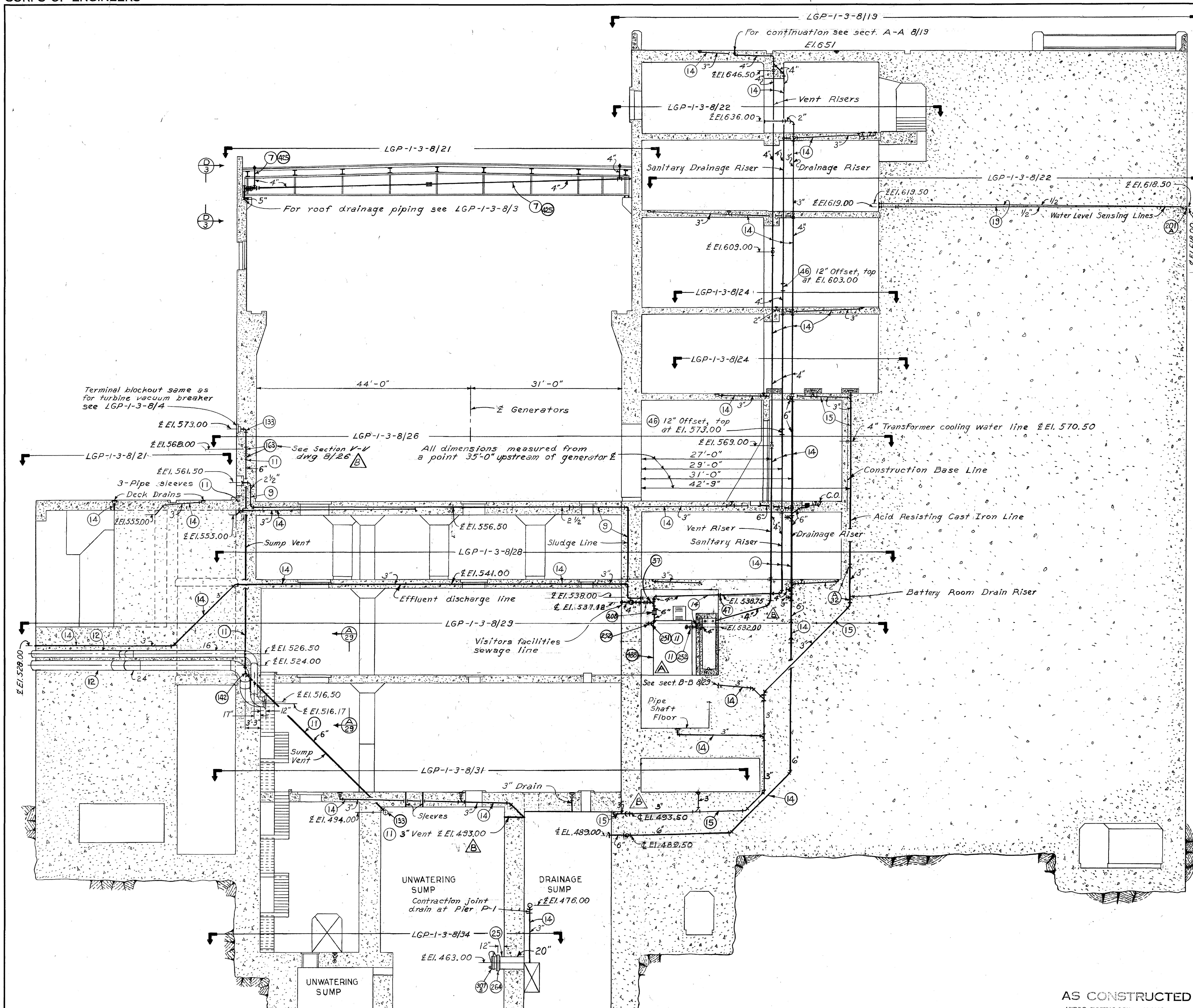
POWERHOUSE - ELECTRICAL
METAL TRAY SYSTEM
SCHEMATIC DIAGRAM

SHEET ID
R-001

FINAL

CORPS OF ENGINEERS

U. S. ARMY



ERECTION BAY CROSS SECTION THRU SUMP

SCALE 1/8"=1'-0"

LIST OF MATERIAL

PART No.	MAT'L	QTY.	DESCRIPTION	BID ITEM
12	BLK. STL.		Pipe, 12" and larger Standard 3/8" wall	218
7	GAL. "		Pipe, 3" thru 10" Schedule 40	220
9	BLK. STL.		Pipe, 2½" and smaller Schedule 40	216
11	" "		Pipe, 3" thru 10" Schedule 40	217
14	C. I.		Soil pipe, hub & spigot EX. HVY.	214
15	A.R.C.I.		Soil pipe, hub & spigot EX. HVY.	215
19	Copper		Tubing, type K (hard)	221
A 32	A.R.C.I.		Bend, 1/8 EX. HVY.	215
46	C. I.		Offset, 1/8 bend EX. HVY.	214
142	" "		45° Elbow, long turn drainage, not pitched	217
133	" "		90° Long elbow, drainage not pitched	217
264	Steel		Flange, slip-on, welding 150 PSI	218
3075	IBBT		Valve, flap, flanged inlet, ~~Eddy F-3012 or equal~~	224
25	BLK. STL.		Pipe, 12" and larger Extra Strong ½" wall	218
201A	Brass		Piezometer plate, (Detail "B" LGP-1-3-8/15)	221
163	C.I.		45° Y-branch, reducing, single, drainage	217
425	—		Insulation, pipe. See specifications	114
A 37	C.I.		~~Comb. Y & 1/8" bend~~, single EX. HVY.	214
A 47	"		Double hub EX. HVY.	214
A 208	–		Coupling, Dresser type, style 38 or eq.	222
A 251	Stl.		Elbow, 90°, L.R., welding 150 PSI	217
A 252	"		Elbow, 45°, L.R., welding 150 PSI	217
A 488	–		Sewage disposal unit	243

REFERENCE DRAWINGS:

LGP-1-3-8/1 TYPICAL DETAILS SHEET NO. 1
LGP-1-3-8/2 TYPICAL DETAILS SHEET NO. 2
LGP-1-3-8/3 MISC. ROOF SECTIONS
LGP-1-3-8/4 GENERATOR BAY TRANSVERSE SECT. & DETAILS
LGP-1-3-8/18 ERECTION BAY TRANSVERSE SECTION THRU PUMP
LGP-1-3-8/19 ERECTION BAY INTAKE DECK EL. 683 & 651
LGP-1-3-8/21 ERECTION BAY ROOF PLAN & TAILRACE DECK PLAN
LGP-1-3-8/22 ERECTION BAY PLAN EL. 634 & 618
LGP-1-3-8/24 ERECTION BAY PLAN EL. 598 & 580
LGP-1-3-8/26 ERECTION BAY PLAN EL. 558
LGP-1-3-8/28 ERECTION BAY PLAN EL. 542
LGP-1-3-8/29 ERECTION BAY PLAN EL. 522 & 505
LGP-1-3-8/31 ERECTION BAY PLAN EL. 488 & 454.5
LGP-1-3-8/34 ERECTION BAY MISC. SECTIONS & DETAILS

NOTES:

1 - For general notes see LGP-1-3-8/1.
2 - See reference plan views for details of piping.
3 - Drainage and sanitary piping shall slope 1/4 inch per foot unless otherwise shown.
4 - A.R.C.I. = Acid Resisting Cast Iron.
5 - All pipe lines crossing the expansion joint shall be as shown in detail "B" dwg. LGP-1-3-8/2 except 1/8 inch gaps shall be increased as required.

REVISION	DATE	DESCRIPTION	BY
C	71 Jul 01	As constructed. Minor revisions.	WWM
B	10 Jan 66	Serial letter 217; revised vent lines	QED
A	8 Oct 65	Deleted septic tank - added sewage disposal unit & parts.	QED

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY W. W. McMannis

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY TTT
DRAWN BY JCM
CHECKED BY: VLP
PREPARED: HEAD, MECHANICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED PIPING
ERECTION BAY
CROSS SECTION THRU SUMP

SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV. ENGINEER DATE 4 DEC. 64
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN SPEC. NO.
~~INV. NO. CIVENG-45-164-65-18~~
VOL. IV LGP-1-3-8/17
SHEET 38

US Army Corps of Engineers®

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DRAWN BY:	SOLICITATION NO.: W912EF22R0001
CHECKED BY:	CONTRACT NO.:
SUBMITTED BY:	DRAWING NUMBER:
SIZE: ANSI D	FILENAME: R-002.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

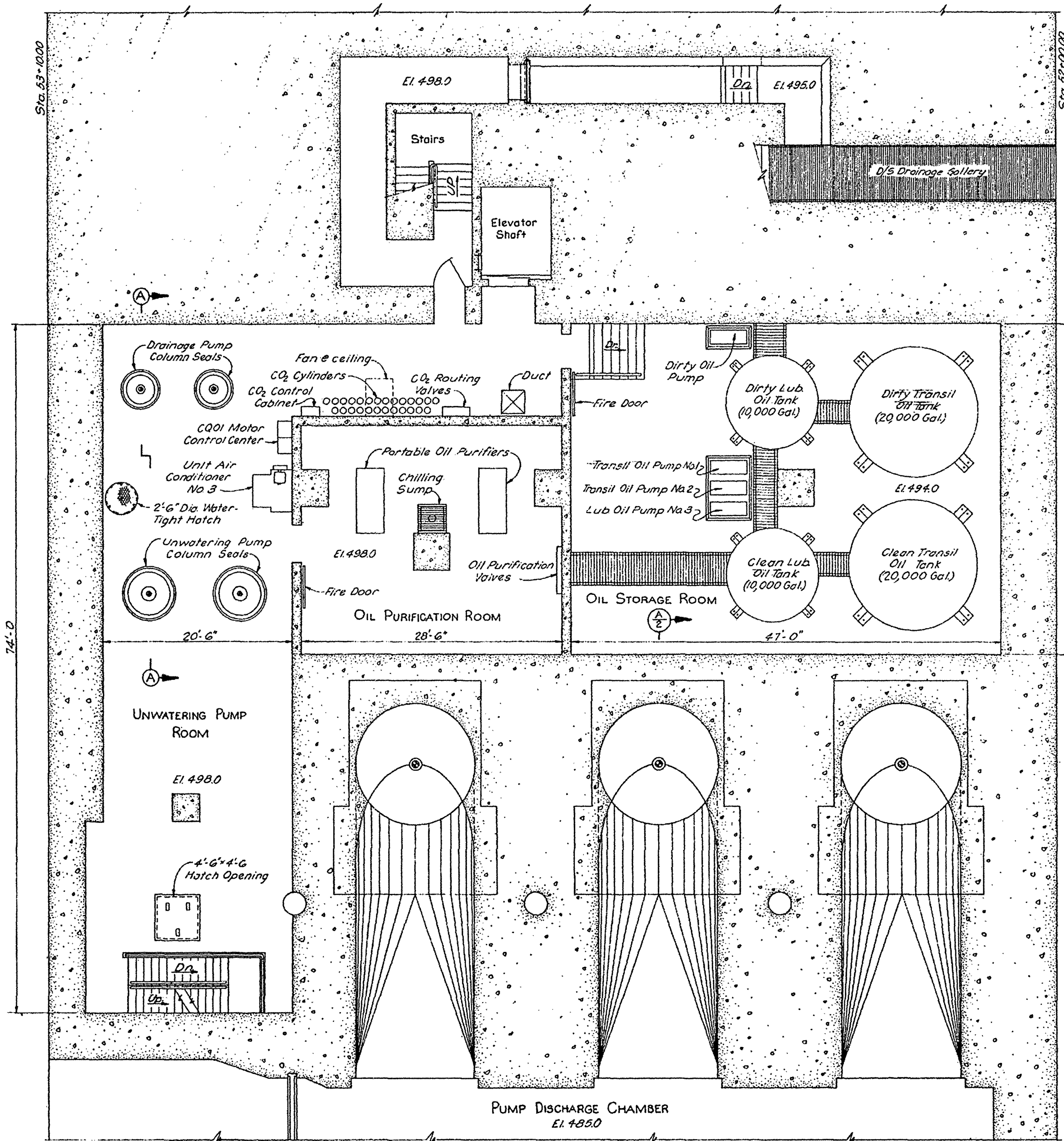
LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
EMBEDDED PIPING
ERECTION BAY
CROSS SECTION THRU SUMP

SHEET ID
R-002

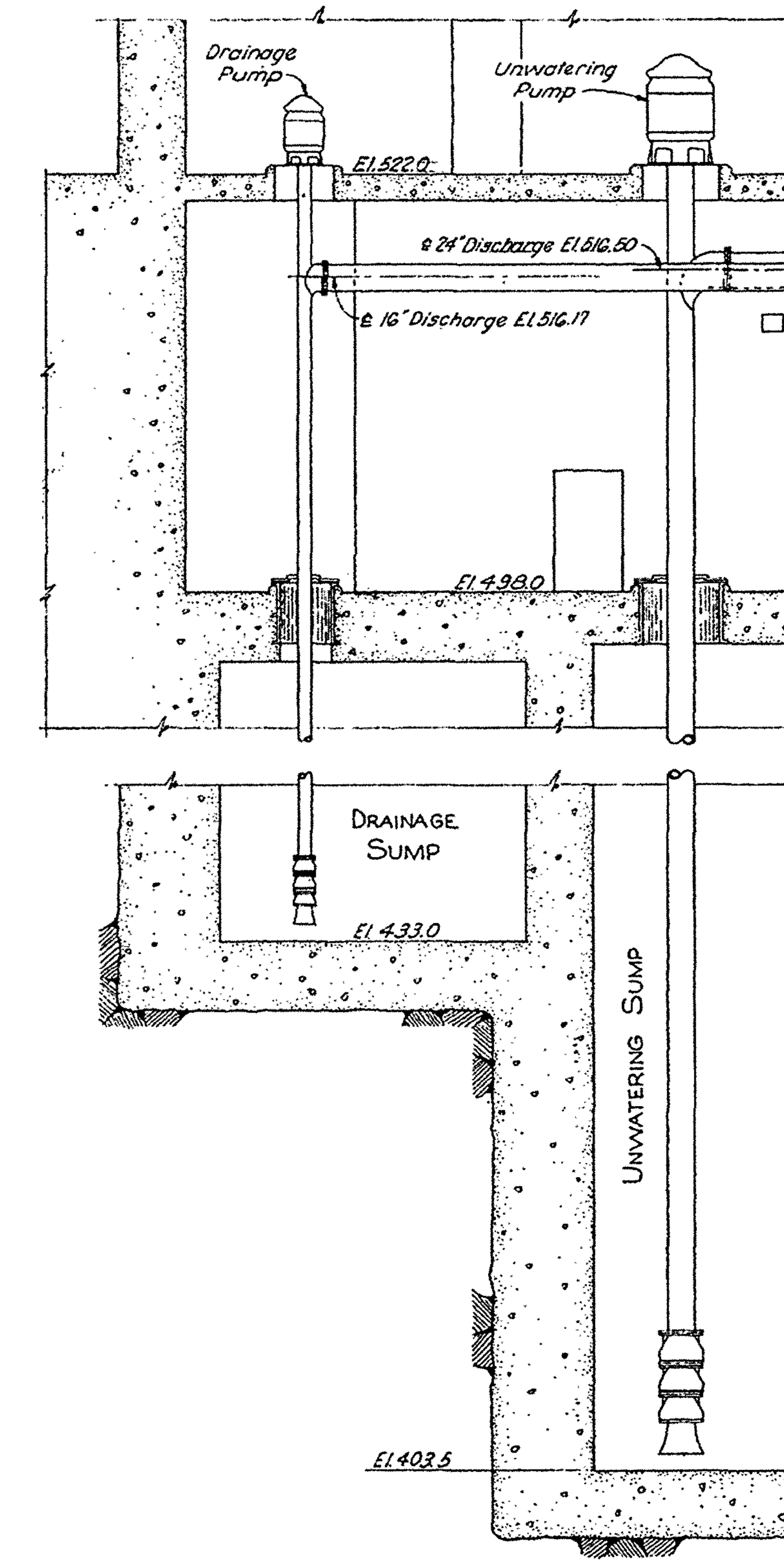
FINAL

CORPS OF ENGINEERS

U. S. ARMY



PLAN
Scale: 3/16" = 1'-0"



SECTION A-A
Scale: 3/16" = 1'-0"

THIS PRINT REDUCED TO ONE-HALF SCALE

REVISION	DATE	DESCRIPTION	BY

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY: RDB
DRAWN BY: PER
CHECKED BY: RDB
PREPARED: Paul E. Drake

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
ARRANGEMENT
ERECTION BAY
PLAN — EL'S 494 & 498

SUBMITTED: L. T. Fisher
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER DATE 25 Jan '68

SCALE AS SHOWN | SPEC. NO.

~~INV. NO. DACW68-68-D-0020~~

LGP-6-0-0/8

~~SHEET 14 Vol. 7~~

REFERENCE DRAWING No. 14
FOR INFORMATION ONLY

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U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

DESIGNED BY:
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SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-003 .dgn
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

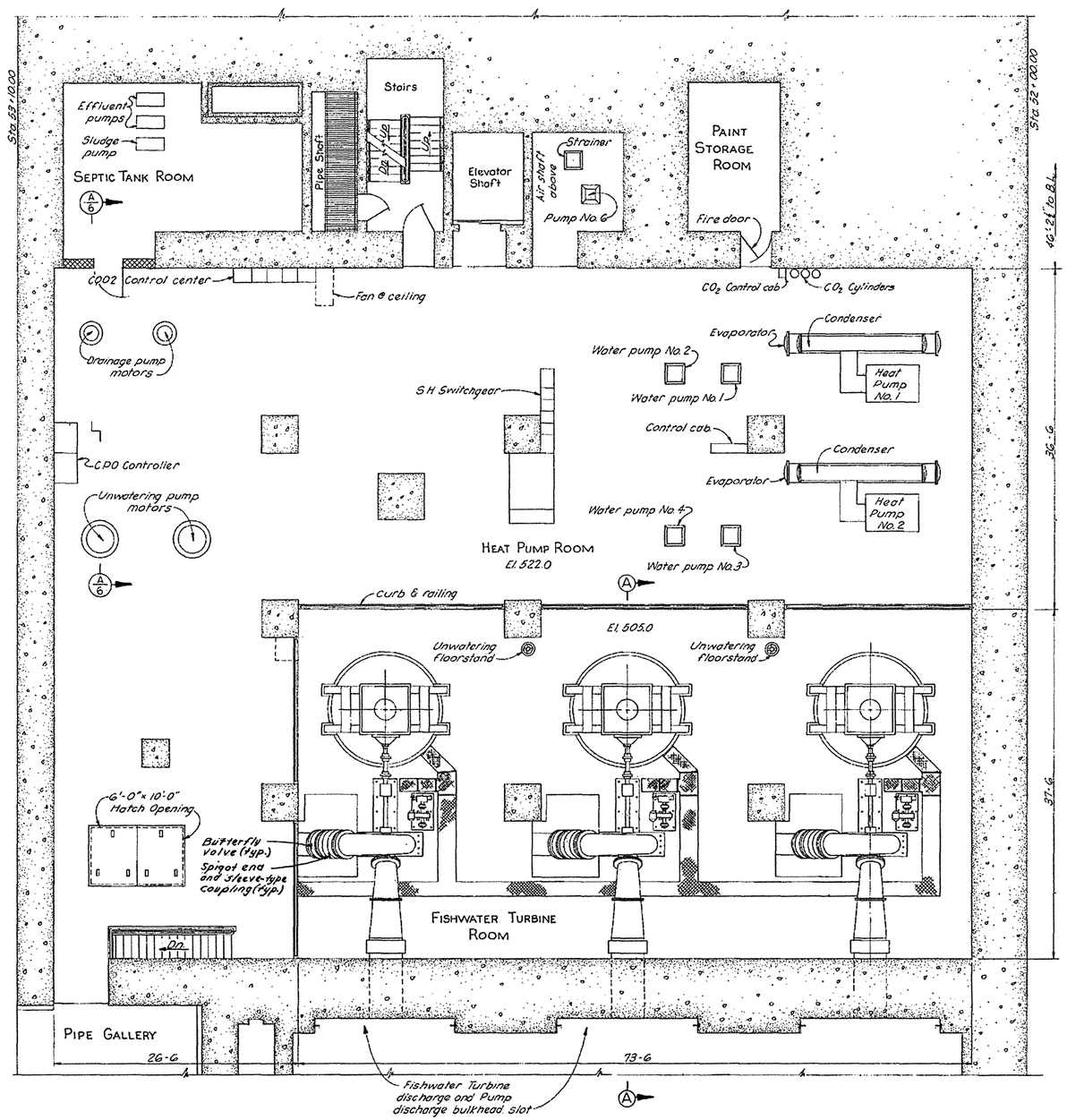
LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE ARRANGEMENT
ERECTION BAY
PLAN - EL'S 494 & 498

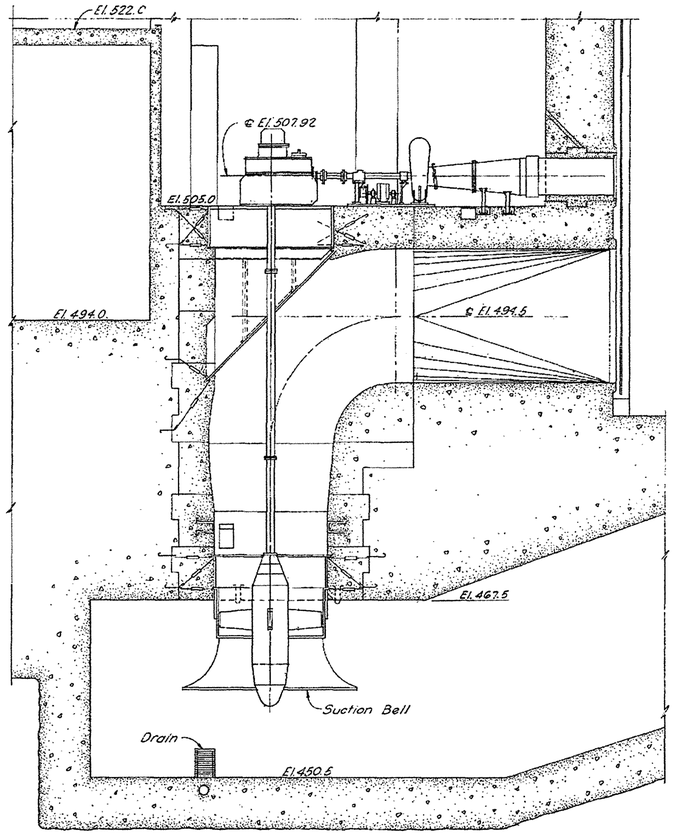
SHEET ID
R-003

FINAL

CORPS OF ENGINEERS — U. S. ARMY



PLAN



SECTION A-A

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1973 MAY 1 6

REVISION	DATE	DESCRIPTION	BY
1	31 Aug 72	As Constructed	CJH

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: R.D.B.
DRAWN BY: PER
CHECKED BY: R.D.B.
PREPARED: Paul C. Brooks, ASSISTANT CHIEF, DESIGN BRANCH

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
ARRANGEMENT
ERECTION BAY
PLAN — EL. 522

SUBMITTED: J. T. Fisher, CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED FOR DIV. ENGINEER: DATE 25 Jan '68
CHIEF, ENGINEERING DIVISION
SCALE: 3/16" = 1'-0" | SPEC. NO.
INV. NO. DACW68-68-B-0029
LGP-6-0-0/9
SHEET 15 Vol. 3

REFERENCE DRAWING No. 15
FOR INFORMATION ONLY

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CHECKED BY:	CONTRACT NO.:
SUBMITTED BY:	DRAWING NUMBER:
SIZE: ANSI D	FILENAME: R-004.dgn

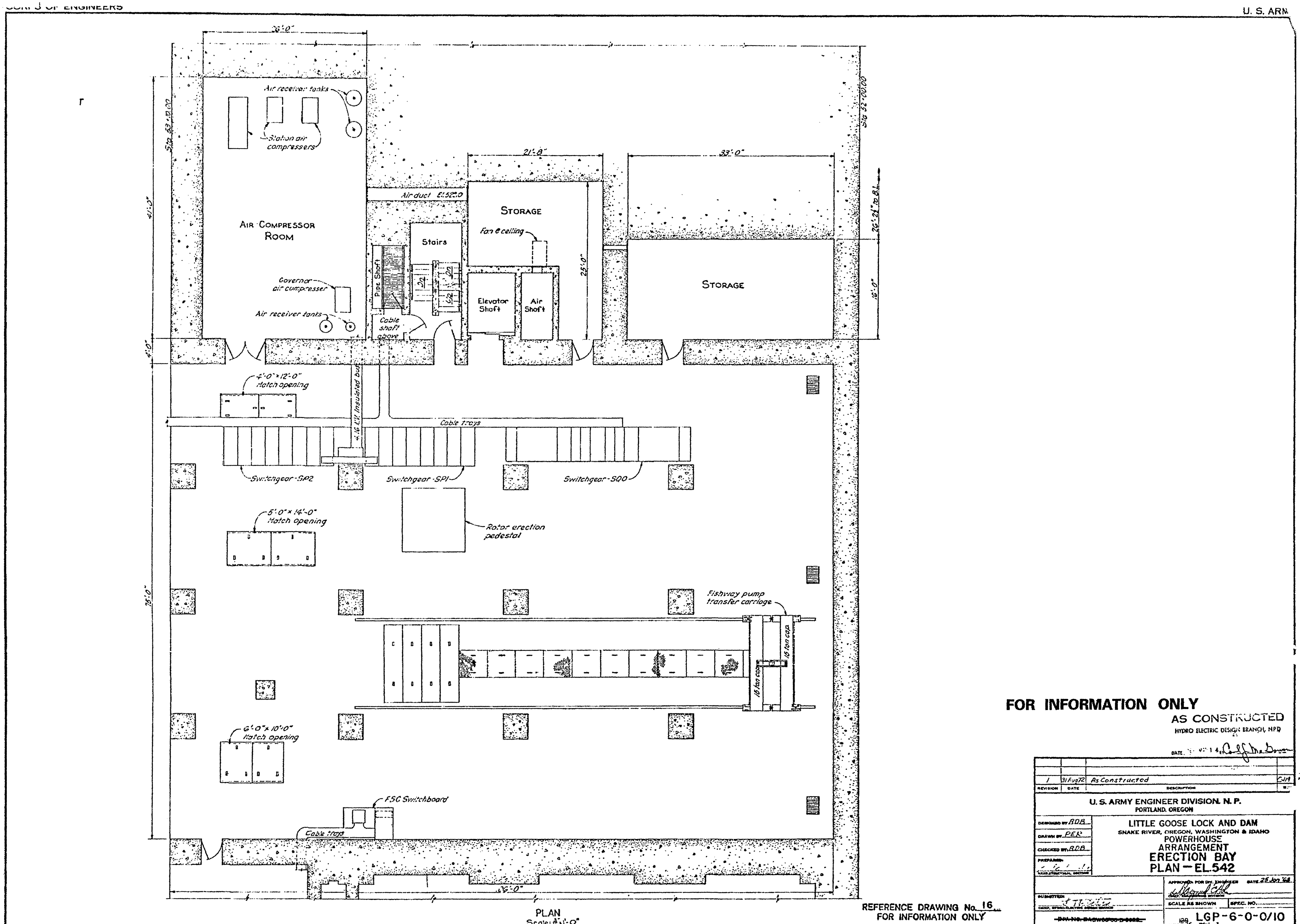
U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE ARRANGEMENT
ARRANGEMENT - ERECTION BAY
PLAN - EL. 522

SHEET ID
R-004

FINAL



PLAN
Scale: 1/8" = 1'-0"

FOR INFORMATION ONLY
AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD

REVISION	DATE	DESCRIPTION	
1	31 Aug 72	As Constructed	CJH

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
ARRANGEMENT
ERECTION BAY
PLAN — EL.542

DESIGNED BY RDB
DRAWN BY PER
CHECKED BY RDB
DATE 25 Jan '68
SCALE AS SHOWN
LGP-6-0-0/10

REFERENCE DRAWING No. 16
FOR INFORMATION ONLY

US Army Corps of Engineers®

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FILENAME: R-005.dgn
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

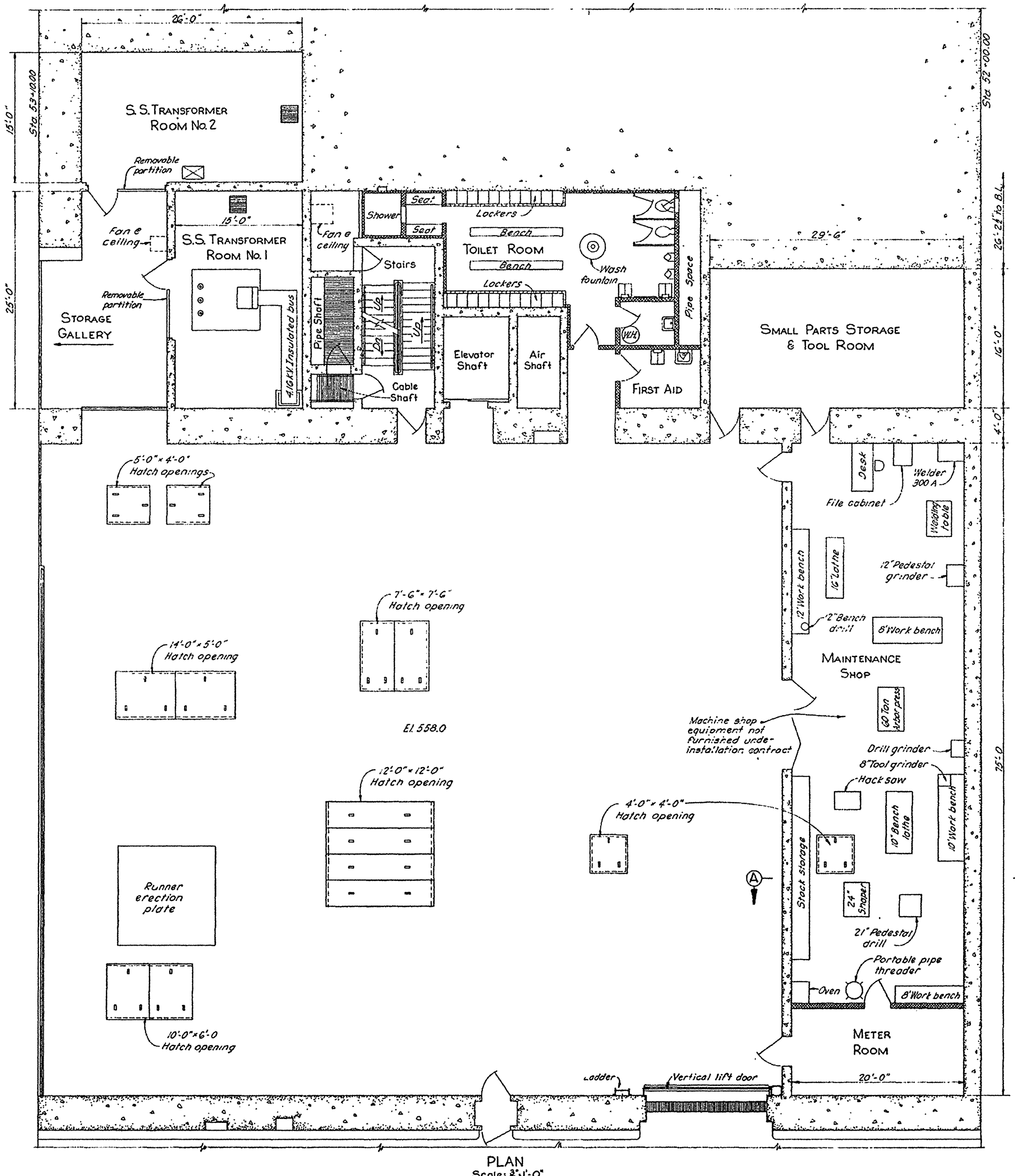
U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE ARRANGEMENT
ARRANGEMENT - ERECTION BAY
PLAN - EL 542

SHEET ID
R-005

FINAL



PLAN
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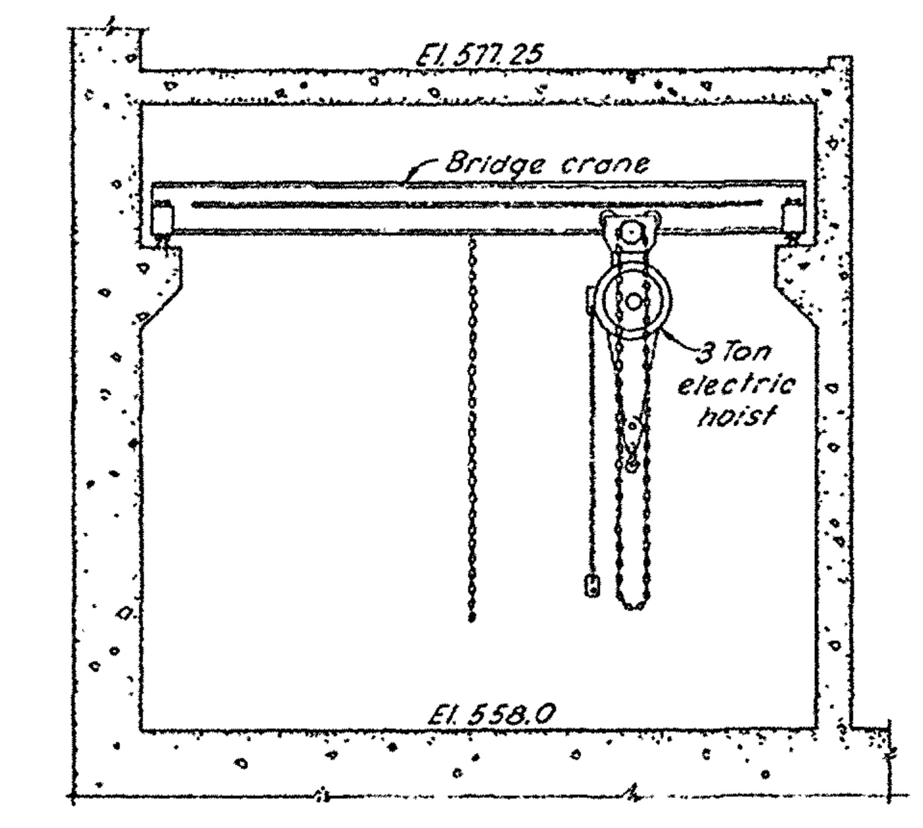

SECTION A-A
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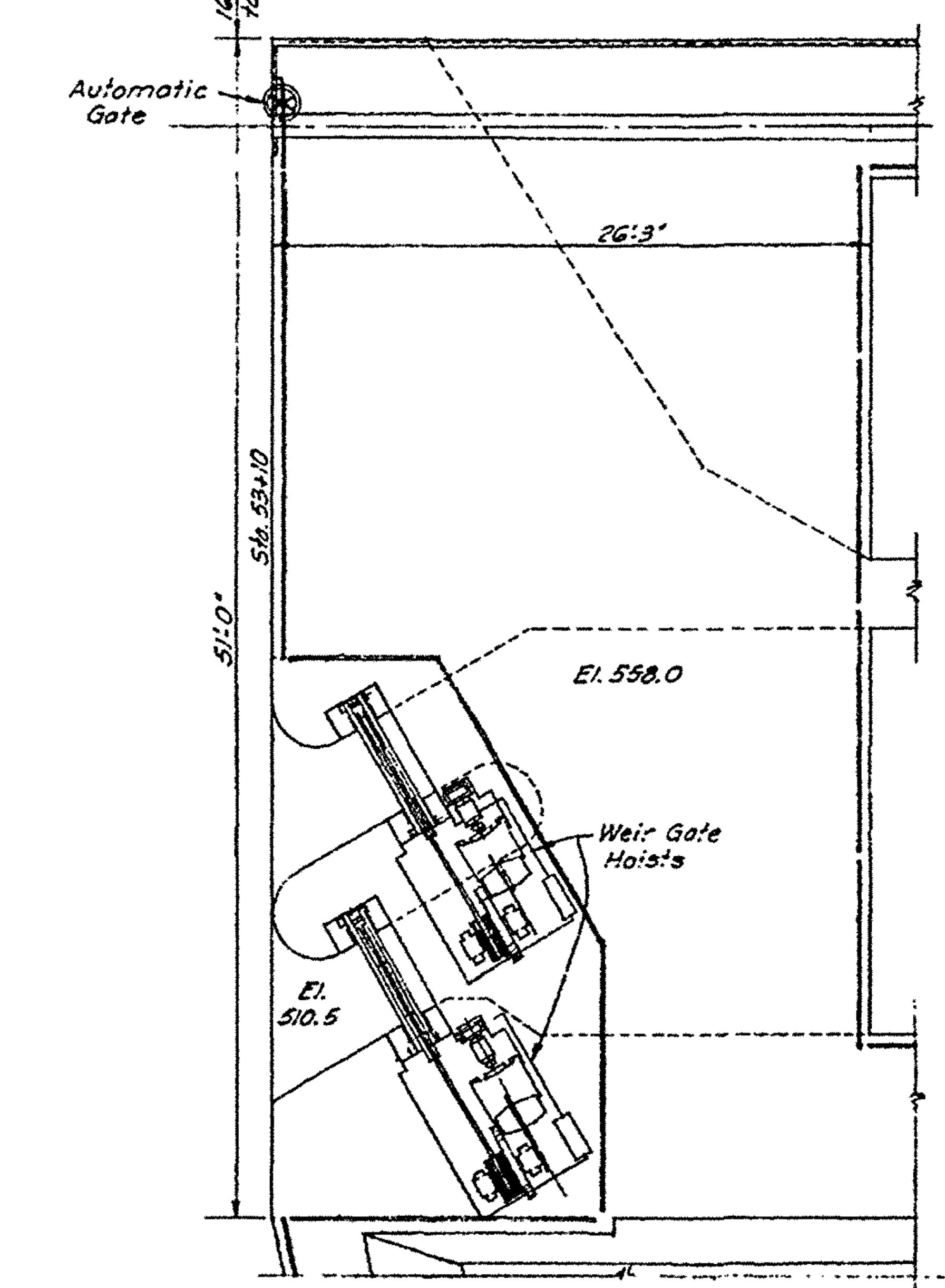

PART PLAN - SOUTH SHORE FISH ENTRANCE
Scale: 3/16" = 1'-0"

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REFERENCE DRAWING No. 17 FOR INFORMATION ONLY

REVISION	DATE	DESCRIPTION	BY

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY: RDB
DRAWN BY: P.E.R.-MB
CHECKED BY: RDB
PREPARED: Paul E. Drake

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE ARRANGEMENT
ERECTION BAY
PLAN — EL. 558

SUBMITTED: L. T. Fisher
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED FOR DIV. ENGINEER DATE 25 Jan '66
CHIEF, ENGINEERING DIVISION

SCALE AS SHOWN | SPEC. NO.

~~INV. NO. DACW68-65-B-0029~~

LGP-6-0-0/11
~~SHEET 17 Vol. I~~

US Army Corps of Engineers

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U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
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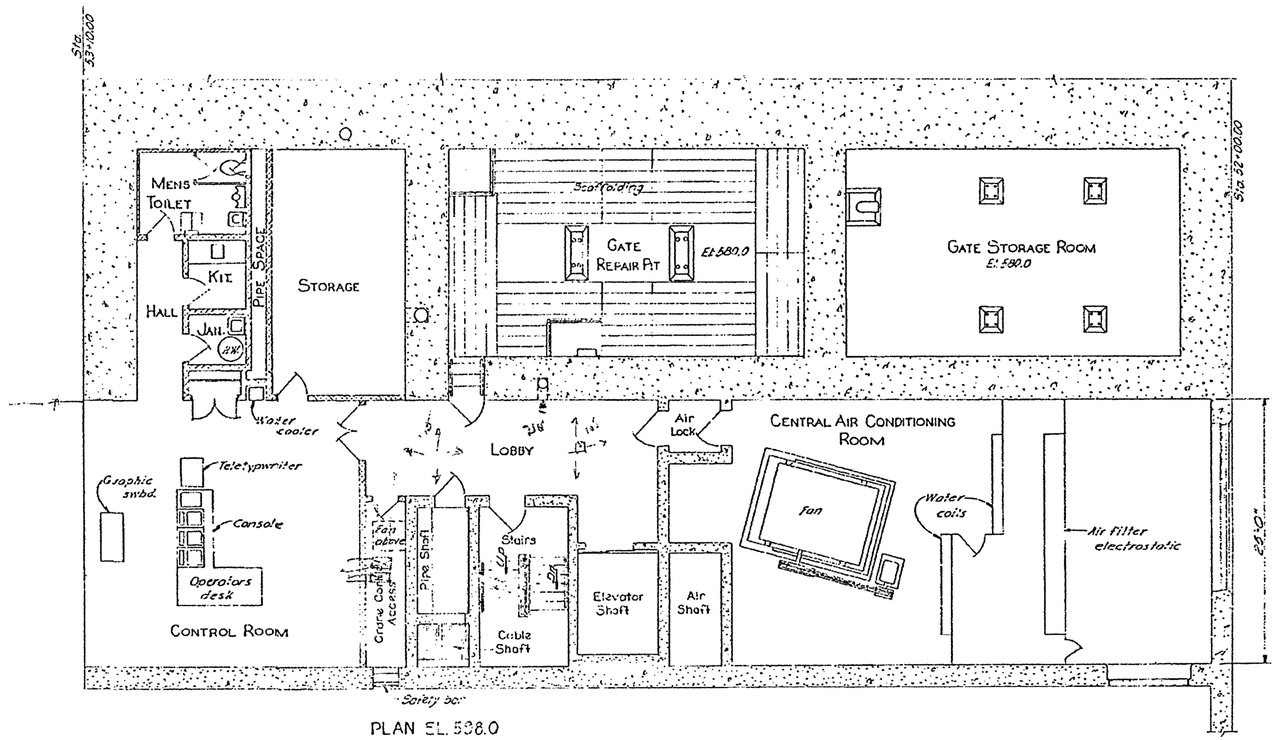
SUBMITTED BY:	DRAWING NUMBER:
SIZE: ANSI D	FILENAME: R-006 .dgn

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

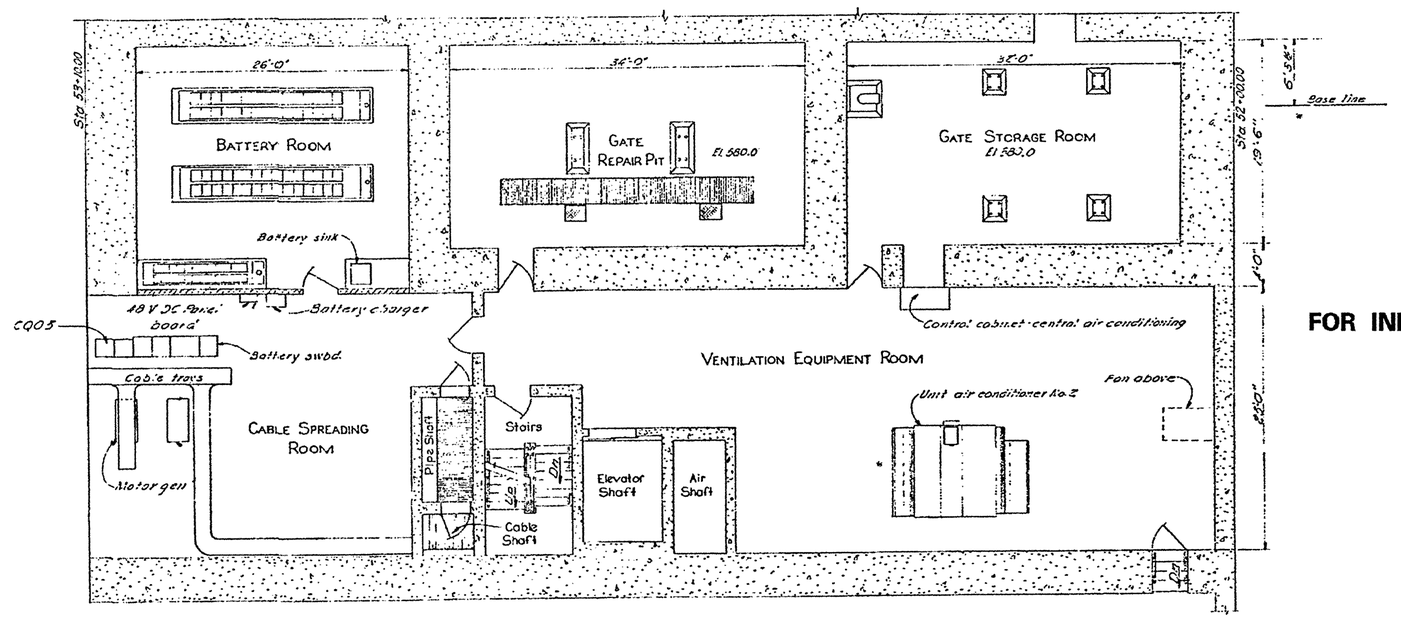
POWERHOUSE ARRANGEMENT
ARRANGEMENT - ERECTION BAY
PLAN - EL. 558

SHEET ID
R-006

FINAL



PLAN EL. 598.0



PLAN EL. 560.0

FOR INFORMATION ONLY AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE

REVISION	DATE	DESCRIPTION	BY
1	31 Aug 12	As Constructed	CJH

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: R.O.B.
DRAWN BY: A.R.
CHECKED BY: R.O.B.
PREPARED:
SUBMITTED:
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
ARRANGEMENT
ERECTION BAY
PLAN GALLERY – EL'S 580 & 598

APPROVED FOR DIVISION ENGINEER DATE 25 Jan '68
CHIEF, ENGINEERING DIVISION
SCALE
SPEC. NO.
DWG. NO. DACW68-68-D-0028
LGP-6-0-0/12

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CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R-007.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

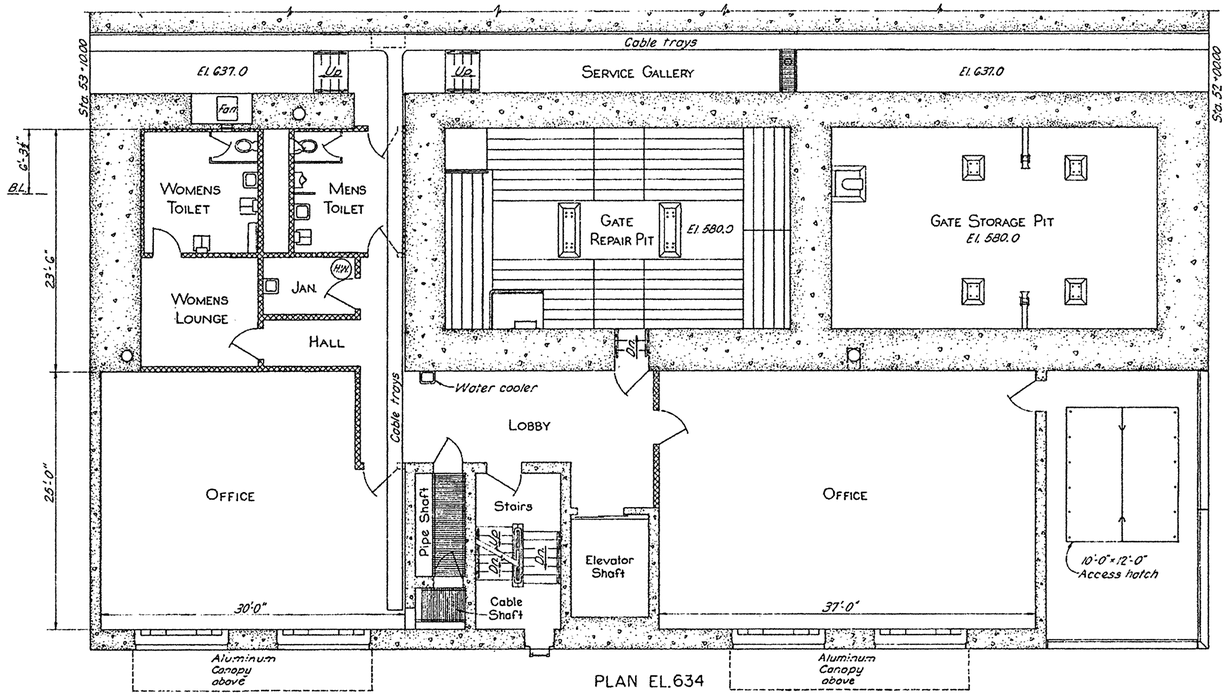
POWERHOUSE
ARRANGEMENT - ERECTION BAY
PLAN GALLERY - EL'S 580 & 598

SHEET ID
R-007

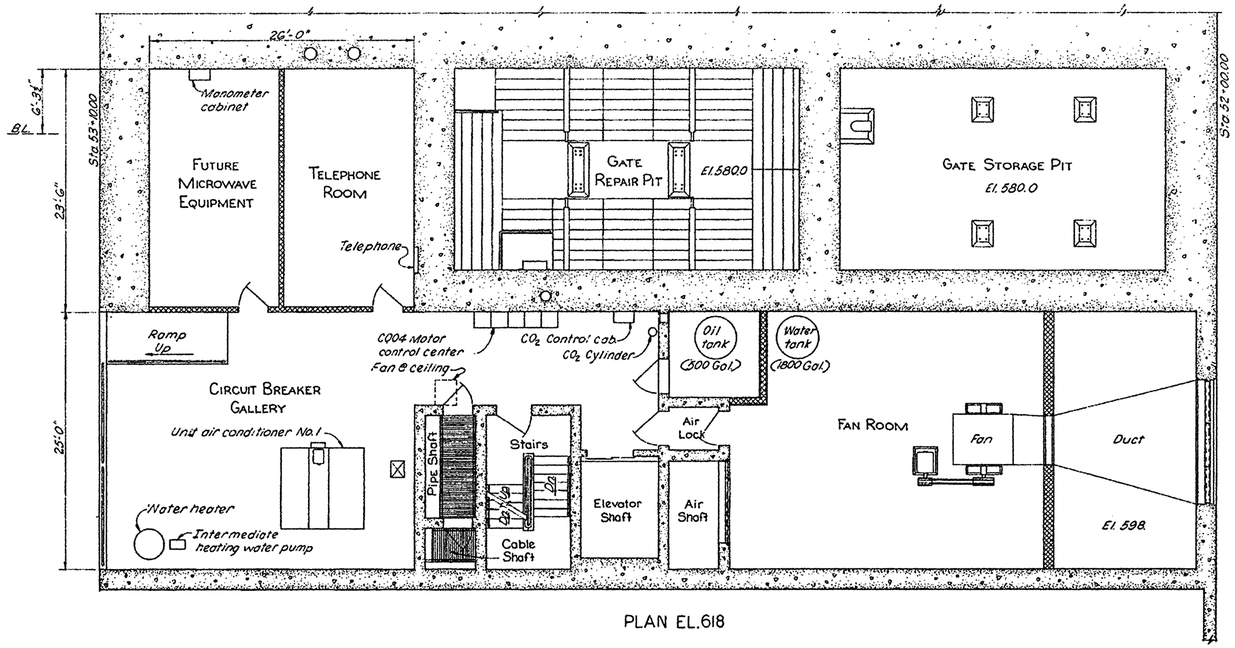
FINAL

CORPS OF ENGINEERS

U. S. ARMY



PLAN EL.634



PLAN EL.618

REFERENCE DRAWING No. 19
FOR INFORMATION ONLY

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REVISION	DATE	DESCRIPTION	BY

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: R.D.B.
DRAWN BY: P.E.R.
CHECKED BY: R.D.B.
PREPARED: Paul E. Deeks

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
ARRANGEMENT
ERECTION BAY
PLAN GALLERY — EL'S 618 & 634

APPROVED FOR DIVISION ENGINEER DATE 25 Jan 68
CHIEF, CONSTRUCTION DIVISION

SUBMITTED: [illegible]
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

SCALE: 1/8"-1'-0" SPEC. NO.

DAY NO. DACW68-68-B-0020

SHEET 10 Vol. 1

LGP-6-0-0/13

US Army Corps of Engineers®

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SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R-008.dgn

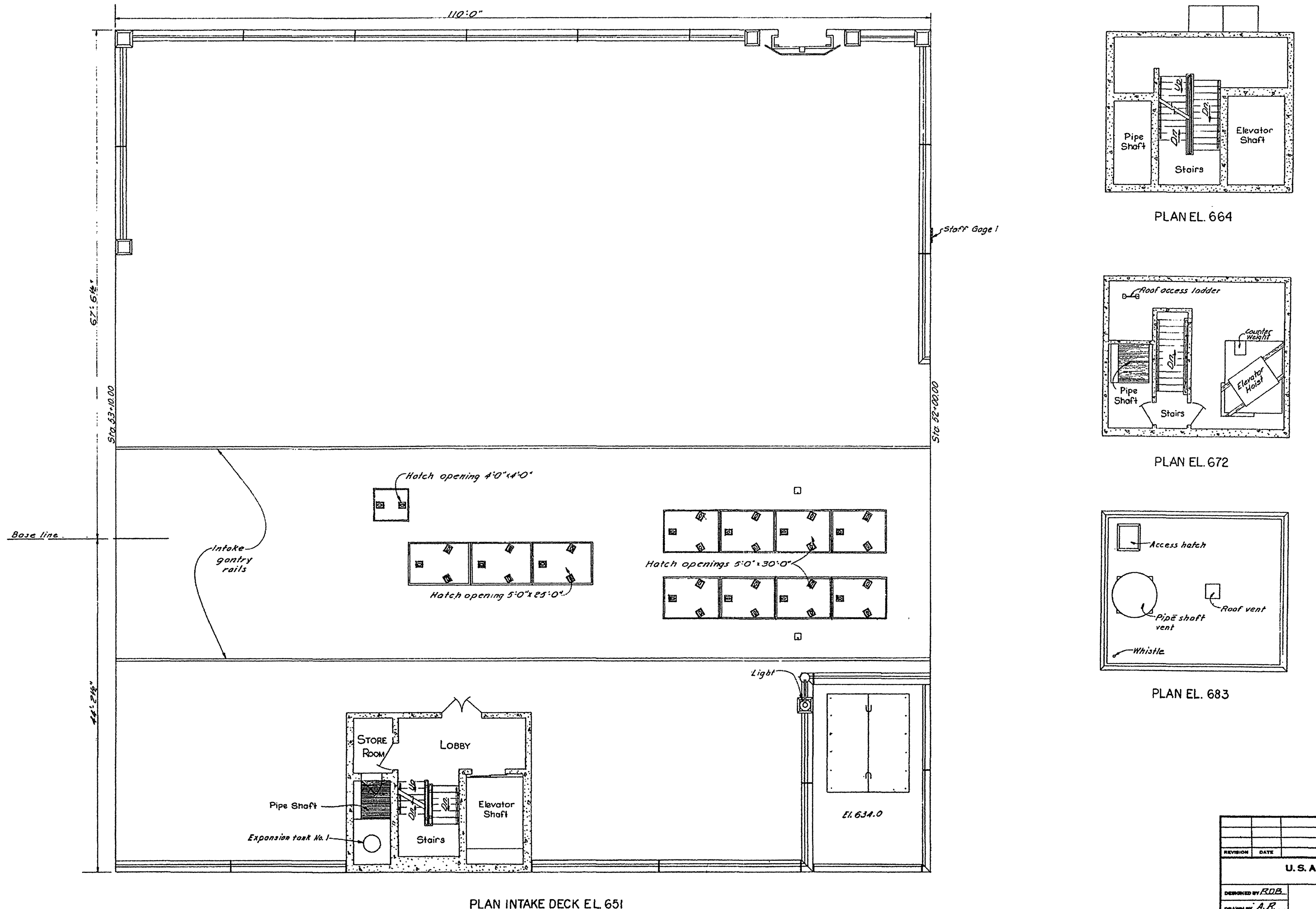
U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
ARRANGEMENT - ERECTION BAY
PLAN GALLERY - EL'S 618 & 634

SHEET ID
R-008

FINAL



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REFERENCE DRAWING No. 20
FOR INFORMATION ONLY

REVISION	DATE	DESCRIPTION	BY

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY RDB
DRAWN BY A.R.
CHECKED BY: RDB
PREPARED: Paul E. Drake

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
ARRANGEMENT
ERECTION BAY
PLAN EL'S 651, 664, & 672

APPROVED: FOR DIV. ENGINEER DATE 25 Jan '68
CHIEF, ENGINEERING DIVISION
SUBMITTED: L. T. Fisher
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
SCALE 3/16"=1'-0" SPEC. NO.
~~INV. NO. DACW68-65-B-0023~~
LGP-6-0-0/14
~~SHEET 20 Vol. 1~~

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

DESIGNED BY:
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SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-009 .dgn
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

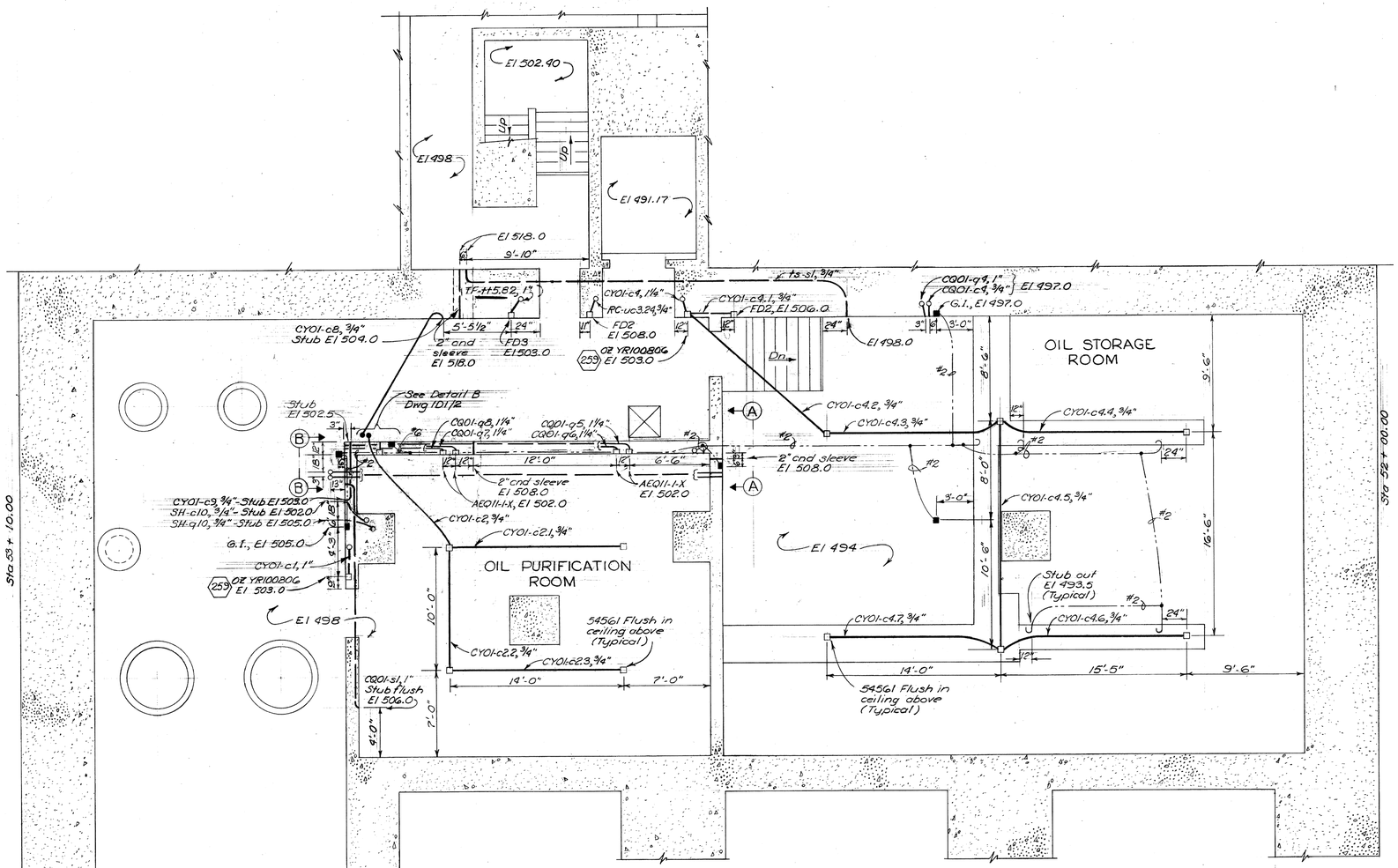
POWERHOUSE
ARRANGEMENT - ERECTION BAY
PLAN EL'S 651, 664, & 672

SHEET ID
R-009

FINAL

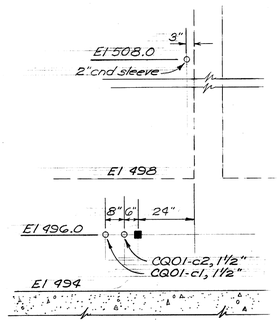
CORPS OF ENGINEERS

U. S. ARMY



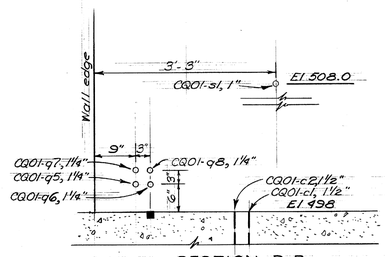
PLAN - EL 498

Scale: 1/4" = 1'-0"



SECTION A-A

No Scale



SECTION B-B

No Scale

LEGEND

- Conduit embedded in ceiling
- Conduit embedded in floor or wall
- Conduit turned toward observer
- Conduit turned away from observer
- Embedded ground conductor
- Ground Insert in floor (or ceiling if noted)
- G.I. — Ground insert in wall
- Conduit outlets as noted
- Embedded cable tray insert in wall as noted

GENERAL NOTES

GN1 Conduits, boxes and ground inserts are dimensioned to center lines unless otherwise noted.

