



ADDENDUM NO. 01

To: Prospective Bidders & Plan Holders

From: Craig A. Johnson, P.E.
Crist Engineers, Inc.

Date: January 13, 2023

Project: Wastewater Treatment Facility
Headworks Improvements
Paragould Light, Water, & Cable
Paragould, Arkansas

Bid Date: January 19, 2023

Bid Time: 2:00 PM

Location: Paragould Light, Water, & Cable
1901 Jones Road
Paragould, Arkansas 72450

The BIDDER shall properly acknowledge Addendum No. 01 as required in Article 3 of Document 004100 on the Bid Form as confirmation that the BIDDER has examined the following Addenda and the related changes to the Contract Documents. Lack of proper acknowledgement on the Bid Form may deem a bid non-responsive.

The Contract Documents dated December 27, 2023, are hereby amended as follows:





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Wastewater Treatment Facility Headworks Improvements
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IMPORTANT REMINDERS:

The bid opening for this project is 2:00 PM on January 19, 2023.

Please reference Section 002113 - Instructions to Bidders, provided in the contract documents for information required for the bid submission.

SUPPLEMENTAL INFORMATION TO BIDDERS:

This electronic data is provided to Bidders for the Paragould Light, Water, & Cable Wastewater Treatment Facility Headworks Improvements as supplemental information only and not considered to be a part of the contract documents. The interpretation of this electronic information attached hereto is at the sole discretion of the Bidder.

Attachment No. 01:

1. Unsecured Portable Digital File (PDF) Grit Chamber & Screen Structure Record Drawings.

Attachment No. 02:

1. Unsecured Portable Digital File (PDF) Owner Procured Materials List for Appendix F, G, and H.

Informational Only:

1. All owner procured equipment in Appendix C, D, and E is scheduled for delivery no later than October 15, 2023.

BID DOCUMENTS:

1. 000110 - Table of Contents
 - a. Revise Section number for Potable Water Line Pipe and Fittings as follows: ~~334246~~
331113
2. 004000 – Bid Form
 - a. Delete in its entirety and replace with Bid Form – Addendum No. 1, attached hereto.

SPECIFICATIONS:

1. Specification 033000 – Cast In-Place Concrete
 - a. Add the following to Section 2.2.F:
 5. **PRAH Antimicrobial Crystalline Admixture: Xypex “Bio San” C500 or prior approved equal at a rate of no less than 1% by weight of cementitious and in accordance with manufacturer’s instructions.**
 6. **PRAH Regular: Regular Xypex C500 or prior approved equal at dosage rate of no less than 2% cementitious and in accordance with manufacturer’s instructions.**



7. The PRAH shall include an all-in-one Visual Detection System (VDS) to enable field confirmation of addition to the concrete.

b. Modify Table 1 – CONCRETE MIX REQUIREMENTS as follows:

Class	W/C Ratio (4)	Fly Ash Permitted (5)	AE Percent (6)	WR (7)	HRWR (8)	Slump Range Inches	PRAH Regular ⁽⁹⁾ , (11)	PRAH Antimicrobial (10)
A	0.53 max	Yes	Optional	Yes	Yes	1-4	No	No
E1	0.42 max	Yes	0	Yes	Yes	2-4	Yes	Yes
E2	0.42 max	Yes	5.5	Yes	Yes	2-4	Yes	Yes
E3	0.42 max	Yes	5.5	Yes	Yes	2-4	No-Yes	Yes
S	0.44 max	Yes	5*	Yes	Yes	2-4	No	No

c. Add the following to Section 2.3 NOTES:

10. PRAH Antimicrobial Crystalline Waterproofing Admixture (Basis of Bid)

11. PRAH Regular is Deductive Alternative No. 02.

2. Specification 261300 - Conduits

a. Revise Section title number as follows: ~~46130~~ 261300

3. Specification 312000 – Grading and Earthwork

a. Add the following Section to Part 2 – Products:

2.5 SELECT FILL

A. Select Fill shall be an approved, low-plasticity sandy clay (CL), clayey sand (SC), gravelly clay (CL), or clayey gravel (GC) with a liquid limit (LL) less than 40 and a plasticity index (PI) less than 18, with a maximum rock size of 2 inches or an alternate accepted by the Engineer.

4. Specification 312302 – Trench Excavation, Backfill, and Compacting

a. Revise Section title number as follows: ~~312333~~ 312302

b. Modify 3.2.A as follows:

- i. ~~In areas of maintained lawns and within golf course property,~~ Remove surface material to a depth of 6 inches for full width of disturbed areas and stockpile or finish grading. Imported topsoil may be substituted for stockpiling and replacing of surface material.

5. Specification 314100 – Sheeting, Waling, and Shoring

a. Revise Section footer numbers as follows: ~~312000~~ **314100**



6. Specification 333100 – Sanitary Sewer (Gravity)
 - a. Delete section 2.1.J.
 - b. Modify section 3.11.A as follows:
 - i. The Contractor shall be responsible for locating all existing ~~live sewer and water services connections by CCTV~~ prior to work **to validate elevation and potential conflicts with proposed work. Should elevations or conflicts exist with proposed work, the Contractor shall notify Engineer for corrective measures prior to the work progressing.** ~~Contractor shall reconnect all live (active) services.~~
7. Specification 400559 – Stainless Steel Slide Gates & Weir Gates
 - a. Modify the Channel Depth of SLG-04, SLG-05, and SLG-06 in Section 2.3 – Upward Opening Slide Gate Schedule as follows: ~~8-25~~ **9.75**

APPENDIX:

1. Appendix B – Geotechnical Information
 - a. Add the Interim Results for Geotechnical Investigation, attached hereto.
 - b. Add the Owner Performed Piezometer Well Logs, attached hereto.

DRAWINGS:

1. Drawing G-6 – Design Information:
 - a. Modify this drawing as shown on the Addendum No. 1 – Design Information, attached hereto.
2. Drawing D-1 – Demolition Plan:
 - a. Modify this drawing as shown on the Addendum No. 1 – Demolition Plan, attached hereto.
3. Drawing C-3 – Site Grading and Pavement Plan:
 - a. Modify this drawing as shown on the Addendum No. 1 – Site Grading and Pavement Plan, attached hereto.
4. Drawing C-4 – Yard Piping Plan:
 - a. Modify this drawing as shown on the Addendum No. 1 – Yard Piping Plan, attached hereto.
5. Drawing C-7 – Yard Piping 48-IN Overflow Plan:
 - a. Modify this drawing as shown on the Addendum No. 1 – Yard Piping 48-IN. Overflow Plan, attached hereto.
6. Drawing C-8 – Yard Piping 48-IN. Overflow Profile:
 - a. Modify this drawing as shown on the Addendum No. 1 – Yard Piping 48-IN. Overflow Profile, attached hereto.



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7. Drawing CZ-2 – Civil Standard Details II:
 - a. Modify this drawing as shown on the Addendum No. 1 – Civil Standard Details II, attached hereto.
8. Drawing S-0 – Design Notes & Criteria:
 - a. Modify this drawing as shown on the Addendum No. 1 – Design Notes & Criteria, attached hereto.
9. Drawing S-1 – HGL – Foundation Plans:
 - a. Modify this drawing as shown on the Addendum No. 1 – HGL – Foundation Plans, attached hereto.
10. Drawing S-2 – Foundation Plans:
 - a. Modify this drawing as shown on the Addendum No. 1 – Foundation Plans, attached hereto.
11. Drawing S-3 – HGL - Concrete Wall Plan:
 - a. Modify this drawing as shown on the Addendum No. 1 – HGL - Concrete Wall Plan, attached hereto.
12. Drawing S-4 – HGL Sections (1):
 - a. Modify this drawing as shown on the Addendum No. 1 – HGL Sections (1), attached hereto.
13. Drawing S-5 – HGL Sections (2):
 - a. Modify this drawing as shown on the Addendum No. 1 – HGL Sections (2), attached hereto.
14. Drawing S-6 – HGL Sections (3):
 - a. Modify this drawing as shown on the Addendum No. 1 – HGL Sections (3), attached hereto.
15. Drawing S-8 – HGL Sections (5):
 - a. Modify this drawing as shown on the Addendum No. 1 – HGL Sections (5), attached hereto.
16. Drawing S-10 – Equalization Basin Inlet & Baffles:
 - a. Modify this drawing as shown on the Addendum No. 1 – Equalization Basin Inlet & Baffles, attached hereto.
17. Drawing S-11 – Partial Platform Framing Plan (West):
 - a. Modify this drawing as shown on the Addendum No. 1 – Partial Platform Framing Plan (West), attached hereto.
18. Drawing S-12 – Partial Platform Framing Plan (East):
 - a. Modify this drawing as shown on the Addendum No. 1 – Partial Platform Framing Plan (East), attached hereto.
19. Drawing S-13 – Platform Framing Sections:
 - a. Modify this drawing as shown on the Addendum No. 1 – Platform Framing Sections, attached hereto.
20. Drawing S-14 – Partial Grating Plan (West):
 - a. Modify this drawing as shown on the Addendum No. 1 – Partial Grating Plan (West), attached hereto.

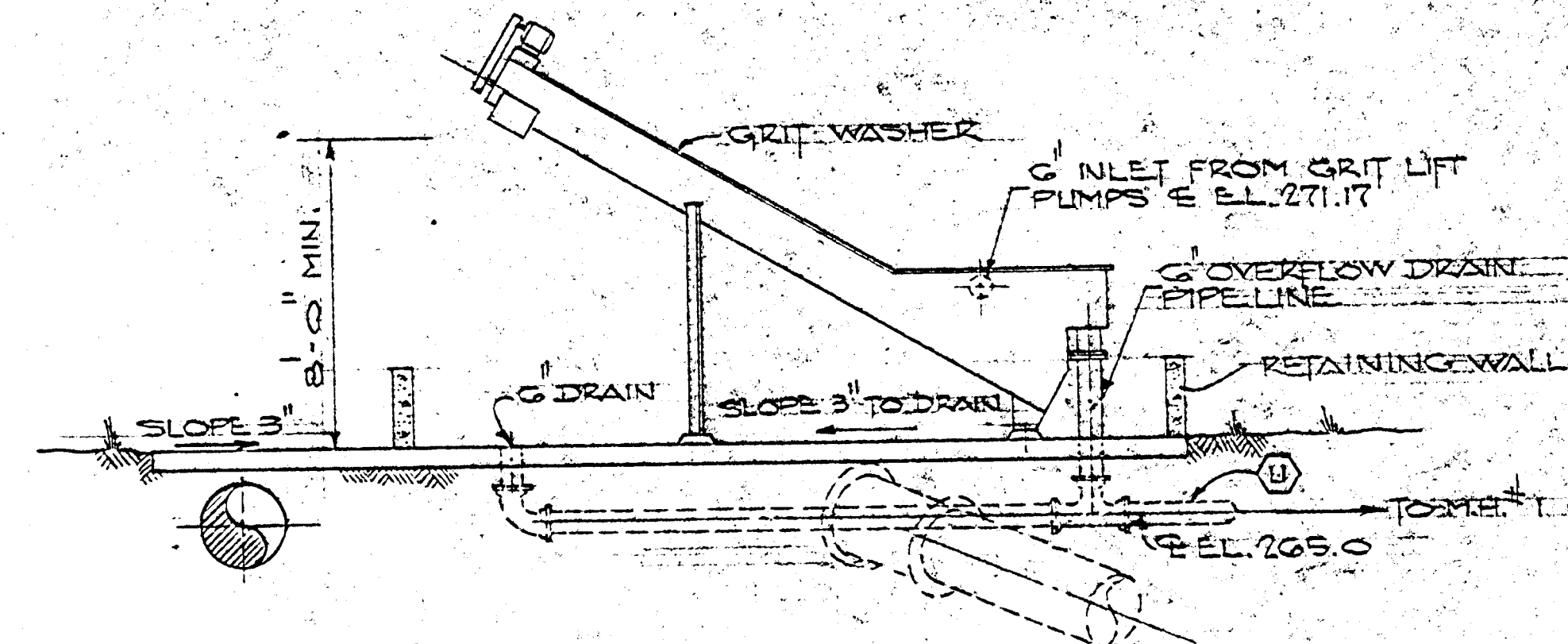
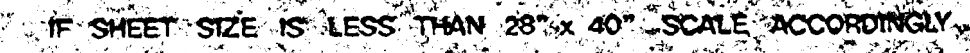


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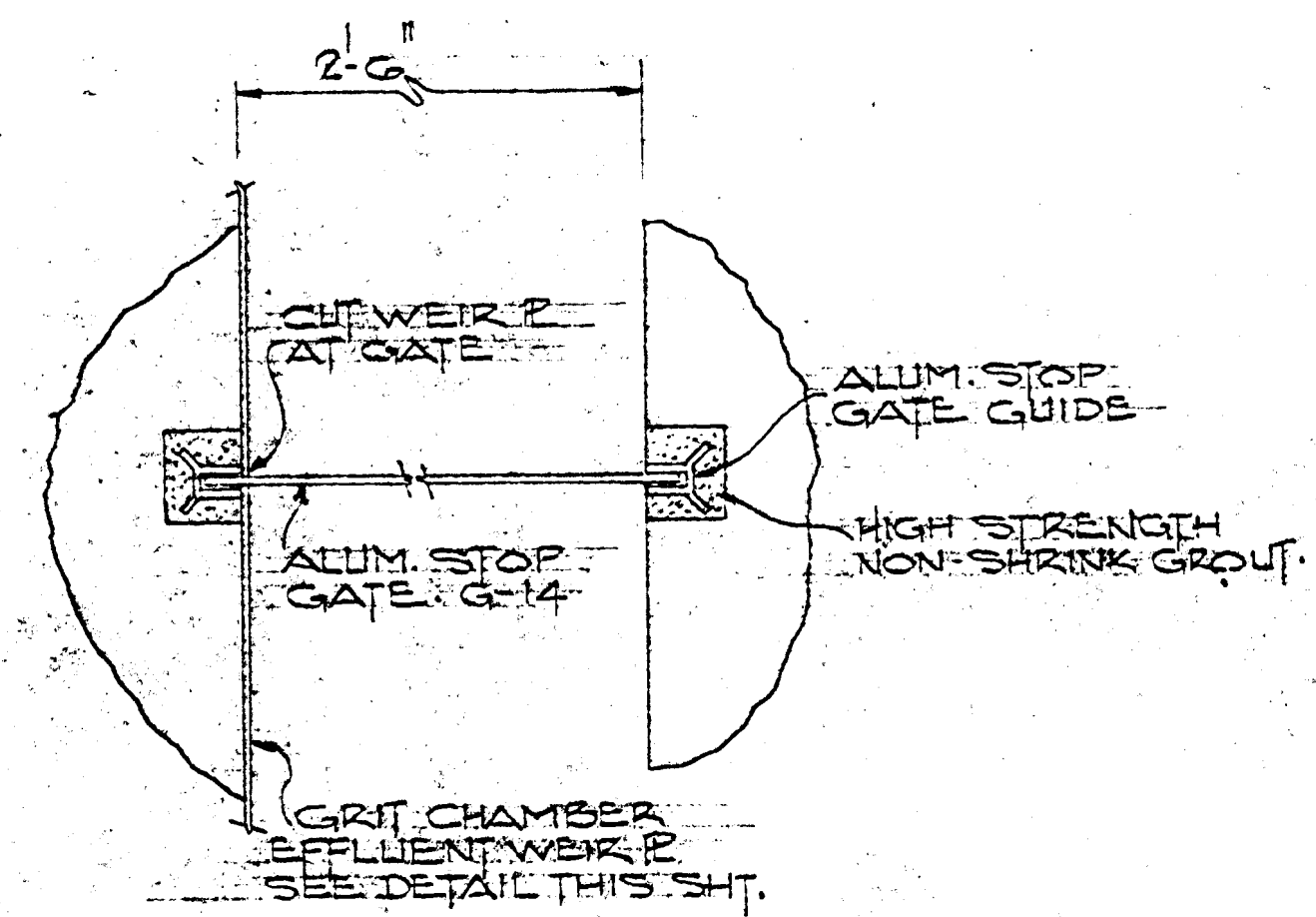
21. Drawing S-15 – Partial Grating Plan (East):
 - a. Modify this drawing as shown on the Addendum No. 1 – Partial Grating Plan (East), attached hereto.
22. Drawing S-16 – PistaGrit Framing Details:
 - a. Add new Drawing Sheet S-16 as shown on the Addendum No. 1 – PistaGrit Framing Details, attached hereto.
23. Drawing M-2 – Plan:
 - a. Modify this drawing as shown on the Addendum No. 1 – Plan, attached hereto.
24. Drawing M-6 – Plan III:
 - a. Modify this drawing as shown on the Addendum No. 1 – Plan III, attached hereto.
25. Drawing M-7 – Section IV:
 - a. Modify this drawing as shown on the Addendum No. 1 – Section IV, attached hereto.
26. Drawing M-16 – Dimension Plan:
 - a. Add new Drawing Sheet M-16 as shown on the Addendum No. 1 – Dimension Plan, attached hereto.
27. Drawing MZ-9 – Mechanical Standard Details IX:
 - a. Add new Drawing Sheet MZ-9 as shown on the Addendum No. 1 – Mechanical Standard Details IX, attached hereto.
28. Drawing E-02 – Site Area Plan:
 - a. Delete in its entirety.

TOTAL SHEETS NEW: 3
TOTAL SHEETS MODIFIED: 24
TOTAL SHEETS REMOVED: 1

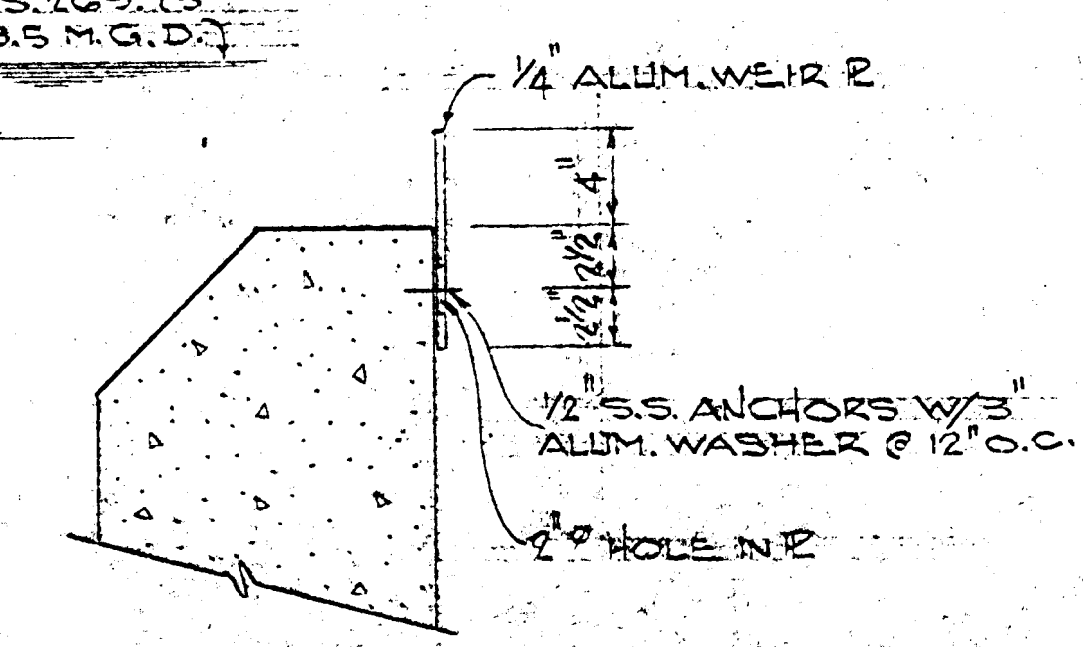
END ADDENDUM NO. 01



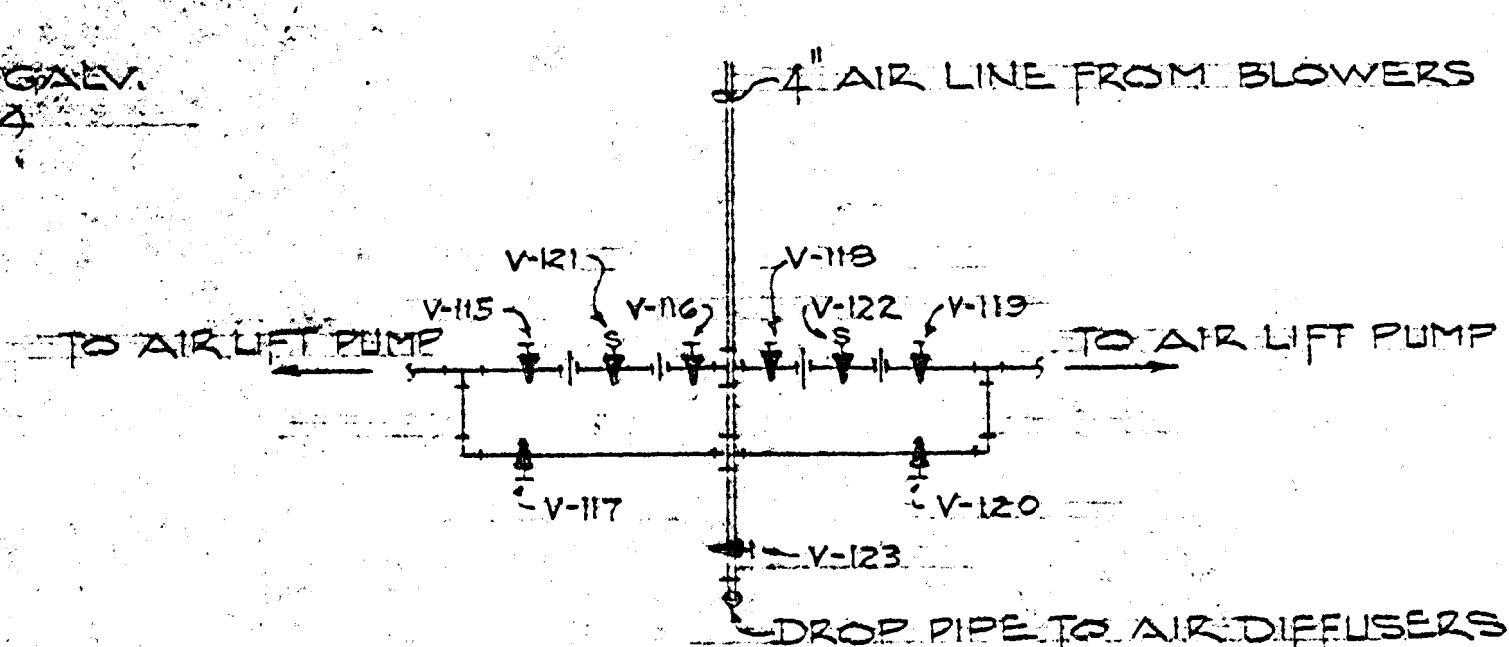
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DETAIL - EFFLUENT WEIR
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AIR PIPING SCHEMATIC
NO SCALE

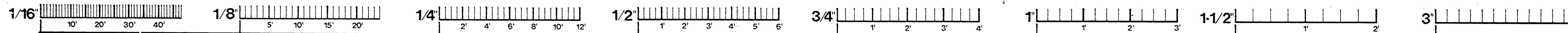
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NO.		DATE

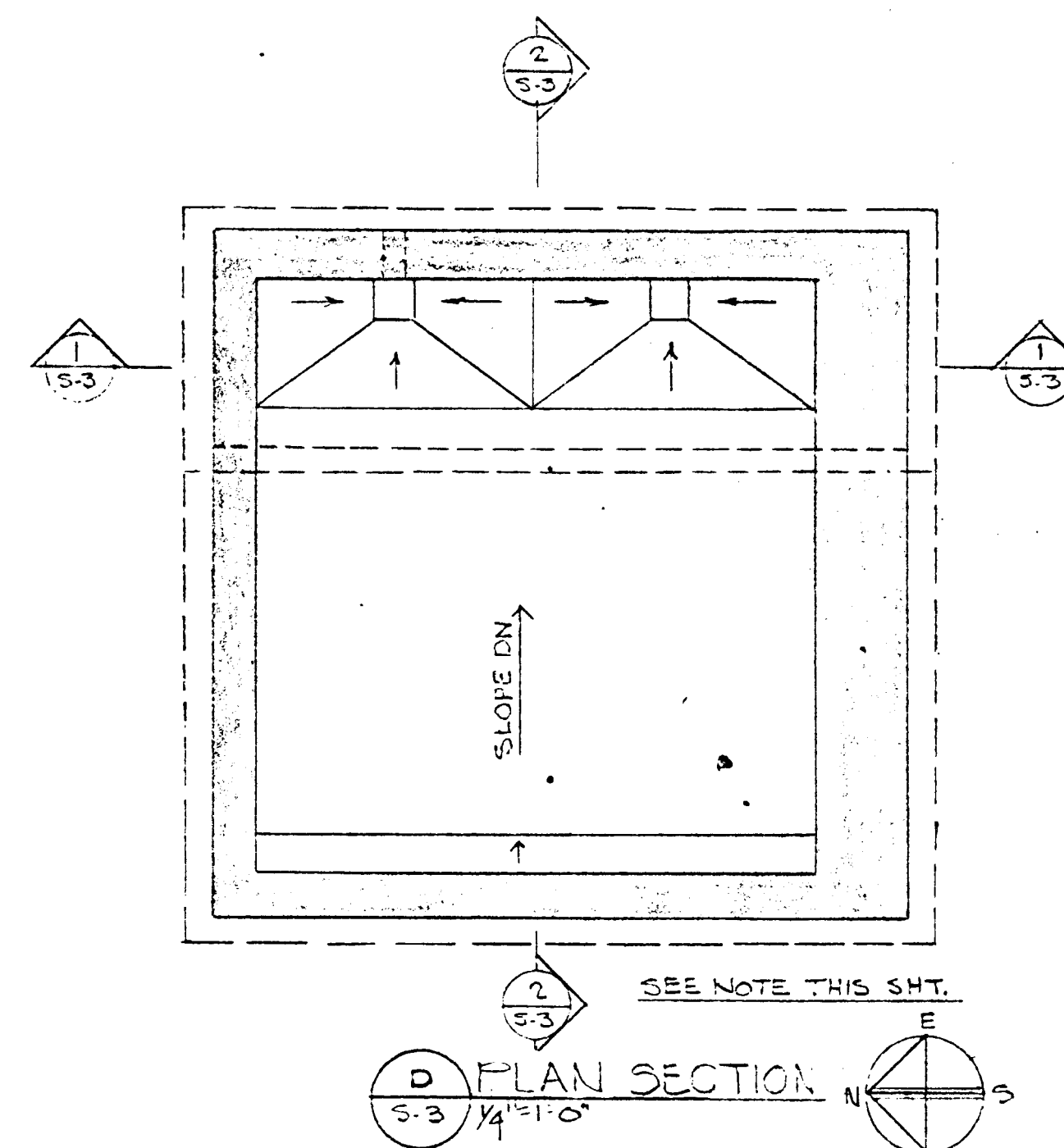
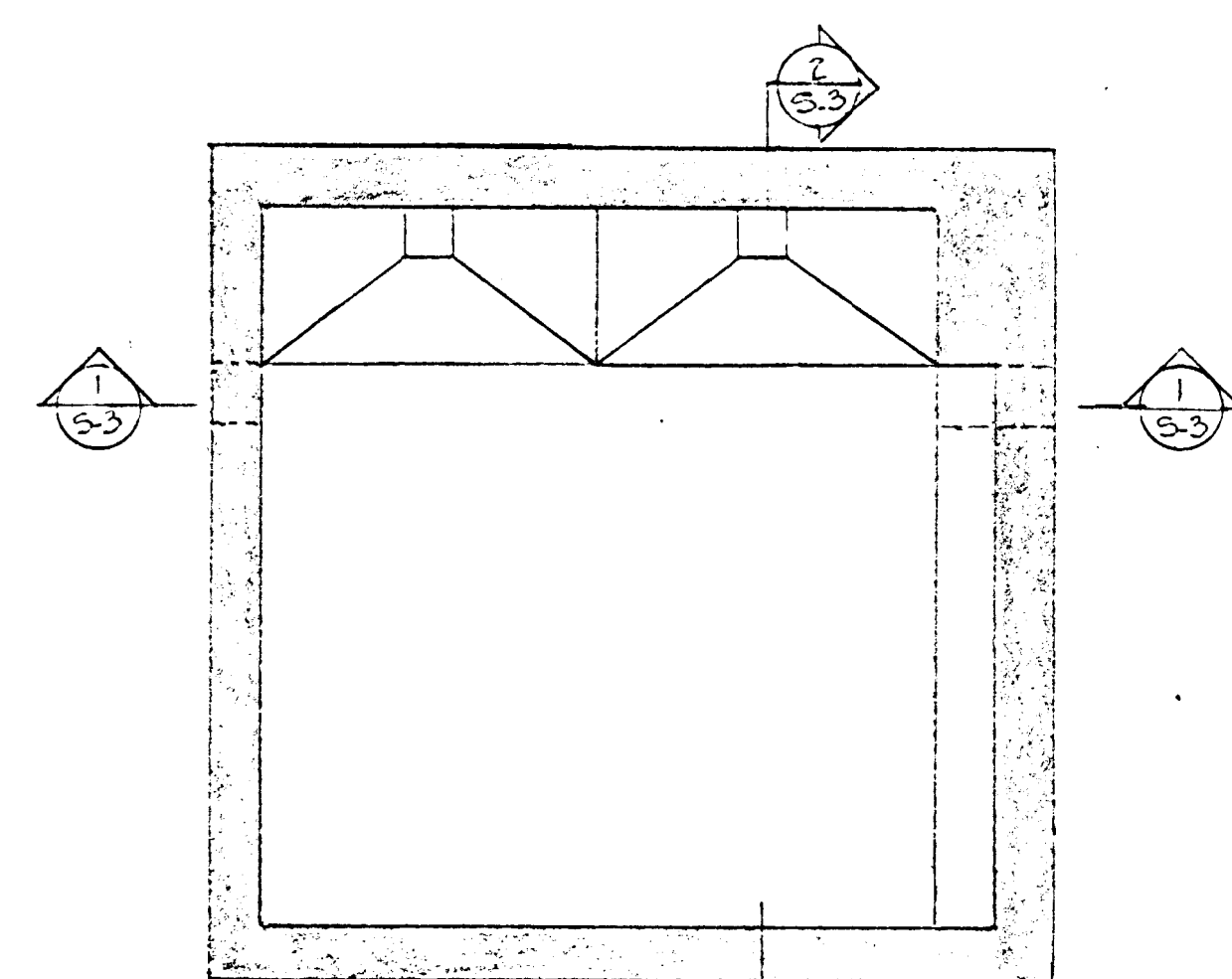
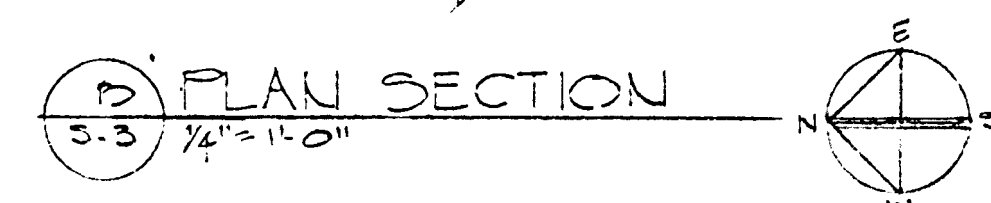
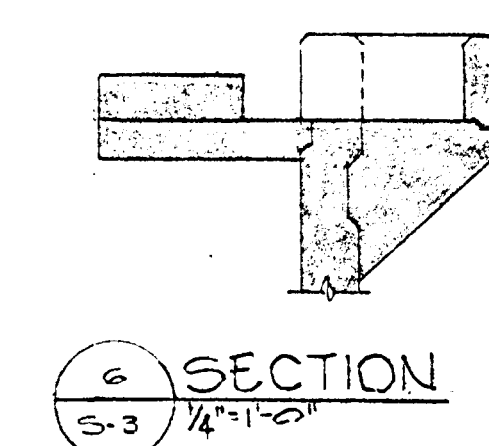
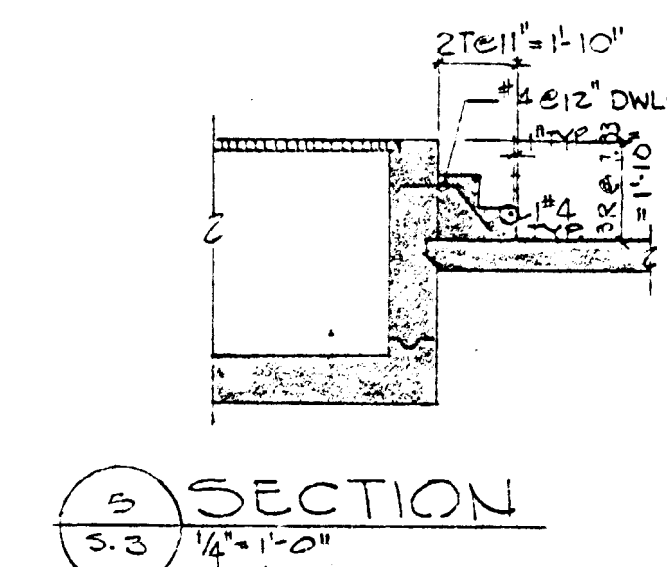
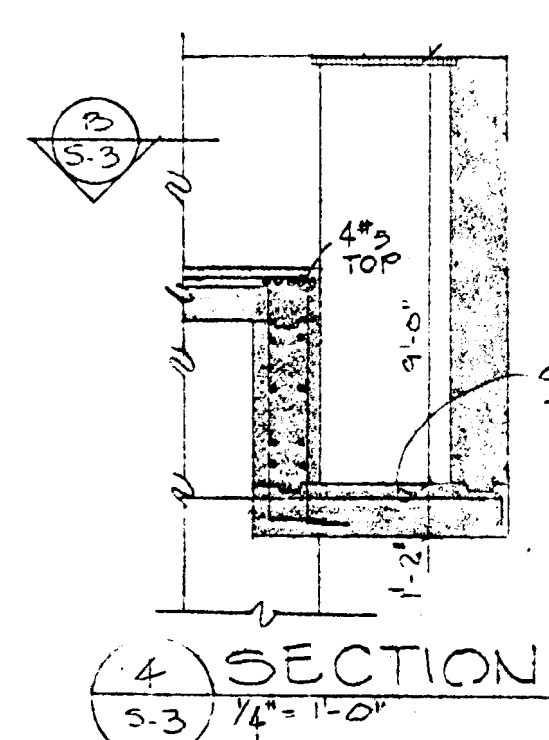
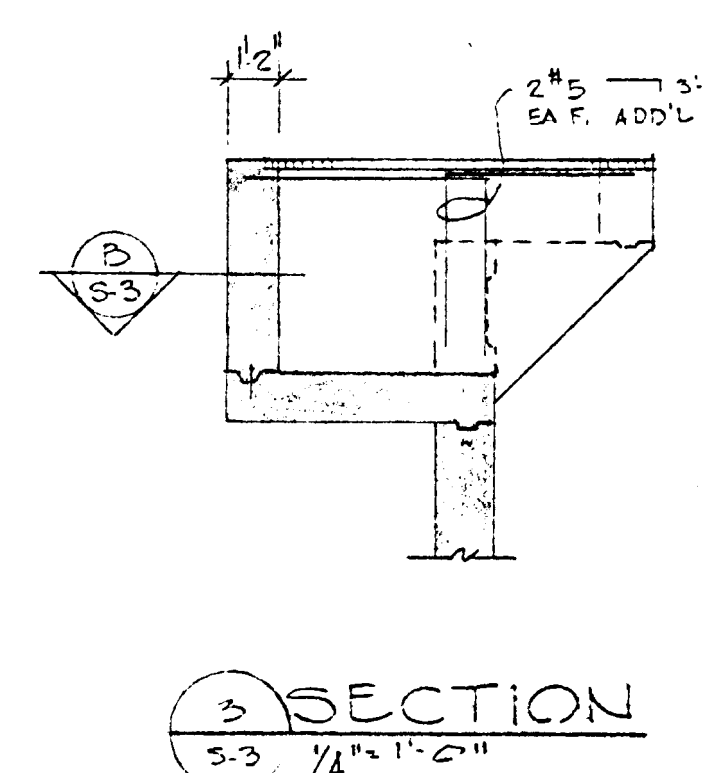
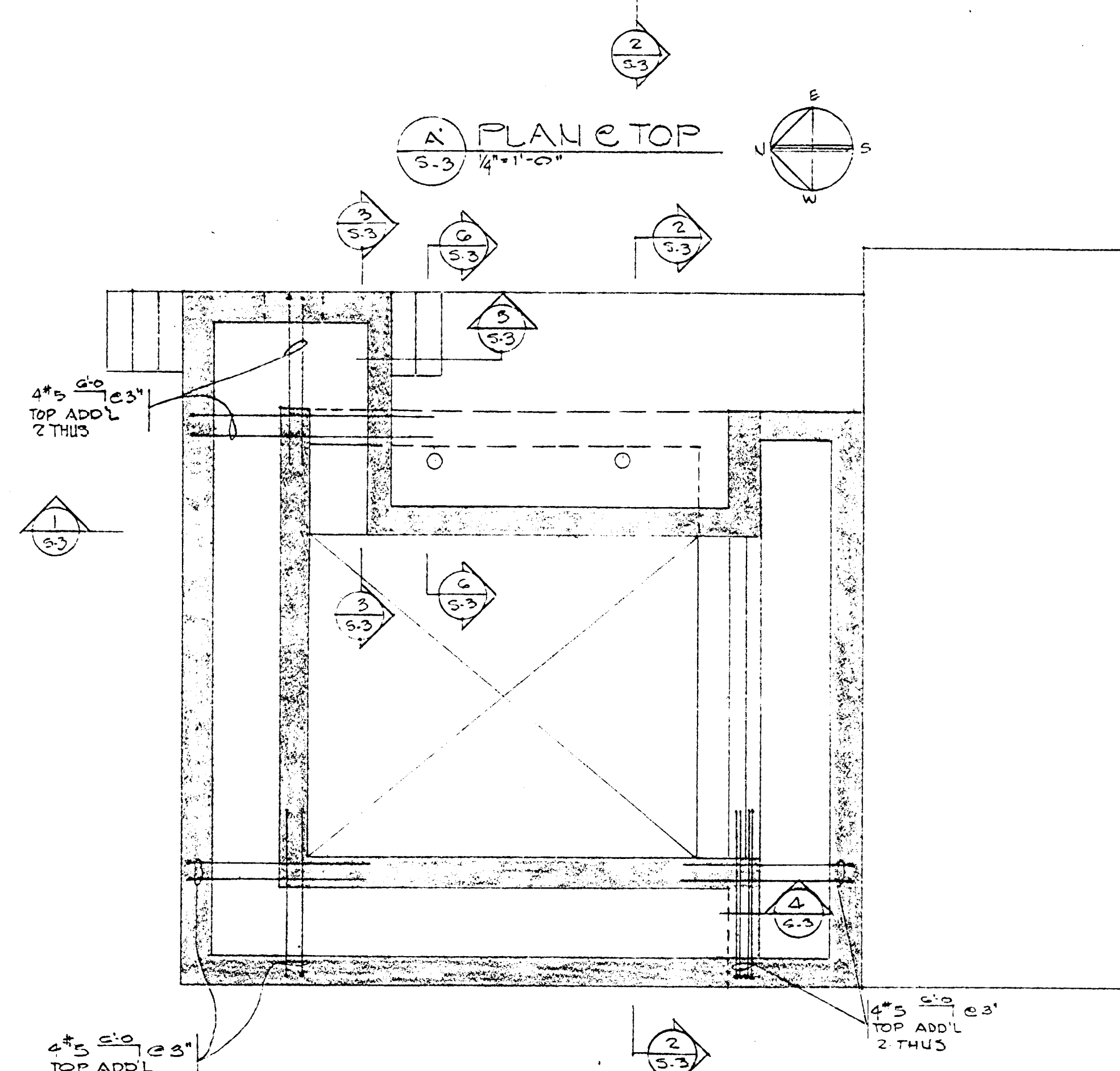
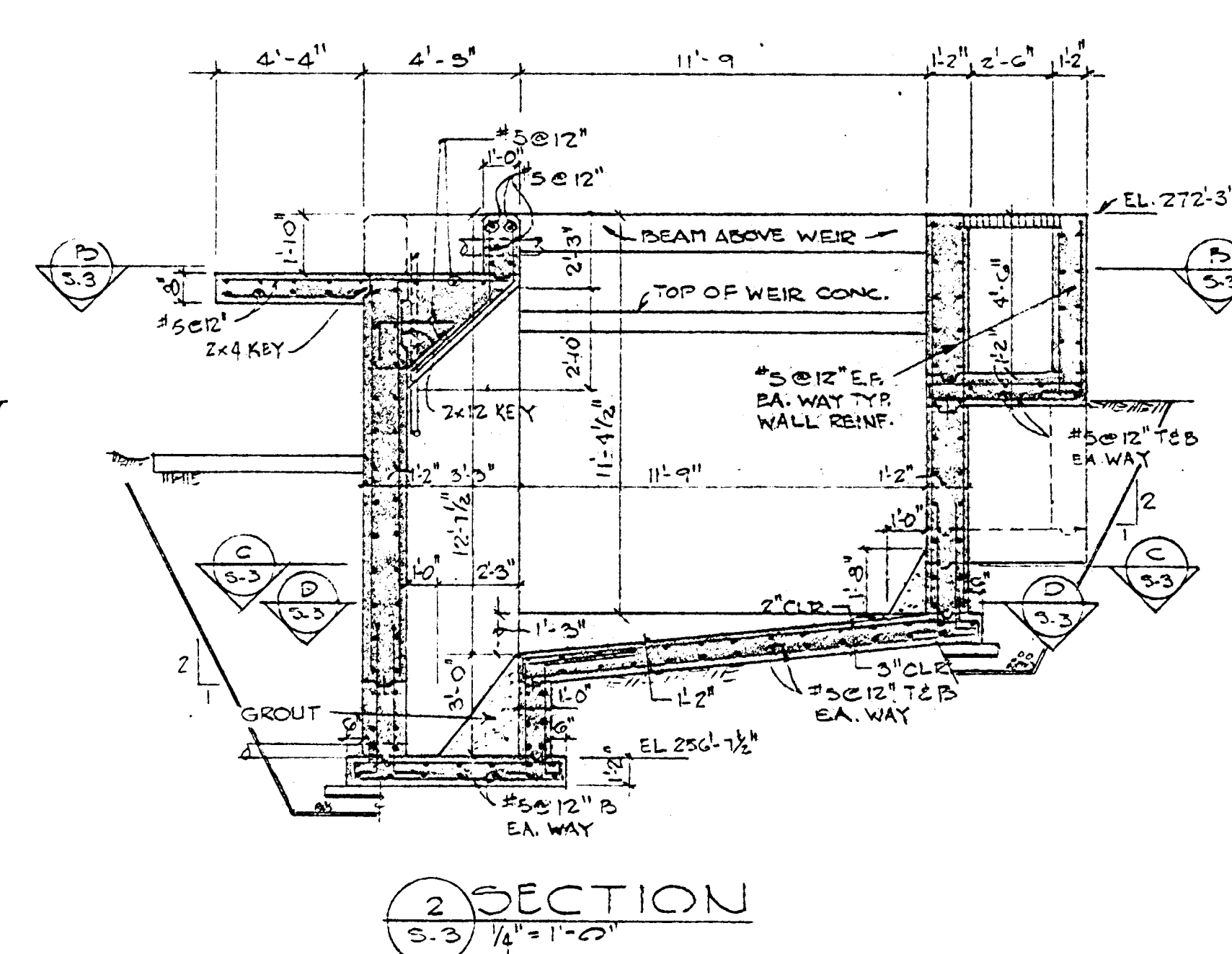
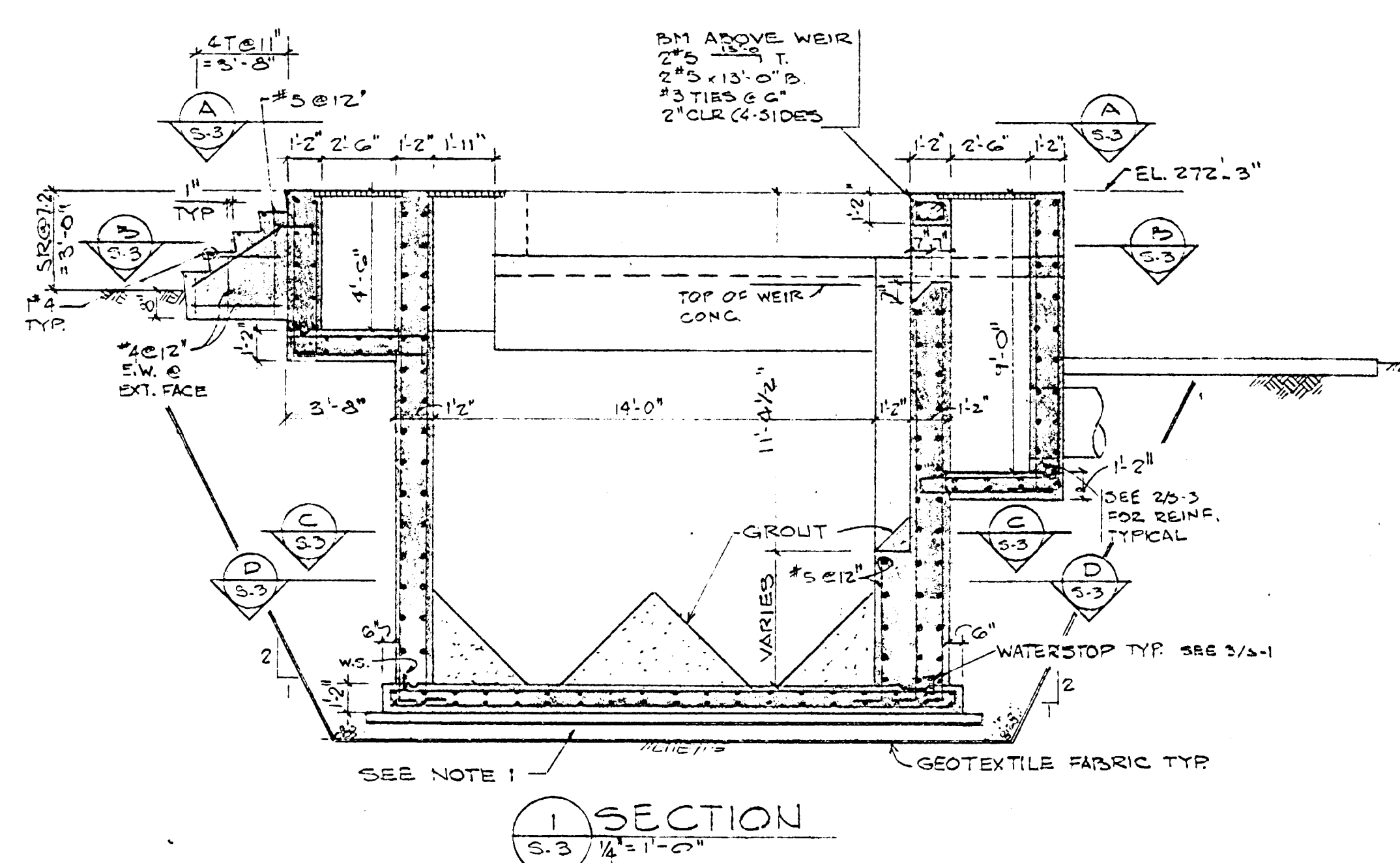
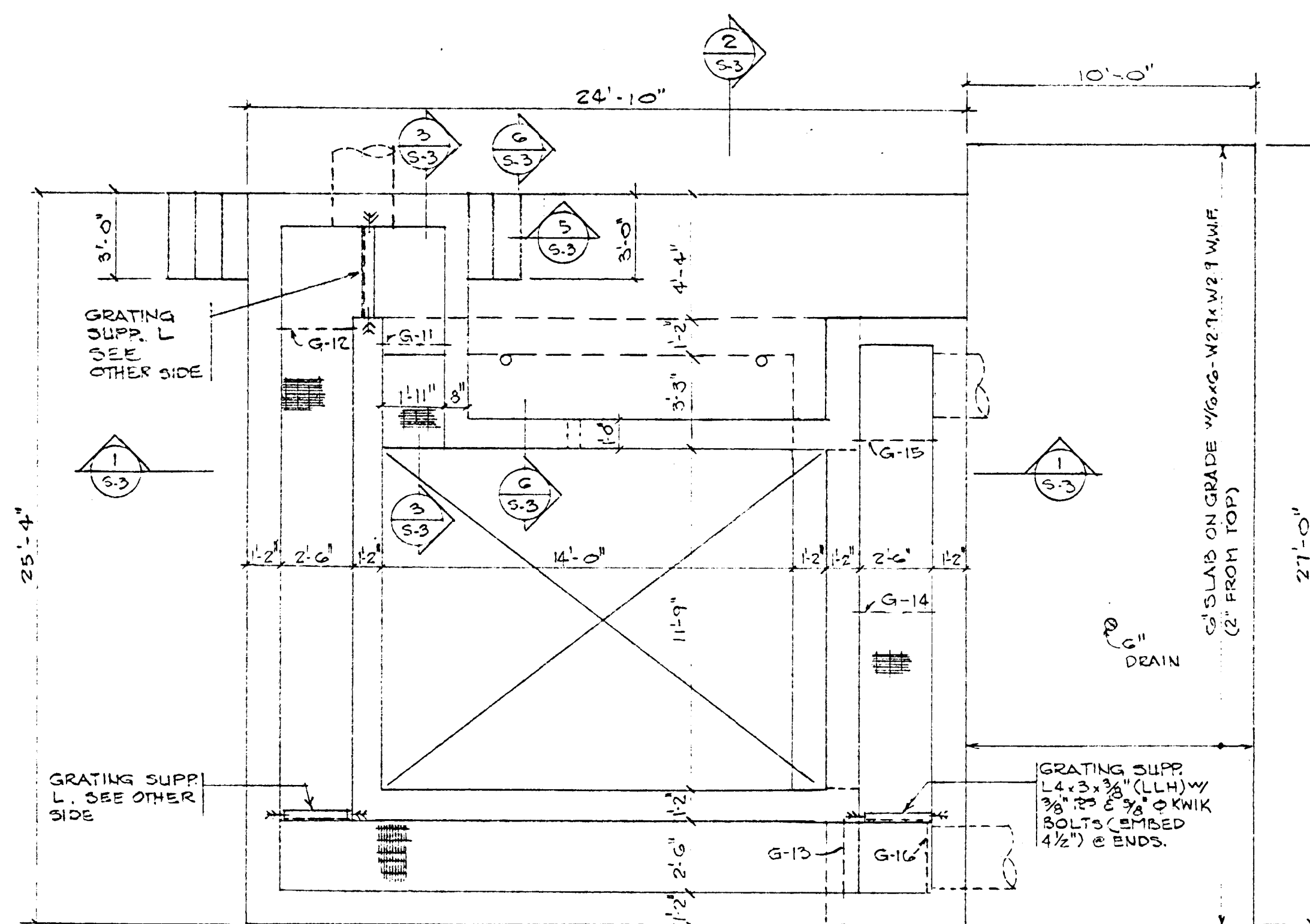
GRIT CHAMBER

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DATE 3-11-88	

REPORT DRAWING



IF SHEET SIZE IS LESS THAN 28" x 40" SCALE ACCORDINGLY



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MEMPHIS, TENNESSEE
JACKSON, MS. KNOXVILLE, TN. NASHVILLE, TN.

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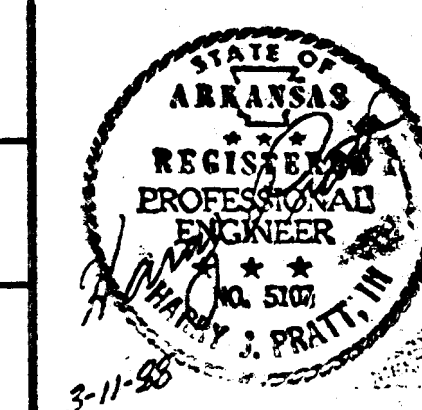
Y.E.N.

CHECKED

P.N.R.

APPROVED

T.L.W.



NOTES

1. SEE NOTES 1, 2, 3, SHT. S-2

NO.	RECORD DWS.	DATE
3-11-88		

REVISIONS

WASTEWATER TREATMENT PLANT
IMPROVEMENT

PARAGOULD LIGHT & WATER
COMMISSION

PARAGOULD, ARKANSAS

GRIT CHAMBER

SCALE: NOTE D

JOB NO.

MO207C3023

DATE

3-11-88

SHEET NO.

S-3

PROGRESS PRINT ISSUE DATE:

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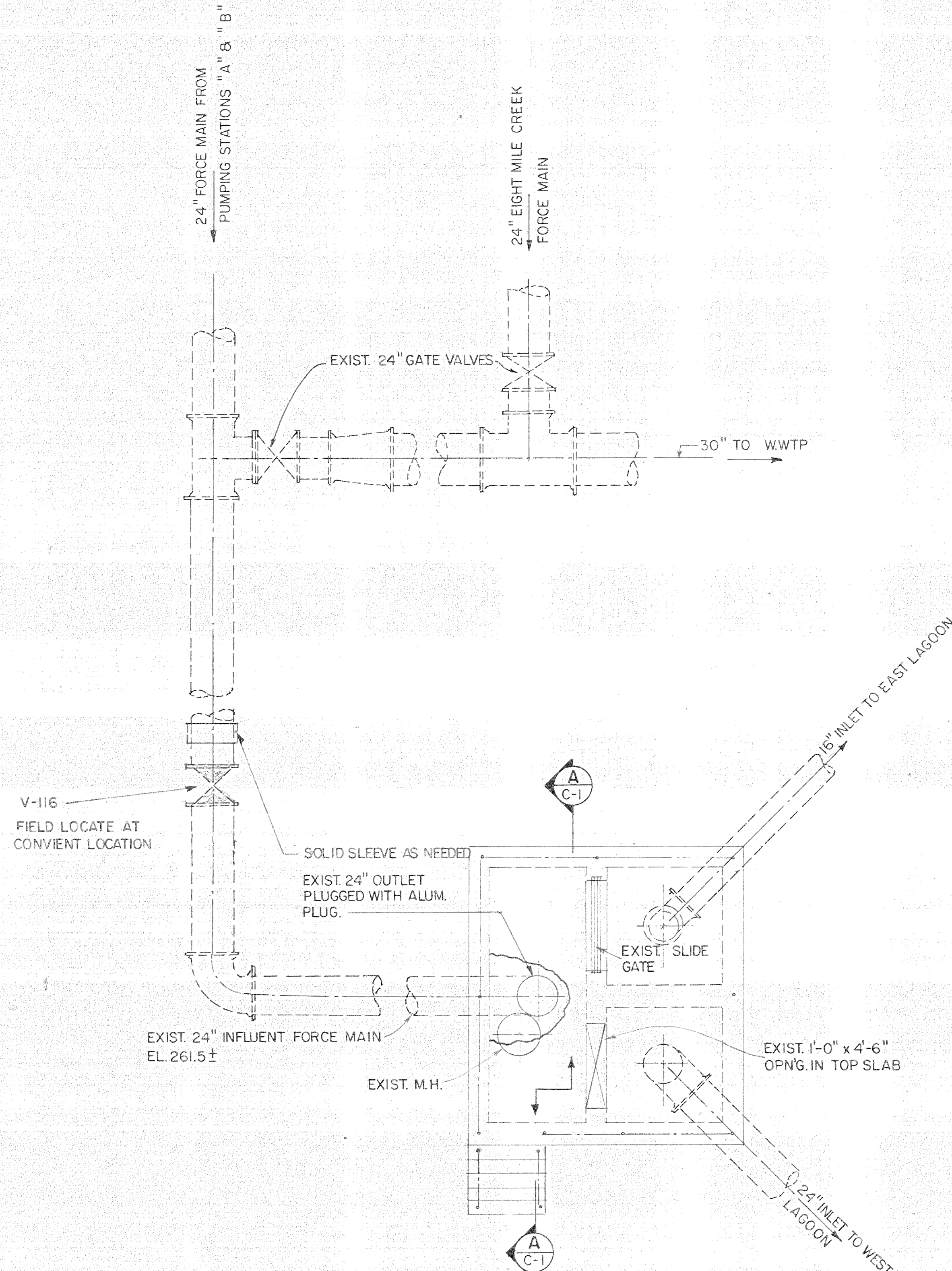
ALLEN &
HOSHALL

ENGINEERS
ARCHITECTS
CONSULTANTS
Memphis, Tennessee
Jackson, Mississippi
Knoxville, Tennessee
Nashville, Tennessee

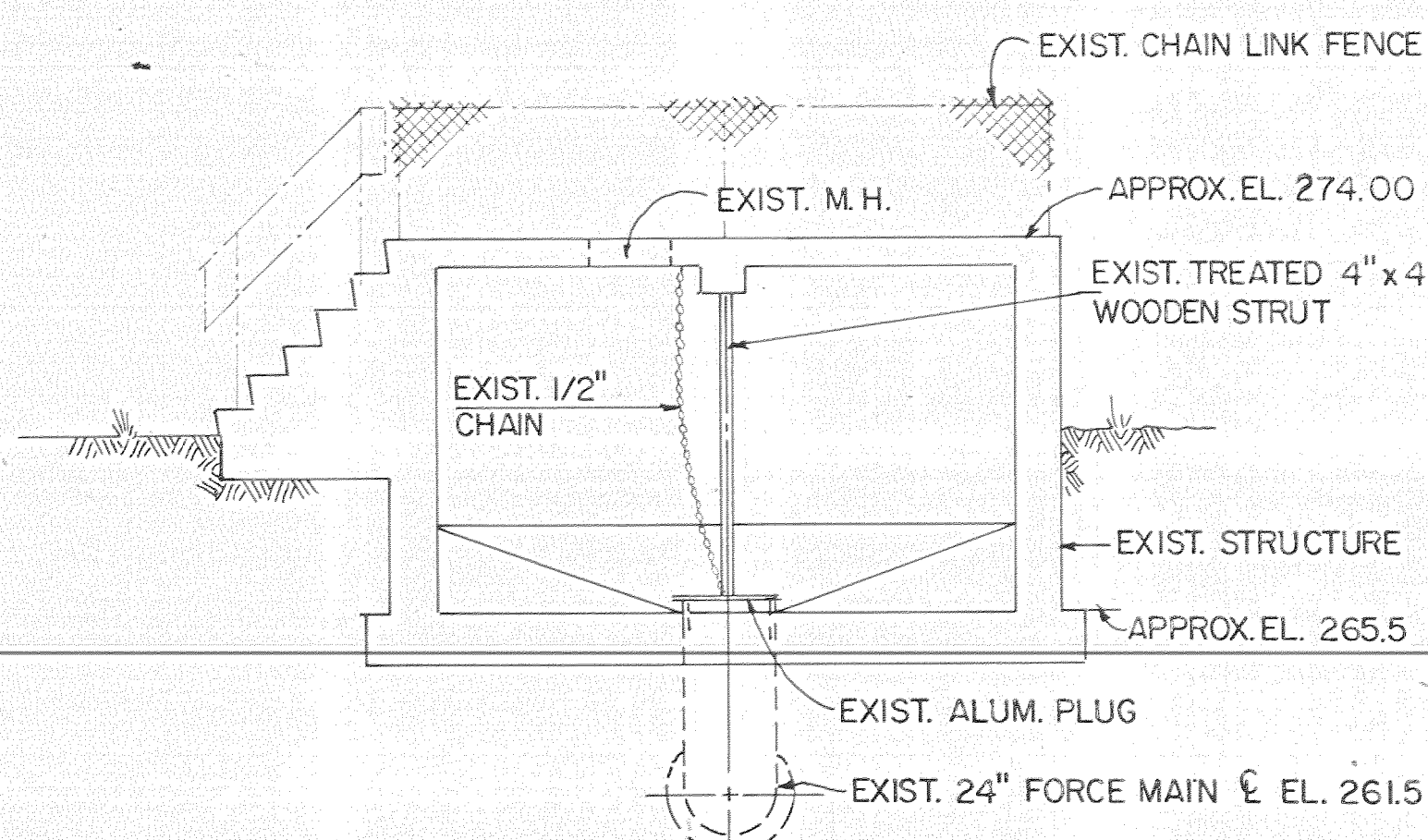


NOTES

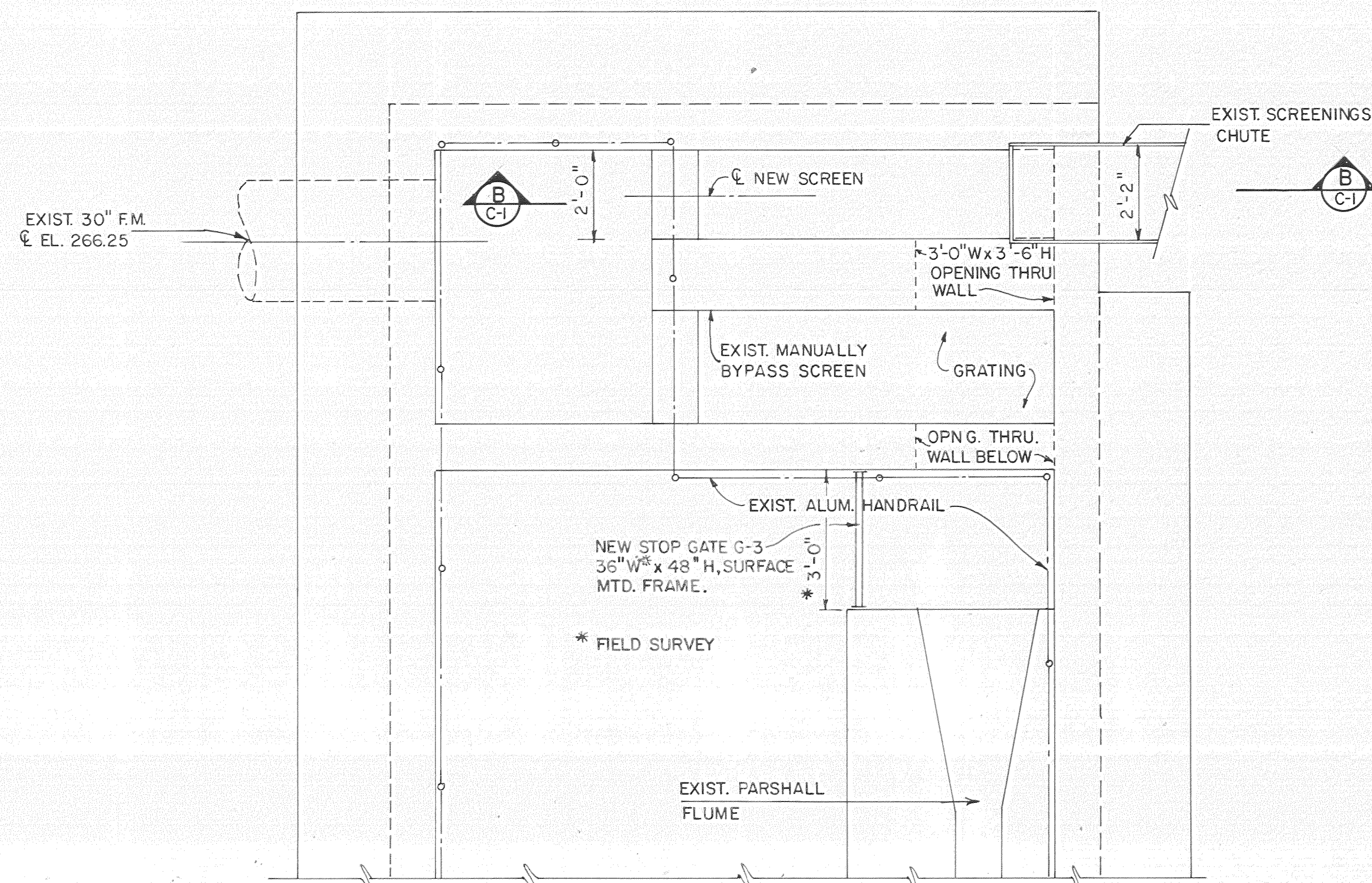
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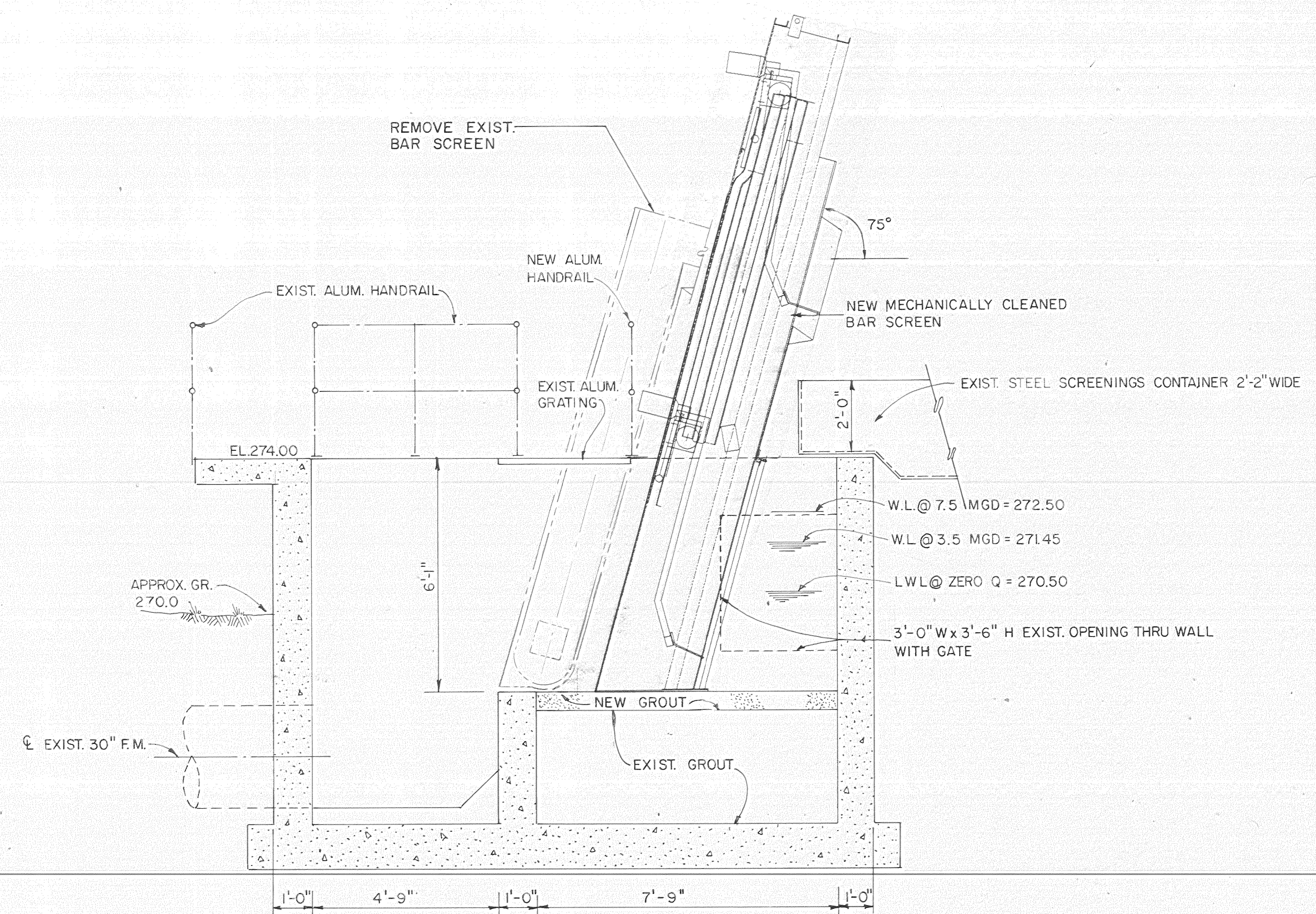
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SECTION
A-C-1
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PLAN - EXISTING BAR SCREEN STRUCTURE
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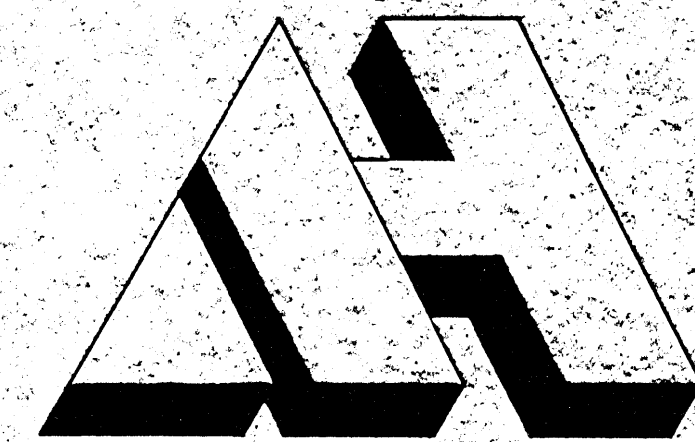
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WASTEWATER TREATMENT
PLANT MODIFICATIONS

PARAGOULD LIGHT
& WATER COMMISSION
PARAGOULD, ARKANSAS

SCREEN STRUCTURE MODIFICATIONS

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ENGINEER	BSP	
NO 7462	Date	Sheet No.
BENJAMIN S. PEASE	12/17/53	C-1



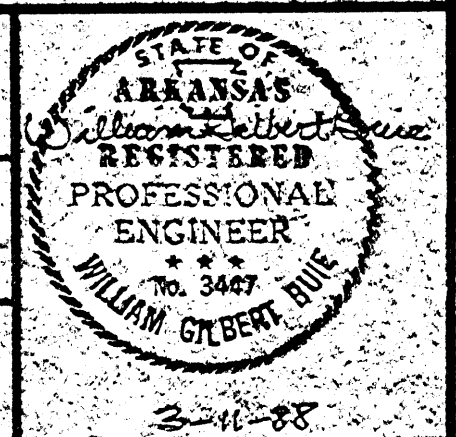
ALLEN & HOSHALL
ENGINEERS ARCHITECTS CONSULTANTS

MEMPHIS, TENNESSEE
JACKSON, MS. KNOXVILLE, TN. NASHVILLE, TN.

DRAWN BY
SJK

CHECKED
RTH

APPROVED
MAD



NOTES

RECORD DRAWING

RECORD DWG. NO. 3-11-88
GENERAL REVISIONS NO. DATE

REVISIONS

WASTEWATER TREATMENT PLANT
IMPROVEMENT

PARAGOULD LIGHT & WATER
COMMISSION

PARAGOULD, ARKANSAS

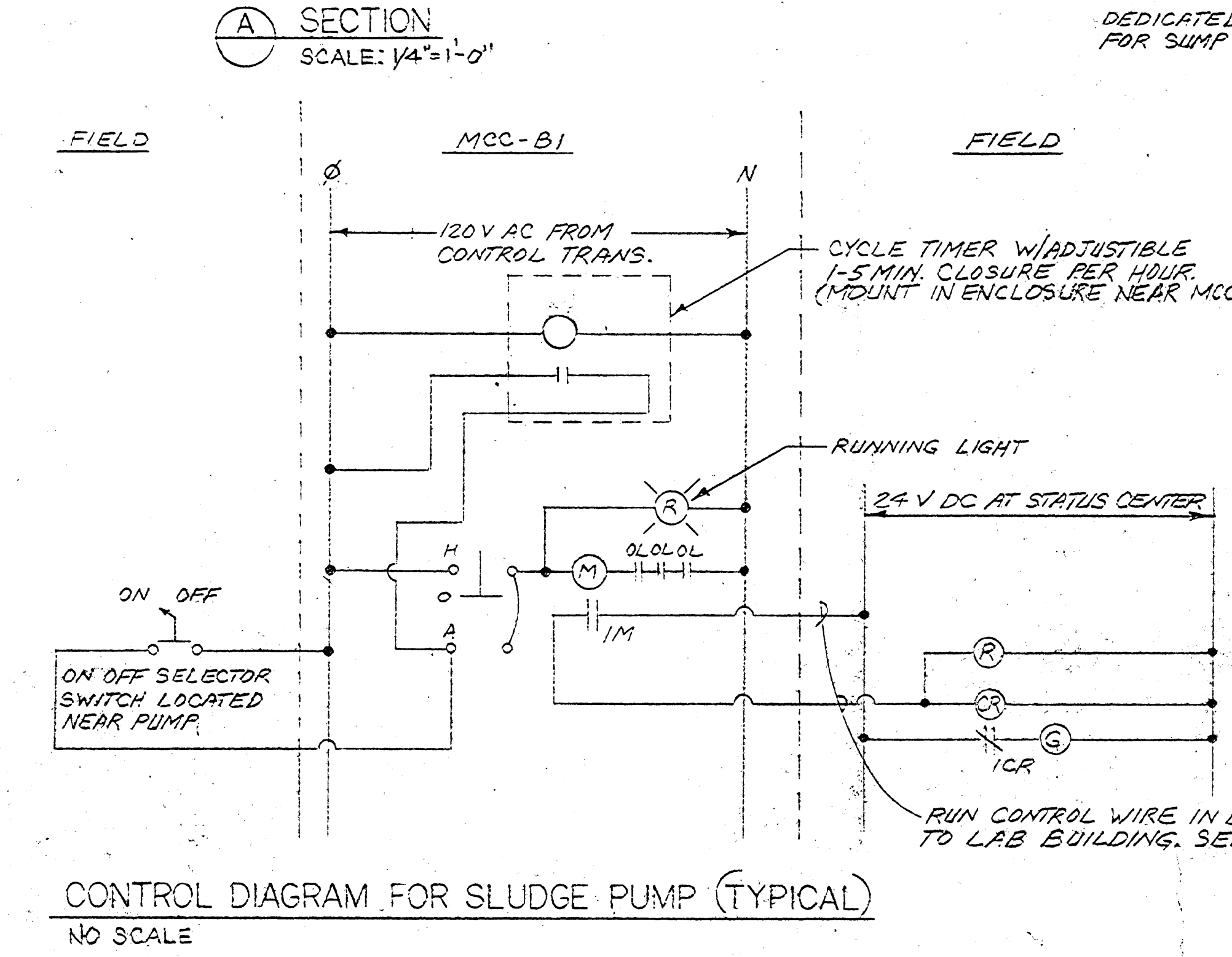
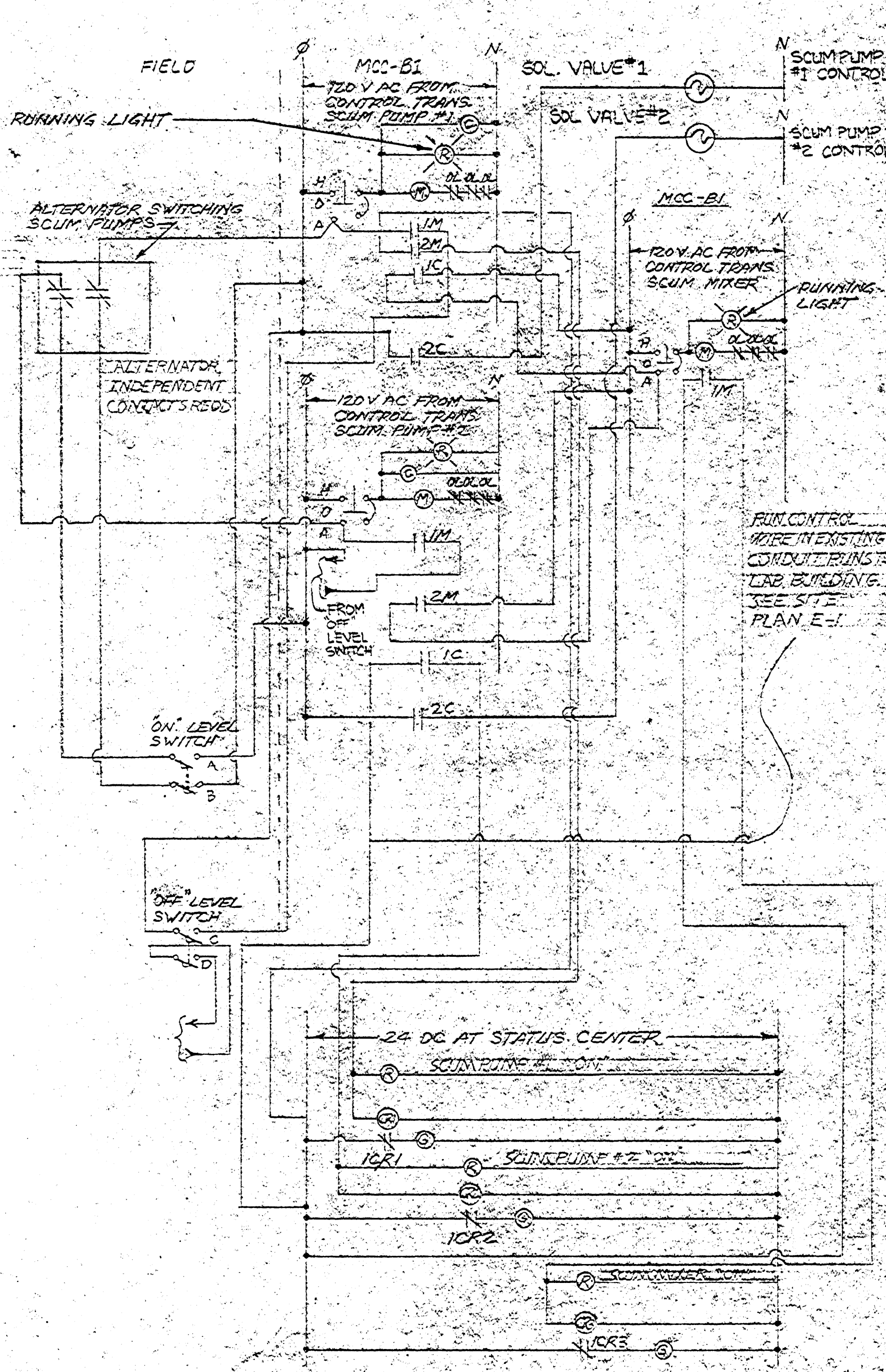
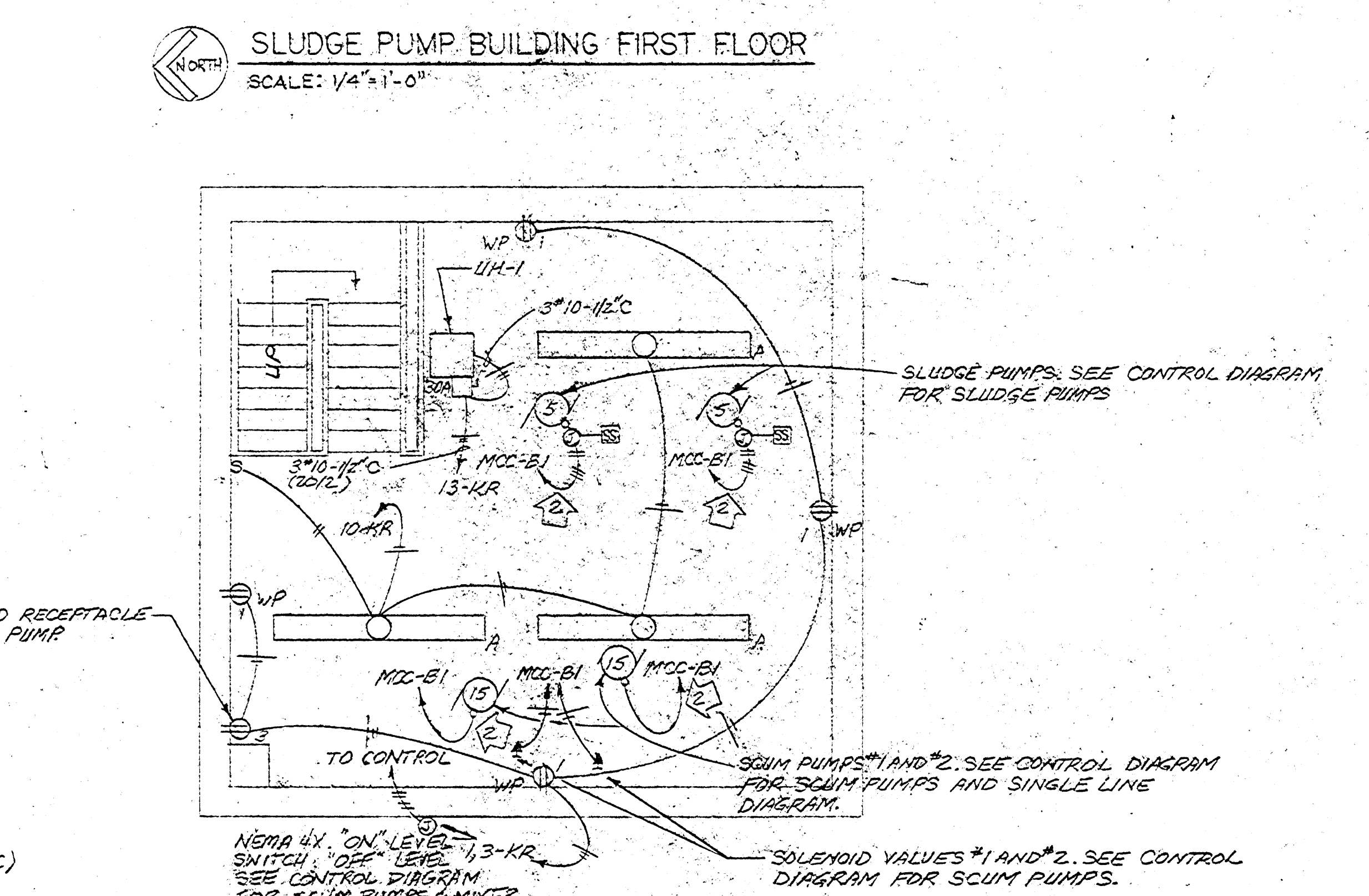
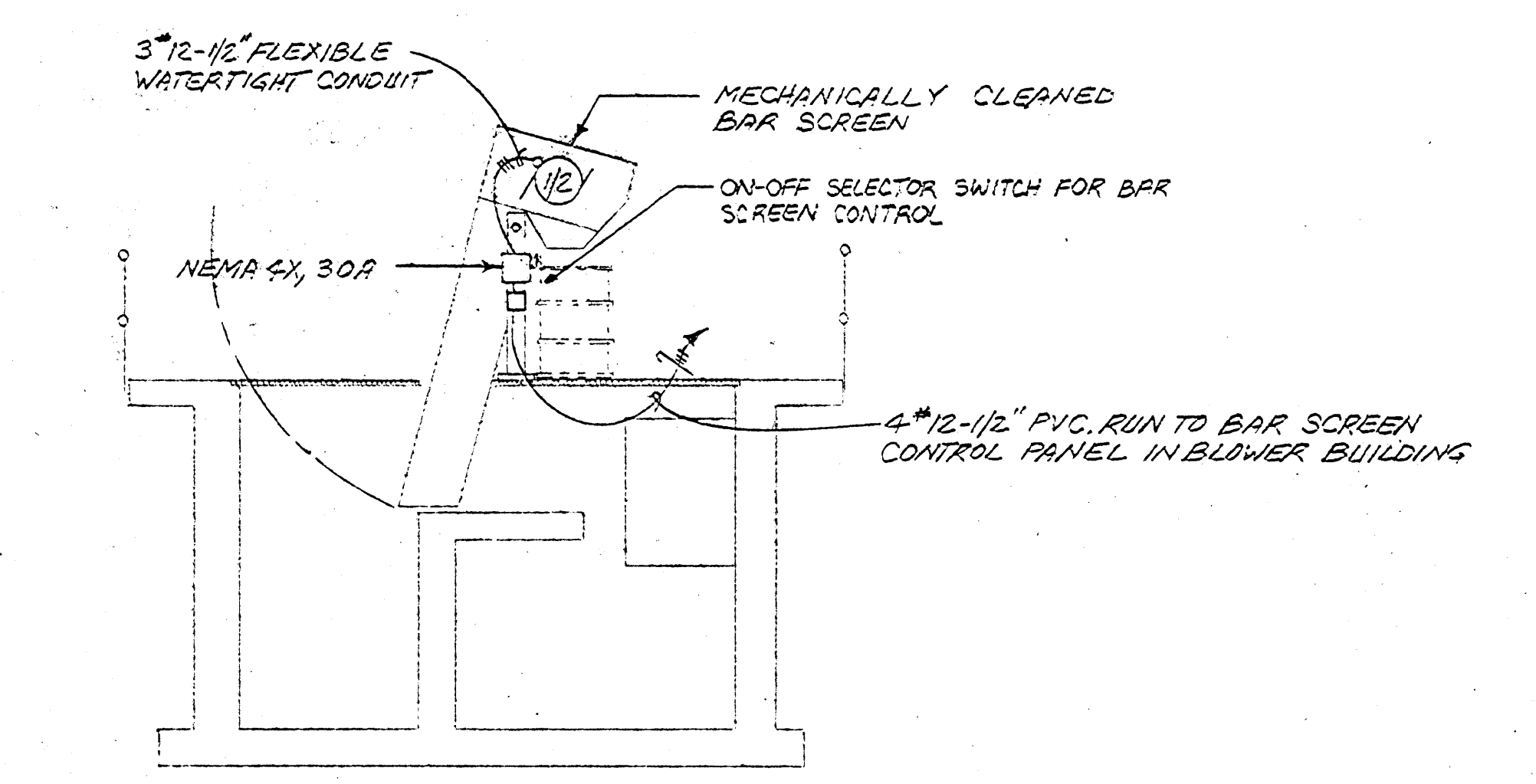
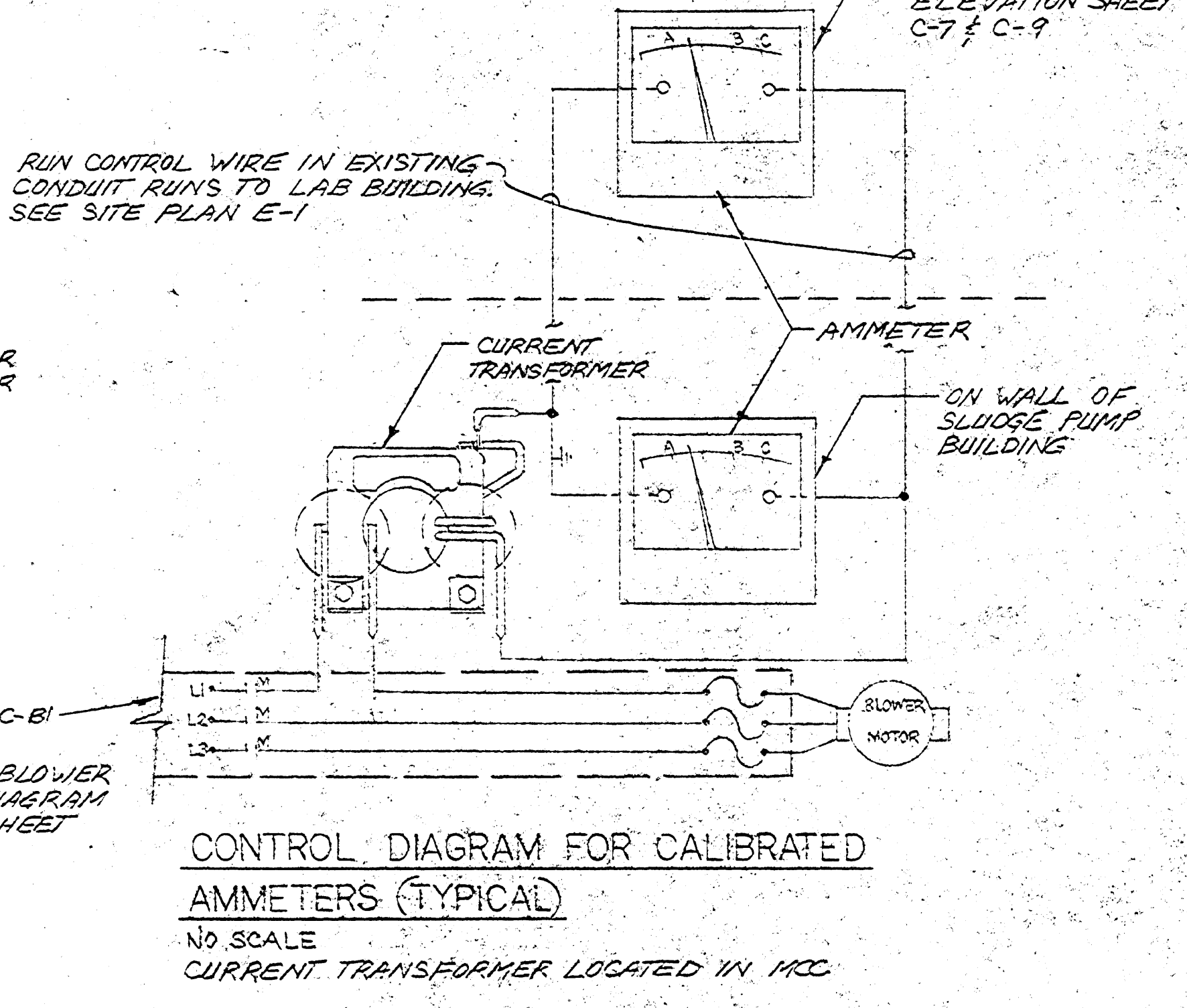
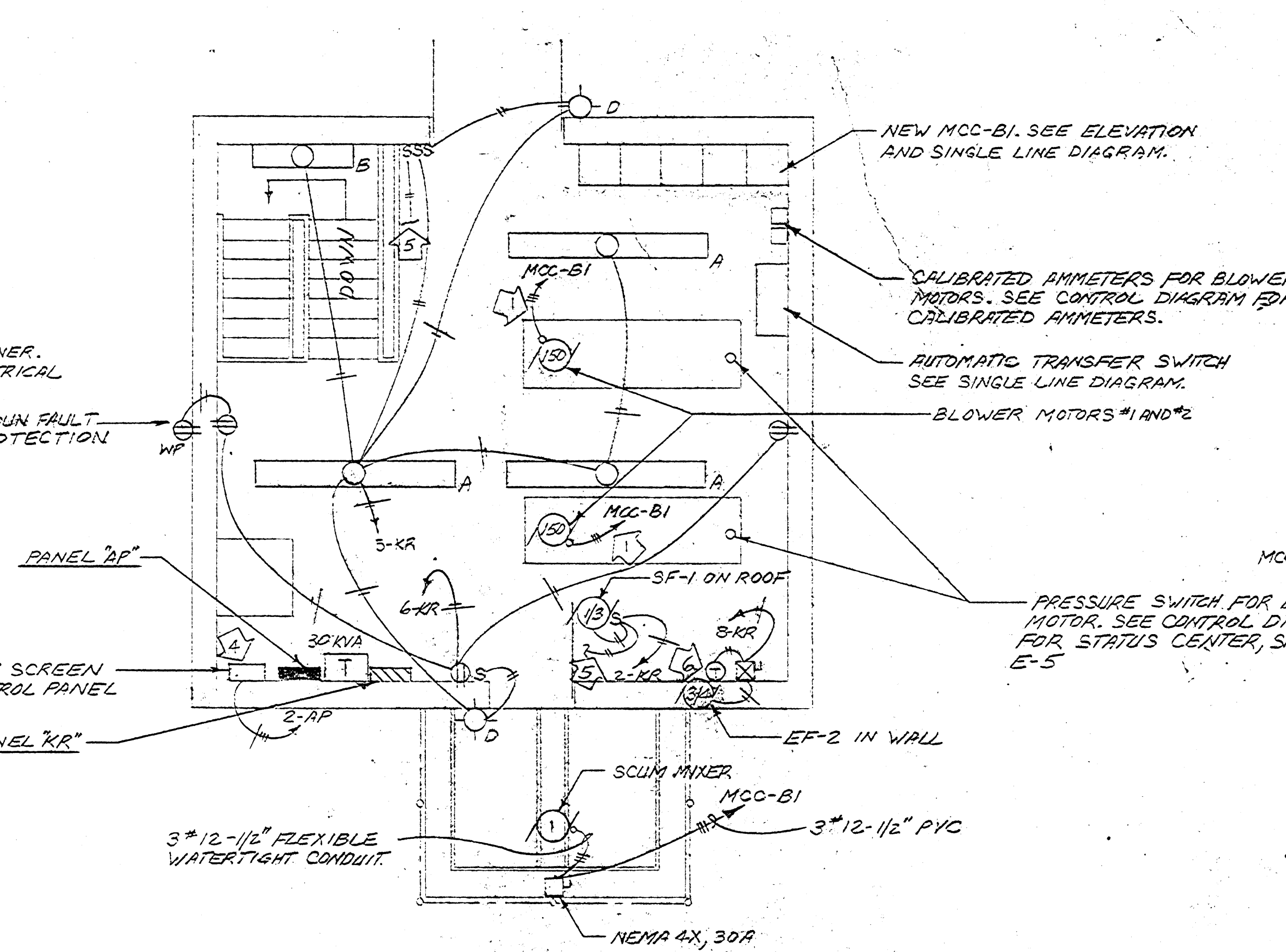
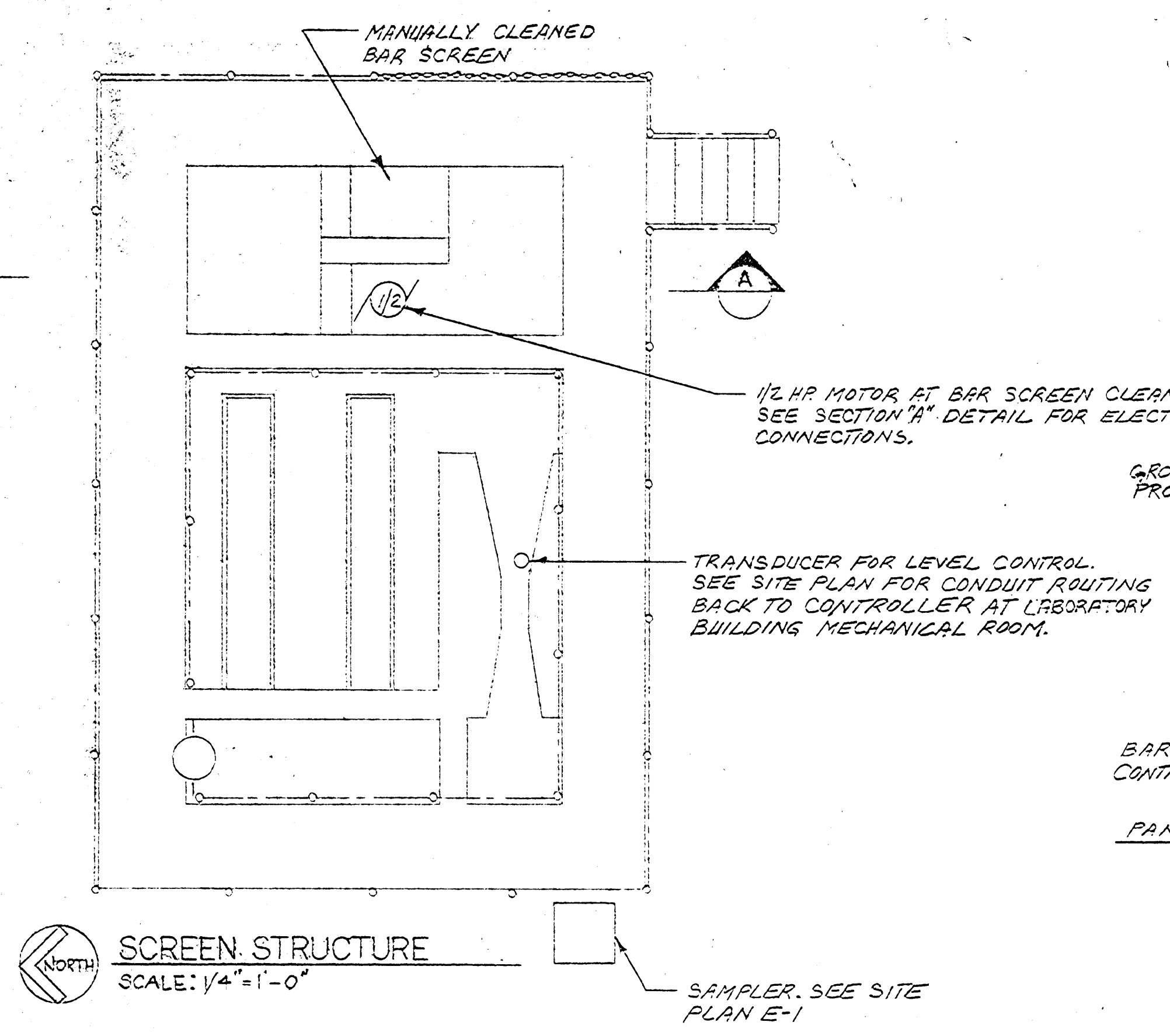
SCREEN STRUCTURE AND
SLUDGE PUMP BUILDING