GN2 Manufacturer's catalog numbers have been used to indicate desired quality of materials and are not intended to exclude approved equals. Box numbers are Crouse Hinds except as noted.

GN3 Typical conduit and grounding details are shown on drawing LGP.1-6-1A13/1 and are not necessarily referenced on individual conduit drawings.

GN4 All telephone conduit (designated TF-tt—, TF-s—, or TB-tt—) shall have minimum radius bends as follows: 1 inch - 18" radius, 1¼ and 1½ inch - 24" radius, 2 and 3 inch - 48" radius.

GN5 Additional grounding connections are shown on the Lift Drawings.

REFERENCE DRAWINGS

DRAWING NO	SHEET NO
LGP-1-6-1A13/1	61
LGP-1-6-1D1/2	63

(250) Incl as req'd (257) (258) (296)

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 1971 JUL 01 BY D. Koehler

GRAPHIC SCALE

4' 0 4' 8'

1/4" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
C	7 Jul 71	As constructed - minor changes	WDK
B	6 Jun 66	Rearranged gnd & cnd, corrected Sec. B-B	WHR
A	1 Feb 65	Changed cnd. location, added dimension.	WHR

CORPS OF ENGINEERS, U. S. ARMY
NORTH PACIFIC DIVISION, PORTLAND, OREGON

DESIGNED BY: E.M.S.
DRAWN BY: D.F.R.
CHECKED BY: W.L.S.
PREPARED: J. T. Foster, HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY
EL 498 & AREAS BELOW

SUBMITTED: L. L. Lundmark, CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR DIVISION ENGINEER Raymond C. Hall, CHIEF, ENGINEERING DIVISION DATE 4 DEC 64

SCALE AS SHOWN SPEC. NO.

~~INV. NO. GIVENG 45-164-65-19~~

LGP-1-6-1D1/1

SHEET 62

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE: AUGUST 2022
SOLICITATION NO.:
W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R010.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

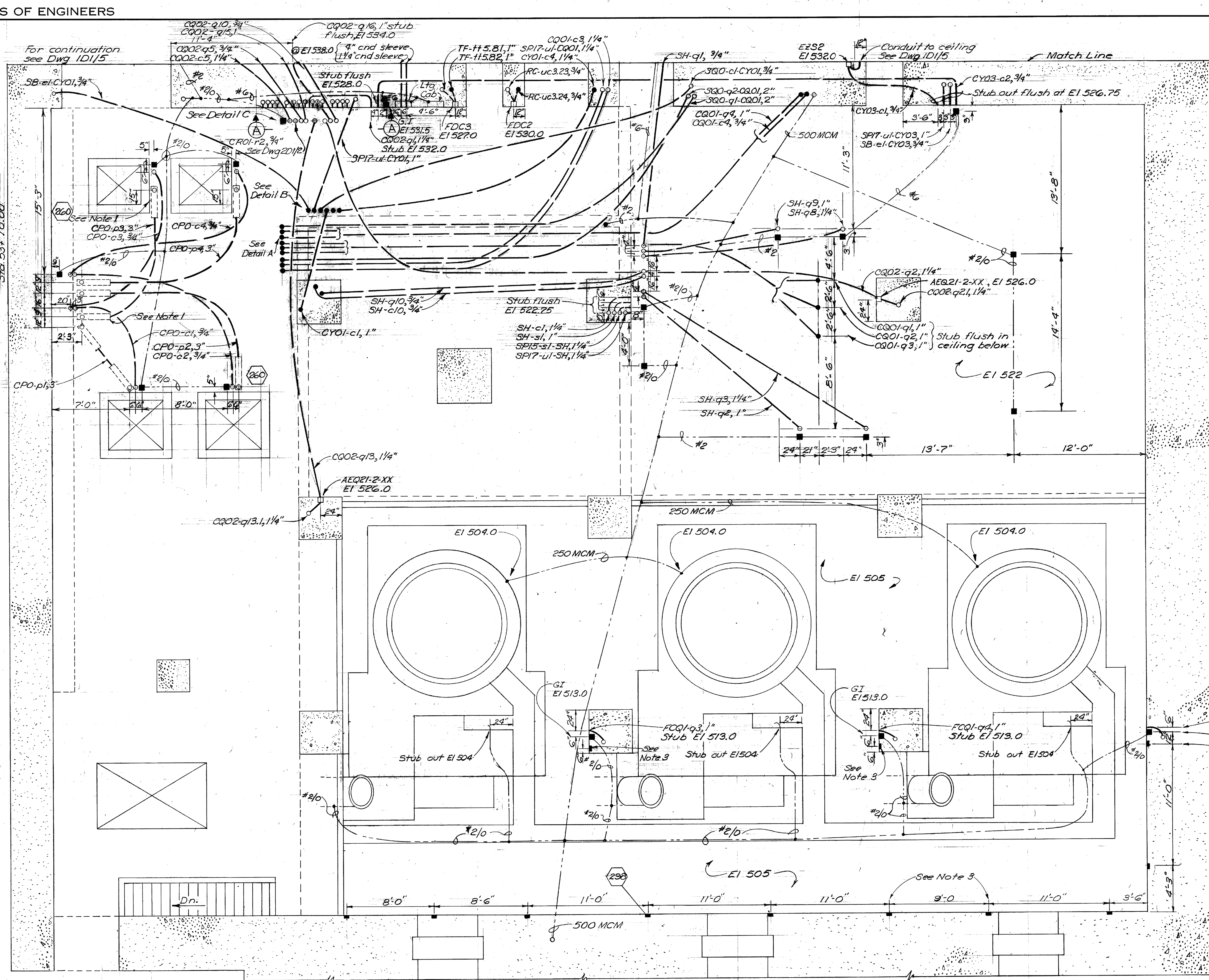
LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY EL 498 & AREAS BELOW

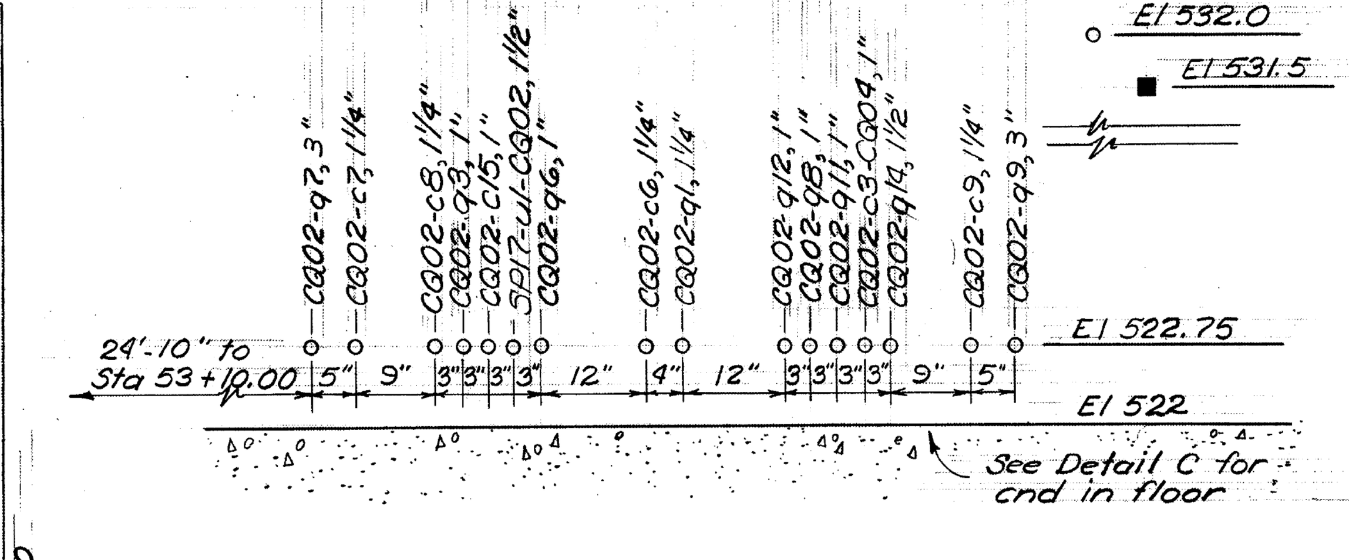
SHEET ID
R-010

FINAL

CORPS OF ENGINEERS — U. S. ARMY



PLAN - EL 522
Scale: 1/4" = 1'-0"



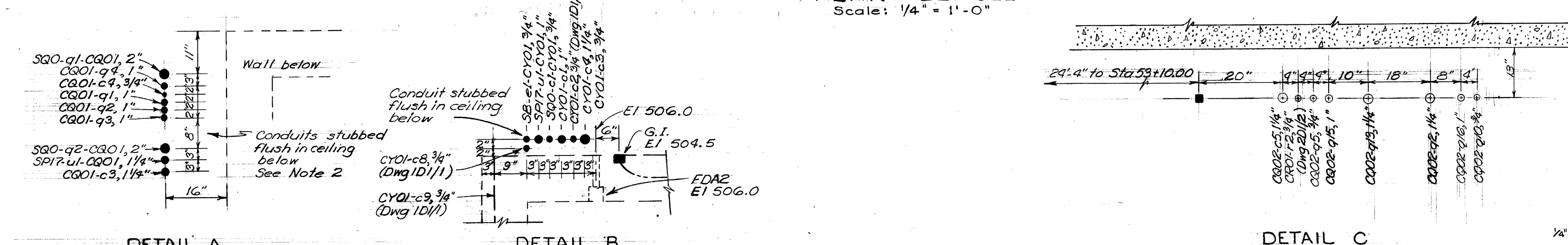
SECTION A-A
No Scale

NOTES

1. Mount pull boxes flush in ceiling below. See drawing LGP-1-6-1D1/8, Detail B for pull box details.
2. Conduits to be stubbed flush with ceiling except for sizes 2inch or larger where a minimum amount of bend may be exposed.
3. All embedded inserts shall be Unistrut Type P-3254 with top at El 515.75.

REFERENCE DRAWINGS

DRAWING No	SHEET No
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/3	64
LGP-1-6-1D1/5	66
LGP-1-6-1D1/8	69
LGP-1-6-2D1/2	94



DETAIL A
Scale: 3/4" = 1'-0"

DETAIL B
Scale: 3/4" = 1'-0"

DETAIL C
Scale: 3/4" = 1'-0"

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY H. D. Koehler

GRAPHIC SCALES

250 Incl as req'd 257 260 296 298

REVISION	DATE	DESCRIPTION	BY
F	71 Jul 1	As Constructed-rerouted conduits	WDK
E	6 Jun 66	Relocated SH conduits, minor corrections	WHR
D	8 Oct 65	Added cnd CQ02-q16, relocated cnd & gnd	WHR
C	20 Apr 65	Relocated cnd & changed concrete outline	WHR
B	31 Mar 65	Added concrete inserts, minor revisions	WHR
A	1 Feb 65	Relocated CP0 cnd. Changed Detail B.	WHR

CORPS OF ENGINEERS, U. S. ARMY
NORTH PACIFIC DIVISION, PORTLAND, OREGON

DESIGNED BY EMS
DRAWN BY DFR
CHECKED BY: RCM
PREPARED: L T Fisher — HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY
EL 522

SUBMITTED: [signature] — CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV. ENGINEER — DATE 4 DEC 64 — [signature] CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN — SPEC. NO.
~~INV. NO. CIVENG-45-164-65-18~~
LGP-1-6-1D1/2
SHEET 63
VOL NO III

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE: AUGUST 2022
DRAWN BY:	SOLICITATION NO.: W912EF22R0001
CHECKED BY:	CONTRACT NO.:
SUBMITTED BY:	DRAWING NUMBER:
SIZE: ANSI D	FILENAME: R-011.dgn

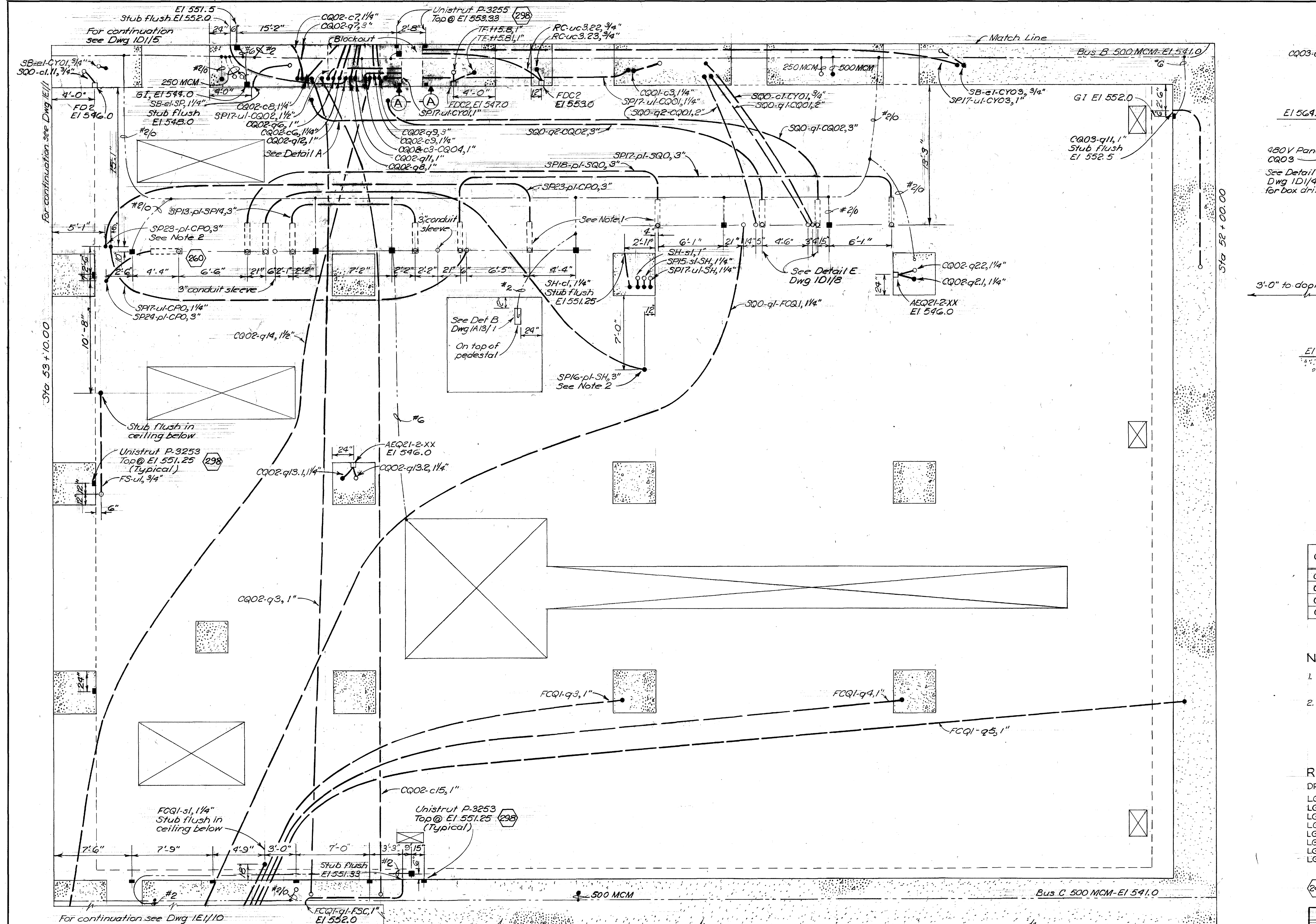
U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

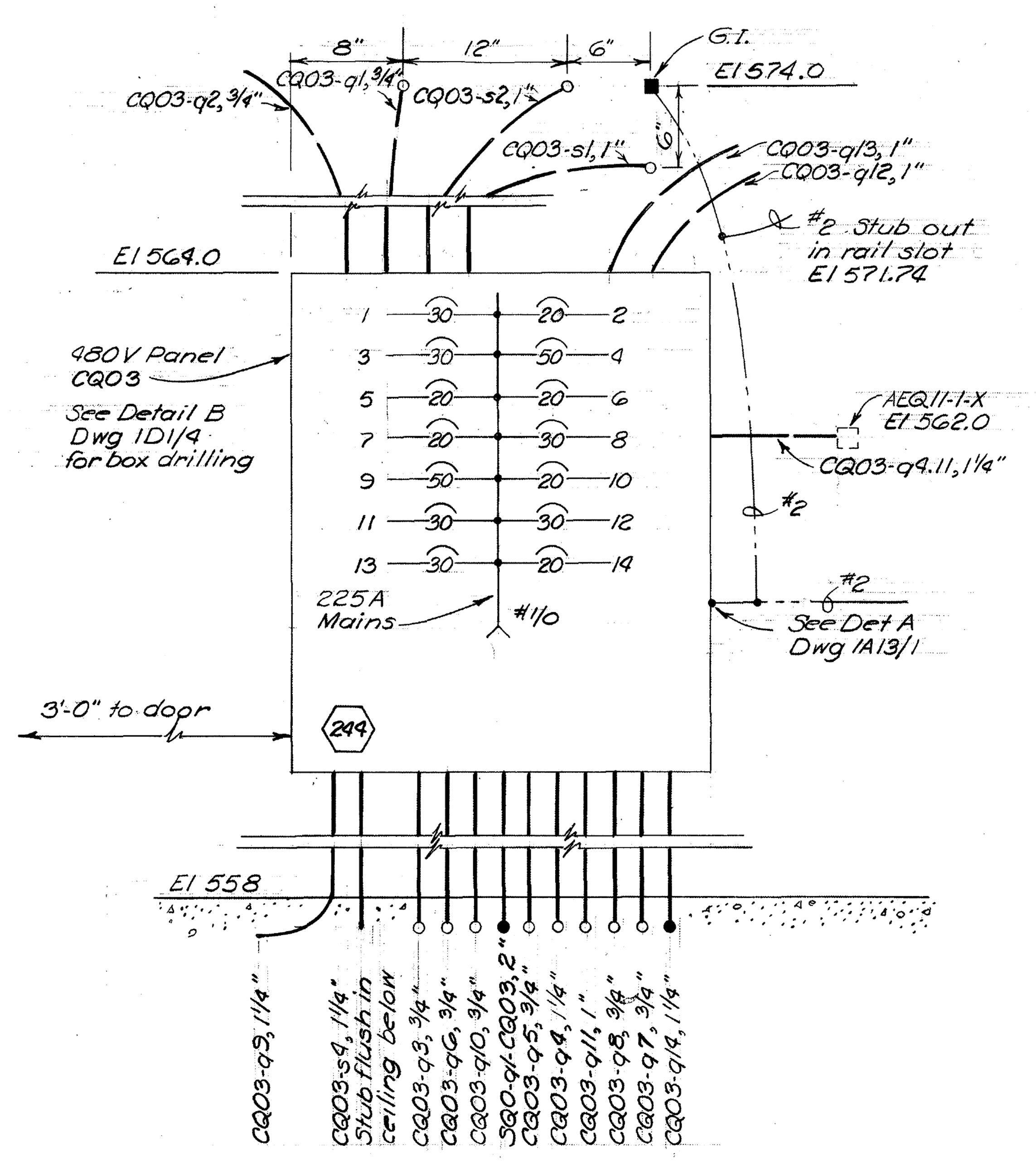
LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY EL 522

SHEET ID
R-011

FINAL





480 PANEL - CQ03 - CABLE SCHEDULE (267)

(Furnish and install cable as shown)

Circuit	Bkr No	600V Insulated Conductors			Directory
		No.	AWG Size	Ckt Lg - Ft	
CQ03-q11	11	3	10	45	TR03, El 542
CQ03-q12	12	3	10	70	Hi Bay
CQ03-q13	13	3	10	45	Hi Bay
CQ03-q14	14	3	10	90	TR04, El 558

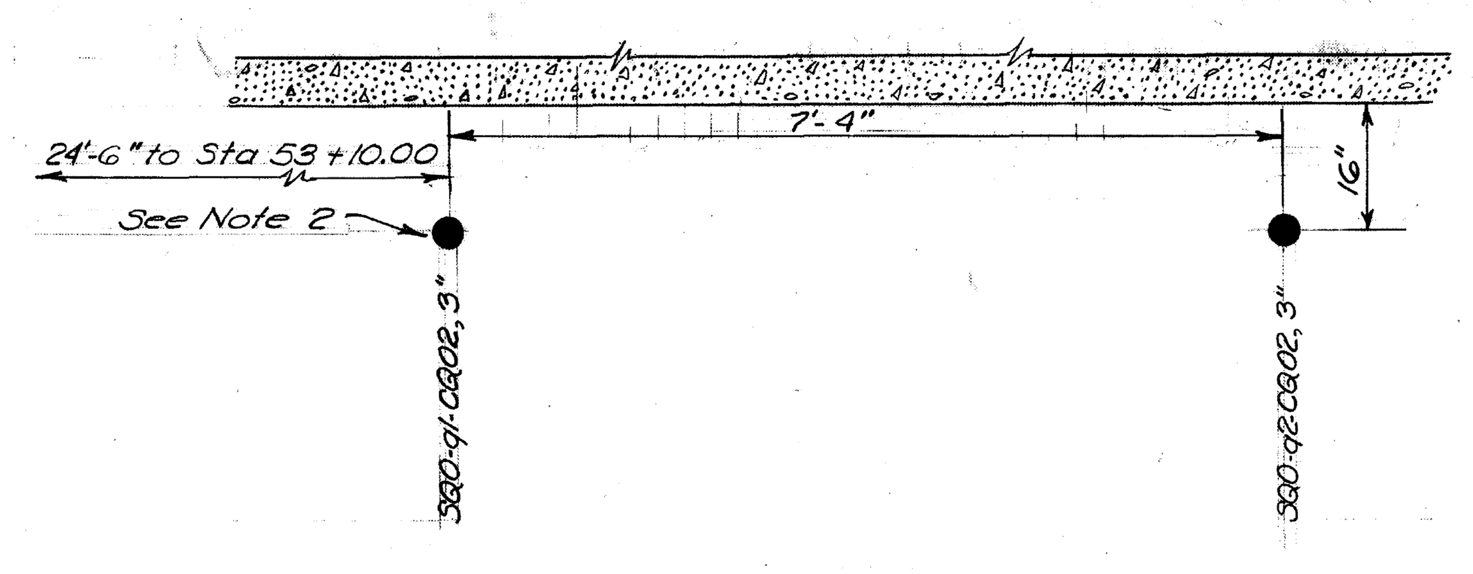
NOTES

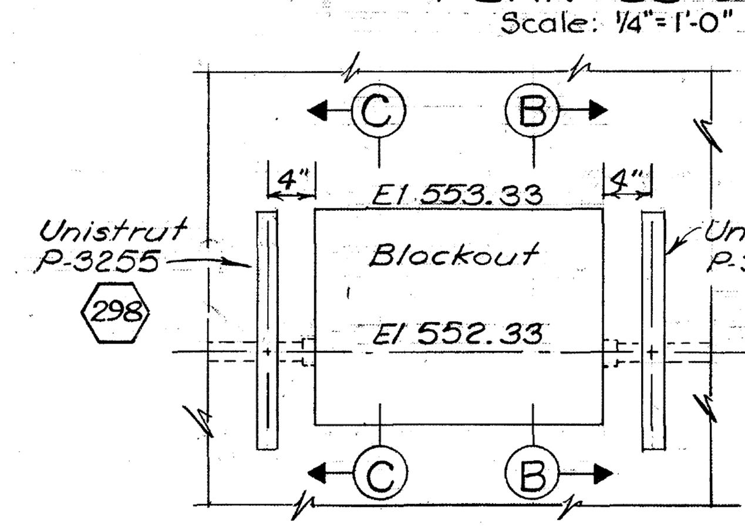
1. Mount pull boxes flush in ceiling below. See drawing LGP-1-6-1D1/8, Detail B for box details, except as noted.
2. Conduits to be stubbed flush with ceiling except for sizes 2-inch or larger where a minimum amount of bend may be exposed.

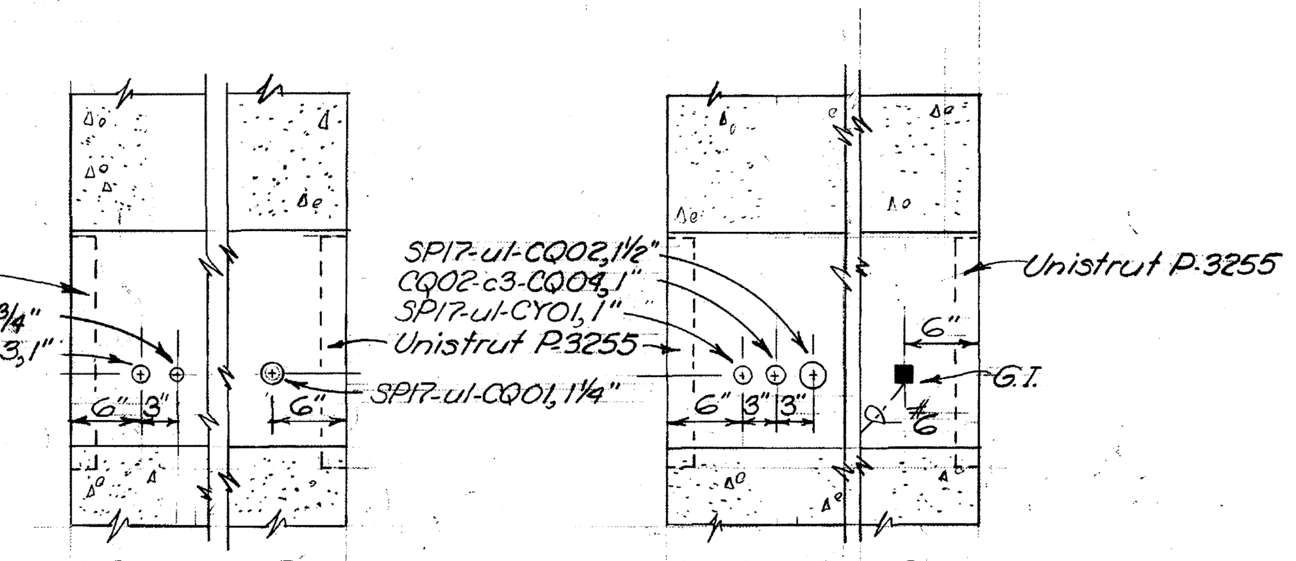
REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/2	63
LGP-1-6-1D1/4	65
LGP-1-6-1D1/5	66
LGP-1-6-1E1/1	71
LGP-1-6-1E1/2	72
LGP-1-6-1E1/10	80

244 250 Incl as req'd 257 260 267 296 298







AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 71 JUL 01

GRAPHIC SCALES
¼" = 1'-0"
¾" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
E	71Jul1	As Constructed - minor changes	WDK
D	6Jun66	Relocated cnd, corrected designations, added gnd	WHR
C	8Oct65	Relocated cnd & gnd, changed cnd size	WHR
B	31Mar65	Relocated cnd, changed designation	WHR
A	1Feb65	Relocated SP cnd.	WHR

CORPS OF ENGINEERS, U. S. ARMY
NORTH PACIFIC DIVISION, PORTLAND, OREGON

DESIGNED BY EMS
DRAWN BY DFR
CHECKED BY: RCM
PREPARED: L T Fisher, HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY
EL 542

SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN SPEC. NO.
~~INV. NO. CIVENG-45-164-65-18~~
LGP-1-6-1D1/3
SHEET 64

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-012.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

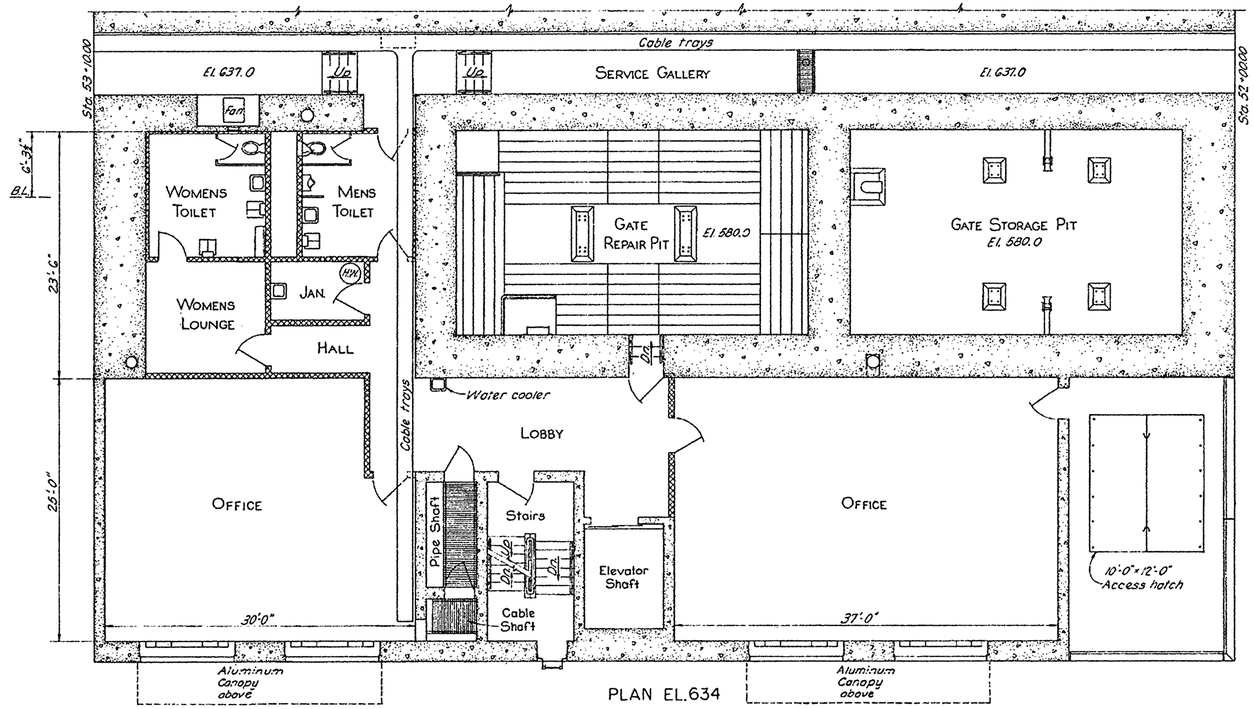
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY EL 542

SHEET ID
R-012

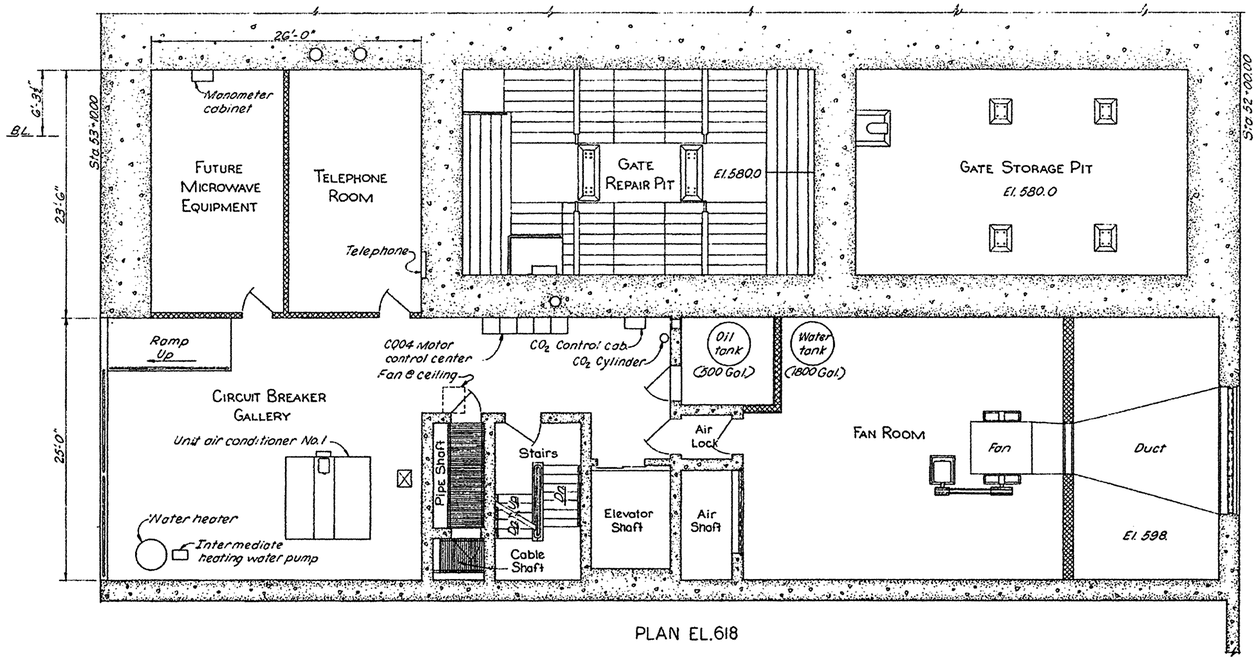
FINAL

CORPS OF ENGINEERS

U. S. ARMY



PLAN EL.634



PLAN EL.618

REFERENCE DRAWING No. 19
FOR INFORMATION ONLY

THIS PRINT REDUCED TO ONE-HALF SCALE

REVISION	DATE	DESCRIPTION	BY

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY: R.D.B.
DRAWN BY: PER
CHECKED BY: R.D.B.
PREPARED: Paul E. Drake (HEAD, ELECTRICAL DESIGN SECTION)

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE ARRANGEMENT
ERECTION BAY
PLAN GALLERY — EL'S 618 & 634

SUBMITTED: (CHIEF, MECHANICAL-ELECTRIC DESIGN BRANCH)
APPROVED FOR CHIEF ENGINEER (CHIEF, ENGINEERING DIVISION) DATE 23 Jan 68
SCALE: 1/2"-1'-0" SPEC. NO.
~~ENV. NO. DACW68-68-B-0023~~
SHEET 19 Vol. 5
LGP-6-0-0/13

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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DRAWN BY:
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SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R013.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

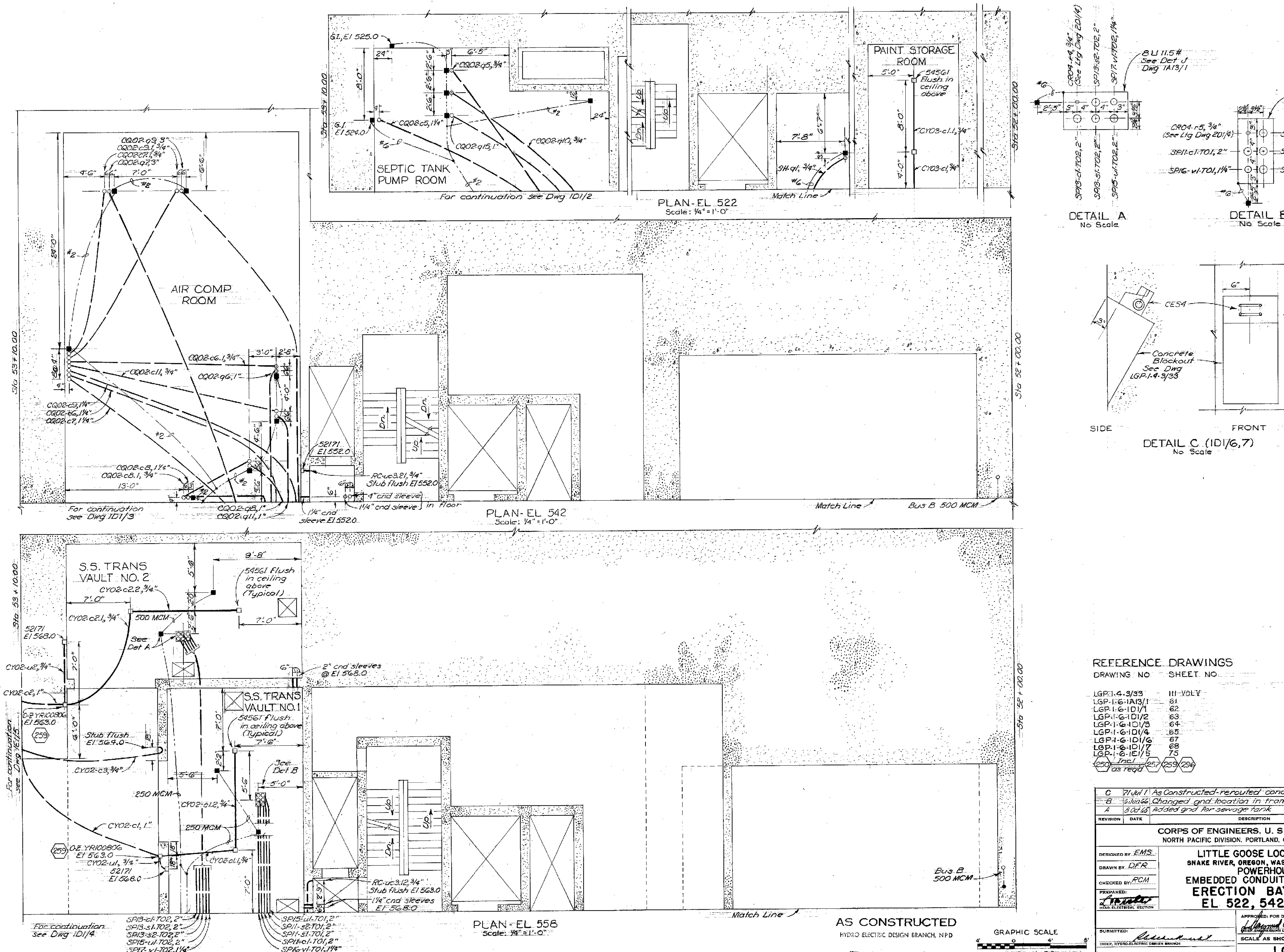
POWERHOUSE ARRANGEMENT
ERECTION BAY
PLAN GALLERY - EL'S 618 & 634

SHEET ID
R-013

FINAL

CORPS OF ENGINEERS

U. S. ARMY



REFERENCE DRAWINGS

DRAWING NO	SHEET NO
LGP-1-4-3/33	III-VOL V
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/2	63
LGP-1-6-1D1/3	64
LGP-1-6-1D1/4	65
LGP-1-6-1D1/6	67
LGP-1-6-1D1/7	68
LGP-1-6-1E1/5	75

250 Incl as reqd 257 259 296

REVISION	DATE	DESCRIPTION	BY
C	71 Jul 1	As Constructed-rerouted conduit	WDK
B	6 Jun 66	Changed gnd location in trans. vault	WHR
A	8 Oct 65	Added gnd for sewage tank	WHR

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

1971 JUL 01

CORPS OF ENGINEERS, U. S. ARMY
NORTH PACIFIC DIVISION, PORTLAND, OREGON

DESIGNED BY EMS
DRAWN BY DFR
CHECKED BY: RCM
PREPARED: HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY - INTAKE
EL 522, 542 & 558

APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION
SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
SCALE AS SHOWN SPEC. NO.
INV. NO. CIVENG-45-164-65-16
LGP-1-6-1D1/5
SHEET 66

CONT NO. 560

VOL. NO. IV

US Army Corps of Engineers®

MARK | DESCRIPTION | DATE

ISSUE DATE: AUGUST 2022
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DESIGNED BY:
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SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-014.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE EMBEDDED CONDUIT & GROUNDING
ERECTION BAY - INTAKE
EL 522, 542 & 558

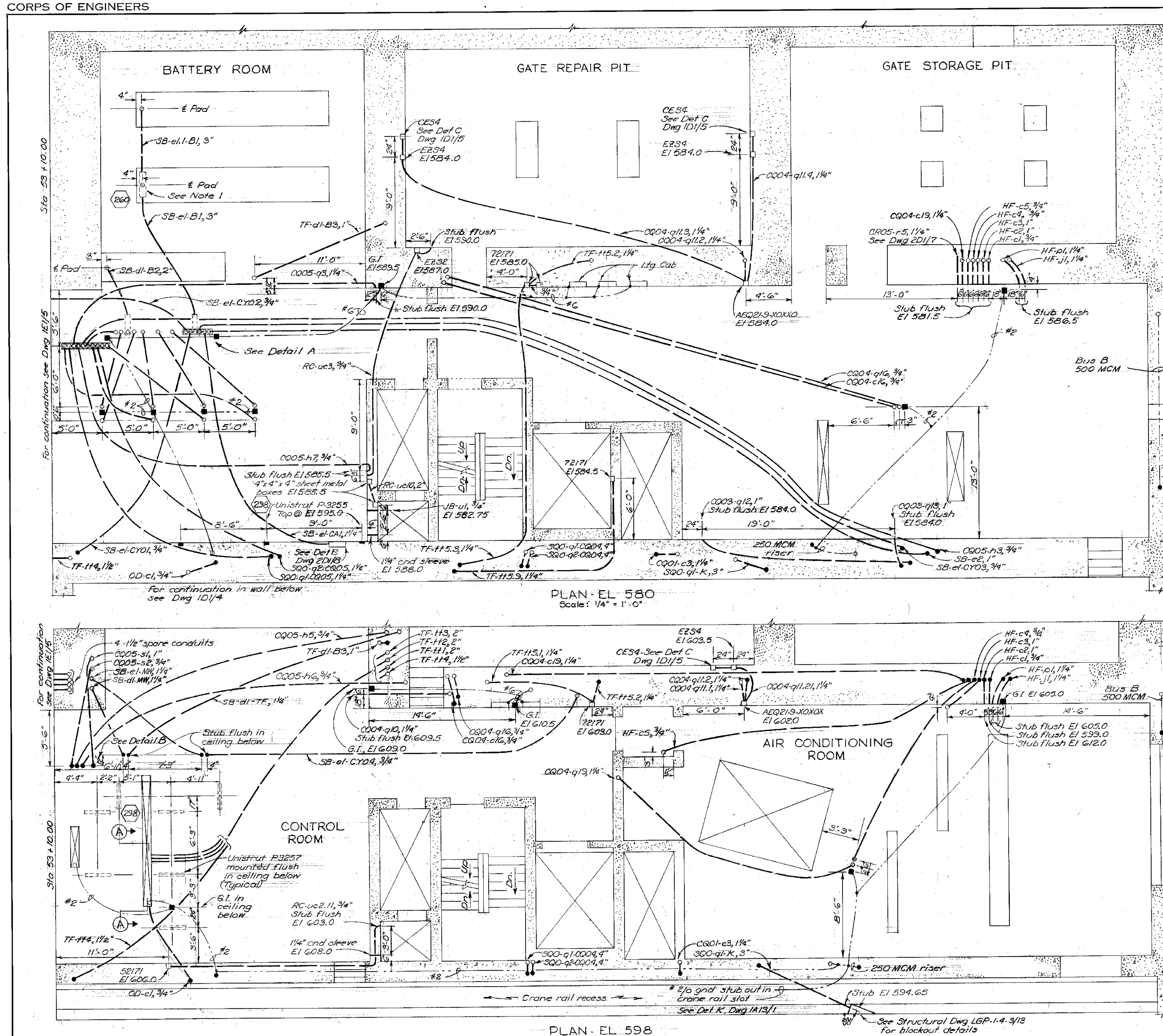
SHEET ID

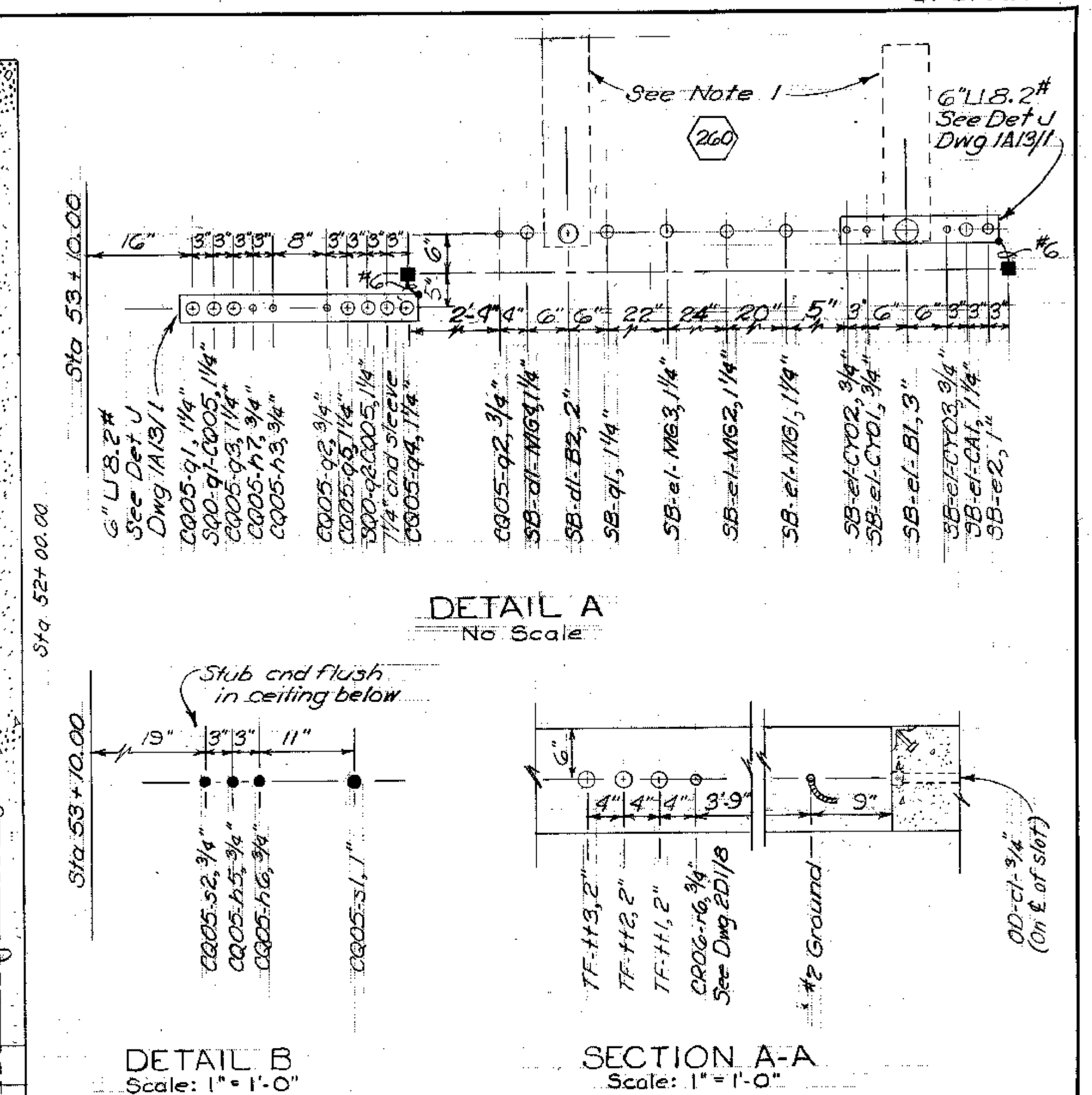
R-014

FINAL

CORPS OF ENGINEERS

U. S. ARMY





NOTE

1. Mount pull box flush in ceiling below. See Dwg 1D1/8, Detail D and E for box details.

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-4-3/18	91 VOL V
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/4	65
LGP-1-6-1D1/5	66
LGP-1-6-1D1/7	68
LGP-1-6-1D1/8	69
LGP-1-6-1E1/5	75

250 Incl as req'd 257 260 296 298

REVISION	DATE	DESCRIPTION	BY
D	71Jul1	As constructed - minor changes	WDK
C	6Jun66	General revisions & added gnd.	WHR
B	8Oct65	Added & relocated cond & gnd, changed designations	WHR
A	1Feb65	Added conduit & reference dwg.	WHR

CORPS OF ENGINEERS, U. S. ARMY
NORTH PACIFIC DIVISION, PORTLAND, OREGON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY - INTAKE
EL 580 & 598

DESIGNED BY JLS
DRAWN BY DFR
CHECKED BY: RCM
PREPARED: L T Fisher, HEAD, ELECTRICAL SECTION
SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN SPEC. NO.
INV. NO. CIVENG-45-164-65-18
LGP-1-6-1D1/6
SHEET 67
~~CONT NO. 65 560~~
VOL. NO. IV

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 1 BY W.D. Kohler

GRAPHIC SCALES
1/8" = 1'-0"
1" = 1'-0"

FOR INFORMATION ONLY

US Army Corps of Engineers
Walla Walla District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
WALLA WALLA, WASHINGTON

U.S. ARMY CORPS OF ENGINEERS
HYDROELECTRIC DESIGN CENTER
PORTLAND, OREGON

DESIGNED BY: First Last
DWN BY: G2EC#XXX
CKD BY: G2EC#XXX
DATE: June 12, 2013
SOLICITATION NO.: 13-R-0002
CONTRACT NO.: 14-C-0002
SUBMITTED BY: SUBMITTER NAME / SUBMITTER TITLE
FILE NO.: LGP-1-6-1D1/6

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON AND IDAHO
BRIDGE CRANE REHABILITATION
ERECTION BAY - INTAKE
EL. 580 &598

Sheet number:
FIO–015
VOLUME 1

SCALE$SCALE$ USERNAME $USER$

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22B0001
CONTRACT NO.:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
DRAWING NUMBER:
SIZE: ANSI D
FILENAME: R-015.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

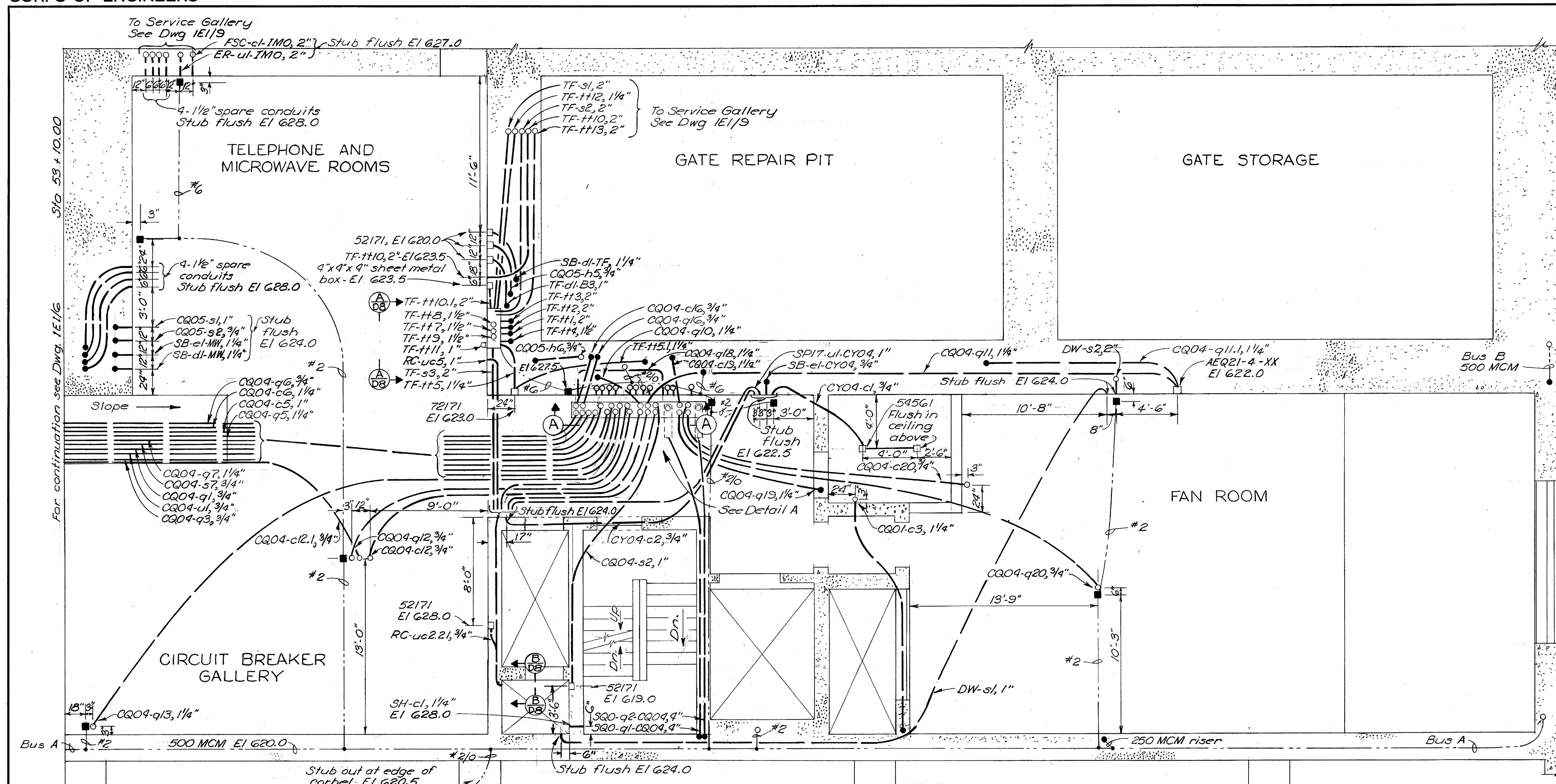
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
ERECTION BAY - INTAKE
EL 580 & 598

SHEET ID
R-015

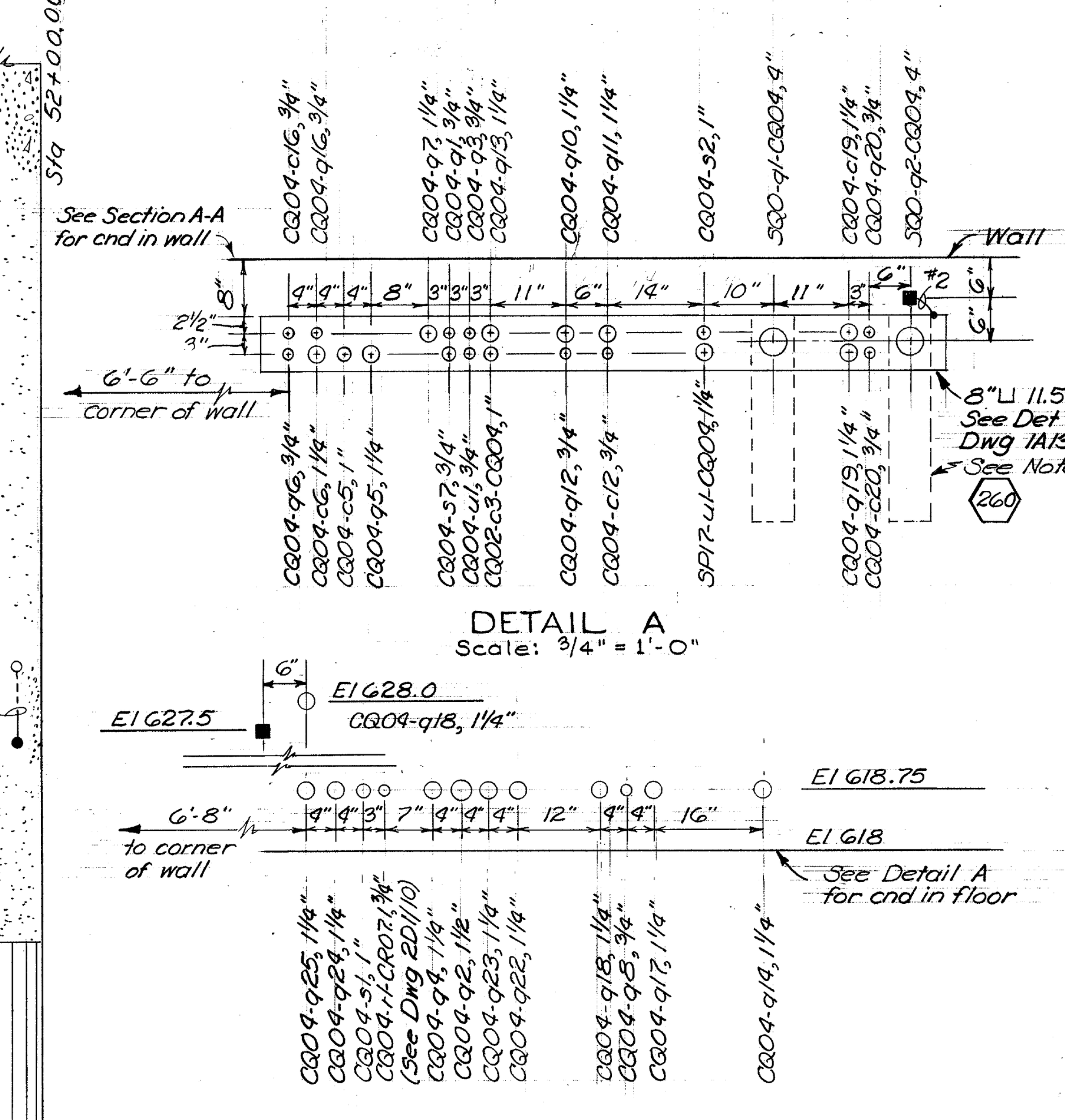
FINAL

CORPS OF ENGINEERS

U. S. ARMY



PLAN - EL 618
Scale: 1/4" = 1'-0"



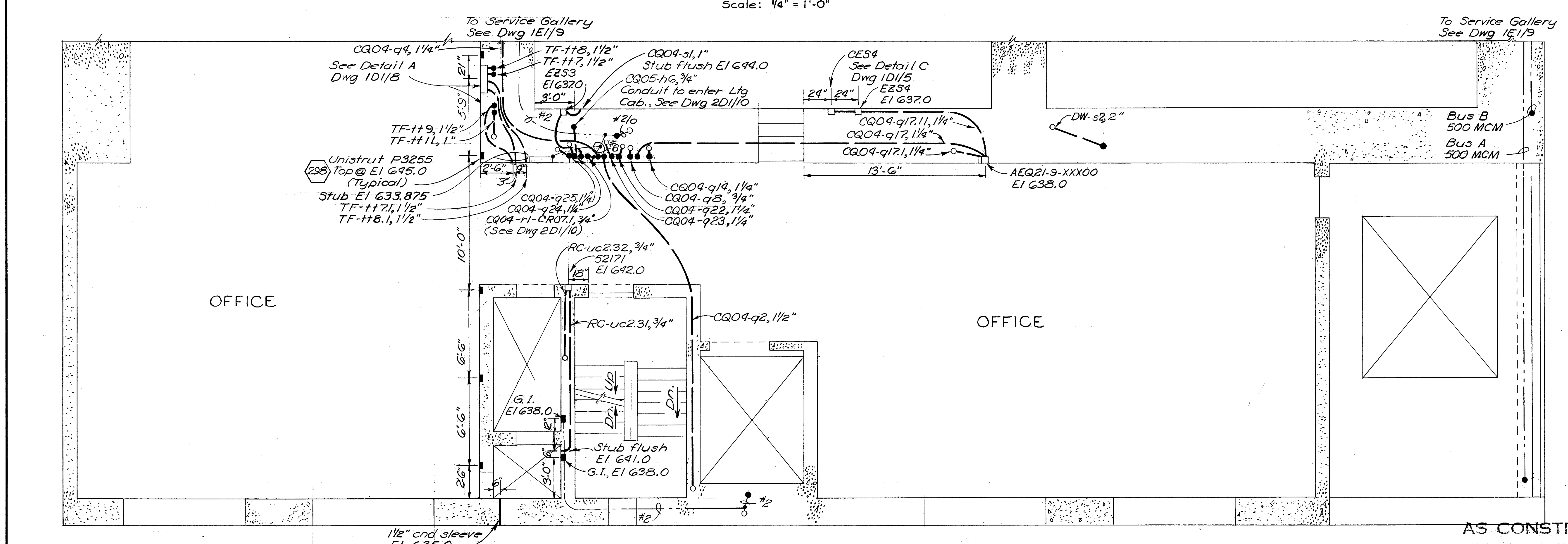
DETAIL A
Scale: 3/4" = 1'-0"

SECTION A-A
Scale: 3/4" = 1'-0"

NOTES

1. Mount pull boxes flush in ceiling below. See drawing LGP-1-6-1D1/8, Detail C for box details.

2. Conduits to be stubbed flush with ceiling except for 1 1/4" and larger where a minimum amount of bend may be exposed.



PLAN - EL 634
Scale: 1/4" = 1'-0"

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/5	66
LGP-1-6-1D1/6	67
LGP-1-6-1D1/8	69
LGP-1-6-1E1/6	76
LGP-1-6-1E1/9	79
LGP-1-6-2D1/10	102

250 Incl as req'd 257 260 296 298

REVISION	DATE	DESCRIPTION	BY
E	7 Jul 71	As Constructed-minor changes	WDK
D	6 Jun 66	Relocated cnd, changed size, corrected and	WHR
C	8 Oct 65	Relocated cnd, changed designations	WHR
B	31 Mar 65	Changed cnd location & designation	WHR
A	1 Feb 65	Relocated cnd	WHR

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY A. D. Koehler

GRAPHIC SCALES
1/4" = 1'-0"
3/4" = 1'-0"

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY - INTAKE
EL 618 & 634

DESIGNED BY: JLS
DRAWN BY: DFR
CHECKED BY: RCM
PREPARED: [signature] HEAD, ELECTRICAL SECTION
SUBMITTED: [signature] CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV. ENGINEER [signature] DATE 4 DEC 64 CHIEF, ENGINEERING DIVISION
INV. NO. CIVENG-45-164-65-18
SCALE AS SHOWN
SPEC. NO.
LGP-1-6-1D1/7
SHEET 68

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-016.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

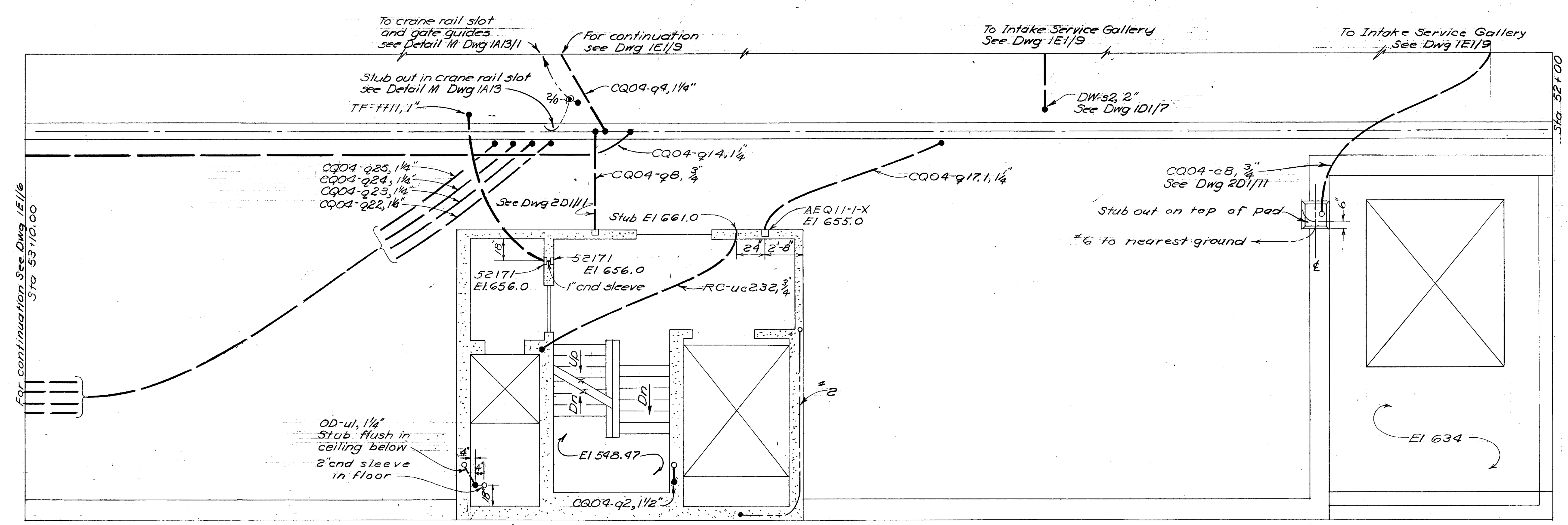
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE EMBEDDED CONDUIT & GROUNDING
ERECTION BAY - INTAKE
EL 618 & 634

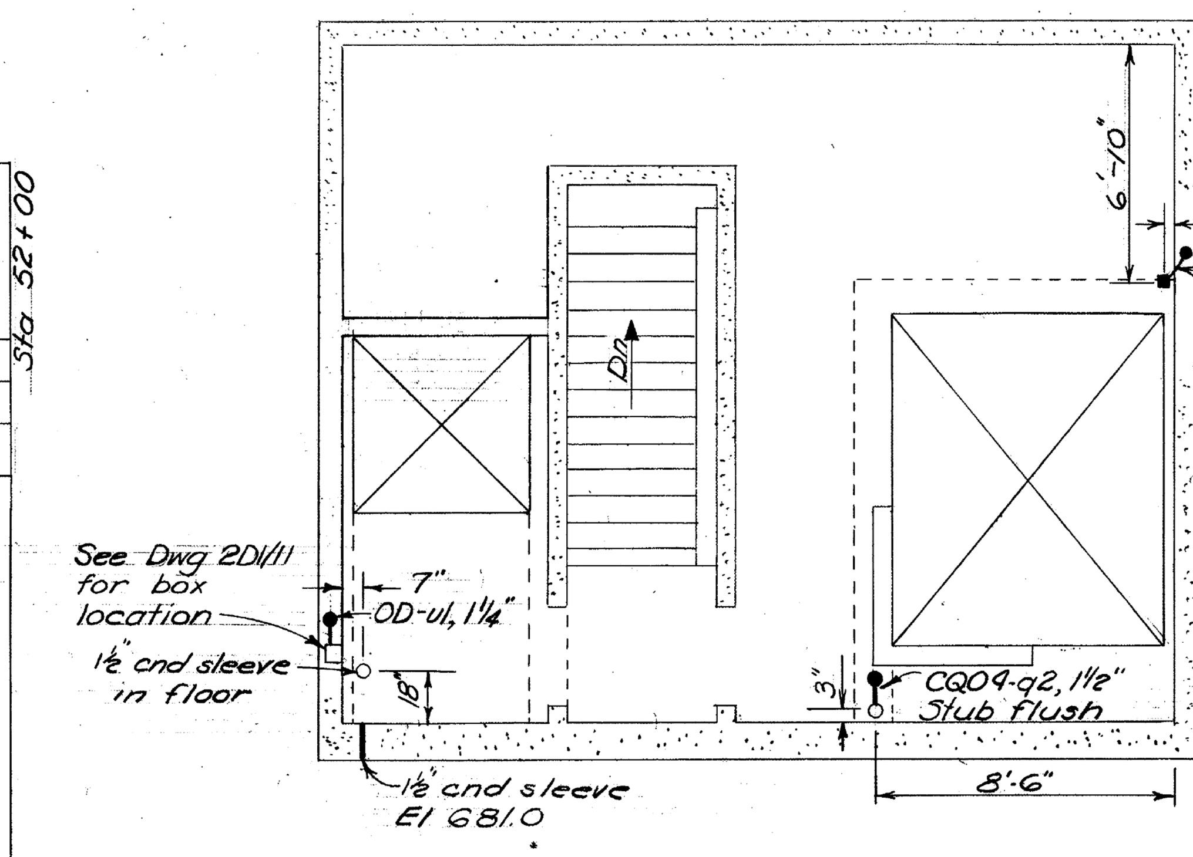
SHEET ID
R-016

FINAL

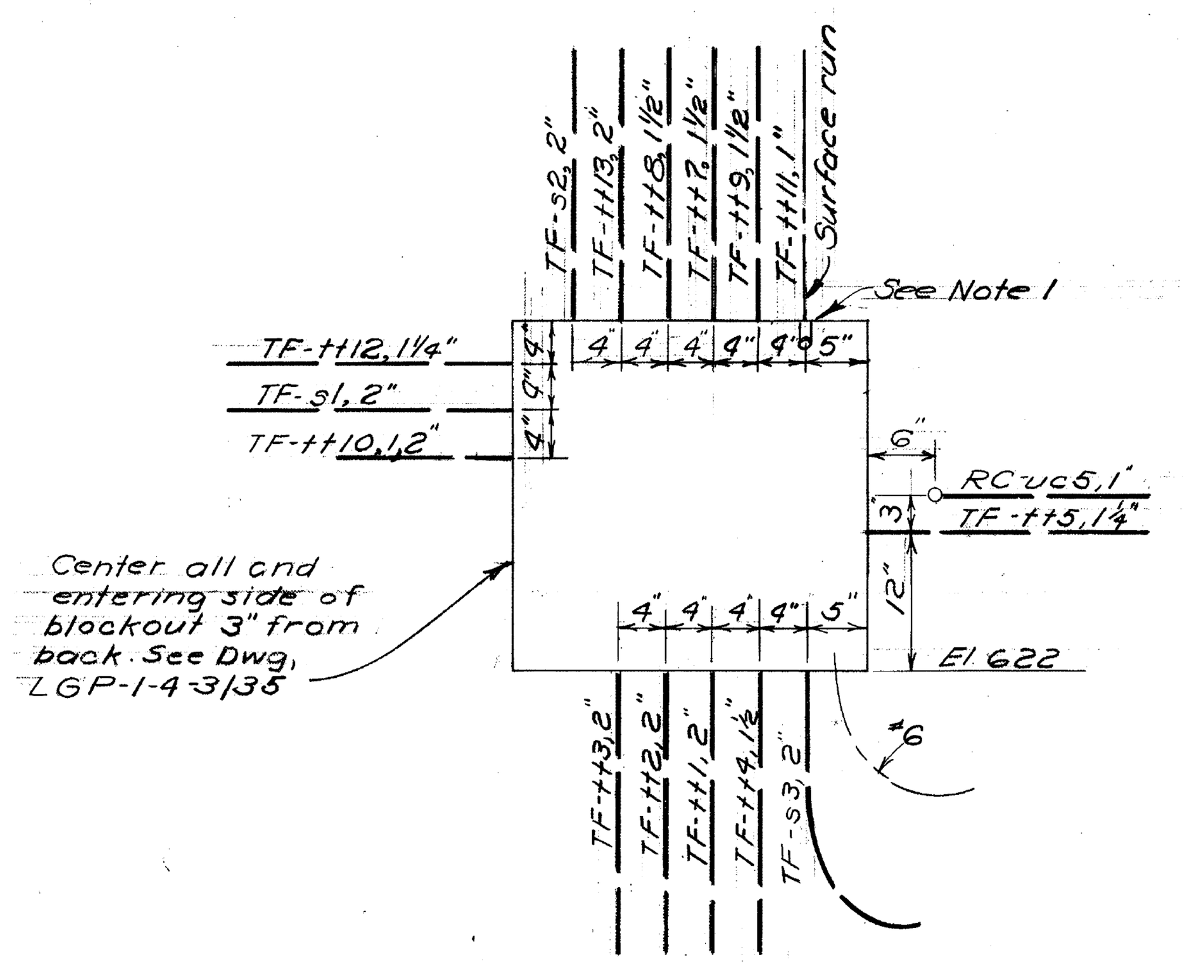
CORPS OF ENGINEERS — U. S. ARMY



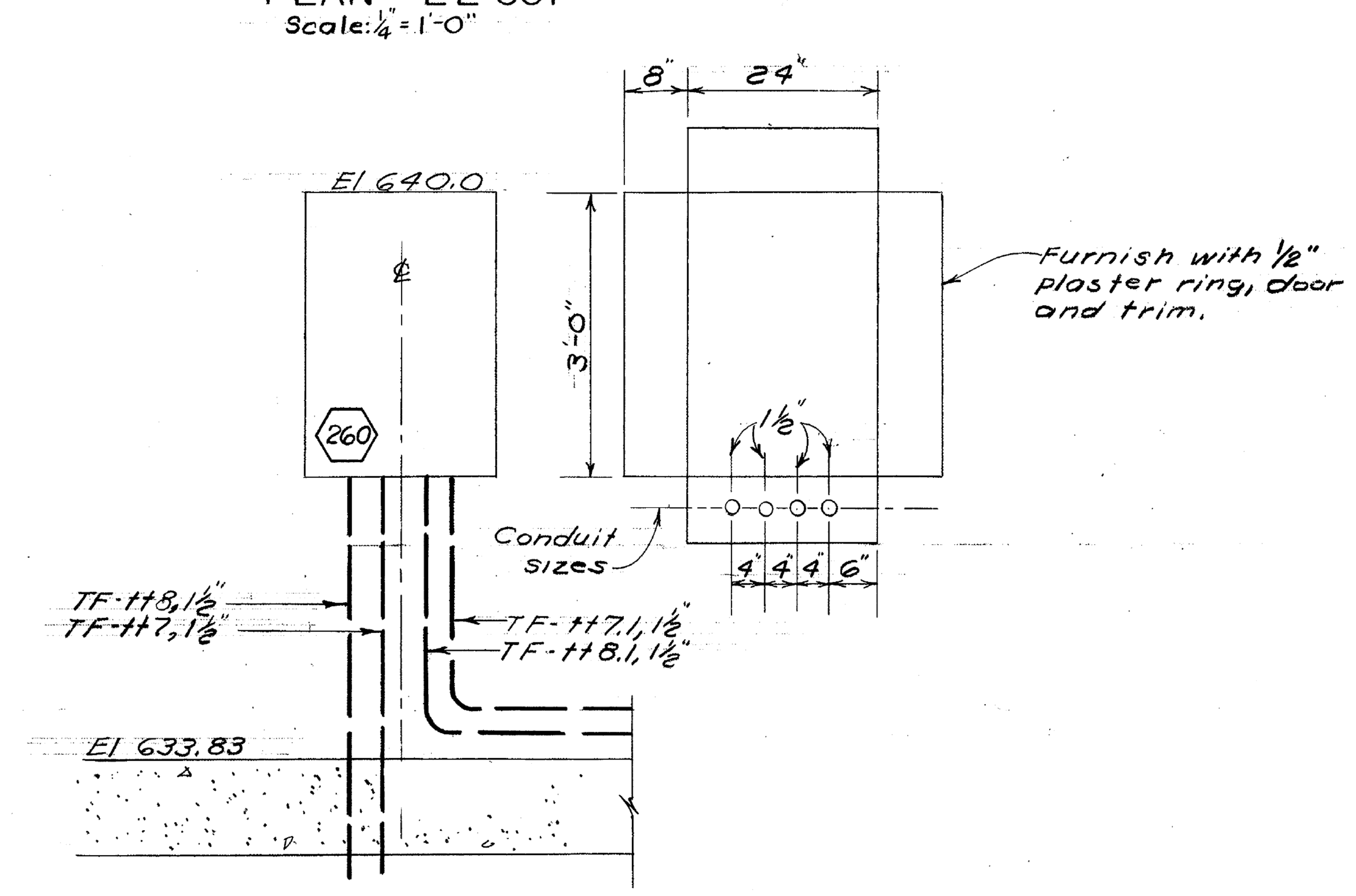
PLAN EL 651
Scale: ¼" = 1'-0"



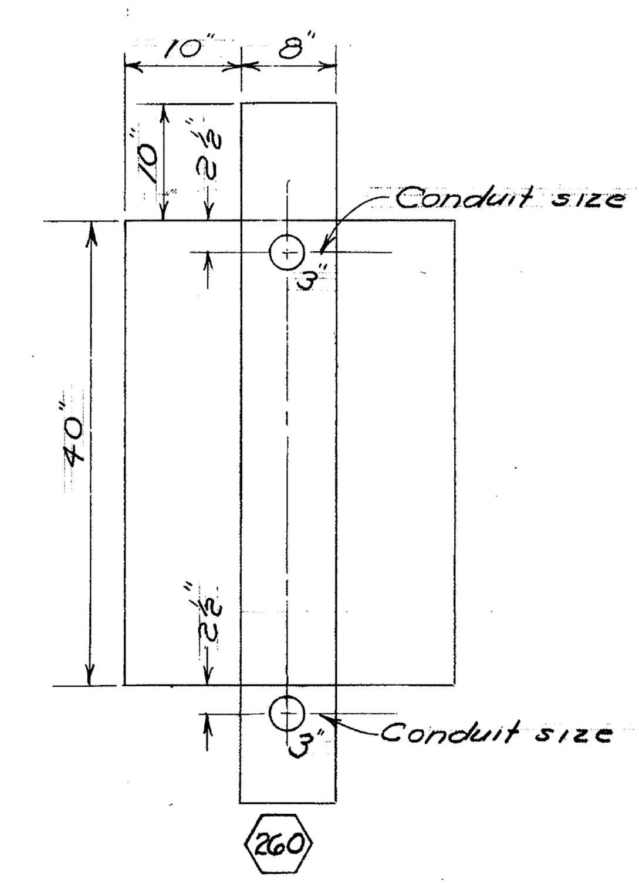
PLAN - EL 672
Scale: ¼" = 1'-0"



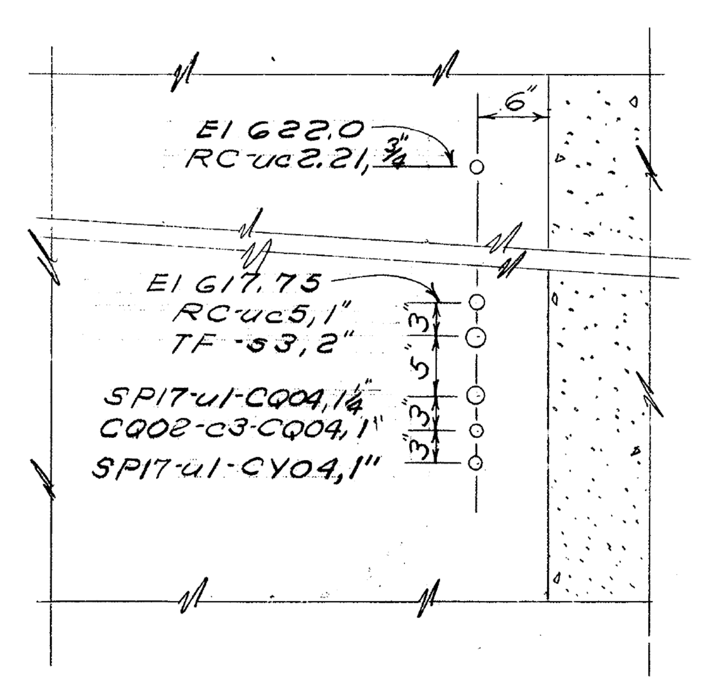
SECTION A-A (ID1/7)
No Scale



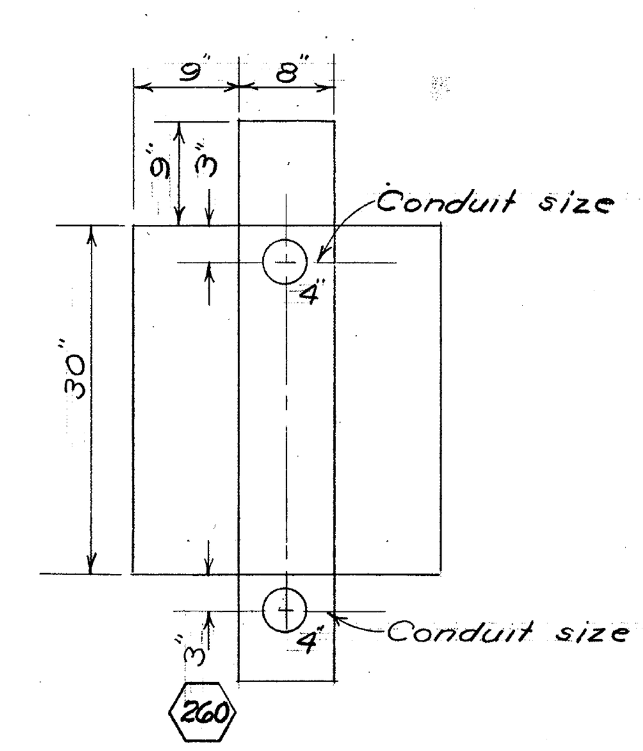
DETAIL A (ID1/7)
TELEPHONE CABINET
(GENERAL ELECTRIC 7510 OR EQUAL)
No Scale



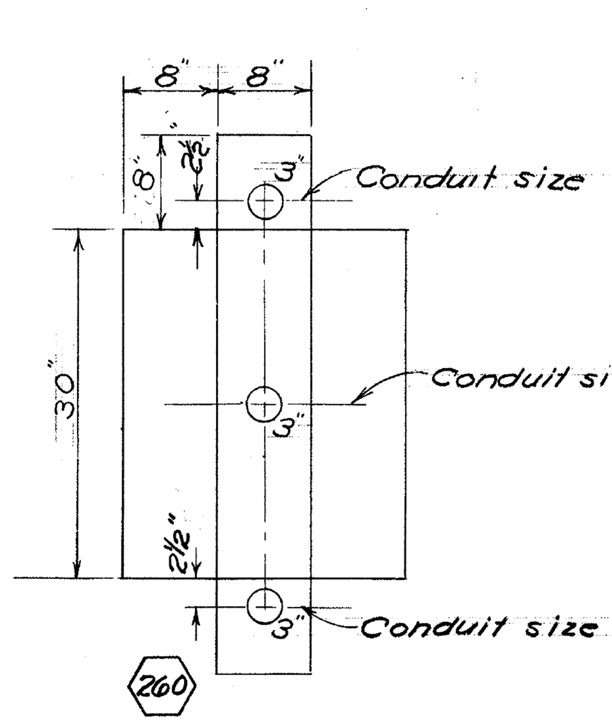
DETAIL B (ID1/2,3)
No Scale



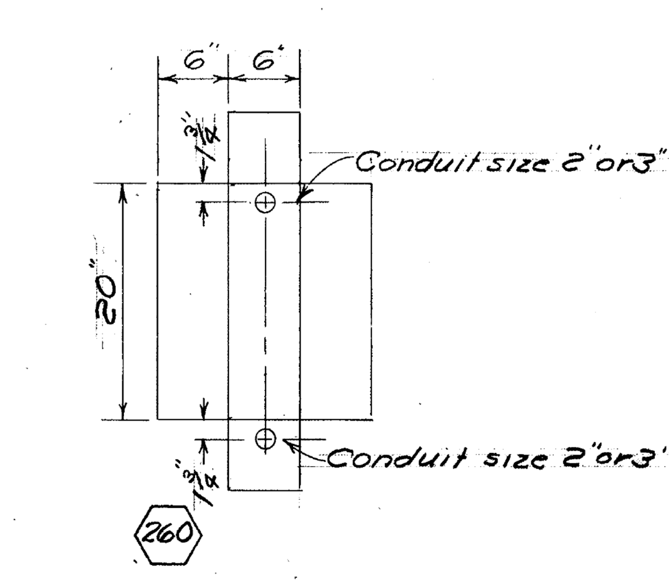
SECTION B-B (ID1/7)
No Scale



DETAIL C (ID1/7)
No Scale



DETAIL D (ID1/6)
No Scale



DETAIL E (ID1/3, /6)
No Scale

NOTE
1. Extend all conduits 1 inch beyond the surface of blockout.

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-4-3/35	113 VOL V
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/2	63
LGP-1-6-1D1/3	64
LGP-1-6-1D1/6	67
LGP-1-6-1D1/7	68
LGP-1-6-1E1/6	76
LGP-1-6-1E1/9	79
LGP-1-6-2D1/11	103

250 Incl as req'd 257 260 296

REVISION	DATE	DESCRIPTION	BY
D	7 Jul 71	As Constructed-minor changes	WDK
C	8 Oct 65	Relocated cnd.	WHR
B	31 Mar 65	Changed cnd designation	WHR
A	1 Feb 65	Relocated cnd and box	WHR

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY H. D. Koehler

GRAPHIC SCALE
1/4" = 1'-0"

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY VLS
DRAWN BY J.J.C.
CHECKED BY RCM
PREPARED: [signature] HEAD, ELECTRICAL SECTION
SUBMITTED: [signature] CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY-INTAKE EL 651
& MISC DETAILS

APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN SPEC. NO.
INV. NO. CIVENG-43-184-83-18
LGP-1-6-ID1/8
SHEET 69

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-017.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

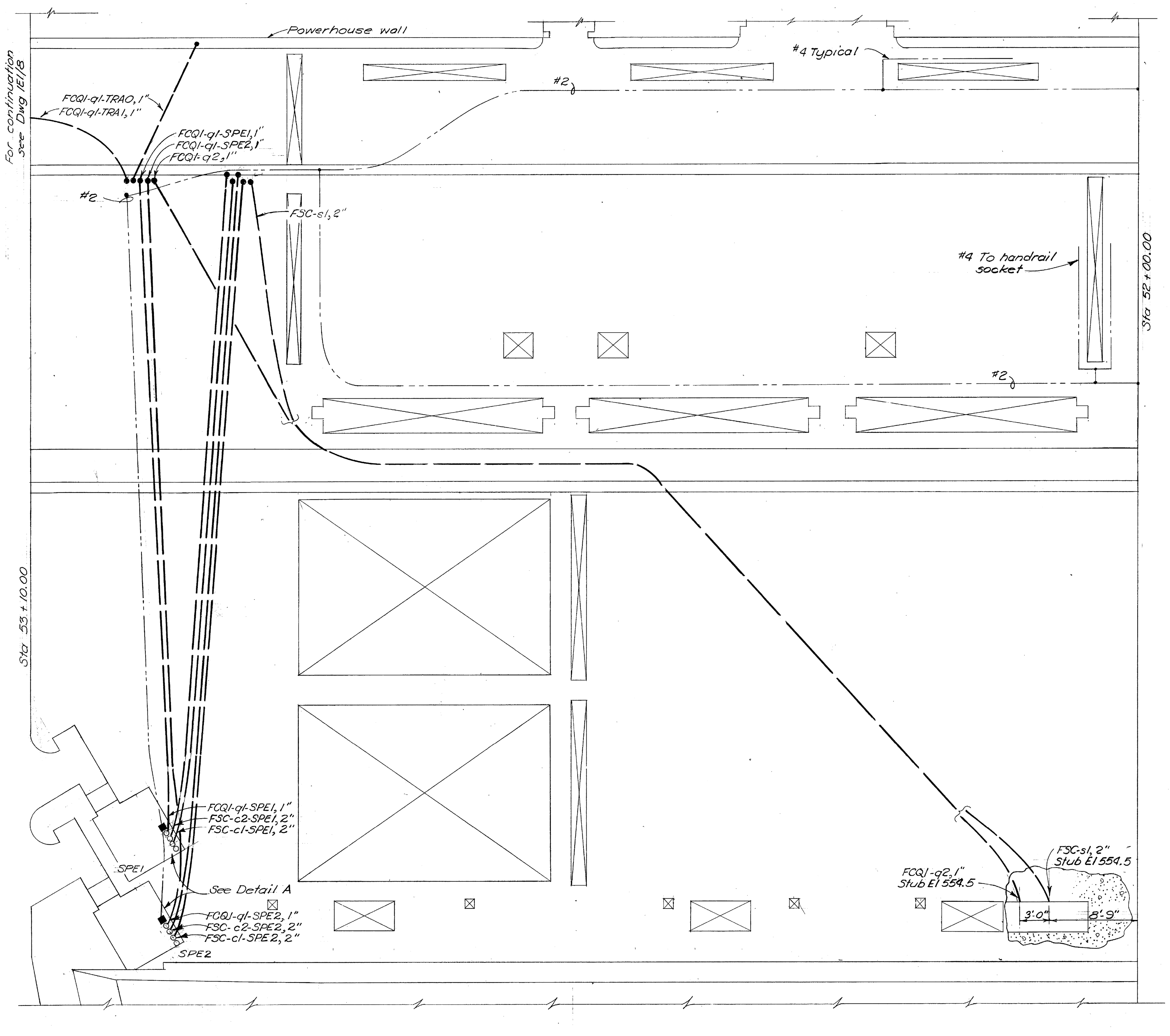
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
ERECTION BAY - INTAKE
EL 651 & MISC DETAILS

SHEET ID
R-017

FINAL

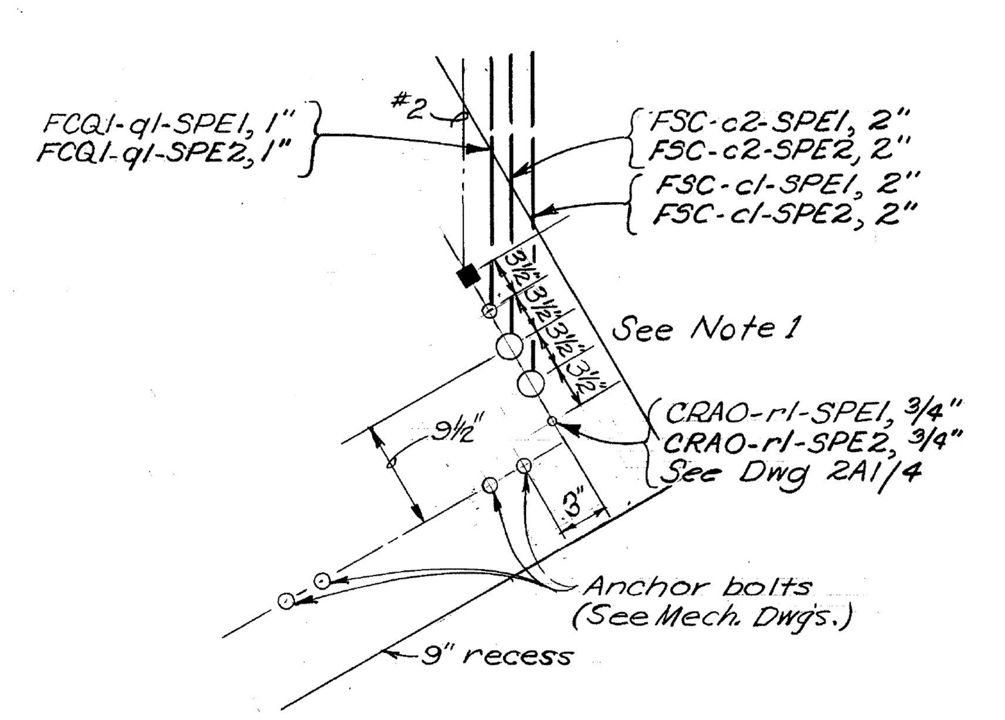
CORPS OF ENGINEERS

U. S. ARMY



PLAN EL 558

Scale: 3/16" = 1'-0"



DETAIL A

SPE1 & SPE2

No Scale

NOTE

1. Stub out conduits at El 558.25 and cap. GI to be installed flush with top surface of finished grout fill.
2. All hatch frames and gate guides grounded with #2.
3. All handrail post sockets grounded with #4 where chain handrail is used.

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/4	65
LGP-1-6-1E1/8	78
LGP-1-6-1E1/10	80
LGP-1-6-2A1/4	90

250 Incl as req'd 257 296

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 71 JUL 01 BY K. D. Kohler

GRAPHIC SCALE 4' 0 4' 8' 12'

3/16" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
B	71 Jul 1	As constructed-added grounding, minor changes	WDK
A	31 Mar 65	Relocated cnd, changed Note & Detail A.	WHR

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY JLS
DRAWN BY REF
CHECKED BY: RCM
PREPARED: L T Fisher, HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
ERECTION BAY
TAILRACE DECK EL 558

SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION

SCALE AS SHOWN | SPEC. NO.

~~INV. NO. CIVENG 45-164-65-18~~

LGP-1-6-1D1/9

SHEET 70

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: | DRAWN BY: | CHECKED BY: | SUBMITTED BY: | SIZE: ANSI D | FILENAME: R-018.dgn

ISSUE DATE: AUGUST 2022 | SOLICITATION NO.: W912EF22R0001 | CONTRACT NO.: | DRAWING NUMBER:

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
ERECTION BAY
TAILRACE DECK EL 558

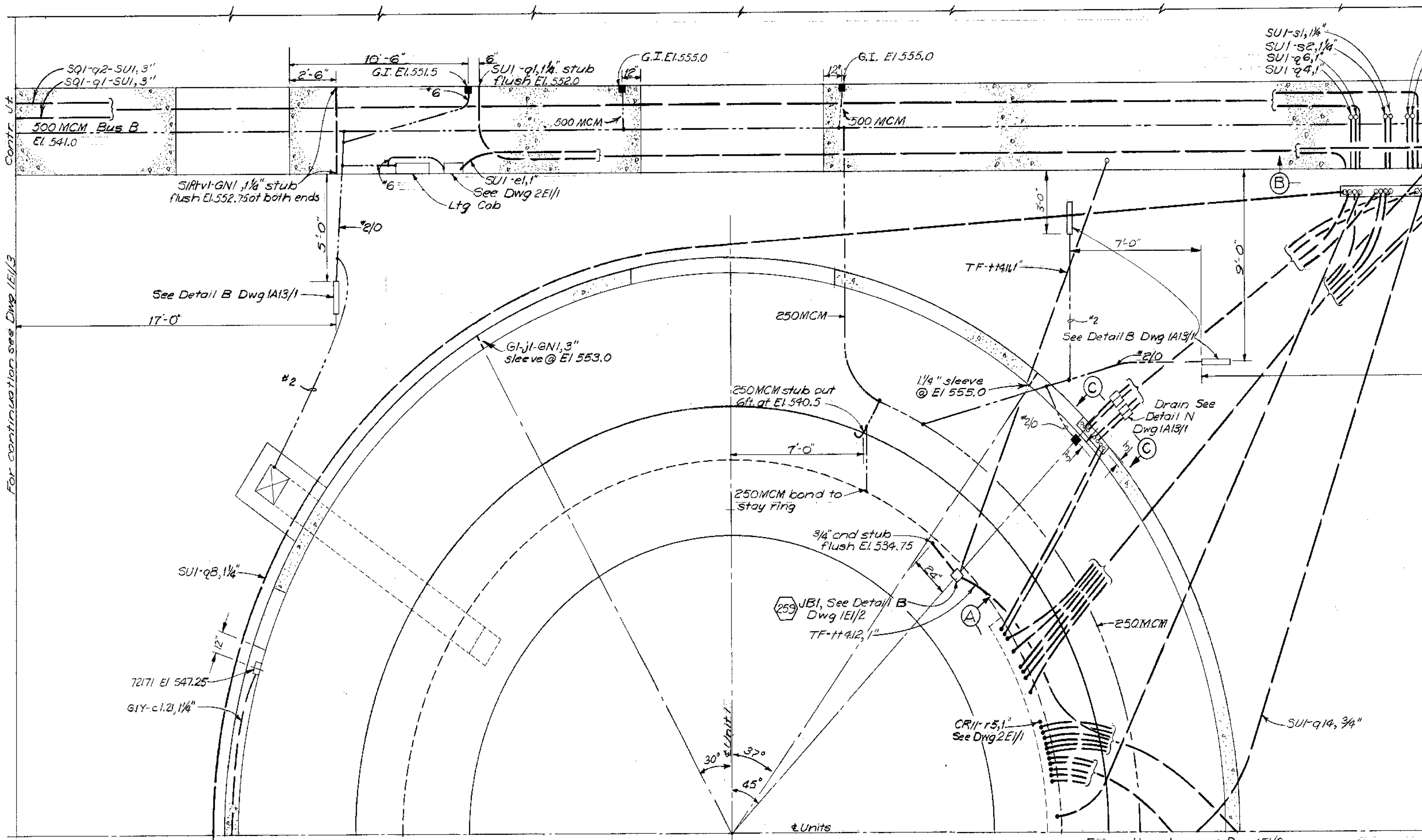
SHEET ID

R-018

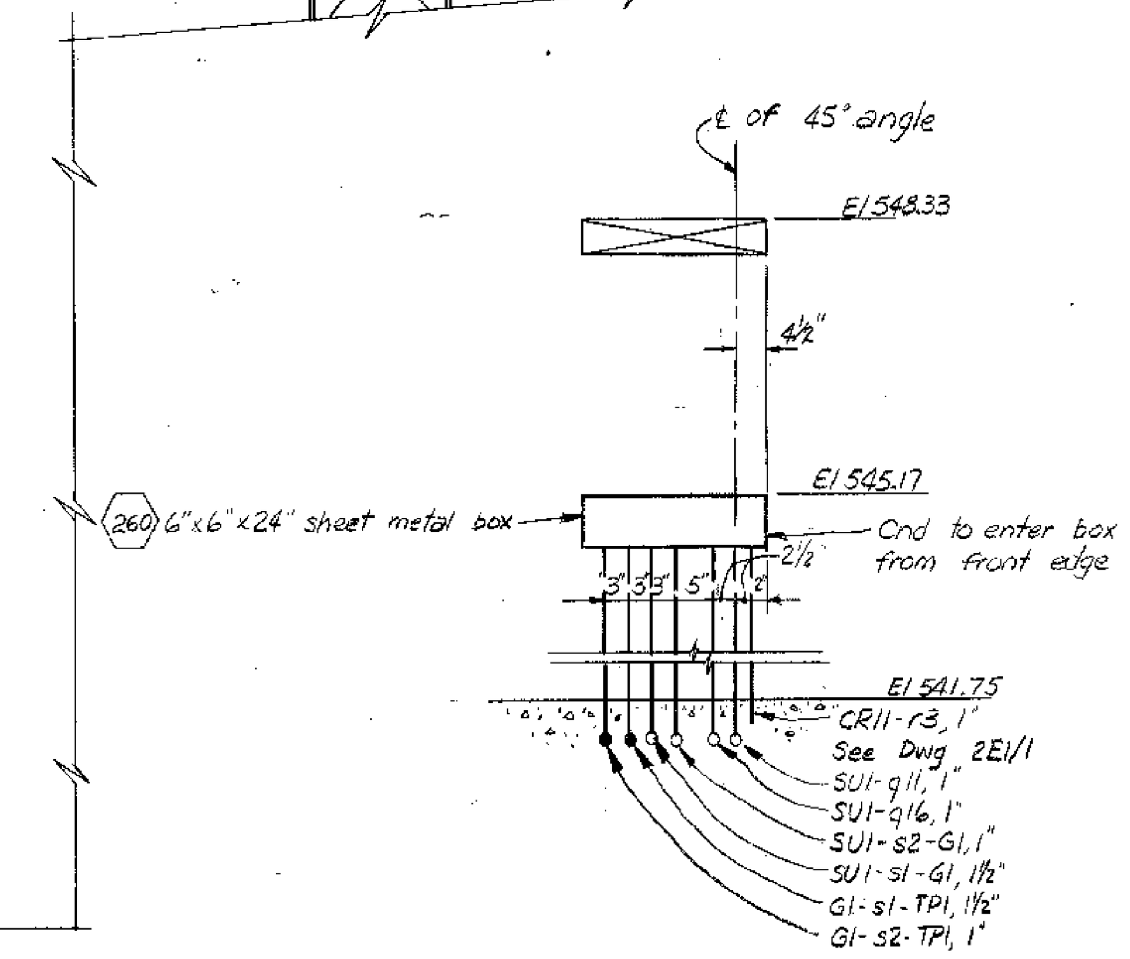
FINAL

CORPS OF ENGINEERS

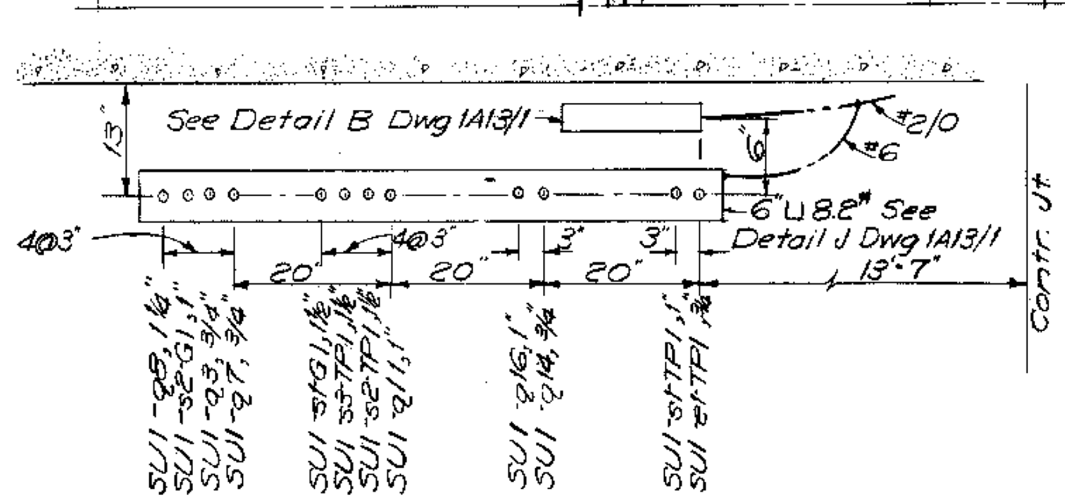
U. S. ARMY



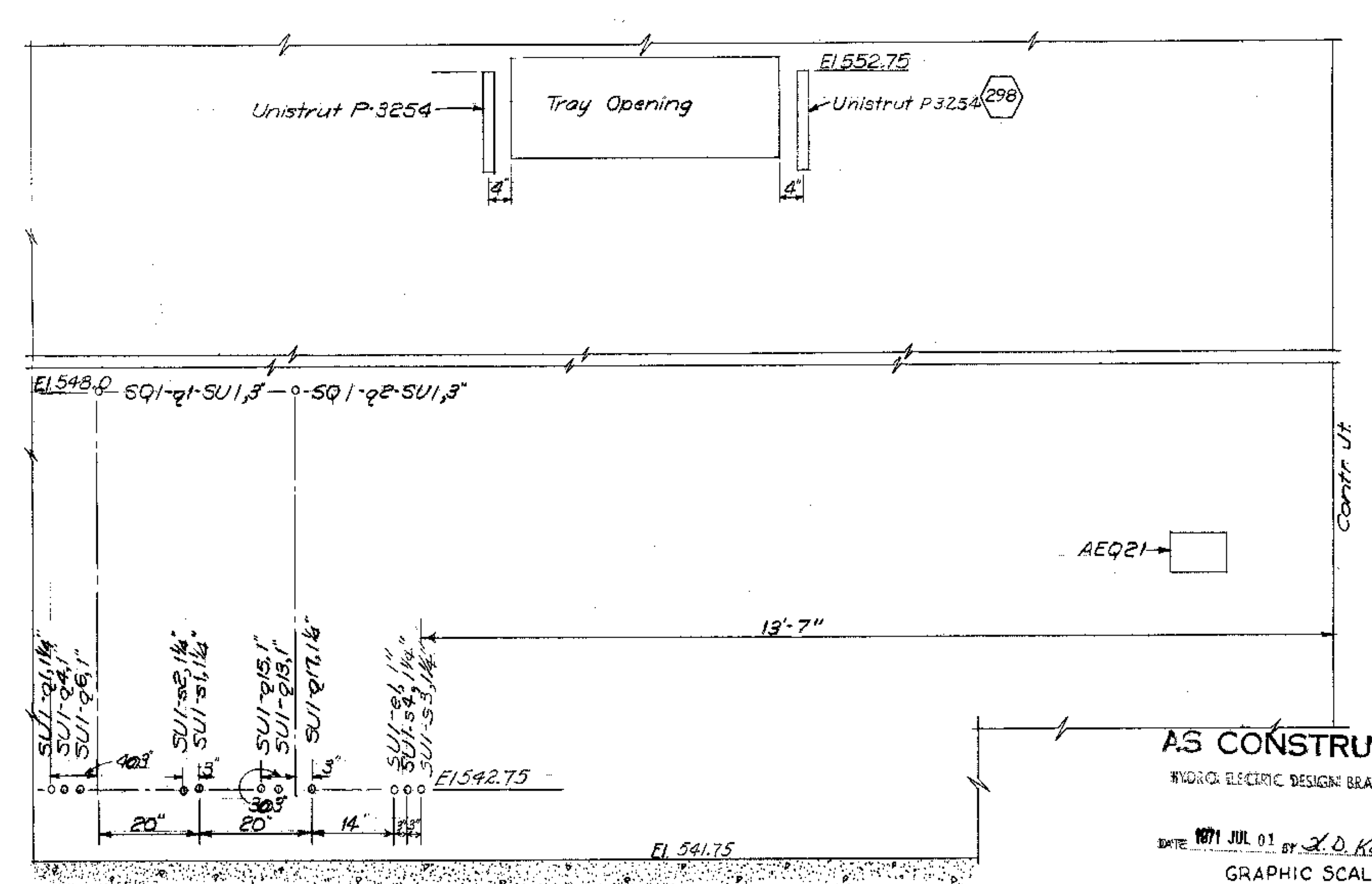
PLAN BAY 1 EL. 542
Scale: 3/8" = 1'-0"



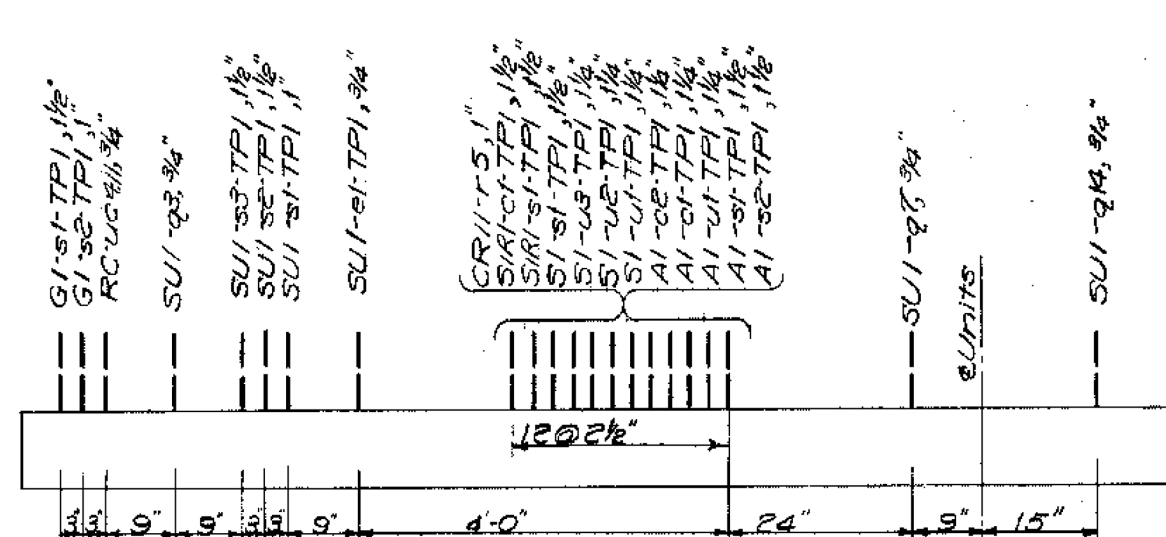
SECTION C-C
No Scale



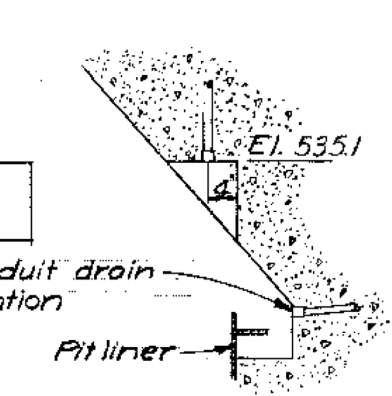
PLAN DETAIL A
No Scale



SECTION B-B
No Scale



SECTION A-A
No Scale



SIDE VIEW

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/3	64
LGP-1-6-1E1/2	72
LGP-1-6-1E1/3	73
LGP-1-6-1E1/5	75
LGP-1-6-2E1/1	106

250 Incl as req'd 257 259 260 296 298

REVISION	DATE	DESCRIPTION	BY
D	71 Jul 1	As constructed - added grounding	WDK
C	6 Jun 66	Relocated Unistrut, Section B-B	WHR
B	8 Oct 65	Added cnd sleeves, changed dimensions	WHR
A	31 Mar 65	Relocated cnd & gnd. Added Section C-C Removed Det B	WHR

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY L. D. Koehler

GRAPHIC SCALE
4' 0' 4'
Scale: 3/8" = 1'-0"

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY JY
DRAWN BY REF / HAL
CHECKED BY: EMS
PREPARED: L Fisher, HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 1
UPSTREAM HALF EL 542

SUBMITTED: [signature] CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64 [signature] CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN | SPEC. NO.
~~INV. NO. CIVENG-45-164-65-19~~
LGP-1-6-1E1/1
SHEET 71

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-019.dgn
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

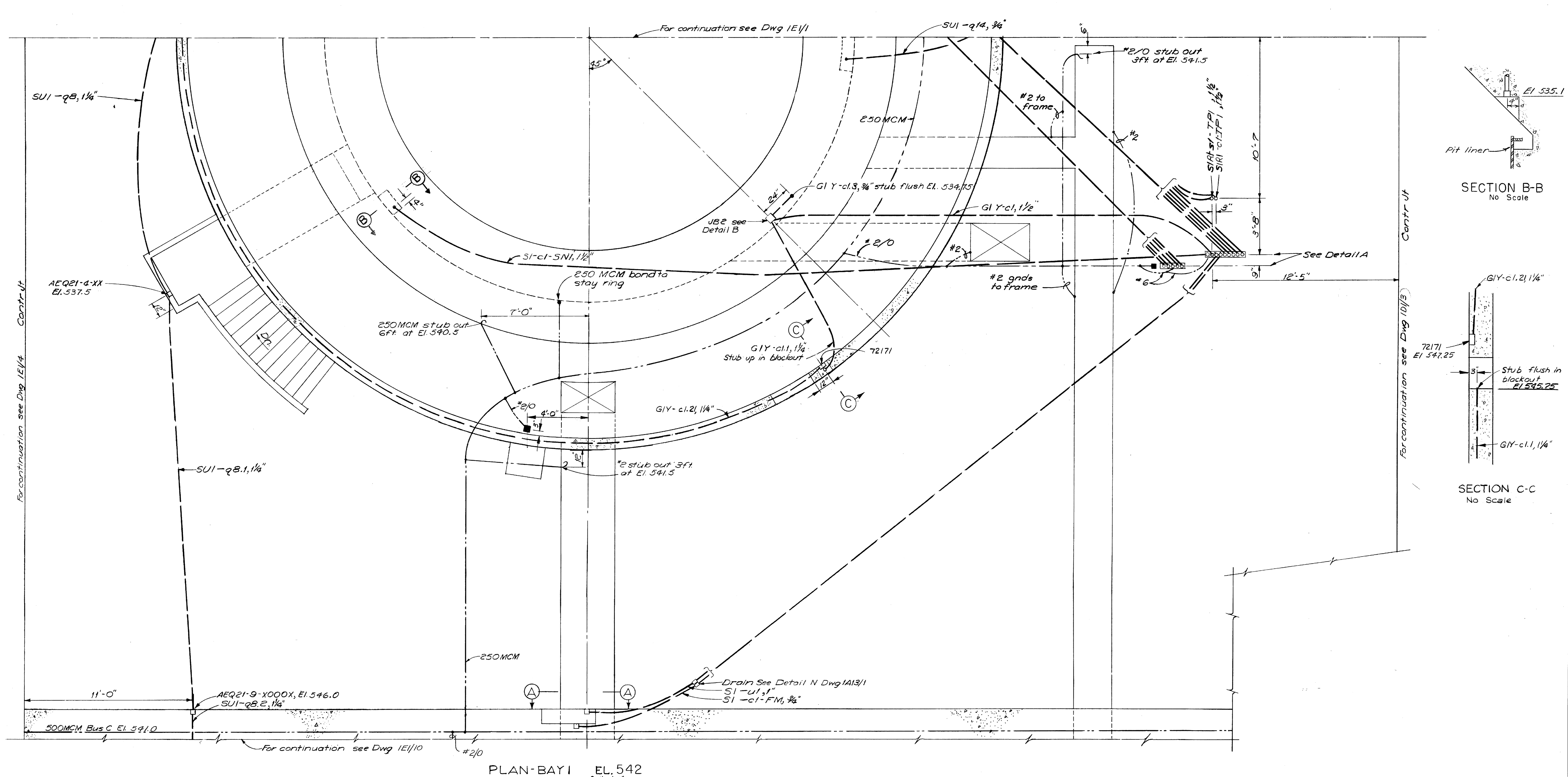
U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 1
UPSTREAM HALF EL542

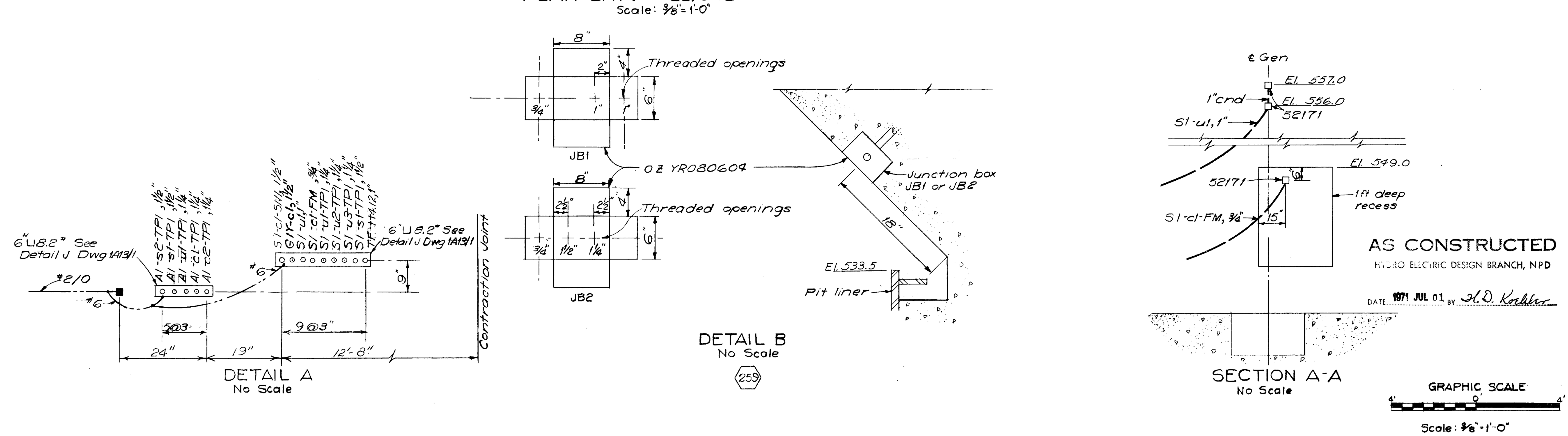
SHEET ID
R-019

FINAL

CORPS OF ENGINEERS U. S. ARMY



PLAN-BAY 1 EL. 542
Scale: 3/8"=1'-0"



DETAIL A
No Scale

DETAIL B
No Scale
(259)

SECTION A-A
No Scale

GRAPHIC SCALE
Scale: 3/8"-1'-0"

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY H.D. Koehler

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/3	64
LGP-1-6-1E1/1	71
LGP-1-6-1E1/4	74
LGP-1-6-1E1/10	80

(250) Incl as reqd (257) (259) (296)

REVISION	DATE	DESCRIPTION	BY
C	7 Jul 71	As constructed-added grounding	WDK
B	28 Dec 66	Corrected Sec B-B, C-C, and Ref Dwg	WHR
A	31 Mar 65	Added cnd & Section C-C. Relocated gnd	WHR