SCALE: AS NOTED

JOB NO. M020703023 SHEET NO.

DATE 3-11-88 E-2

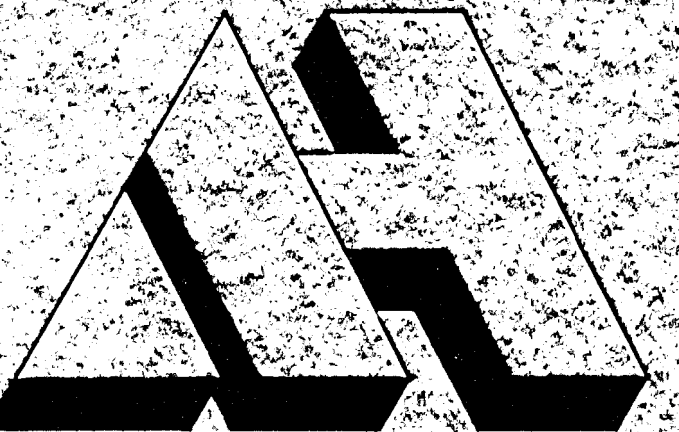
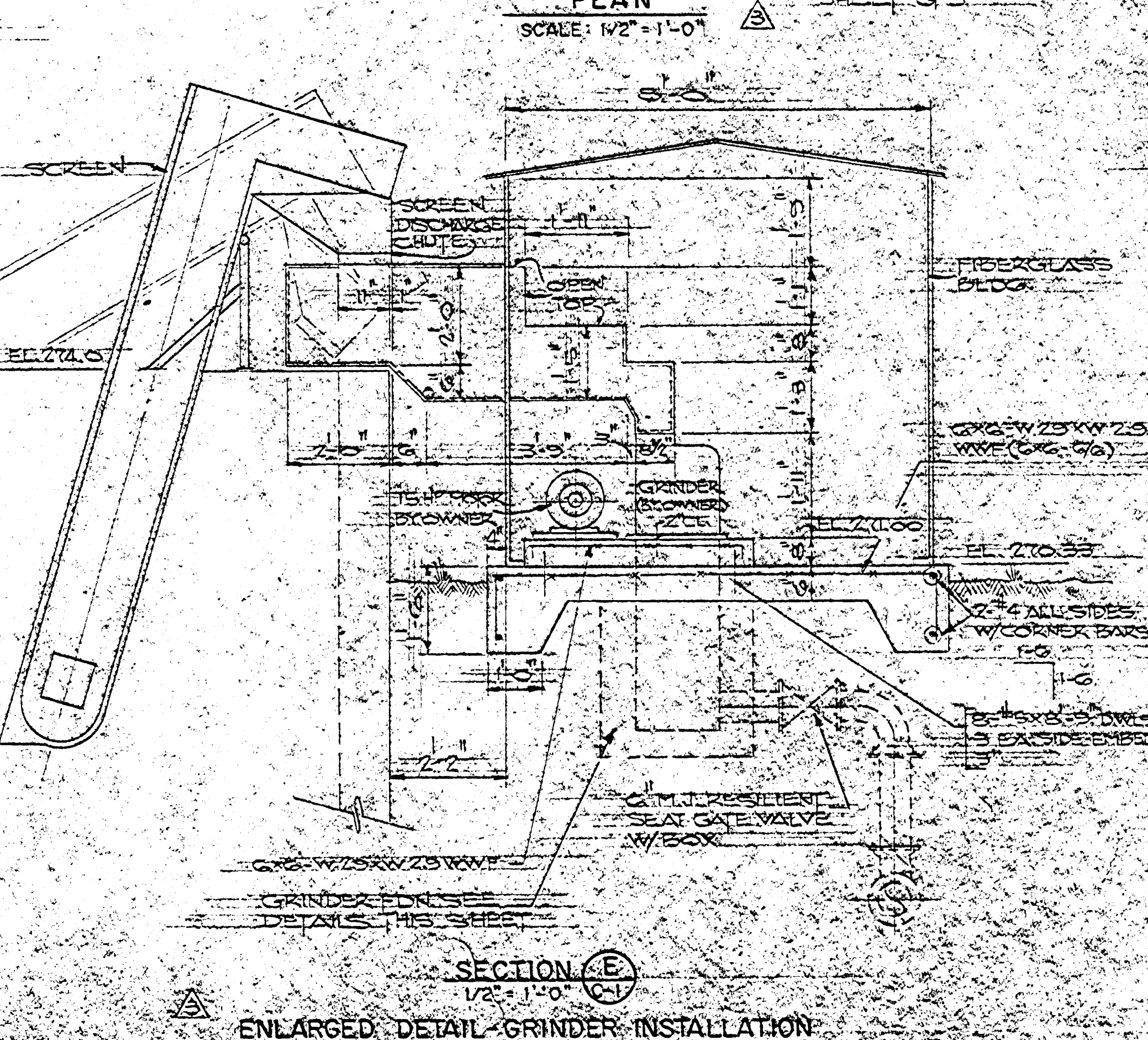
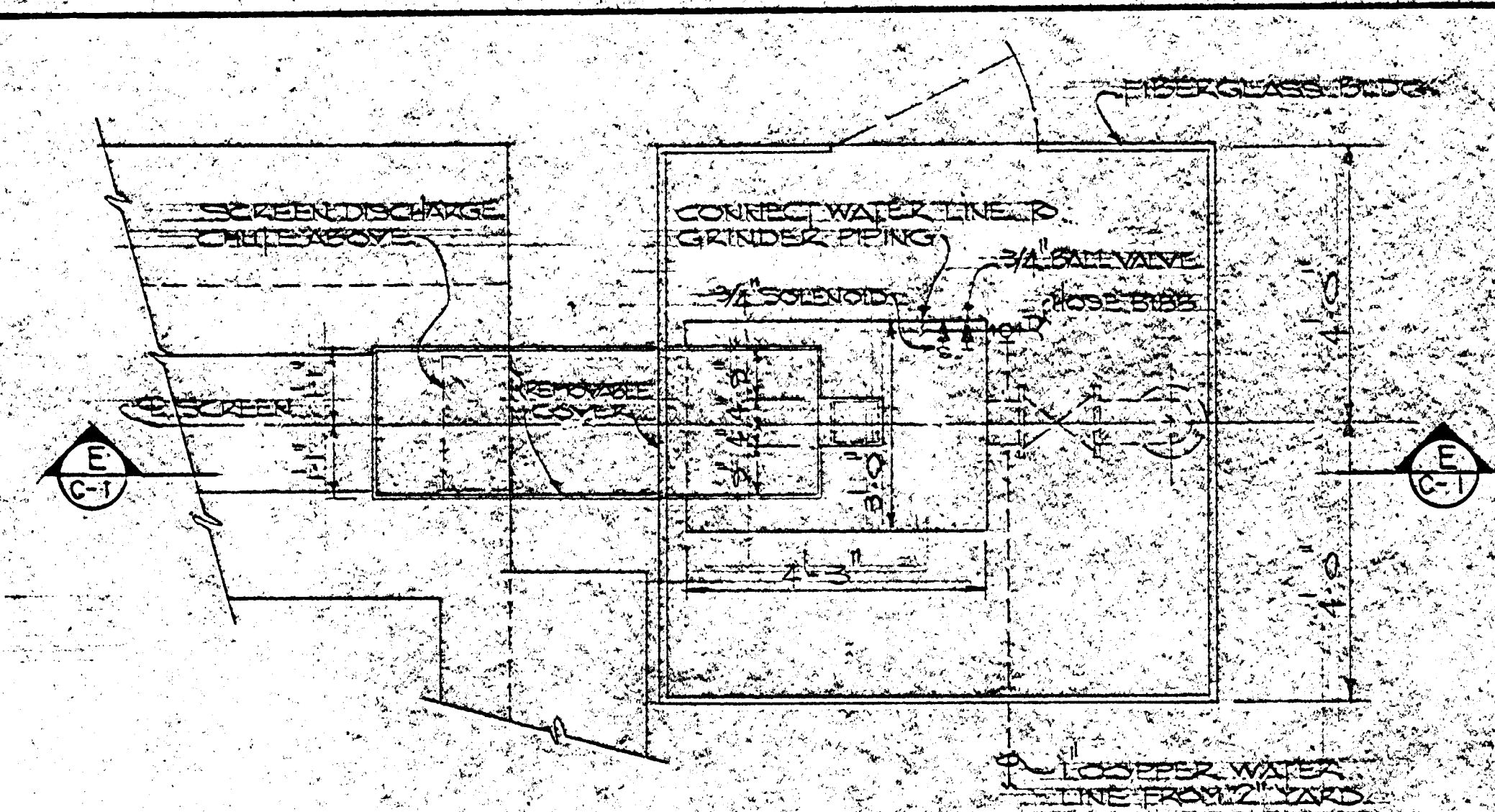
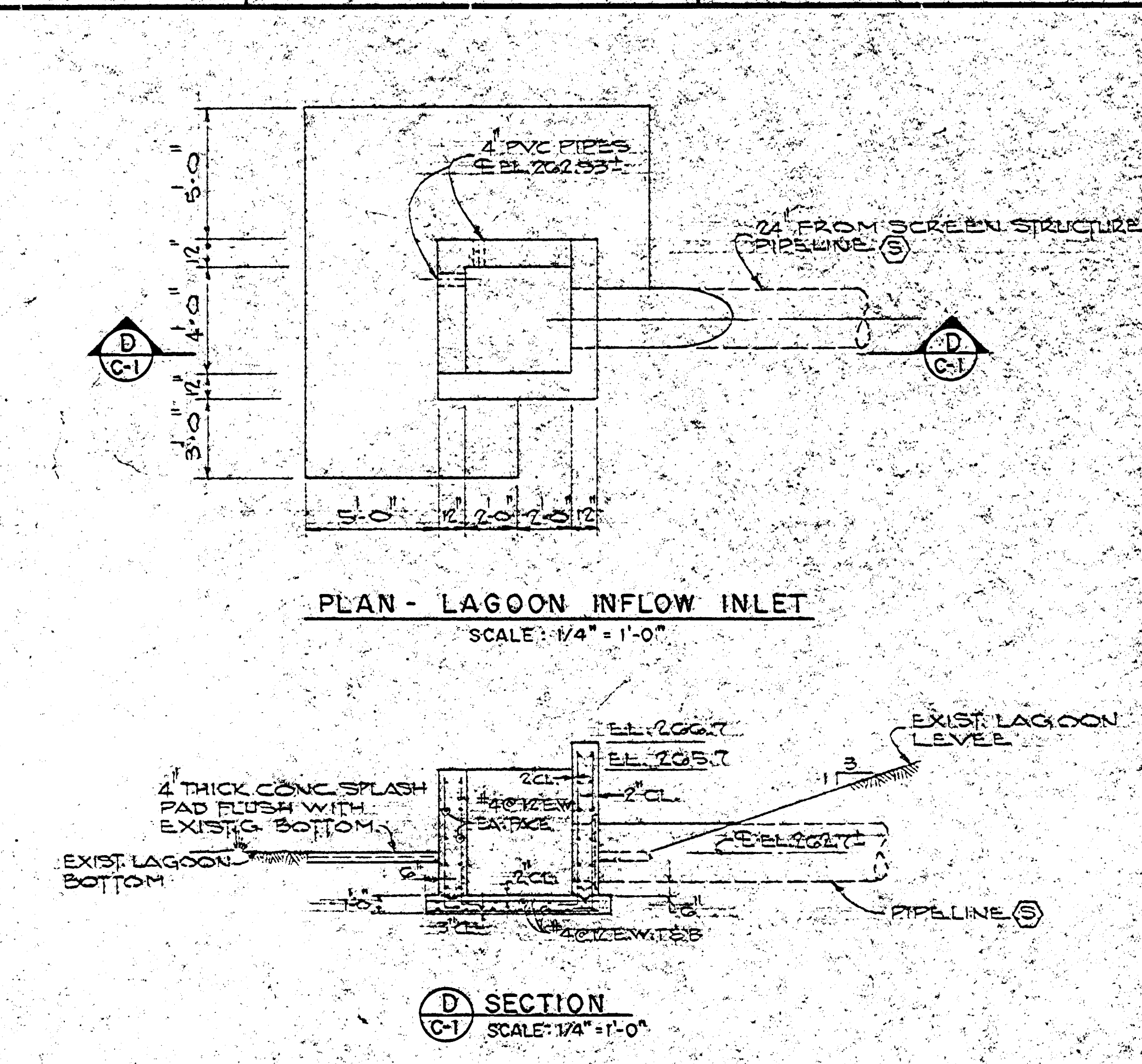
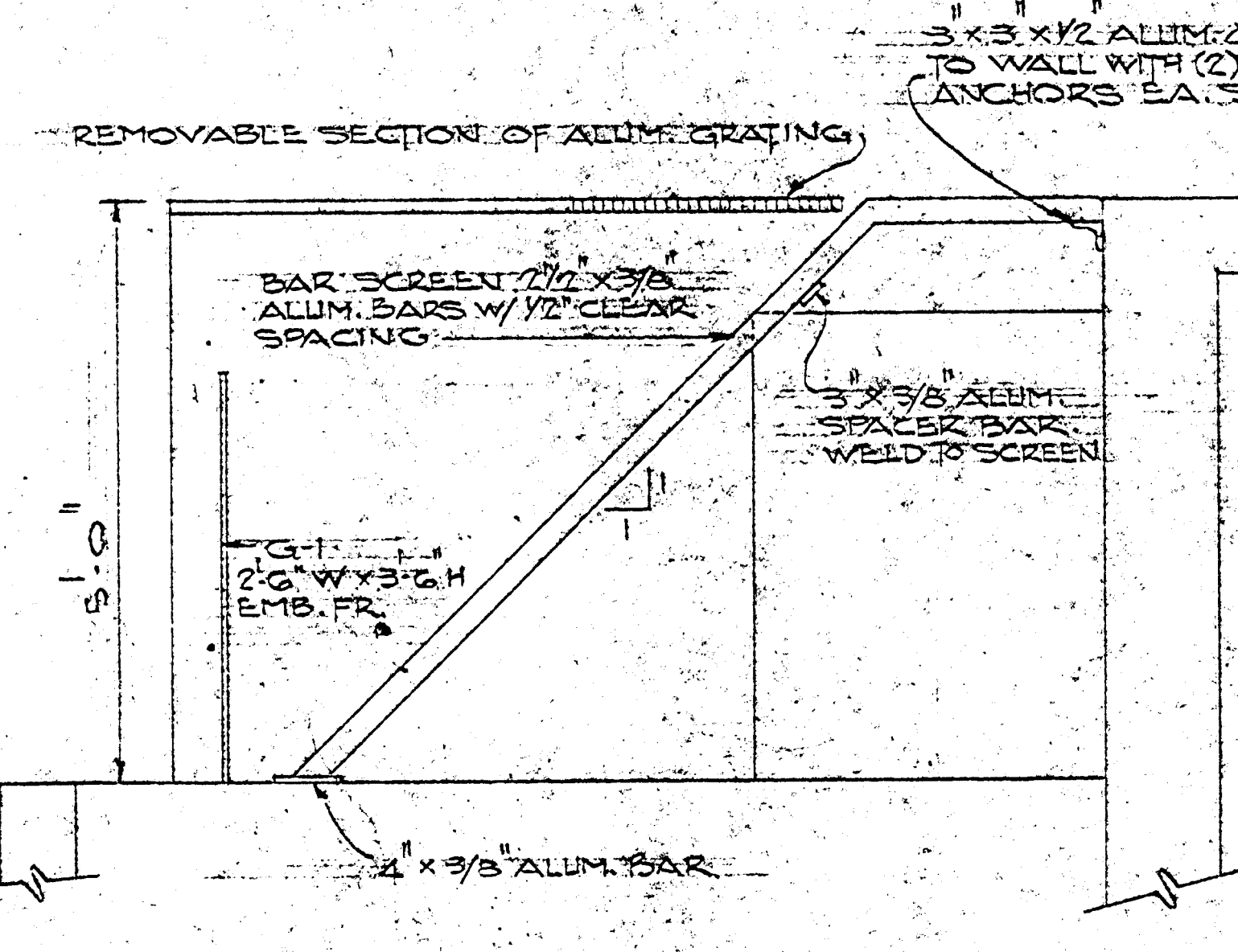
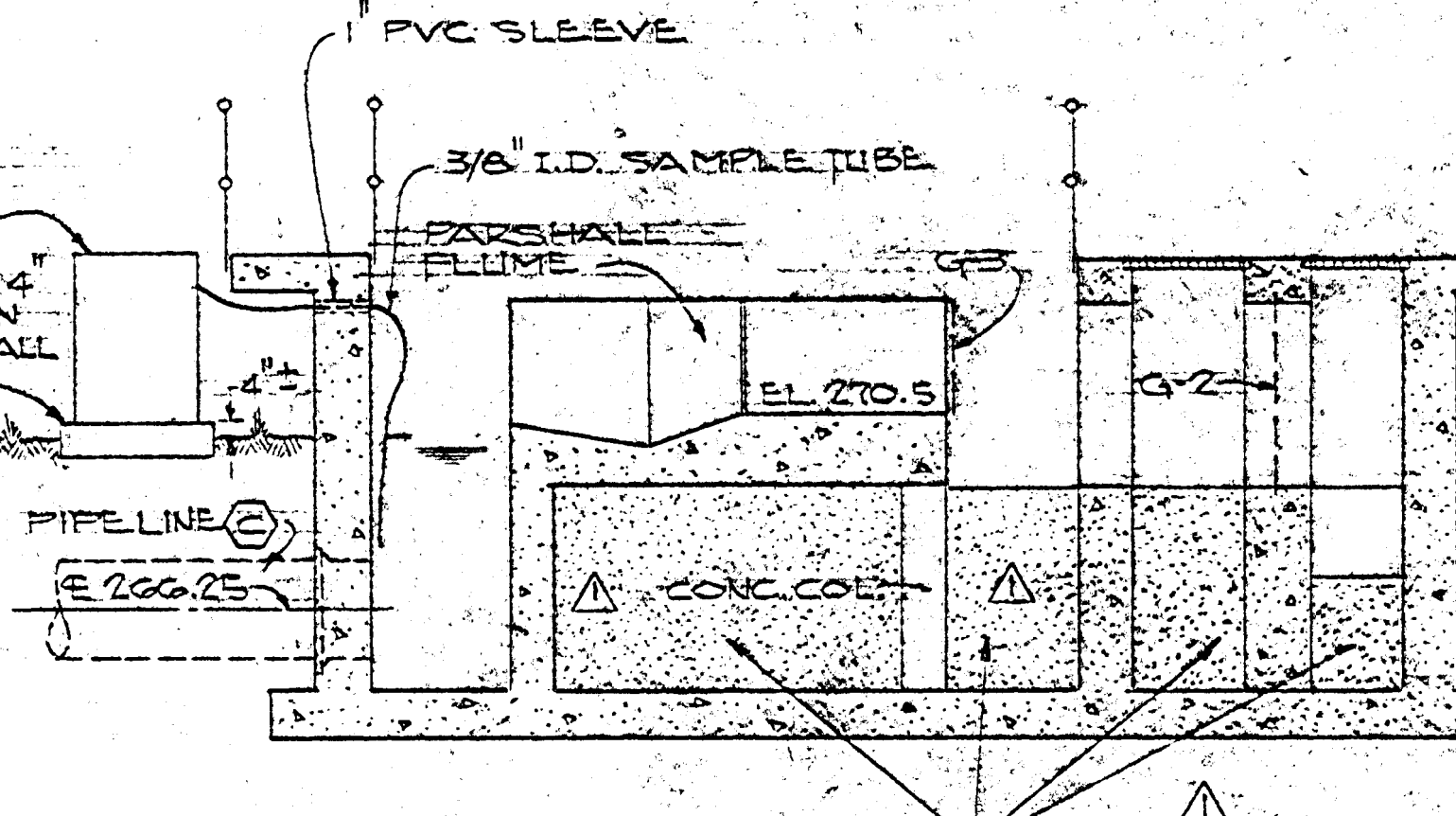
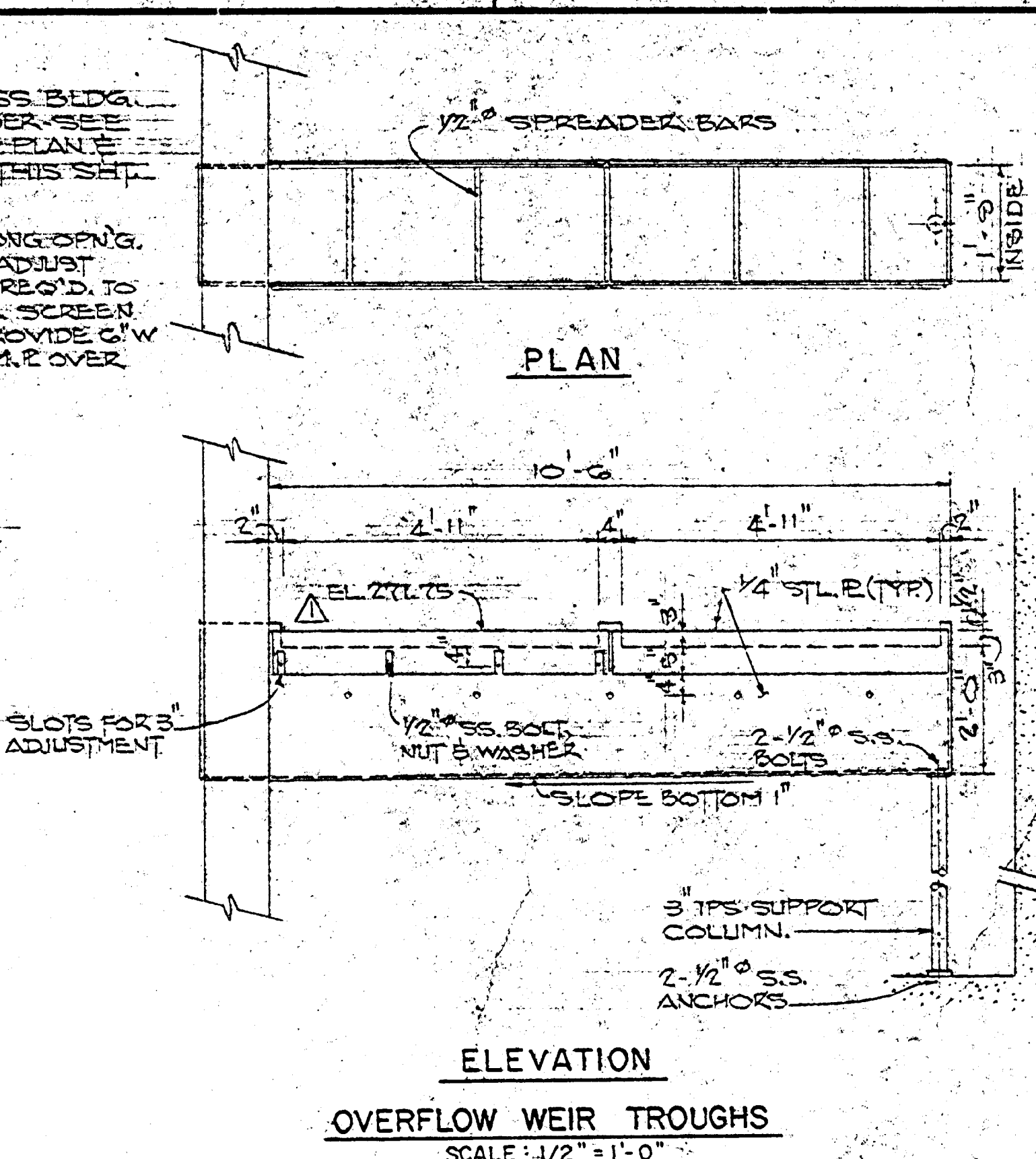
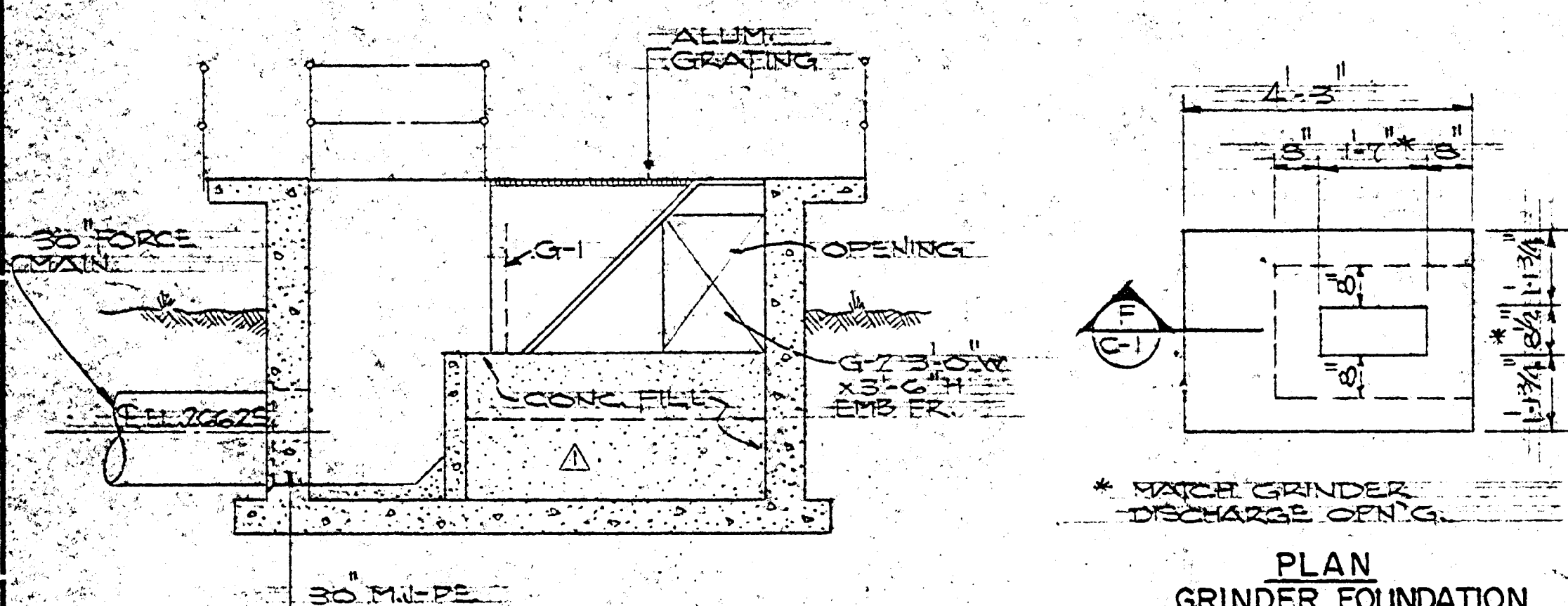
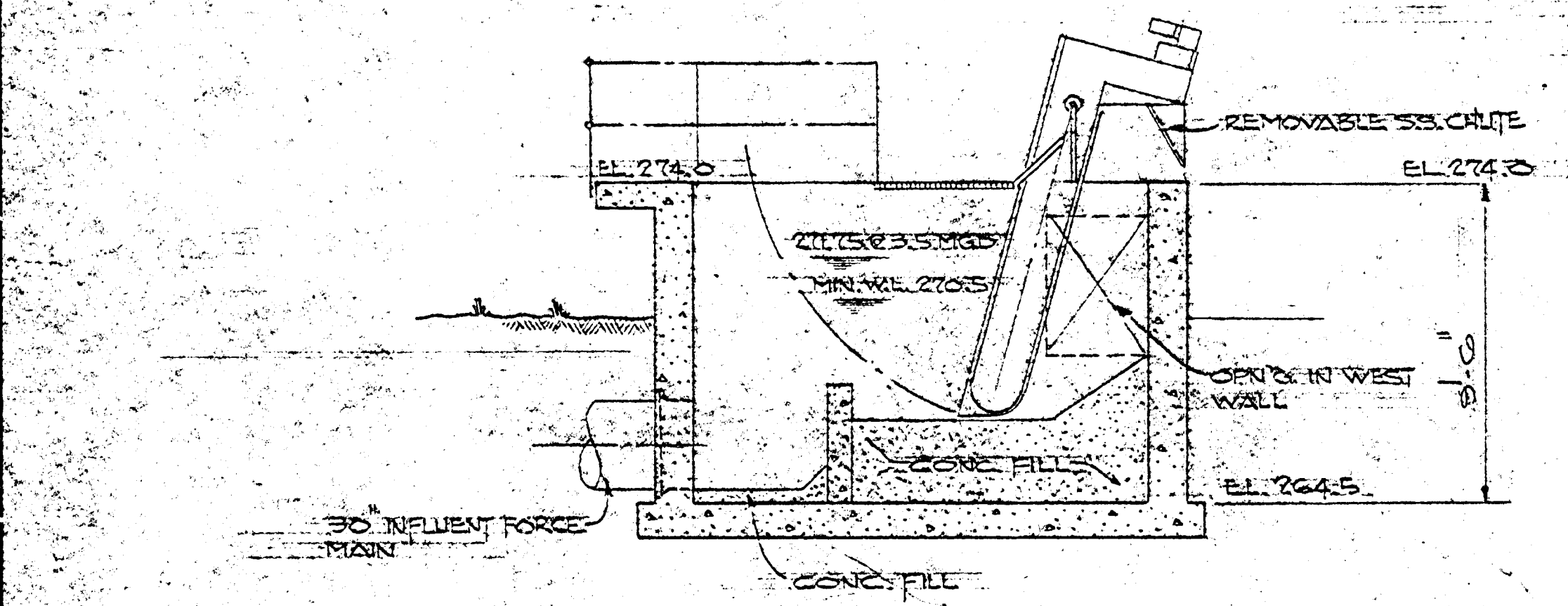
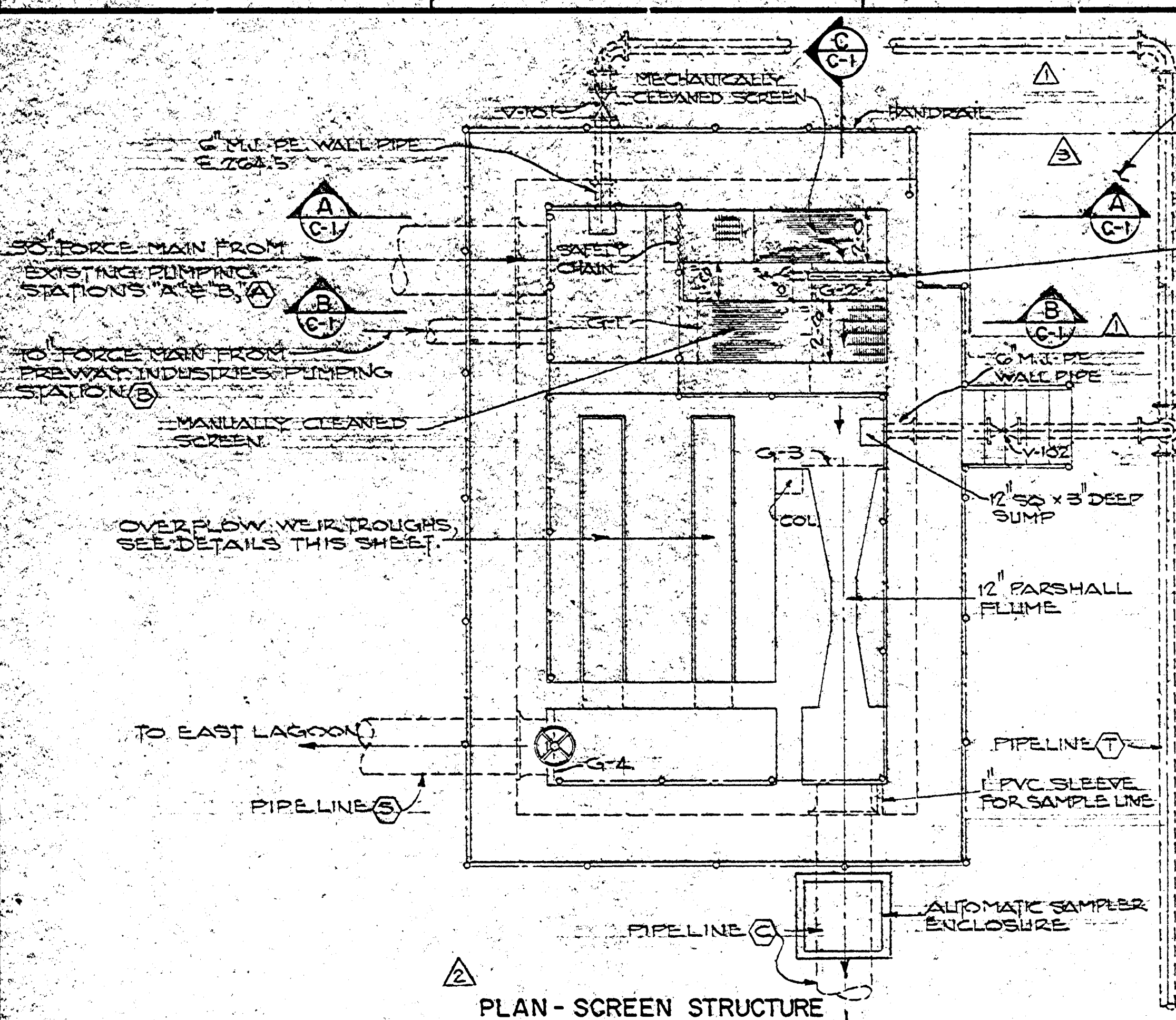
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CONTROL DIAGRAM FOR SLUDGE PUMP (TYPICAL)
NO SCALE

SLUDGE PUMP BUILDING BASEMENT
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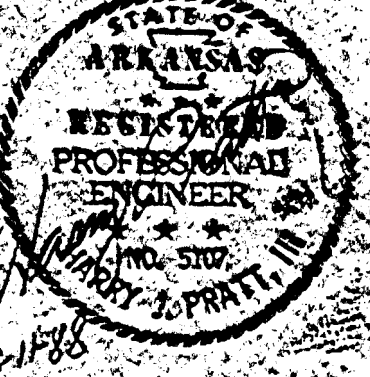
CONTROL DIAGRAM FOR SCUM PUMPS AND MIXER
NO SCALE



ALLEN & HOSHALL
ENGINEERS, ARCHITECTS, CONSULTANTS

MEMPHIS, TENNESSEE
JACKSON, MISSISSIPPI, KNOXVILLE, TENNESSEE, NASHVILLE, TENNESSEE

DRAWN BY: W. J. Evans
CHECKED: B. J. P.
APPROVED: [Signature]
NOTES:

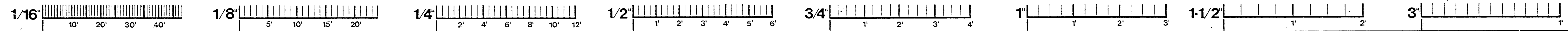


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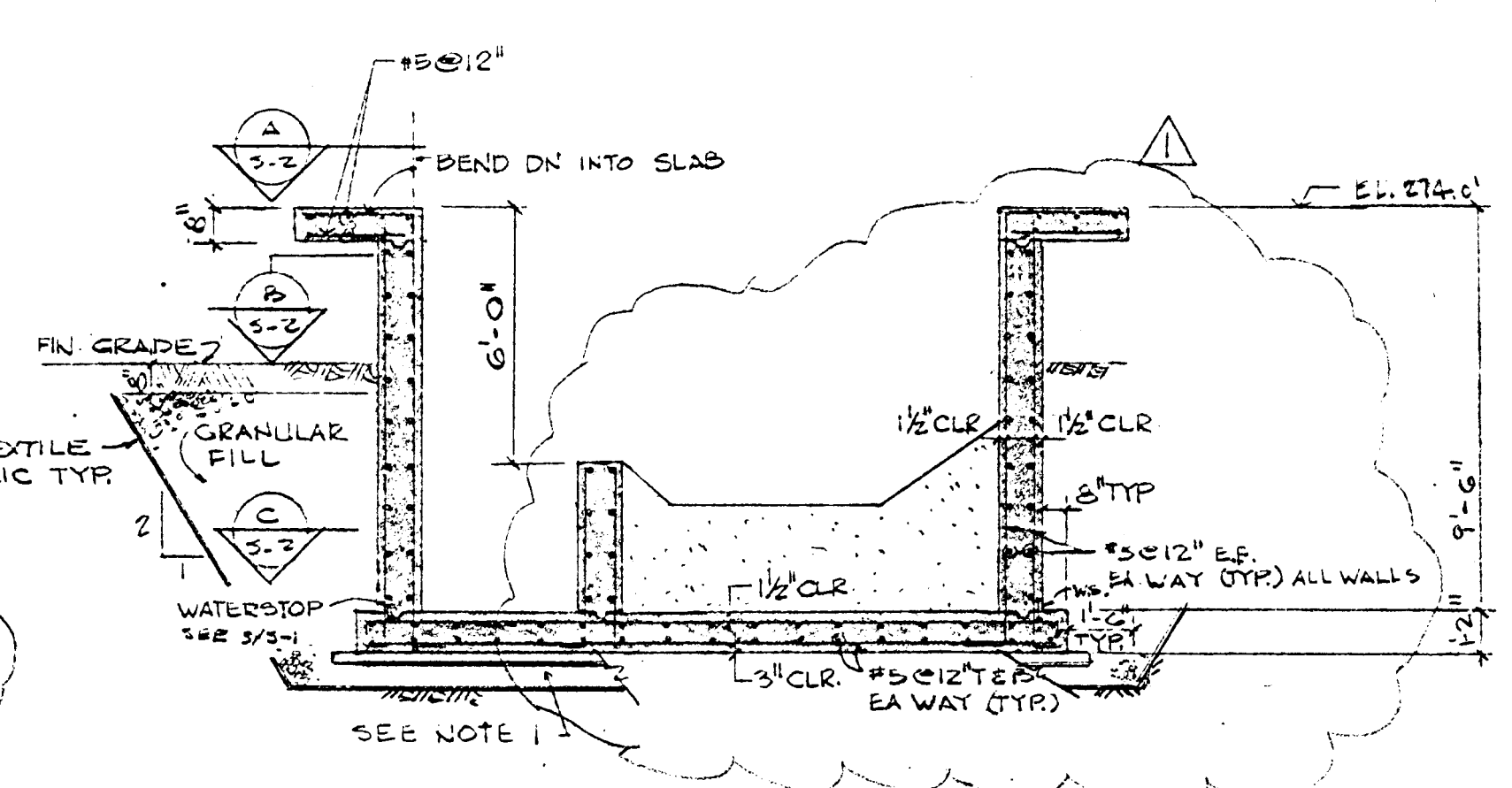
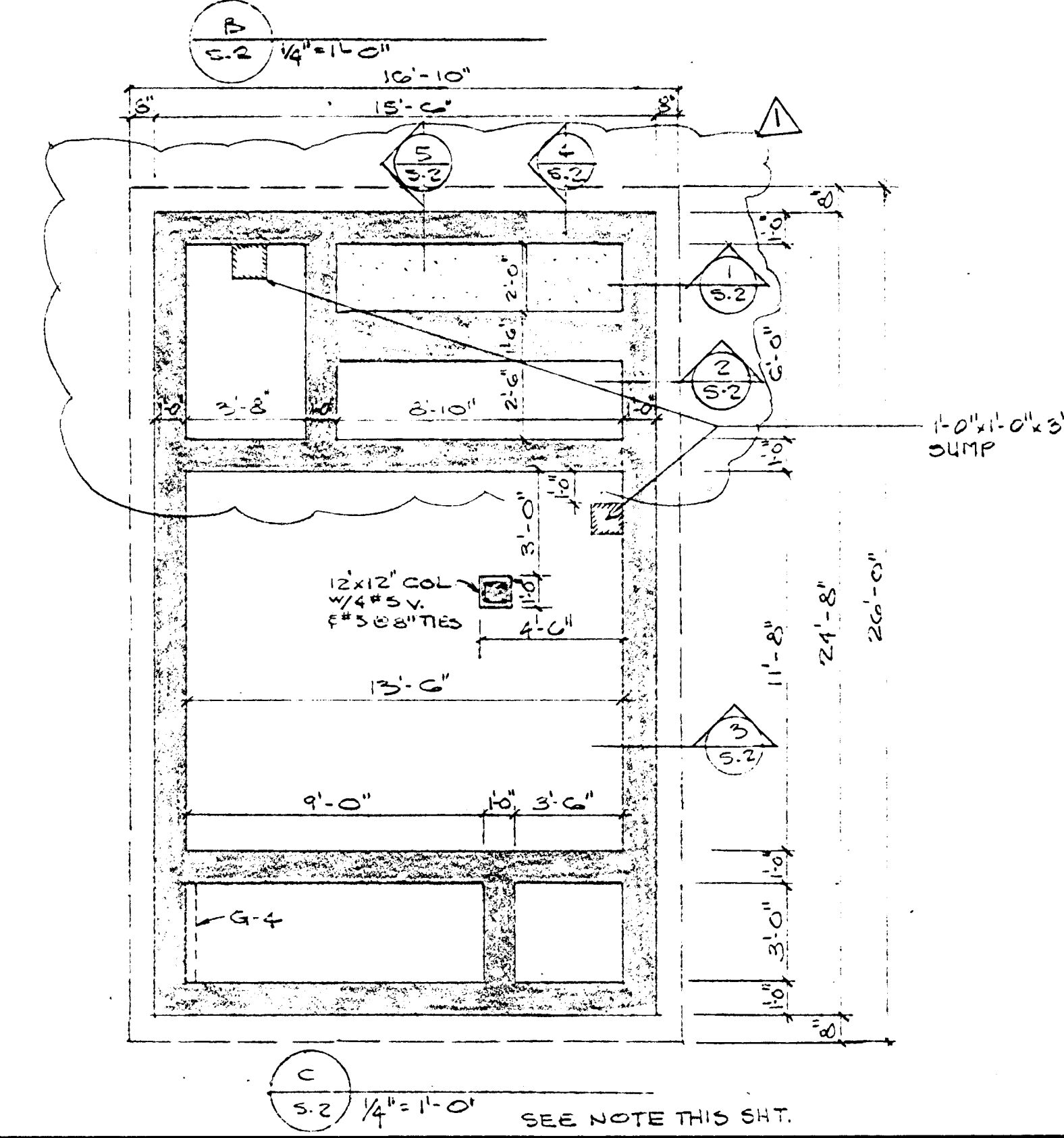
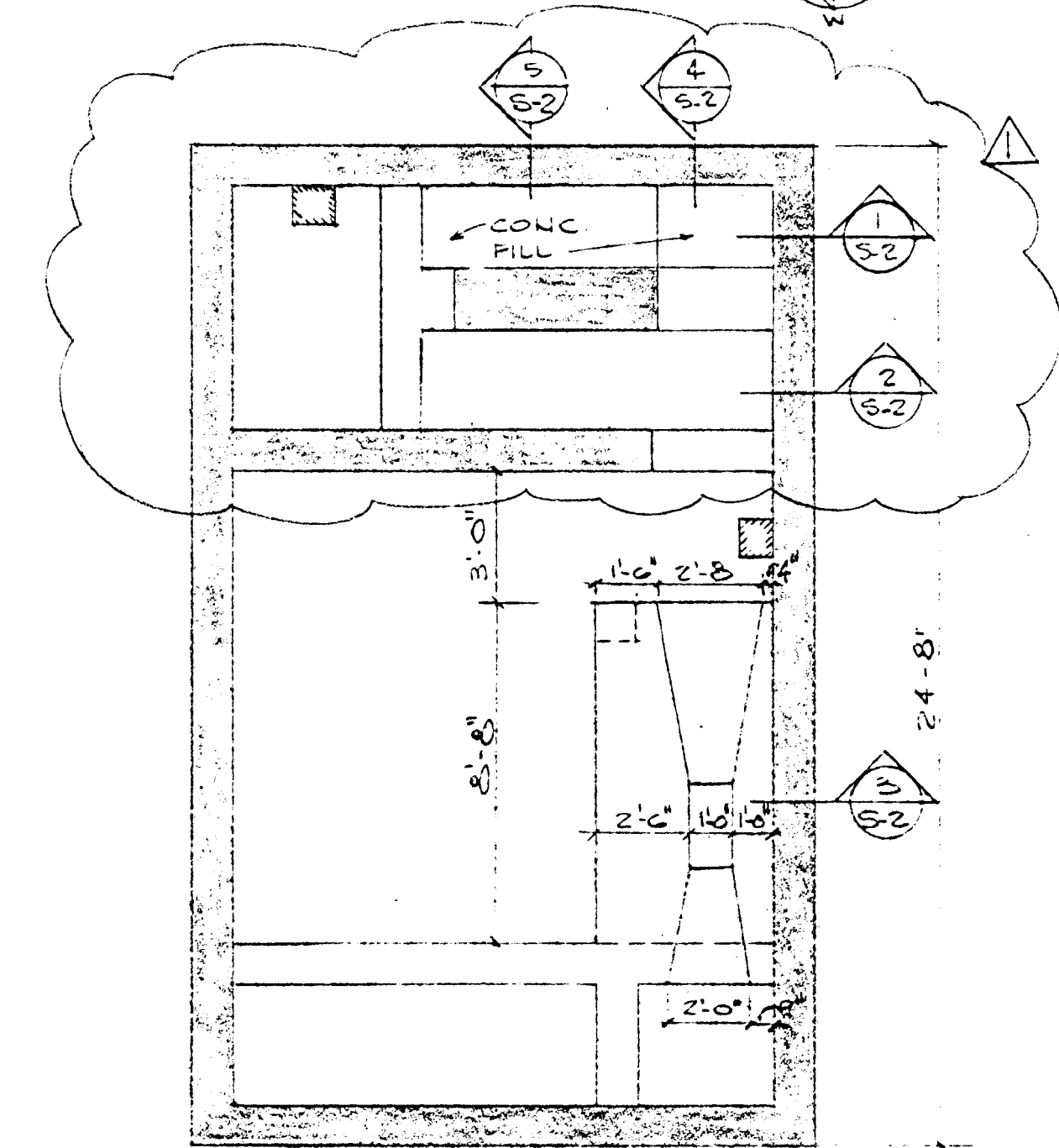
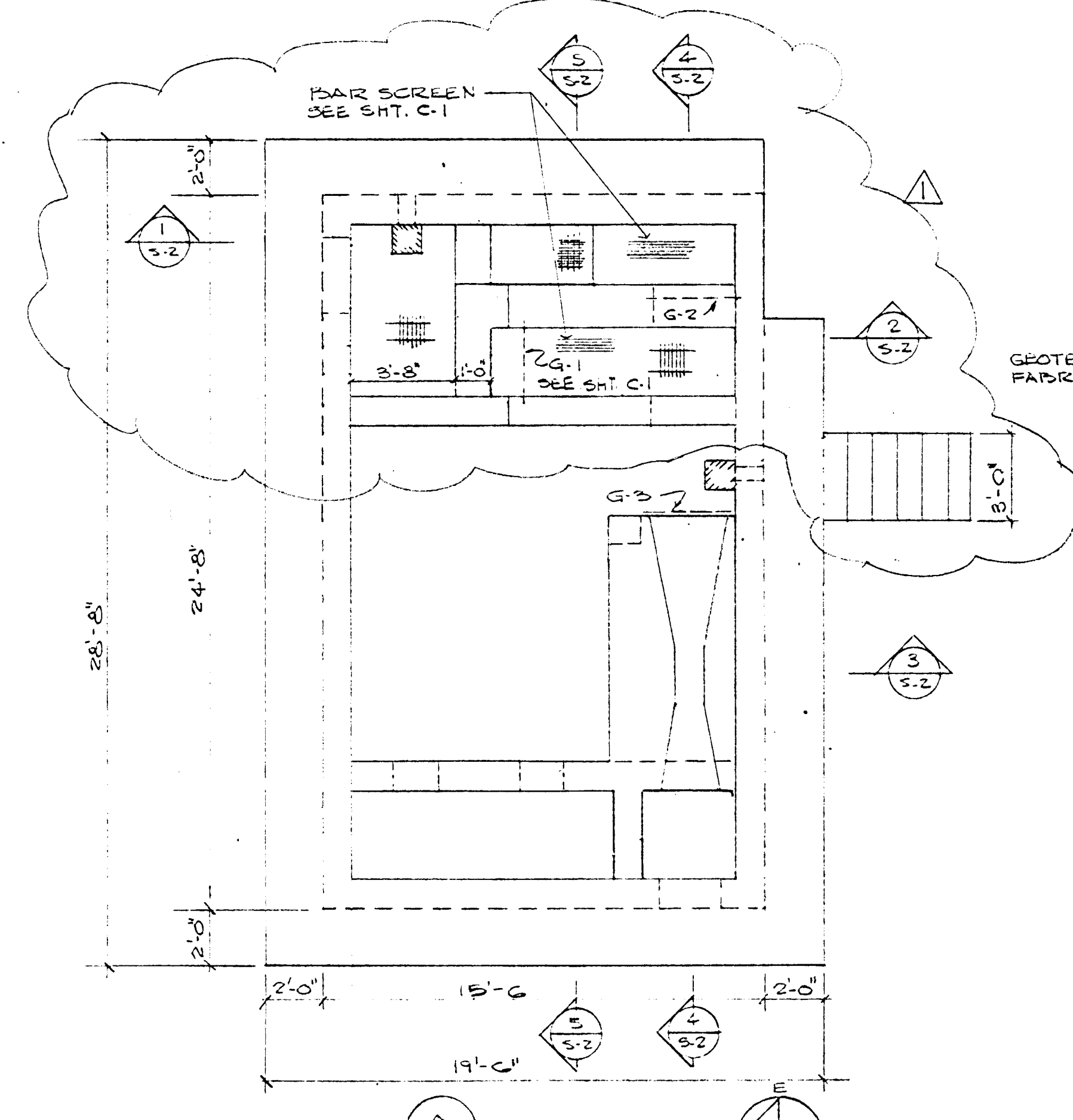
REVISIONS	DATE
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4. REVISED GRINDER STRUCTURE	8/25/80
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6. REVISED GRINDER STRUCTURE	8/25/80
7. REVISED GRINDER STRUCTURE	8/25/80
8. REVISED GRINDER STRUCTURE	8/25/80
9. REVISED GRINDER STRUCTURE	8/25/80
10. REVISED GRINDER STRUCTURE	8/25/80

WASTEWATER TREATMENT PLANT
IMPROVEMENT
PARAGOULD LIGHT & WATER
COMMISSION
PARAGOULD, ARKANSAS

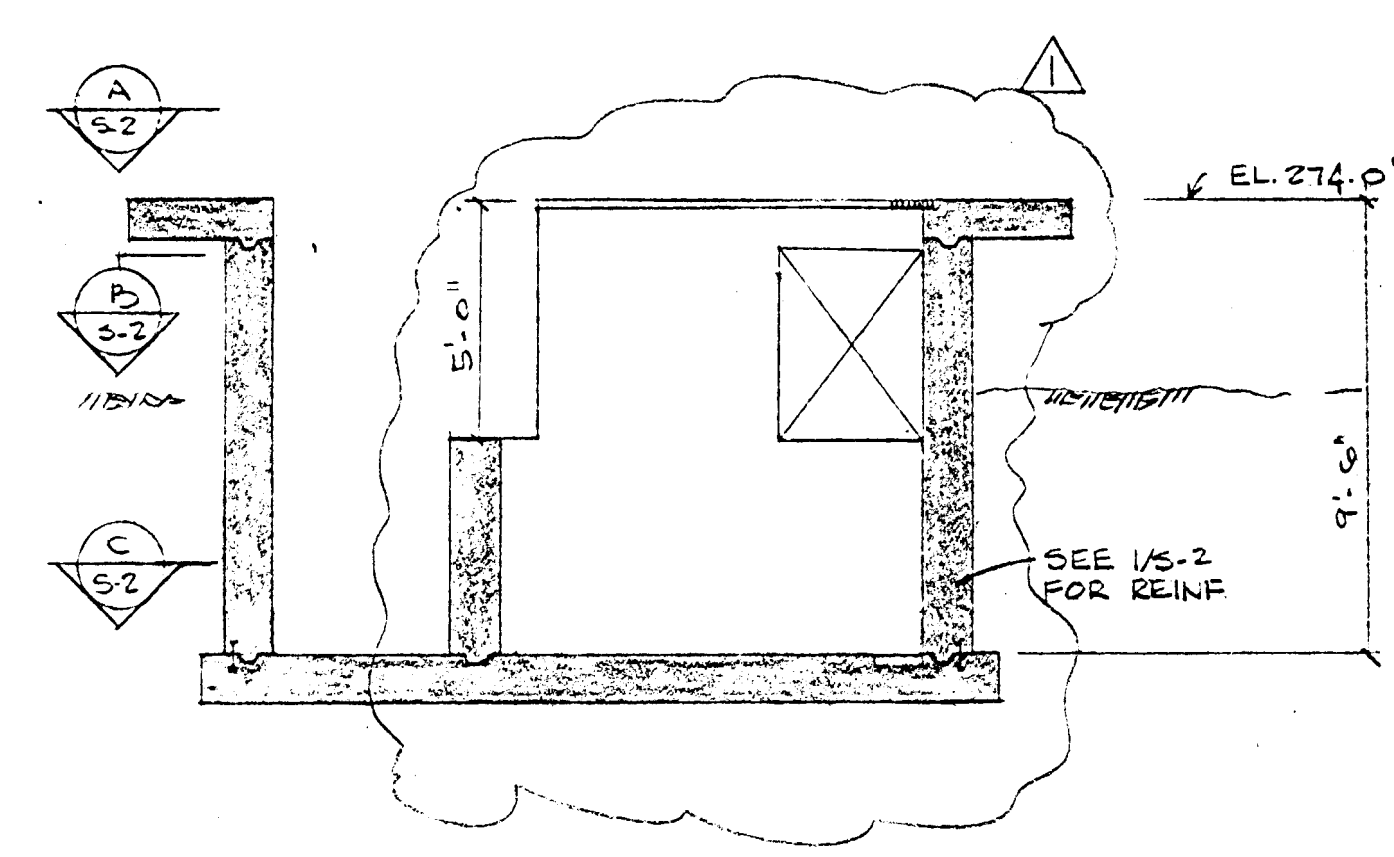
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SCALE: 1/2" = 1'-0"
JOB NO: M0207C3025
DATE: 3-11-88
SHEET NO: C-1



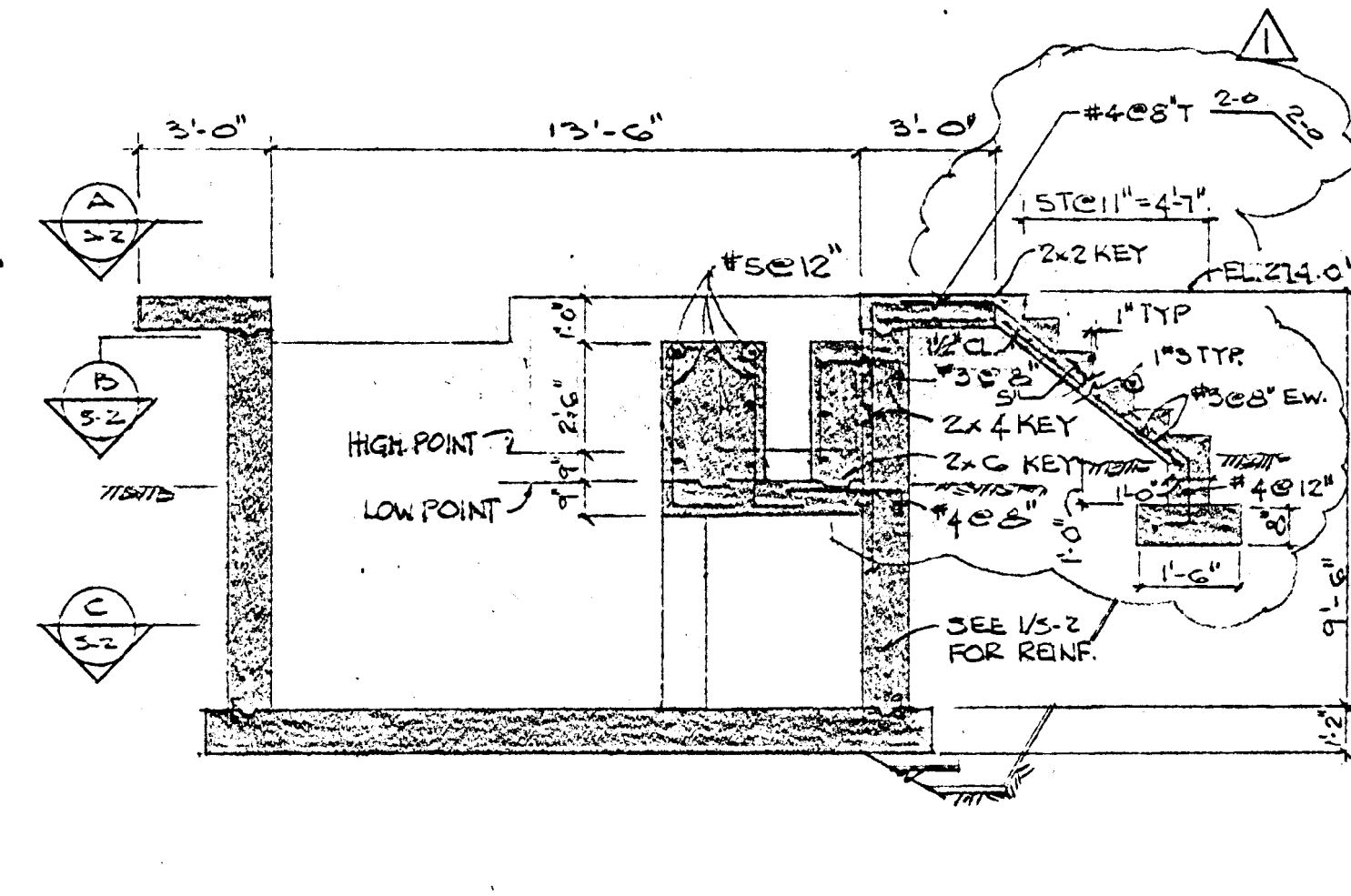
IF SHEET SIZE IS LESS THAN 28" x 40" SCALE ACCORDINGLY



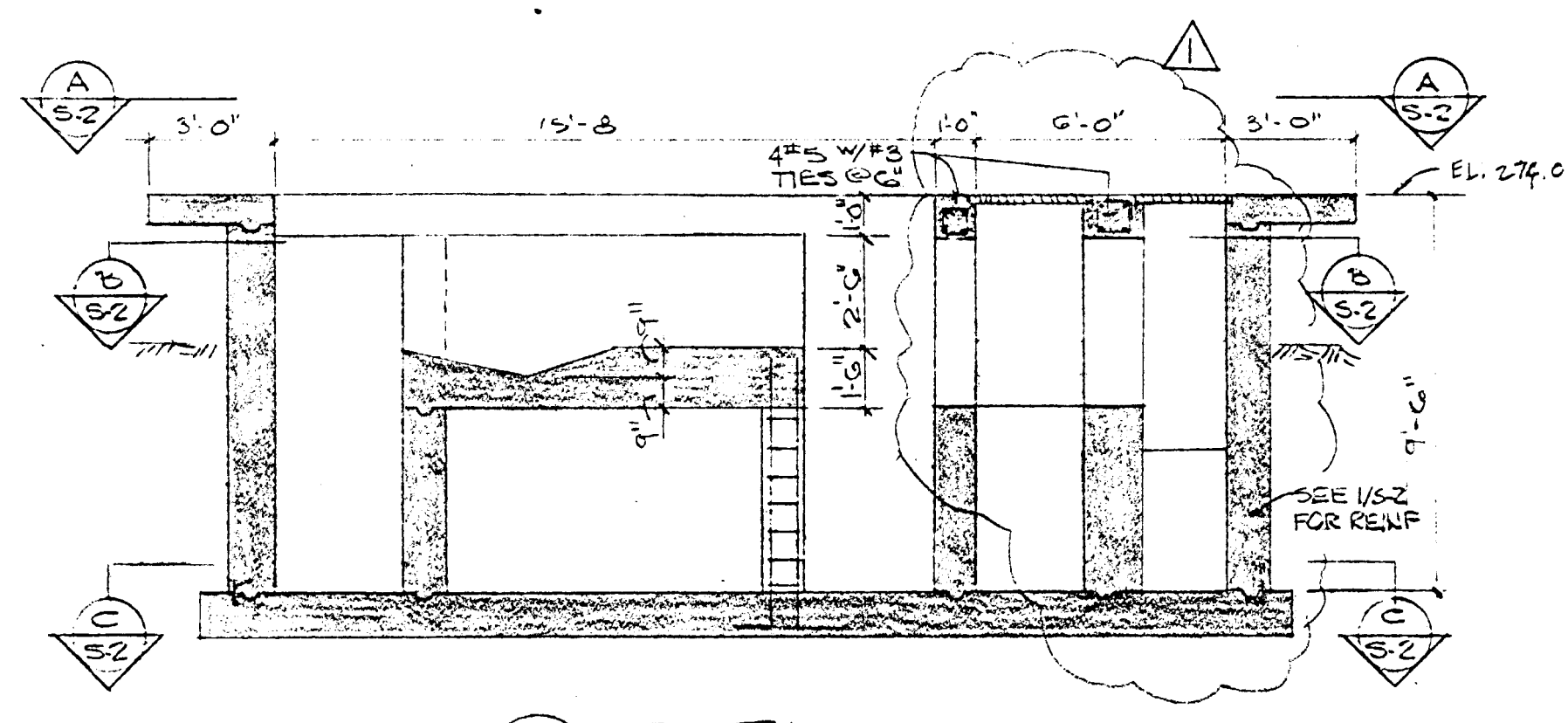
1 SECTION
5-2 1/4" x 1'-0"



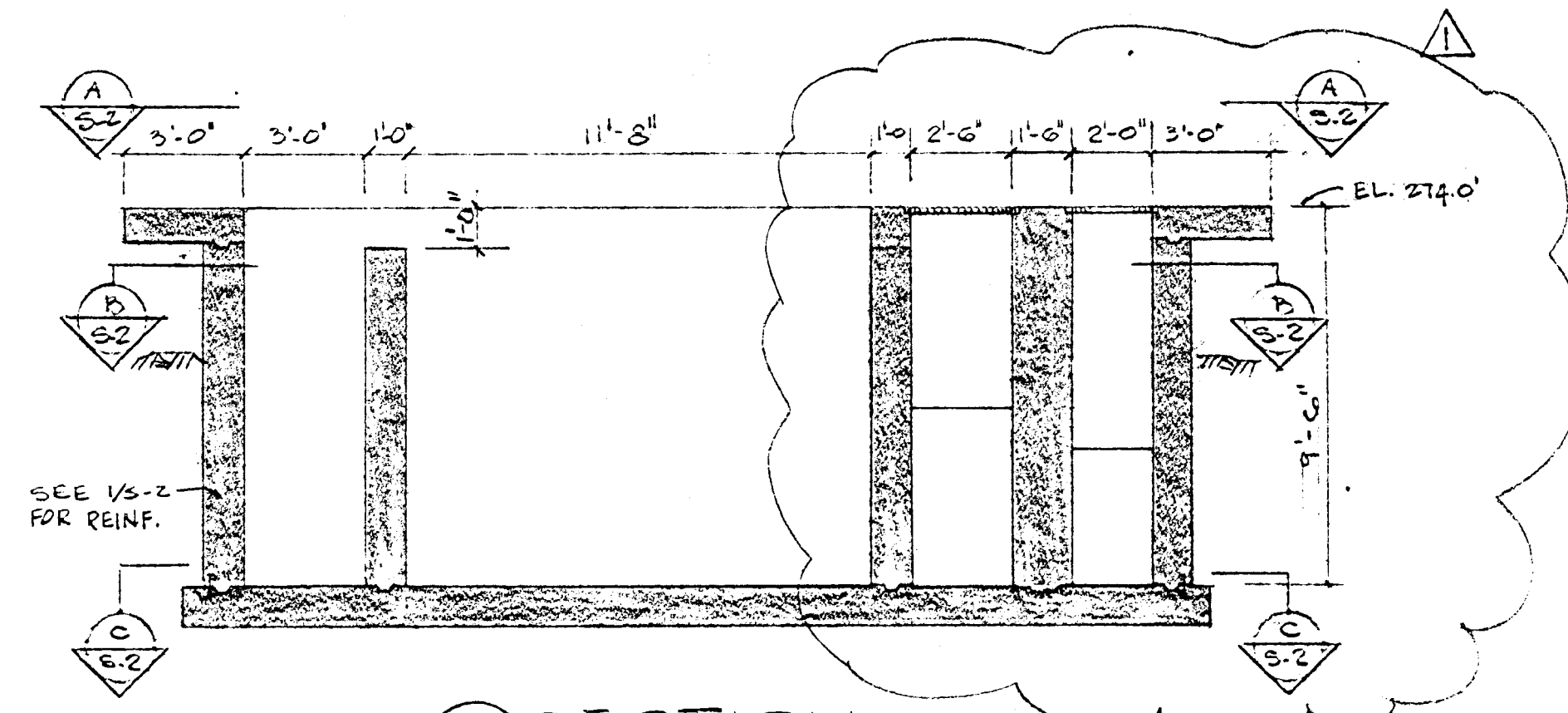
2 SECTION
5-2 1/4" x 1'-0"



3 SECTION
5-2 1/4" x 1'-0"



4 SECTION
5-2 1/4" x 1'-0"



5 SECTION
5-2 1/4" x 1'-0"



ALLEN & HOSHALL
ENGINEERS ARCHITECTS CONSULTANTS

MEMPHIS, TENNESSEE
JACKSON, MS. KNOXVILLE, TN. NASHVILLE, TN.

DRAWN BY H.E.W.	
CHECKED P.L.P.	
APPROVED T.W.	

NOTES
1. SEE NOTE 1, 2, 3 SHT. S-G.

RECORD DNG.	3/15/88
REV. TO ACCORD WITH SCREEN	1-6-88
NO.	DATE

REVISIONS

WASTEWATER TREATMENT PLANT
IMPROVEMENT

PARAGOULD LIGHT & WATER
COMMISSION

PARAGOULD, ARKANSAS

SCREEN STRUCTURE

SCALE	SHEET NO. S-2
JOB NO. M0207C3023	DATE 3-11-88

RECORD DRAWING

PROGRESS PRINT ISSUE DATE:

RFP#4 - Valves

No.	Description	Quantity	Unit	ETA
1	30" MJ X MJ Buried Plug Valves Standard Port Per Section 331216	2	EA	On-Site
2	16" MJ X MJ Buried Plug Valves Standard Port Per Section 331216	1	EA	On-Site
3	8" MJ X MJ Buried Plug Valves Standard Port Per Section 331216	1	EA	On-Site
4	6" MJ X MJ Buried Plug Valves Full Port Per Section 331216	2	EA	Mid-February
5	4" MJ X MJ Buried Gate Valve per Section 331216	3	EA	On-Site
6	4" Mud Valves Per Section 331216	8	EA	On-Site

RFP#5 - Pipe & Fittings Under Slab

No.	Description	Quantity	Unit	ETA
1	48" D.I.P. TH. CL. 53 PE x PE, P401 Lined, Asphalt Coated, With Wall Collar: LL = 2' – 8"	4	EA	On-Site
2	48" D.I.P. PC 250 90° MJ Bend, P401 Lined, Asphalt Coated	4	EA	On-Site
3	48" D.I.P. PC 150 PE x PE Joint, P401 Lined, Asphalt Coated: LL = 18' or 20' Joint	2	JT	On-Site
4	48" D.I.P. Mechanical Joint Restraint	8	EA	On-Site
5	30" D.I.P. TH. CL. 53 PE x PE, With Wall Collar, P401 Lined, Asphalt Coated: LL = 2' – 8"	1	EA	On-Site
6	30" D.I.P. PC 250 90° MJ Bend, P401 Lined, Asphalt Coated	1	EA	On-Site
7	30" D.I.P. PC 150 PE x PE Joint, P401 Lined, Asphalt Coated	1	JT	On-Site
8	30" D.I.P. Mechanical Joint Restraint	2	EA	On-Site
9	8" D.I.P. TH. CL. 53 Wall Collar Pipe Threaded Flanged, P401 Lined, Asphalt Coated: LL = 2' – 6"	1	EA	On-Site
10	8" D.I.P. PC 350 PE x PE, P401 Lined, Asphalt Coated: LL = 18' or 20' Joint	2	JT	On-Site
11	6" D.I.P. PC 350 PE x PE, P401 Lined, Asphalt Coated: LL = 18' or 20' Joint	1	JT	On-Site
12	6" x 4" MJ x MJ D.I.P. Reducer, P401 Lined, Asphalt Coated	1	EA	On-Site
13	6" D.I.P. Mechanical Joint Restraint	1	EA	On-Site
14	4" D.I.P. TH. CL. 53 FL x PE With Wall Collar, P401 Lined, Asphalt Coated: LL = 2' – 8"	8	EA	On-Site
15	4" D.I.P. PC 350 PE x PE Joint, P401 Lined, Asphalt Coated: LL = 18' or 20' Joint	3	JT	On-Site
16	4" D.I.P. PC 350 MJ Tee, P401 Lined, Asphalt Coated	4	EA	On-Site

17	4" D.I.P. PC 250 90° MJ Bend, P401 Lined, Asphalt Coated	4	EA	On-Site
18	4" D.I.P. Mechanical Joint Restraint	20	EA	On-Site

RFP#6 - Pipe, Fittings, & Valves

No.	Description	Quantity	Unit	ETA
1	48" Restrained Joint DIP P.C. 150, P401 Lined, Asphalt Coated	350	LF	End-February
2	48" Restrained Joint DIP P.C. 150, Gauged Full Length, P401 Lined, Asphalt Coated	140	LF	End-February
3	48" DIP TH. CL. 53 PE X PE, P401 Lined, Asphalt Coated, With Wall Collar: LL = 3' - 0"	3	EA	End-February
4	48" MJ 45° Bend, P.C. 250, P401 Lined, Asphalt Coated	2	EA	End-February
5	48" MJ Tee, P.C. 250, P401 Lined, Asphalt Coated	1	EA	End-February
6	48" MJ Cap, P.C. 250, P401 Lined, Asphalt Coated	1	EA	End-February
7	48" Mechanical Joint Restraint Including Gasket, Lubrication, Bolting Hardware, And Appurtenances For A Fully Functioning Unit	11	EA	On-Site
8	Gasket, Lubrication, Bolting Hardware, And All Appurtenances To Accompany A 48" Mechanical Joint Restraint	8	EA	Mid-February
9	30" Restrained Joint DIP P.C. 150, P401 Lined, Asphalt Coated	60	LF	End-February
10	30" Restrained Joint DIP P.C. 150, Gauged Full Length, P401 Lined, Asphalt Coated	110	LF	End-February
11	30" MJ Tee Cross, P.C. 250, P401 Lined, Asphalt Coated	1	EA	End-February
12	30" MJ Sleeve, P.C. 250, P401 Lined, Asphalt Coated: L = 2' - 0"	2	EA	End-February
13	30" Mechanical Joint Restraint Including Gasket, Lubrication, Bolting Hardware, And Appurtenances For A Fully Functioning Unit	13	EA	On-Site
14	Gasket, Lubrication, Bolting Hardware, And All Appurtenances To Accompany A 30" Mechanical Joint Restraint	2	EA	Mid-February
15	16" Restrained Joint DIP P.C. 250, Gauged Full Length, P401 Lined, Asphalt Coated	60	LF	End-February
16	16" MJ Sleeve, P.C. 250, P401 Lined, Asphalt Coated: L = 1' - 3"	1	EA	End-February
17	16" MJ 45° Bend, P.C. 250, P401 Lined, Asphalt Coated	2	EA	End-February
18	16" Mechanical Joint Restraint Including Gasket, Lubrication, Bolting Hardware, And Appurtenances For A Fully Functioning Unit	6	EA	On-Site
19	12" Restrained Joint DIP P.C. 350, P401 Lined, Asphalt Coated	420	LF	End-February
20	12" MJ 45° Bend, P.C. 350, P401 Lined, Asphalt Coated	4	EA	End-February

21	12" x 8" MJ Reducer, P.C. 350, P401 Lined, Asphalt Coated	1	EA	End-February
22	12" Mechanical Joint Restraint Including Gasket, Lubrication, Bolting Hardware, And Appurtenances For A Fully Functioning Unit	11	EA	On-Site
23	8" FL x PE DIP P.C. 350, P401 Lined, Primed and Painted: LL = 2' - 0"	1	EA	End-February
24	8" Restrained Joint DIP P.C. 350, P401 Lined, Asphalt Coated	70	LF	End-February
25	8" MJ Sleeve, P.C. 350, P401 Lined, Asphalt Coated: L = 1' - 0"	1	EA	End-February
26	8" MJ 90° Bend, P.C. 350, P401 Lined, Asphalt Coated	1	EA	End-February
27	8" MJ 45° Bend, P.C. 350, P401 Lined, Asphalt Coated	2	EA	End-February
28	8" MJ 11.25° Bend, P.C. 350, P401 Lined, Asphalt Coated	1	EA	End-February
29	8" MJ Tee Cross, P.C. 350, P401 Lined, Asphalt Coated	1	EA	End-February
30	8" x 6" MJ Tee, P.C. 350, P401 Lined, Asphalt Coated	1	EA	End-February
31	8" x 6" MJ Reducer, P401 Lined, Asphalt Coated	1	EA	End-February
32	8" Mechanical Joint Restraint Including Gasket, Lubrication, Bolting Hardware, And Appurtenances For A Fully Functioning Unit	17	EA	On-Site
33	6" FL DIP P.C. 350, P401 Lined, Primed and Painted	10	LF	End-February
34	6" FL x PE DIP P.C. 350, P401 Lined, Primed and Painted: LL = 6' - 0"	2	EA	End-February
35	6" FL X FL Plug Valve Full Port Per Section 331216	2	EA	End-February
36	6" FL 45° WYE, P.C. 350, P401 Lined, Primed and Painted	2	EA	End-February
37	6" FL Tee, P.C.350, P401 Lined, Primed and Painted	2	EA	End-February
38	6" FL 90° Bend, P.C. 350, P401 Lined, Primed and Painted	2	EA	End-February
39	6" MJ 90° Bend, P.C. 350, P401 Lined, Asphalt Coated	1	EA	End-February
40	6" x 4" MJ Reducer, P401 Lined, Asphalt Coated	1	EA	End-February
41	6" x 4" FL 45° WYE, P.C. 350, P401 Lined, Primed and Painted	2	EA	End-February
42	6" FL Flexible Connection, Proco Model 242 SS FL, EPDM Tube, 316 SS Hardware	2	EA	On-Site
43	6" FL Restrained Dismantling Joint, Smith Blair Model 975, 316 SS Bolting Hardware	2	EA	On-Site
44	6" Megaflange Adapter Including Gasket, Lubrication, 316 SS Bolting Hardware, And Appurtenances For A Fully Functioning Unit	2	EA	On-Site

45	6" Mechanical Joint Restraint Including Gasket, Lubrication, Bolting Hardware, And Appurtenances For A Fully Functioning Unit	2	EA	On-Site
46	Gasket, Lubrication, Bolting Hardware, And All Appurtenances To Accompany A 6" Mechanical Joint Restraint	3	EA	Mid-February
47	4" Restrained Joint DIP P.C. 350, P401 Lined, Asphalt Coated	45	LF	End-February
48	4" MJ 45° WYE, P.C. 350, P401 Lined, Asphalt Coated	1	EA	End-February
49	4" MJ Tee Cross, P.C. 350, P401 Lined, Asphalt Coated	1	EA	End-February
50	4" MJ 22.5° Bend, P.C. 350, P401 Lined, Asphalt Coated	1	EA	End-February
51	4" FL DIP Spool, P.C. 350, Glass Lined, Primed and Painted: LL = 0' – 6"	2	EA	End-April
52	4" Restrained Joint DIP P.C. 350, Cement Mortar Lined	310	LF	End-February
53	4" FL x PE DIP Spool, P.C. 350, Glass Lined, Primed and Painted: LL = 3' - 2"	2	EA	End-April
54	4" FL DIP, P.C. 350, Glass Lined, Primed and Painted	48	LF	End-April
55	4" FL Plug Valve, Glass Lined Full Port Per Section 331216	4	EA	End-April
56	4" FL 45° WYE, P.C. 350, Glass Lined, Primed and Painted	5	EA	End-April
57	4" FL 45° Bend, P.C. 350, Glass Lined, Primed and Painted	4	EA	End-April
58	4" FL 90° Bend, P.C. 350, Glass Lined, Primed and Painted	2	EA	End-April
59	4" MJ Tee, P.C. 350, Cement Mortar Lined	1	EA	End-February
60	4" FL Plug Valve Full Port Per Section 331216	2	EA	End-February
61	4" FL 45° Bend, P.C. 350, P401 Lined, Primed and Painted	2	EA	End-February
62	4" MJ Sleeve, P.C. 350, Cement Mortar Lined: L = 1' – 0"	2	EA	End-February
63	4" MJ 90° Bend, P.C. 350, Cement Mortar Lined	1	EA	End-February
64	4" Mechanical Joint Restraint Including Gasket, Lubrication, Bolting Hardware, And Appurtenances For A Fully Functioning Unit	17	EA	On-Site
65	Gasket, Lubrication, Bolting Hardware, And All Appurtenances To Accompany A 4" Mechanical Joint Restraint	20	EA	Mid-February
66	2" MNPT SCH 40 304 SS Threaded Piping	11	LF	End-February
67	2" NPT Outlet, 304 SS Double Strap Service Saddle, Smith Blair Model 317, SS Bolts	2	EA	End-February
68	2" FNPT Quarter Turn 304 SS Ball Valve	2	EA	End-February
69	2" MTHRD 304 SS 90° Bend	4	EA	End-February
70	2" FTHRD 304 SS Union	2	EA	End-February
71	2" 303 SS Street Elbow (Connect to Classifier)	2	EA	End-February

72	4" Cleanout Including All Piping, Fittings, Mega-Lug Restraints, Companion Flanges, Plugs, Concrete Pad, Nuts, Bolts, Gaskets, And All Other Appurtenances Per Detail A/MZ-5	2	EA	End-February
73	8" Cleanout Including All Piping, Fittings, Mega-Lug Restraints, Companion Flanges, Plugs, Concrete Pad, Nuts, Bolts, Gaskets, And All Other Appurtenances Per Detail B/MZ-5	2	EA	End-February
74	8" Welded Cleanout Including All Piping, Fittings, Mega-Lug Restraints, Companion Flanges, Plugs, Concrete Pad, Nuts, Bolts, Gaskets, Welding, And All Other Appurtenances Per Detail C/MZ-5	2	EA	End-February

BID FORM
PARAGOULD, LIGHT, WATER, & CABLE
WASTEWATER TREATMENT FACILITY HEADWORKS IMPROVEMENTS
PARAGOULD, ARKANSAS

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

**Mr. Darrell Phillips, General Manager/C.E.O.
Paragould Light, Water, & Cable
1901 Jones Road
Paragould, Arkansas 72450**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 30 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

2.02 Owner Procured Equipment:

- A. The Owner has procured certain materials and equipment for Contractor installation on this project.
- B. The Owner procurement packages are included in the Contract Documents and the Contractor shall carefully examine the materials and equipment supplied under this Contract to coordinate installation.
- C. It is the responsibility of the Contractor to install the Owner procured materials and equipment for a complete and working system.
- D. No further materials or equipment shall be provided than those shown in the Contract Documents. It is the responsibility of the Contractor to provide materials necessary to provide a complete and working system other than those identified and accepted by the Owner for Bid Item No. 16 in accordance with the specifications of the Project.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Issue Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. “corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following prices:

BID FORM CITY OF PARAGOULD, ARKANSAS PARAGOULD LIGHT, WATER, & CABLE WASTEWATER TREATMENT FACILITY HEADWORKS IMPROVEMENTS LUMP SUM ITEMS		
Item No.	Description	Bid Price
1.	<u>Insurance, Bonds, Mobilization, Demobilization:</u> Price shall be for mobilization of the Contractor's forces and equipment necessary to execute the Work - not to exceed 7.5% of the overall total bid amount of which not more than 65% will be paid on the first payment application with the remainder 35% on the final pay application.	\$ _____ (Lump Sum)
2.	<u>Site Grading/Earthwork:</u> All work, equipment, materials, and other costs related to the drainage improvements to be performed in conjunction with the aggregate surface and concrete pavement, including drainage pipe, trench drains, excavation, bedding, compacted backfill, geotextile fabric, aggregates, ditch construction, site grading, site restoration, erosion and sediment control, but excluding costs that are included in other line-items of this Bid Form.	\$ _____ (Lump Sum)
3.	<u>Demolition:</u> All work, equipment, materials and other costs related to the demolition of piping and above grade structures in accordance with the Drawings and Specifications, but excluding costs that are included in other line items on this Bid Form.	\$ _____ (Lump Sum)

BID FORM CITY OF PARAGOULD, ARKANSAS PARAGOULD LIGHT, WATER, & CABLE WASTEWATER TREATMENT FACILITY HEADWORKS IMPROVEMENTS LUMP SUM ITEMS		
Item No.	Description	Bid Price
4.	<u>Installation of Owner Procured Mechanical Bar Screen Equipment MSC-01, MSC-02, MSC-03, WSH-01, WSH-02, & WSH-03:</u> All work, equipment, materials, and other costs for the assembly, factory testing, installation, start-up, operation and maintenance manuals and OWNER acceptance for MSC-01, MSC-02, MSC-03, WSH-01, WSH-02, & WSH-03. Compensation shall be for installation of the screens, mounting equipment, drive assemblies, frames, spare parts, control systems, electrical connections, electrical wiring and conduits, instrumentation, communication, and all necessary appurtenances necessary, to complete and operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	\$ _____ (Lump Sum)
5.	<u>Installation of Owner Procured Vortex Grit Removal Equipment GRT-02, GRT-02, CLS-01, & CLS-02:</u> All work, equipment, materials, and other costs for the assembly, factory testing, installation, start-up, operation and maintenance manuals and OWNER acceptance for GRT-01, GRT-02, CLS-01 & CLS-02. Compensation shall be for installation of the grit chambers, baffles, grit pumps, grit classifiers, electrical wiring and conduit, mechanical drives, pipe and fittings, operators, control systems, instrumentation, safety devices, and all necessary appurtenances necessary, to complete and operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	\$ _____ (Lump Sum)

BID FORM CITY OF PARAGOULD, ARKANSAS PARAGOULD LIGHT, WATER, & CABLE WASTEWATER TREATMENT FACILITY HEADWORKS IMPROVEMENTS LUMP SUM ITEMS		
Item No.	Description	Bid Price
6.	<u>Installation of Owner Procured Actuated Slide Gates and Weir Gates:</u> All work, equipment, materials, and other costs for the assembly, factory testing, installation, start-up, operation and maintenance manuals and OWNER acceptance for the slide gates. Compensation shall be for installation of slide gates, operators/electric actuators, motors, operating stems, electrical wiring and conduit, and all necessary appurtenances necessary, to complete and operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	\$ _____ (Lump Sum)
7.	<u>Installation of Owner Procured Valves:</u> All work, equipment, materials, and other costs for the assembly, factory testing, installation, and OWNER acceptance for the Valves. Compensation shall be for the valves and all necessary appurtenances to complete an operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	\$ _____ (Lump Sum)
8.	<u>Installation of Owner Procured Pipe and Pipe Fittings:</u> All work, equipment, materials, and other costs for the assembly, factory testing, installation, and OWNER acceptance for the Pipe and Pipe Fittings. Compensation shall be for installation of all pipe, fittings, and all required appurtenances necessary to complete and operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	\$ _____ (Lump Sum)

BID FORM CITY OF PARAGOUL, ARKANSAS PARAGOUL LIGHT, WATER, & CABLE WASTEWATER TREATMENT FACILITY HEADWORKS IMPROVEMENTS LUMP SUM ITEMS		
Item No.	Description	Bid Price
9.	<u>Electrical & SCADA Coordination:</u> Payment for Electrical & SCADA Coordination shall be at the percentage lump sum of the coordinated Owner provided and installed work and shall include all costs related to coordination with the Owner for the electrical and SCADA system for the complete operation of all components included in the Contract Documents including but not limited to motors, switchgear, uninterruptable power supplies, cabling, conduits, pull boxes, motor control centers, interior lighting, exterior lighting, wiring, concrete for conduit encasement, and all appurtenances, incidentals, and miscellaneous equipment shown or specified in the Drawings and Contract Documents required for a complete and operating system, but excluding costs in other line-items of this Bid Form.	\$ _____ (Lump Sum)
10.	<u>Structural Concrete:</u> Payment for Structural Concrete shall be at the percentage lump sum of the completed work and shall include all work, equipment, materials, and other costs related to the construction of the Headworks Improvements included in the Drawings and Contract Documents including but not limited to manholes, concrete material, concrete placements, reinforcement material, reinforcement placement, grout, drains, blockouts, platform grating, handrails, waterstops, anchors, supports, hardware, and all appurtenances, incidentals, and miscellaneous equipment shown or specified in the Drawings and Contract Documents required for a complete Headworks System, but excluding costs in other line-items of this Bid Form.	\$ _____ (Lump Sum)
11.	<u>Miscellaneous Work:</u> All other work, equipment, materials, tools, labor, incidentals, and other costs to accomplish all Work within the Scope of this Contract and not otherwise included in this Bid Form; however, the Lump Sum Amount for this Bid Form line-item shall not exceed ten (10) percent of the Total Lump Sum Bid Amount.	\$ _____ (Lump Sum)

BID FORM CITY OF PARAGOULD, ARKANSAS PARAGOULD LIGHT, WATER, & CABLE WASTEWATER TREATMENT FACILITY HEADWORKS IMPROVEMENTS LUMP SUM ITEMS		
Item No.	Description	Bid Price
12.	<u>SWPPP Preparation and Application:</u> All work to prepare, submit, and receive approval from DEQ-OWQ regarding a SWPPP for the project site. Includes conformance for all requirements including inspections, application, and maintenance of appropriate erosion control devices, measuring rainfall, close-out and removal of devices at the conclusion of construction.	\$ _____ (Lump Sum)
13.	<u>Trench and Excavation Safety:</u> Trench or Excavation Safety Systems applicable to this Contract, per Act 291 of the 1993 Arkansas General Assembly (as amended), including shoring protection system for improvements and protection of existing facilities.	\$ _____ (Lump Sum)
14.	<u>Material Testing Allowance:</u> For all invoices for laboratory testing and other costs shall be submitted to the Engineer for payment approval. All testing shall be performed by a reputable material testing firm approved by the Owner. Frequency, location, and types of testing shall be directed by the Engineer. Any payment for retests performed at the option of the Contractor due to non-compliance shall be borne by the Contractor.	<u>\$25,000</u> (Allowance)
15.	<u>Addendum No. 01 - Owner Procured Pipe, Fittings, and Valve Material Allowance:</u> For pipe and appurtenances necessary to supplement RFP No. 05 - Pipe and Fittings and RFP No. 06 - Pipe, Fittings, and Valves – Schedule 2 to assemble a complete and working system specific to yard piping for sanitary sewer, potable water, and valves as approved by the OWNER.	<u>\$125,000</u> (Allowance)
TOTAL LUMP SUM BID PRICE ITEMS BASES BID AMOUNT		\$ _____

DEDUCTIVE ALTERNATES CITY OF PARAGOULD, ARKANSAS PARAGOULD LIGHT, WATER, & CABLE WASTEWATER TREATMENT FACILITY HEADWORKS IMPROVEMENTS		
Deductive Alternative	Description for Deduction	Bid Price
A.	Under Deductive Alternate A, all work, equipment, materials, and other costs for <u>Demolition</u> will be deleted from the Work and the Lump Sum Amount shown in the Bid Form as Item No. 3 and will be deducted from the Total Lump Sum Base Bid Amount.	\$ _____ (Same Lump Sum amount for Bid Item 3)
B.	Under Deductive Alternative B, all work, equipment and materials to substitute PRAH Antimicrobial Crystalline Admixture with PRAH Regular Crystalline Admixture as required in the Cast in Place Concrete Specification Section 033000.	\$ _____ (Lump Sum)

5.02 Schedule of Major Equipment: NOT APPLICABLE.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security;
 - B. List of Proposed Subcontractors;
 - C. Copy of current Arkansas Contractor's License

ARTICLE 8 – DEFINED TERMS

- 8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature]

[Printed name]

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

[Signature]

[Printed name]

Title:

Submittal Date:

Address for giving notices:

Telephone Number:

Fax Number:

Contact Name and e-mail address:



April 29, 2021
Job No. 21-050

Crist Engineers, Inc.
205 Executive Court
Little Rock, Arkansas 72205

Attn: Mr. Craig A. Johnson, P.E.
Vice President

**RE: INTERIM RESULTS of GEOTECHNICAL INVESTIGATION
PLWC WWTP HEADWORKS ADDITION
PARAGOULD, ARKANSAS**

Dear Mr. Johnson,

This report presents the initial results of the geotechnical investigation being performed for the headworks addition for the Paragould Light Water & Cable (PLWC) wastewater treatment plant in Paragould, Arkansas. Preliminary logs and piezometer details were provided on April 21, 2021.

The project consists of a new headworks addition to the operational wastewater treatment plant. The new headworks will have dimensions of approximately 50 ft by 125 feet. The headworks will have a plan discharge pipe flow line at El 261 and the deepest component at approximately El 253. Existing grade is about El 270 and the new headworks is expected to extend approximately 9 to 17 ft below existing grades.

SUBSURFACE EXPLORATION

Subsurface conditions at the new headworks location were explored by drilling two (2) sample borings to depths of 30 ft each. The boring locations were selected by the Engineer (Crist). The site vicinity is shown on Plate 1. The approximate boring locations are shown on the Plan of Borings, Plate 2. Preliminary boring logs, presenting descriptions of the subsurface strata encountered and results of field and completed laboratory tests, are included as Plates 3 and 4. A key to the terms and symbols used on the logs is presented as Plate 5. The approximate boring locations shown on an aerial photograph are shown in Appendix A.

The borings were drilled with a truck-mounted SIMCO 2800 rotary-drilling rig using a combination of dry-auger and rotary-wash drilling procedures. Samples were typically obtained using a 2-in.-diameter split-barrel sampler driven into the strata by blows of a 140-lb automatic hammer dropped 30 in. as per Standard Penetration Test (SPT) procedures. The number of blows required to drive the standard split-barrel sampler the final 12 in. of an 18-in. total drive, or portion thereof, is defined as the Standard Penetration Number (N). Recorded N-values are shown on the boring logs in the "Blows Per Ft" column.

All samples were removed from sampling tools in the field, examined and visually classified. Samples were then placed in appropriate containers to prevent moisture loss and/or change in condition during transfer to our laboratory for further examination and testing.

The borings were advanced to the extent possible using dry-auger drilling procedures to facilitate groundwater observations. Observations regarding groundwater are noted in the lower-right portion of each log and are discussed in subsequent sections of this report.

To facilitate obtaining long-term data on groundwater levels, piezometers were set at each boring location. The piezometer depths ranged from 29 to 30 ft below existing grade. Each piezometer consisted of 2-in.-diameter Schedule 40 PVC, flush-thread well pipe placed in a 6-in.-diameter borehole. A 10-ft-long, 0.010-in. slotted screen section was installed with a 6-in. sump below the screen. A sand pack of 20/30 filter sand was installed around and above the screen section up to about 10-ft depth. 1.3-to 2-ft-thick impervious seal was placed above the filter sand. The remainder of the annulus around the well pipe was backfilled with bulk bentonite. A flush-mount cover was installed at the ground surface of each piezometer location.

Piezometer details are shown in Appendix B. A summary of the relevant depths and elevations as well as the initial water level readings are also shown in Appendix B.

LABORATORY TESTING

Laboratory testing was performed to evaluate subgrade and foundation soil plasticity and to confirm visual classification. The testing program included natural water content determinations, liquid and plastic (Atterberg) limit determinations, and sieve analysis through the No. 200 sieve. Dry unit weight was determined on selected and representative tube samples.

Test results are shown on the logs at the appropriate depth. The water contents and Atterberg limits are plotted in accordance with the scale and symbols contained in the legend in the upper-right portion of the log forms. The Atterberg limits are plotted on the boring logs as pluses connected with a dashed line using the water content scale. The percent of soil passing through the No. 200 sieve is noted in the "Minus No. 200" column on the appropriate log forms. The measured dry unit weight is tabulated in the "UNIT DRY WEIGHT" column of the boring logs.

GENERAL SITE and SUBSURFACE CONDITIONS

Site Conditions

The headworks addition project site is located at the existing PLWC wastewater treatment plant in Paragould, Arkansas. The plant is located on the north side of Grant Lane and west of South 2nd Avenue. This location is about 1.5 miles south of central Paragould. The headworks location is on the south side of a large lagoon. The project location presently is occupied by two (2) metal buildings used for storage of materials and equipment. Outside the building areas the ground surface is short grass, aggregate, and bare ground. The terrain is flat and surface drainage is considered poor to fair.

Site Geology

The project is located in the Mississippi Embayment Physiographic Province. Geologically, the project locale is in the mapped region of Quaternary (Pleistocene) Terrace deposits. The Terrace Deposits consist of a complex sequence of unconsolidated sandy gravel, sand, silt, clayey silt, and clay units. Terrace deposits are often lenticular and discontinuous. The thickness of the terrace deposits can vary widely between locations and the terrace deposits lie on consolidated Tertiary or Cretaceous sediments at variable depths. Bedrock (Paleozoic rocks) in this vicinity is reported to be about 1300 ft deep.

Seismic Conditions

The Greene County, Arkansas site is located in Seismic Zone 3, i.e., the zone of moderate to high anticipated seismic damage and the most severely rated seismic zone in Arkansas. Based on the average soil shear strength indicated by the results of the borings performed for this study, the local geology, and our experience in the area, a Seismic Site Class D (stiff soil profile) is considered fitting for the site in accordance with the criteria of the Arkansas Fire Prevention Code Vol II, the International Building Code (IBC 2012), and AWWA D100-11. Information provided by the United States Geologic Survey (USGS) indicates the Peak Ground Acceleration (PGA) having a 7 percent chance of exceedance in 75 years (or mean return period of approximately 1000 years) is predicted to be 0.739g. The liquefaction potential is considered low for the predominantly cohesive soils encountered within the exploration depths of the borings performed for this study.

Subsurface Conditions

Based on the results of the borings, the subsurface stratigraphy may be generalized into two (2) primary strata as follows.

Stratum I: The surface and near-surface soils are on-site fill comprised of soft to firm brown and light grayish brown silty clay with silty pockets. Below a relatively stable crust of firm soils the fill exhibits decreasing strength with soft consistence. The fill has low plasticity with poor compaction and moderate compressibility. The depth, compaction, and content of the on-site fill is likely to vary across the site.

Stratum II: The natural soils below the on-site fill are stiff gray and tan to grayish brown and reddish tan silty clay with silt pockets and ferrous stains. The natural silty clay has low plasticity with moderate shear strength and low compressibility with light loads.

To aid in visualizing subsurface conditions, a generalized subsurface profile is presented in Appendix C. It should be recognized that the stratigraphy illustrated by the profile has been inferred between discrete boring locations. In view of the natural variations in stratigraphy and conditions, variations from the stratigraphy illustrated by the profile should be anticipated. Additionally, the natural transition between strata is generally gradual, and the stratigraphy described in the sections above may vary.

Groundwater was encountered in the borings at depths of 13 to 16 ft in April 2021. As noted, piezometers were installed at both boring locations. Water levels recharged to 6.1 ($\pm$ El 263.9) and 9.4 ft ($\pm$ El 260.4) within 20 to 30 minutes after well construction in April 2021. Groundwater levels will vary with seasonal precipitation and surface runoff and infiltration as well as with surface water levels in the nearby lagoons.

PRELIMINARY CONCLUSIONS and RECOMMENDATIONS

Foundations

Foundation loads of the new headworks structure may be supported on continuous footings or a rigid mat foundation founded in the stiff gray and tan to grayish brown and reddish tan silty clay (Stratum II). Continuous footings or a mat foundation founded as recommended may be designed with respect to a maximum net allowable soil bearing pressure of 2750 lbs per sq foot. Foundation elements should be embedded at least 1 ft into the bearing stratum. Foundations at the exterior surface grade should have a minimum embedment of 2 ft below lowest adjacent grades.

For a mat supported on a properly prepared subgrade of the stiff silty clay, a modulus of subgrade reaction (k) value of 100 lbs per sq in. per in. may be utilized for design of the bottom slab. The recommended bearing value includes a minimum factor of safety of 3.0 with respect to measured shear strength of the stiff silty clay (Stratum II). The modulus of subgrade reaction (k) may be increased to 200 lbs per sq in. per in. if the bottom slab is underlain by a minimum of 12 in. of crushed stone base (ARDOT Standard Specifications Section 303, Class 7), lean concrete, or approved flowable fill. Post-construction settlement of foundations supported as recommended should be less than 1.0 inch.

Uplift resistance of foundations will be provided by the weight of the structure and the foundation units. Resistance to lateral forces will be developed by the passive resistance of the foundation soils and sliding resistance at the foundation bottoms. The passive resistance of the soil within the upper 2 ft of the ground surface or 1 ft of foundation embedment, whichever is greater, should be neglected. Below the neglected depth, an ultimate passive resistance value of 350 lbs per sq ft may be assumed for the stable on-site silty clay fill (Stratum I) and stiff silty clay (Stratum II). Below 4-ft depth, an ultimate passive resistance value of 750 lbs per sq ft may be assumed for the stiff silty clay (Stratum II). Resistance to sliding may also be evaluated using an ultimate friction value ($\tan \delta$) of 0.35 for concrete on the stiff silty clay. An appropriate factor of safety must be included in analysis of sliding.

Continuous footings should have a minimum width of 18 inches. Foundations placed near existing grade should extend a minimum of 2 ft below final grade for embedment and frost protection. All foundation elements should have a minimum embedment of 1 ft into the recommended bearing stratum. Foundation excavations should be observed by the Geotechnical Engineer to verify suitable bearing.

Appurtenant Structures

Appurtenant structures such as a generator pads and/or storage buildings may be constructed in conjunction with the headworks. These facilities may be supported using slab-on-ground or shallow footing foundation systems. Foundation elements should be founded in compact low-plasticity select fill.

Shallow foundations should be founded at a minimum depth of 2 ft below lowest adjacent grade. For turned-down slab systems, the perimeter beams should extend at least 1 ft below final grade. Beams extending less than 2 ft below final grade should be underlain by a minimum of 1 ft of crushed stone aggregate base, lean concrete, or flowable fill. Foundations supported as recommended may be sized using a maximum net allowable soil bearing pressure of 1500 lbs per sq foot. This value includes a factor of safety of 3.0 with respect to anticipated shear strength of properly compacted fill and measured shear strength of the stiff silty clay. Settlement of shallow foundations supported as recommended is expected to be minor, with post-construction settlement expected to be less than 1.0 inch.

Continuous footings should have a minimum width of 18 in. and individual footings a minimum dimension of 24 inches. All foundation excavations should be observed by the Geotechnical Engineer to verify suitable bearing.

Below-Grade Walls – Lateral Earth Pressures

The headworks structure includes below-grade walls. It is expected that these walls will be fixed at the top by inside corners, interior baffle walls, top slabs and/or other features. Consequently,

the below-grade walls will be acted on by at-rest lateral earth pressures. Where the below-grade walls are free to rotate about the base, such as during construction, active earth pressures will be mobilized. The below-grade walls are anticipated to be supported on continuous footings or mat foundations as previously recommended.

The below-grade walls should be backfilled with either clean crushed stone or low-plasticity select fill. For clean crushed stone, a gradation complying with ASTM D448 No. 57 or 67 stone is recommended. As a minimum, clean crushed stone wall backfill should be placed in a zone extending from the back of walls to daylight on a 1-horizontal to 1-vertical (1H:1V) configuration. The top 12 in. of wall backfill should consist of low-permeability clayey soils. This top layer should limit infiltration of surface water into backfill. The on-site silty clay is suitable for this use.

Pressure envelopes for equivalent fluid pressures are provided in Appendix D. Undrained conditions assume that the walls will be subject to full hydrostatic pressure. Drained conditions assume positive and continuous drainage of infiltrated water from the wall backfill. Drainage systems must be provided to assure a drained condition for walls designed with respect to drained lateral earth pressures. Where drainage cannot be assured, then undrained conditions should be assumed for wall design.

Lateral surcharge loads on walls backfilled with clean stone may be evaluated using earth pressure coefficients of 0.43 for crushed stone backfill. For low-plasticity select fill backfill an earth pressure coefficient of 0.66 should be utilized to evaluate lateral load surcharges.

Clean granular backfill should be placed in maximum 10- to 12-in.-thick lifts and densified by vibrating equipment, rodding, or other suitable means. Granular backfill should be separated from the on-site soils and fine-grained backfill soils by a suitable filter fabric. A geotextile such as Mirafi 140N or approved equal is recommended.

For walls backfilled with low-plasticity select fill, wall backfill should be compacted to a minimum of 95 percent of the maximum dry density as determined by Standard Proctor (ASTM D698) procedures. Maximum particle size in wall backfill should be limited to about 1.5 inches. Compaction within 5 ft of walls should be performed with hand compaction equipment. Care should be taken when compacting as overcompaction may cause damage to walls.

Design of bottom mats should consider uplift forces equivalent to a water level at the ground surface unless positive drainage is assured at a lower elevation. In conjunction with structure dead loads, additional uplift restraint may be provided with a thickened base slab, extended exterior slab edges, or by other means. A total unit weight of 100 lbs per cu ft is recommended for select fill and backfill. Use of pressure relief valves may also be considered for relief of uplift pressures. More specific recommendations for options to resist uplift can be provided upon request.

It should be recognized that there will be some settlement of below-grade wall backfill. Concrete flatwork and other features constructed over wall backfill will be subject to variable amounts of post-construction settlement. Locating foundation elements in wall backfill should be avoided. Where necessary to place foundations in wall backfill, special consideration must be given to the settlement potential. We recommend that this situation be evaluated by the Engineer and the Geotechnical Engineer on a case-by-case basis.

Site Grading

Site preparation is expected to begin with removal of the existing buildings on the headworks addition site. All abandoned foundation elements and underground utilities should be completely removed unless specifically accepted by the Engineer.

Site preparation will require stripping the zone of organic-containing soils. A stripping depth of 6 in. below existing grade is anticipated to be adequate. After stripping and any cut in areas not to be excavated, and prior to placing any fill, the subgrade should be proof-rolled with a loaded tandem-wheel dump truck or similar equipment. Areas identified to be soft or that exhibit pumping should be undercut and processed and re-compacted or replaced, whichever is appropriate. Based on the results of the borings, localized undercuts on the order of 2 to 4 ft, more or less, could be required. Performing the work during dry seasons and providing initial drainage improvements can potentially reduce undercut requirements.

The on-site soils, free of organics and debris and with a maximum plasticity index (PI) of 18, are suitable for use as select fill and backfill. However, it must be recognized that these soils are moisture sensitive and will be difficult to compact at elevated water contents. Imported borrow for fill or backfill should consist of low-plasticity clayey sand (SC), sandy clay (CL), or clayey gravel (GC) with a liquid limit less than 40 and a maximum PI of 18, or approved alternates. Fill and backfill should have a maximum particle size of about 3 in. and must be free of organic materials and debris. All fill and backfill should be approved by the Geotechnical Engineer.

With the exception of cohesive below-grade wall backfill, recompacted soils, fill, and backfill should be compacted to at least 98 percent of the Standard Proctor (ASTM D698) maximum dry density within a water content range of 2 percent below to 3 percent above the optimum value. All fill and backfill should be placed in horizontal, nominal 6- to 8-in.-thick lifts. Each lift of fill and backfill should be properly compacted, tested, and approved prior to placing subsequent lifts.

CLOSURE

The conclusions and recommendations presented herein are offered for use in preliminary design and planning. The final report will be prepared following completion of the laboratory testing and review of any comments on the interim report. Depending on final plans, revision or modification of the recommendations discussed herein could be warranted.

The following attachments are included and complete this preliminary submittal.

Plate 1	Site Vicinity
Plate 2	Plan of Borings
Plates 3 and 4	Preliminary Boring Logs
Plate 5	Key to Terms and Symbols
Appendix A	Plan of Borings on Aerial Photograph
Appendix B	Piezometer Details
Appendix C	Generalized Subsurface Profile
Appendix D	Lateral Earth Pressure Envelopes

* * * * *

We appreciate the opportunity to provide this interim report. Please contact us should you have any questions regarding this information. In the meantime, we will be working on the final report.

Sincerely,

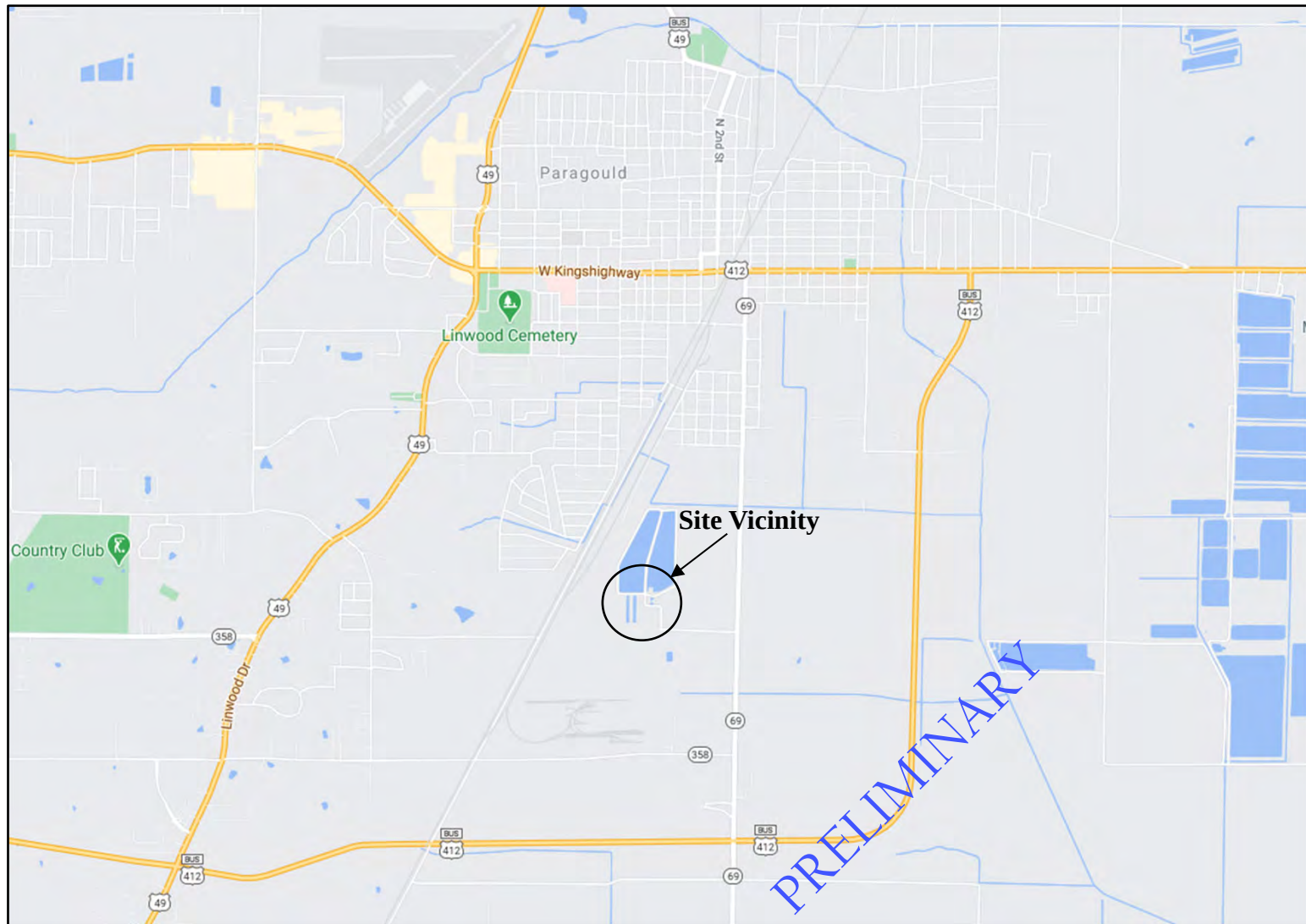
**GRUBBS, HOSKYN,
BARTON & WYATT, INC.**



Mark E. Wyatt, P.E.
President

MEW:jw

Copies submitted:	Copies submitted:	Crist Engineers, Inc.
	Attn: Mr. Craig A. Johnson, P.E.	(1-email)
	Attn: Mr. Mark Ramm, P.E.	(1-email)

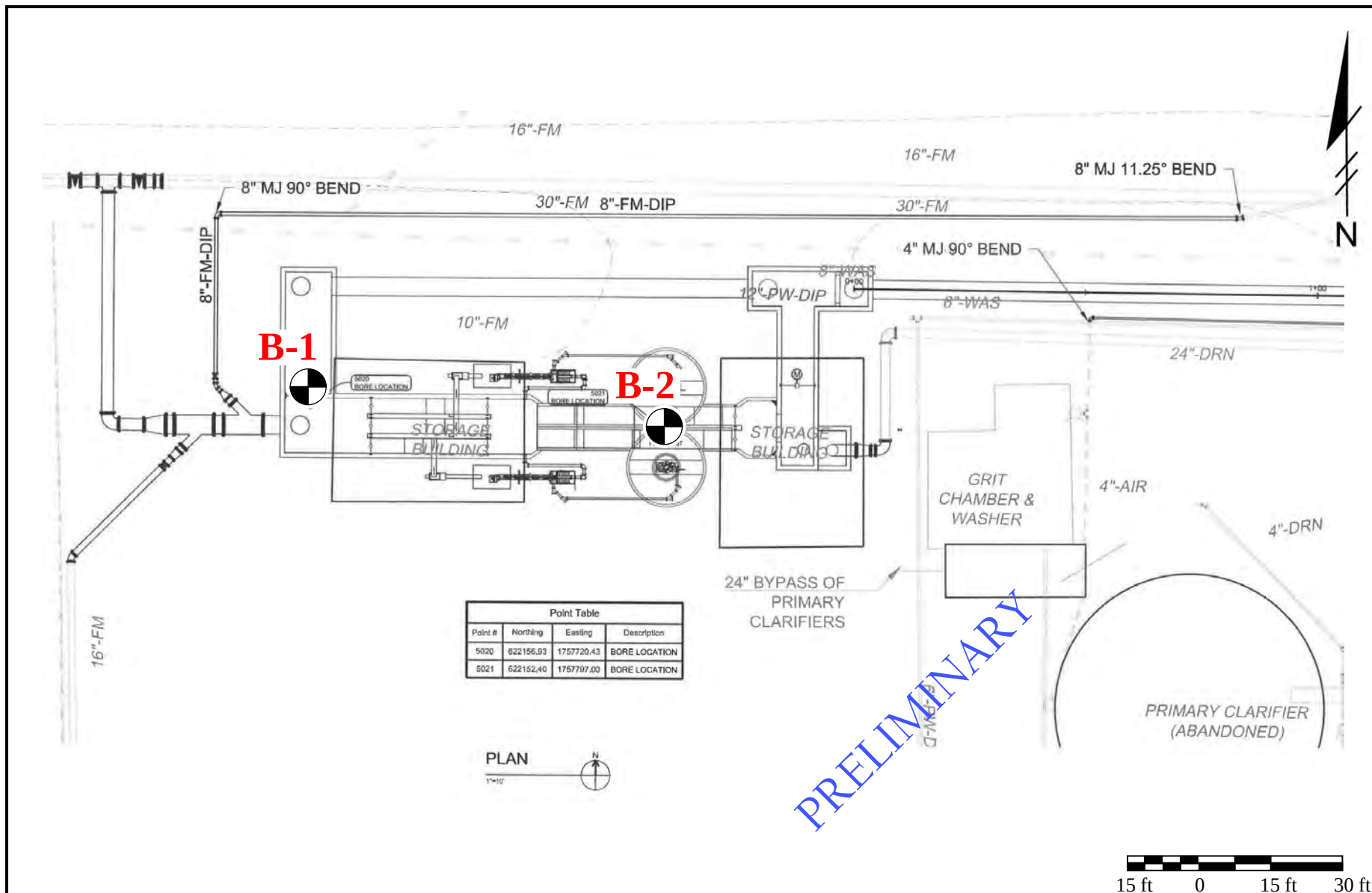


**Grubbs, Hoskyn,
Barton & Wyatt, INC.**
CONSULTING ENGINEERS

SITE VICINITY MAP
PLWC WWTP Headworks
Paragould, Arkansas

Job No. 21-050

Plate 1



**Grubbs, Hoskyn,
Barton & Wyatt, INC.**
CONSULTING ENGINEERS

PLAN OF BORINGS
PLWC WWTP Headworks
Paragould, Arkansas

Scale: As Shown

Job No. 21-050

Plate 2



**Grubbs, Hoskyn,
Barton & Wyatt, Inc.**
Consulting Engineers

LOG OF BORING NO. 1

PLWC WWTP Headworks
Paragould, Arkansas

TYPE: Auger to 20 ft /Wash

LOCATION: See Plate 2

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	COHESION, TON/SQ FT						- No. 200 %	
						0.2 0.4 0.6 0.8 1.0 1.2 1.4							
						PLASTIC LIMIT +	WATER CONTENT ●				LIQUID LIMIT +		
SURF. EL: 270±						10	20	30	40	50	60	70	
			Firm brown and light grayish brown silty clay w/silt pockets (fill)	7									
			- soft, with occasional decayed organics and organic stains below 2 ft	5									
5			Stiff gray and tan silty clay w/silt pockets and ferrous stains	21									
				17									
10													
				18									
15													
			Stiff reddish tan and gray silty clay w/silt pockets and ferrous stains	14									
20				19									
25													
30				92									
NOTE: Set Piezometer P1 this location.													
COMPLETION DEPTH: 30.0 ft				DEPTH TO WATER				DATE: 4/15/2021					
DATE: 4-15-21				IN BORING: 16.8 ft									

LGBNEW 21-050.GPJ 4-28-21

PRELIMINARY



**Grubbs, Hoskyn,
Barton & Wyatt, Inc.**
Consulting Engineers

LOG OF BORING NO. 2

PLWC WWTP Headworks
Paragould, Arkansas

TYPE: Auger

LOCATION: See Plate 2

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	COHESION, TON/SQ FT		- No. 200 %
						0.2 0.4 0.6 0.8 1.0 1.2 1.4	PLASTIC LIMIT 10 20 30 40 50 60 70	
			SURF. EL: 270±					
			Firm brown and light grayish brown silty clay w/silt pockets and organic stains (fill) - soft to firm below 2 ft	9	102			93
5			Stiff gray and tan silty clay w/silt pockets and ferrous stains	21				
			Stiff grayish brown silty clay w/silt pockets and ferrous stains	101				95
10				13				
15			Stiff reddish tan and light brownish gray silty clay w/silt pockets and ferrous stains, wet - with more ferrous stains below 18 ft	11				
20				17				
25			Stiff reddish tan and tan silty clay w/ferrous stains, wet	20				
30				16				
			NOTE: Set Piezometer P2 this location.					
COMPLETION DEPTH: 30.0 ft DATE: 4-15-21				DEPTH TO WATER IN BORING: 13.0 ft		DATE: 4/15/2021		

LGBNEW 21-050.GPJ 4-28-21

PRELIMINARY



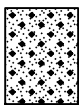
SYMBOLS AND TERMS USED ON BORING LOGS

SOIL TYPES

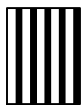
(SHOWN IN SYMBOLS COLUMN)



Gravel



Sand



Silt

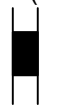


Clay

Predominant type shown heavy

SAMPLER TYPES

(SHOWN ON SAMPLES COLUMN)



Shelby
Tube



Rock
Core



Split
Spoon



No
Recovery



Cutting

TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE GRAINED SOILS (major portion retained on No. 200 sieve): Includes (1) Clean gravels and sands, and (2) silty or clayey gravels and sands. Condition is rated according to relative density, as determined by laboratory tests.

DESCRIPTIVE TERM

VERY LOOSE

LOOSE

MEDIUM DENSE

DENSE

VERY DENSE

N-VALUE

0-4

4-10

10-30

30-50

50 and above

RELATIVE DENSITY

0-15%

15-35%

35-65%

65-85%

85-100%

FINE GRAINED SOILS (major portion passing No. 200 sieve): Includes (1) Inorganic and organic silts and clays, (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings or by unconfined compression tests.

DESCRIPTIVE TERM

VERY SOFT

SOFT

FIRM

STIFF

VERY STIFF

HARD

UNCONFINED COMPRESSIVE STRENGTH TON/SQ. FT.

Less than 0.25

0.25-0.50

0.50-1.00

1.00-2.00

2.00-4.00

4.00 and higher

NOTE: Slickensided and fissured clays may have lower unconfined compressive strengths than shown above, because of planes of weakness or cracks in the soil. The consistency ratings of such soils are based on penetrometer readings.

TERMS CHARACTERIZING SOIL STRUCTURE

SLICKENSIDED - having inclined planes of weakness that are slick and glossy in appearance.

FISSURED - containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical.

LAMINATED - composed of thin layers of varying color and texture.

INTERBEDDED - composed of alternate layers of different soil types.

CALCAREOUS - containing appreciable quantities of calcium carbonate.

WELL GRADED - having a wide range in grain sizes and substantial amounts of all intermediate particle sizes.

POORLY GRADED - predominantly of one grain size, or having a range of sizes with some intermediate sizes missing.