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 1
DOWNSTREAM HALF EL 542

DESIGNED BY: J.Y.
DRAWN BY: BEF HAL
CHECKED BY: EMS
PREPARED: L. H. Fisher, HEAD, ELECTRICAL SECTION
SUBMITTED: [signature] CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV. ENGINEER [signature] CHIEF, ENGINEERING DIVISION DATE 4 DEC 64
SCALE AS SHOWN SPEC. NO.
INV. NO. CIVENG-45-164-65-15
LGP-1-6-1E1/2
SHEET 72

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

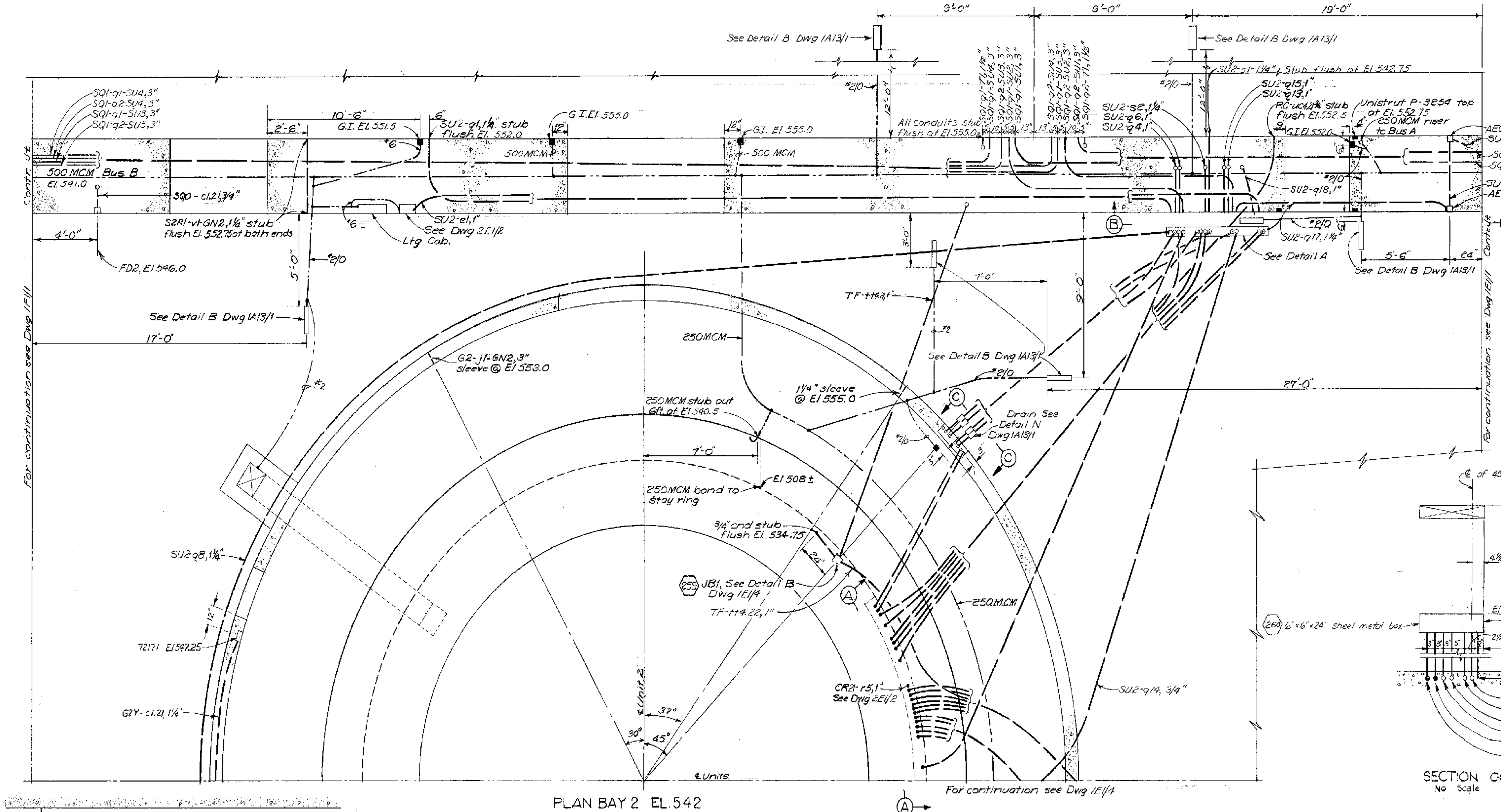
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-020.dgn
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

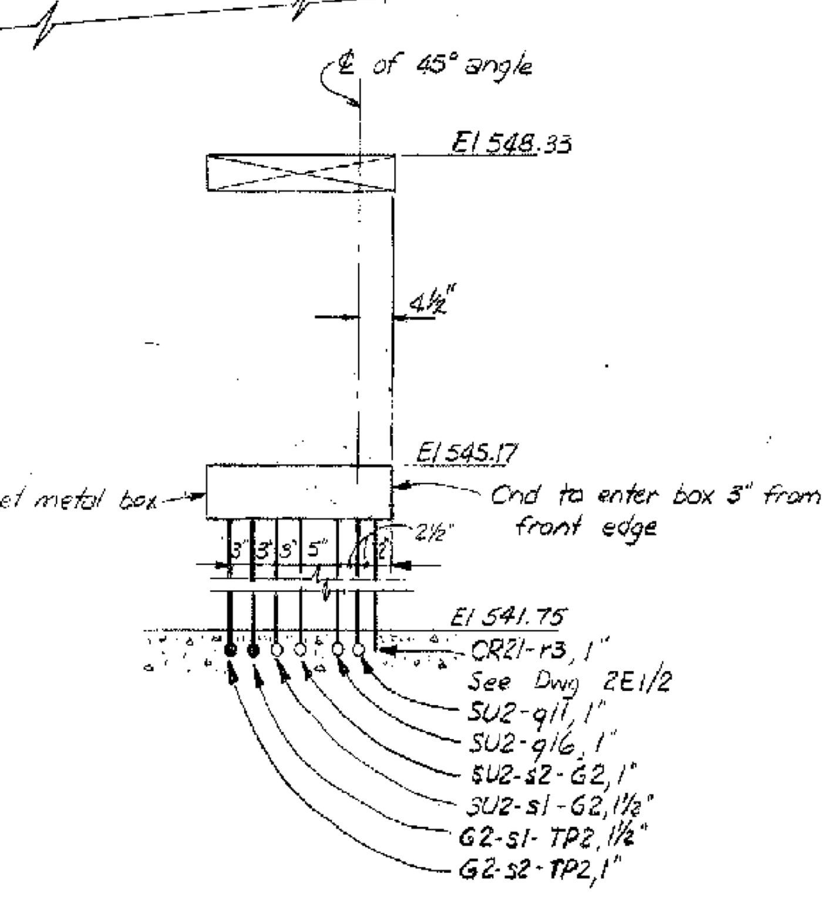
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 1
UPSTREAM HALF EL542

SHEET ID
R-020

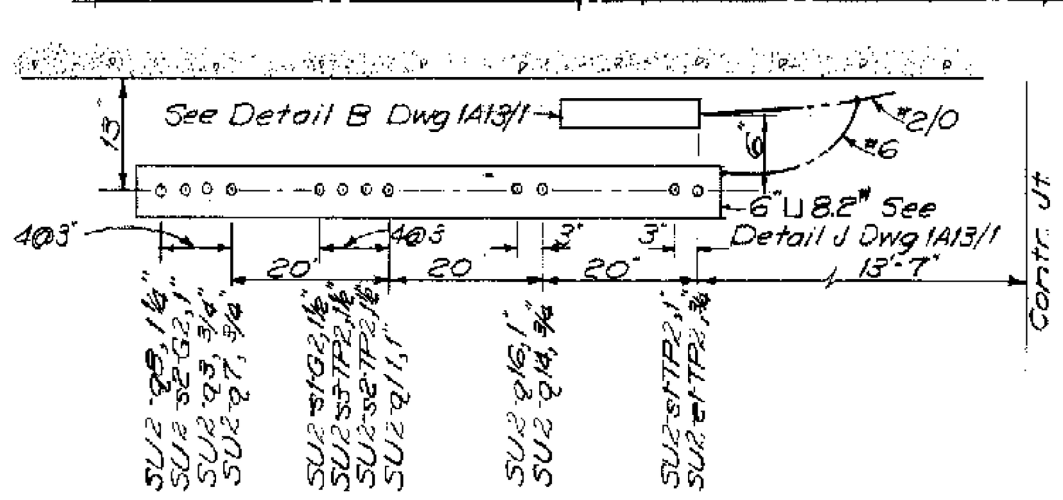
FINAL



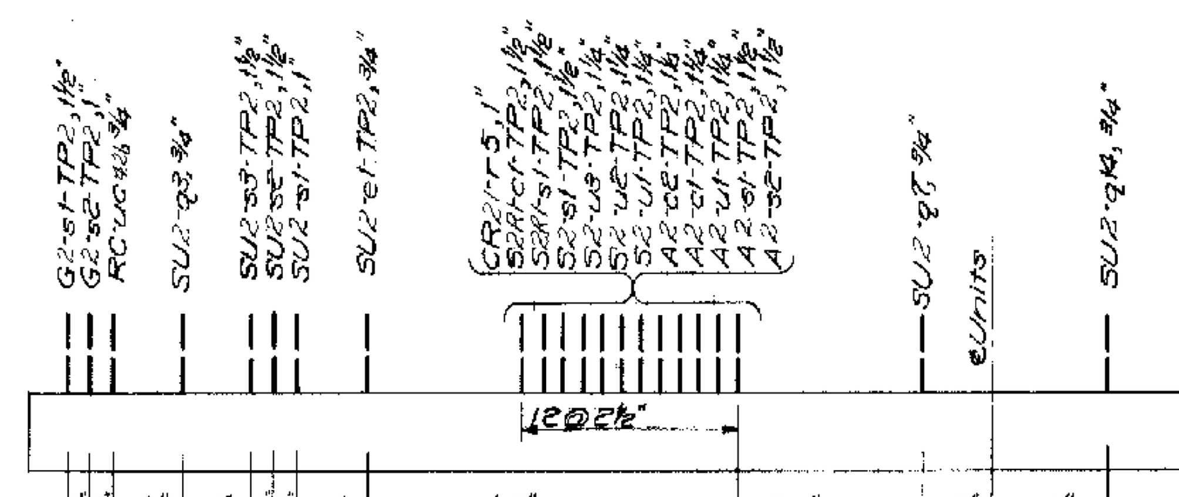
PLAN BAY 2 EL.542
Scale: 3/8" = 1'-0"



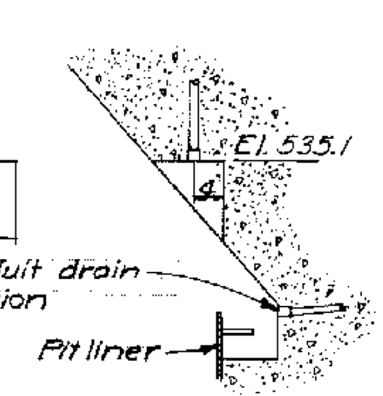
SECTION CC
No Scale



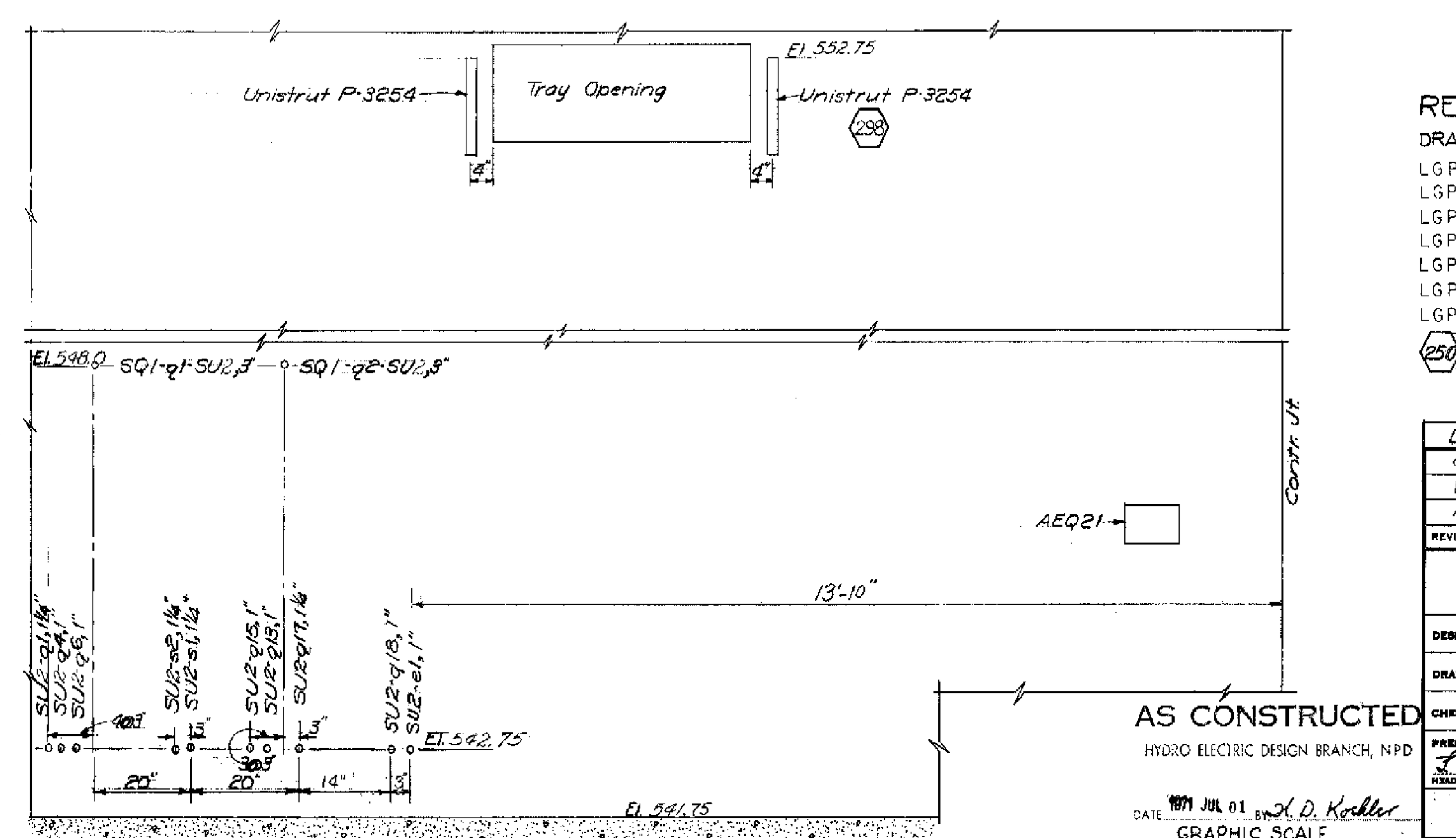
PLAN DETAIL A
No Scale



SECTION A-A
No Scale



SIDE VIEW



SECTION B-B
No Scale

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1E1/1	71
LGP-1-6-1E1/4	74
LGP-1-6-1E1/5	75
LGP-1-6-1F1/1	81
LGP-1-6-2E1/2	107

250 Incl as req'd 257 259 260 296 298

REVISION	DATE	DESCRIPTION	BY
D	71 Jul 1	As Constructed-SQ1 conduits revised	WDK
C	8 Oct 65	Added cnd, changed dimensions.	WHR
B	31 Mar 65	Relocated cnd & gnd. Added Sec C-C. Removed Det B.	WHR
A	1 Feb 65	Relocated FD box.	WHR

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY JY
DRAWN BY REF HAL
CHECKED BY EMS
PREPARED: [signature] HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 2
UPSTREAM HALF EL542

SUBMITTED: [signature] CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV. ENGINEER [signature] CHIEF, ENGINEERING DIVISION DATE 4 DEC 64
SCALE AS SHOWN SPEC. NO.
~~INV. NO. CIVENG 45-164-65-13~~
LGP-1-6-1E1/3
SHEET 73

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY H. D. Koehler
GRAPHIC SCALE
4' 0' 4'
Scale: 3/8" = 1'-0"

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-021.dgn
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

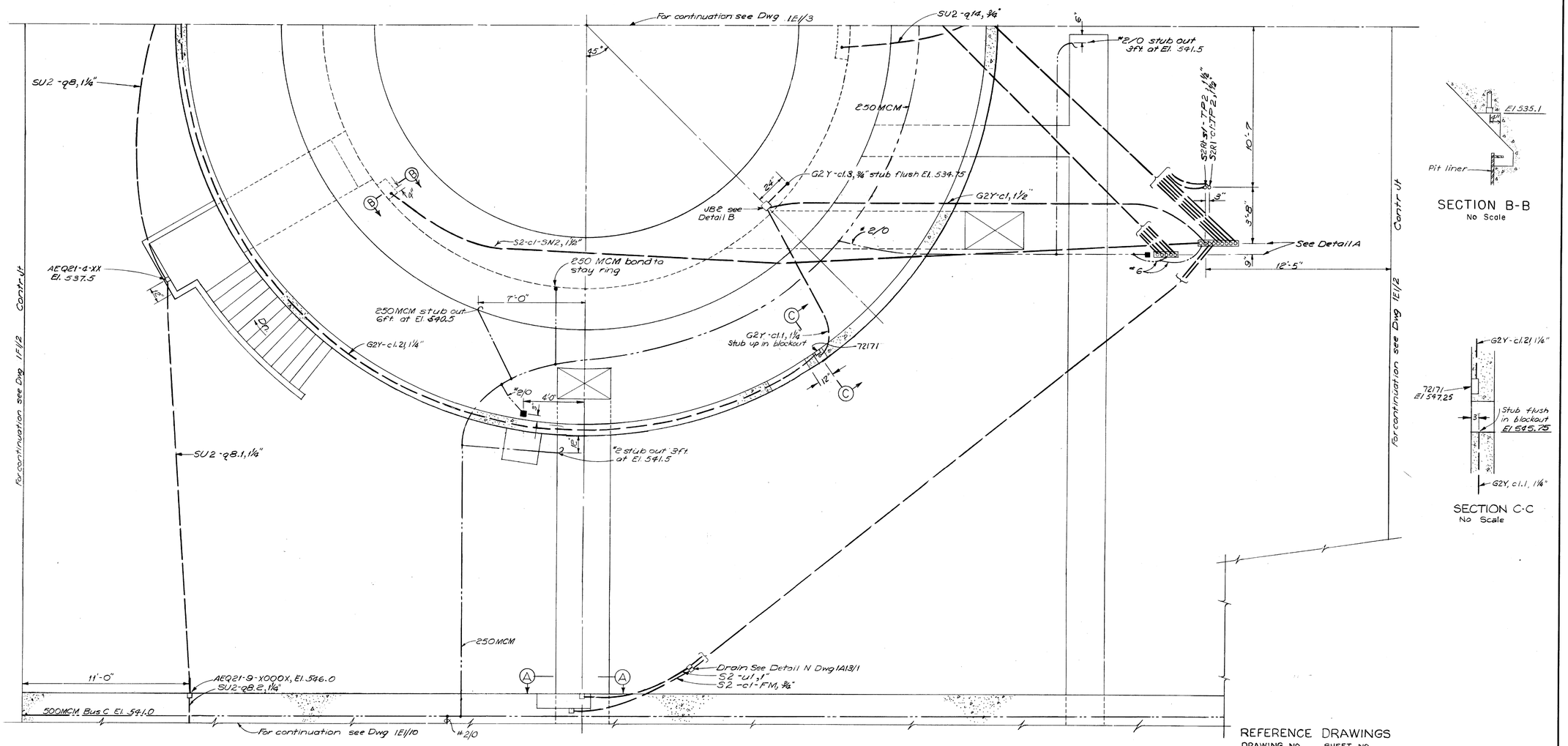
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 2
UPSTREAM HALF EL542

SHEET ID
R-021

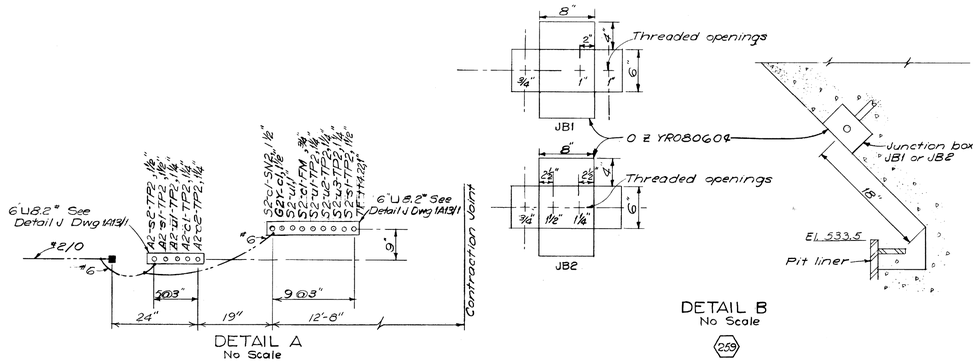
FINAL

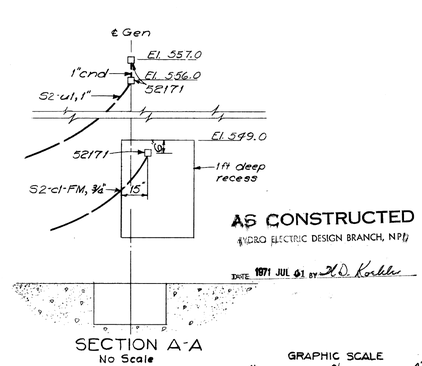
CORPS OF ENGINEERS

U. S. ARMY



PLAN-BAY 2 EL. 542
Scale: 3/8"=1-0"





AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY H.D. Kobler

GRAPHIC SCALE
4' 0' 4'
Scale: 3/8"=1-0"

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-G-1A13/1	61
LGP-1-G-1D1/1	62
LGP-1-G-1E1/2	72
LGP-1-G-1E1/3	73
LGP-1-G-1E1/10	80
LGP-1-G-1F1/2	82

250 Incl 253 reqd 257 259 296

REVISION	DATE	DESCRIPTION	BY
B	28Dec68	Corrected Section C-C	WHR
A	31 Mar 65	Added cnd & Sec C-C. Relocated gnd.	WHR

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY: J.V.
DRAWN BY: REF HAL
CHECKED BY: E.M.S.
PREPARED: L.T. Traster, HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 2
DOWNSTREAM HALF EL 542

SUBMITTED: Chief, Hydro-Electric Design Branch
APPROVED FOR DIV. ENGINEER: Chief, Engineering Division
DATE 4 DEC 64
SCALE AS SHOWN
SPEC. NO.
INV. NO. CIVENG 45-164-65-18
LGP-1-6-1E1/4
SHEET 74

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
SIZE: ANSI D
FILENAME: R022.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

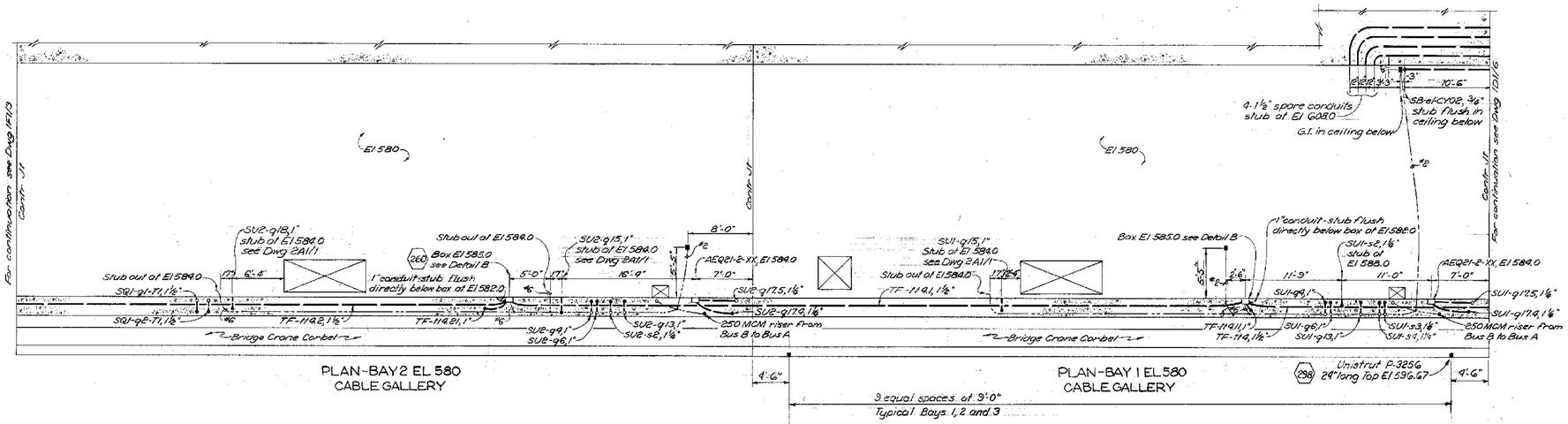
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 2
DOWNSTREAM HALF EL542

SHEET ID
R-022

FINAL

CORPS OF ENGINEERS

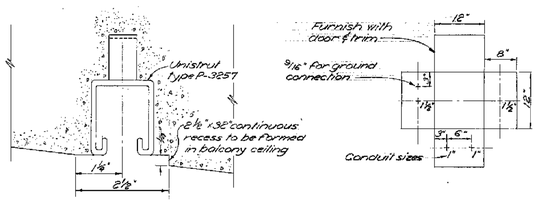
U. S. ARMY



REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-G-1A13/1	61
LGP-1-G-1D1/1	62
LGP-1-G-1D1/4	65
LGP-1-G-1D1/5	66
LGP-1-G-1D1/6	67
LGP-1-G-1E1/1	71
LGP-1-G-1E1/3	73
LGP-1-G-1E1/6	76
LGP-1-G-1E1/7	77
LGP-1-G-1F1/3	83
LGP-1-G-2A1/1	87

(250) Incl as reqd (257) (260) (296) (298)



DETAIL A
No Scale
(298)

DETAIL B
TELEPHONE CABINET
No Scale
(260)

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY J.D. Hatchett

GRAPHIC SCALE
4' 0' 4' 8' 12'
3/16" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
C	7 Jul 71	As constructed-added inserts	WDX
B	3 Mar 65	Relocated inserts, changed cnd designation	WHR
A	1 Feb 65	Changed cnd dimensions	WHR

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: J.L.S.
DRAWN BY: P.J.L.
CHECKED BY: E.M.S.
PREPARED: J. Trischka, HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERIES 1 & 2
EL 558 & 580

SUBMITTED: Chief, Hydro-Electric Design Branch

APPROVED: FOR DIVISION ENGINEER DATE 4 DEC 64
Chief, Engineering Division

INV. NO. CIVENG 45-164-65-18

SCALE AS SHOWN SPEC. NO.

LGP-1-6-1E1/5

SHEET 75

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-023.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

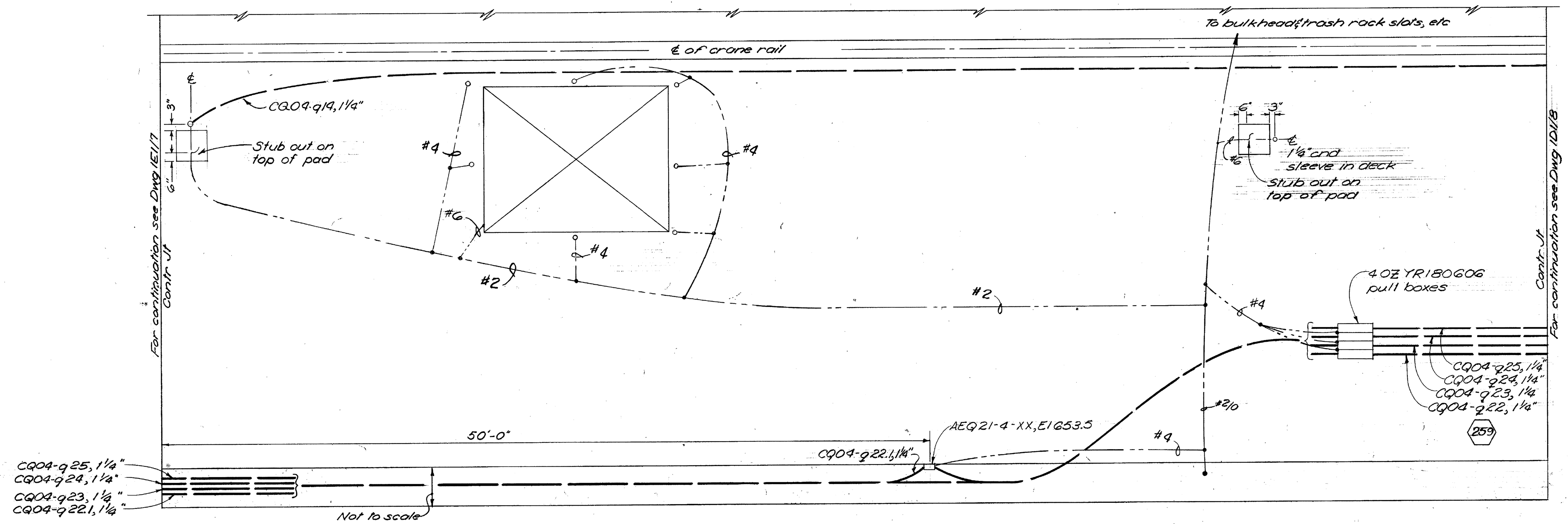
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERIES 1 & 2
EL558 & 580

SHEET ID
R-023

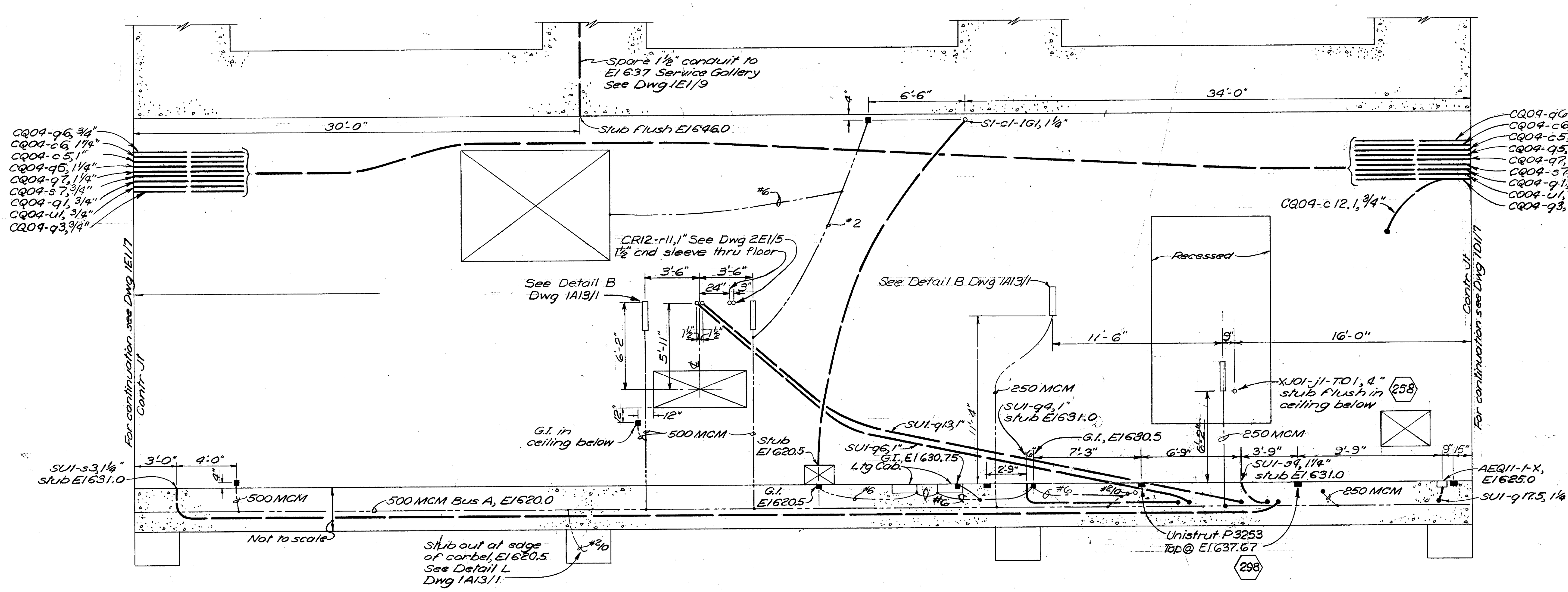
FINAL

CORPS OF ENGINEERS

U. S. ARMY



PLAN - BAY 1 EL 651
INTAKE DECK



PLAN - BAY 1 EL 621
CIRCUIT BREAKER GALLERY

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/7	68
LGP-1-6-1D1/8	69
LGP-1-6-1E1/5	75
LGP-1-6-1E1/7	77
LGP-1-6-1E1/9	79

250 Incl as req'd 258 259 296 298

REVISION	DATE	DESCRIPTION	BY
C	71 Jul 1	As constructed-add grounding, conduit	WDK
B	6 Jun 66	Relocated cnd & gnd, changed cnd & gnd size	WHR
A	8 Oct 65	Relocated cnd & gnd	WHR

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
1971 JUL 1 BY W.D. Koehler

GRAPHIC SCALE
¼" = 1'-0"

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY: JLS
DRAWN BY: PJL
CHECKED BY: EMS
PREPARED: [signature] HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERY & INTAKE DECK
BAY 1 EL 621 & 651

APPROVED: FOR DIV. ENGINEER [signature] CHIEF, ENGINEERING DIVISION DATE 4 DEC 64
SUBMITTED: [signature] CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
SCALE AS SHOWN | SPEC. NO.
INV. NO. CIVENG-45-164-65-18
LGP-1-6-1E1/6
SHEET 76

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-024.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

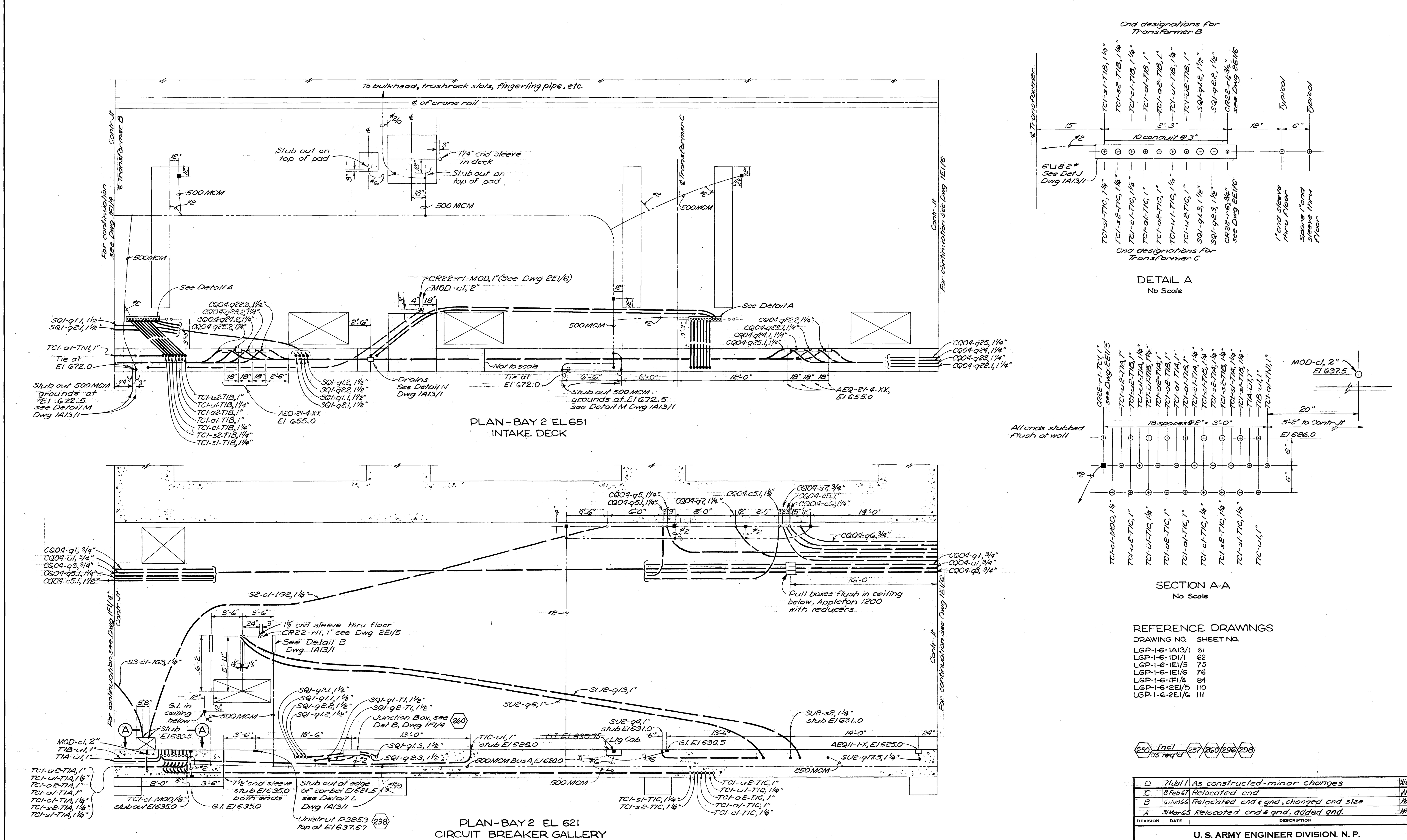
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERY & INTAKE DECK
BAY 1 EL 621 & 651

SHEET ID
R-024

FINAL

CORPS OF ENGINEERS

U. S. ARMY



REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1E1/5	75
LGP-1-6-1E1/6	76
LGP-1-6-1F1/4	84
LGP-1-6-2E1/5	110
LGP-1-6-2E1/6	111

250 Incl as req'd 257 260 296 298

REVISION	DATE	DESCRIPTION	BY
D	7 Jul 1	As constructed-minor changes	WDK
C	8 Feb 67	Relocated cnd	WDK
B	6 Jun 66	Relocated cnd & gnd, changed cnd size	WAR
A	31 Mar 65	Relocated cnd & gnd, added gnd.	WAR

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERY & INTAKE DECK
BAY 2 EL 621 & 651

DESIGNED BY: JLS
DRAWN BY: PJL
CHECKED BY: EMS
PREPARED: HEAD, ELECTRICAL SECTION
SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIVISION ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN SPEC. NO.
INV. NO. CIVENG-45-164-65-18
LGP-1-6-1E1/7
SHEET 77

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY H.D. Koehler

GRAPHIC SCALE
4' 0 4' 8'
1/4" = 1'-0"

CONT NO. 65 560 VOL. NO. IV

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-025.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

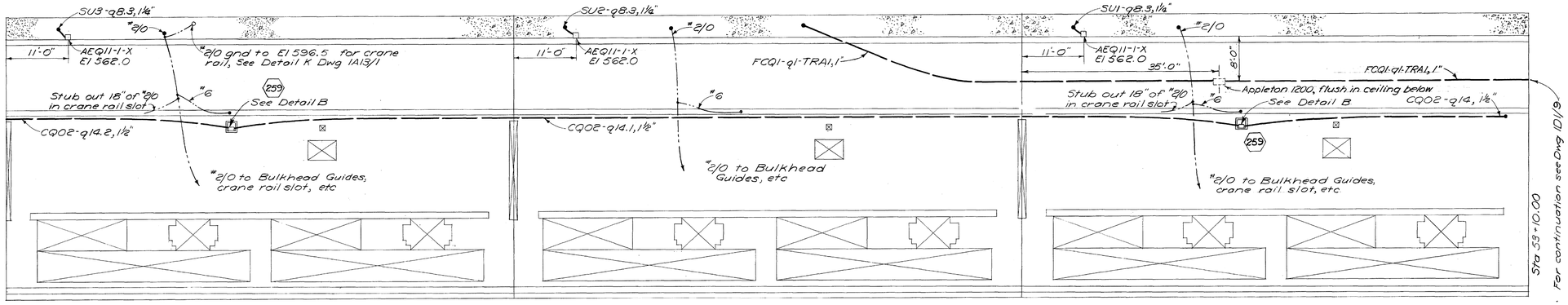
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERY & INTAKE DECK
BAY 2 EL 621 & 651

SHEET ID
R-025

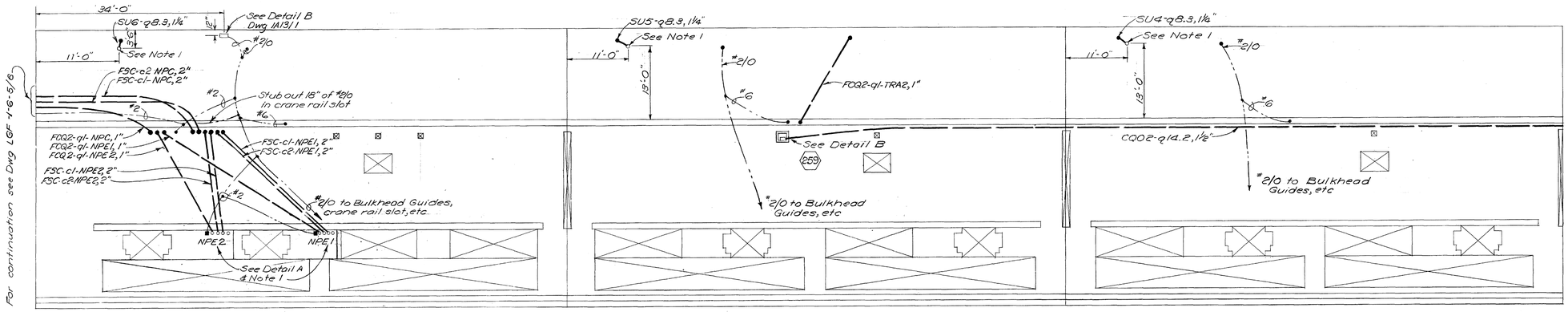
FINAL

CORPS OF ENGINEERS

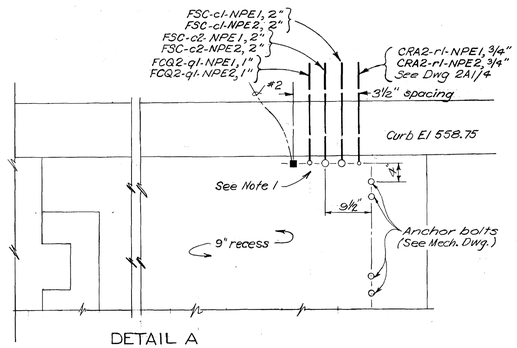
U. S. ARMY



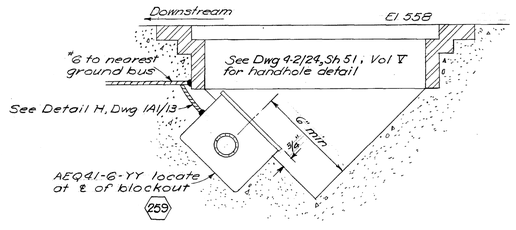
BAY 3 BAY 2 BAY 1



BAY 6 BAY 5 BAY 4



DETAIL A
NPE1 & NPE2
No Scale



DETAIL B
No Scale

NOTE

1. Stub out conduits at El 558.25 and cap. GI to be installed flush with top surface of finished grout fill.

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A1/13	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/9	70
LGP-1-6-1E1/10	80
LGP-1-6-1F1/5	85
LGP-1-6-2A1/4	90

(250) Incl as reqd (257) (259) (296)

REVISION	DATE	DESCRIPTION	BY
B	31 Mar 65	Relocated cnd, changed Note & Detail A.	WHR
A	1 Feb 65	Added grd cable and relocated cnd.	WHR

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY JLS
DRAWN BY REF
CHECKED BY ATO
PREPARED: Chief, Electrical Section

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
TAILRACE DECK EL 558
MAIN UNIT BAYS

SUBMITTED: Chief, Hydro-Electric Design Branch

APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
Chief, Engineering Division

SCALE AS SHOWN SPEC. NO.

~~INV. NO. CIVENG 45-164-65-19~~

LGP-1-6-1E1/8

SHEET 78

~~CONT NO. 65 561~~ VOL. NO. IV

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY H.D. Koehler

GRAPHIC SCALE
4 0 4 8 12 16 20
⅛" = 1'-0"

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
SIZE: ANSI D
FILENAME: R-026.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE EMBEDDED CONDUIT & GROUNDING
TAILRACE DECK EL 558
MAIN UNIT BAYS

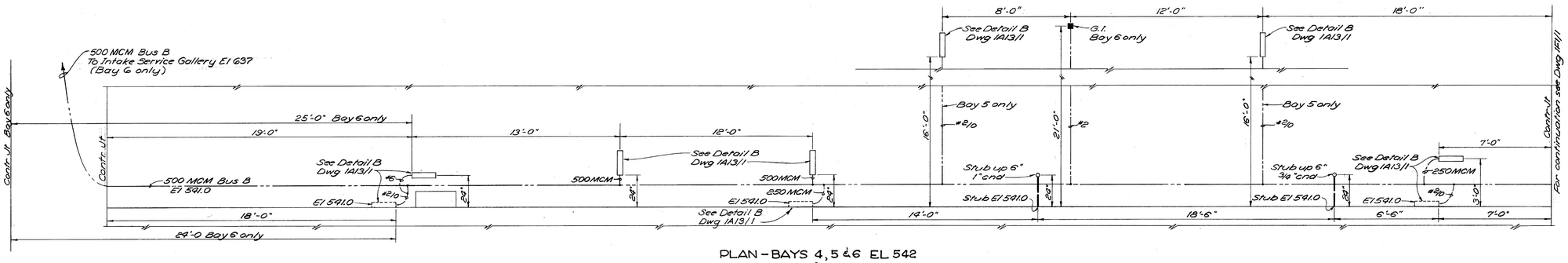
SHEET ID
R-026

FINAL

ARMY - KUHAN STATIONERY & PRINTING CO., PORTLAND, OREGON

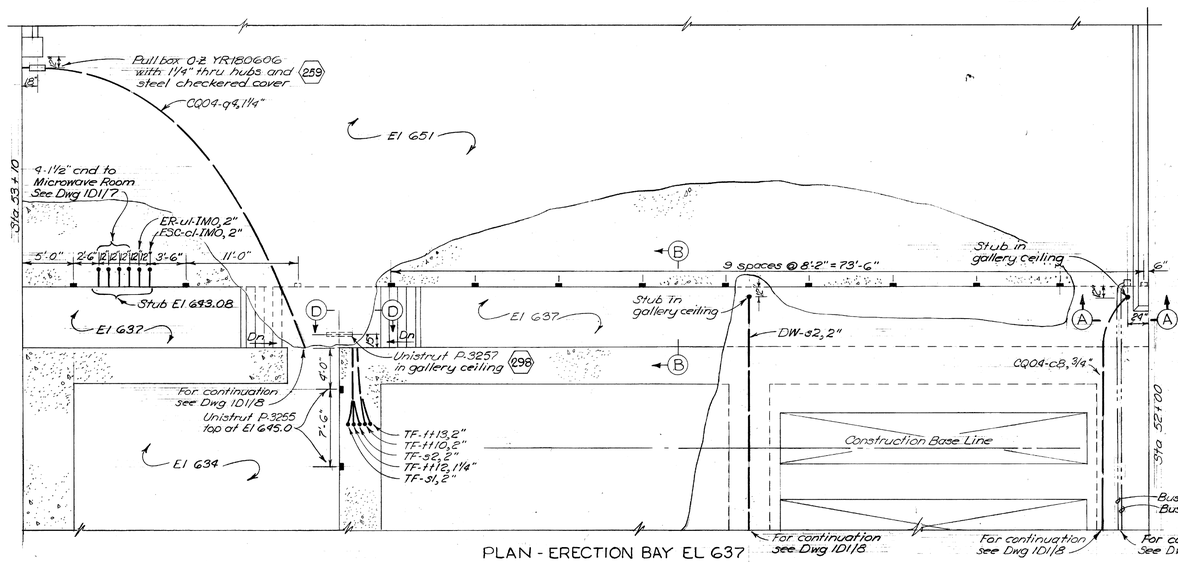
CORPS OF ENGINEERS

U. S. ARMY



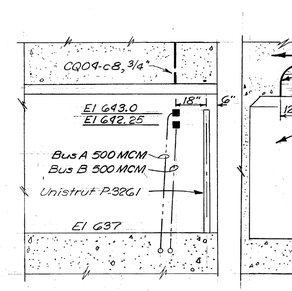
PLAN – BAYS 4, 5 & 6 EL 542

Scale: 3/8" = 1'-0"



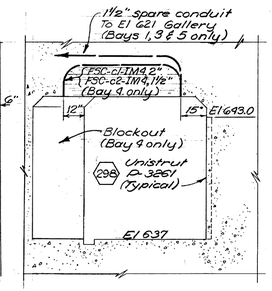
PLAN - ERECTION BAY EL 637

Scale: 3/16" = 1'-0"



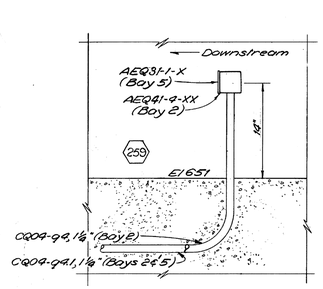
SECTION A-A

No Scale



SECTION B-B

No Scale

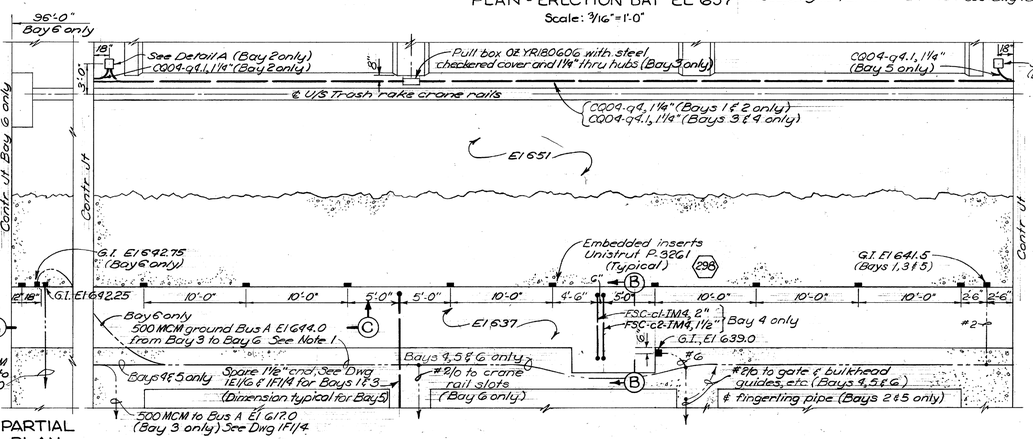


DETAIL A (BAYS 2 & 5)

No Scale

NOTE

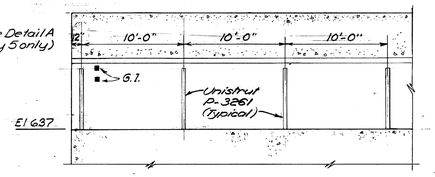
1. 500 MCM ground bus from Bay 3 to Bay 6 for grounding crane rails, hand rails, gate and bulkhead guides, etc. Crane rails grounded at Erection Bay and Bays 3 & 6 only.



PARTIAL PLAN BAY 6

PLAN – BAYS 1 THRU 6 EL 637

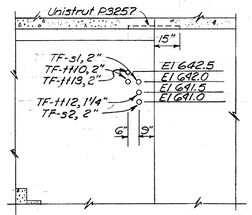
Scale: 3/16" = 1'-0"



SECTION C-C

BAY 6 ONLY

No Scale



SECTION D-D

No Scale

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 1971 JUL 6 BY H.O. Koehler

GRAPHIC SCALES

3/16"=1'-0" 4' 0' 4' 8' 12'

3/8"=1'-0" 4' 0' 4'

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/7	68
LGP-1-6-1D1/8	69
LGP-1-6-1E1/6	76
LGP-1-6-1F1/1	81
LGP-1-6-1F1/4	84

(250) Incl as req'd (257) (259) (296) (298)

REVISION	DATE	DESCRIPTION	BY
C	7 Jul 71	As Constructed - minor changes	WDC
B	28 Nov 66	Added cnd Bay 4	WHR
A	6 Jun 66	Corrected cnd locations, added gnd notation	WHR

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY: RCM
DRAWN BY: PJL
CHECKED BY: RTO
PREPARED: J. Thiessen, HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
SERVICE GALLERY EL 637
UNITS 4,5 & 6 GALLERY EL 542

SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR THE ENGINEER DATE: 4 DEC 64
CHIEF, ENGINEERING DIVISION

SCALE AS SHOWN SPEC. NO.