Terms used on this report for describing soils according to their texture or grain size distribution are in accordance with the UNIFIED SOIL CLASSIFICATION SYSTEM, as described in Technical Memorandum No.3-357, Waterways Experiment Station, March 1953

APPENDIX A

PRELIMINARY



**Grubbs, Hoskyn,
Barton & Wyatt, INC.**
CONSULTING ENGINEERS

PLAN OF BORINGS
PLWC WWTP Headworks
Paragould, Arkansas

Scale: As Shown

Job No. 21-050

Plate

APPENDIX B

PRELIMINARY

LOG OF PIEZOMETER NO. 1
PLWC WWTP Headworks
Paragould, Arkansas

DEPTH, FT	SYMBOL	DESCRIPTION OF MATERIAL			DEPTH, FT	EL., FT
		SURF. EL: 270±	Top of Riser Casing		0	270
		Firm brown and light grayish brown silty clay w/silt pockets (fill)				
		- soft, with occasional decayed organics and organic stains below 2 ft				
		Stiff gray and tan silty clay w/silt pockets and ferrous stains	Backfill Material Type: Bentonite			
10			Riser Casing Dia: 2 in. Type: Flush Thread PVC			
			Top of Seal		8.7	261.3
			Annular Seal Type: 3/8 in. Bentonite Pellets			
			Top of Filter Pack		10.0	260.0
20		Stiff reddish tan and gray silty clay w/silt pockets and ferrous stains	Filter Pack Type: 20/30 sand			
			Bottom of Riser/ Top of Screen		18.0	252.0
			Screen Dia: 2 in. Openings Width: 0.010 in. Type: Flush Thread PVC			
			Bottom of Screen		28.0	242.0
30			Bottom of Slump		28.5	241.5
			Bottom of Hole		30.0	240.0
NOTES:			Hole Dia: 6 in.			
1. Water at 1.7 ft at completion						
2. Bailed to 9.6 ft, water at 6.1 ft after 20 minutes						

DATE: 4/15/2021

PIEZO 21-050.GPJ 4-19-21

SUMMARY of PIEZOMETER READINGS

PROJECT: PLWC WWTP Headworks

LOCATION: Paragould, Arkansas

JOB No.: 21-050

Piezometer No.: **P1** installed at Boring 1 location

Surface Elevation: 270 surface elevation approximate

Tip Depth, ft: 28.5

Tip Elevation: 241.5

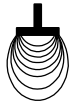
Top Filter Pack, ft: 10

Top Filter Pack, El.: 260

Riser Height (ft): Flush mount cover

DATE	Elapsed Time, days	Depth to water, ft	Groundwater Elevation, ft	Comments
15-Apr-21	0	9.6	260.4	Water bailed at well completion
15-Apr-21	0	6.1	263.9	Recharge in 20 minutes

PRELIMINARY



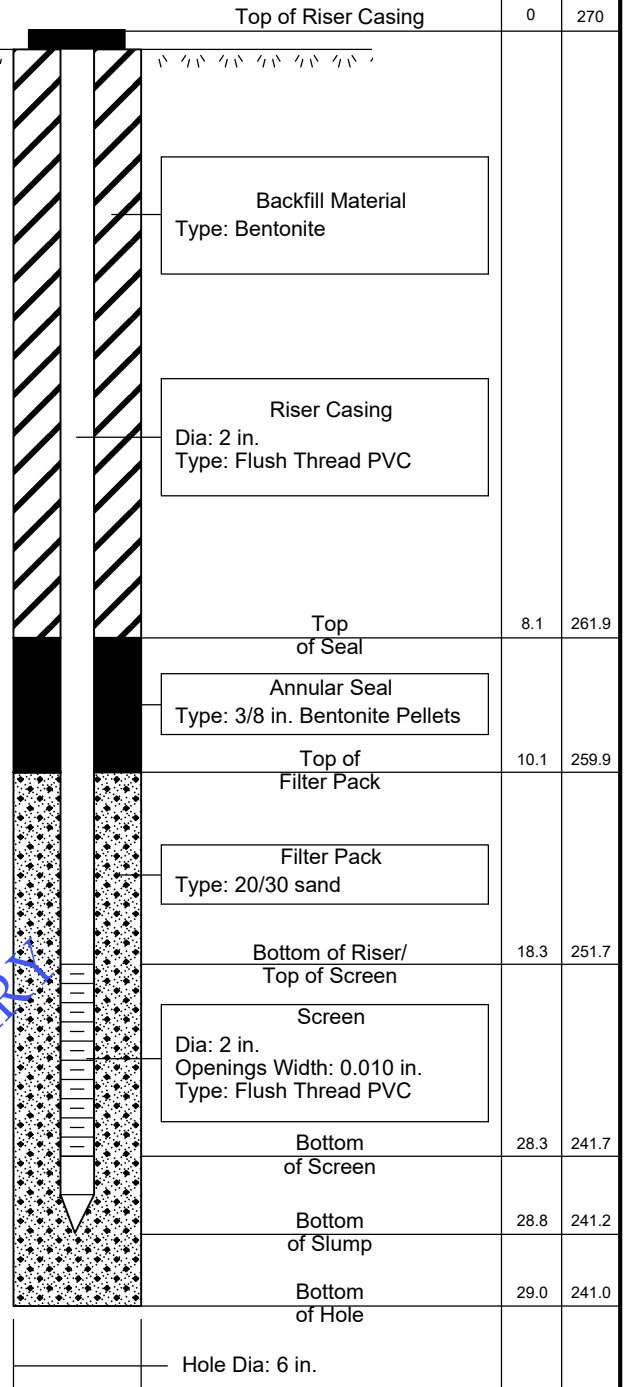
**Grubbs, Hoskyn,
Barton & Wyatt, Inc.**
Consulting Engineers

LOG OF PIEZOMETER NO. 2
PLWC WWTP Headworks
Paragould, Arkansas

LOCATION: Boring 2

DEPTH, FT	SYMBOL	DESCRIPTION OF MATERIAL		DEPTH, FT	EL, FT
		SURF. EL: 270±		0	270
		Firm brown and light grayish brown silty clay w/silt pockets and organic stains (fill) - soft to firm below 2 ft			
		Stiff gray and tan silty clay w/silt pockets and ferrous stains			
10		Firm to stiff grayish brown silty clay w/silt pockets and ferrous stains - stiff below 8 ft			
		Stiff reddish tan and light brownish gray silty clay w/silt pockets and ferrous stains, wet		8.1	261.9
		- with more ferrous stains below 18 ft		10.1	259.9
20					
		Stiff reddish tan and tan silty clay w/ferrous stains, wet		18.3	251.7
30				28.3	241.7
				28.8	241.2
				29.0	241.0
		NOTES: 1. Water at 1.8 ft at completion 2. Bailed to 26.6 ft, water at 9.4 ft after 30 minutes			

PRELIMINARY



BORING COMPLETION DATE: 4/15/2021

DEPTH TO WATER
IN BORING: 13.0 ft

DATE: 4/15/2021

PLATE

SUMMARY of PIEZOMETER READINGS

PROJECT: PLWC WWTP Headworks
LOCATION: Paragould, Arkansas
JOB No.: 21-050

Piezometer No.: **P2** installed at Boring 2 location

Surface Elevation: 270 surface elevation approximate

Tip Depth, ft: 29

Tip Elevation: 241

Top Filter Pack, ft: 10.1

Top Filter Pack, El.: 259.9

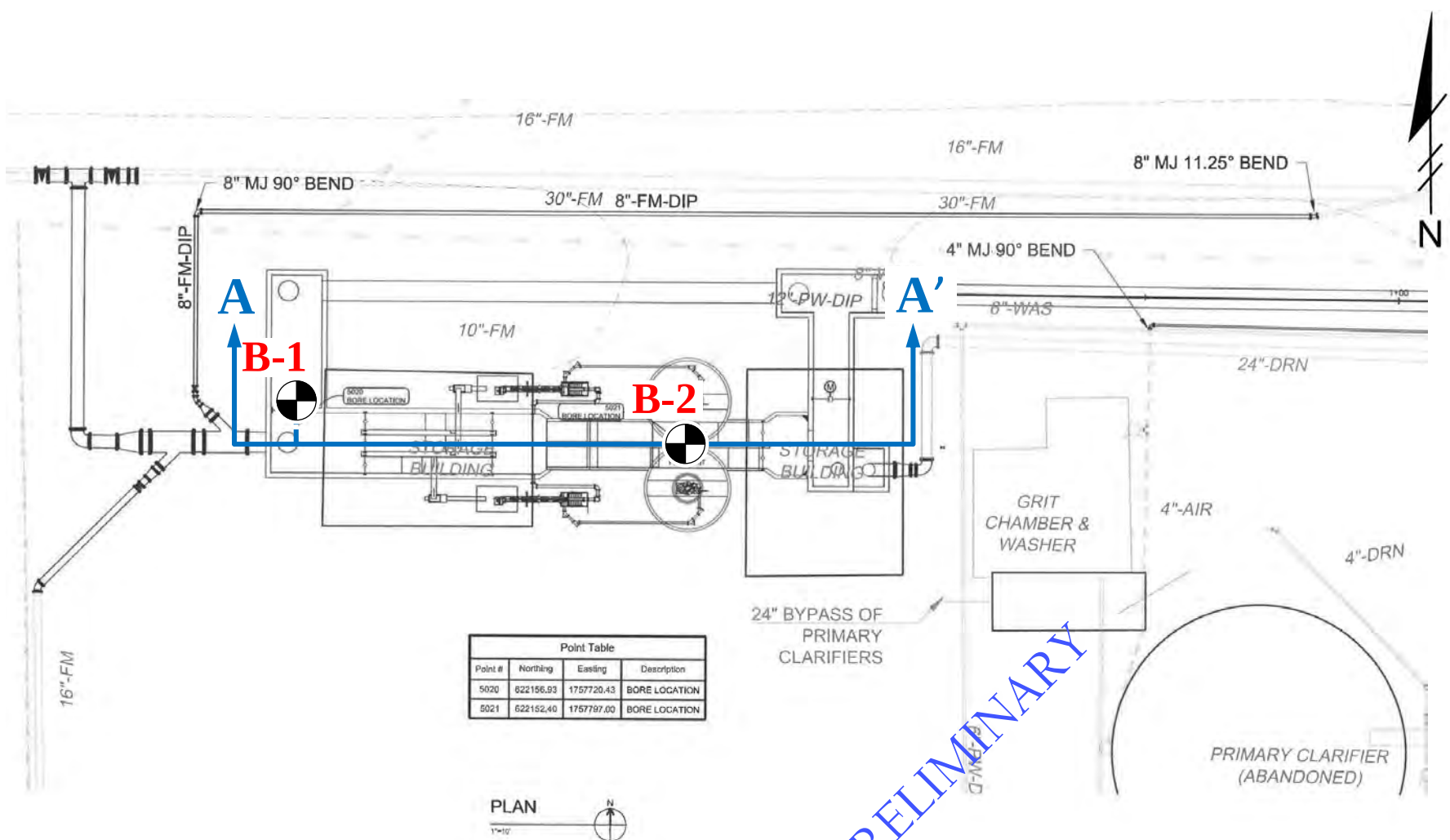
Riser Height (ft): Flush mount cover

DATE	Elapsed Time, days	Depth to water, ft	Groundwater Elevation, ft	Comments
15-Apr-21	0	26.6	243.4	Water bailed at well completion
15-Apr-21	0	9.4	260.6	Recharge in 30 minutes

PRELIMINARY

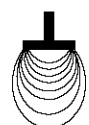
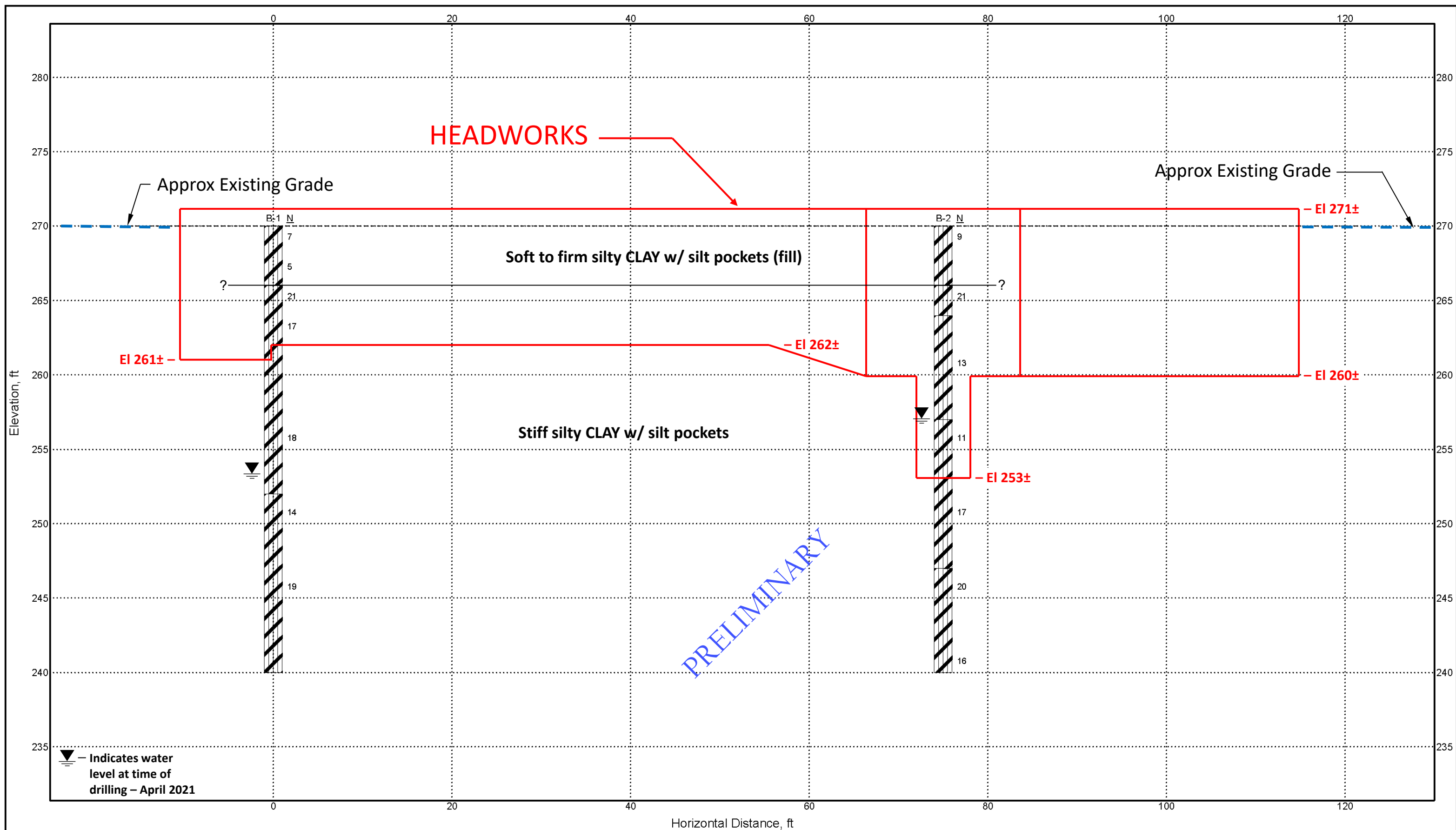
APPENDIX C

PRELIMINARY



PRELIMINARY





Grubbs, Hoskyn,
Barton & Wyatt, Inc.

NOTES:
1. Subsurface conditions have been inferred between discrete boring locations. Actual conditions may vary.
2. Ground surface approximate.

SCALE:
1" = 10' Horizontal
1" = 6' Vertical

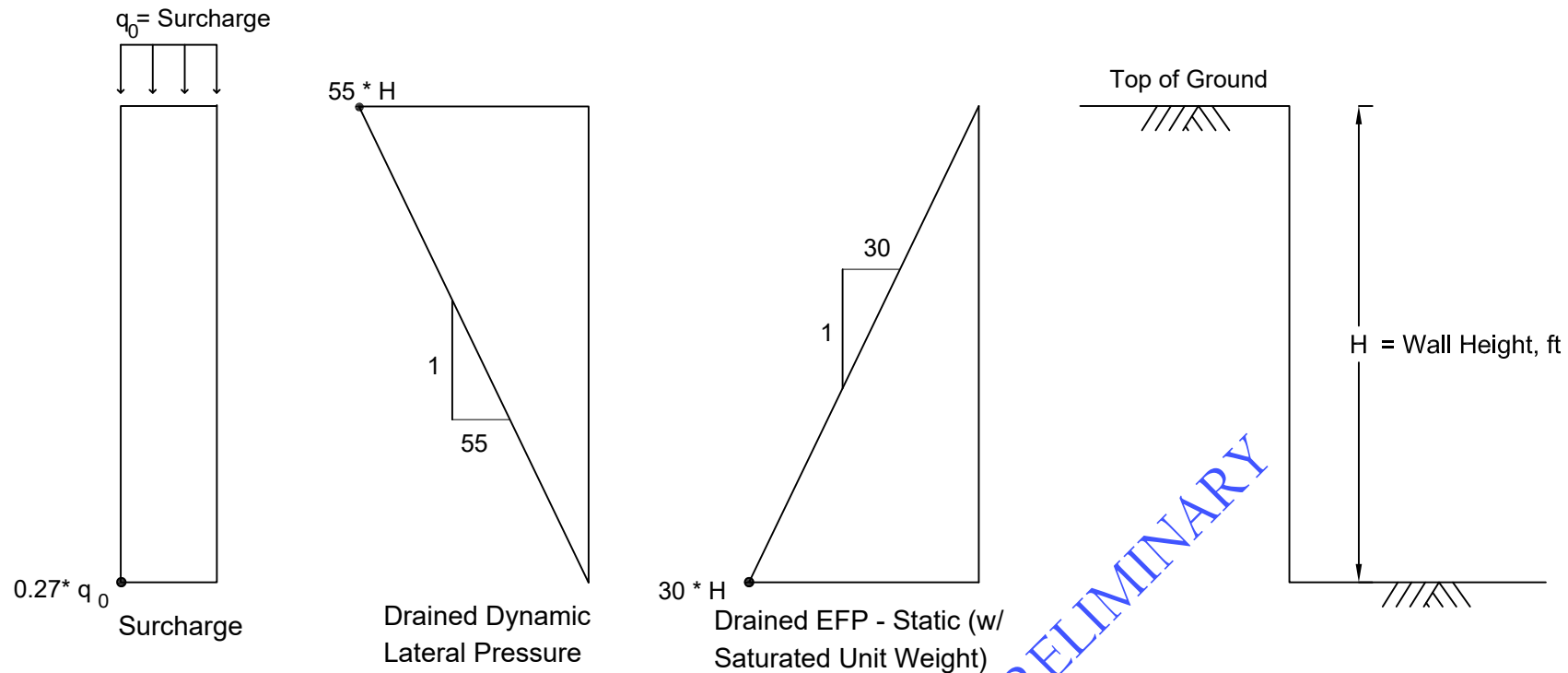
Generalized Subsurface Profile A-A'
PLWC WWTP Headworks
Paragould, Arkansas

Project Number: 21-050

APPENDIX D

PRELIMINARY

Active Drained Earth Pressures



- Notes: 1. EFP = equivalent fluid pressure, lbs per sq ft
 2. Hydrostatic pressure can be adjusted for water depth
 3. ASTM D448 #67 or #57: TUW < 105 pcf



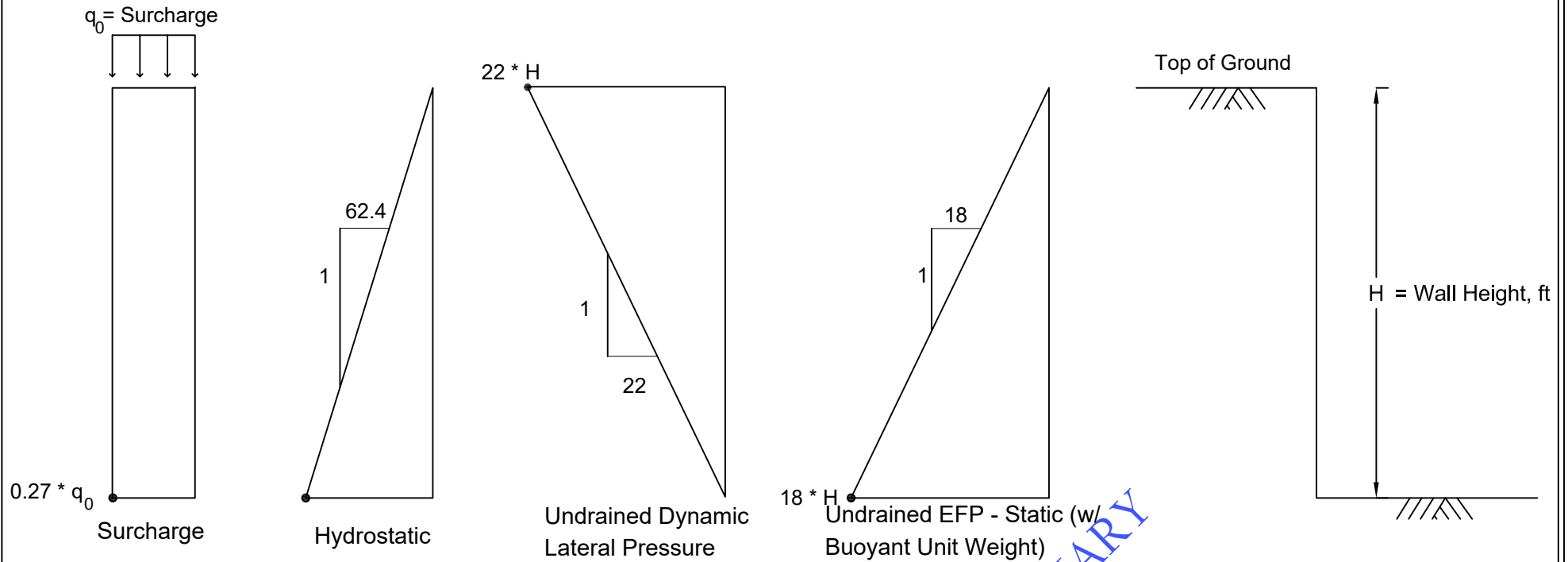
Grubbs, Hoskyn,
 Barton & Wyatt, Inc.
 Consulting Engineers

Lateral Earth Pressure Envelopes
 Clean Stone (#67 or #57) Backfill
 (Drained Condition)

N.T.S

PLWC WWTP Headworks
 Paragould, Arkansas
 Project Number: 21-050

Active Undrained Earth Pressures



- Notes: 1. EFP = equivalent fluid pressure, lbs per sq ft
 2. Hydrostatic pressure can be adjusted for water depth
 3. ASTM D448 #67 or #57: BUW < 43 pcf



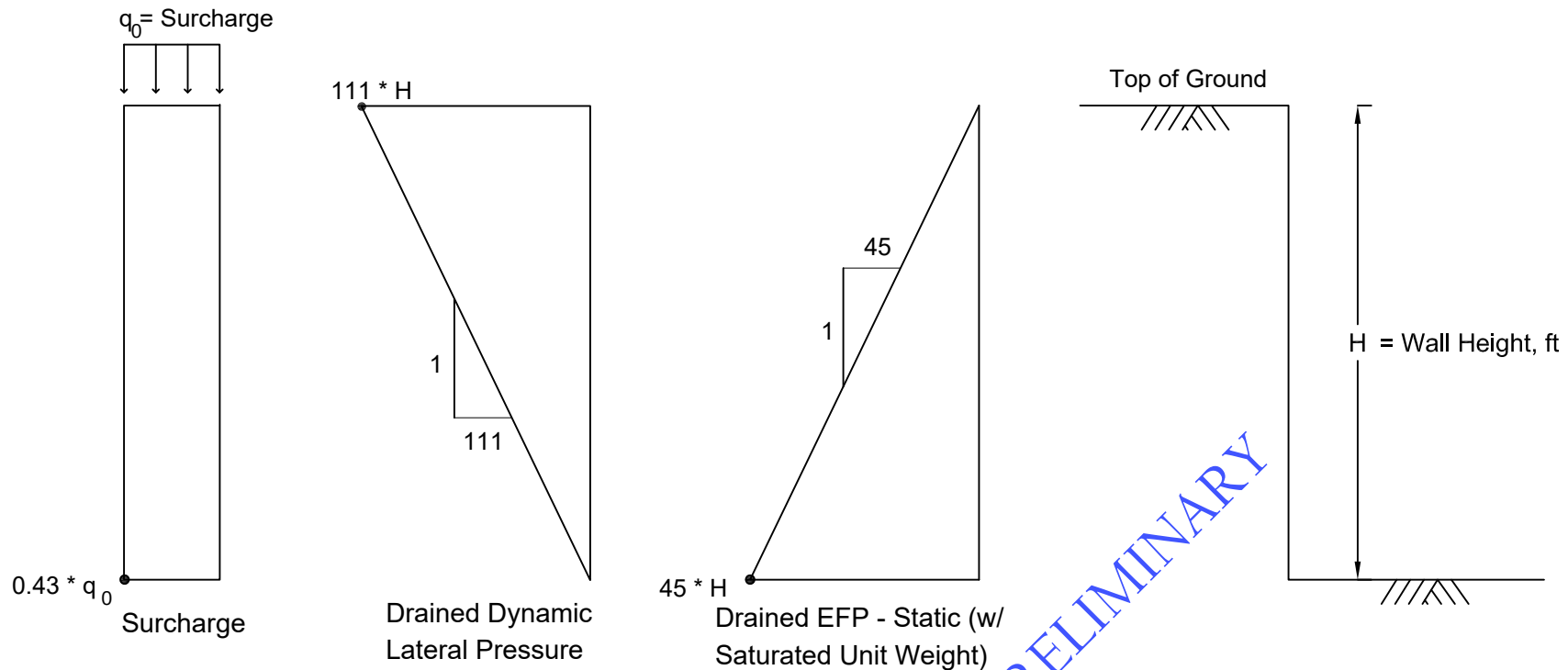
Grubbs, Hoskyn,
 Barton & Wyatt, Inc.
 Consulting Engineers

Lateral Earth Pressure Envelopes
 Clean Stone (#67 or #57) Backfill
 (Undrained Condition)

N.T.S

PLWC WWTP Headworks
 Paragould, Arkansas
 Project Number: 21-050

At-rest Drained Earth Pressures



- Notes: 1. EFP = equivalent fluid pressure, lbs per sq ft
 2. Hydrostatic pressure can be adjusted for water depth
 3. ASTM D448 #67 or #57: TUW < 105 pcf



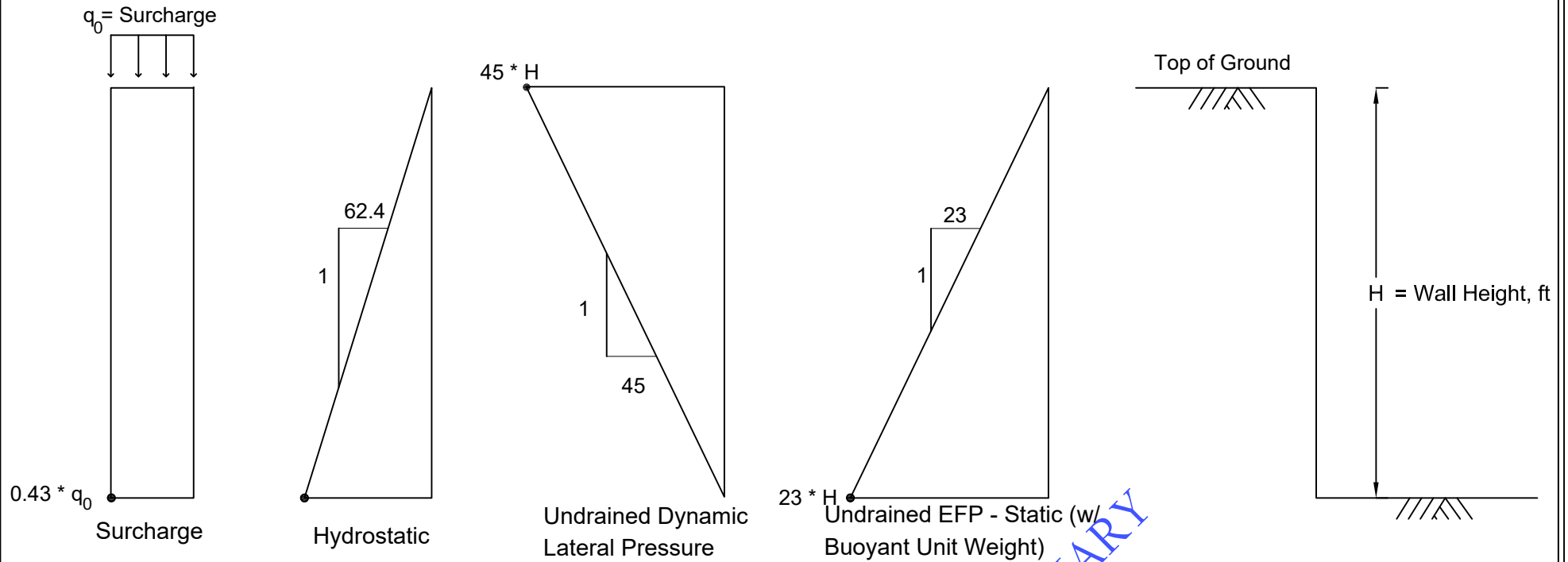
Grubbs, Hoskyn,
 Barton & Wyatt, Inc.
 Consulting Engineers

Lateral Earth Pressure Envelopes
 Clean Stone (#67 or #57) Backfill
 (Drained Condition)

N.T.S

PLWC WWTP Headworks
 Paragould, Arkansas
 Project Number: 21-050

At-Rest Undrained Earth Pressures



- Notes:
1. EFP = equivalent fluid pressure, lbs per sq ft
 2. Hydrostatic pressure can be adjusted for water depth
 3. ASTM D448 #67 or #57: BUW < 43 pcf



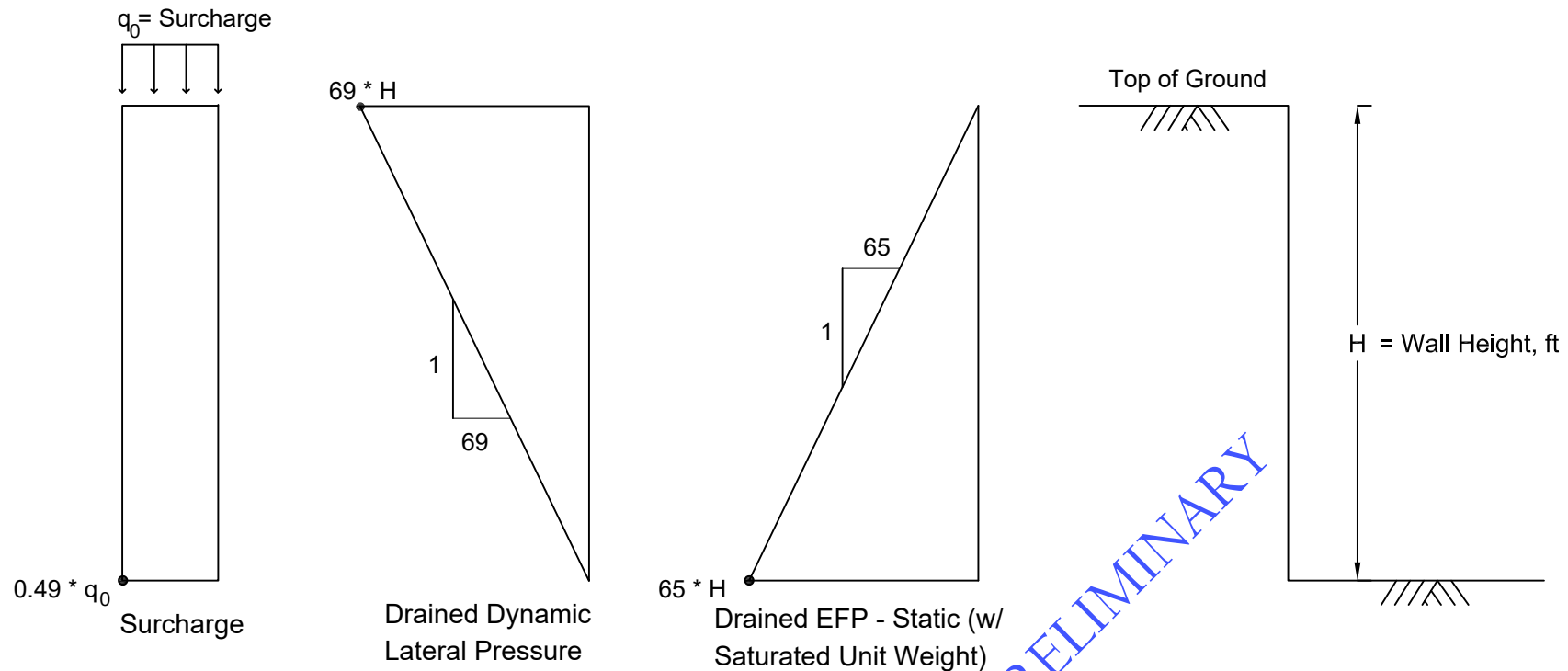
Grubbs, Hoskyn,
Barton & Wyatt, Inc.
Consulting Engineers

Lateral Earth Pressure Envelopes
Clean Stone (#67 or #57) Backfill
(Undrained Condition)

N.T.S

PLWC WWTP Headworks
Paragould, Arkansas
Project Number: 21-050

Active Drained Earth Pressures



Notes: 1. EFP = equivalent fluid pressure, lbs per sq ft
2. Hydrostatic pressure can be adjusted for water depth



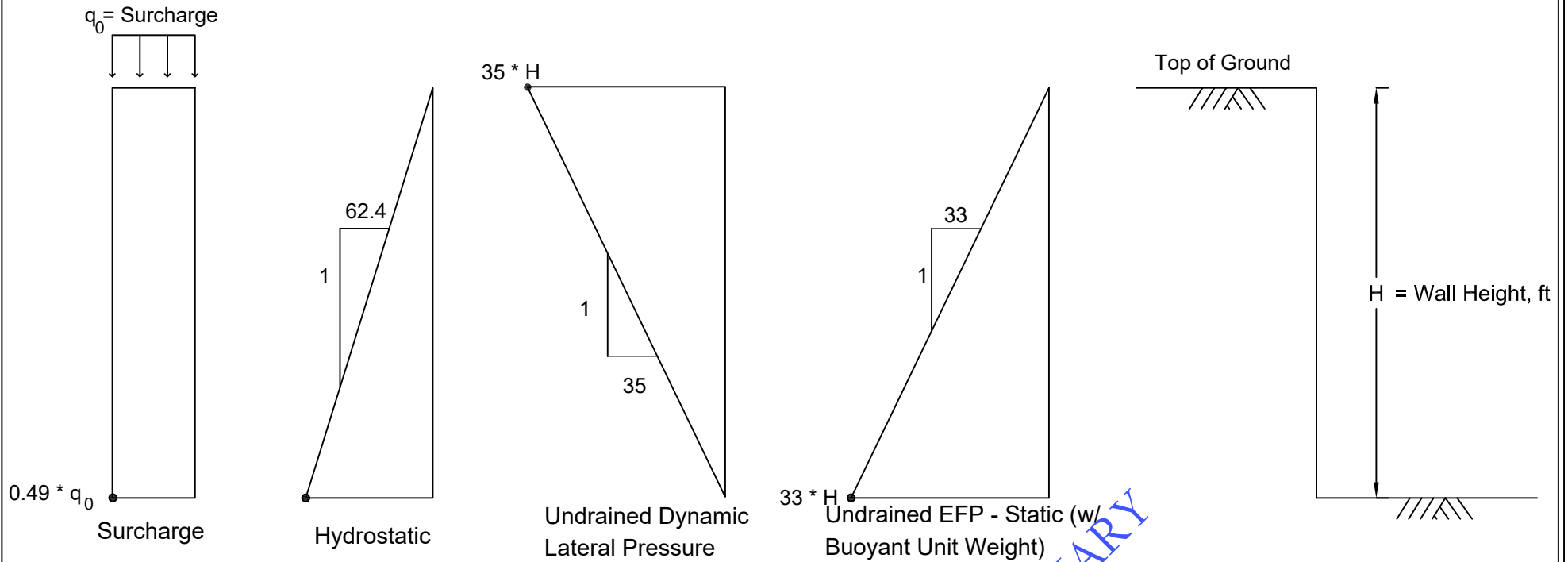
Grubbs, Hoskyn,
Barton & Wyatt, Inc.
Consulting Engineers

Lateral Earth Pressure Envelopes
Low-Plasticity Select Fill
(Drained Condition)

N.T.S

PLWC WWTP Headworks
Paragould, Arkansas
Project Number: 21-050

Active Undrained Earth Pressures



- Notes: 1. EFP = equivalent fluid pressure, lbs per sq ft
2. Hydrostatic pressure can be adjusted for water depth



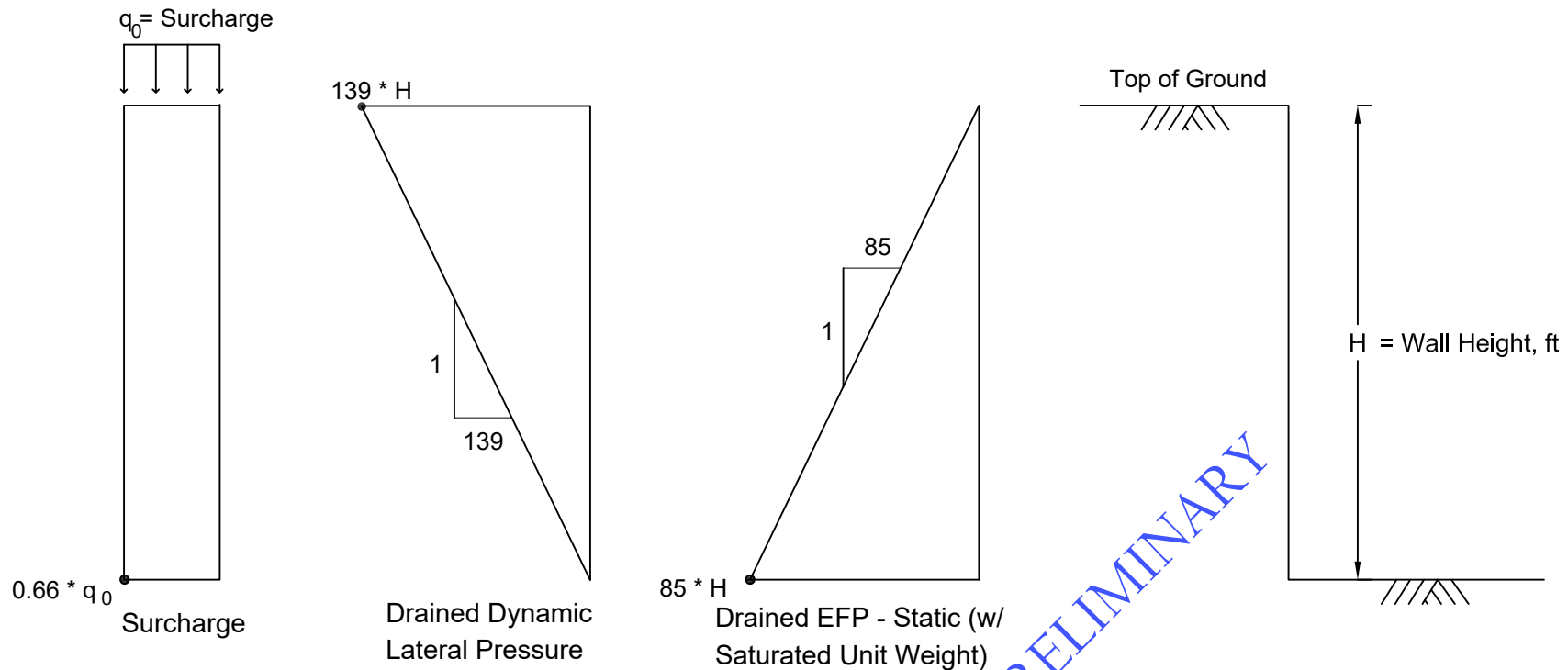
Grubbs, Hoskyn,
Barton & Wyatt, Inc.
Consulting Engineers

Lateral Earth Pressure Envelopes
Low-Plasticity Select Fill
(Undrained Condition)

N.T.S

PLWC WWTP Headworks
Paragould, Arkansas
Project Number: 21-050

At-rest Drained Earth Pressures



Notes: 1. EFP = equivalent fluid pressure, lbs per sq ft
2. Hydrostatic pressure can be adjusted for water depth

PRELIMINARY



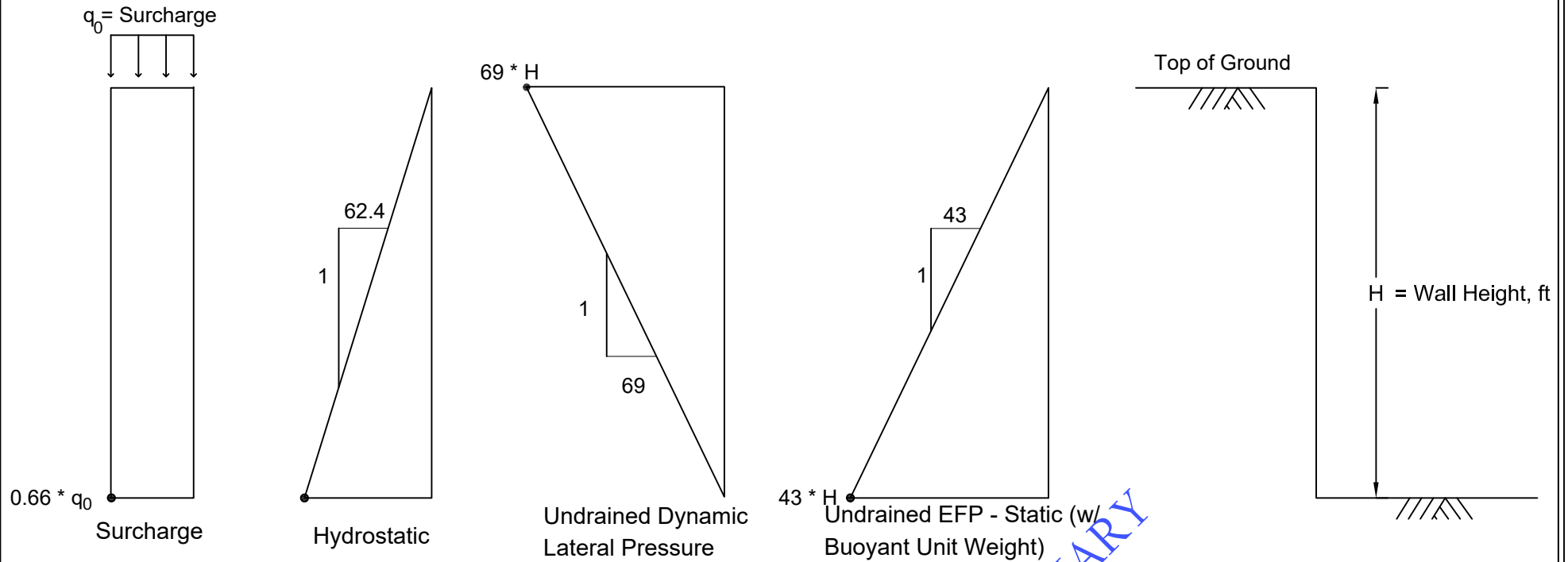
Grubbs, Hoskyn,
Barton & Wyatt, Inc.
Consulting Engineers

Lateral Earth Pressure Envelopes
Low-Plasticity Select Fill
(Drained Condition)

N.T.S

PLWC WWTP Headworks
Paragould, Arkansas
Project Number: 21-050

At-Rest Undrained Earth Pressures



Notes: 1. EFP = equivalent fluid pressure, lbs per sq ft
 2. Hydrostatic pressure can be adjusted for water depth



Grubbs, Hoskyn,
 Barton & Wyatt, Inc.
 Consulting Engineers

Lateral Earth Pressure Envelopes
 Low-Plasticity Select Fill
 (Undrained Condition)

N.T.S

PLWC WWTP Headworks
 Paragould, Arkansas
 Project Number: 21-050

Well Log
PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	B-1 - West Well 1	B-2 - East Well 2
5/1/2021	7:30 AM			
5/2/2021	7:30 AM			
5/3/2021	7:30 AM			
5/4/2021	7:30 AM			
5/5/2021	7:30 AM	.70	4'6"	5'5"
5/6/2021	7:30 AM	0	5'0"	5'1"
5/7/2021	7:30 AM	.19	5'2'	5'4"
5/8/2021	7:30 AM	.10	5'1'	5'4"
5/9/2021	7:30 AM	.22		
5/10/2021	7:30 AM	.11		
5/11/2021	7:30 AM	0	5'6"	5'4"
5/12/2021	7:30 AM	.16	5'6"	5'3"
5/13/2021	7:30 AM	0	5'7"	5'3"
5/14/2021	7:30 AM	0	5'7"	5'3"
5/15/2021	7:30 AM	0		
5/16/2021	7:30 AM	~~0.20~~ .20		
5/17/2021	7:30 AM	.04	5'8"	5'5"
5/18/2021	7:30 AM	0.34	5'6"	5'3"
5/19/2021	7:30 AM	0.02		
5/20/2021	7:30 AM	0.00		
5/21/2021	7:30 AM	0.00	5'7"	5'2"
5/22/2021	7:30 AM	0.00		
5/23/2021	7:30 AM	0.00		
5/24/2021	7:30 AM	0.00	5'7"	5'3"
5/25/2021	7:30 AM	0.00		
5/26/2021	7:30 AM	0.03	5'6"	5'4"
5/27/2021	7:30 AM	0.01		
5/28/2021	7:30 AM	1.75	5'9"	5'6"
5/29/2021	7:30 AM	0.00		
5/30/2021	7:30 AM	0.00		
5/31/2021	7:30 AM	0.00		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
6/1/2021	7:30 AM	0.01	6.3	5.9
6/2/2021	7:30 AM	2.66		
6/3/2021	7:30 AM	0.01	6.1	5.7
6/4/2021	7:30 AM	0.00		
6/5/2021	7:30 AM	0.00		
6/6/2021	7:30 AM	0.14		
6/7/2021	7:30 AM	0.07	5.9	5.6
6/8/2021	7:30 AM	0.28		
6/9/2021	7:30 AM	0.05	5.9	5.6
6/10/2021	7:30 AM	0.00		
6/11/2021	7:30 AM	0.39	6.0	5.6
6/12/2021	7:30 AM	0.14		
6/13/2021	7:30 AM	0.00		
6/14/2021	7:30 AM	0.00	6.1	5.7
6/15/2021	7:30 AM	0.00		
6/16/2021	7:30 AM	0.00	6.1	5.8
6/17/2021	7:30 AM	0.00		
6/18/2021	7:30 AM	0.00	6.1	5.7
6/19/2021	7:30 AM	0.00		
6/20/2021	7:30 AM	0.00		
6/21/2021	7:30 AM	0.00	6.2	5.9
6/22/2021	7:30 AM	2.00		
6/23/2021	7:30 AM	0.00	6.3	6.0
6/24/2021	7:30 AM	0.00		
6/25/2021	7:30 AM	0.00	6.3	5.9
6/26/2021	7:30 AM	0.00		
6/27/2021	7:30 AM	0.00		
6/28/2021	7:30 AM	0.00		
6/29/2021	7:30 AM	0.00		
6/30/2021	7:30 AM	0.00		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
1/1/2022	7:30 AM	1.55		
1/2/2022	7:30 AM	1.91		
1/3/2022	7:30 AM	0.00		
1/4/2022	7:30 AM	0.00		
1/5/2022	7:30 AM	0.00		
1/6/2022	7:30 AM	0.01		
1/7/2022	7:30 AM	0.11		
1/8/2022	7:30 AM	0.00		
1/9/2022	7:30 AM	1.91		
1/10/2022	7:30 AM	0.04	6.0	5.4
1/11/2022	7:30 AM	0.00		
1/12/2022	7:30 AM	0.00		
1/13/2022	7:30 AM	0.00		
1/14/2022	7:30 AM	0.00		
1/15/2022	7:30 AM	0.01		
1/16/2022	7:30 AM	1.28		
1/17/2022	7:30 AM	0.00	4.0	5.4
1/18/2022	7:30 AM	0.00		
1/19/2022	7:30 AM	0.00	6.0	5.4
1/20/2022	7:30 AM	0.03		
1/21/2022	7:30 AM	0.00	6.0	5.4
1/22/2022	7:30 AM	0.00		
1/23/2022	7:30 AM	0.00		
1/24/2022	7:30 AM	~~1~~ 0.00	6.00	5.5
1/25/2022	7:30 AM	0.00		
1/26/2022	7:30 AM	0.00		
1/27/2022	7:30 AM	0.00		
1/28/2022	7:30 AM	0.00	6.4	5.7
1/29/2022	7:30 AM	0.00		
1/30/2022	7:30 AM	0.00		
1/31/2022	7:30 AM	0.00	6.6	5.9

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
2/1/2022	7:30 AM	0.00		
2/2/2022	7:30 AM	0.35		
2/3/2022	7:30 AM	0.85		
2/4/2022	7:30 AM	0.45		
2/5/2022	7:30 AM	0.00		
2/6/2022	7:30 AM	0.00		
2/7/2022	7:30 AM	0.00		
2/8/2022	7:30 AM	0.00		
2/9/2022	7:30 AM	0.00	6.2	5.8
2/10/2022	7:30 AM	0.00		
2/11/2022	7:30 AM	0.00	6.2	5.8
2/12/2022	7:30 AM	0.00		
2/13/2022	7:30 AM	0.00		
2/14/2022	7:30 AM	0.00	6.2	5.8
2/15/2022	7:30 AM	0.00		
2/16/2022	7:30 AM	0.60	6.2	5.8
2/17/2022	7:30 AM	0.38		
2/18/2022	7:30 AM	1.42		
2/19/2022	7:30 AM	0.00		
2/20/2022	7:30 AM	0.00		
2/21/2022	7:30 AM	0.00		
2/22/2022	7:30 AM	0.84	6.2	5.8
2/23/2022	7:30 AM	0.00		
2/24/2022	7:30 AM	1.10		
2/25/2022	7:30 AM	0.10		
2/26/2022	7:30 AM	0.00		
2/27/2022	7:30 AM	0.00		
2/28/2022	7:30 AM	0.00	6.3	4.8