~~INV. NO. GIVENG 45-164-65-18~~

LGP-1-6-1E1/9

SHEET 79

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R-027.dgn

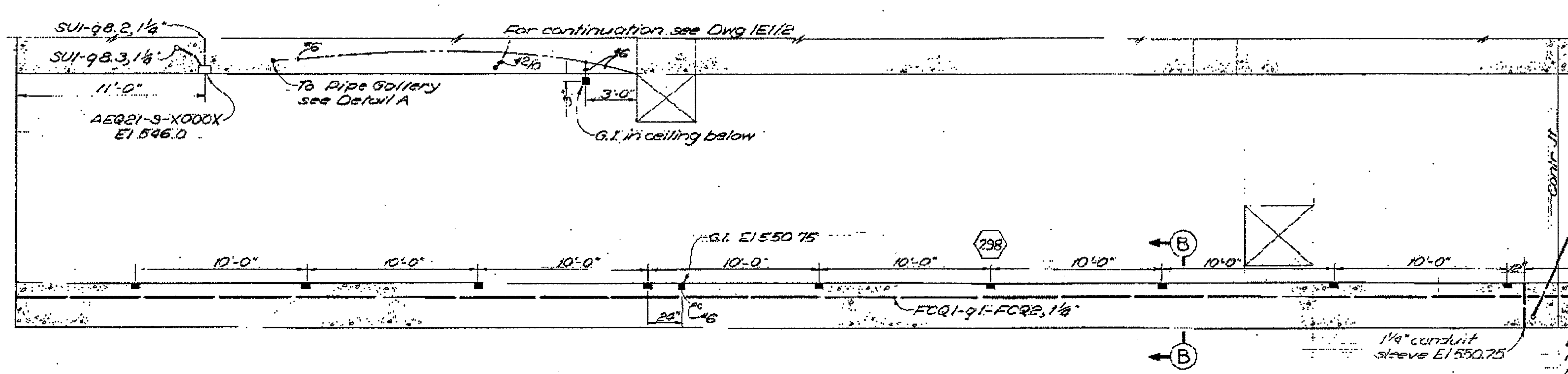
U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

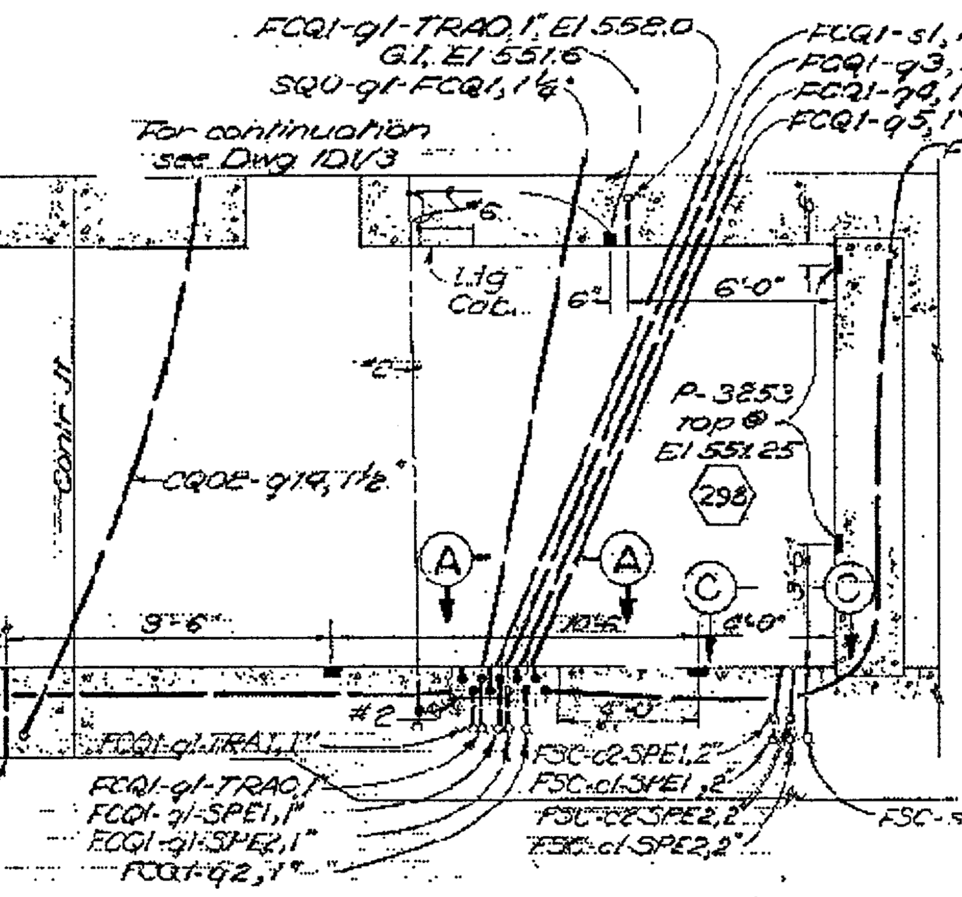
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
SERVICE GALLERY EL 637
UNITS 4,5 & 6 GALLERY EL 542

SHEET ID
R-027

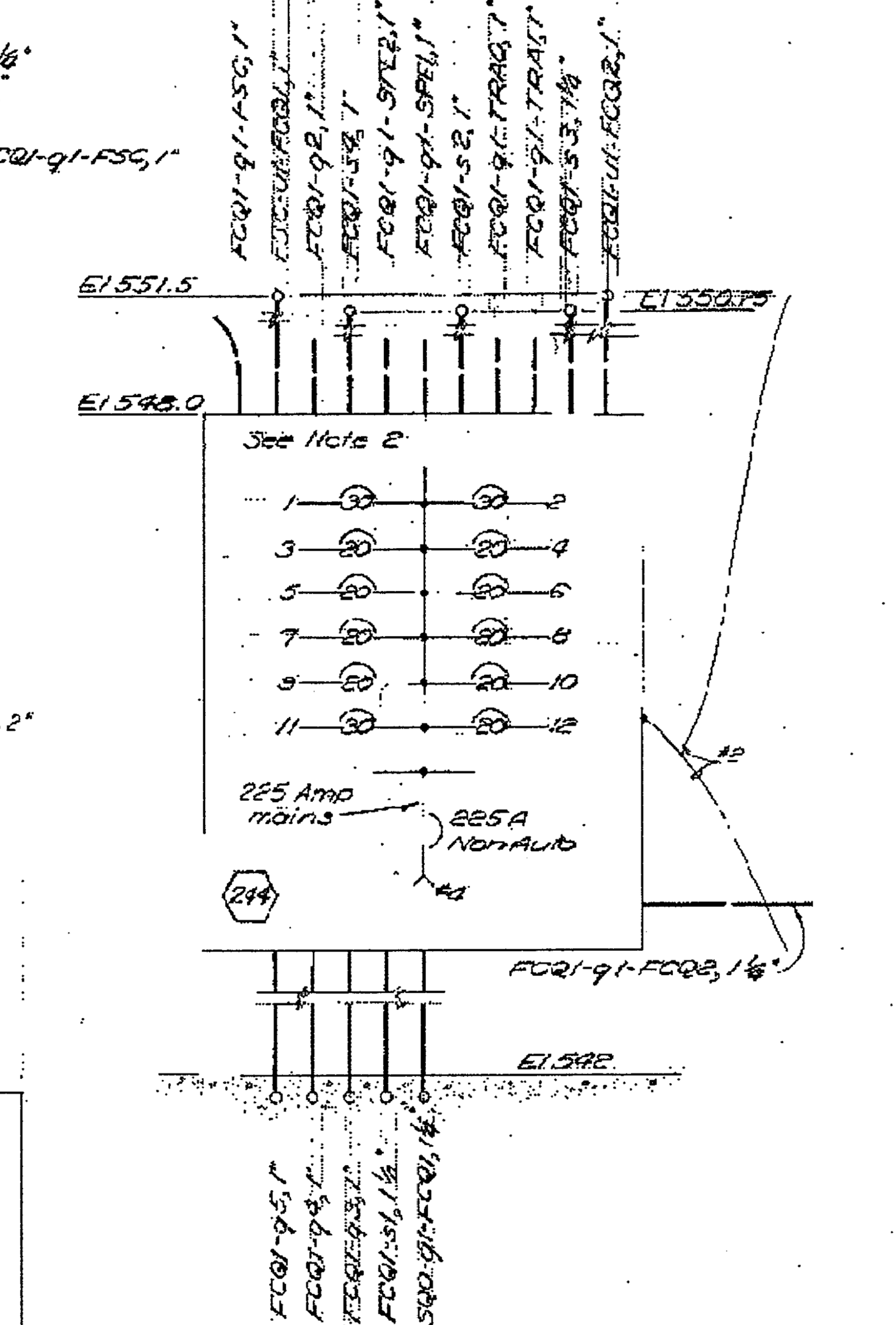
FINAL



BAY 1 EL 542

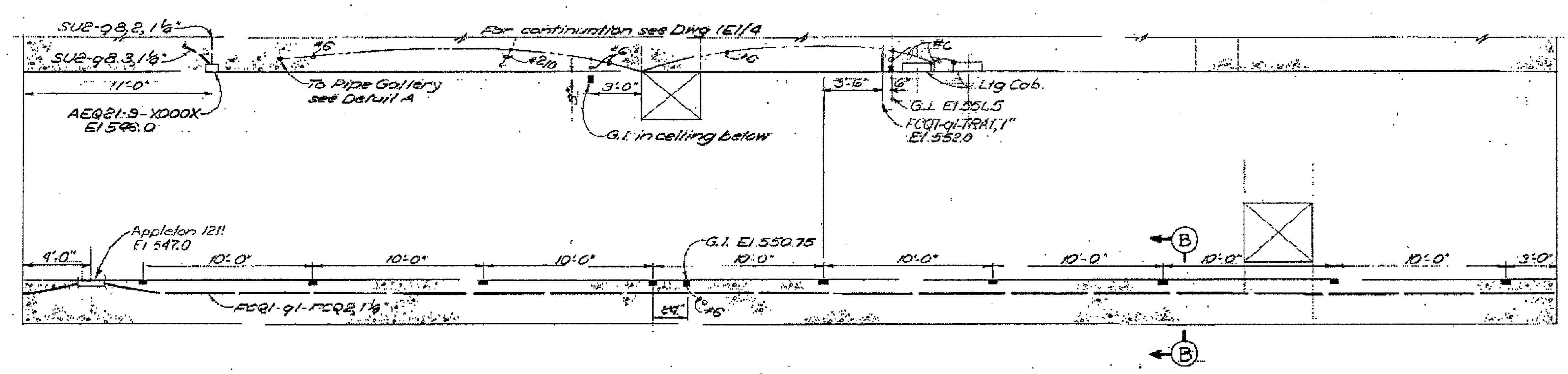


ERECTION BAY

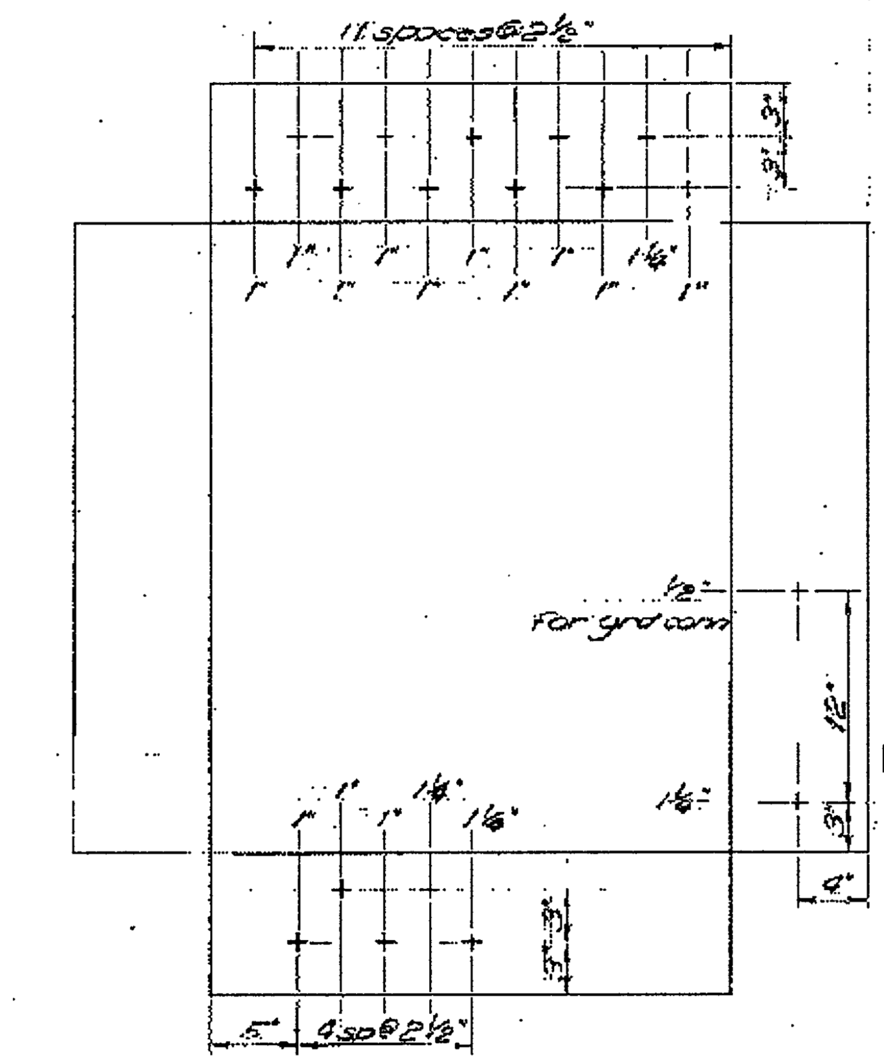


SECTION A-A (FCQ1)

No Scale



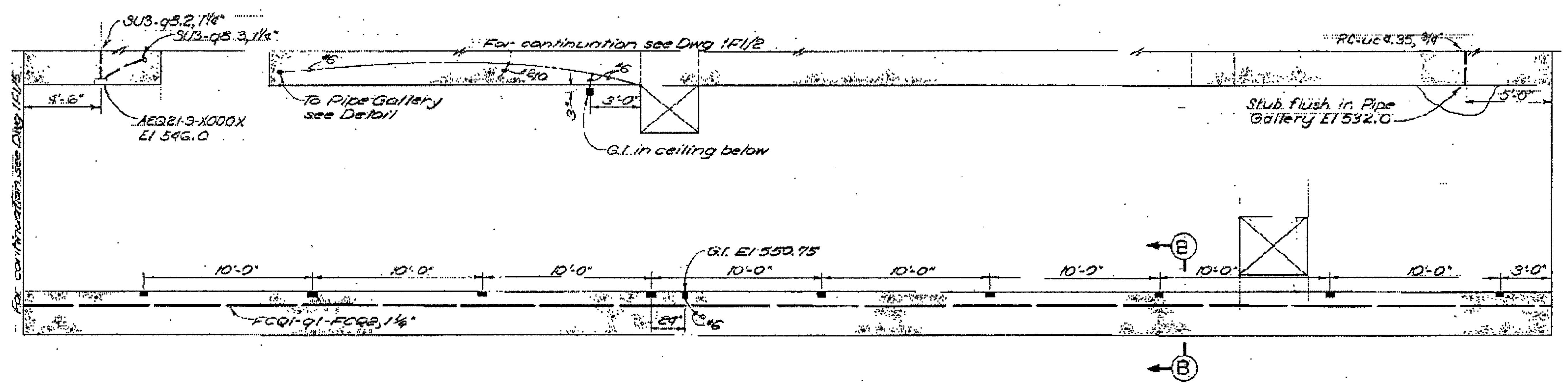
BAY 2 EL 542



FCQ1 DRILLING

(Conduit Sizes Shown)

No Scale



BAY 3 EL 542

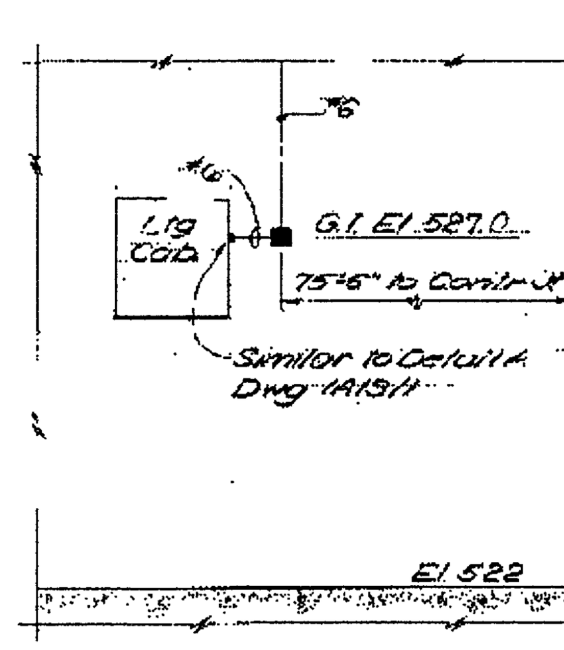
NOTES

1. Furnish and install cable for FCQ1 & FCQ2 as shown in schedule.

2. All breakers shall be equipped with bell alarm contacts.

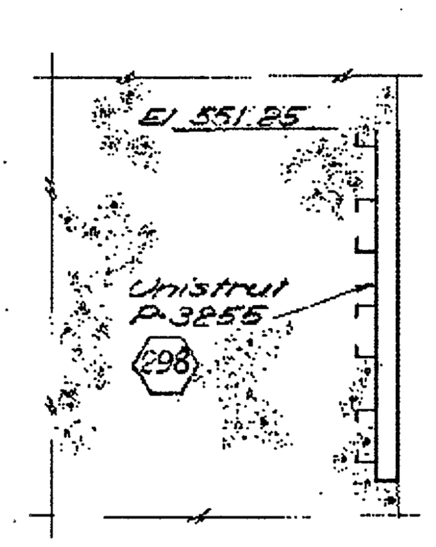
REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1D1/3	64
LGP-1-6-1D1/9	70
LGP-1-6-1E1/2	72
LGP-1-6-1E1/4	74
LGP-1-6-1E1/8	78
LGP-1-6-1F1/2	82
LGP-1-6-1F1/5	85



DETAIL A

No Scale



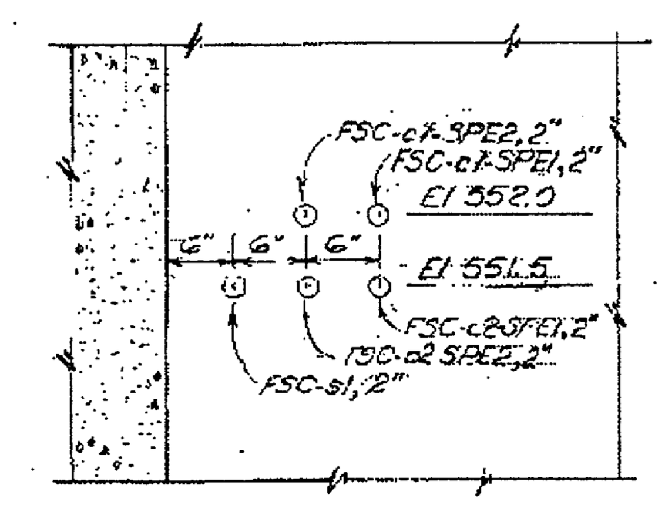
SECTION B-B

No Scale

480V PANELS-FCQ1 & FCQ2 - CABLE SCHEDULE (267)

(See Note 1)

CIRCUIT	BKR NO.	600V INSULATED SINGLE CONDUCTORS NO.	AWG SIZE	CKT LG-FT	DIRECTORY
FCQ1-g1-TRA0	2	3	10	35	TRA0, El 542
FCQ1-g1-TRA1	4	3	10	170	TRA1, El 542
FCQ2-g1-NPC	6	3	10	110	NPC, El 558
FCQ2-g1-TRA2 (Dwg 1F1/5)	2	3	10	150	TRA2, El 542



SECTION C-C

No Scale

(244) (250) Incl. as reqd (257) (267) (296) (298)

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

GRAPHIC SCALE

REVISION	DATE	DESCRIPTION	BY
A	71 Jul 1	As constructed-Added FCQ2-g1-NPC	WDR

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY JLS
DRAWN BY PJL
CHECKED BY: RTQ
PREPARED: HEAD, ELECTRICAL SECTION
SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
FISHWAY GALLERY EL 542
ERECTION BAY & BAYS 1 THRU 3

APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN
SPEC. NO.
LGP-1-6-1E1/10

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE: AUGUST 2022
DRAWN BY:	SOLICITATION NO.: W912EF22R0001
CHECKED BY:	CONTRACT NO.:
SUBMITTED BY:	DRAWING NUMBER:
SIZE: ANSI D	FILENAME: R-028.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE EMBEDDED CONDUIT & GROUNDING
FISHWAY GALLERY EL 542
ERCTION BAY & BAYS 1 THRU 3

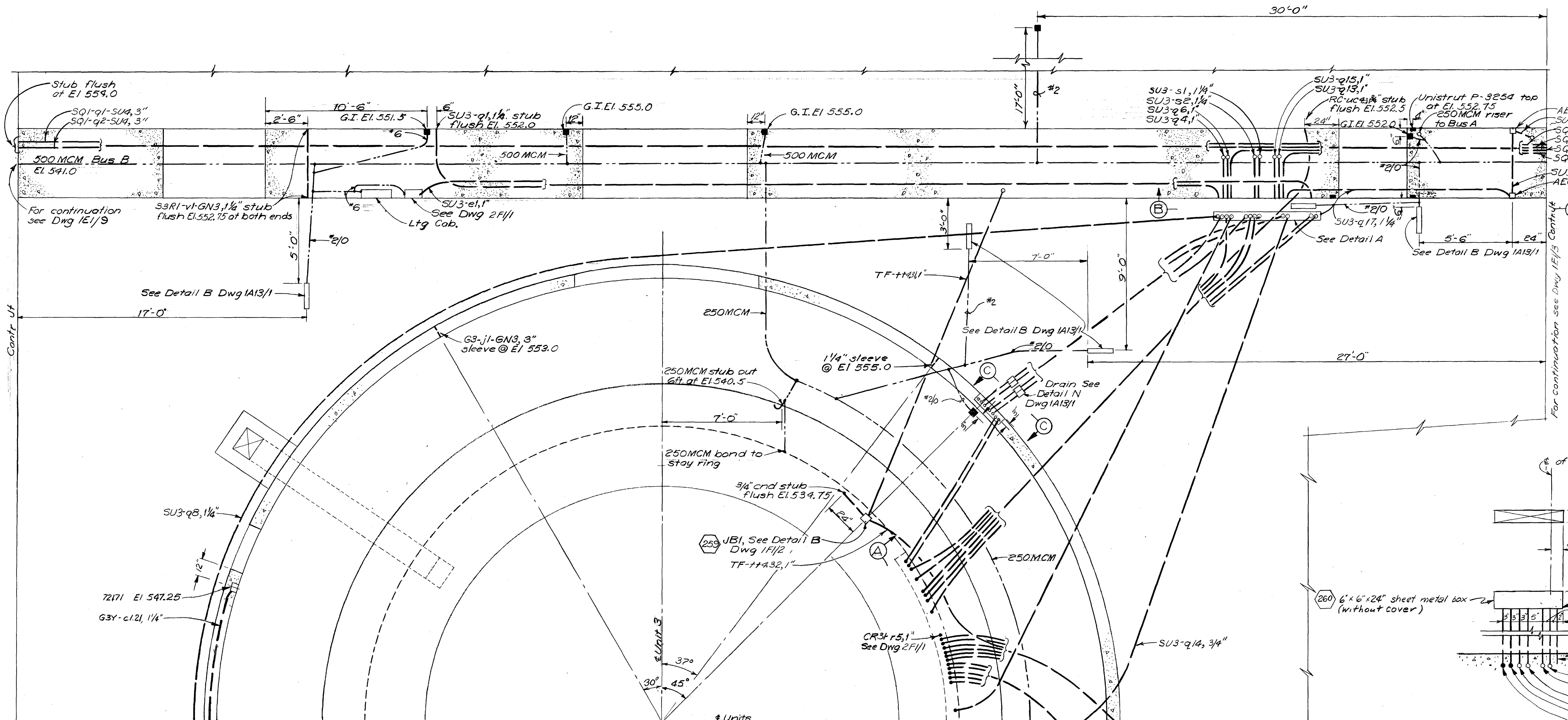
SHEET ID

R-028

FINAL

CORPS OF ENGINEERS

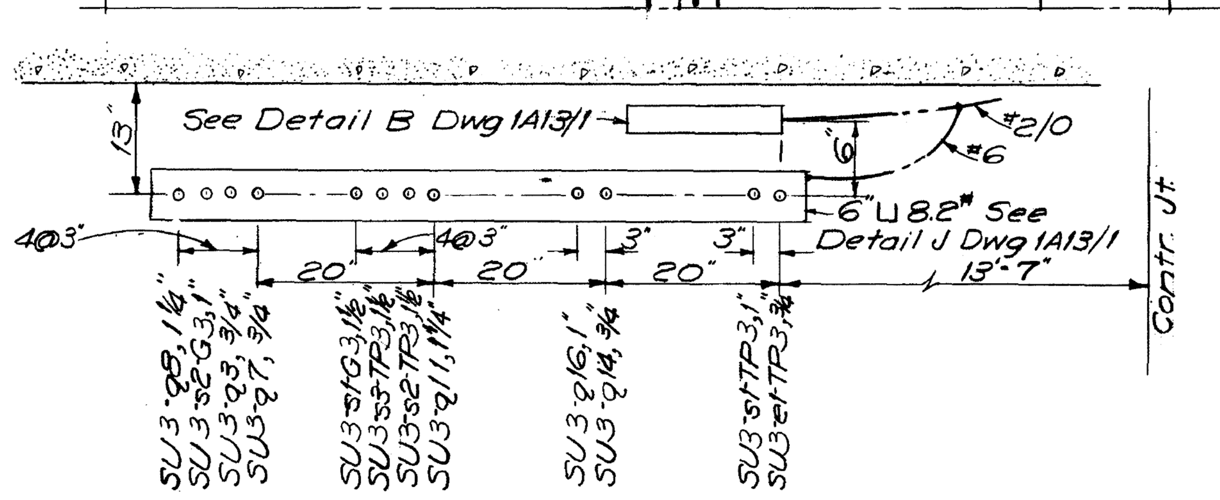
U. S. ARMY



PLAN BAY 3 EL. 542

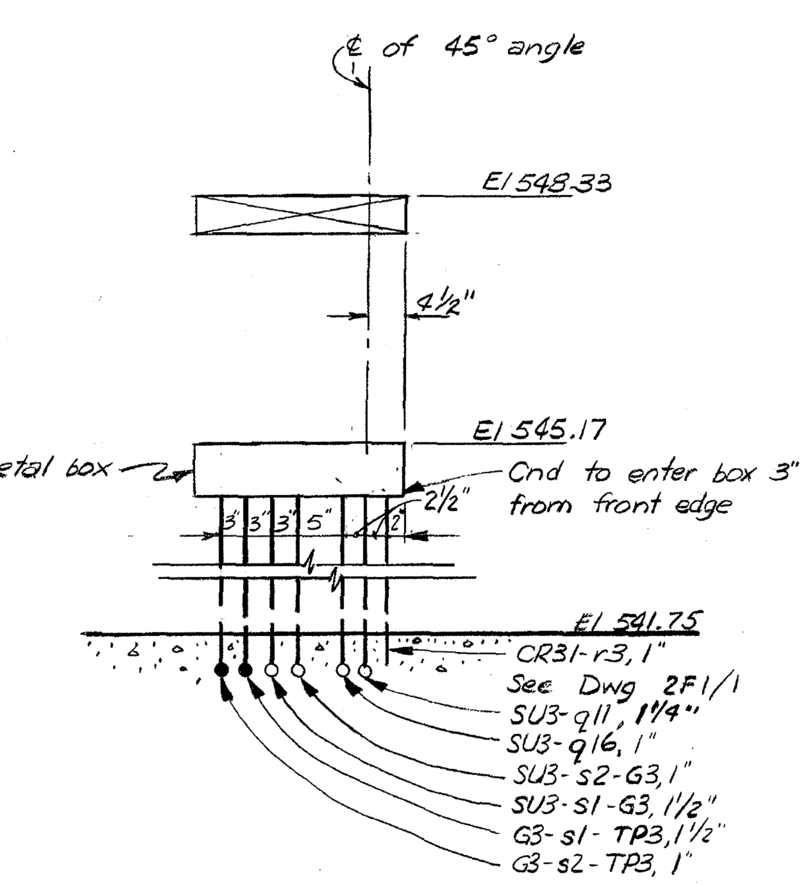
Scale: 3/8" = 1'-0"

For continuation see Dwg 1F1/2



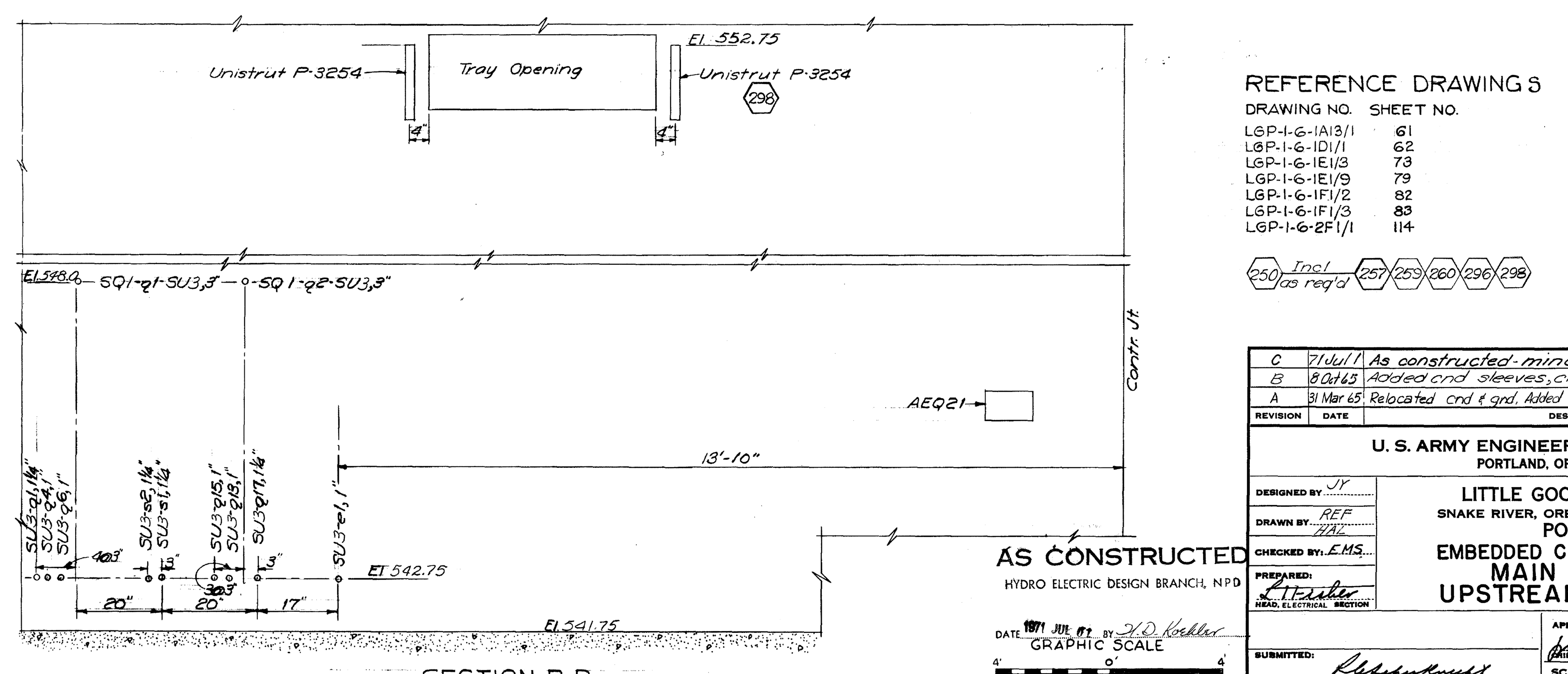
PLAN DETAIL A

No Scale



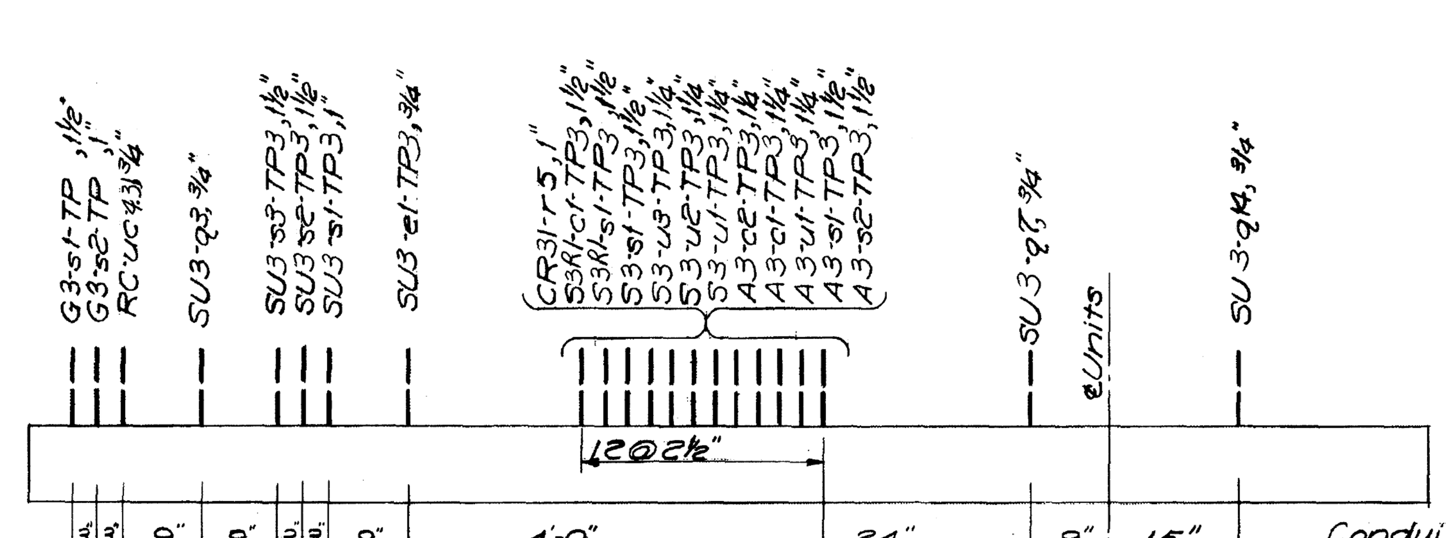
SECTION C-C

No Scale



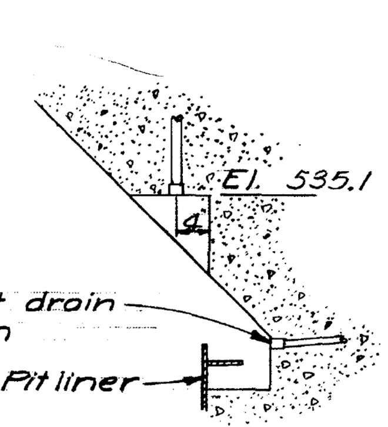
SECTION B-B

No Scale



SECTION A-A

No Scale



SIDE VIEW

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1E1/3	73
LGP-1-6-1E1/9	79
LGP-1-6-1F1/2	82
LGP-1-6-1F1/3	83
LGP-1-6-2F1/1	114

250 Incl as req'd 257 259 260 296 298

REVISION	DATE	DESCRIPTION	BY
C	7 Jul 11	As constructed-minor changes	WDK
B	8 Oct 65	Added cnd sleeves, changed dimensions	WHR
A	31 Mar 65	Relocated cnd & gnd, Added Sec C-C, Removed Detail B	WHR

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 2011 JUL 07 BY H.D. Koehler

GRAPHIC SCALE

Scale: 3/8" = 1'-0"

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY JY
DRAWN BY REF / HAL
CHECKED BY: EMS
PREPARED: L. Fisher, HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 3
UPSTREAM HALF EL 542

SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION

SCALE AS SHOWN | SPEC. NO.

INV. NO. CIVENG-45-164-65-18

LGP-1-6-1F1/1

SHEET 81

~~CONT NO. 65 560~~ VOL. NO. IV

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

DESIGNED BY: | DRAWN BY: | CHECKED BY: | SUBMITTED BY:

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
SIZE: ANSI D
FILENAME: R-029 .dgn

LITTLE GOOSE LOCK AND DAM

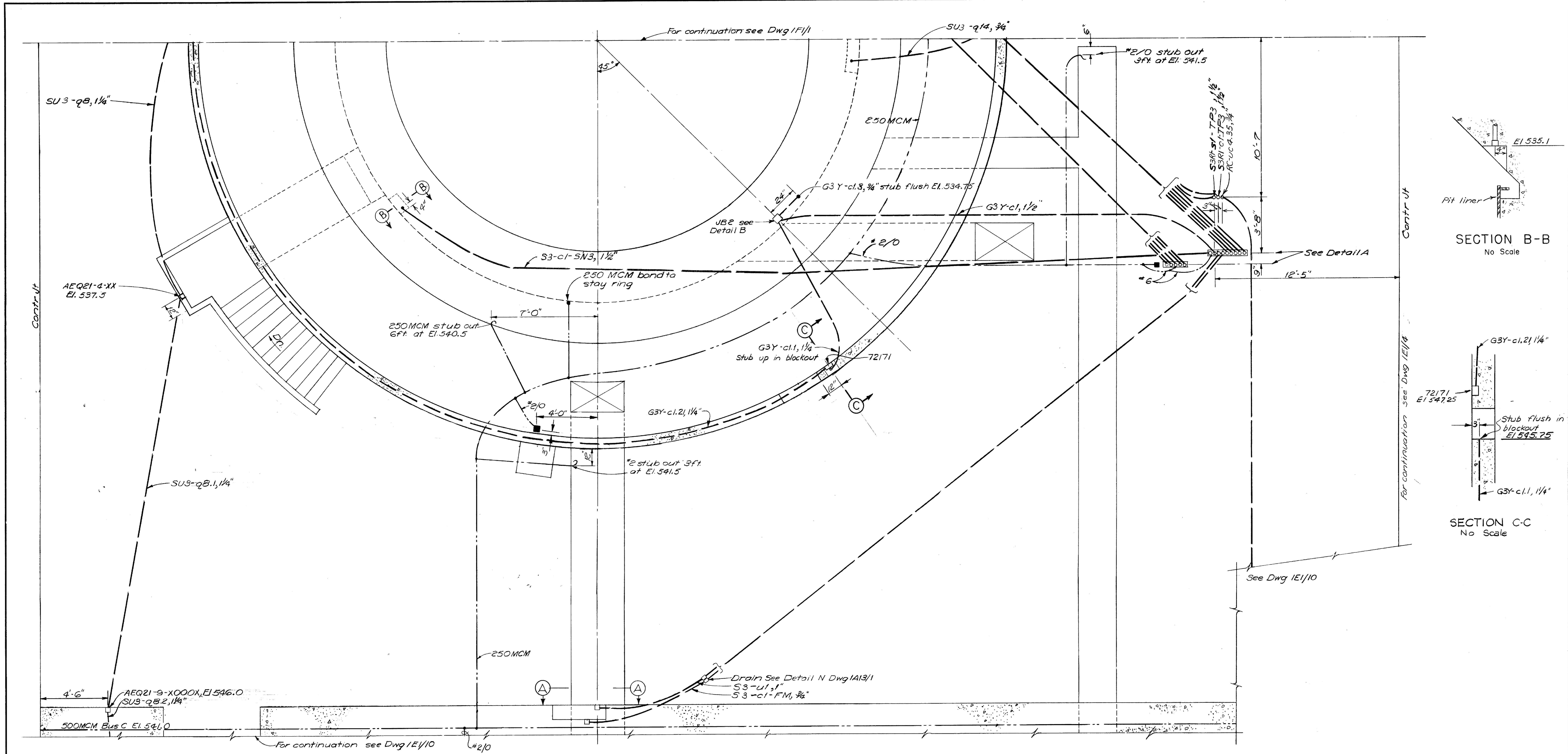
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 3
UPSTREAM HALF EL 542

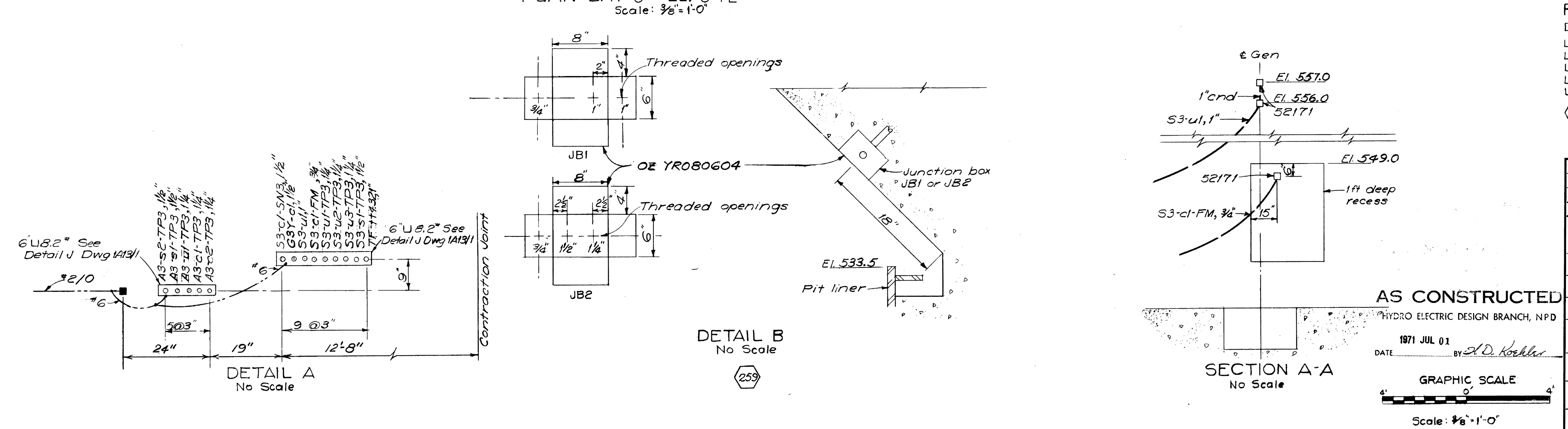
SHEET ID

R-029

FINAL



PLAN-BAY 3 EL. 542
Scale: 3/8" = 1'-0"



DETAIL A
No Scale

DETAIL B
No Scale

SECTION A-A
No Scale

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1E1/4	74
LGP-1-6-1E1/10	80
LGP-1-6-1F1/1	81

(250) Incl as req'd (257) (259) (296)

REVISION	DATE	DESCRIPTION	BY
B	28 Dec 66	Corrected Section C-C	WHK
A	31 Mar 65	Added cnd & Section C-C. Relocated gnd	WHK

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY D. D. Koehler

GRAPHIC SCALE
Scale: 3/8" = 1'-0"

U.S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 3
DOWNSTREAM HALF EL 542

DESIGNED BY J.Y.
DRAWN BY R.E.F. / HAL
CHECKED BY: EMS
PREPARED: HEAD, ELECTRICAL SECTION
SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED: FOR DIV. ENGINEER — DATE 4 DEC 64
SCALE AS SHOWN — SPEC. NO.
INV. NO. CIVENG 45-164-65-18
LGP-1-6-1F1/2
SHEET 82
CONT NO. 65 560
VOL. NO. IV

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: | ISSUE DATE: AUGUST 2022
DRAWN BY: | SOLICITATION NO.: W912EF22R0001
CHECKED BY: | CONTRACT NO.:
SUBMITTED BY: | DRAWING NUMBER:
SIZE: ANSI D | FILENAME: R-030.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

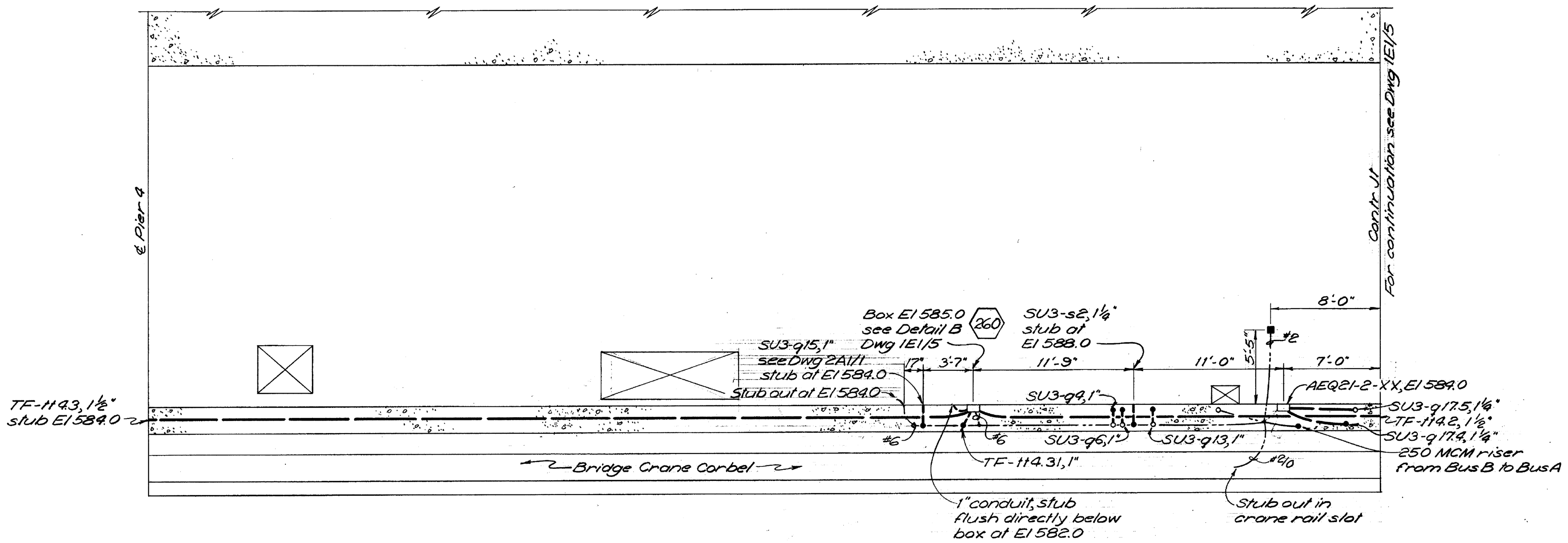
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT BAY 3
DOWNSTREAM HALF EL 542

SHEET ID
R-030

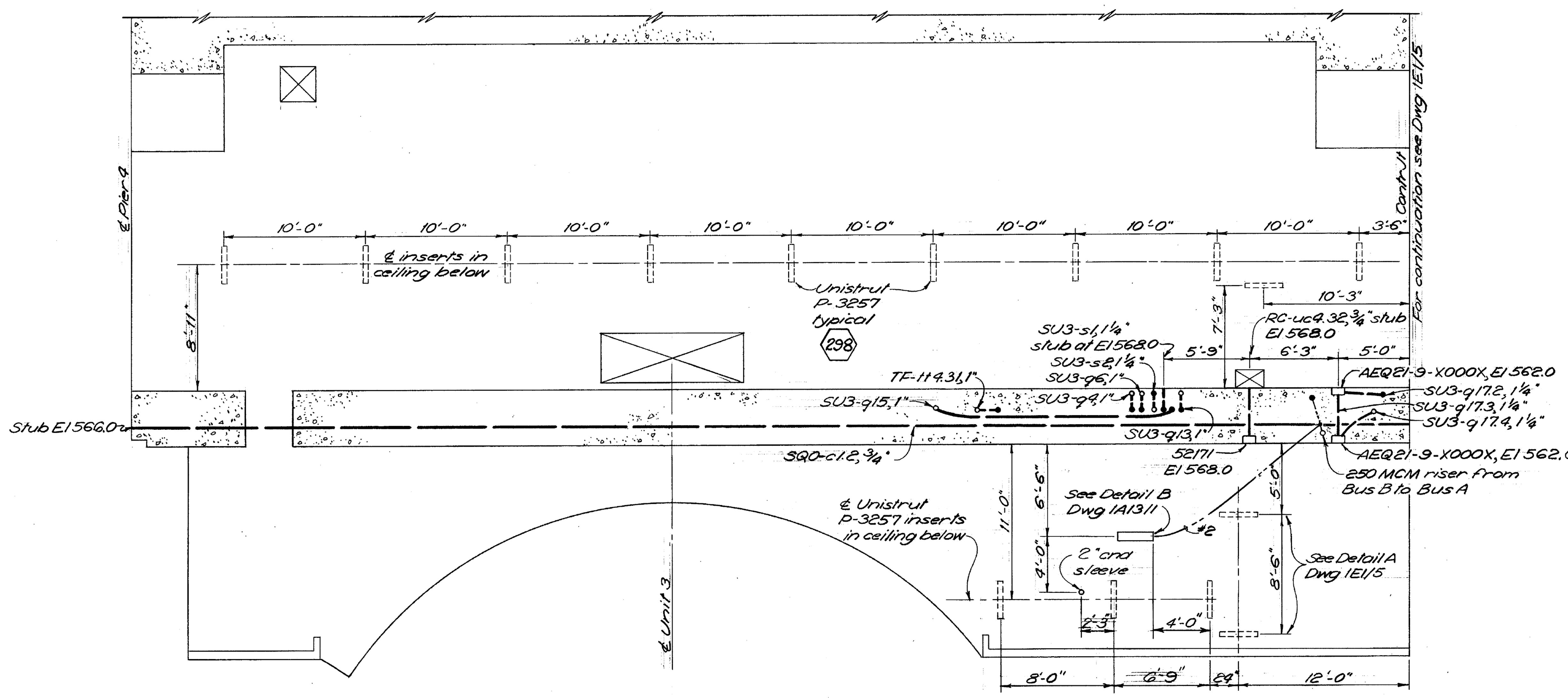
FINAL

CORPS OF ENGINEERS

U. S. ARMY



PLAN - BAY 3 EL 580
CABLE GALLERY



PLAN - BAY 3 EL 558
BALCONY & STORAGE GALLERY

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1E1/5	75
LGP-1-6-1F1/1	81
LGP-1-6-1F1/4	84
LGP-1-6-2A1/1	87

250 Incl as req'd 257 260 294 298

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY H.D. Koehler

GRAPHIC SCALE
3/16" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
A	31 Mar 65	Changed insert location	WHR

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY JLS
DRAWN BY PJL
CHECKED BY EMS
PREPARED: HEAD, ELECTRICAL SECTION
SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERY 3
EL 558 & 580

APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN SPEC. NO.
INV. NO. CIVENG-45-164-65-18
LGP-1-6-1F1/3
SHEET 83

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-031.dgn
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

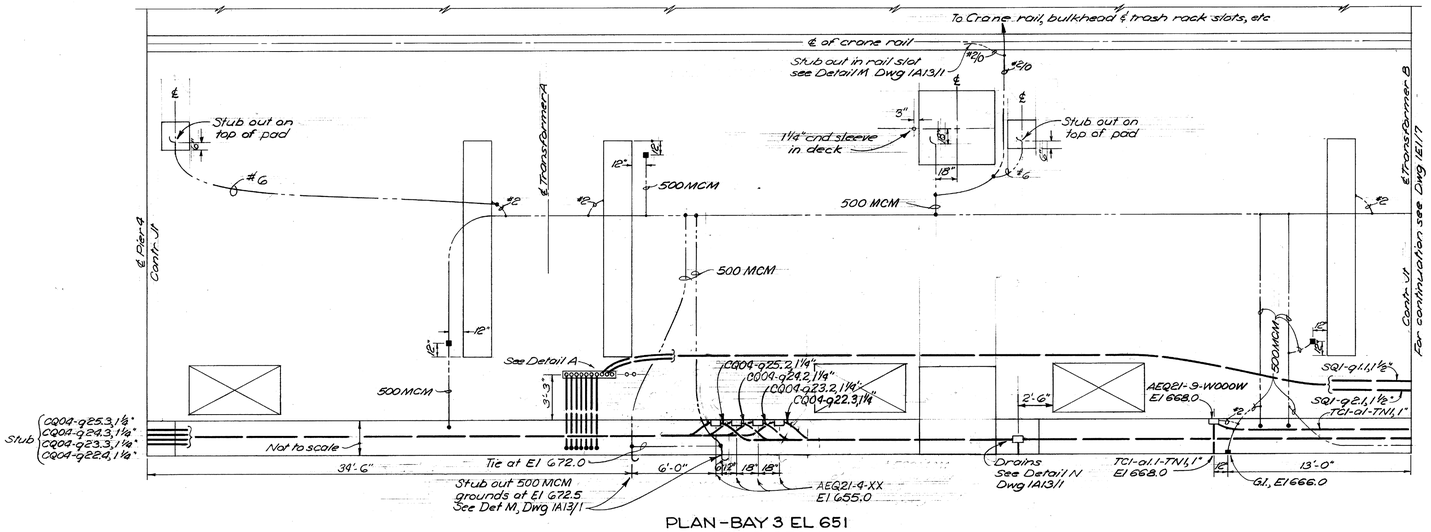
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERY 3
EL 558 & 580

SHEET ID
R-031

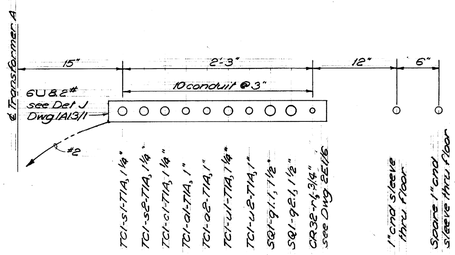
FINAL

CORPS OF ENGINEERS

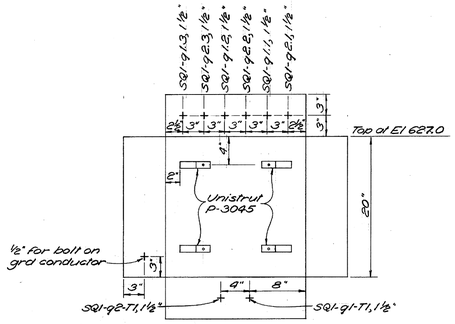
U. S. ARMY



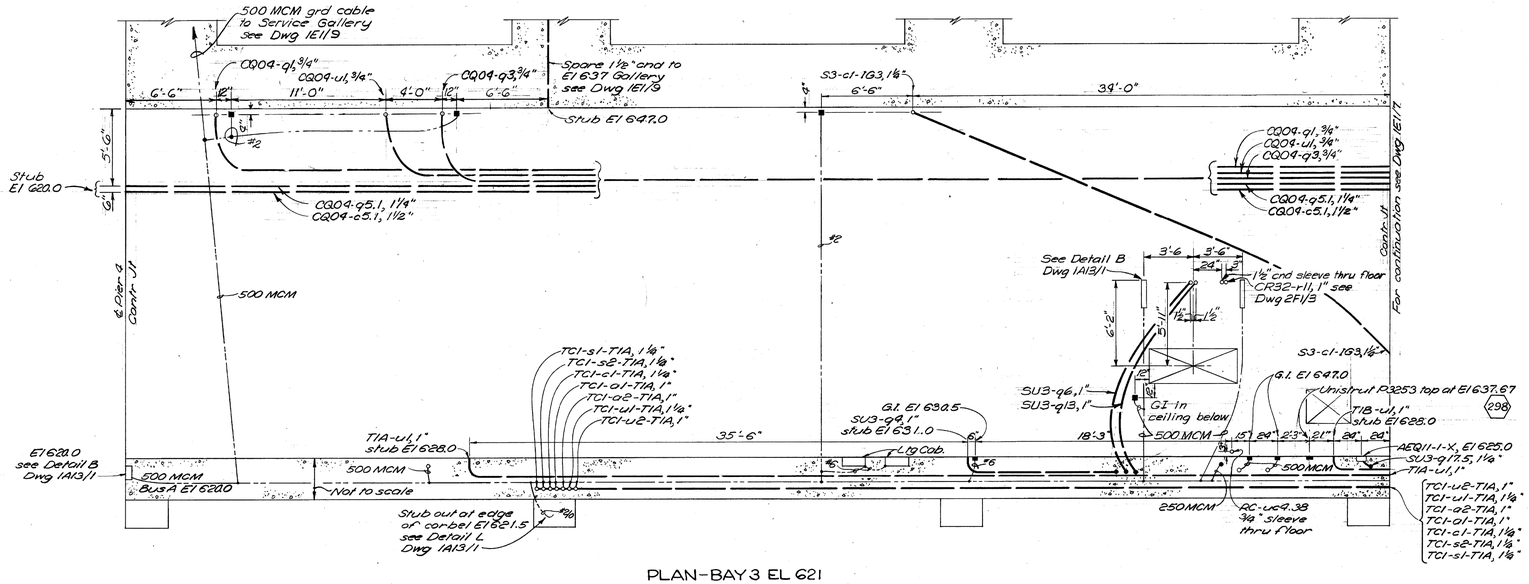
PLAN - BAY 3 EL 651
INTAKE DECK



DETAIL A
No Scale



DETAIL B (1E1/7)
No Scale
(260)



PLAN - BAY 3 EL 621
CIRCUIT BREAKER GALLERY

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1E1/7	77
LGP-1-6-1E1/9	79
LGP-1-6-1F1/3	83
LGP-1-6-2E1/6	111
LGP-1-6-2F1/3	116

(250) Incl as req'd (257) (260) (290) (298)

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 JUL 01 BY J. D. Koehler

GRAPHIC SCALE
6' 0' 4' 8'
⅛" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
B	7 Jul 1	As constructed - minor changes	WDK
A	6 Jun 66	Relocated cnd & gnd, changed cnd size	WDK

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: J.L.S.
DRAWN BY: P.J.L.
CHECKED BY: E.M.S.
PREPARED: J. Forster, HEAD, ELECTRICAL SECTION
SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
INV. NO. CIVENG-45-164-65-18

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERY & INTAKE DECK
BAY 3 EL 621 & 651

APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
Chief, Engineering Division
SCALE AS SHOWN SPEC. NO.
LGP-1-6-1F1/4
SHEET 84

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.:
W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-032.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE EMBEDDED CONDUIT & GROUNDING
MAIN UNIT GALLERY & INTAKE DECK
BAY 3 EL 621 & 651

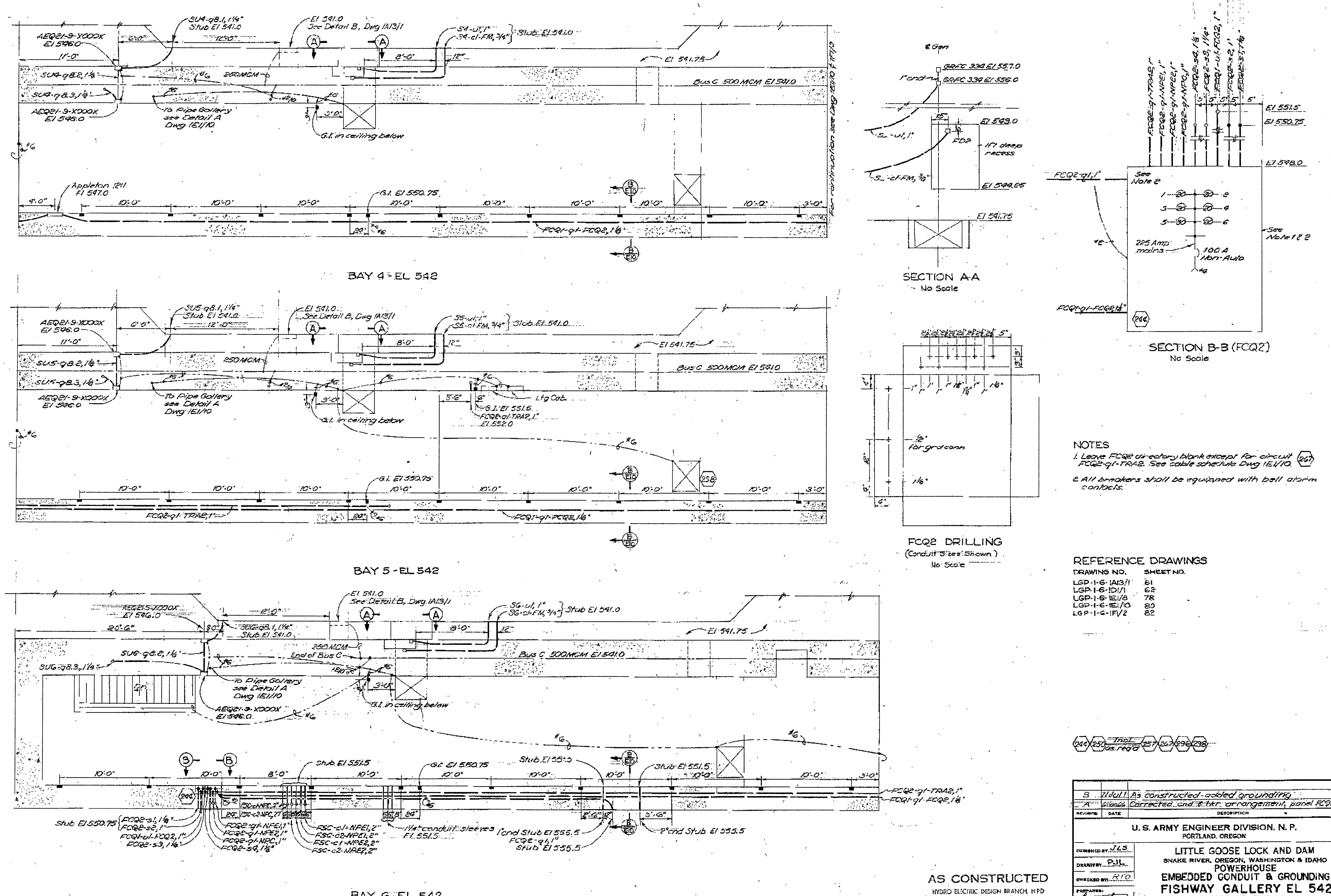
SHEET ID
R-032

FINAL

ARMY - KILHAM STATIONERY & PRINTING CO., PORTLAND, OREGON

CORPS OF ENGINEERS

U. S. ARMY



NOTES

1. Leave FCQ2 directory blank except for circuit FCQ2-q1-TRA2. See cable schedule Dwg 1E1/10. (267)

2. All breakers shall be equipped with bell alarm contacts.

REFERENCE DRAWINGS

DRAWING NO.	SHEET NO.
LGP-1-6-1A13/1	61
LGP-1-6-1D1/1	62
LGP-1-6-1E1/8	78
LGP-1-6-1E1/10	80
LGP-1-6-1F1/2	82

(244) (250) Incl. as req'd (257) (267) (296) (298)

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 1971 JUL 01 BY J. D. Kohler

GRAPHIC SCALE

1/8" = 1'-0"

REVISION	DATE	DESCRIPTION	BY
B	71 Jul 1	As constructed - added grounding	WDK
A		Corrected and 6 bkr. arrangement, panel FCQ2	WHR

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY J.L.S.
DRAWN BY P.J.L.
CHECKED BY R.I.O.
PREPARED: [signature]
HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
EMBEDDED CONDUIT & GROUNDING
FISHWAY GALLERY EL 542
BAYS 4, 5 & 6

APPROVED: FOR DIV. ENGINEER DATE 4 DEC 64
CHIEF, ENGINEERING DIVISION

SUBMITTED: [signature]
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

SCALE AS SHOWN
SPEC. NO.

~~INV. NO. CIVENG 45-164-65-10~~

LGP-1-6-1F1/5

SHEET ~~85~~

~~CONT № 65-560~~ ~~VOL. NO. IV~~

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE: AUGUST 2022
DRAWN BY:	SOLICITATION NO.: W912EF22R0001
CHECKED BY:	CONTRACT NO.:
SUBMITTED BY:	DRAWING NUMBER:
SIZE: ANSI D	FILENAME: R-033.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM

POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

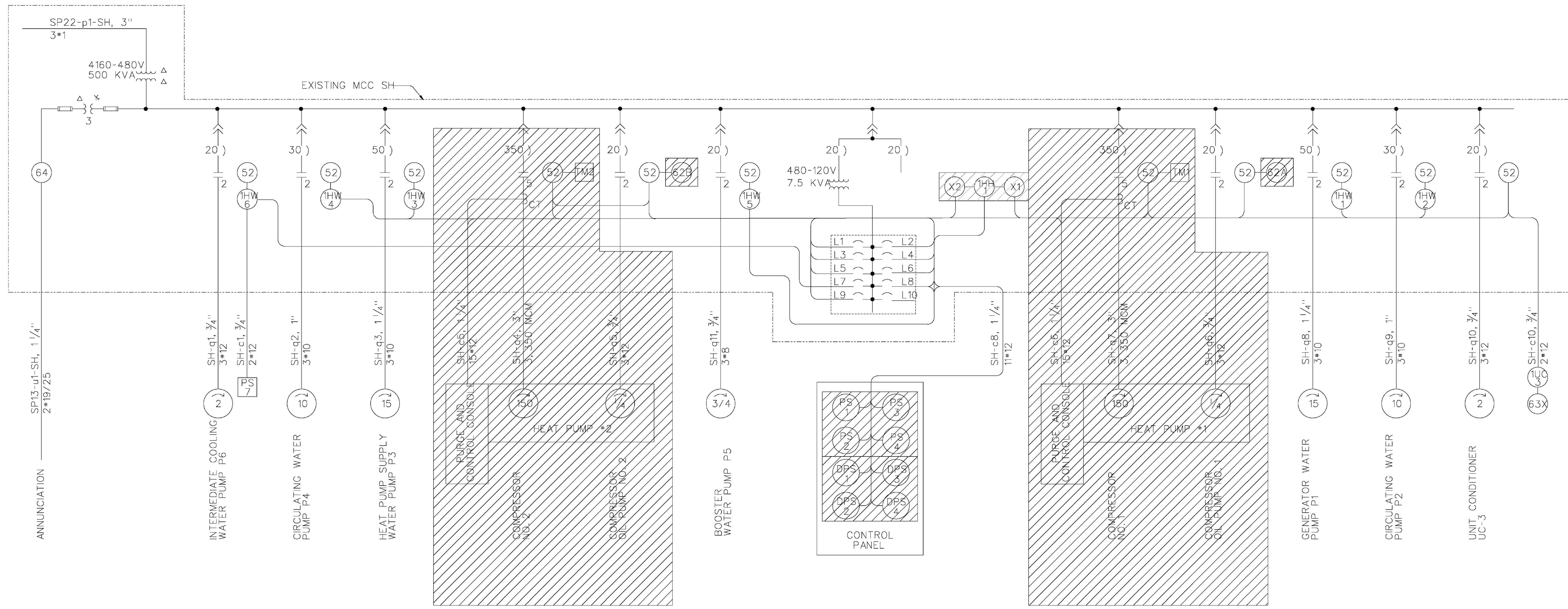
POWERHOUSE EMBEDDED CONDUIT & GROUNDING
FISHWAY GALLERY EL 542
BAY 4,5 & 6

SHEET ID

R-033

FINAL

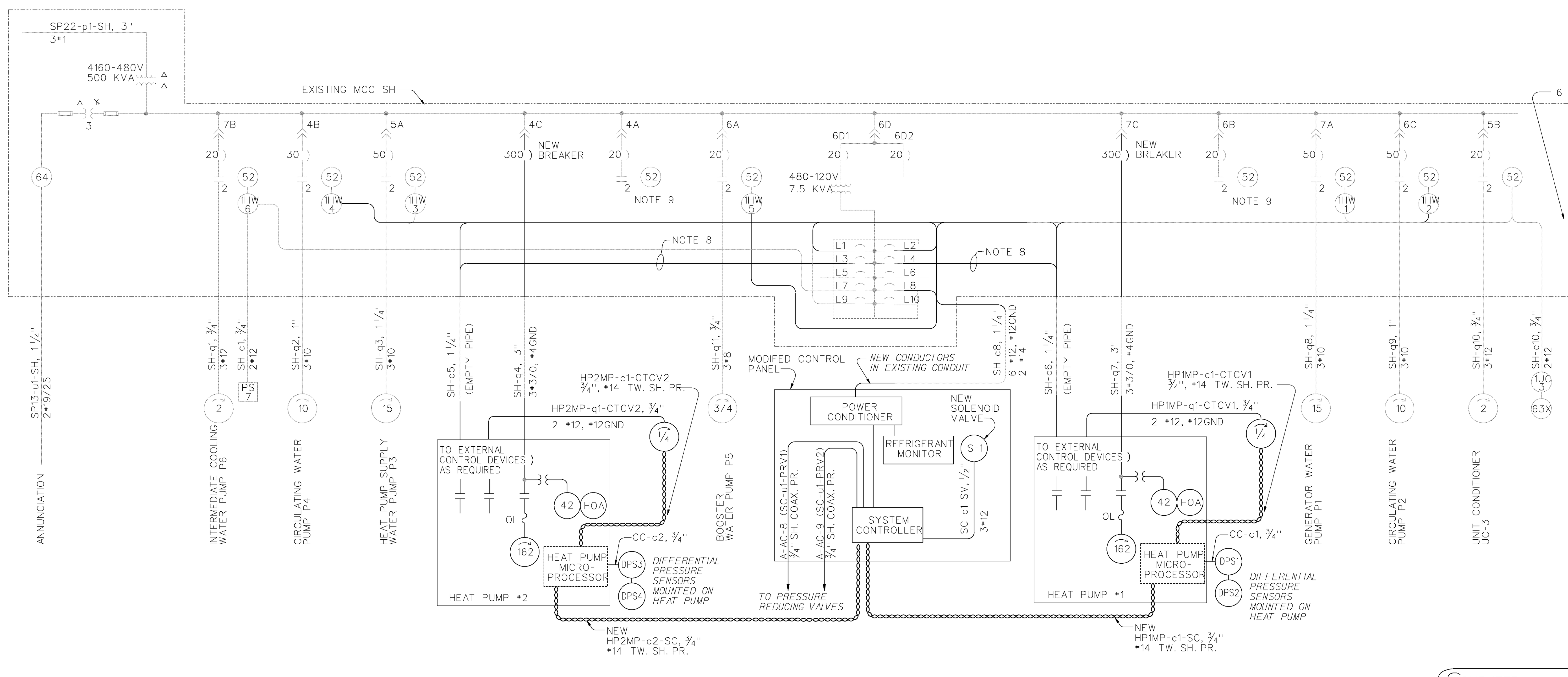
CORPS OF ENGINEERS — SAFETY PAYS — U. S. ARMY



MCC SH SINGLE LINE DIAGRAM (DEMOLITION)

LEGEND:

- AIR CIRCUIT BKR
- (52) AC CONTACTOR, SIZE 2 (EXISTING)
- (DPSx) DIFFERENTIAL PRESSURE SENSOR (NEW)
- (X1) AUXILIARY RELAY (EXISTING)
- (HOA) HAND OFF AUTO (NEW)
- (1HW) HAND OFF AUTO (EXISTING)
- (1HH) MASTER OFF ON SWITCH (EXISTING)
- (TM1) TIME METER NO. 1 (EXISTING)
- (42) S1 AC CONTACTOR (NEW) COIL IDENTIFIED BY SUBSCRIPT LABEL
- (62) TIME DELAY RELAY (EXISTING)
- (30) HP1 ALARM RELAY (NEW) COIL IDENTIFIED BY SUBSCRIPT LABEL
- (63) GAS PRESSURE RELAY (EXISTING)



MCC SH SINGLE LINE DIAGRAM (MODIFIED)

NOTES

1. ALL ELECTRICAL ITEMS AND WIRING SHOWN WITH HASH MARKS SHALL BE REMOVED. REMOVE ASSOCIATED CONTROL AND INTERCONNECTING WIRING AS INDICATED ON SHEETS 17-18.
2. REMOVE OLD IDENTIFYING NAME PLATE ON ABANDONED EQUIPMENT COMPT'S. INSTALL NEW NAME PLATE WITH NEW INSCRIPTION. SEE SCHEDULE SHEET 18.
3. NEW OR MODIFIED EQUIPMENT IS SHOWN IN BOLD LINE WEIGHT FOR THE MODIFIED SH SINGLE LINE DIAGRAM.
4. SEE FOR INFORMATION ONLY REFERENCE DRAWINGS FOR EXISTING CONTROL DIAGRAMS.
5. SEE SHEETS 20-22 FOR ADDITIONAL CONTROL MODIFICATIONS.
6. DO NOT ROUTE THE COMMUNICATION CABLE (#14 TW. SH. PR.) IN THE SAME CONDUIT THAT CONTAINS 120 VOLT CONTROL OR POWER CONDUCTORS.
7. COORDINATE NECESSARY FIELD WIRING (DIFFERENTIAL PRESSURE SENSORS, THERMOWELLS, TEMPERATURE CONTROL VALVES, ETC) WITH HEAT PUMP SUPPLIER.
8. CONTROL VOLTAGES MAY BE DERIVED FROM 480 VOLT LINE SOURCE, HOWEVER, THIS CIRCUIT IS STILL REQUIRED FOR ALARM RELAYS.
9. MOTOR CONTROLLER AND BREAKER SHALL REMAIN IN MCC SH BUT DISCONNECTED FROM PREVIOUS MOTOR.

REVISION	DATE	DESCRIPTION	CHKD.	APPR.
B	10/4/16	AS-BUILT PER PROJECT PERSONNEL	ZB	
A	12/5	AS CONSTRUCTED		

U. S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

LITTLE GOOSE LOCK & DAM
SNAKE RIVER, OREGON, WASHINGTON AND IDAHO
HEAT PUMPS REPLACEMENT
MCC SH ONE-LINE DIAGRAM
ELECTRICAL MODIFICATIONS

DESIGNED BY: NGUYEN/EMBREE
DRAWN BY: JH
DATE: 30 SEP 04
SCALE AS SHOWN — INV. NO. 05-B-0002
19 — LGP-1-6-18/4

COMPUTER AIDED DESIGN & DRAFTING
N:\TECH SECTION\D_EquipmentHierarchy\... Little Goose\P Powerhouse\S Station Power\SQ 480V System\H 480V Substation SH\LGP-1-6-18_4.dgn
PLOTTING TIME: 10/4/2016

VALUE ENGINEERING PAYS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-034.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

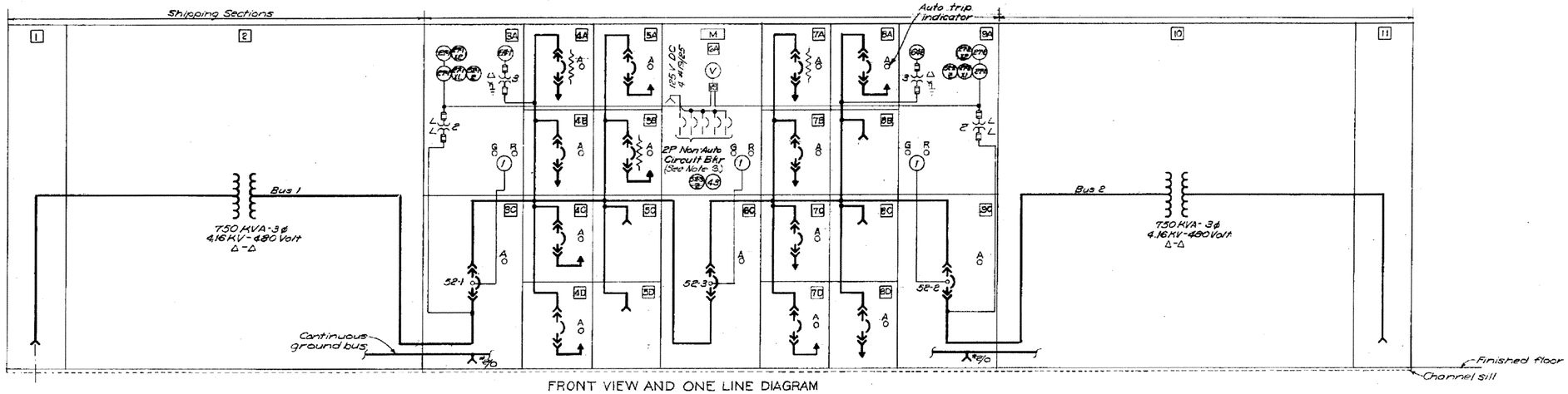
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
HEAT PUMPS REPLACEMENT
MCC SH ONE-LINE DIAGRAM
ELECTRICAL MODIFICATIONS

SHEET ID
R-034

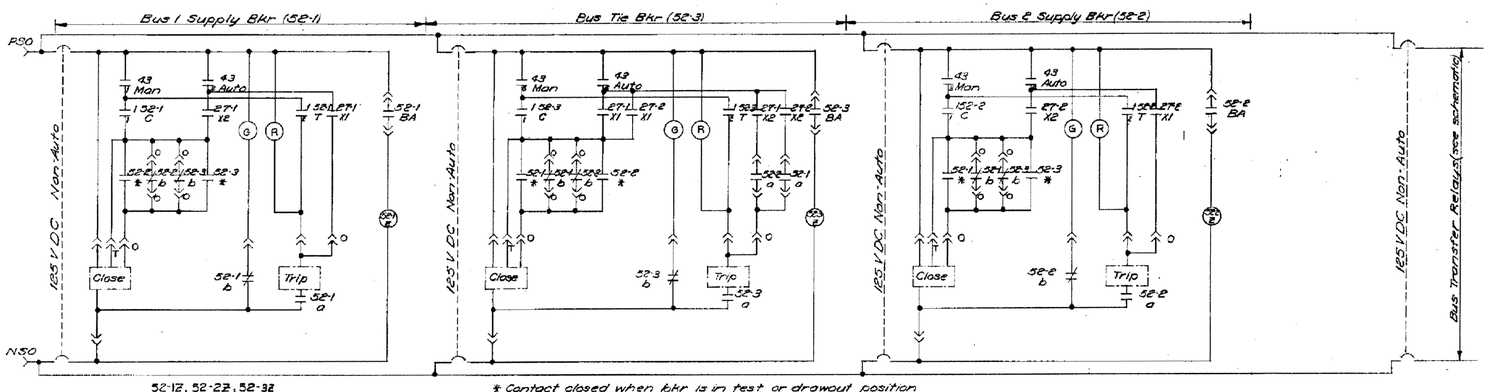
FINAL

CORPS OF ENGINEERS

U. S. ARMY



FRONT VIEW AND ONE LINE DIAGRAM



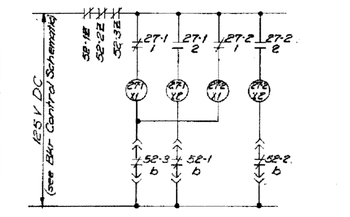
* Contact closed when bkr is in test or drawout position

ELECTRICAL BKR CONTROL - SCHEMATIC DIAGRAM

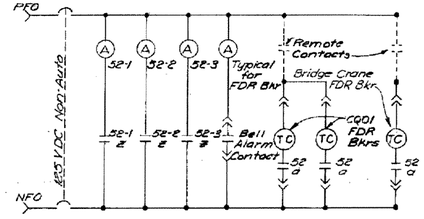
52-12, 52-22, 52-32 Transfer Relays
Ann Indicating Lights
Spare

EQUIPMENT SCHEDULE

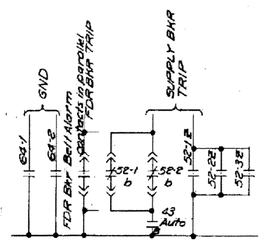
NO	NAMEPLATE LETTERING FIRST LINE	SECOND LINE	TRIP RATING (AMP)	CABLE SIZE
1	4.16 KV FDR	BUS 1		1
2	TRANS	BUS 1		Bus
3A	POT TRANS	RELAYS BUS 1		
3C	BUS 1	SUPPLY BREAKER	1200	Bus
4A	CQ01 480V	CONTROL CENTER	150	1/0
4B	CQ02 480V	CONTROL CENTER	350	350 MCM
4C	CQ03 480V	PANELBOARD	150	1/0
4D	CQ04 480V	CONTROL CENTER	400	500 MCM
5A	CQ05 480V	CONTROL CENTER	70	4
5B	BRIDGE CRANE	SUPPLY	350	350 MCM
5C	None (See Note 2)			
5D	None (See Note 2)			
M	SQO 480 V	SUBSTATION		
6A	CONTROL	BREAKERS		
6C	BUS TIE	BREAKER	1000	Bus
7A	CQ01 480V	CONTROL CENTER	150	1/0
7B	CQ02 480V	CONTROL CENTER	350	350 MCM
7C	Blank		200	3/0
7D	CQ04 480V	CONTROL CENTER	400	500 MCM
8A	CQ05 480V	CONTROL CENTER	70	4
8B	None (See Note 2)			
8C	None (See Note 2)			
8D	FISHWAY	PANELBOARDS	70	4
9A	POT TRANS	RELAYS BUS 2		
9C	BUS 2	SUPPLY BREAKER	1200	Bus
10	TRANS	BUS 2		Bus
11	4.16 KV FDR	BUS 2		1



BUS TRANSFER RELAYS SCHEMATIC DIAGRAM



ALARM LIGHTS & SHUNT TRIP SCHEMATIC DIAGRAM



ANNUNCIATION WIRING

1 52-3	BUS TIE BKR
1 52-2	BUS 2 SUPPLY BKR
1 52-1	BUS 1 SUPPLY BKR

TRIP (Neutral) CLOSE — Spring Return to Neutral

CONTACT	CLOSE	Neutral	TRIP
1	X		
2			X

43 TRANSFER CONTROL

AUTO MAN (Maintained Contacts)

CONTACT	MAN	AUTO
1	X	
2		X
3	X	
4		X
5	X	
6		X
7	Spare	
8		X
9	Spare	
10		Spare

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 SEP 7 BY

LEGEND

In accordance with ASA standards C37.2-1962 and Y32.2-1962 except as noted:

- Electrically operated drawout type air circuit breaker
- Disconnect device, closed in both test and operating position unless marked as follows: O - closed in operating position only. T - closed in test position only
- Shunt trip attachment
- (R) Indicating light (letter indicates color)
- M Master nameplate (see Equipment Schedule)
- 2 Circuit or compartment no. (see Equipment Schedule)
- VS Voltmeter switch

NOTES

1. Variations in equipment arrangement and breaker control will be allowed to fit manufacturers standard construction subject to the approval of the Contracting Officer.
2. Compartments shall be constructed to accommodate future breakers.
3. Provide nameplates labeled as indicated by schematic diagrams.
4. All drawout type air circuit breakers shall be 22,000 rms symmetrical amperes minimum interrupting capacity. Feeder breakers with trip ratings of 350 amperes or more shall be of 600 ampere minimum frame size.
5. This drawing, including Notes 1 through 4, was issued as LGP-1-G-1A8/1 for procurement of Government furnished 480 volt Substation SQO. Design is subject to modification in accordance with Note 1. Westinghouse Electric Corporation is the Contractor.

(1.1.7)

REVISION	DATE	DESCRIPTION	BY

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
480 VOLT SUBSTATION
SQO

DESIGNED BY JRK
DRAWN BY REF
CHECKED BY EMS
PREPARED
HEAD, ELECTRICAL SECTION
SUBMITTED
CHIEF, HYDRO ELECTRIC DESIGN BRANCH
APPROVED FOR DIV. ENGINEER DATE 25 JAN 68
CHIEF, ENGINEERING DIVISION
SCALE 1/4 SHOWN SPEC. NO.
INV. NO. DACW68-68-B-0029
LGP-1.1-6-1A8/1
SHEET 48

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: JRK
DRAWN BY: REF
CHECKED BY: EMS
SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R035.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

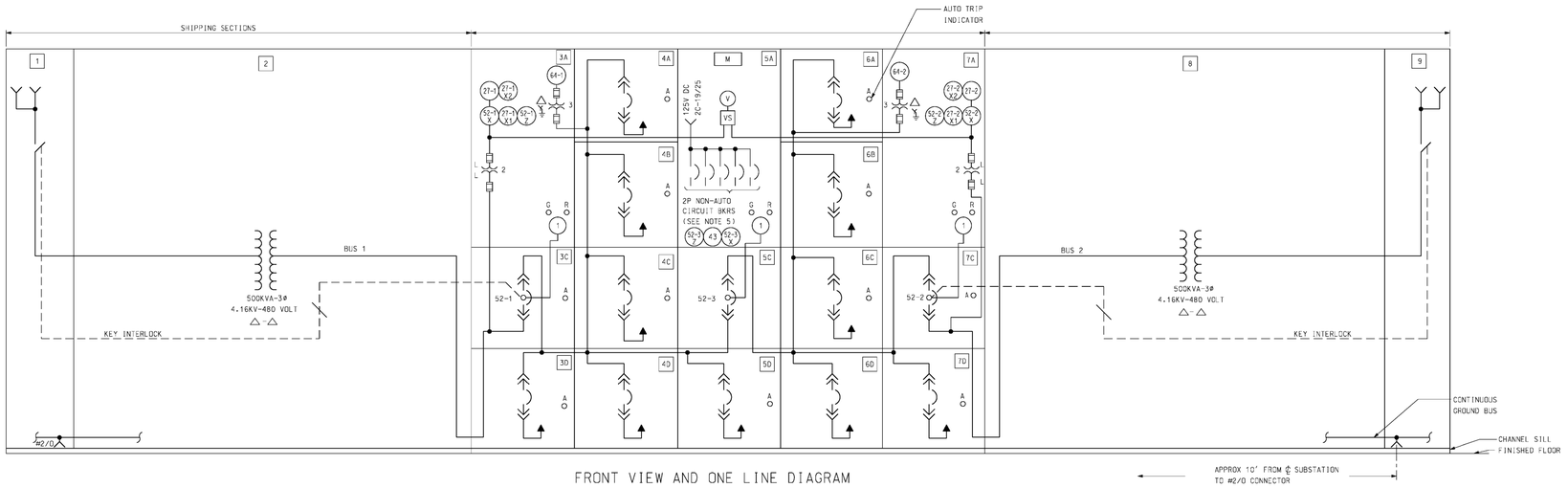
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
480 VOLT SUBSTATION
SQO

SHEET ID
R-035

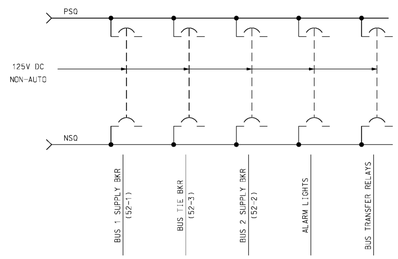
FINAL

CORPS OF ENGINEERS U.S. ARMY



FRONT VIEW AND ONE LINE DIAGRAM

NO.	NAMEPLATE LETTERING SQ1		TRIP	CABLE
	FIRST LINE	SECOND LINE	RATING (AMP)	SIZE
1	4.16KV FDR	BUS 1		2 #1/0
2	TRANS	BUS 1		BUS
3A	POT TRANS	RELAYS BUS 1		
3C	BUS 1	SUPPLY BREAKER	600	BUS
3D	TRANS T1	COOLING FDR 1	90	#4
4A	SU1 480V	CONTROL CENTER	200	#3/0
4B	SU2 480V	CONTROL CENTER	200	#3/0
4C	SU3 480V	CONTROL CENTER	200	#3/0
4D	SU4 480V	CONTROL CENTER	225	?
M	SQ1 480 VOLT	SUBSTATION		
5A	CONTROL	BREAKERS		
5C	BUS TIE	BREAKER	600	BUS
5D	480V OUTLETS	TRAVELING SCREENS BAY 3	200	?
6A	SU1 480V	CONTROL CENTER	200	#3/0
6B	SU2 480V	CONTROL CENTER	200	#3/0
6C	SU3 480V	CONTROL CENTER	200	#3/0
6D	SU4 480V	CONTROL CENTER	225	?
7A	POT TRANS	RELAYS BUS 2		
7C	BUS 2	SUPPLY BREAKER	600	BUS
7D	TRANS T1	COOLING FDR 2	90	#4
8	TRANS	BUS 2		
9	4.16KV FDR	BUS 2		2 #1/0



CONTROL SOURCE DISTRIBUTION

NOTES

1. FOR LEGEND SEE DWG LGP-1-6-1A8/1.
2. FOR SCHEMATIC DIAGRAMS OF ELECTRICAL BREAKER CONTROL, AUTOMATIC BUS TRANSFER AND BREAKER ALARM LIGHTS, AND WIRING OF ANNUNCIATION CONTACTS SEE DWG LGP-1-6-1A8/1.
3. VARIATIONS IN EQUIPMENT ARRANGEMENT AND BREAKER CONTROL WILL BE ALLOWED TO FIT MANUFACTURERS STANDARD CONSTRUCTION SUBJECT TO THE APPROVAL OF THE CONTRACTING OFFICER.
4. COMPARTMENTS SHALL BE CONSTRUCTED TO ACCOMMODATE FUTURE BREAKERS.
5. PROVIDE NAMEPLATES LABELED AS INDICATED BY CONTROL SOURCE DISTRIBUTION DIAGRAM.
6. THIS DRAWING, INCLUDING NOTES 1 THROUGH 5, WAS ISSUED AS LGP-1-6-1A8/2 FOR PROCUREMENT OF GOVERNMENT-FURNISHED 480 VOLT SUBSTATION SQ1. DESIGN IS SUBJECT TO MODIFICATION IN ACCORDANCE WITH NOTE 3. WESTINGHOUSE ELECTRIC CORPORATION IS THE CONTRACTOR.

117

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD
DATE 1971 SEP 7 BY

REVISION	DATE	DESCRIPTION	BY
1	02/28/17	AS-BUILT PER PROJECT PERSONNEL	SMN

U.S. ARMY ENGINEER DIVISION, N.P.
PORTLAND, OREGON

DESIGNED BY JRK
DRAWN BY REF
CHECKED BY EMS
PREPARED:
HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
480 VOLT SUBSTATION
SQ1

SUBMITTED:
CHIEF, HYDRO. ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER DATE 25 JAN 68
CHIEF, ENGINEERING DIVISION

INV. NO. DACW68-68-B-0029

SCALE AS SHOWN SPEC. NO.
LGP-1.1-6-1A8/2
SHEET 49

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R036.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

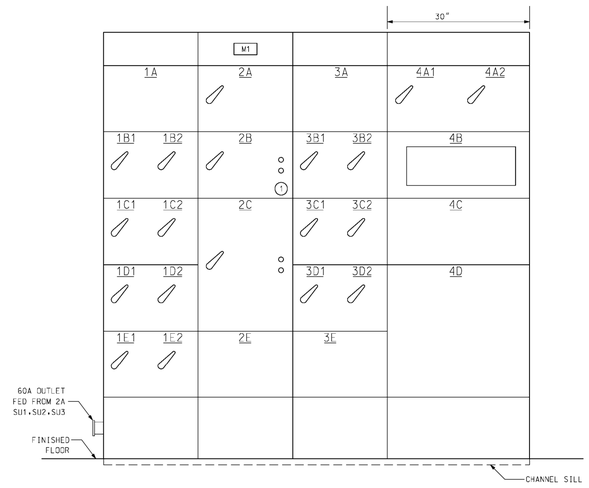
POWERHOUSE
480 VOLT SUBSTATION
SQ1

SHEET ID
R-036

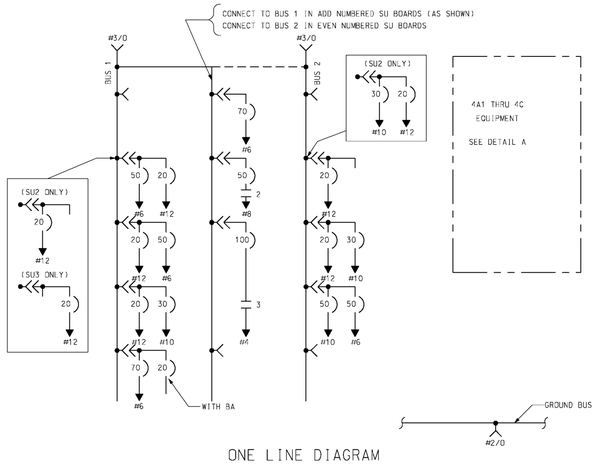
FINAL

2/28/2017 N:\@TECH_SECTION\D_Equipment\Hierarchy\4_Little Goose\P_Powerhouse\S_Station Power\SQ_480V_System\1_480V_Substation_SQ1\3Drawings\lgp-1_1-6-1a8_2.dgn

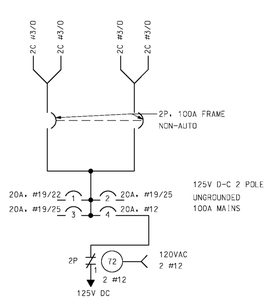
CORPS OF ENGINEERS — U.S. ARMY



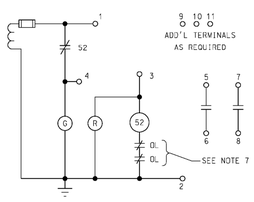
FRONT VIEW



ONE LINE DIAGRAM



DETAIL A



TYPICAL SCHEMATIC DIAGRAM

(SEE CONTROL CONNECTIONS FOR VARIATIONS AND INTERCONNECTIONS)

NAMEPLATE SCHEDULE

NO.	FIRST LINE	SECOND LINE
M1	SU1 480V	CONTROL CENTER
1A	NONE (SEE NOTE 3)	
1B1	3RD FLOOR UPSTREAM	GALLERY WORKSHOP
1B2	GEN BKR	COOLER NO.1
1C1	HEAD COVER	PUMP NO.1
1C2	480 VOLT	OUTLETS
1D1	AC TURBINE	BRG OIL PUMP
1D2	LIGHT TRANS	TR12
1E1	LIGHT TRANS	TR11
1E2	BLANK	
2A	60 AMP	OUTLET
2B	GENERATOR	HEATERS
2C	GOVERNOR OIL	PUMP NO.1
2E	NONE (SEE NOTE 3)	

NO.	FIRST LINE	SECOND LINE
M1	SU1 480V	CONTROL CENTER
3A	NONE (SEE NOTE 3)	
3B1	GOV. OIL	FILTER PUMP
3B2	BLANK	
3C1	HEAD COVER	PUMP NO.2
3C2	HIGH BAY	LIGHTS
3D1	THRUST BRG	OIL PUMP
3D2	480 VOLT	OUTLETS
3E	NONE (SEE NOTE 3)	
4A1	125 VOLT DC	SUPPLY NO.1
4A2	125 VOLT DC	SUPPLY NO.2
4B	125 VOLT DC	PANEL
4C	EMERG LTG	CONTACTOR
4D	NONE	

SEE DIRECTORY SCHEDULE

BKR NO.	COMPARTMENT 4B DIRECTORY SCHEDULE
1	DC TURBINE BRG OIL PUMP (SU1)
2	
3	DC TURBINE BRG OIL PUMP (SU2.SU3)
4	125V EMERG LTG

1 ON OFF AUTO — MAINTAINED CONTACTS

CONTACT	ON	OFF	AUTO
1	X		
2			X

NAMEPLATE SCHEDULE

NO.	FIRST LINE	SECOND LINE
M1	SU2 480V	CONTROL CENTER
1A	NONE (SEE NOTE 3)	
1B1	GOV. OIL	FILTER PUMP
1B2	BLANK	
1C1	HEAD COVER	PUMP NO.1
1C2	480 VOLT	OUTLETS
1D1	AC TURBINE	BRG OIL PUMP
1D2	LIGHT TRANS	TR22
1E1	LIGHT TRANS	TR21
1E2	BLANK	
2A	60 AMP	OUTLET
2B	GENERATOR	HEATERS
2C	GOVERNOR OIL	PUMP NO.1
2E	NONE (SEE NOTE 3)	

NO.	FIRST LINE	SECOND LINE
M1	SU2 480V	CONTROL CENTER
3A	NONE (SEE NOTE 3)	
3B1	HIGH BAY	LIGHTS
3B2	GEN. BKR	COOLER NO.1
3C1	HEAD COVER	PUMP NO.2
3C2	HIGH BAY	LIGHTS
3D1	THRUST BRG	OIL PUMP
3D2	480 VOLT	OUTLETS
3E	NONE (SEE NOTE 3)	
4A1	125 VOLT DC	SUPPLY NO.1
4A2	125 VOLT DC	SUPPLY NO.2
4B	125 VOLT DC	PANEL
4C	EMERG LTG	CONTACTOR
4D	NONE	

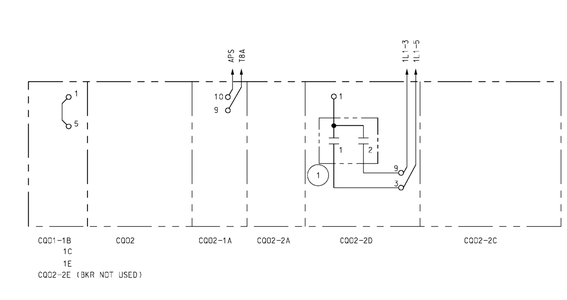
SEE DIRECTORY SCHEDULE

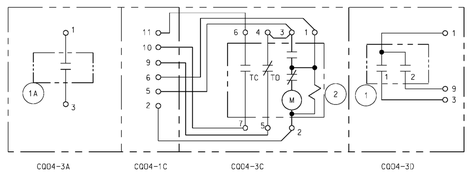
NAMEPLATE SCHEDULE

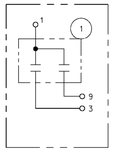
NO.	FIRST LINE	SECOND LINE
M1	SU3 480V	CONTROL CENTER
1A	NONE (SEE NOTE 3)	
1B1	BLANK	
1B2	GEN. BKR.	COOLER NO.1
1C1	HEAD COVER	PUMP NO.1
1C2	480 VOLT	OUTLETS
1D1	AC TURBINE	BRG OIL PUMP
1D2	LIGHT TRANS	TR32
1E1	LIGHT TRANS	TR31
1E2	BLANK	
2A	60 AMP	OUTLET
2B	GENERATOR	HEATERS
2C	GOVERNOR OIL	PUMP NO.1
2E	NONE (SEE NOTE 3)	

NO.	FIRST LINE	SECOND LINE
M1	SU3 480V	CONTROL CENTER
3A	NONE (SEE NOTE 3)	
3B1	GOV. OIL	FILTER PUMP
3B2	BLANK	
3C1	HEAD COVER	PUMP NO.2
3C2	HIGH BAY	LIGHTS
3D1	THRUST BRG	OIL PUMP
3D2	480 VOLT	OUTLETS
3E	NONE (SEE NOTE 3)	
4A1	125 VOLT DC	SUPPLY NO.1
4A2	125 VOLT DC	SUPPLY NO.2
4B	125 VOLT DC	PANEL
4C	EMERG LTG	CONTACTOR
4D	NONE	

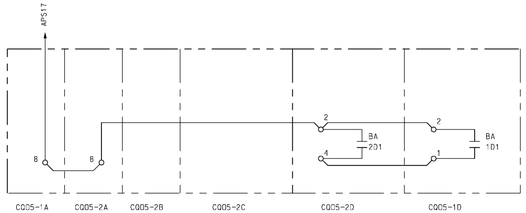
SEE DIRECTORY SCHEDULE







2B
HAND/OFF/AUTO
SU1, SU2, SU3



CONTROL CONNECTIONS

SEE NOTE 6

NOTES

1. FOR LEGEND SEE DWG LGP.1-6-1A8/3.
2. THE NUMBER OF VERTICAL SECTIONS SHALL BE AS SHOWN; OTHERWISE, VARIATIONS IN EQUIPMENT ARRANGEMENT WILL BE ALLOWED TO FIT MANUFACTURERS STANDARD CONSTRUCTION SUBJECT TO APPROVAL OF THE CONTRACTING OFFICER.
3. ALL EMPTY COMPARTMENTS SHALL HAVE BLANK COVERS AND BE CONSTRUCTED TO ACCOMMODATE FUTURE OPERATING UNITS.
4. THIS DRAWING IS REPRESENTATIVE OF CONTROL CENTERS SU1 THRU SU3 WITH VARIATIONS IN BUS CONNECTIONS AND NAMEPLATES AS INDICATED.
5. EACH CONTROL CENTER SHALL BE SHIPPED IN ONE PIECE.
6. SEE DWG LGP-1-6-1A8/3 FOR ARRANGEMENTS OF CONTROL CENTERS CQ01, CQ02, CQ04, AND CQ05.
7. NO OVERLOAD DEVICES ARE REQUIRED FOR CONTACTORS IN CQ02-2D, CQ04-3D, CQ05-1C AND SU1, SU2, SU3, COMPARTMENTS 2B AND 4C.
8. THIS DRAWING, INCLUDING NOTES 1 THROUGH 7, WAS ISSUED AS LGP-1-6-1A8/4 FOR PROCUREMENT OF GOVERNMENT-FURNISHED 480 VOLT CONTROL CENTERS SU1, SU2 AND SU3 DESIGN IS SUBJECT TO MODIFICATION IN ACCORDANCE WITH NOTE 2. WESTINGHOUSE ELECTRIC CORPORATION IS THE CONTRACTOR.

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REVISION	DATE	DESCRIPTION	BY
1	2/23/17	AS-BUILT PER PROJECT PERSONNEL	SMN

U.S. ARMY ENGINEER DIVISION. N.P.
PORTLAND, OREGON

DESIGNED BY JRK
DRAWN BY PJL-REF
CHECKED BY EMS
PREPARED:
READ: ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE

480 VOLT CONTROL CENTERS
SU1 THRU SU3

SUBMITTED:
CHIEF, HYDRO. ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER DATE 25 JAN 68
CHIEF, ENGINEERING DIVISION

INV. NO. DACW68-68-B-0029

SCALE AS SHOWN SPEC. NO.

LGP-1.1-6-1A8/4

SHEET 51

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 1971 SEP 7 BY

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-037.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
480 VOLT CONTROL CENTERS
SU1 THRU SU3

SHEET ID
R-037

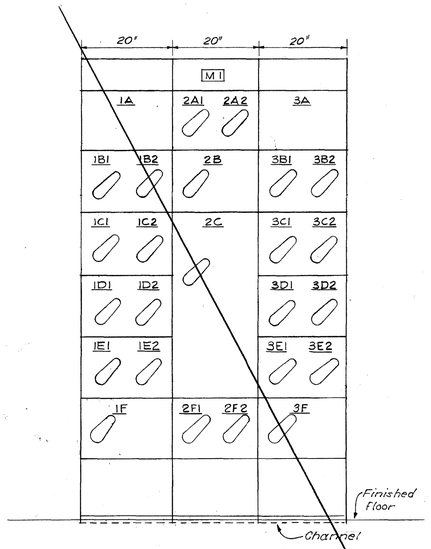
FINAL

IMD lgp-1-6-1a8-4

2/23/2017 N:\@TECH SECTION\C_EquipmentHierarchy\4 Little Goose\P Powerhouse\S Station Power\SQ 480V System\1480V Substation SQ1\zDrawings\lgp-1_1-6-1a8_4.dgn

CORPS OF ENGINEERS

U. S. ARMY



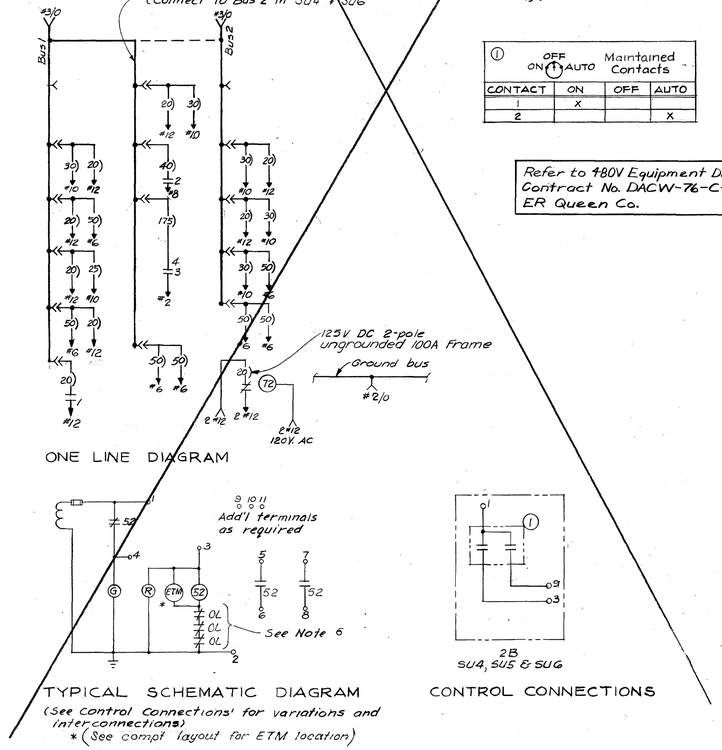
FRONT VIEW

NAMEPLATE SCHEDULE

	NO	FIRST LINE	SECOND LINE
*	M1	SU4 480V	CONTROL CENTER
	1A	None (See Note 3)	
*	1B1	AIR CKT BKR	COMPRESSOR NO.1
	1B2	GEN BKR	COOLER A
	1C1	HEAD COVER	PUMP NO.1
	1C2	480 VOLT	OUTLETS
	1D1	TURBINE BRG	OIL SUMP PUMP
*	1D2	LIGHT TRANS	TR42
*	1E1	LIGHT TRANS	TR41
	1E2	Blank	
*	1F	GOVERNOR AIR	COMPRESSOR
	2A1	Blank	
*	2A2	AIR CKT BKR	COMPRESSOR NO.2
	2B	GENERATOR	HEATERS
	2C	GOVERNOR OIL	PUMP NO.1
	2F1	480 VOLT	OUTLETS
	2F2	480 VOLT	OUTLETS
	3A	None (See Note 3)	
*	3B1	Blank	
	3B2	GEN BKR	COOLER B
	3C1	HEAD COVER	PUMP NO. 2
	3C2	HIGH BAY	LIGHTS
	3D1	THRUST BRG	OIL PUMP
	3D2	480 VOLT	OUTLETS
	3E1	480 VOLT	OUTLETS
	3E2	480 VOLT	OUTLETS
	3F	125 V DC	EMERG. LIGHTING

* Nameplates are shown for SU4 and are same for other boards except as noted below

M1 Replace SU4 with SU5, SU6
1D2 Replace TR42 with TR52 in SU5, TR62 in SU6
1E1 Replace TR41 with TR51 in SU5, TR61 in SU6
1F SU4 only, blank on SU5 & SU6
2A2 SU4 only, blank on SU5 & SU6
3B1 Replace blank with "HIGH BAY" (first line) "LIGHTS" (second line) in SU5 only
1B1 SU4 only, blank on SU5 & SU6



ONE LINE DIAGRAM

TYPICAL SCHEMATIC DIAGRAM

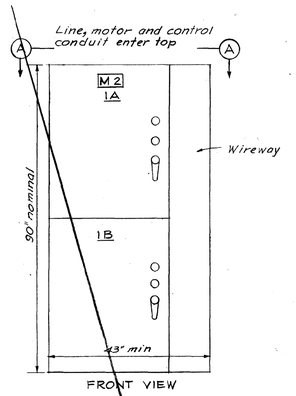
(See Control Connections' for variations and interconnections)
* (See compt layout for ETM location)

① OFF ON AUTO Maintained Contacts

CONTACT	ON	OFF	AUTO
1	X		
2			X

Refer to 480V Equipment Drawings
Contract No. DACW-76-C-0247
ER Queen Co.

CONTROL CONNECTIONS



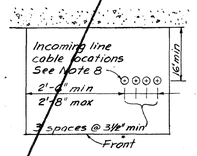
FRONT VIEW

CP_ CONTROLLER
(TYPICAL)

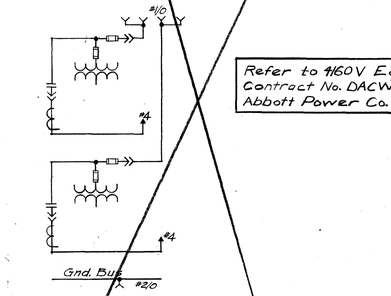
NAMEPLATE SCHEDULE

NO.	FIRST LINE	SECOND LINE
* M2	CP_ 4160 V.	CONTROLLER
1A	GOV OIL PUMP	NO. 2
1B	GOV OIL PUMP	NO. 3

* CP4 THRU CP6

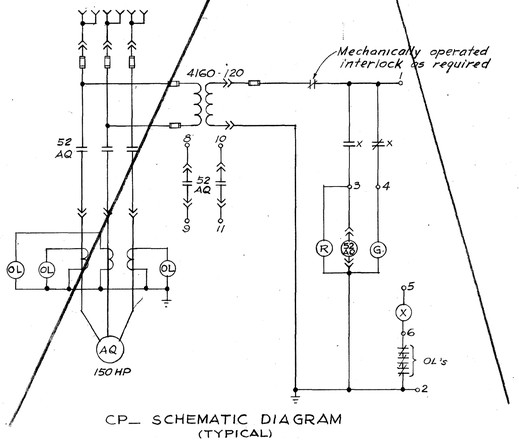


SECTION A - A



ONE LINE DIAGRAM

Refer to 4160V Equipment Drawings
Contract No. DACW68-76-C-0098
Abbott Power Co.



CP_ SCHEMATIC DIAGRAM
(TYPICAL)

THIS DRAWING WAS PREPARED FOR PROCUREMENT OF GOVERNMENT-FURNISHED EQUIPMENT AND REPRESENTS THE LATEST AVAILABLE INFORMATION. THIS DRAWING WILL BE SUPERSEDED BY MANUFACTURER'S SHOP DRAWINGS FOR INSTALLATION PURPOSES.

LEGEND
In accordance with ANSI standards C37.2-1969 (rev. 1974) & Y32.2-1970 except as noted:

- or Power fuse with disconnect means.
- #1 Outgoing cable; number indicates wire size.
- O or (R) Indicating lights; R-red. G-green.
- (OL) OL Overload relay
- (1) Selector switch. See development.
- (52) A-C contactor operating coil.
- (X) Auxiliary relay
- 1A Circuit or compartment no. See nameplate schedules.
- M1 Master nameplate
- o—— Terminal block point for external connections
- (ETM) Elapsed time meter

NOTES
1. For Legend see Dwg. LGP.1.9-6-1A8/1.
2. The number of vertical sections shall be as shown; otherwise, variations in equipment arrangement will be allowed to fit manufacturer's standard construction subject to approval of the Contracting Officer.
3. All empty compartments shall have blank covers and be constructed to accommodate future operating units.
4. This drawing is representative of control centers SU4 thru SU6 and controllers CP4 thru CP6 with variations in bus connections and nameplates as indicated.
5. Each control center and controller shall be shipped in one piece.
6. No overload devices are required for contactors in SU4, SU5, SU6 compartments 2B and 3F.
7. Controllers shall be rated 4.6 KV and 250 mva interrupting capacity.
8. The CP_ controllers and wireway shall accommodate the entrance of 4 line armor cables. A pullbox with a maximum height of 10 inches shall be furnished if required to meet the limitations shown.
9. Control transformer for operating unit 1F shall have an additional 100 VA capacity for continuous operation of electro-magetic devices.

98 99

SUPERSEDED BY EQUIPMENT MANUFACTURERS SHOP DRAWINGS
SEP 30 1980

REVISION	DATE	DESCRIPTION	BY
C	80SEP30	Superseded by Shop Drawings	RCM
B	75May5	Bid item number	EMS
A	75Apr24	General revisions	EMS

PENED

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: RCM
DRAWN BY: Const. 1218
CHECKED BY: JMN
PREPARED: Chief, Electrical Section

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE UNITS 4-6
ELECTRICAL EQUIPMENT
480 VOLT CONTROL CENTERS
SU4-SU6 & 4.16 KV CONTROLLERS

APPROVED: FOR DIV. ENGINEER: DATE: 1975 MAR 07
Chief, Engineering Division

SUBMITTED: Chief, Hydro-Electric Design Branch

SCALE AS SHOWN | SPEC. NO. 75-B-55

LGP-1.9-6-1A8/2

SHEET 227

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-038.dgn

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

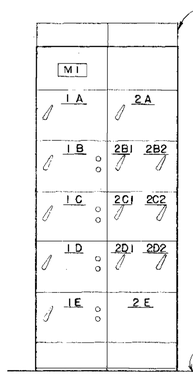
POWERHOUSE
480 VOLT CONTROL CENTERS
SU4-SU6 & 4.16KV CONTROLLERS

SHEET ID
R-038

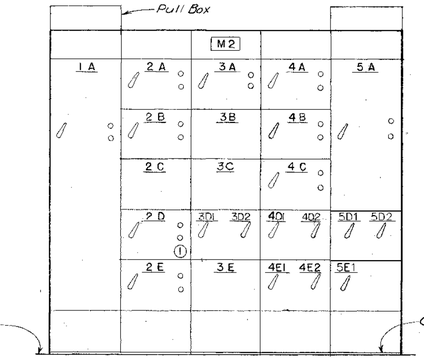
FINAL

CORPS OF ENGINEERS

U. S. ARMY



FRONT VIEW



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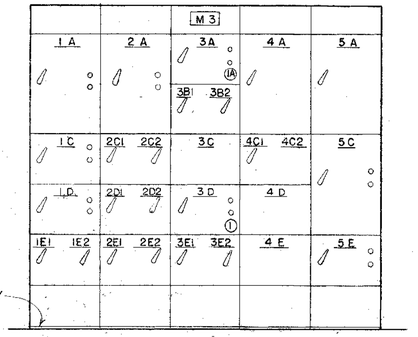

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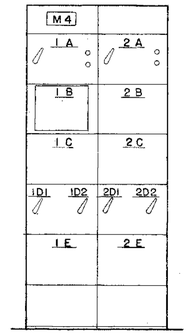
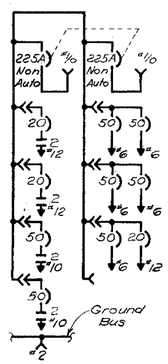


FRONT VIEW

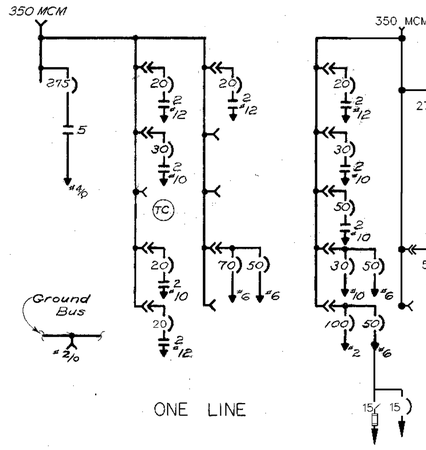
LEGEND

In accordance with ASA standards C37.2-1962 and Y32.2-1962 except as noted.

- 20 — Air circuit breaker; 3 pole with thermal and magnetic overload devices except as noted; number indicates trip rating.
- 2 — Contactor; 3 pole, with manual reset overload relays except as noted; number indicates NEMA size.
- #12 — Outgoing cable; number indicates wire size.
- (R) — Indicating lights; R-red, G-green.
- OL — Overload relay contact.
- (1) (1A) (43) — Selector switch. See developments.
- (52) — AC contactor operating coil.
- (72) — DC contactor operating coil.
- (2) — Time delay relay.
- (TC) — Time clock.
- −+− — Key interlock.
- 1A — Circuit or compartment number; see nameplate schedule.
- M1 — Master nameplate.
- ○— — Terminal block point for external connection.
- BA — Breaker alarm contact; closes on automatic trip.



ONE LINE



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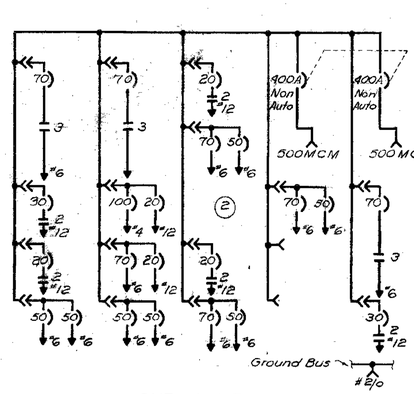

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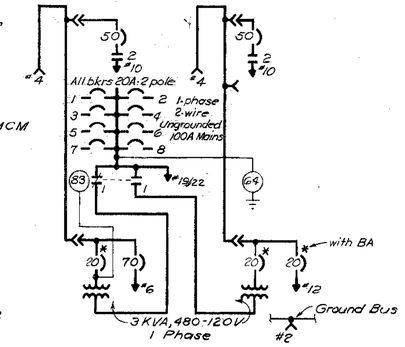


ONE LINE

NAMEPLATE SCHEDULE

NO.	FIRST LINE	SECOND LINE
M1	CQ01 480 VOLT	CONTROL CENTER
1A	MAIN BREAKER	BUS 1
1B	TRANSIL OIL	PUMP NO.1
1C	TRANSIL OIL	PUMP NO.2
1D	LUBE OIL	PUMP NO.3
1E	DIRTY OIL	PUMP NO.4
2A	MAIN BREAKER	BUS 2
2B1	OIL PURIFIER	OUTLET NO. 1
2B2	OIL PURIFIER	OUTLET NO. 2
2C1	OIL PURIFIER	OUTLET NO. 3
2C2	OIL PURIFIER	OUTLET NO. 4
2D1	Blank	
2D2	Blank	
2E	None (See Note 2)	

CQ01

NAMEPLATE SCHEDULE

NO.	FIRST LINE	SECOND LINE
M2	CQ02 480 VOLT	CONTROL CENTER
1A	STATION AIR	COMPRESSOR NO. 4
2A	SEWAGE	PUMP NO.1
2B	STATION AIR	COMPRESSOR NO.1
2C	NONE (SEE NOTE 2)	
2D	TAILRACE	DECK LIGHTS
2E	SEWAGE	SLUDGE PUMP
3A	Blank	
3B	None (See Note 2)	
3C	None (See Note 2)	
3D1	LIGHT TRANS	TRO1
3D2	480 VOLT	OUTLETS
3E	None (See Note 2)	
4A	SEWAGE	PUMP NO. 2
4B	STATION AIR	COMPRESSOR NO. 2
4C	GOVERNOR AIR	COMPRESSOR
4D1	LIGHT TRANS	TRO2
4D2	480 VOLT	OUTLETS
4E1	TAILRACE	CRANE
4E2	SEWAGE AIR	COMPRESSOR, 4E2:1, COMMUTER
5A	STATION AIR	COMPRESSOR NO. 3
5D1	SPARE	
5D2	FISH PUMP ROOM	120V RECEPTACLES
5E	NONE (SEE NOTE 2)	

CQ02

NAMEPLATE SCHEDULE

NO.	FIRST LINE	SECOND LINE
M3	CQ04 480 VOLT	CONTROL CENTER
1A	INTAKE GATE	HYD PUMP NO.1
1C	INTAKE GATE	HYD PUMP NO.3
1D	UNIT CONDITIONER	UC-2
1E1	OIL PURIFIER	OUTLETS
1E	OIL PURIFIER	OUTLETS
2A	INTAKE GATE	HYD PUMP NO.2
2C1	ELEVATOR	
2C2	AIR CKT BRK	COMPRESSOR NO.1
2D1	TRASH RACK	CRANE
2D2	AIR CKT BRK	COMPRESSOR NO.2
2E1	OIL PURIFIER	OUTLETS
2E2	OIL PURIFIER	OUTLETS
3A	UNIT CONDITIONER	UC-1
3B1	LIGHT TRANS	TRO6
3B2	480 VOLT	OUTLETS
3C	INTAKE GATE	HYD PUMP RELAY
3D	INTAKE DECK	LIGHTS
3E1	LIGHT TRANS	TRO7
3E2	480 VOLT	OUTLETS
4A	MAIN BREAKER	BUS 1
4C1	HOT WATER	BOILER
4C2	INTAKE CRANE	HEATER
4D	None (See Note 2)	
4E	None (See Note 2)	
5A	MAIN BREAKER	BUS 2
5C	CENTRAL COND FAN	SF-1
5E	RECIRCULATING FAN	RF-1

CQ04

NAMEPLATE SCHEDULE

NO.	FIRST LINE	SECOND LINE
M4	CQ05 480 VOLT	CONTROL CENTER
1A	MG 1	MOTOR SUPPLY
1B	PREF AC	120 PANEL
1C	PREF AC	TRANSFER SW
1D1	PREF AC	BUS 1
1D2	LIGHT TRANS	TRO5
1E	PREF AC	TRANS-BUS 1
2A	MG 2	MOTOR SUPPLY
2B	None (See Note 2)	
2C	PREF AC	GND DETECTOR
2D1	PREF AC	BUS 2
2D2	48 VOLT	BATTERY CHARGER
2E	PREF AC	TRANS-BUS 2

CQ05

(1) ON OFF AUTO — Maintained Contacts

CONTACT	ON	OFF	AUTO
1	X		
2			X

(1A) ON OFF — Maintained Contacts

CONTACT	ON	OFF
1	X	

(43) NO.1 LEAD NO.2 LEAD — Maintained Contacts

CONTACT	NO.1 LEAD	NO.2 LEAD
1	X	
2		X
3	X	
4		X
5	X	
6		X
7	X	
8		X

PREFERRED A C PANELBOARD DIRECTORY SCHEDULE

BKR NO.	
1	
2	
3	METER SHOP
4	
5	TELEPHONE ROOM
6	OFFICES
7	CODE CALL
8	

NOTES

1. The number of vertical sections shall be as shown; otherwise, variations in equipment arrangement will be allowed to fit manufacturers standard construction subject to approval of the Contracting Officer.
2. All empty compartments shall have blank covers and be constructed to accommodate future operating units.
3. Control transformers for operating units 1D in CQ01, 1A, 2B, 4B, 4C & 5A in CQ02 and 5C in CQ04 shall each have sufficient capacity for an external continuous load of 100va consisting of solenoid valves, magnetic unloaders, etc.
4. No overload devices are required for contactors in CQ02-2D, CQ04-3D and CQ05-1C.
5. Each control center shall be shipped in one piece.
6. Typical Schematic Diagrams and Control Connections are shown on Dwg LGP-1-6-1A8/4.