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
3/1/2022	7:30 AM	0.00		
3/2/2022	7:30 AM	0.00	6.1	5.6
3/3/2022	7:30 AM	0.00		
3/4/2022	7:30 AM	0.00		
3/5/2022	7:30 AM	0.00		
3/6/2022	7:30 AM	0.05		
3/7/2022	7:30 AM	0.64	5.9	5.3
3/8/2022	7:30 AM	0.00		
3/9/2022	7:30 AM	0.09		
3/10/2022	7:30 AM	0.06		
3/11/2022	7:30 AM	0.00	5.8	5.3
3/12/2022	7:30 AM	0.08		
3/13/2022	7:30 AM	0.00		
3/14/2022	7:30 AM	0.00		
3/15/2022	7:30 AM	0.00		
3/16/2022	7:30 AM	0.00		
3/17/2022	7:30 AM	0.00		
3/18/2022	7:30 AM	0.42		
3/19/2022	7:30 AM	0.00		
3/20/2022	7:30 AM	0.00		
3/21/2022	7:30 AM	0.00	5.4	5.1
3/22/2022	7:30 AM	0.83		
3/23/2022	7:30 AM	0.71	5.5	5.0
3/24/2022	7:30 AM	0.01		
3/25/2022	7:30 AM	0.00		
3/26/2022	7:30 AM	0.00		
3/27/2022	7:30 AM	0.00		
3/28/2022	7:30 AM	0.00	5.4	5.0
3/29/2022	7:30 AM	0.00		
3/30/2022	7:30 AM	0.00		
3/31/2022	7:30 AM	1.47		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
4/1/2022	7:30 AM	0.04		
4/2/2022	7:30 AM	0.00		
4/3/2022	7:30 AM	0.00		
4/4/2022	7:30 AM	0.00	5.0 5.3	5.0
4/5/2022	7:30 AM	~~0.00~~ 0.17		
4/6/2022	7:30 AM	~~0.05~~ 1.17		
4/7/2022	7:30 AM	~~0.64~~ 0.00		
4/8/2022	7:30 AM	0.00	5.2	4.9
4/9/2022	7:30 AM	0.00		
4/10/2022	7:30 AM	0.00		
4/11/2022	7:30 AM	0.00	5.2	4.8
4/12/2022	7:30 AM	~~0.08~~ 1.56		
4/13/2022	7:30 AM	~~0.00~~ 0.64	5.2	4.9
4/14/2022	7:30 AM	~~0.00~~ 1.01		
4/15/2022	7:30 AM	0.00		
4/16/2022	7:30 AM	~~0.00~~ 0.70		
4/17/2022	7:30 AM	~~0.00~~ 0.01		
4/18/2022	7:30 AM	~~0.42~~ 0.56	5.2	4.8
4/19/2022	7:30 AM	0.00		
4/20/2022	7:30 AM	0.00	5.0	4.5
4/21/2022	7:30 AM	0.61		
4/22/2022	7:30 AM	0.00		
4/23/2022	7:30 AM	0.00		
4/24/2022	7:30 AM	0.00		
4/25/2022	7:30 AM	0.46		
4/26/2022	7:30 AM	~~5.4~~ 0.09	5.4	4.9
4/27/2022	7:30 AM	0.00		
4/28/2022	7:30 AM	0.00		
4/29/2022	7:30 AM	0.00		
4/30/2022	7:30 AM	0.00		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
5/1/2022	7:30 AM	0.00		
5/2/2022	7:30 AM	0.00		
5/3/2022	7:30 AM	0.55		
5/4/2022	7:30 AM	0.00	5'6"	5'3"
5/5/2022	7:30 AM	0.00		
5/6/2022	7:30 AM	1.00		
5/7/2022	7:30 AM	0.07		
5/8/2022	7:30 AM	0.00		
5/9/2022	7:30 AM	0.00		
5/10/2022	7:30 AM	0.00		
5/11/2022	7:30 AM	0.00		
5/12/2022	7:30 AM	0.00		
5/13/2022	7:30 AM	0.00		
5/14/2022	7:30 AM	0.00		
5/15/2022	7:30 AM	0.00		
5/16/2022	7:30 AM	0.00		
5/17/2022	7:30 AM	0.00		
5/18/2022	7:30 AM	0.00		
5/19/2022	7:30 AM	0.00		
5/20/2022	7:30 AM	0.00		
5/21/2022	7:30 AM	0.00		
5/22/2022	7:30 AM	1.95		
5/23/2022	7:30 AM	0.00	5'7"	
5/24/2022	7:30 AM	0.00		
5/25/2022	7:30 AM	1.14		5'4"
5/26/2022	7:30 AM	0.08		
5/27/2022	7:30 AM	0.06		
5/28/2022	7:30 AM	0.00		
5/29/2022	7:30 AM	0.00		
5/30/2022	7:30 AM	0.00		
5/31/2022	7:30 AM	0.00		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
6/1/2022	7:30 AM	0.00		
6/2/2022	7:30 AM	0.10		
6/3/2022	7:30 AM	0.00		
6/4/2022	7:30 AM	0.00		
6/5/2022	7:30 AM	0.00		
6/6/2022	7:30 AM	0.00		
6/7/2022	7:30 AM	0.32		
6/8/2022	7:30 AM	2.19		
6/9/2022	7:30 AM	0.10		
6/10/2022	7:30 AM	0.00		
6/11/2022	7:30 AM	0.00		
6/12/2022	7:30 AM	0.00	6'1"	
6/13/2022	7:30 AM	0.00	6'1"	
6/14/2022	7:30 AM	0.00		
6/15/2022	7:30 AM	0.00		
6/16/2022	7:30 AM	0.00		5'7"
6/17/2022	7:30 AM	0.00		
6/18/2022	7:30 AM	0.00		
6/19/2022	7:30 AM	0.00		
6/20/2022	7:30 AM	0.00		
6/21/2022	7:30 AM	0.00		
6/22/2022	7:30 AM	0.00		
6/23/2022	7:30 AM	0.00	6'2"	
6/24/2022	7:30 AM	0.00		
6/25/2022	7:30 AM	0.00		
6/26/2022	7:30 AM	0.00		
6/27/2022	7:30 AM	0.00		
6/28/2022	7:30 AM	0.00		5'10"
6/29/2022	7:30 AM	0.00		
6/30/2022	7:30 AM	0.00		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
7/1/2022	7:30 AM	0.00		
7/2/2022	7:30 AM	0.00		
7/3/2022	7:30 AM	0.00		
7/4/2022	7:30 AM	0.00		
7/5/2022	7:30 AM	0.00		
7/6/2022	7:30 AM	0.00		
7/7/2022	7:30 AM	0.00	7'1"	
7/8/2022	7:30 AM	0.00		6'9"
7/9/2022	7:30 AM	0.04		
7/10/2022	7:30 AM	0.00		
7/11/2022	7:30 AM	0.00		
7/12/2022	7:30 AM	0.00		
7/13/2022	7:30 AM	0.00		
7/14/2022	7:30 AM	0.00		
7/15/2022	7:30 AM	0.00		
7/16/2022	7:30 AM	0.00		
7/17/2022	7:30 AM	0.02		
7/18/2022	7:30 AM	0.56		
7/19/2022	7:30 AM	0.00	7'3"	
7/20/2022	7:30 AM	0.00		6'7"
7/21/2022	7:30 AM	0.00		
7/22/2022	7:30 AM	0.00		
7/23/2022	7:30 AM	0.00		
7/24/2022	7:30 AM	0.00		
7/25/2022	7:30 AM	0.00		
7/26/2022	7:30 AM	0.00		
7/27/2022	7:30 AM	0.00		
7/28/2022	7:30 AM	0.60	7'4"	
7/29/2022	7:30 AM	0.60		
7/30/2022	7:30 AM	0.65		
7/31/2022	7:30 AM	1.42		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
8/1/2022	7:30 AM	0.11		6'8"
8/2/2022	7:30 AM	0.00		
8/3/2022	7:30 AM	0.00		
8/4/2022	7:30 AM	1.51		
8/5/2022	7:30 AM	1.59		
8/6/2022	7:30 AM	0.03		
8/7/2022	7:30 AM	0.00		
8/8/2022	7:30 AM	0.00		
8/9/2022	7:30 AM	0.00		
8/10/2022	7:30 AM	0.46		
8/11/2022	7:30 AM	0.21		
8/12/2022	7:30 AM	0.00		
8/13/2022	7:30 AM	0.00		
8/14/2022	7:30 AM	0.00		
8/15/2022	7:30 AM	0.00		
8/16/2022	7:30 AM	0.00		
8/17/2022	7:30 AM	0.46		
8/18/2022	7:30 AM	0.00		
8/19/2022	7:30 AM	0.00		
8/20/2022	7:30 AM	0.47		
8/21/2022	7:30 AM	0.02		
8/22/2022	7:30 AM	0.00		
8/23/2022	7:30 AM	0.00		
8/24/2022	7:30 AM	0.00	7'0"	
8/25/2022	7:30 AM	0.00		6'10"
8/26/2022	7:30 AM	0.00		
8/27/2022	7:30 AM	0.00		
8/28/2022	7:30 AM	0.00		
8/29/2022	7:30 AM	0.00		
8/30/2022	7:30 AM	0.42		
8/31/2022	7:30 AM	0.00		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
9/1/2022	7:30 AM	0.00		
9/2/2022	7:30 AM	0.00		
9/3/2022	7:30 AM	0.11		
9/4/2022	7:30 AM	0.00		
9/5/2022	7:30 AM	0.00		
9/6/2022	7:30 AM	0.00	7'6"	7'3"
9/7/2022	7:30 AM	0.04		
9/8/2022	7:30 AM	0.03		
9/9/2022	7:30 AM	0.00		
9/10/2022	7:30 AM	0.00		
9/11/2022	7:30 AM	0.00		
9/12/2022	7:30 AM	0.00		
9/13/2022	7:30 AM	0.00		
9/14/2022	7:30 AM	0.00		
9/15/2022	7:30 AM	0.00		
9/16/2022	7:30 AM	0.00		
9/17/2022	7:30 AM	0.00		
9/18/2022	7:30 AM	0.00		
9/19/2022	7:30 AM	0.00		
9/20/2022	7:30 AM	0.00	7'10"	7'5"
9/21/2022	7:30 AM	0.00		
9/22/2022	7:30 AM	0.00		
9/23/2022	7:30 AM	0.00		
9/24/2022	7:30 AM	0.00		
9/25/2022	7:30 AM	0.05		
9/26/2022	7:30 AM	0.00		
9/27/2022	7:30 AM	0.00		
9/28/2022	7:30 AM	0.00		7'8"
9/29/2022	7:30 AM	0.00		
9/30/2022	7:30 AM	0.00		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
10/1/2022	7:30 AM	0.00		
10/2/2022	7:30 AM	0.00		
10/3/2022	7:30 AM	0.00		
10/4/2022	7:30 AM	0.00	8'1"	7'1 1/2"
10/5/2022	7:30 AM	0.00		
10/6/2022	7:30 AM	0.00		
10/7/2022	7:30 AM	0.00		
10/8/2022	7:30 AM	0.00		
10/9/2022	7:30 AM	0.00		
10/10/2022	7:30 AM	0.00		
10/11/2022	7:30 AM	0.00		
10/12/2022	7:30 AM	0.00		
10/13/2022	7:30 AM	0.07		
10/14/2022	7:30 AM	0.00		
10/15/2022	7:30 AM	0.00		
10/16/2022	7:30 AM	0.33		
10/17/2022	7:30 AM	0.00		
10/18/2022	7:30 AM	0.60	8'3"	
10/19/2022	7:30 AM	0.00		8'0"
10/20/2022	7:30 AM	0.00		
10/21/2022	7:30 AM	0.00		
10/22/2022	7:30 AM	0.00		
10/23/2022	7:30 AM	0.00		
10/24/2022	7:30 AM	0.00		
10/25/2022	7:30 AM	0.02	~~8'3"~~	
10/26/2022	7:30 AM	0.44		
10/27/2022	7:30 AM	0.00		
10/28/2022	7:30 AM	0.00		
10/29/2022	7:30 AM	0.00		
10/30/2022	7:30 AM	1.11		
10/31/2022	7:30 AM	0.04		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
11/1/2022	7:30 AM	0.00	8'4"	
11/2/2022	7:30 AM	0.00		
11/3/2022	7:30 AM	0.00		8'0"
11/4/2022	7:30 AM	0.00		
11/5/2022	7:30 AM	1.46		
11/6/2022	7:30 AM	0.00		
11/7/2022	7:30 AM	0.00		
11/8/2022	7:30 AM	0.00		
11/9/2022	7:30 AM	0.00		
11/10/2022	7:30 AM	0.00		
11/11/2022	7:30 AM	0.00		
11/12/2022	7:30 AM	0.33		
11/13/2022	7:30 AM	0.00		
11/14/2022	7:30 AM	0.00	8'5"	8'0"
11/15/2022	7:30 AM	0.00		
11/16/2022	7:30 AM	0.00		
11/17/2022	7:30 AM	0.00		
11/18/2022	7:30 AM	0.00		
11/19/2022	7:30 AM	0.00		
11/20/2022	7:30 AM	0.00		
11/21/2022	7:30 AM	0.00		
11/22/2022	7:30 AM	0.00		
11/23/2022	7:30 AM	0.00		
11/24/2022	7:30 AM	0.13		
11/25/2022	7:30 AM	0.22		
11/26/2022	7:30 AM	0.01		
11/27/2022	7:30 AM	0.37		
11/28/2022	7:30 AM	0.02	8'6"	
11/29/2022	7:30 AM	0.00		8'3"
11/30/2022	7:30 AM	0.07		

Well Log

PLWC Headworks Project #3293

Date	Time	rain - last 24 Hr	Well 1	Well 2
12/1/2022	7:30 AM	0.00		
12/2/2022	7:30 AM	0.01		
12/3/2022	7:30 AM	0.04		
12/4/2022	7:30 AM	0.00		
12/5/2022	7:30 AM	0.04		
12/6/2022	7:30 AM	0.07		
12/7/2022	7:30 AM	0.03		
12/8/2022	7:30 AM	2.23		
12/9/2022	7:30 AM	0.42		
12/10/2022	7:30 AM	0.03		
12/11/2022	7:30 AM	0.21		
12/12/2022	7:30 AM	0.01		8.2
12/13/2022	7:30 AM	0.00	9.4	
12/14/2022	7:30 AM	1.50		
12/15/2022	7:30 AM	0.24		
12/16/2022	7:30 AM	0.00		
12/17/2022	7:30 AM	0.00		
12/18/2022	7:30 AM	0.00		
12/19/2022	7:30 AM	0.00		
12/20/2022	7:30 AM	0.00	- 8.8	
12/21/2022	7:30 AM	0.00		
12/22/2022	7:30 AM	0.02		
12/23/2022	7:30 AM	0.18		
12/24/2022	7:30 AM	0.00		
12/25/2022	7:30 AM	0.00		
12/26/2022	7:30 AM	0.00		
12/27/2022	7:30 AM	0.00		
12/28/2022	7:30 AM	0.00		
12/29/2022	7:30 AM	0.00		
12/30/2022	7:30 AM	0.58		
12/31/2022	7:30 AM	0.15		

1/4/23

8.2

GRIT CLASSIFIER UNITS

NAME: CLS-01, CLS-02

QUANTITY 2

PARAMETER	VALUE	UNIT
CAPACITY	250	GPM
SCREW CONVEYOR POWER	480/3/60	VOLT/FRE
SCREW CONVEYOR MOTOR SIZE	1	HP

SLIDE GATE SCHEDULE

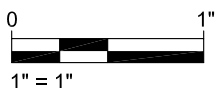
DESCRIPTOR	QUANTITY	CHANNEL DEPTH (FT.)	WIDTH (FT.)	HEIGHT (FT.)	TYPE
SLG-01, SLG-02 & SLG-03	3	9.75	3.50	8.75	SELF-CONTA
SLG-04, SLG-05 & SLG-06	3	9.75	3.50	3.50	SELF-CONTA
SLG-07, SLG-08, SLG-09	3	8.25	3.50	4.75	SELF-CONTA
SLG-10 & SLG-11	2	8.25	4.00	4.75	SELF-CONTA
SLG-12 & SLG-13	2	3.60	4.00	3.50	SELF-CONTA
SLG-14 & SLG-15	2	10.00	4.50	4.50	SELF-CONTA

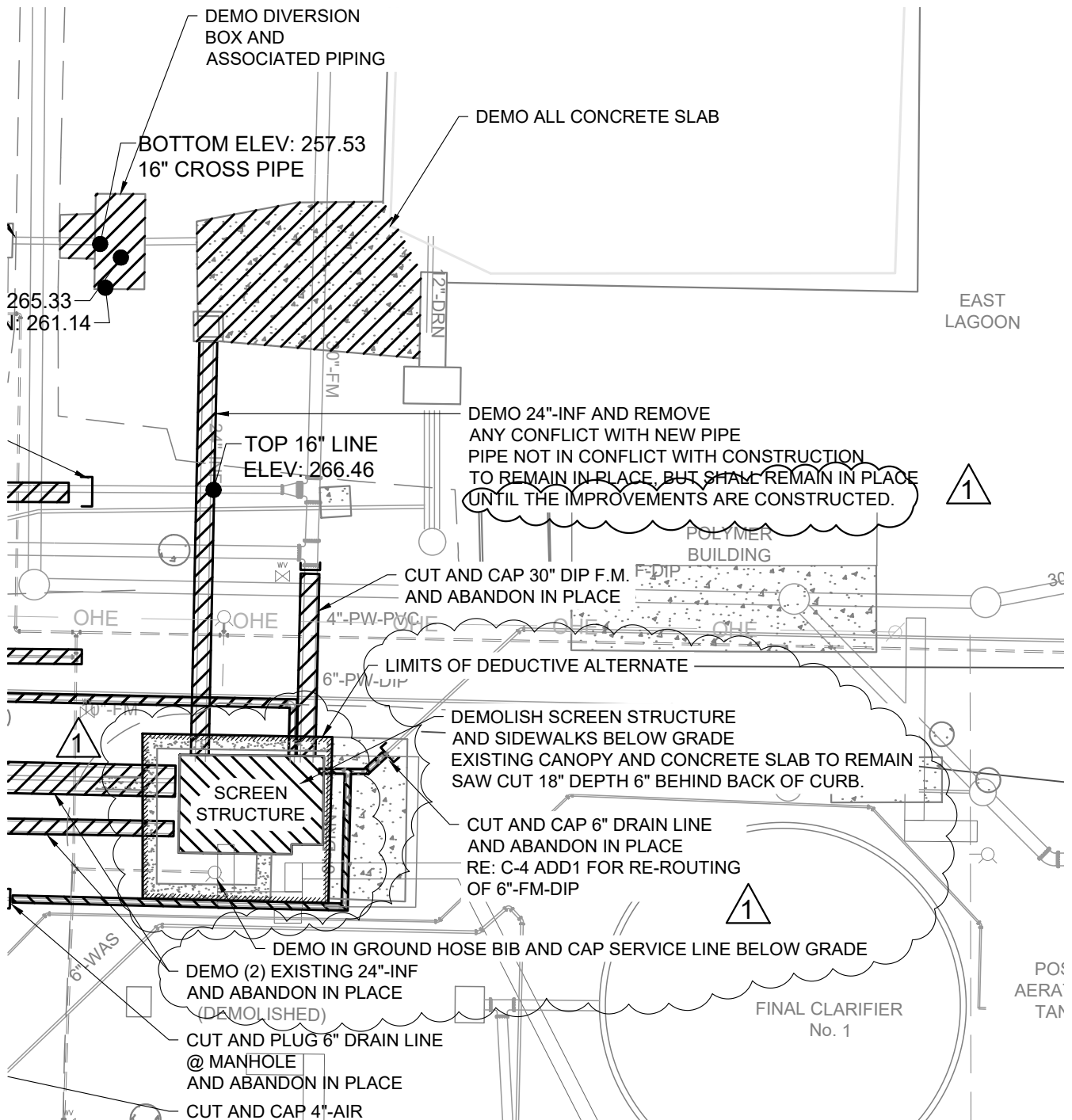
DOWNWARD OPENING WEIR GATE SCHEDULE

DESCRIPTOR	QUANTITY	CHANNEL DEPTH (FT.)	WIDTH (FT.)	HEIGHT (FT.)	TYPE
WG-01	1	9.75	6.0	3.0	SELF-CONTA
WG-02	1	12.60	10.0	5.0	SELF-CONTA
WG-03	1	10.60	8.0	6.0	SELF-CONTA

ADDENDUM 1

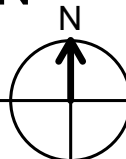
	CRIST ENGINEERS, INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS
PARAGOULD, ARKANSAS	
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS	
DESIGN INFORMATION	
DESIGNED: CAJ	JOB NO. 2023
DRAFTED: SBM	DATE JAN. 2023
CHECKED: CAJ	SCALE: AS SHOWN
ADD. NO. 1	
REF SHEET G-6	





DEMOLITION PLAN D-1

SCALE: 1" = 30'



ADDENDUM 1

CRIST ENGINEERS, INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS			
PARAGOULD, ARKANSAS			
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS			
DEMOLITION PLAN			
DESIGNED: CAJ	JOB NO. 2023	DATE JAN. 2023	ADD. NO. 1
DRAFTED: SBM	SCALE: AS SHOWN	REF SHEET D-1	
CHECKED: CAJ			

WEST
GOON

OUTSIDE OF BOX
AFTER DEMOLISHING
EAST DIVERSION BOX

WALL ELEV: 265.33
12" INVERT IN: 261.14

CUT AND CAP 16" DIP F.M.
AND ABANDON IN PLACE

CUT AND CAP 8"-WAS-DIP

DEMO 8"-FM-DIP

FM

HE

OHE

OHE

OHE

OHE

OHE

OHE

OHE

12"-PW-DIP

6"-PW-DIP

TOP DEMO 4"-PW & RELOCATE
ELEV: 268.01

24"-DRN

2-24"-INF

STORAGE
BUILDING

TOP 8" SLUDGE LINE
ELEV: 268.84

GRIT
CHAMBER
& WASHER

4"-AIR

4"-DRN

24" BYPASS OF
PRIMARY
CLARIFIERS

CUT AND CAP
24"-EFF-DIP
DEMO IN-PLACE

EXISTING 12"-PW-DIP
PROPOSED STRUCTURE

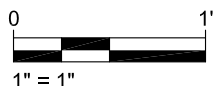
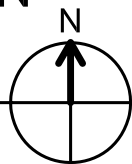
1

PRIMARY CLARIFIER
(ABANDONED)

DEMOLISH GRIT CHAMBER
BELOW GRADE. LIMITS OF
DEDUCTIVE ALTERNATE 01

DEMOLITION PLAN D-1

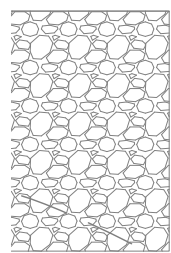
SCALE: 1" = 30'



ADDENDUM 1

		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS			
DEMOLITION PLAN			
DESIGNED: CAJ	JOB NO. 2023	DATE JAN. 2023	ADD. NO. 1
DRAFTED: SBM	SCALE: AS SHOWN	REF SHEET D-1	
CHECKED: CAJ			

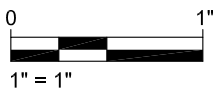
CONCRETE 2:1 SLOPE
FROM SW CORNER OF
OUTFALL TO THE
NORTH AS SHOWN
RE: F/CZ-2



OHE OHE OHE OHE OHE OHE OHE

SITE GRADING AND PAVEMENT PLAN C-3

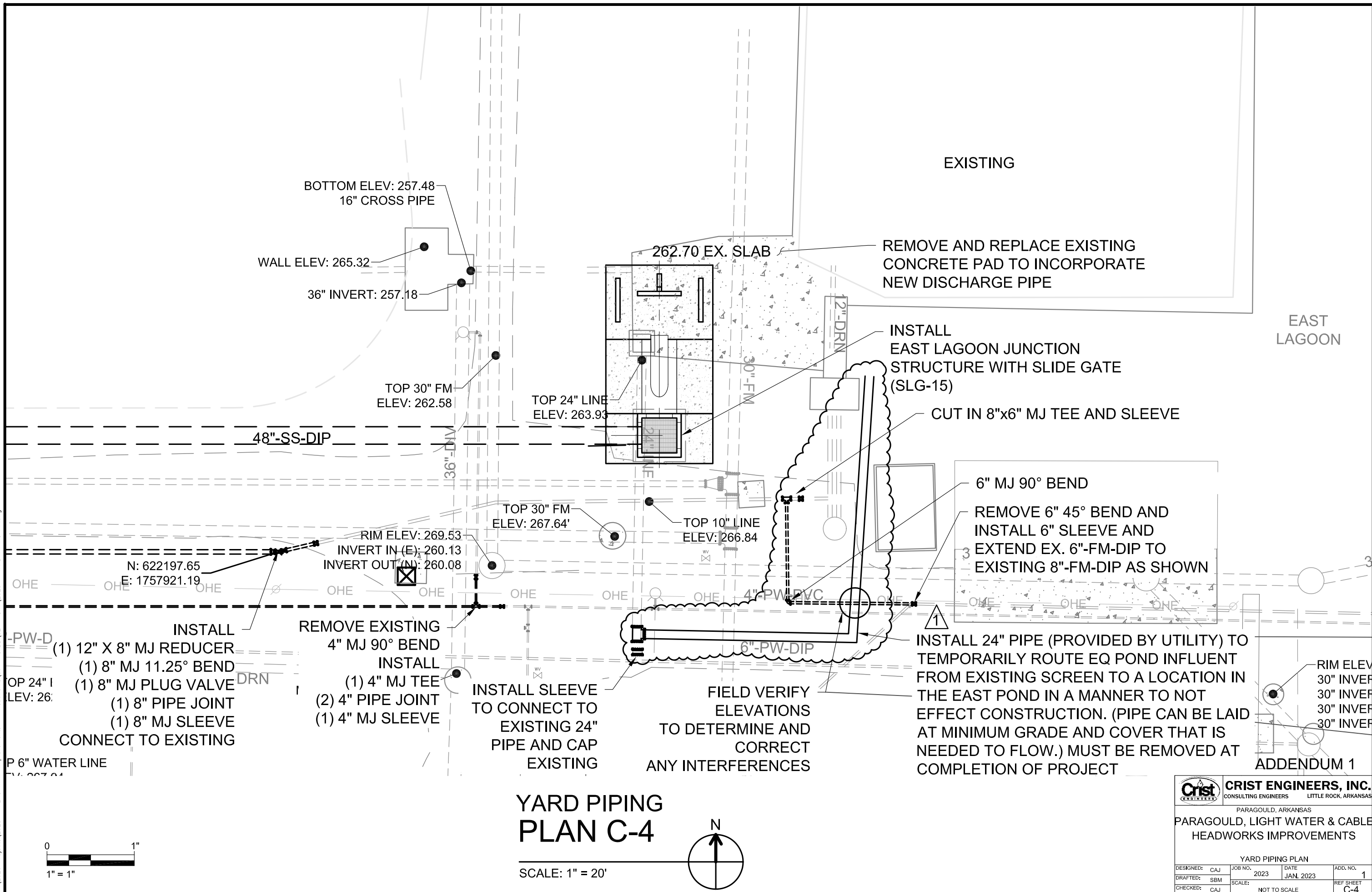
SCALE: 1" = 20'



ADDENDUM 1

		CRIST ENGINEERS, INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS			
SITE GRADING AND PAVEMENT PLAN			
DESIGNED: CAJ	JOB NO. 2023	DATE JAN. 2023	ADD. NO. 1
DRAFTED: SBM	SCALE:	AS SHOWN	REF SHEET C-3
CHECKED: CAJ			

P:\2020 Projects\2023 - PLWC WWTP Improvements - CADD\02 - Civil\2023 - YARD PIPING PP.dwg





CRIST ENGINEERS, INC.

CONSULTING ENGINEERS

LITTLE ROCK, ARKANSAS

PARAGOULD, ARKANSAS

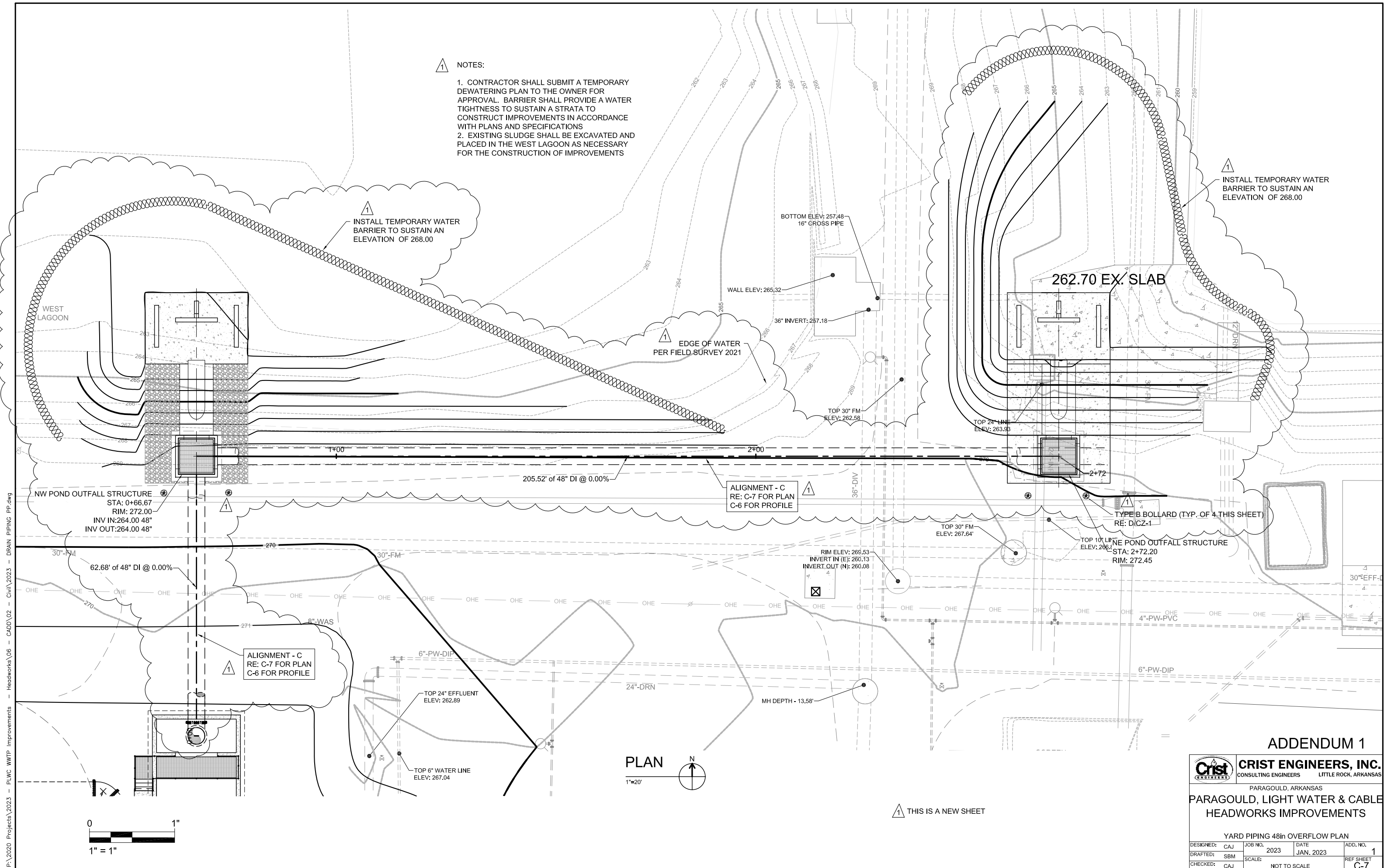
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS

YARD PIPING PLAN

DESIGNED: CAJ	JOB NO. 2023	DATE JAN. 2023	ADD. NO. 1
DRAFTED: SBM	SCALE:	NOT TO SCALE	REF SHEET C-4
CHECKED: CAJ			

P:\2020 Projects\2023 - PLWC WRP Improvements - Headworks\06 - CADD\02 - Civi\2023 - DRAIN PIPING PP.dwg

- NOTES:
1. CONTRACTOR SHALL SUBMIT A TEMPORARY DEWATERING PLAN TO THE OWNER FOR APPROVAL. BARRIER SHALL PROVIDE A WATER TIGHTNESS TO SUSTAIN A STRATA TO CONSTRUCT IMPROVEMENTS IN ACCORDANCE WITH PLANS AND SPECIFICATIONS
 2. EXISTING SLUDGE SHALL BE EXCAVATED AND PLACED IN THE WEST LAGOON AS NECESSARY FOR THE CONSTRUCTION OF IMPROVEMENTS



PLAN
1"=20'

THIS IS A NEW SHEET

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
LITTLE ROCK, ARKANSAS

PARAGOULD, ARKANSAS

PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS

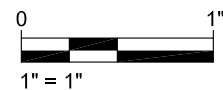
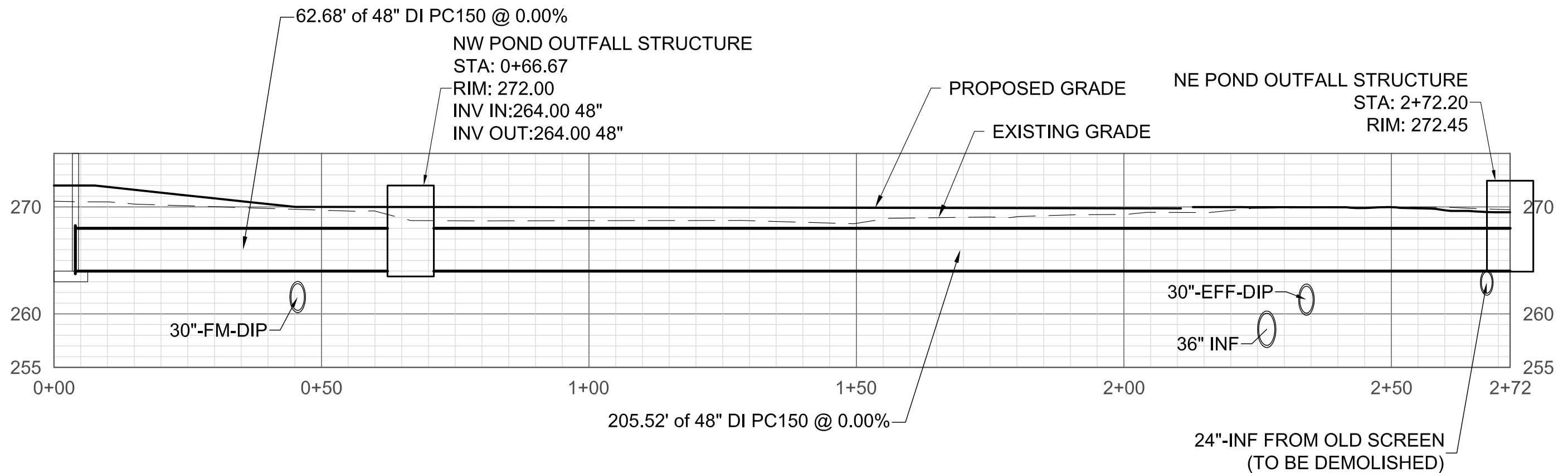
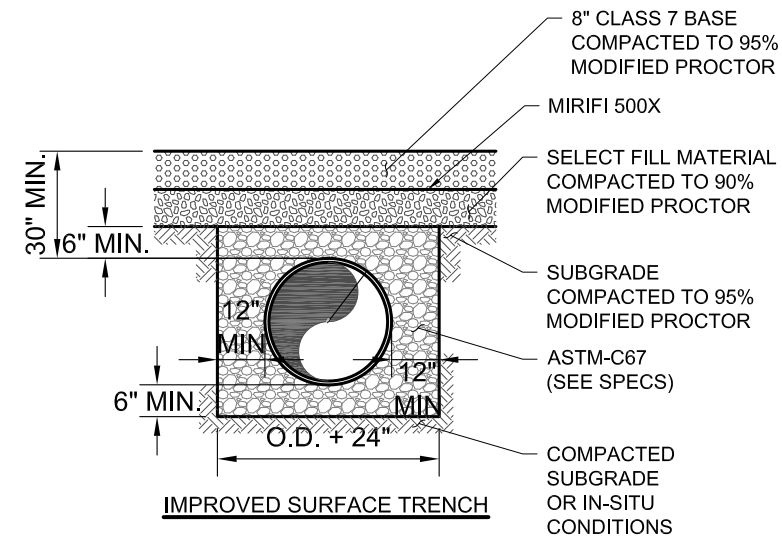
ADDENDUM 1

YARD PIPING 48in OVERFLOW PLAN

DESIGNED: CAJ	JOB NO. 2023	DATE JAN, 2023	ADD. NO. 1
DRAFTED: SBM	SCALE: NOT TO SCALE	REF SHEET C-7	
CHECKED: CAJ			

0 1"
1" = 1"

P:\2020 Projects\2023 - PLWC WWTP Improvements - Headworks\06 - CADD\02 - Civil\2023 - DRAIN PIPING PP.dwg



48" OVERFLOW LINE ALIGNMENT - C

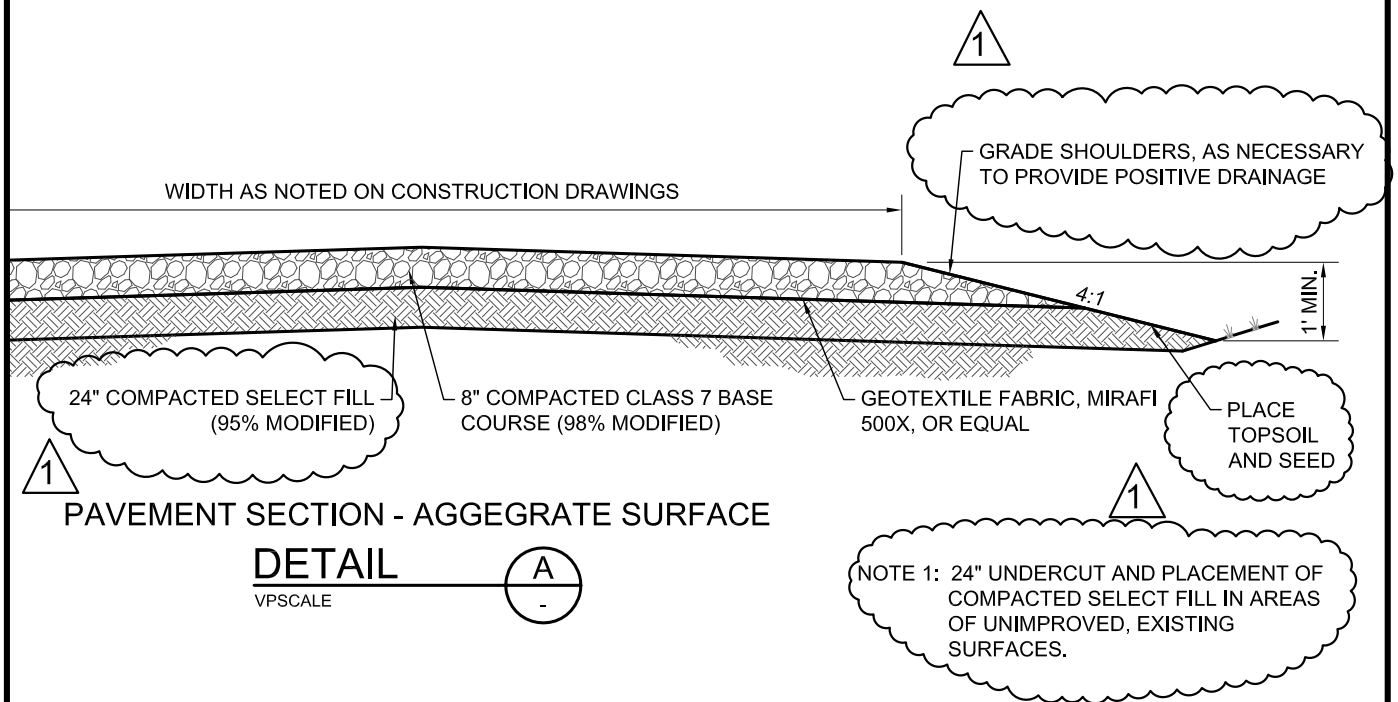
H= 1" = 20'
V= 1" = 4'

THIS IS A NEW SHEET

ADDENDUM 1

		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS			
YARD PIPING 48in OVERFLOW PROFILE			
DESIGNED: CAJ	JOB NO. 2023	DATE JAN. 2023	ADD. NO. 1
DRAFTED: SBM	SCALE:	NOT TO SCALE	REF SHEET C-8
CHECKED: CAJ			

P:\2020 Projects\2023 - PLWC WTP Improvements - Headworks\06 - CADD\2023 - Civil Standard Details.dwg



ADDENDUM 1

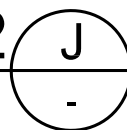
		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS			
CIVIL STANDARD DETAILS II			
DESIGNED: CAJ	JOB NO. 2023	DATE JAN. 2023	ADD. NO. 1
DRAFTED: SBM	SCALE: AS SHOWN	REF SHEET CZ-2	
CHECKED: CAJ			

SECTION

ANCHOR COLLAR DIMENSIONS AND REINFORCEMENT					
PIPE SIZE	W	H	T	"A" BAR	"B" BAR
6"	18"	24"	12"	#6 @ 6"	#6 @ 6"
8"	18"	30"	12"	#6 @ 6"	#6 @ 6"
10"	24"	36"	18"	#6 @ 6"	#6 @ 6"
12"	24"	48"	18"	#6 @ 6"	#6 @ 6"
14"	30"	48"	18"	#6 @ 6"	#6 @ 6"
16"	36"	54"	18"	#6 @ 6"	#6 @ 6"
18"	36"	60"	18"	#6 @ 6"	#6 @ 6"
20"	36"	60"	24"	#6 @ 6"	#6 @ 6"
24"	42"	60"	24"	#7 @ 6"	#7 @ 10"
30"	48"	72"	24"	#7 @ 6"	#7 @ 10"
36"	52"	72"	24"	#7 @ 6"	#7 @ 10"

ANCHOR COLLAR DETAIL CZ-2 (J)

N.T.S.



ADDENDUM 1



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

PARAGOULD, ARKANSAS

PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS

CIVIL STANDARD DETAILS II

DESIGNED: CAJ	JOB NO. 2023	DATE JAN. 2023	ADD. NO. 1
DRAFTED: SBM	SCALE: AS SHOWN		REF SHEET C7-2
CHECKED: CAJ			



II. STRUCTURAL EARTHWORK AND FOUNDATION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR TRENCH SAFETY DURING EXCAVATION.
2. BACKFILL PER THE SPECIFICATIONS.
3. COMPACT BACKFILL TO 95% STD. PROCTOR.
4. THE TOP TWELVE (12) INCHES OF BACKFILL SHALL BE LOW-PERMEABILITY, CLAYEY SOILS COMPACTED TO 95% STD. PROCTOR.
5. SOFT SOIL AT ELEVATIONS 260' - 263' WILL REQUIRE A 4" MINIMUM THICK, CLASS A CONCRETE MUD SLAB. DEWATER PIT BEFORE CASTING.