NO SCALE

REVISION	DATE	DESCRIPTION	BY
2	8/04/05	UPDATED CQ02	LH
1	3JulyO4	Added pull box to CQ01	WHR

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: J.L.S.
DRAWN BY: J.L.S.
CHECKED BY: E.M.S.
PREPARED: [signature] HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
480 VOLT CONTROL CENTERS
CQ01, CQ02, CQ04 & CQ05

SUBMITTED: [signature] CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER — DATE 10 MAR 64
[signature] CHIEF, ENGINEERING DIVISION

SCALE AS SHOWN | SPEC. NO. C 65-6

LGP-1-6-1A8/3

SHEET 3

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.L.S.
DRAWN BY: J.L.S.
CHECKED BY: E.M.S.
SUBMITTED BY: [signature]
SIZE: ANSI D
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R-039.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

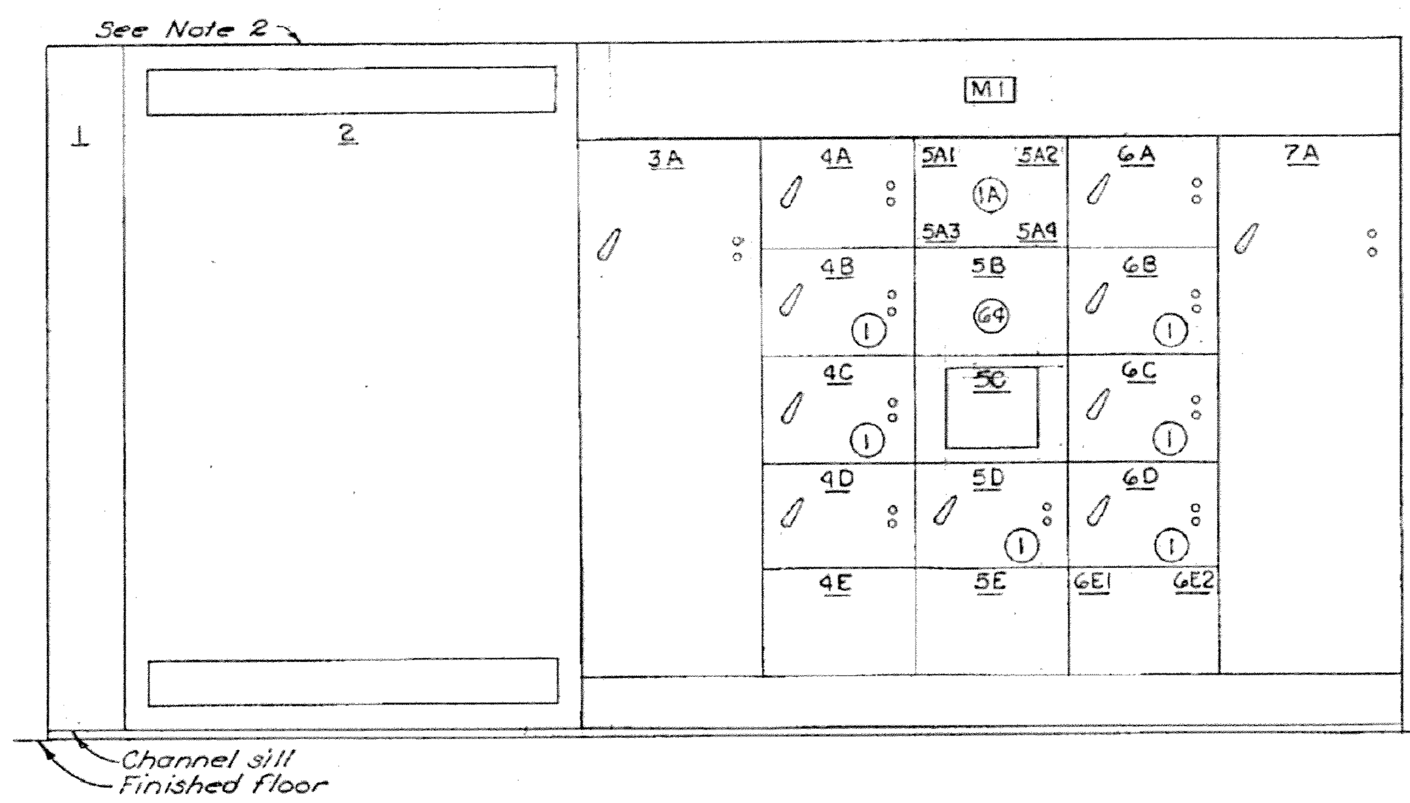
POWERHOUSE
480 VOLT CONTROL CENTERS
CQ01, CQ02, CQ04 & CQ05

SHEET ID
R-039

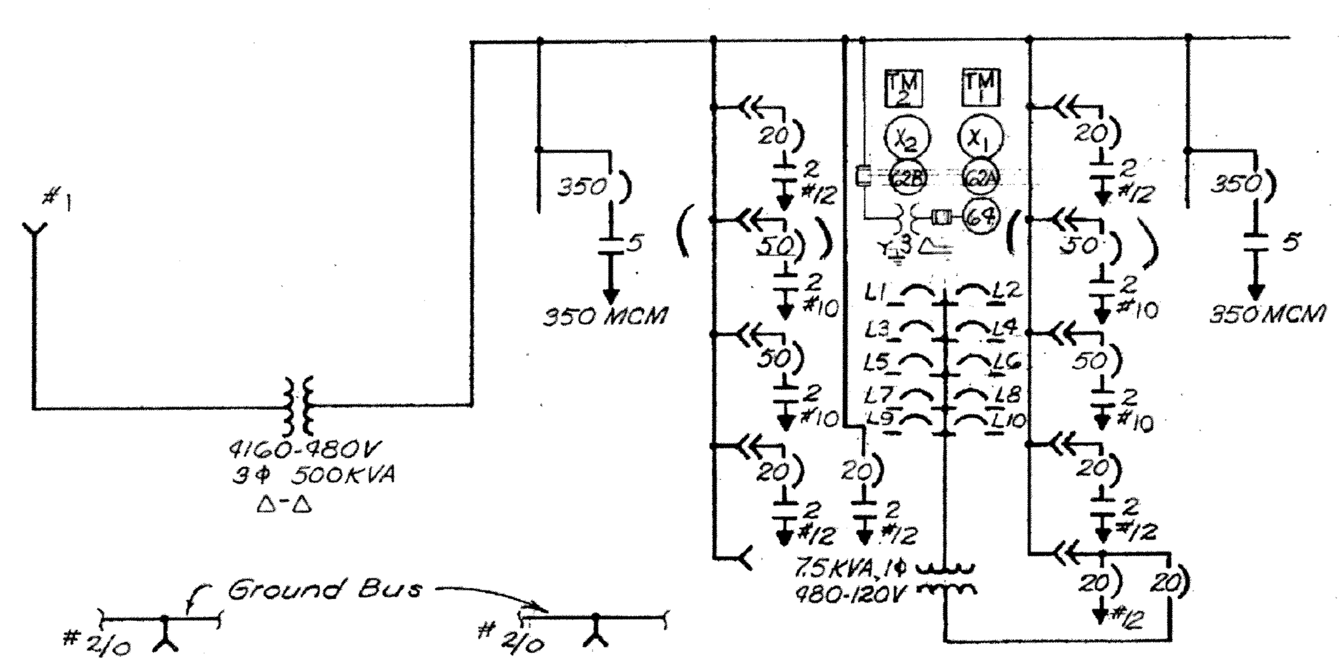
FINAL

CORPS OF ENGINEERS

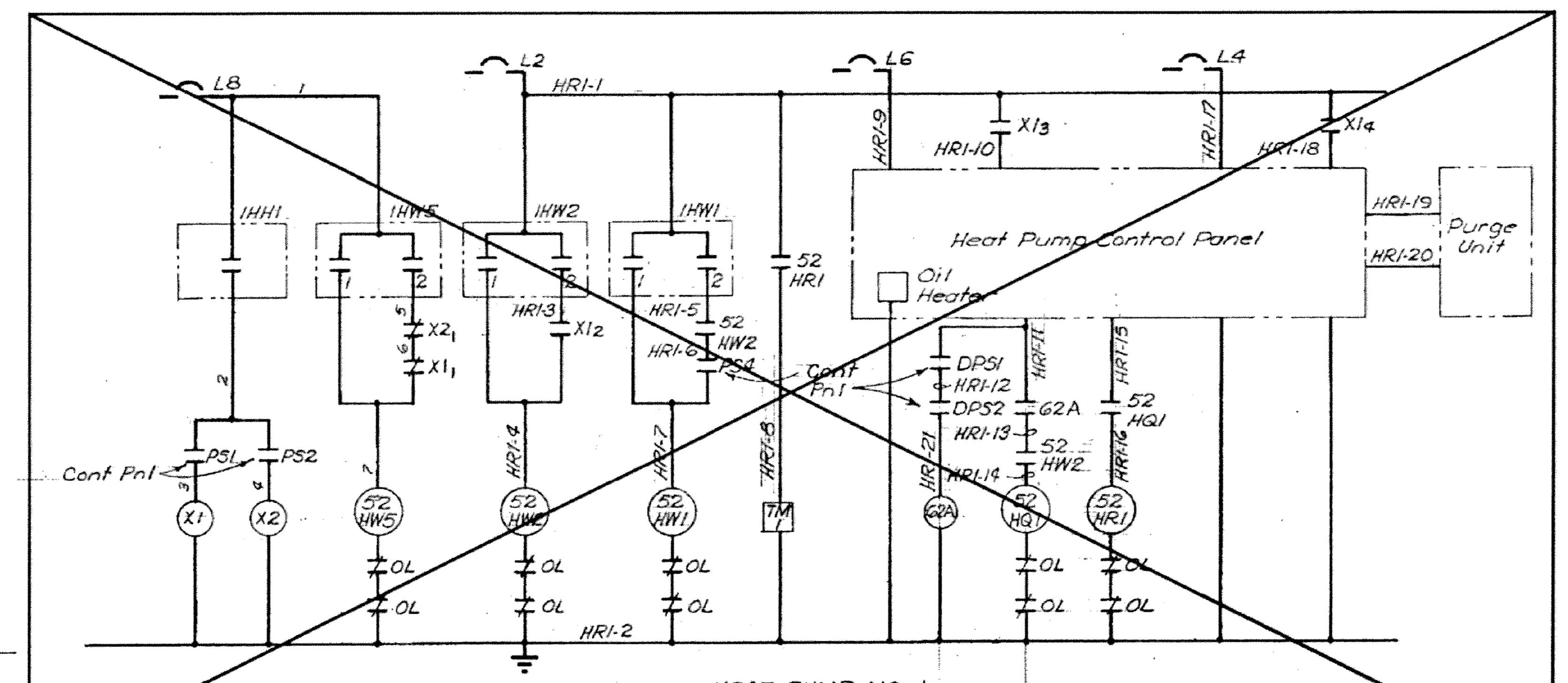
U. S. ARMY



FRONT VIEW



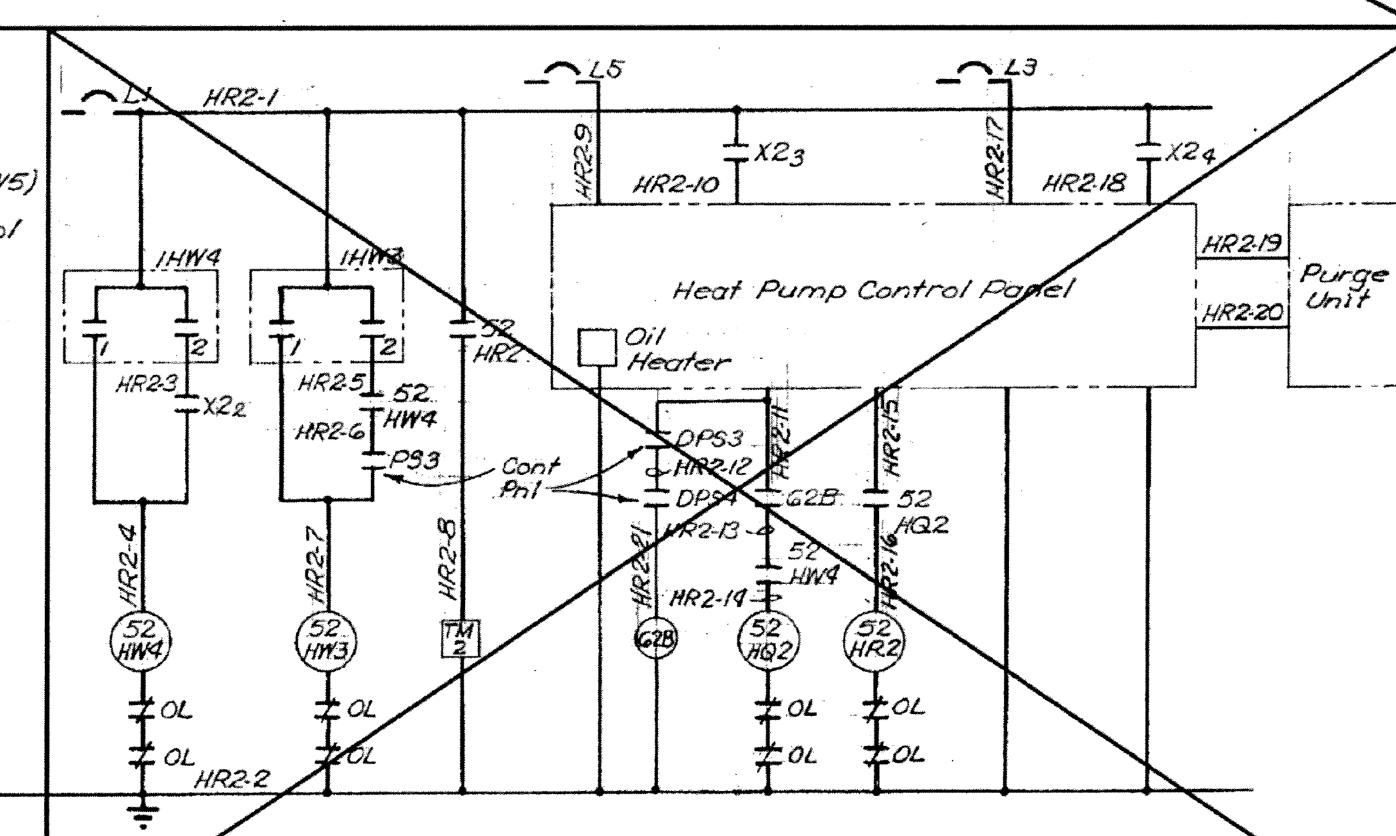
ONE LINE DIAGRAM



MASTER CONTROL

HEAT PUMP NO. 1

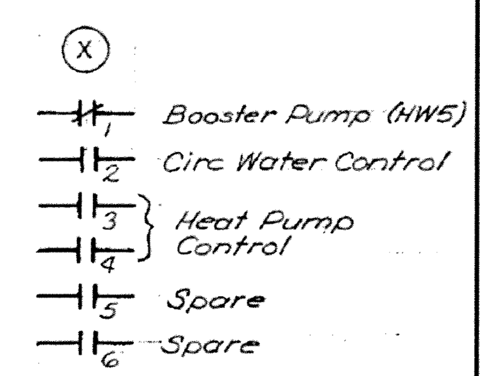
SCHEMATIC DIAGRAM



HEAT PUMP NO. 2

SCHEMATIC DIAGRAM

SUPERSEDED BY CONTRACT 05-C-0013, SEE LPG-1-6-18/5



1HW6	INTER COOLING W PUMP
1HW5	BOOSTER WATER PUMP
1HW4	CIRC WATER PUMP P4
1HW3	SUPPLY WATER PUMP P3
1HW2	CIRC WATER PUMP P2
1HW1	SUPPLY WATER PUMP P1

(1) OFF / ON / AUTO — Maintained Contacts

CONTACT	ON	OFF	AUTO
1	X		
2			X

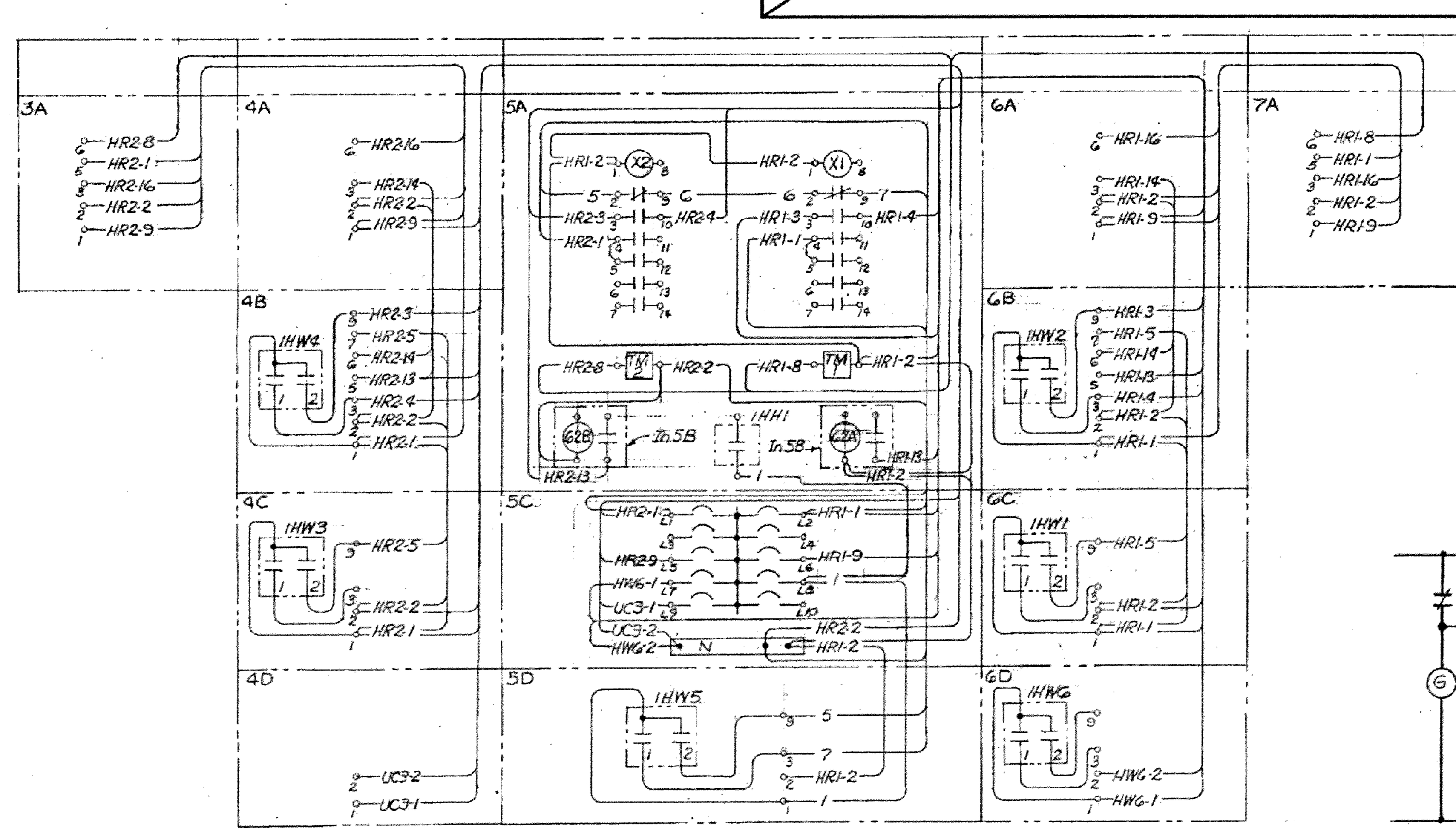
1HH1	HT PUMP MASTER SW

(1A) OFF / ON — Maintained Contacts

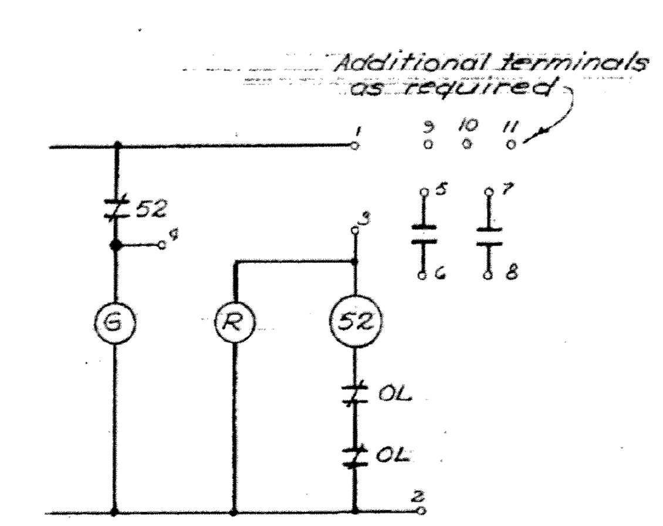
CONTACT	ON	OFF
1	X	

NAMEPLATE SCHEDULE		
NO.	FIRST LINE	SECOND LINE
1	TERMINAL	SECTION
2	TRANSFORMER	SECTION
3A	COMPRESSOR	UNIT NO. 2
4A	OIL PUMP	UNIT NO. 2
4B	CIRCULATING	WATER PUMP P-4
4C	HEAT PUMP SUPPLY	WATER PUMP P-3
4D	UNIT CONDITIONER	UC-3
4E	None (See Note 4)	
5A1	TIME METER	HEAT PUMP 2
5A2	TIME METER	HEAT PUMP 1
5A3	AUXILIARY RELAY	X2
5A4	AUXILIARY RELAY	X1
5B	POT TRANS	GROUND RELAY
5C	CONTROL	BREAKERS
5D	BOOSTER	WATER PUMP P-5
5E	480-120 V	TRANSFORMER
6A	OIL PUMP	UNIT NO. 1
6B	CIRCULATING	WATER PUMP P-2
6C	HEAT PUMP SUPPLY	WATER PUMP P-1
6D	INTER COOLING	WATER PUMP P-6
6E1	Blank	
6E2	CONTROL TRANS	SUPPLY
7A	COMPRESSOR	UNIT NO. 1
M1	SH 480 V	SWITCHGEAR

120 VOLT PANEL (5C) NAMEPLATE SCHEDULE	
NO.	FIRST LINE
L1	UNIT NO. 2
L2	UNIT NO. 1
L3	COMPRESSOR NO. 2
L4	COMPRESSOR NO. 1
L5	PURGE UNIT NO. 2
L6	PURGE UNIT NO. 1
L7	INTER COOLING PUMP
L8	MASTER CONTROL
L9	UNIT COND. UC-3
L10	(BLANK)



CONTROL CONNECTIONS



TYPICAL SCHEMATIC DIAGRAM

(See Control drawings for interconnections)

NOTES

1. For General Notes and Legend see drawing LGP-1.1-6-1A0/1.
2. Shipping dimensions shall be limited to allow passage through a 6'-0" x 10'-0" hatch.
3. Circuit breakers in the load control center shall be 3 pole except control breakers in compartment 3C shall be single pole, 20 amperes.
4. All empty compartments shall be covered with a suitable cover and available for future use.

This drawing was issued to show general design information for supply purposes and is now superseded by shop drawings listed below.

CONTR. NO.	MANUFACTURER	DWG NO.
68-0080	TRANE CO.	2301/9333
↓	TRANE CO.	2301/6205
	ITE CIR. BKR. CO.	86-0D-06387-D
	ITE CIR. BKR. CO.	86-0F-06387-B

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 1971 SEP 7 BY J R Kline

(23)

REVISION	DATE	DESCRIPTION	BY
B	6-08	AS CONSTRUCTED, NEW HEAT PUMPS	
A	71Sep7	As Constructed; changed bkr size, added Note	JRK

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY EMS
DRAWN BY DFR
CHECKED BY: DBS
PREPARED: [signature] HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
AIR CONDITIONING SYSTEM
480 VOLT SUBSTATION
SH

APPROVED: FOR DIV. ENGINEER DATE 25 Jan 68
[signature] CHIEF, ENGINEERING DIVISION

SUBMITTED: L I Fisher CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

SCALE AS SHOWN SPEC. NO.

INV. NO. ~~DACW68-68-B-0020~~

LGP-1.1-6-1A8/5

SHEET ~~71~~

~~68-C-80~~ ~~VOL. NO. II~~

FOR INFORMATION ONLY

US Army Corps of Engineers
Walla Walla District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
WALLA WALLA, WASHINGTON

DESIGNED BY: | DWN BY: | CHKED BY: | SUBMITTED BY:

DATE: 16 JULY 2009
SOLICITATION NO. 09-R-0043
CONTRACT NO. 10-C-0005
FILE NO.: LGP-1.1-6-1A8/5

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON AND IDAHO
POWERHOUSE HVAC CONTROLS UPGRADE
POWERHOUSE
AIR CONDITIONING SYSTEM
480 VOLT SUBSTATION SH

Sheet number: I-018

L:\LGA\CAD\LPHC\INFO-0*1\LPHCFIO_18.DGN

SCALE$SCALE$ USERNAME$USER$

US Army Corps of Engineers

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

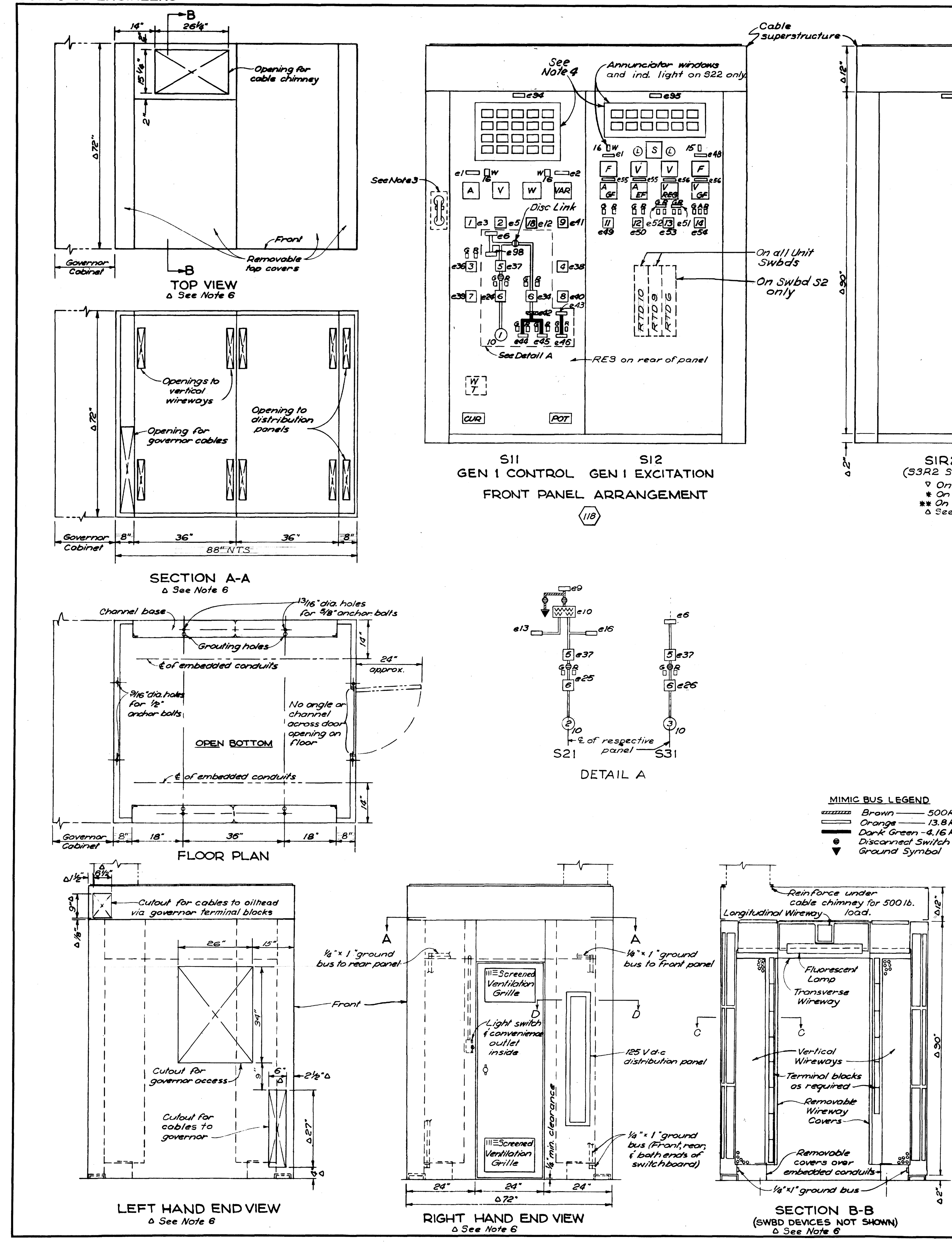
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

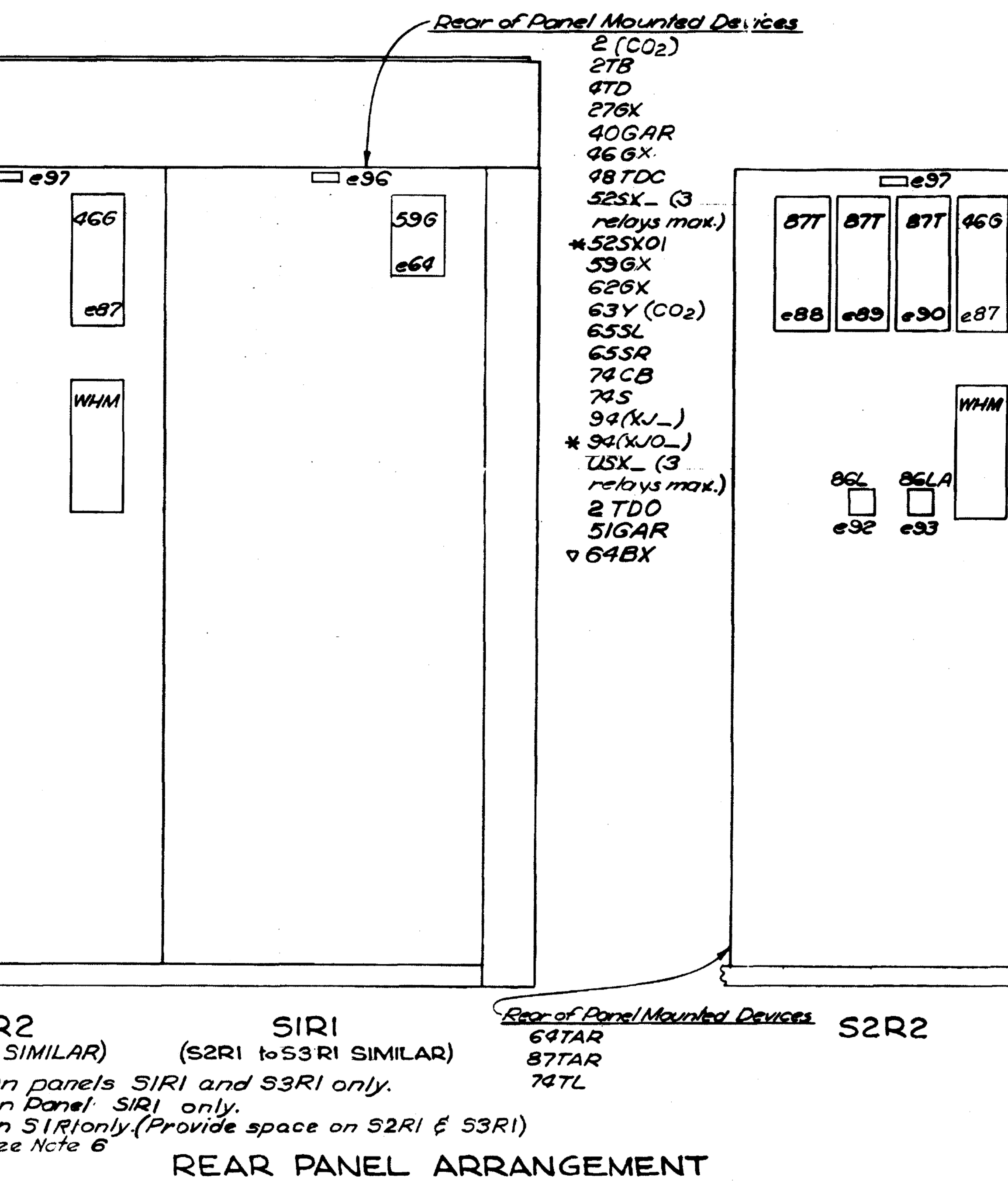
DESIGNED BY: | DRAWN BY: | CHECKED BY: | SUBMITTED BY:
SIZE: ANSI D | FILENAME: R-040.dgn

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
AIR CONDITIONING SYSTEM
480 VOLT SUBSTATION
SH

SHEET ID
R-040

FINAL





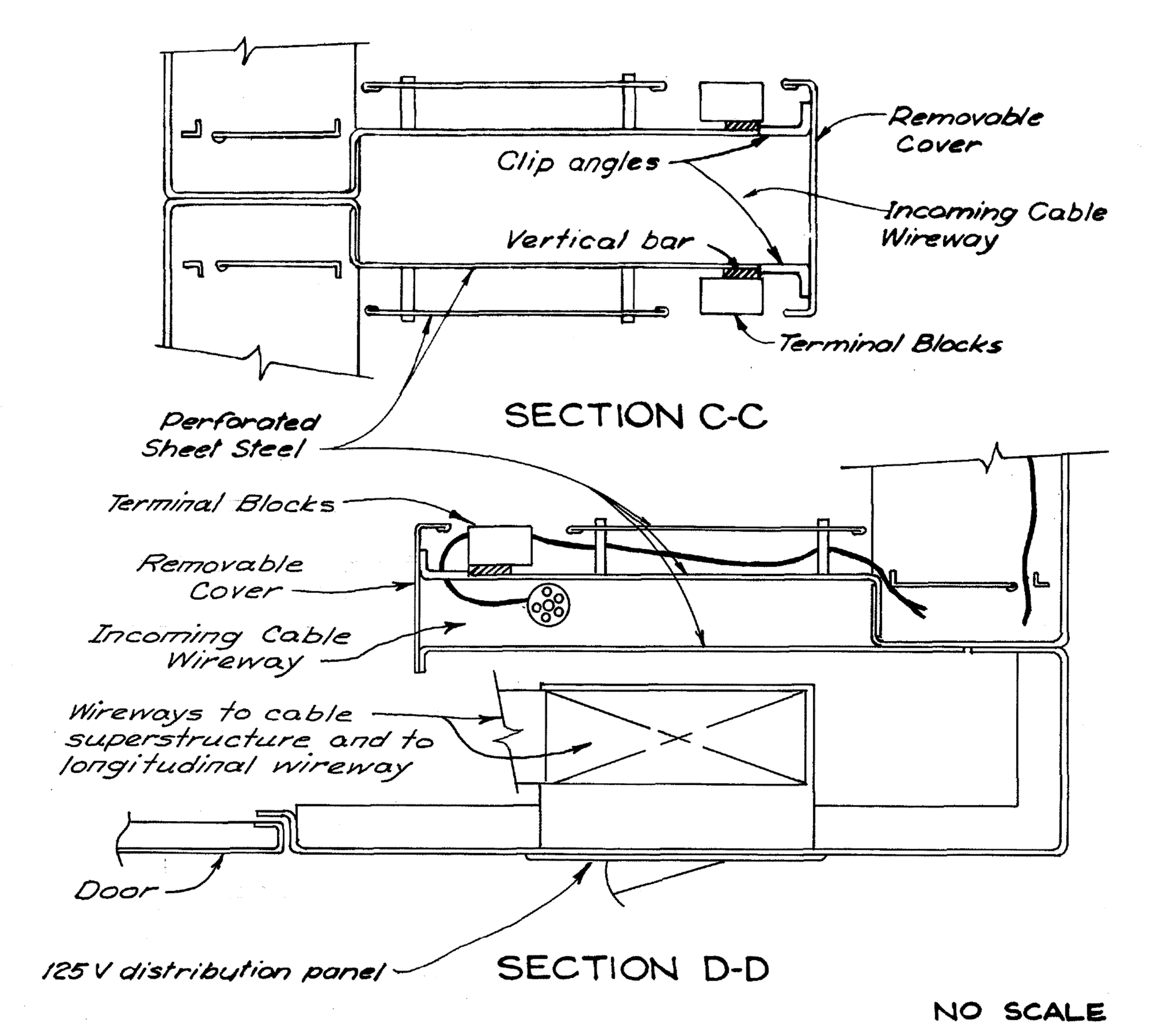
NOTES (CONT'D.)

6. All dimensions marked Δ shall not be changed. These dimensions are required for proper lineup with adjacent governor cabinet.

7. Dashed lines indicate rear of panel mounted equipment.

THIS DRAWING WAS ISSUED TO SHOW GENERAL DESIGN INFORMATION FOR SUPPLY PURPOSES AND IS NOW SUPERSEDED BY SHOP DRAWINGS LISTED BELOW.

CONTR. NO.	MANUFACTURER	DWG. NO.
GG-261	UP & CS	6586-1CD
" "	" "	6586-1ABCD
" "	" "	6585M, Sh 1, 2 & 3
" "	" "	6585-ABCD



NOMENCLATURE

CONTROL AND EXCITATION PANEL

A	Ammeter	V	Voltmeter
AEF	Ammeter, Exc Field	VAR	Varmeter
AGF	Ammeter, Gen Field	VGF	Voltmeter, Gen Field
F	Frequency Meter	VREG	Voltmeter, Regulator
(L)	Synchronizing Lamp	W	Wattmeter or White Light
S	Synchroscope	WHM	Watthourmeter
	Indicating Lamp, W-White, G-Green, R-Red, A-Amber	WT	Watt Transducer
		VAR T	Var Transducer
		RTD-10, 8 or 6	RTD Bridge Chassis, numeral indicates number of bridges

1. Ammeter Switch
2. Voltmeter Switch
3. Auto-Start-Stop Switch
4. Emergency Stop Switch (5)
5. Synchronizing Switch
6. Circuit Breaker Control Switch
7. Local-Central-Central Test Transfer Switch (43)
8. Annunciator Reset Switch
9. Annunciator Silence Switch
10. Generator Symbol Light
11. Field Breaker Control Switch
12. Voltage Adjust Rheostat Control Switch
13. Voltage Regulator Transfer Switch
14. Exciter Field Rheostat Control Switch
15. CO2 System Indicating Light
16. Annunciator or Horn Source Indicating Lamp
17.
18. Clearance Switch

RELAY PANELS (REAR PANELS)

AR	Alarm Relay	TD	Time Delay
G	Generator, Green	URX	Unit Run Relay
L	Lower, Line	USX	Unit Selector Relay
		W	White
R	Raise, Red	X,Y,Z	Auxiliary Relay
T	Transformer, Trip, Transducer	TDC	Time Delay Close
XJ_	Generator Breaker	XJO_	Sta. Serv. Trans Breaker

- B Bus
- 2 Time Delay Relay
- 3 Unit Start Interlock Relay
- 4 Master Relay
- 27 Voltage Relay
- 40 Loss of Excitation Relay
- 46 Negative Phase Sequence Relay
- 48 Incomplete Sequence Relay
- 51 Overcurrent Relay
- 52 A-C Circuit Breaker or Contactor
- 52SX_ Circuit Breaker Selector Relay
- 59 A-C Overvoltage Relay
- 62 Time Delay Stopping Relay
- 63 Liquid or Gas Pressure Relay
- 64 Overcurrent Ground Relay
- 65 Governor
- SL Speed Adjust, Lower Relay
- SR Speed Adjust, Raise Relay
- 74 Alarm Relay, S-Centralized Start, CB & TL Unit Control Bus and Trans & Line Control Bus Undervoltage Relay
- 86 Lockout Relay, GT-Gen Time Shutdown
- 87 Differential Relay
- 94 Tripping Relay

NOTES

1. For detailed requirements of nameplates refer to nameplate engraving schedule drawing.
2. Ground lug for 2/0 stranded copper cable to be supplied with switchboard behind Panel S11. Lugs to be Burndy type NA or approved equal.
3. Telephone to be furnished and installed by Government.
4. Annunciator engraving as shown on LGP-1-6-9A31/1.
5. Details of construction are typical. Changes to conform to manufacturer's standard practice will be permitted provided that the specific requirements on the drawings and in the specifications are complied with.

REFERENCE DRAWINGS

LGP-1.1-6-9A23/1	CONTROL SOURCES ONE LINE DIAGRAM
LGP-1.1-6-9A28/1	AUTOMATIC SYNCHRONIZING SCHEMATIC DIAG.
LGP-1.1-6-9E24/1	MAIN UNIT CONTROL SCHEMATIC DIAG SH. 1
LGP-1.1-6-9E24/2	MAIN UNIT CONTROL SCHEMATIC DIAG SH. 2
LGP-1.1-6-9E24/3	VOLTAGE REGULATOR SCHEMATIC DIAGRAM
LGP-1.1-6-9A31/1	MAIN UNIT ANNUNCIATOR SCHEMATIC DIAG

This drawing was issued as drawing LGP-1-6-9E4/1 for procurement of Government furnished equipment. It will be superseded by manufacturer's drawing 6586-1CD as soon as "Approved for Construction" tracings are available.

118 124 52 Incl as required 88

REVISION	DATE	DESCRIPTION	BY
A	11 Sep 7	Superseded, see above	JCC

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: WWM
DRAWN BY: REB
CHECKED BY: J.C.
PREPARED:
SUBMITTED: L. Fisher, CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
GENERATOR SWITCHBOARDS
S1-S3

APPROVED: FOR DIV. ENGINEER DATE 25 Jan 68
SCALE AS SHOWN SPEC. NO.
68-C-80
LGP-1.1-6-9E4/1
SHEET 61

NO SCALE

INV. NO. DACW68-68-B-0029 VOL. NO. II

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: | DRAWN BY: | CHECKED BY: | SUBMITTED BY: | SIZE: ANSI D
ISSUE DATE: AUGUST 2022 | SOLICITATION NO.: W912EF22B0001 | CONTRACT NO.: | DRAWING NUMBER: | FILENAME: R-041.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

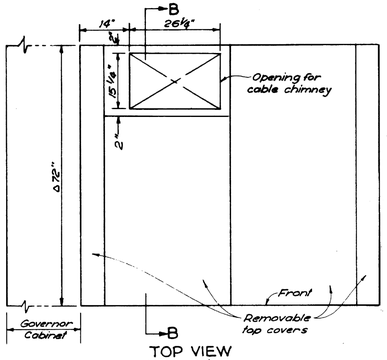
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
GENERATOR SWITCHBOARDS
S1-S3

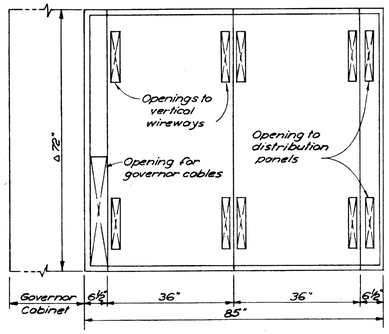
SHEET ID
R-041

FINAL

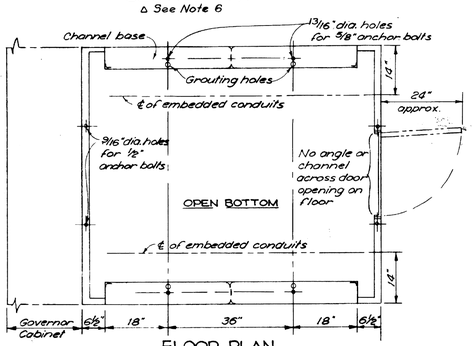
CORPS OF ENGINEERS — U. S. ARMY



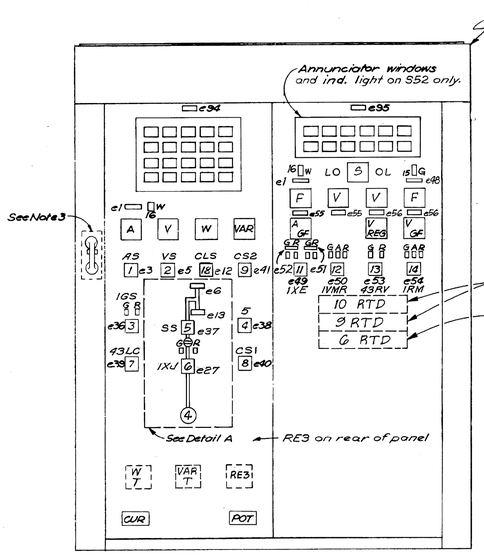
TOP VIEW
△ See Note 6



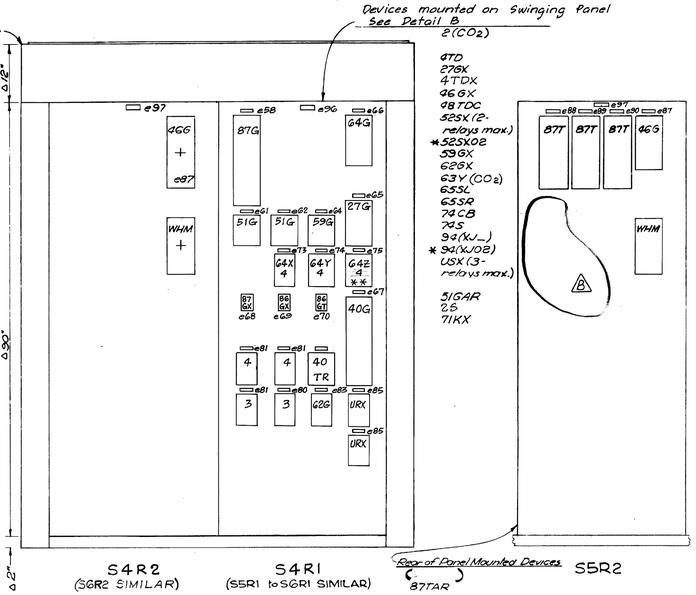
SECTION A-A
△ See Note 6



FLOOR PLAN

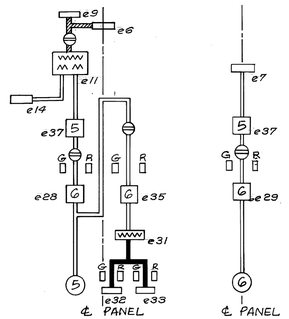


FRONT PANEL ARRANGEMENT
(S5 & SG Similar)

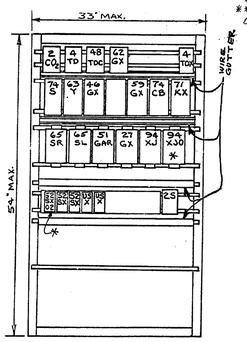


* On Panel S5R1 only
** On Panel S4R1 & S5R1 only
△ See Note 6

REAR PANEL ARRANGEMENT

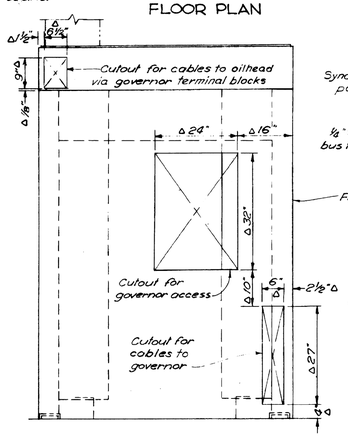


DETAIL A

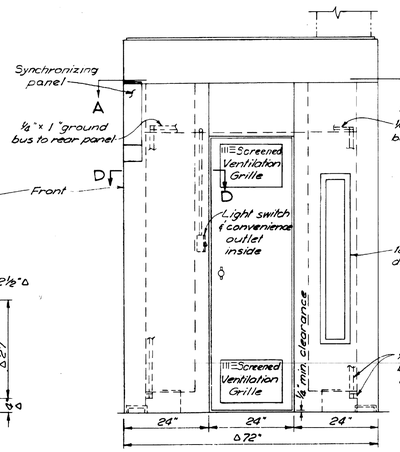


DETAIL B

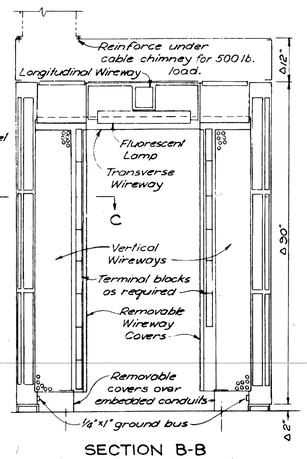
MIMIC BUS LEGEND
- Brown — 500KV
- Orange — 13.8KV
- Dark Green - 4.16 KV
- Disconnect Switch
- Ground Symbol (White)



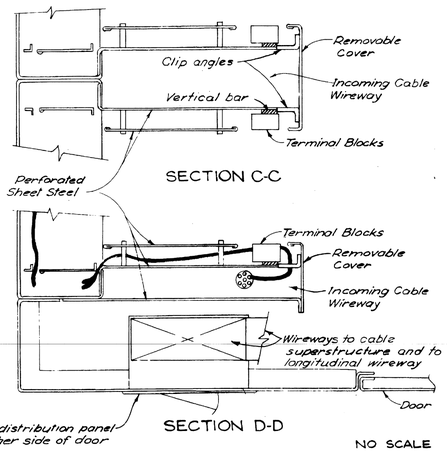
LEFT HAND END VIEW
△ See Note 6



RIGHT HAND END VIEW
△ See Note 6



SECTION B-B
(SWBD DEVICES NOT SHOWN)
△ See Note 6



NO SCALE

NOMENCLATURE

CONTROL AND EXCITATION PANEL

A	Ammeter	V	Voltmeter
AEF	Ammeter, Exc Field	VAR	Varmeter
AGF	Ammeter, Gen Field	VGF	Voltmeter, Gen Field
F	Frequency Meter	VRGS	Voltmeter, Regulator
(L)	Synchronizing Lamp	W	Wattmeter or White Light
S	Synchroscope	WHM	Watthourmeter
	Indicating Lamp, W-White, G-Green, R-Red, A-Amber	WT	Watt Transducer
		VART	Var Transducer
		RTD	Res Temp Dev Sensors

1. Ammeter Switch
2. Voltmeter Switch
3. Auto-Start-Stop Switch
4. Emergency Stop Switch
5. Synchronizing Switch
6. Circuit Breaker Control Switch
7. Local-Central-Central Test Transfer Switch
8. Annunciator Reset Switch
9. Annunciator Silence Switch
10. Generator Symbol Light
11. Field Breaker Control Switch
12. Voltage Adjust Control Switch
13. Voltage Regulator Transfer Switch
14. Exciter Field Rheostat Control Switch
15. CO_2 System Indicating Light
16. Annunciator Indicating Light
17.
18. Clearance Switch

RELAY PANELS (REAR PANELS)

AR	Alarm Relay	TD	Time Delay
G	Generator, Green	URX	Unit Run Relay
L	Lower, Line	USX	Unit Selector Relay
B	Bus	W	White
R	Raise, Red	X,Y,Z	Auxiliary Relay
T	Transformer, Trip, Transducer	TDC	Time Delay Close
XJ_	Generator Breaker	XJO_	Sta Serv Trans Breaker

2 Time Delay Relay
3 Unit Start Interlock Relay
4 Master Relay
27 Voltage Relay
40 Loss of Excitation Relay
46 Negative Phase Sequence Relay
47 Incomplete Sequence Relay
51 Overcurrent Relay
52 A.C Circuit Breaker or Contactor
52SX Circuit Breaker Selector Relay
59 A.C Overvoltage Relay
62 Time Delay Stopping Relay
63 Liquid or Gas Pressure Relay
64 Overcurrent Ground Relay
65 Governor
SL Speed Adjust, Lower Relay
SR Speed Adjust, Raise Relay
74 Alarm Relay, S-Centralized Start, CB & TL Unit Control Bus and Trans & Line Control Bus Undervoltage Relay
86 Lockout Relay, GT-Gen Time Shutdown
87 Differential Relay
94 Tripping Relay

NOTES (CONT'D.)

6. All dimensions marked △ shall not be changed. These dimensions are required for proper lineup with adjacent governor cabinet.
7. Dashed lines indicate rear of panel mounted equipment.

NOTES

1. For detailed requirements of nameplates refer to nameplate engraving schedule drawing.
2. Ground lug for 2/0 stranded copper cable to be supplied with switchboard behind Panel S41. Lugs to be Burndy type NA or approved equal.
3. Telephone to be furnished and installed by Government.
4. Annunciator engraving as shown on 9A31/1.
5. Details of construction are typical. Changes to conform to manufacturer's standard practice will be permitted provided that the specific requirements on the drawings and in the specifications are complied with.

REFERENCE DRAWINGS

9A23/1	CONTROL SOURCES ONE LINE DIAGRAM
9A28/1	AUTOMATIC SYNCHRONIZING SCHEM. DIAG
9G24/1	MAIN UNIT CONTROL SCHEMATIC DIAG
9G24/2	UNIT, TRANSFORMER & LINE RELAYING
9G24/3	VOLTAGE REGULATOR SCHEMATIC DIAGRAM
9A31/1	MAIN UNIT ANNUNCIATOR SCHEMATIC DIAG
9A29/2	UNIT & BREAKER SELECT

REVISION	DATE	DESCRIPTION	BY
B	76Sep1	Removed 86L, 64T, & 64TAR	JCC
A	75Aug29	Minor Revisions	JCC

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND, OREGON

DESIGNED BY: WWM
DRAWN BY: E.J.
CHECKED BY: J.C.C.
PREPARED: Kyle P. Nelson, HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE UNITS 4-6
ELECTRICAL EQUIPMENT
GENERATOR SWITCHBOARDS
S4 - S6

SUBMITTED: D. F. MacDonald, CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER — DATE 1975 APR 3
Chief, Engineering Division

SCALE AS SHOWN | SPEC. NO. 74-B-09

LGP-5-6-9G4/1
SHEET 34

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R042.dgn
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

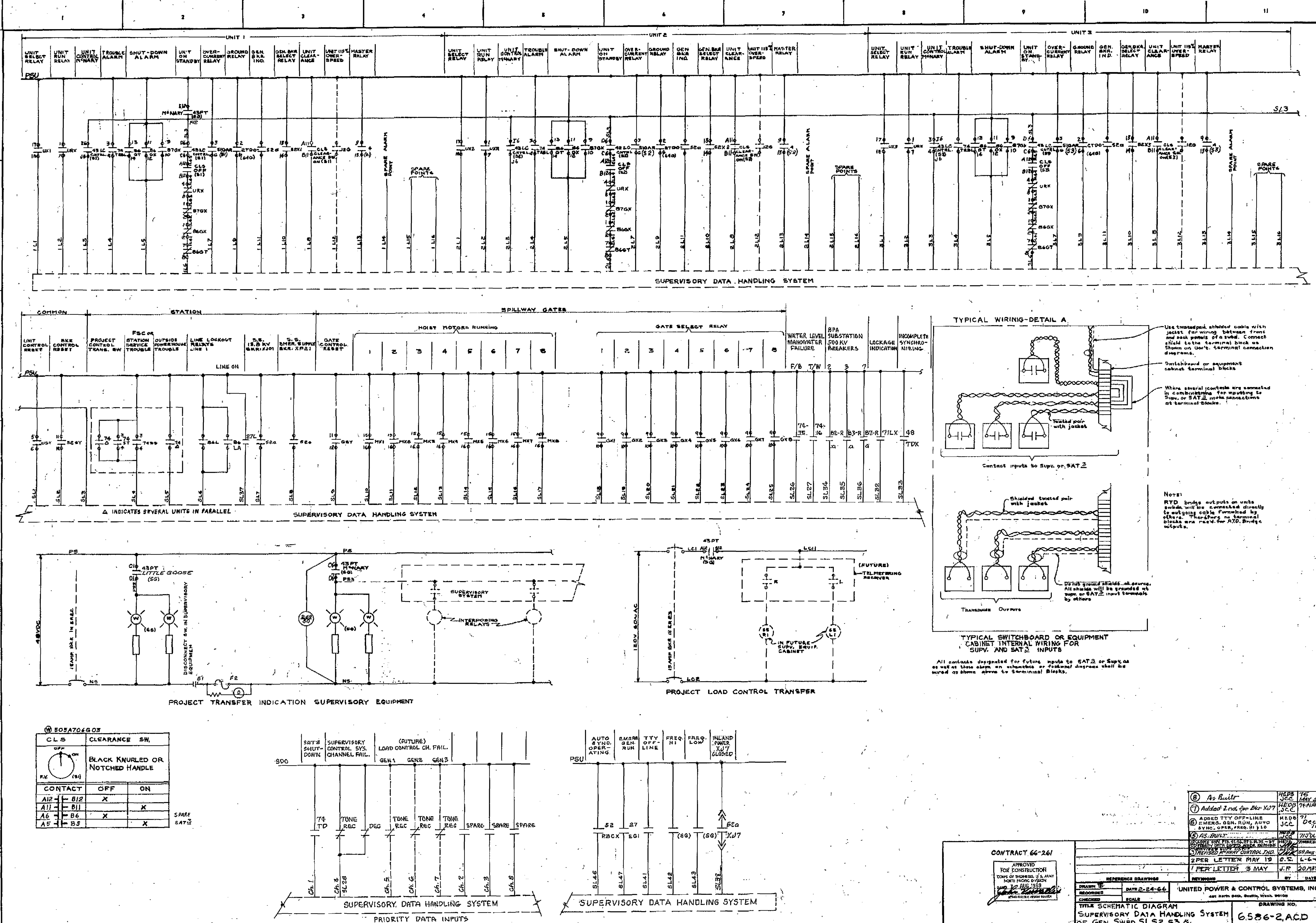
U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
GENERATOR SWITCHBOARDS
S4-S6

SHEET ID
R-042

FINAL



Rev.	Revisions	By	Date
8	As Built	HEDB JCC	75 MAY 9
7	Added Ind. for Bkr XJ7	HEDB JCC	74 AUG 12
6	ADDED TTY OFF-LINE EMERG. GEN. RUN, AUTO SYNC. OPER, FREQ. HI & LO	HEDB JCC	71 Dec 10
5	AS BUILT	HEDB JCC	71 JUL 21
4	ADDED SUPV. PTS. SL26, 27 & SL32 – 37 PRIORITY DATA INPUTS, MINOR REVISIONS	HEDB	70 MAR 24
3	REVISED SUPV. CKTS. REVISED McNARY CONTROL IND.	HEDB	69 Aug 6
2	PER LETTER MAY 19	C.S.	6-6-67
1	PER LETTER 3 MAY	J.P.	20 MAY 66

REFERENCE DRAWINGS

CONTRACT 66-261

APPROVED FOR CONSTRUCTION
CORPS OF ENGINEERS, U.S. ARMY NORTH PACIFIC DIVISION
DATE 12 AUG 1969
HYDRO-ELECTRIC DESIGN BRANCH

DRAWN
RECORDED
CHECKED
DATE 2-24-66
SCALE

UNITED POWER & CONTROL SYSTEMS, INC.
4411 North 34th, Seattle, Wash. 98103

TITLE SCHEMATIC DIAGRAM
SUPERVISORY DATA HANDLING SYSTEM OF GEN. SWBD. S1, S2, S3 & AUX. CONTROL SWBD ER21

DRAWING NO. 6586-2, ACD
REV. 8 SH 2 OF 7

LITTLE GOOSE LOCK AND DAM
66-C-261
77

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-043.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

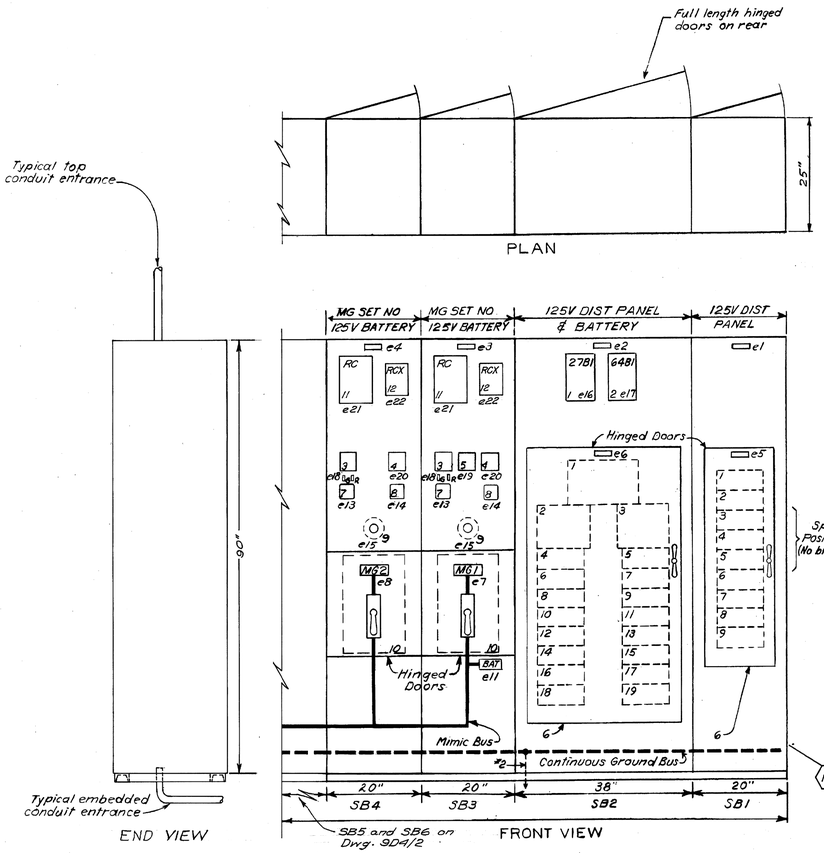
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

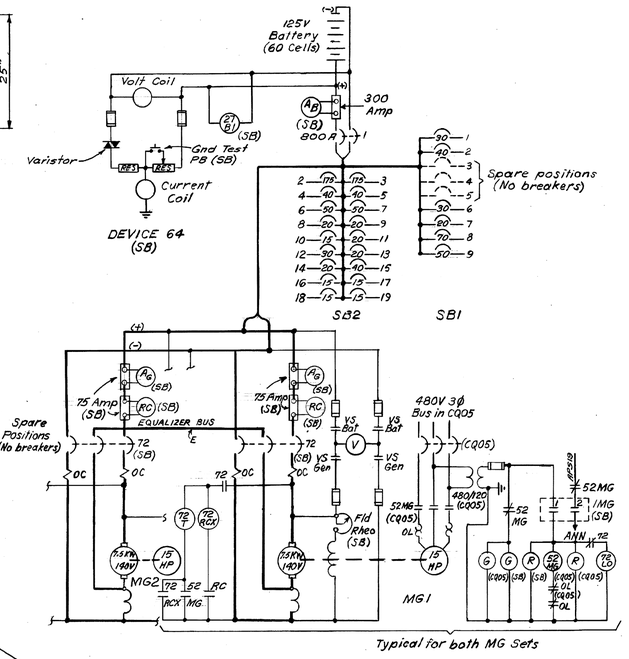
SUPERVISORY DATA HANDLING SYSTEM OF GEN. SWBD. S1, S2, S3 & AUX. CONTROL SWBD ER21

SHEET ID
R-043

FINAL

CORPS OF ENGINEERS — U. S. ARMY





BATTERY CHARGERS AND 125V DISTRIBUTION PANELBOARDS DIAGRAM

CIRCUIT BREAKER SCHEDULE

	PNL NO	CKT NO	DESIGNATION	CIRCUIT RATING VOLTS	WIRE SIZE	BREAKER RATING VOLTS	FRAME	TRIP	NO POLE	CONDUIT SIZE	CONDUIT For B
*	SB2	1	Battery Main 125 volt	125 DC	2-500 MCM	250	800	INST. ONLY	2	3"	B
*		2	Unit Switchboards S & SU Feeder #1		2c # 3/0		400	175			T
*		3	Unit Switchboards S & SU Feeder #2		2c # 3/0		400	175			T
*		4	SP Swgr Bus #1 Control		2c #8		100	40			T
*		5	SP Swgr Bus #2 Control		2c #8			40			T
*		6	Electrical Equip Room Fdr #1		2c # 12/22			50			T
*		7	Electrical Equip Room Fdr #2		2c # 12/22			50			T
*		8	TOI Relaying		2c # 12/25			20			T
*		9	Station Service Common Control		5c-12/25			20			T
		10	Station Service Annunciators					15			
		11	Spare Breaker (Fut. TOI Relaying)					20			
		12	900 Breaker Control		2 # 12/22			30			T
		13	900 Fdr Brks & BA Lights		2 # 12/25			20			T
		14	Spare Breaker					20			
		15	Inverter Breaker					10			T
		16	CO_2 Control Oil Rooms		2 # 12/25			15		3/4"	B
		17	CO_2 Control Sta Ser Trans		2 # 12/25			15		3/4"	B
		18	CO_2 Control Paint Storage		2 # 12/25			15		3/4"	B
		19	CO_2 Gravity Oil Tank Room		2 # 12/25			15		3/4"	T
*	SB3	1	Generator Breaker	125 DC	3 # 4	250	225	(Adj) set at 75	3	1 1/4"	B
*	SB4	1	Generator Breaker	125 DC	3 # 4	250	225	(Adj) set at 75	3	1 1/4"	B
	SB1	1	Spare Breaker			250	100	30	2		
		2	Meter Room & Maintenance Shop	125 DC	2 # 8			40		1"	B
		3	Spare Position (No Breaker)								
		4									
		5									
		6	Spare Breaker					30			
		7	Spare Breaker					20			
		8	Emergency Lights Station Service		2 #6			70		1 1/4	B
		9	SP Switchgear Test Station		2c # 12/22			50			T

* With bell alarm
** T = Top
** B = Bottom

THIS DRAWING WAS ISSUED TO SHOW GENERAL DESIGN INFORMATION FOR SUPPLY PURPOSES AND IS NOW SUPERSEDED BY SHOP DRAWINGS LISTED BELOW.

CONTR. NO.	MANUFACTURER	DWG. NO.
65 - 150	Rundell Elect. Company	A-2774 - 1D4 A-2774 - 2D4 A-2774 - 1X4

DEVICE PANEL DESIGNATION	eNO	DET	LETTER SIZE	ENGRAVING (Also see Dwg. 9D4/2) TITLE	LINE 1 OR POSITION 1	LINE 2 OR POSITION 2	LINE 3 OR POSITION 3	PANELS
PANEL DESIGNATION	1	A	#4		SB1	125V DISTRIBUTION	125V BATTERY	SB1
	2				SB2	125V DISTRIBUTION	125V BATTERY	SB2
	3				SB3	MG SET NO 1	125V BATTERY	SB3
	4				SB4	MG SET NO 2	125V BATTERY	SB4
	5	B	#6		DISTRIBUTION	125 VOLTS DC		SB1
	6				DISTRIBUTION	125 VOLTS DC	AND BAT MAIN	SB2
MIMIC BUS	7		#4		MG1			SB3
	8				MG2			SB4
MIMIC BUS	11	B	#4		125V BATTERY			SB3
MG MOTOR CONTROL SWITCH	13	D	#6	MG MOTOR	OFF	NORMAL	ON	SB3,4
VOLTMETER SWITCH (DC)	14	F		VOLTMETER	BAT	GEN		SB3,4
GENERATOR FIELD RHEOSTAT	15	E		GEN FIELD				SB3,4
BATTERY UNDERVOLTAGE RELAY	16	C			BAT UNDERVOLTAGE			SB2
BATTERY GND DETECTOR RELAY	17				125V BATTERY	GROUND DETECTOR		SB2
BATTERY CHARGING AMMETER	18				CHARGER AMMETER			SB3,4
BATTERY AMMETER	19				125V BATTERY			SB3
VOLTMETER	20				VOLTMETER			SB3,4
REVERSE CURRENT DEVICE	21				REVERSE	CURRENT RELAY		SB3, 4
AUX. REVERSE CURRENT RELAY	22				REVERSE CURRENT	AUX. RELAY		SB3, 4

IMG	MG CONTROL SWITCH	
Norm Off On (F.V.) (SB)	Spring return to Normal	
	POSITION	
CONTACT	OFF	NORMAL: AFTER OFF / AFTER ON / ON
1		X / X
2		X

NOMENCLATURE

IMG Control Switch
27 Undervoltage Relay
52 AC Circuit Breaker
69 Ground Protective Device
72 DC Circuit Breaker, T- Shunt Trip

A Ammeter
B Battery
BA Bell Alarm Contact
G Generator or Green
LO Lock Out
OC Overcurrent
OL Overload
RC Reverse Current Device
V Voltmeter
VS Voltmeter Switch
(CQ05) Located in Load Center CQ05
(SB) Located in Battery Swbd.

LEGEND

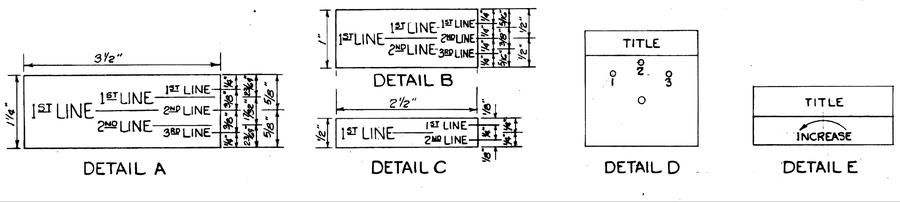
1. Undervoltage Relay
2. Ground Detector Relay
3. Charger Ammeter
4. Voltmeter
5. Battery Ammeter
6. 125 volt DC Distribution Panel
7. Motor Control Switch
8. Voltmeter Switch - 2 position
9. Generator Field Rheostat
10. Generator Breaker
11. Reverse Current Device
12. Aux. Reverse Current Relay

NOTES

1. All breakers shall be provided with thermal and instantaneous magnetic trip units except as otherwise noted.
2. All breakers on panels SB1 through SB4 must have a minimum interrupting capacity of 20,000 amperes, 250 volts DC.
3. Nameplate sizes shown are approximate. Slight deviations will be allowed to agree with manufacturers standard practice.
4. Nameplates of molded case breakers on panels SB1 and SB2 shall be engraved with the designation shown in the breaker schedule above. Blank nameplates shall be furnished for spare breakers.
5. For 48 volt battery and 48 volt MG4 see Dwg. 9D4/2.

This drawing was issued as drawing LGP-1-6-9D4/1 for procurement of Government furnished equipment. It will be superseded by manufacturer's drawings (Rundel Electric Co.) as soon as "Approved for Construction" tracings are available.

118 120 52 Incl. as req'd 88



REVISION	DATE	DESCRIPTION	BY
B	8/8/78	Replacement of Exist. SAT INVERTER	SRB
A	7/Sep 7	Superseded, see above	JCC

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY WWM
DRAWN BY REB
CHECKED BY J.C.
PREPARED: HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER OREGON, WASHINGTON & IDAHO
POWERHOUSE
BATTERY SWITCHBOARD
SB

SUBMITTED: L.I. Fisher, CHIEF, HYDRO-ELECTRIC DESIGN BRANCH
APPROVED FOR DIV. ENGINEER: Maynard Miller, CHIEF, ENGINEERING DIVISION — DATE 25 Jan 68
SCALE AS SHOWN — SPEC. NO.
68-6-68
LGP-1.1-6-9D4/1
SHEET 5.9

US Army Corps of Engineers®

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

DESIGNED BY: — ISSUE DATE: AUGUST 2022
DRAWN BY: — SOLICITATION NO.: W912EF22R0001
CHECKED BY: — CONTRACT NO.:
SUBMITTED BY: — DRAWING NUMBER:
SIZE: ANSI D — FILENAME: R044.dgn

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

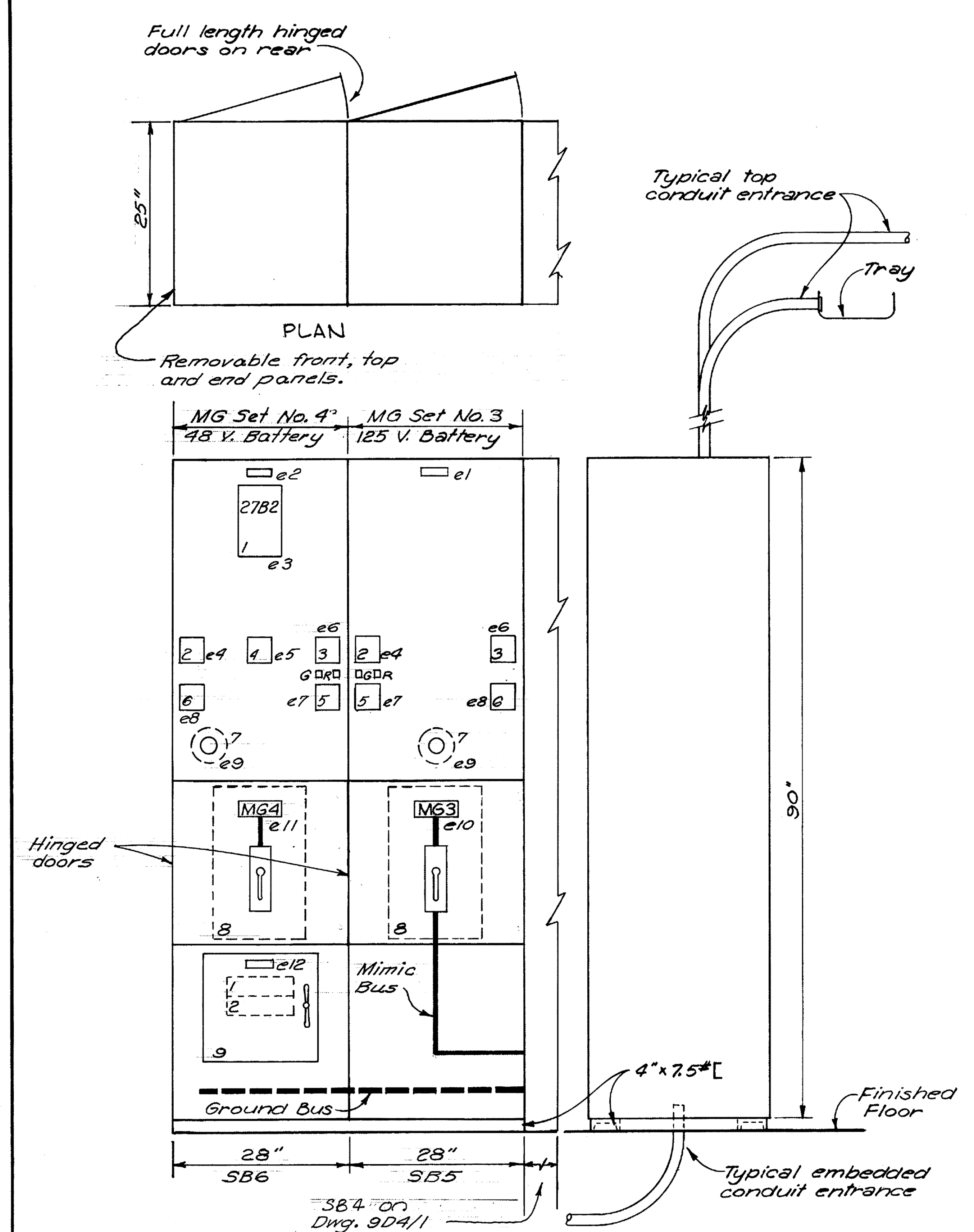
POWERHOUSE
BATTERY SWITCHBOARD
SB

SHEET ID
R-044

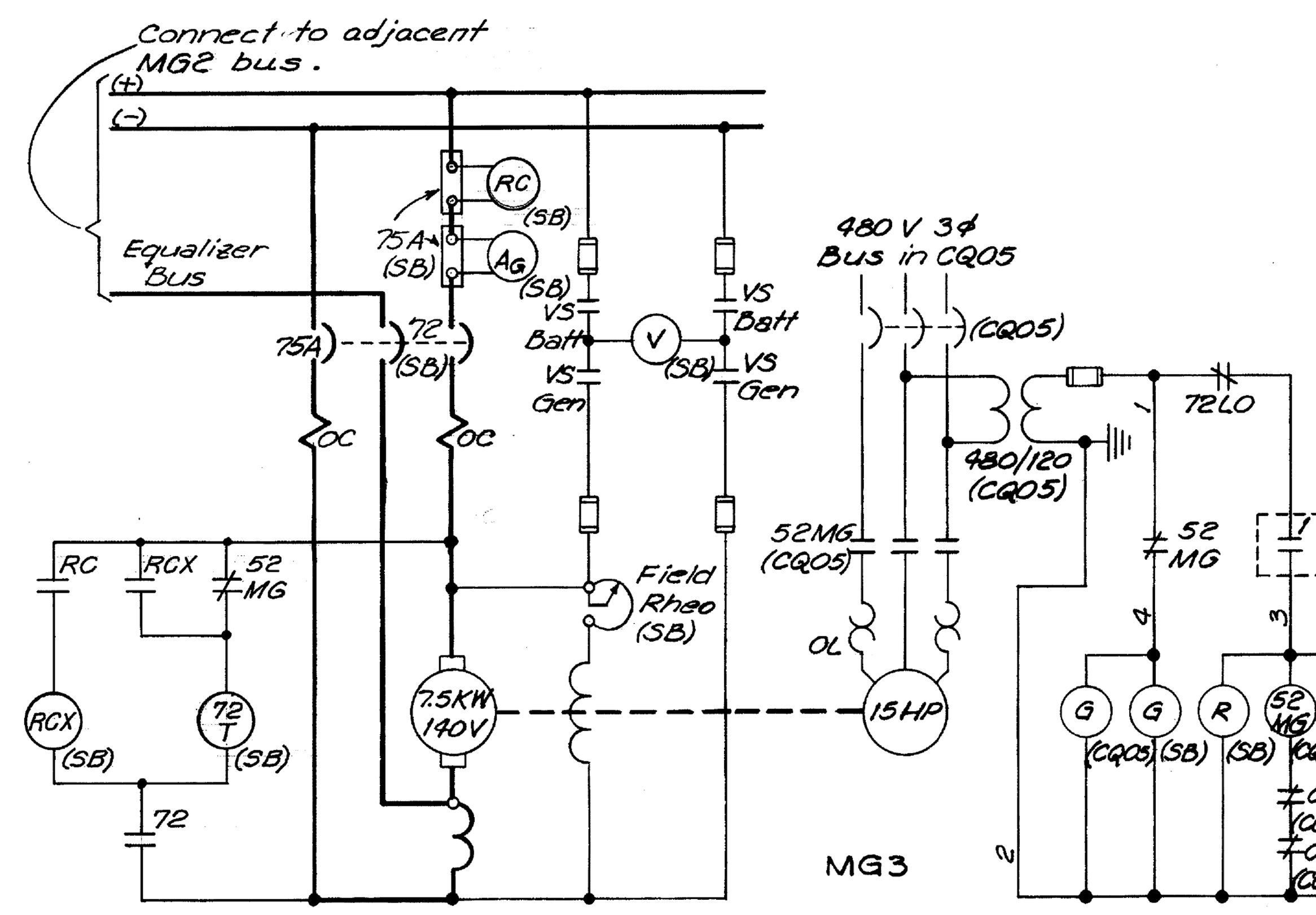
FINAL

CORPS OF ENGINEERS

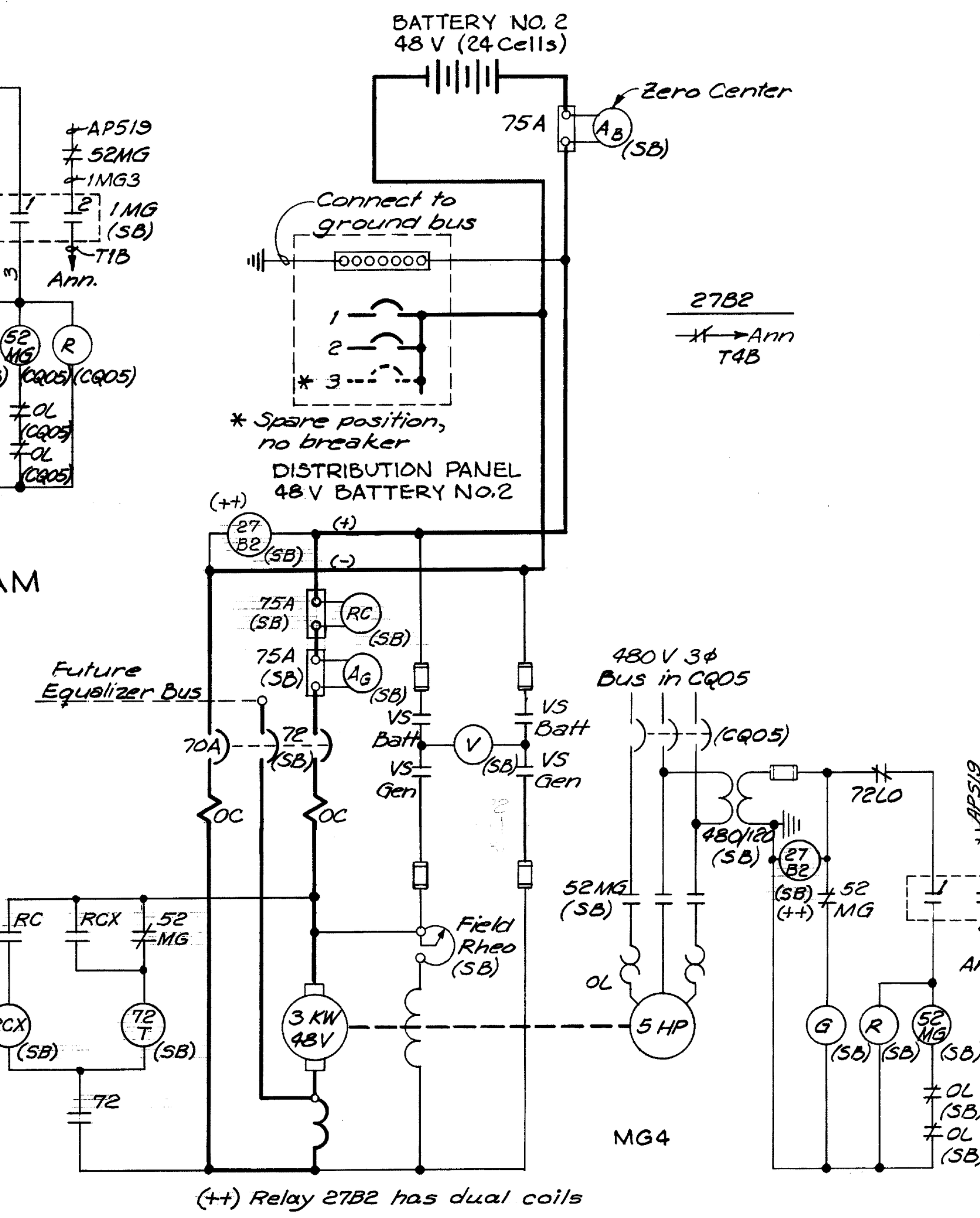
U. S. ARMY



BATTERY SWITCHBOARDS SB5 & SB6 (118)



125 V. BATTERY CHARGER CONNECTION DIAGRAM



48 V. BATTERY CHARGER CONNECTION DIAGRAM

1MG	MG CONTROL SWITCH			
NORM OFF ON	Spring return to normal			
CONTACT	POSITION			
	OFF	NORMAL		ON
		AFTER OFF	AFTER ON	
1			X	X
2			X	

NOMENCLATURE

- 1 Control Switch
- 27 Undervoltage Relay
- 52 A-C Circuit Breaker or Contactor
- 72 D-C Circuit Breaker
- A Ammeter
- B Battery
- BA Bell Alarm Contact
- G Generator or Green
- LO Lockout
- OC Overcurrent
- OL Overload
- RC Reverse Current Device
- V Voltmeter
- VS Voltmeter Switch
- (CQ05) Located in Load Center CQ05
- (SB) Located in Battery Switchboard

LEGEND

- 1 Undervoltage Relay
- 2 Charger Ammeter
- 3 Voltmeter
- 4 Battery Ammeter
- 5 Motor Control Swith
- 6 Voltmeter Switch - 2 position
- 7 Generator Field Rheostat
- 8 Generator Breaker
- 9 48 Volt D-C Distribution Panel

NOTES

1. Devices on Switchboard No.5 & 6 shall be aligned with existing switchboard devices. Device location dimension will be furnished to the successful bidder.
2. All devices located in CQ05 are furnished by others.
3. All 48 Volt D-C breakers in SB6 distribution panel shall be single-pole with 5000 Ampere minimum interrupting rating at 125 Volt D-C.

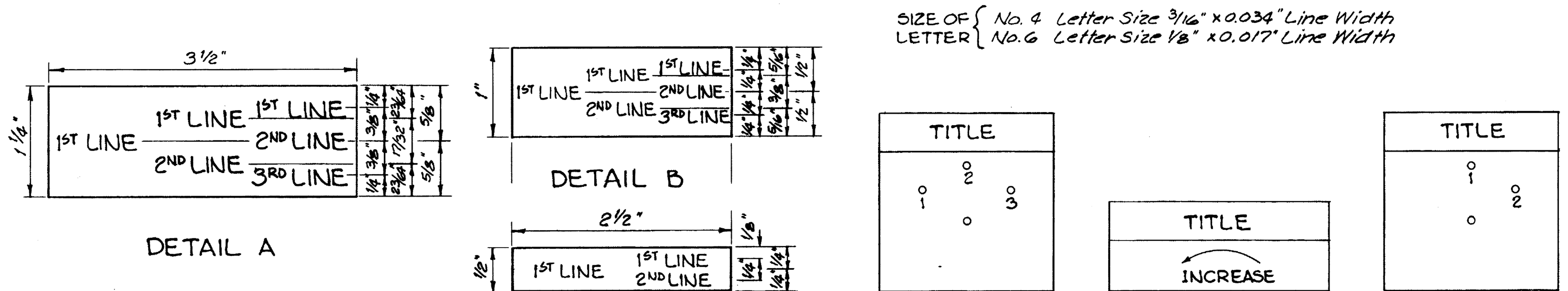
CIRCUIT BREAKER SCHEDULE									
PNL NO.	CKT NO.	DESIGNATION	CIRCUIT RATING		BREAKER RATING				
			VOLTS	WIRE SIZE	VOLTS	FRAME	TRIP	NO POLE
* SB6	1	Panel CD2 Feeder	48 DC	2#4	125	100	50 ⊛	1
* SB6	2		48 DC	2 #19/25	125	100	20 ⊛	1
SB6	3	Space						

* With bell alarm

⊛ Thermal only

DEVICE PANEL DESIGNATION	e NO.	DET	LETTER SIZE	ENGRAVING				PANEL
				TITLE	LINE 1 OR POSITION 1	LINE 2 OR POSITION 2	LINE 3 OR POSITION 3	
Panel Designation	1	A	#4	SB5	SB5	MG SET NO. 3	125 V BATTERY	SB5
Panel Designation	2	A	#4	SB6	SB6	MG SET NO. 4	48 V BATTERY	SB6
Battery Undervoltage Relay	3	C	#6		BAT UNDERVOLTAGE			SB6
Battery Charging Ammeter	4	C	#6		CHARGER AMMETER			SB5,6
Battery Ammeter	5	C	#6		BATTERY NO.2			SB6
Voltmeter	6	C	#6		VOLTMETER			SB5,6
MG Motor Control Switch	7	D	#6	MG MOTOR	OFF	NORMAL	ON	SB5,6
Voltmeter Switch (DC)	8	F	#6	VOLTMETER	BAT	GEN		SB5,6
Generator Field Rheostat	9	E	#6	GEN FIELD				SB5,6
Mimic Bus	10	B	#4		MG 3			SB5
Mimic Bus	11	B	#4		MG 4			SB6
Panel Designation	12	B	#6		DISTRIBUTION	48 VOLTS DC		SB6
Motor Contactor	13	B	#6		MOTOR CONTACTOR	MG SET NO.4		SB6

SIZE OF LETTER { No. 4 Letter Size 3/16" x 0.034" Line Width; No. 6 Letter Size 1/8" x 0.017" Line Width



DETAIL A DETAIL B DETAIL C DETAIL D DETAIL E DETAIL F

THIS DRAWING WAS ISSUED TO SHOW GENERAL DESIGN INFORMATION FOR SUPPLY PURPOSES AND IS NOW SUPERSEDED BY SHOP DRAWINGS LISTED BELOW.

CONTR. NO.	MANUFACTURER	DWG. NO.
66-261	UP & CS	65101 - 1ABC
66-261	UP & CS	65101 - 2AC

This drawing was issued as drawing LGP-1-6-9D4/2 for procurement of Government furnished equipment. It will be superseded by manufacturer's drawings 65101-1ABC & ~~65101-2AC~~ as soon as "Approved for Construction" tracings are available.

(118)(120)(52) Incl as req'd (75)

REVISION	DATE	DESCRIPTION	BY
A	71Sep7	Superseded, see above	JCC

U. S. ARMY ENGINEER DIVISION. N. P.
PORTLAND. OREGON

DESIGNED BY WWM
DRAWN BY REB
CHECKED BY J. C.
PREPARED: HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
48 & 125 V. BATTERY SWBD (SB)
& BATTERY CHARGERS

SUBMITTED: L I Fisher — CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

~~68-C-80~~

APPROVED: FOR DIV. ENGINEER DATE 25 Jan 68
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN SPEC. NO.
LGP-1.1-6-9D4/2
SHEET 60

INV. NO. DACW68-68-B-0029 VOL. NO. II

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SUBMITTED BY:
SIZE: ANSI D
FILENAME: R-045.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

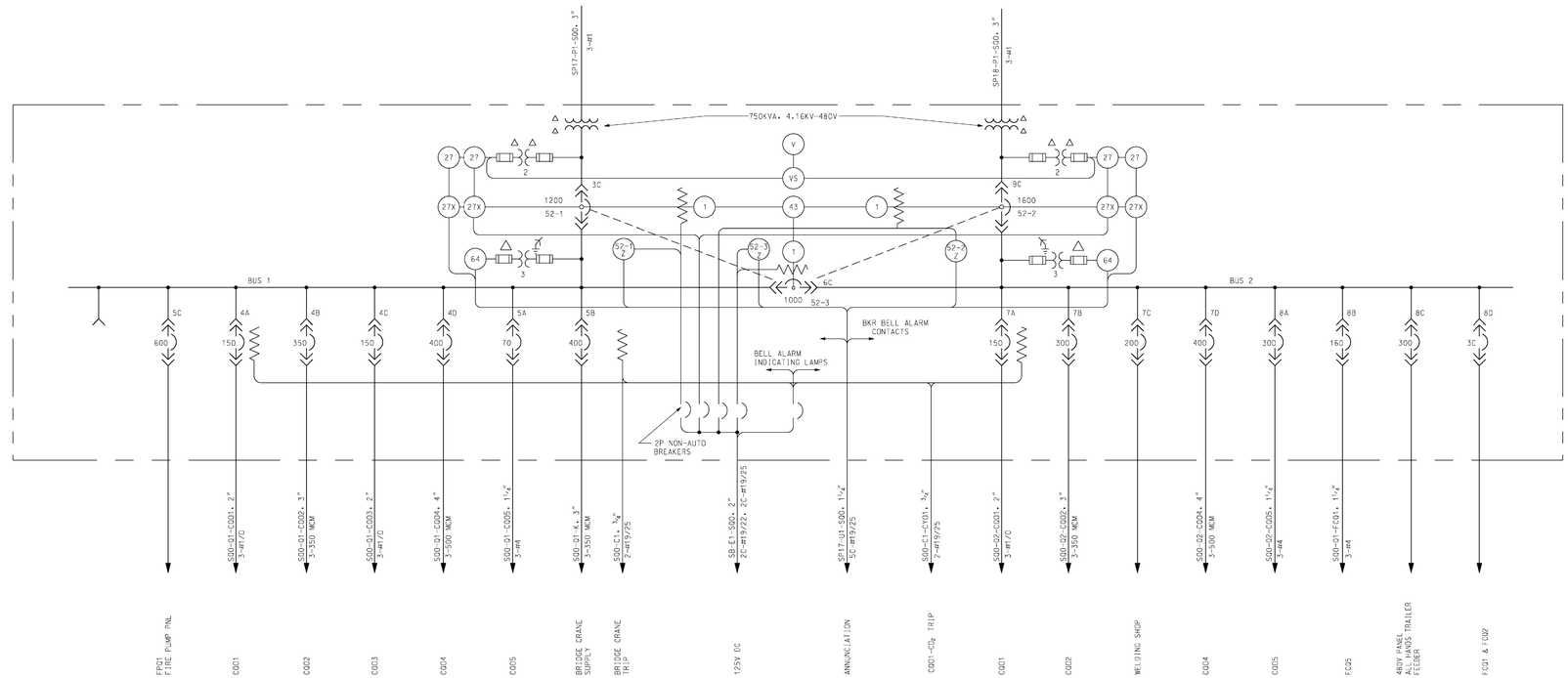
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR
POWERHOUSE
48 & 125V. BATTERY SWBD (SB
& BATTERY CHARGERS

SHEET ID
R-045

FINAL

CORPS OF ENGINEERS

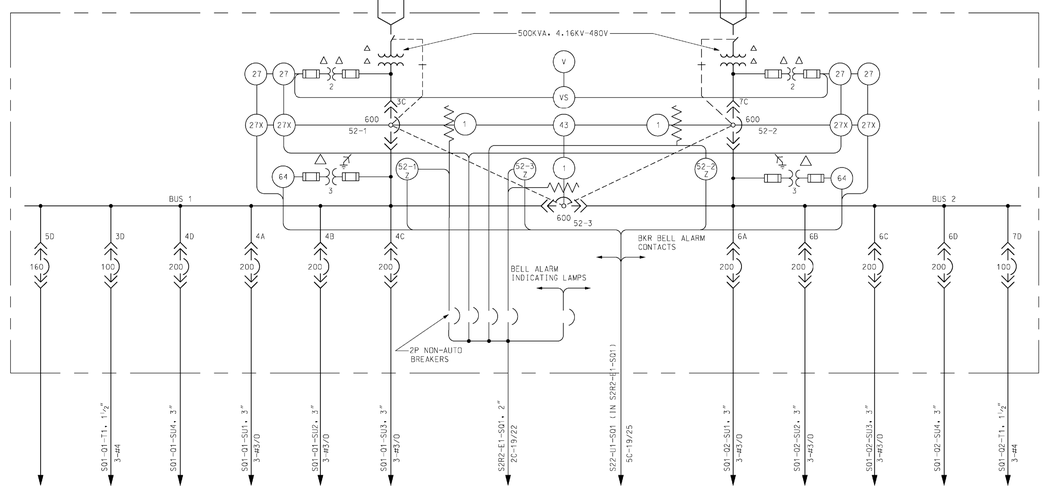
U.S. ARMY



SQ0

NOTE

1. FOR GENERAL NOTES AND LEGEND SEE DWG LGP-1.1-6-1A0/1.



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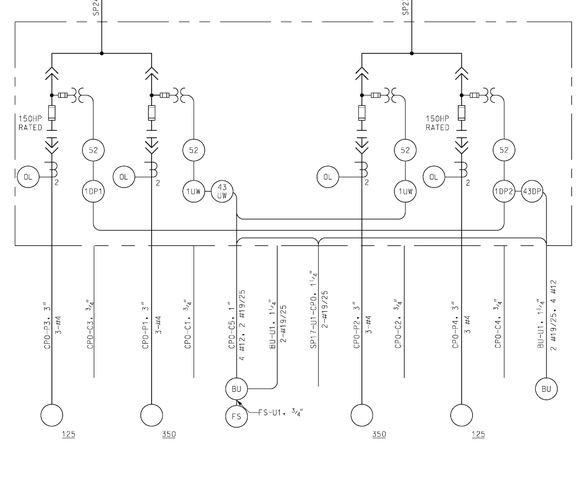


CP0

REVISION	DATE	DESCRIPTION	BY
C	16 OCT 6	AS-BUILT PER PROJECT PERSONNEL	CTM
B	86 JAN 21	AS CONSTRUCTED. ADDED FISHSCREEN LOADS	RCM
A	71 SEP 7	AS CONSTRUCTED. CHG'D SB-e1-SQ0 TO 2" & DRAIN PUMP TO 125hp	JRK

U.S. ARMY ENGINEER DIVISION, N.P.
PORTLAND, OREGON

DESIGNED BY EMS
DRAWN BY DFR
CHECKED BY DBS
PREPARED:
HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON, & IDAHO
POWERHOUSE
ONE LINE DIAGRAM
SQ0, SQ1 & CP0

SUBMITTED:
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER DATE 25 JAN. 68
CHIEF, ENGINEERING DIVISION

INV. NO. DACW68-68-B-0029

SCALE AS SHOWN SPEC. NO.

LGP-1.1-6-1D21/1
SHEET 13

SCALE$SCALE$ USERNAME$USERS

N:\@TECH SECTION\Ø_EQUIPMENTHIERARCHY\4 LITTLE GOOSE\P POWERHOUSE\S STATION POWER\SQ 480V SYSTEM\Ø 480V SUBSTATION SQØ\ZDRAWINGS\LGP-1_1-6-1D21_1.DGN

DESIGNED BY:	ISSUE DATE: AUGUST 2022
DRAWN BY:	SOLICITATION NO.: W912EF22R0001
CHECKED BY:	CONTRACT NO.:
SUBMITTED BY:	DRAWING NUMBER:
SIZE: ANSI D	FILENAME: R046.dgn

MARK	DESCRIPTION	DATE

US Army Corps of Engineers®

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
ONE LINE DIAGRAM
SQ0, SQ1 & CPO

SHEET ID
R-046

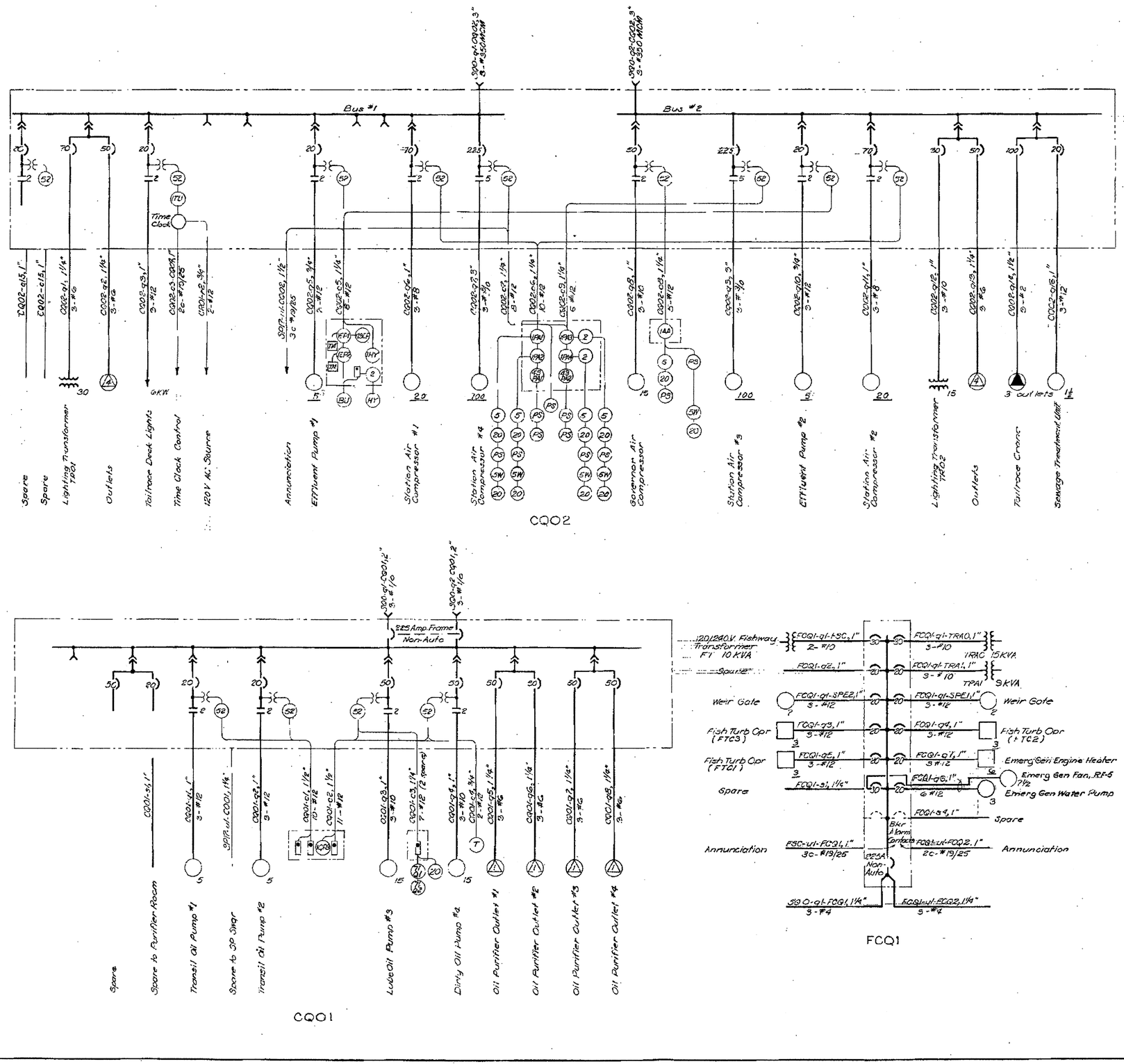
FINAL

9:33:59 AM DATE AND TIME PLOTTED:1/31/2017

DESIGN FILE:N:\@TECH SECTION\Ø_EQUIPMENTHIERARCHY\4 LITTLE GOOSE\P POWERHOUSE\S STATION POWER\SQ 480V SYSTEM\Ø 480V SUBSTATION SQØ\ZDRAWINGS\LGP-1_1-6-1D21_1.DGN

CORPS OF ENGINEERS

U. S. ARMY



NOTE

1. For General Notes and Legend see drawing LGP-1.1-6-1A01/1.

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 18 SEP 7 BY

REVISION	DATE	DESCRIPTION	BY
C	7 Sep 10	Added Emerg. Gen. Aux. to FCQ1	JRK
B	7 Sep 7	As Constructed, chgd Sta. Air Comp. Nos. & Eff. Pump size	JRK
A	6 Oct 9	General revisions	JRK

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: EMS
DRAWN BY: DFR
CHECKED BY: DDG
PREPARED: CHIEF, ELECTRICAL DIVISION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON, & IDAHO
POWERHOUSE
ONE LINE DIAGRAM
CQ01, CQ02, FCQ1 & FCQ2

SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED FOR CIV. ENGINEER DATE 25 Jan 68
CHIEF, ENGINEERING DIVISION

SCALE: AS SHOWN SPEC. NO.

INV. NO. DACW68-68-B-3028

SHEET LGP-1.1-6-1D21/2

VOL. NO. II

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ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
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FILENAME: R047.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

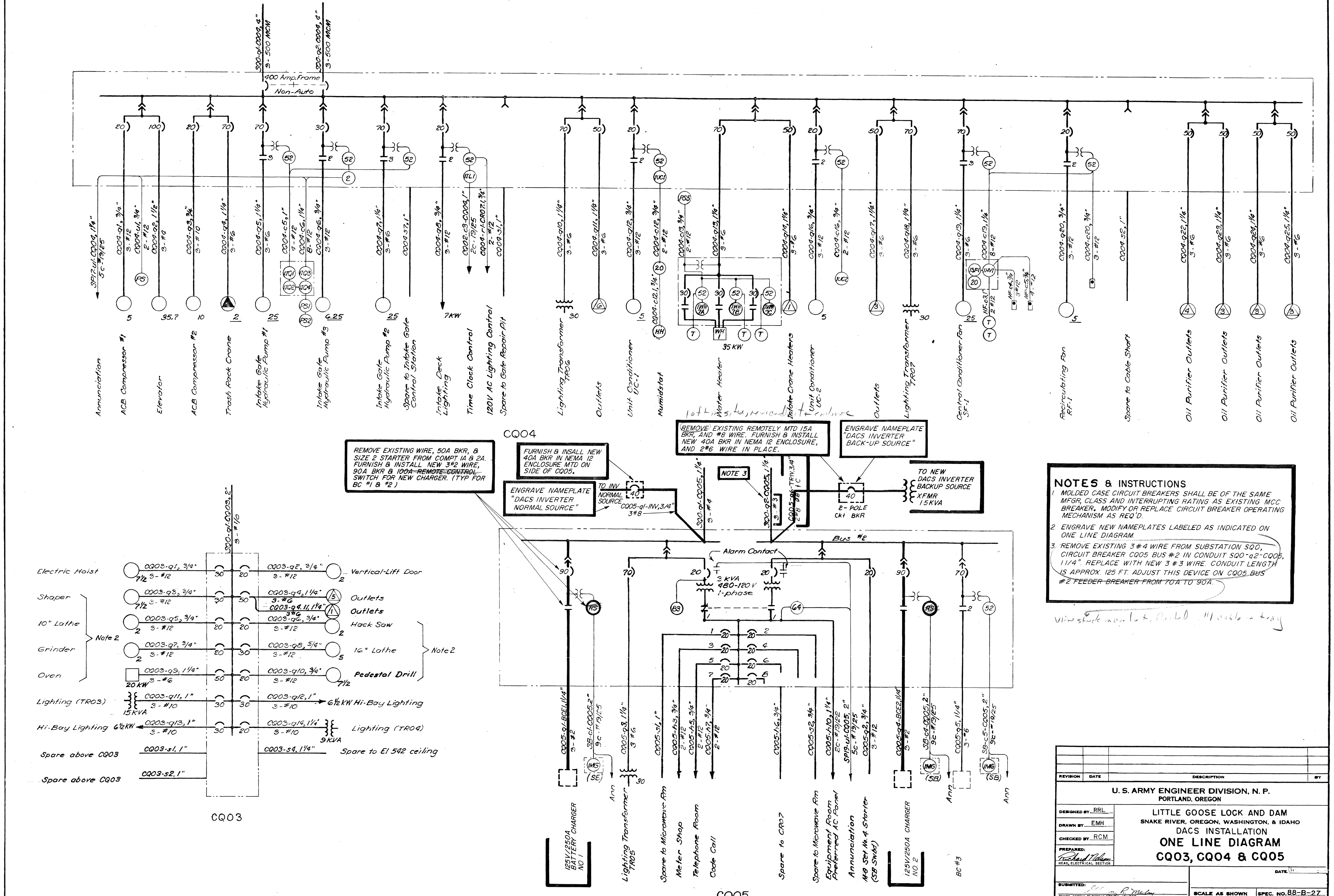
POWERHOUSE
ONE LINE DIAGRAM
CQ01, CQ02, FCQ1 & FCQ2

SHEET ID
R-047

FINAL

CORPS OF ENGINEERS

U. S. ARMY



NOTES & INSTRUCTIONS

1. MOLDED CASE CIRCUIT BREAKERS SHALL BE OF THE SAME MFGR, CLASS AND INTERRUPTING RATING AS EXISTING MCC BREAKER. MODIFY OR REPLACE CIRCUIT BREAKER OPERATING MECHANISM AS REQ'D.
2. ENGRAVE NEW NAMEPLATES LABELED AS INDICATED ON ONE LINE DIAGRAM.
3. REMOVE EXISTING 3#4 WIRE FROM SUBSTATION SQO, CIRCUIT BREAKER CQ05 BUS #2 IN CONDUIT SQO-q2-CQ05, 1 1/4". REPLACE WITH NEW 3 #3 WIRE. CONDUIT LENGTH IS APPROX. 125 FT. ADJUST THIS DEVICE ON CQ05 BUS #2 FEEDER BREAKER FROM 70A TO 90A.

REVISION	DATE	DESCRIPTION	BY

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON, & IDAHO
DACS INSTALLATION
ONE LINE DIAGRAM
CQ03, CQ04 & CQ05

DESIGNED BY RRL
DRAWN BY EMH
CHECKED BY RCM
PREPARED: HEAD, ELECTRICAL SECTION
SUBMITTED: CHIEF, HYDRO-ELECTRIC DESIGN CENTER

SCALE AS SHOWN | SPEC. NO. 88-B-27
LG P-1.22-6-1D21/3
SHEET 21

88-C-38

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: | DRAWN BY: | CHECKED BY: | SUBMITTED BY: | SIZE: ANSI D
ISSUE DATE: AUGUST 2022
SOLICITATION NO.: W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R-048.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

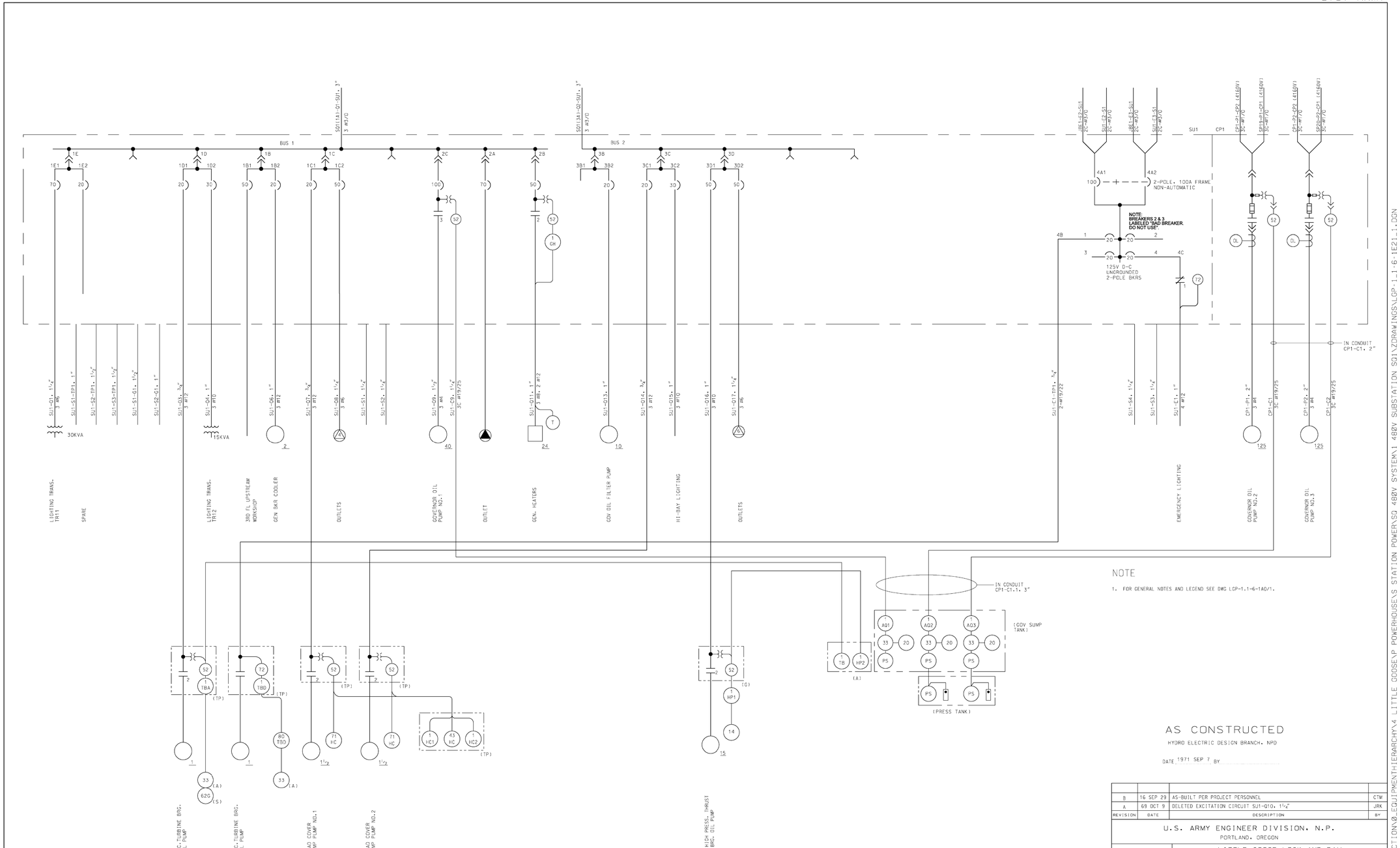
DACS INSTALLATION
ONE LINE DIAGRAM
CQ03, CQ04 & CQ05

SHEET ID
R-048

FINAL

CORPS OF ENGINEERS

U.S. ARMY



NOTE

1. FOR GENERAL NOTES AND LEGEND SEE DWG LGP-1.1-6-1A0/1.

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH. NPD

DATE 1971 SEP 7 BY

REVISION	DATE	DESCRIPTION	BY
B	16 SEP 29	AS-BUILT PER PROJECT PERSONNEL	CTM
A	69 OCT 9	DELETED EXCITATION CIRCUIT SU1-Q10, 1½"	JRK

U.S. ARMY ENGINEER DIVISION. N.P.
PORTLAND. OREGON

DESIGNED BY MHR
DRAWN BY DFR
CHECKED BY DBS
PREPARED:
HEAD, ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER. OREGON. WASHINGTON & IDAHO
POWERHOUSE
ONE LINE DIAGRAM
SU1 & CP1

SUBMITTED:
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER DATE 25 JAN 68
CHIEF, ENGINEERING DIVISION

INV. NO. DACW68-68-B-0029

SCALE AS SHOWN SPEC. NO.

SHEET 18 LGP-1.1-6-1E21/1

1:50:20 PM DATE AND TIME PLOTTED:9/29/2016

DESIGN FILE: N:\@TECH SECTION\@_EQUIPMENTHIERARCHY\4 LITTLE GOOSE\P POWERHOUSE\S STATION POWER\SQ 480V SYSTEM\1 480V SUBSTATION SQ1\ZDRAWINGS\LGP-1_1-6-1E21_1.DGN

SCALE$SCALE$ USERNAME$USER$

N:\@TECH SECTION\@_EQUIPMENTHIERARCHY\4 LITTLE GOOSE\P POWERHOUSE\S STATION POWER\SQ 480V SYSTEM\1 480V SUBSTATION SQ1\ZDRAWINGS\LGP-1_1-6-1E21_1.DGN

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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CHECKED BY:	CONTRACT NO.:
SUBMITTED BY:	DRAWING NUMBER:
SIZE: ANSI D	FILENAME: R049.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

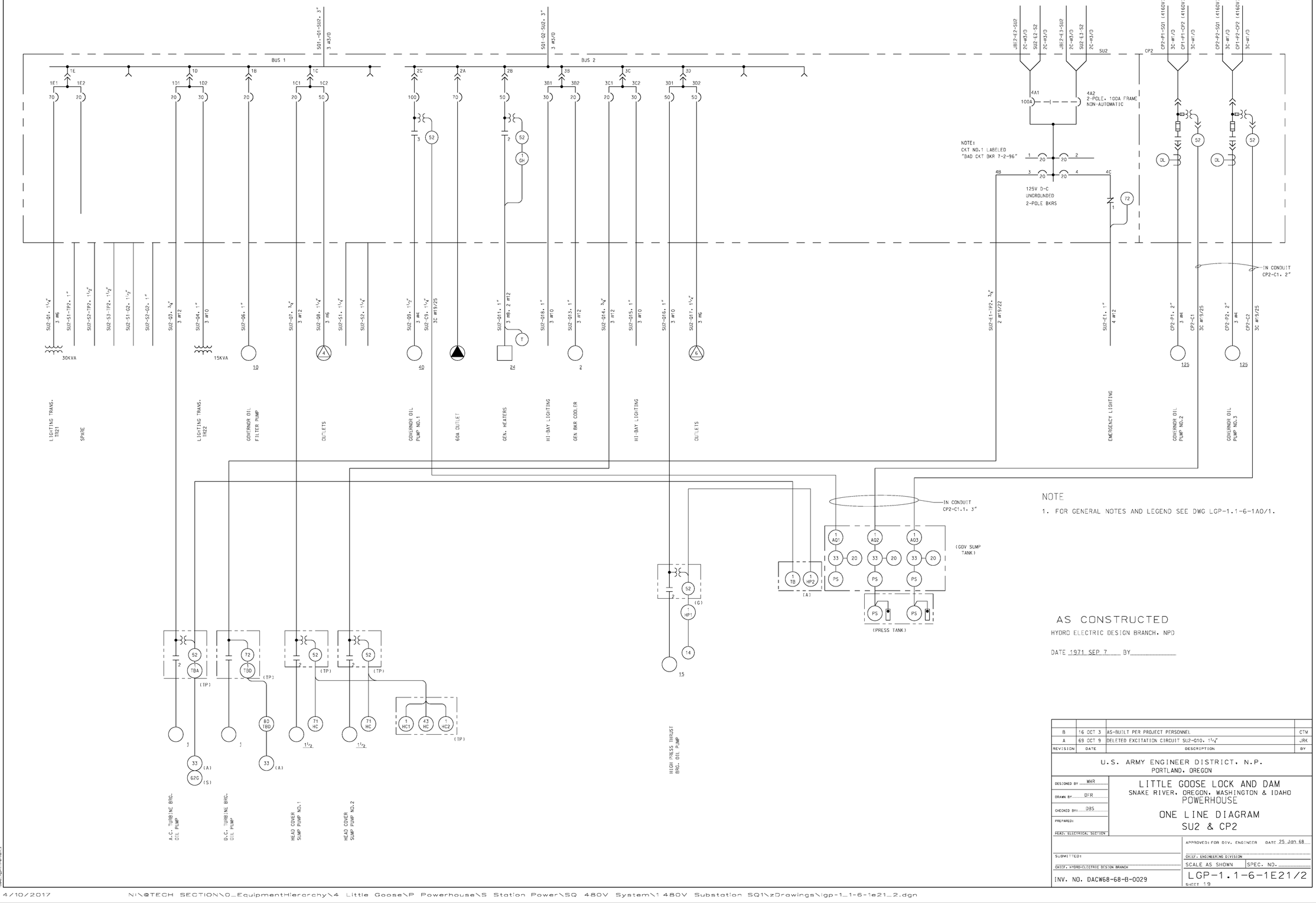
LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
ONE LINE DIAGRAM
SU1 & CP1

SHEET ID
R-049

FINAL

CORPS OF ENGINEERS — U.S. ARMY



NOTE

1. FOR GENERAL NOTES AND LEGEND SEE DWG LGP-1.1-6-1AO/1.

AS CONSTRUCTED

HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE 1971 SEP 7 BY

REVISION	DATE	DESCRIPTION	BY
B	'16 OCT 3	AS-BUILT PER PROJECT PERSONNEL	CTW
A	69 OCT 9	DELETED EXCITATION CIRCUIT SU2-Q10, 1¼"	JRK

U.S. ARMY ENGINEER DISTRICT, N.P.
PORTLAND, OREGON

DESIGNED BY WHR
DRAWN BY DFR
CHECKED BY: DBS
PREPARED:
READ: ELECTRICAL SECTION

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE
ONE LINE DIAGRAM
SU2 & CP2

SUBMITTED:
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

APPROVED: FOR DIV. ENGINEER DATE 25 Jan 68
CHIEF, ENGINEERING DIVISION
SCALE AS SHOWN SPEC. NO.

INV. NO. DACW68-68-B-0029

LGP-1.1-6-1E21/2
SHEET 19

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SIZE: ANSI D
ISSUE DATE: AUGUST 2022
SOLICITATION NO.:
W912EF22R0001
CONTRACT NO.:
DRAWING NUMBER:
FILENAME: R-050.dgn

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
201 NORTH 3RD AVENUE
SEATTLE, WASHINGTON

LITTLE GOOSE LOCK AND DAM
POWERHOUSE
DC SYSTEM AND LOW VOLTAGE SWITCHGEAR

POWERHOUSE
ONE LINE DIAGRAM
SU2 & CP2

SHEET ID
R-050

FINAL

4/10/2017 N:\@TECH SECTION\0_EquipmentHierarchy\4 Little Goose\P Powerhouse\S Station Power\SQ 480V System\1 480V Substation SQ1\zDrawings\lgp-1_1-6-1e21_2.dgn