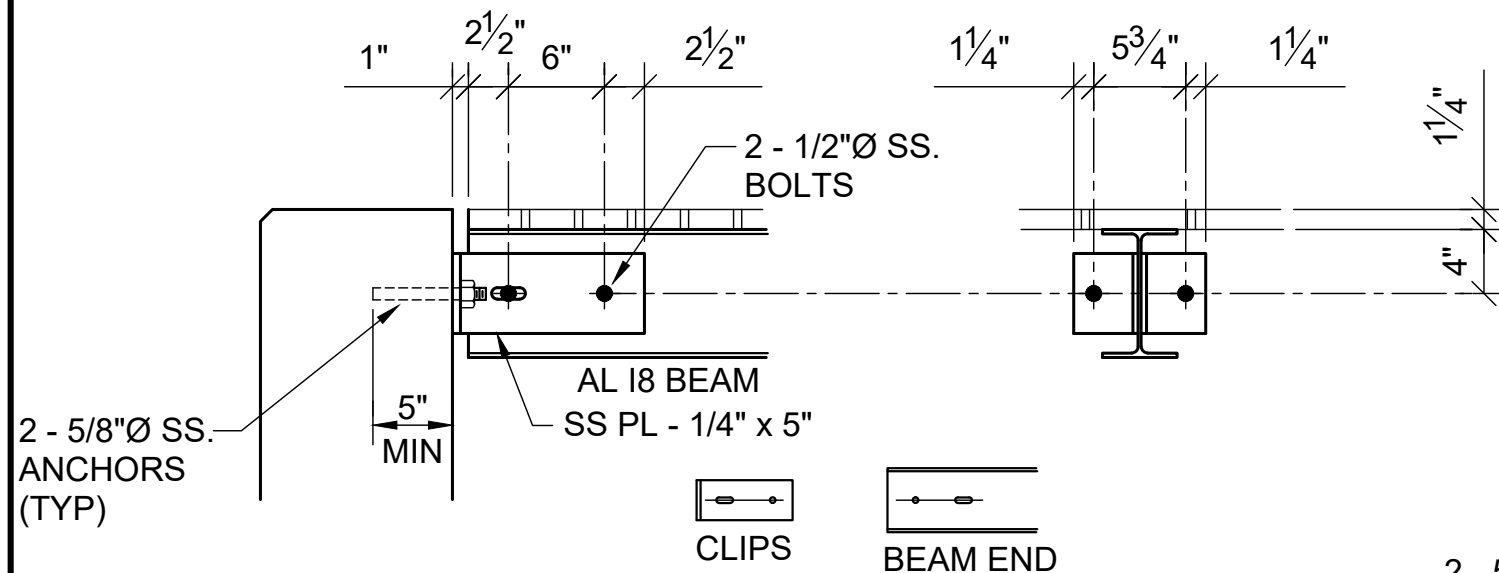
CHANGED FOUNDATION SECTION - NOTE 5.



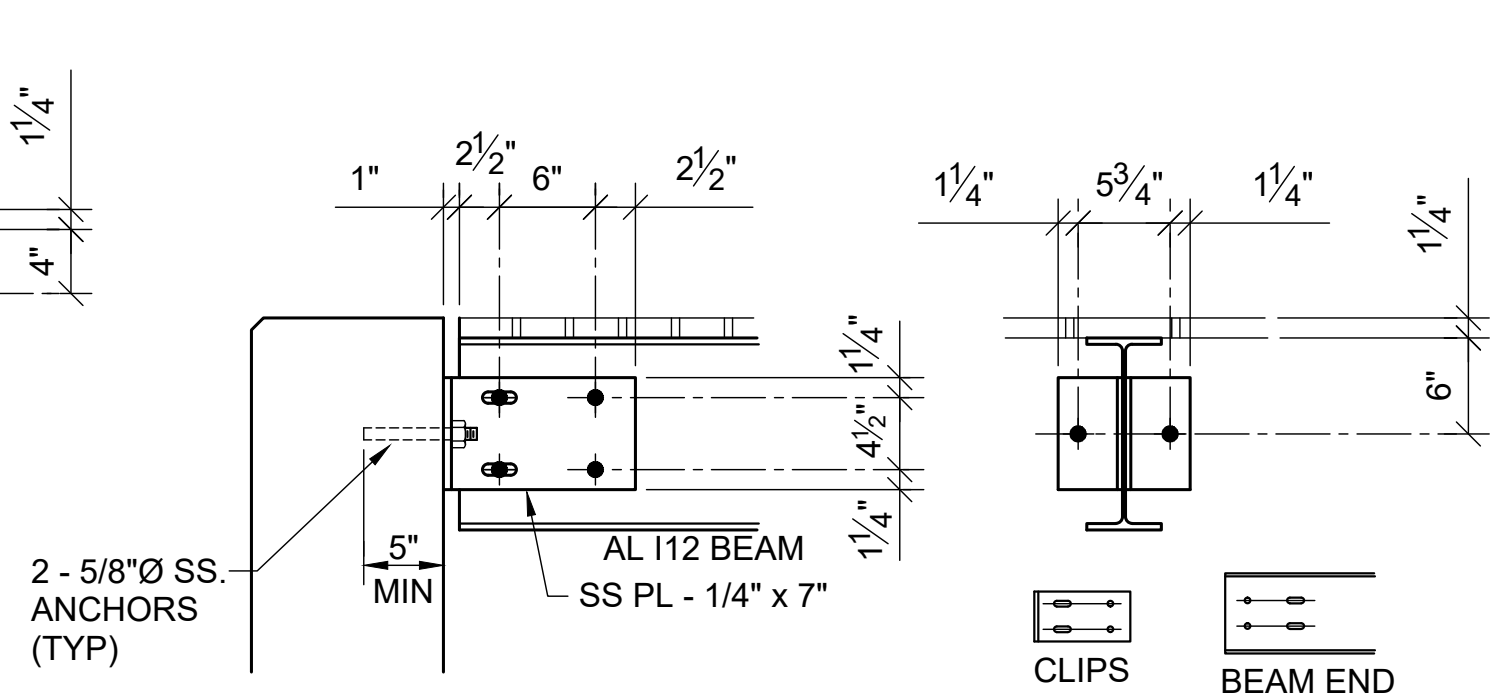
ADDENDUM 1

		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
DESIGN NOTES & CRITERIA			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S0	
CHECKED: MER			

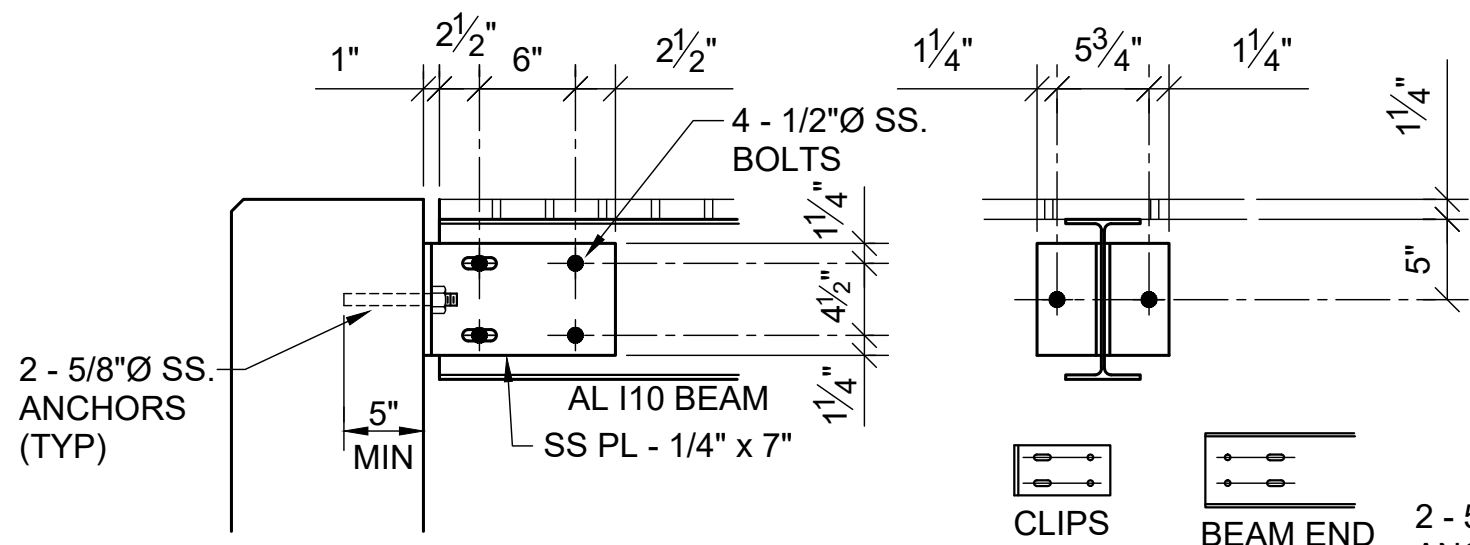
D:\ACAD\CRIST\Project Folders\2023 - Paragould Light, Water & Cable\2023 - Headworks.dwg



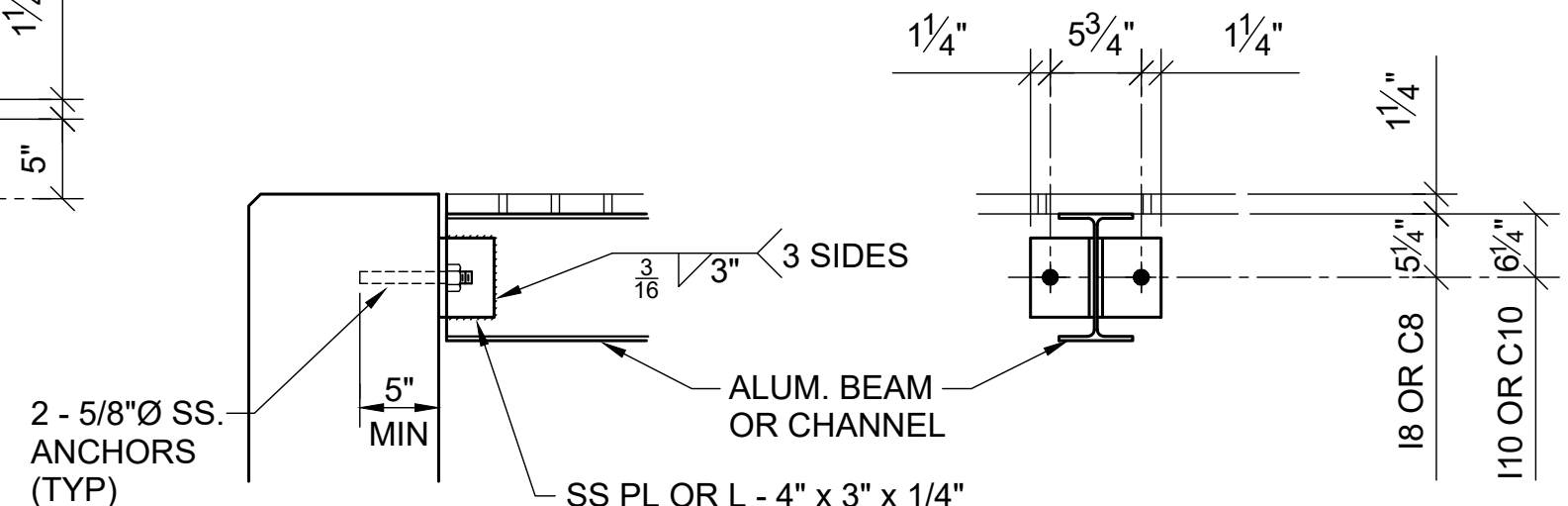
CONNECTION DETAIL FOR AL I8 BEAMS
CONNECTING TO CONCRETE WALLS AT
BOTH ENDS



CONNECTION DETAIL FOR AL I12 BEAMS
CONNECTING TO CONCRETE WALLS AT
BOTH ENDS



CONNECTION DETAIL FOR AL I10 BEAMS
CONNECTING TO CONCRETE WALLS AT
BOTH ENDS



CONNECTION DETAIL FOR BEAMS
CONNECTING TO CONCRETE WALLS AT
ONE END (I8, I10, C8 OR C10)

TYP. BEAM CONNECTION DETAILS

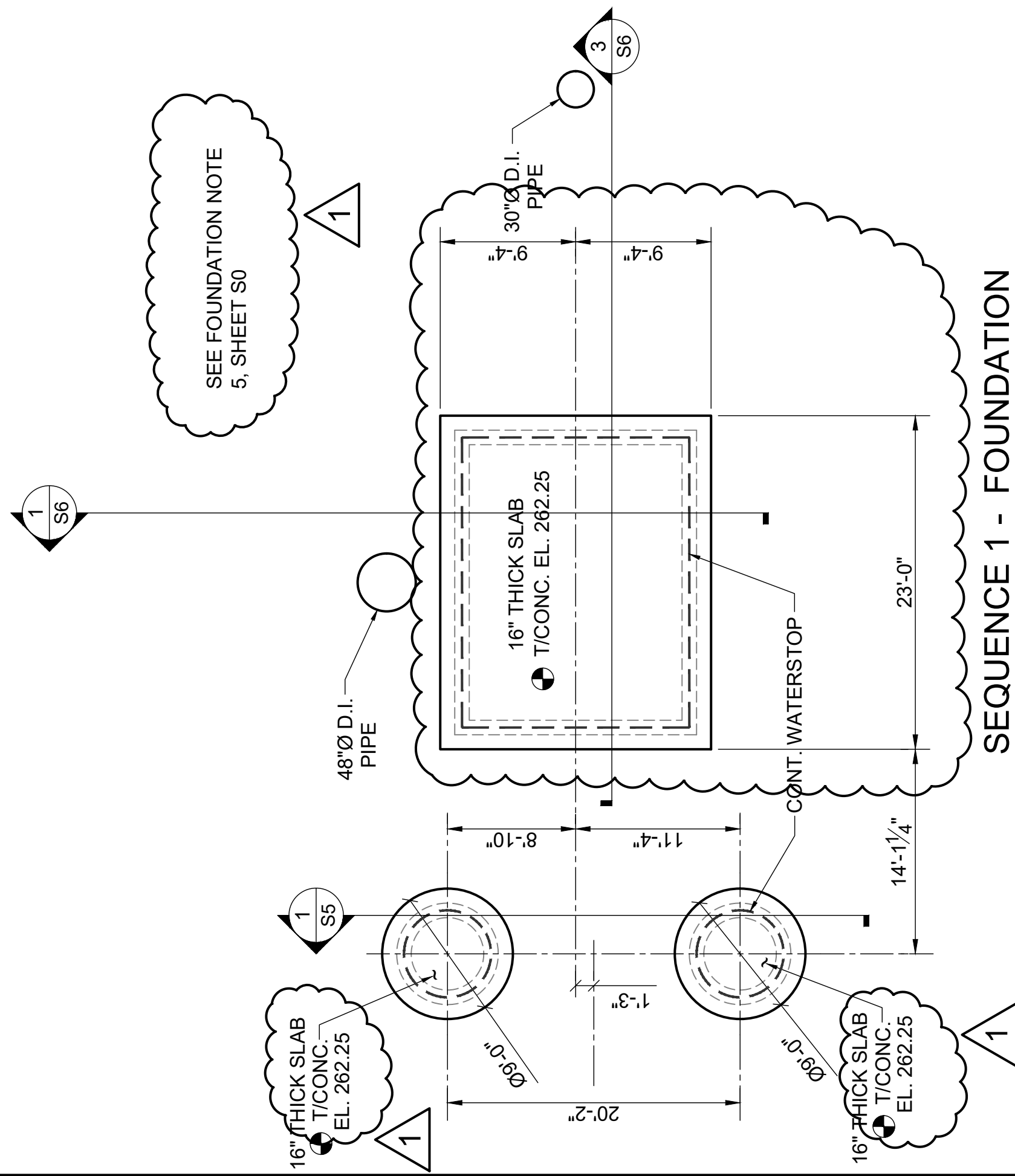
1" = 1'-0"



1

ADDENDUM 1

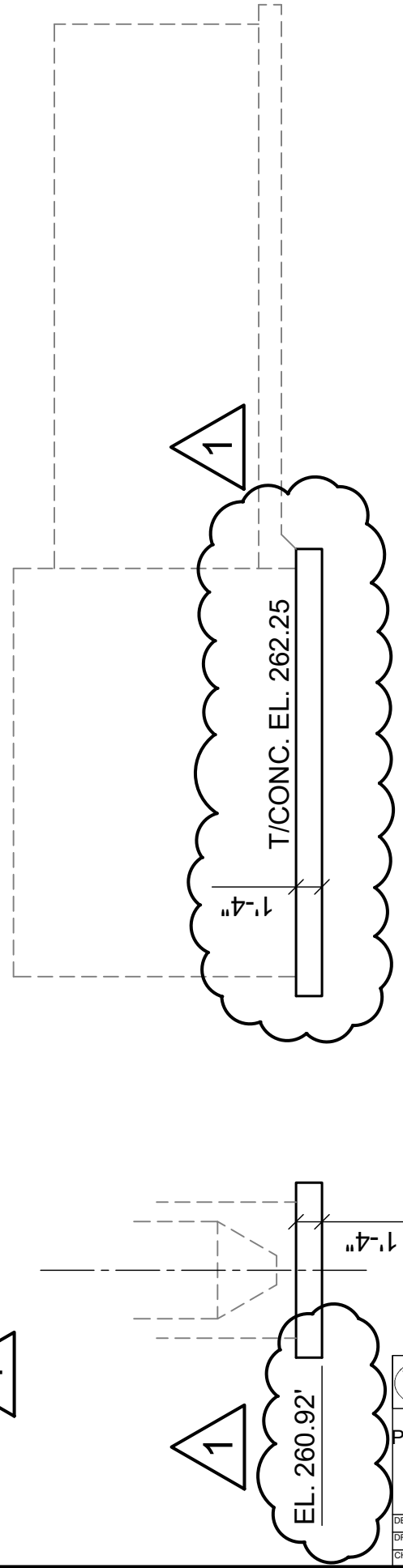
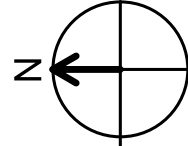
		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE			
HEADWORKS IMPROVEMENTS			
DESIGN NOTES & CRITERIA			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE:	AS SHOWN	REF SHEET S0
CHECKED: MER			



PLAN

1/8" = 1'-0"

CREATED SEQUENCE 1 AND 1A
MOVED PORTION OF FOUNDATION
TO NEW SEQUENCE 1A - SEE SHEET S2



SEQUENCE 1 - FOUNDATION

ELEVATION

1/8" = 1'-0"



ADDENDUM 1



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

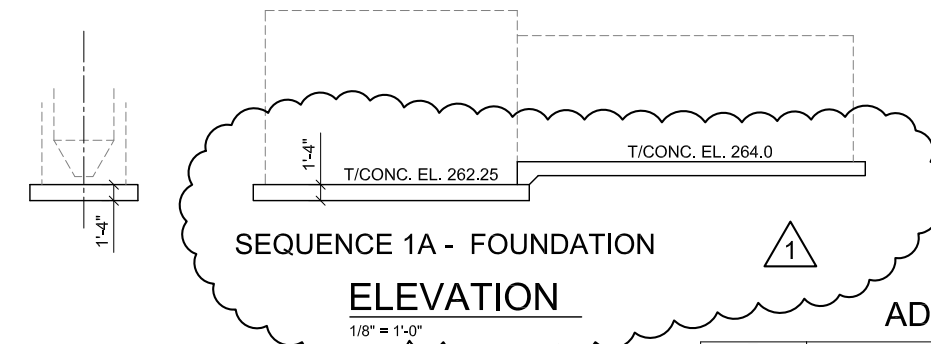
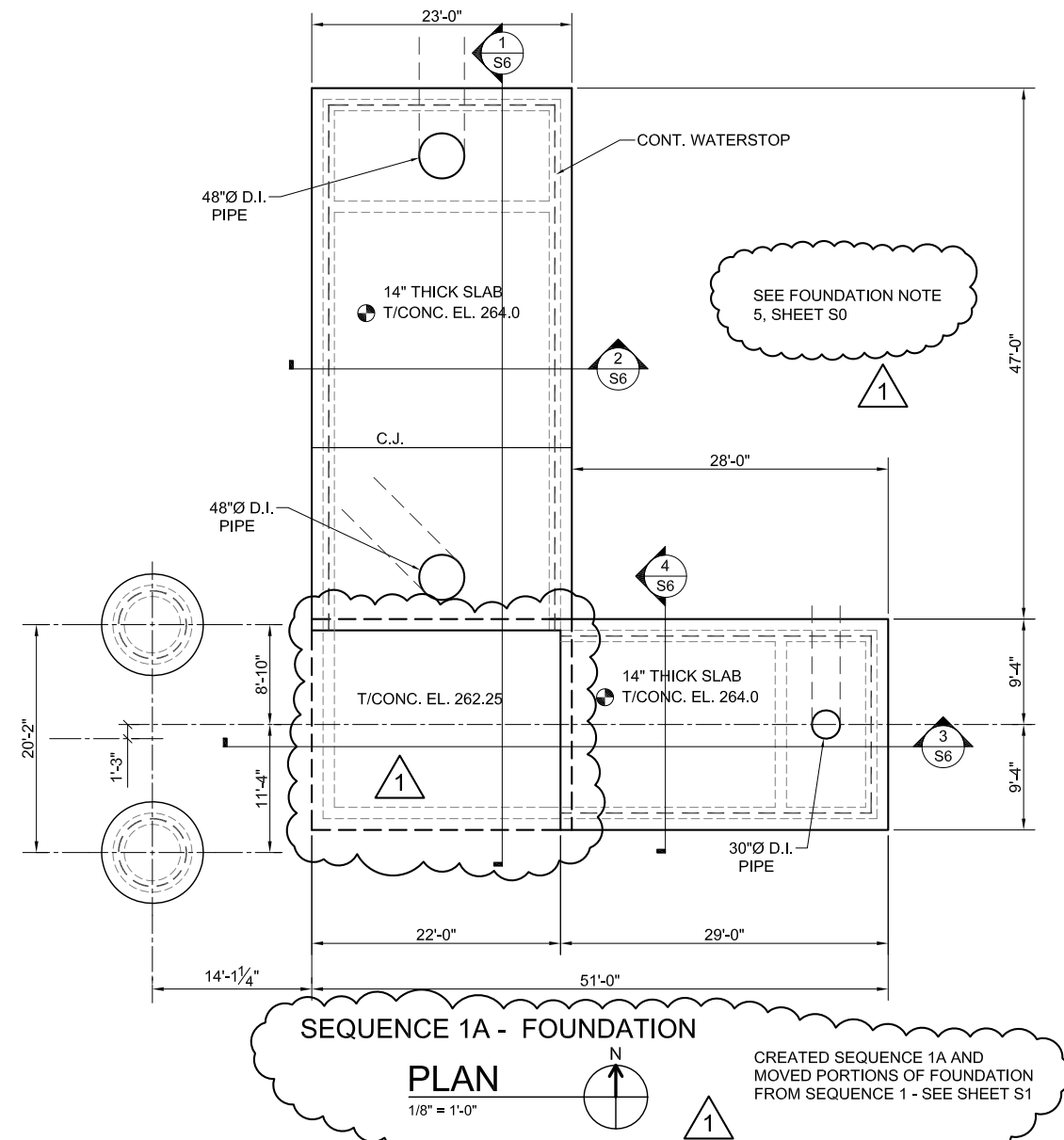
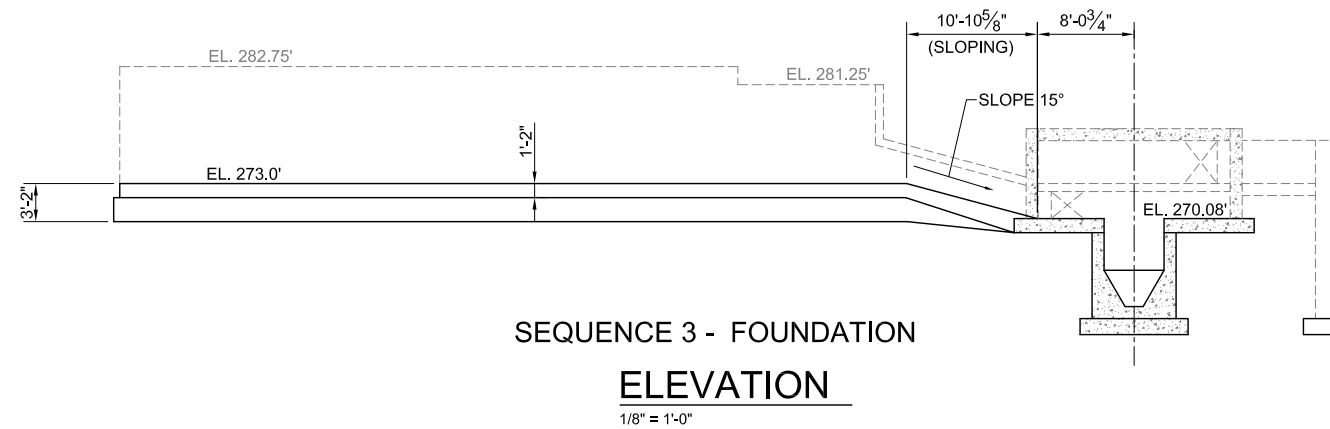
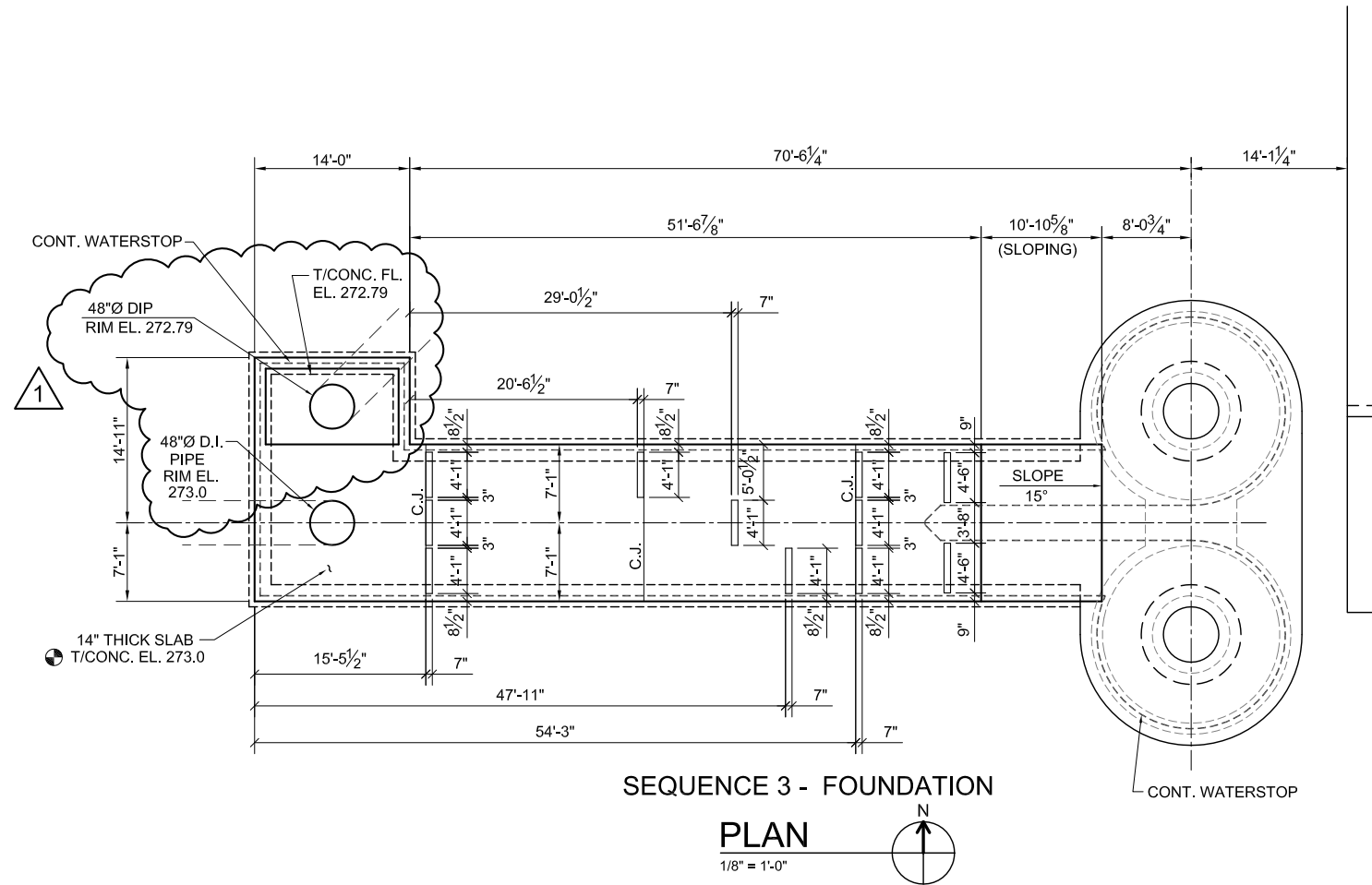
PARAGOULD, ARKANSAS

PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS

HGL - FOUNDATION PLANS

DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN		REF SHEET S1
CHECKED: MER			

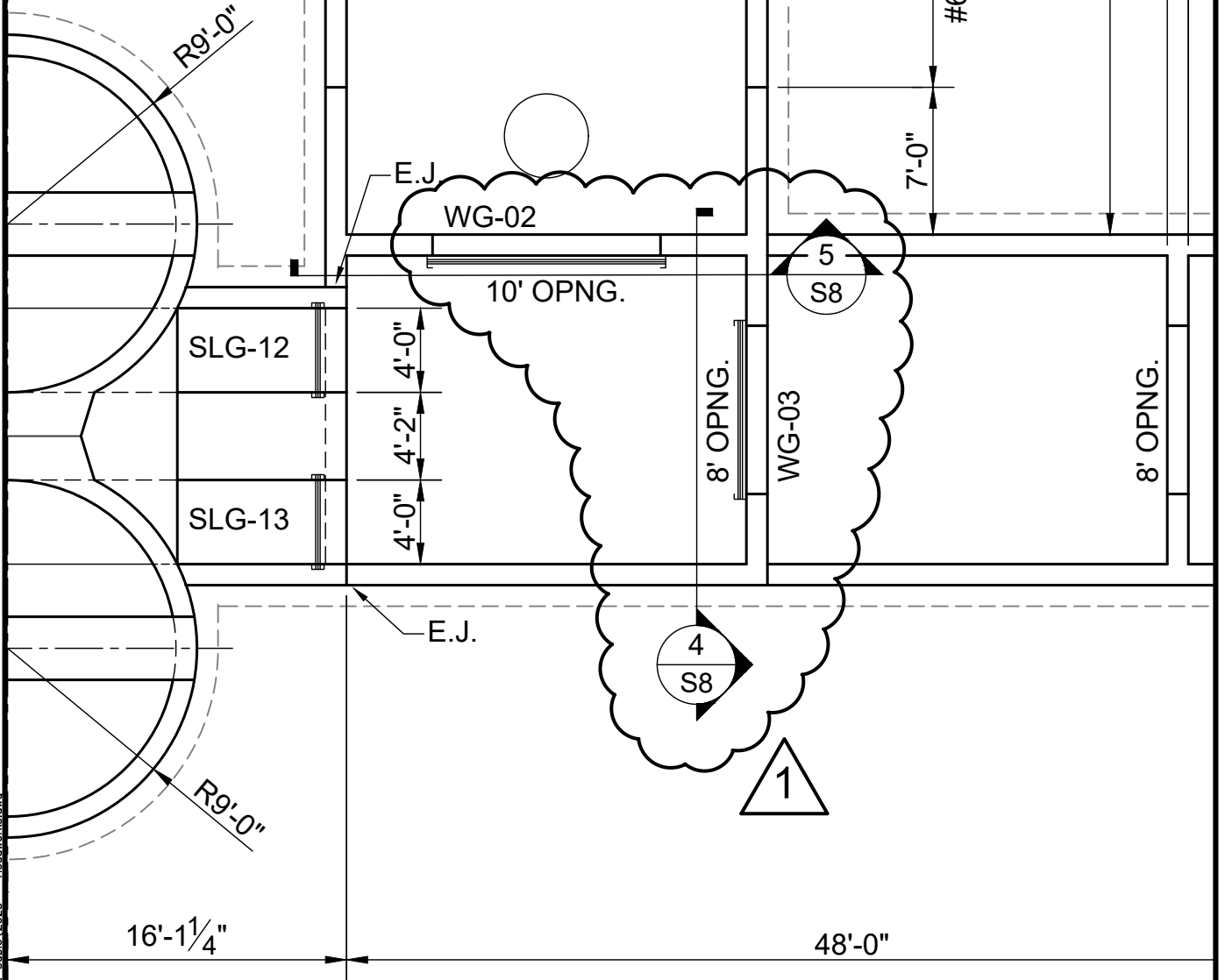
D:\ACAD\CRIST\Project Folders\2023 - Paragould Light, Water & Cable\2023 - Headworks.dwg



ADDENDUM 1

		CRIST ENGINEERS, INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
HGL - FOUNDATION PLANS			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S2	
CHECKED: MER			

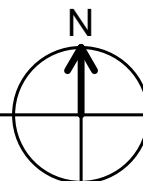
4" x 8" THICK SLAB
@ 11" O.C.E.W.
RED IN SLAB



CONCRETE WALL PLAN



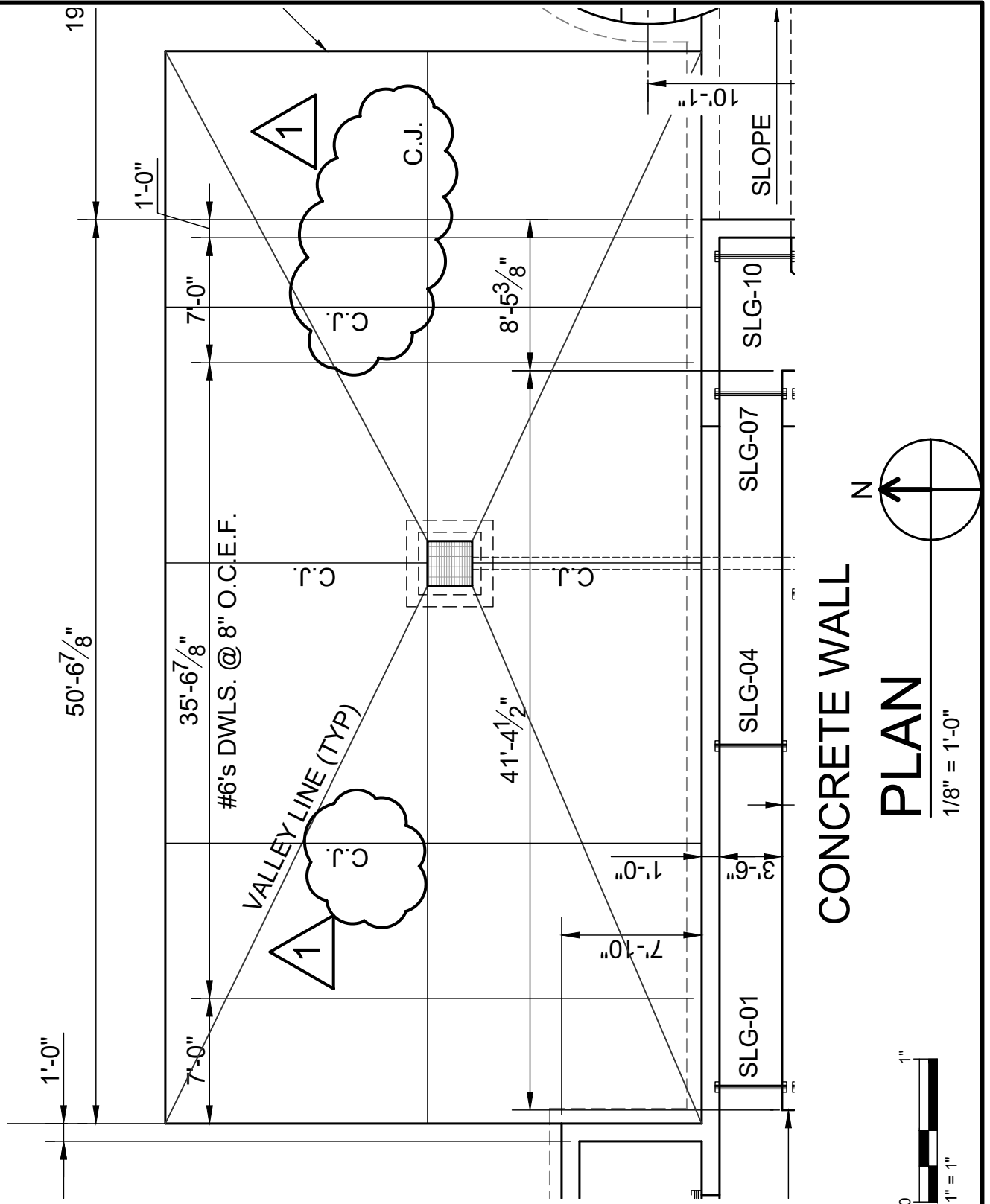
1/8" = 1'-0"



ADDENDUM 1

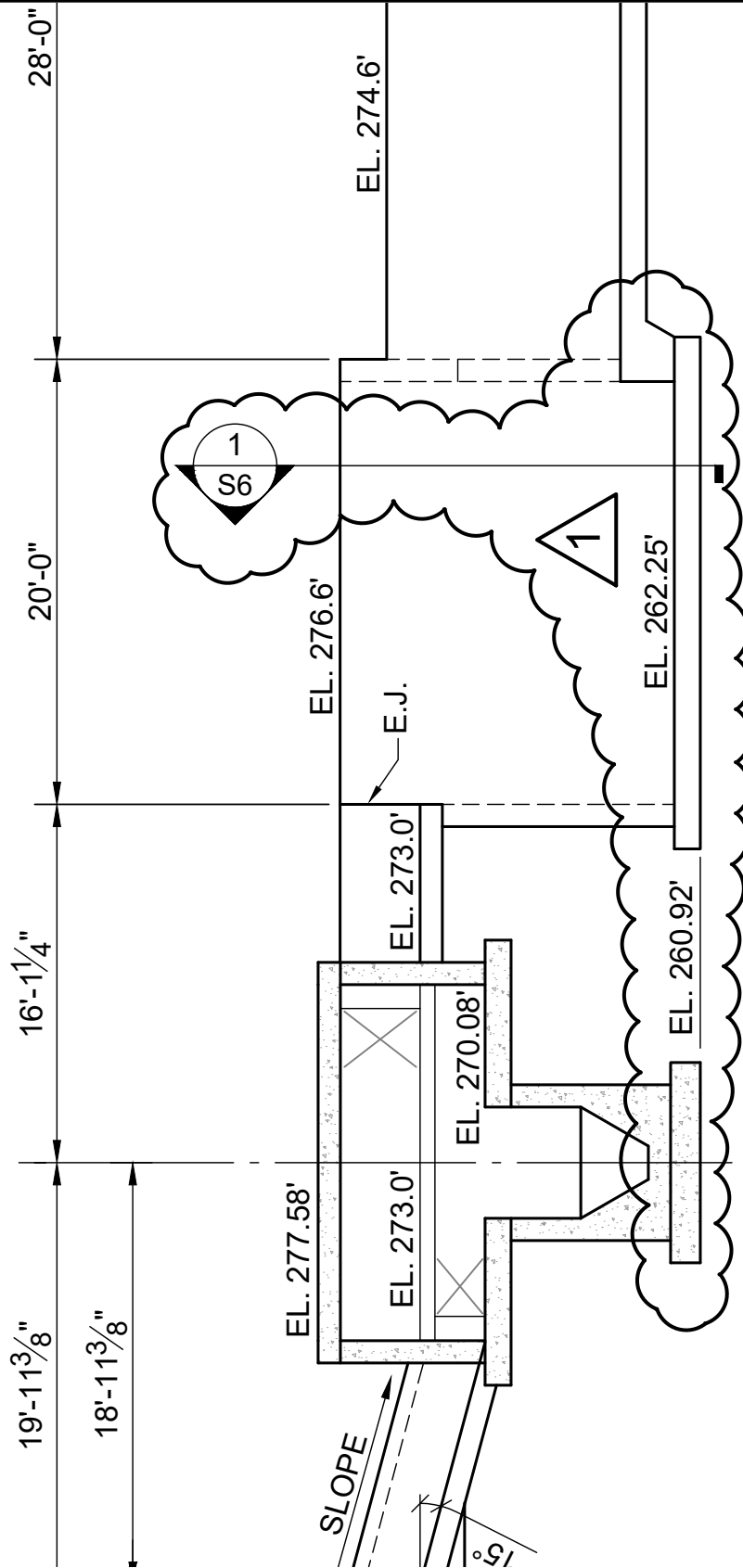
		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
CONCRETE WALL PLAN			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S3	
CHECKED: MER			

D:\AECAD\CRIST\Project_Folders\2023 - Paragould Light, Water & Cable\2023 - Headworks.dwg



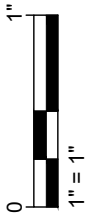
ADDENDUM 1

		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE			
HEADWORKS IMPROVEMENTS			
CONCRETE WALL PLAN			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S3	
CHECKED: MER			



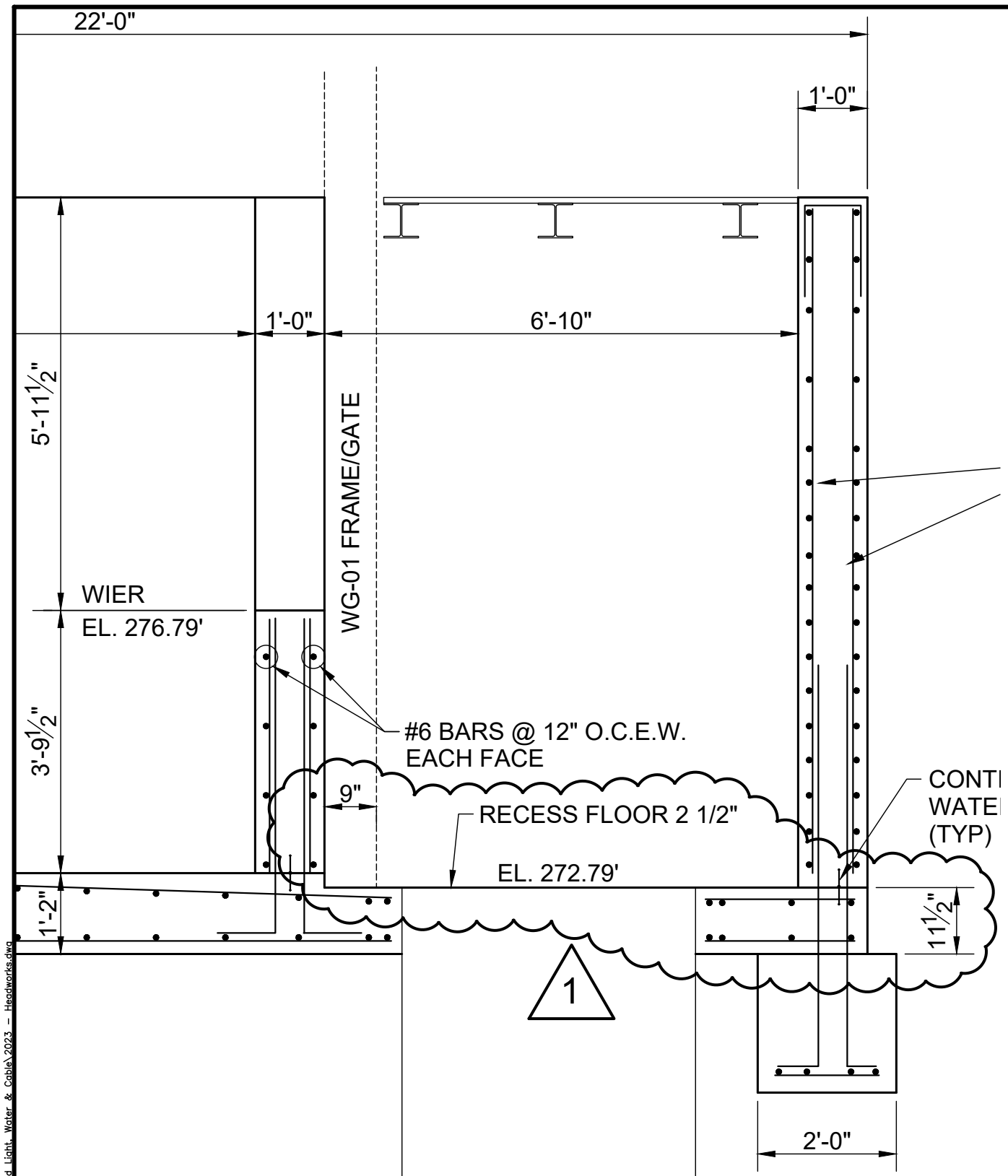
SECTION 1

1/8" = 1'-0"



ADDENDUM 1

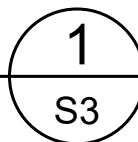
		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE			
HEADWORKS IMPROVEMENTS			
SECTION 1			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S3	
CHECKED: MER			



ADDENDUM 1

SECTION

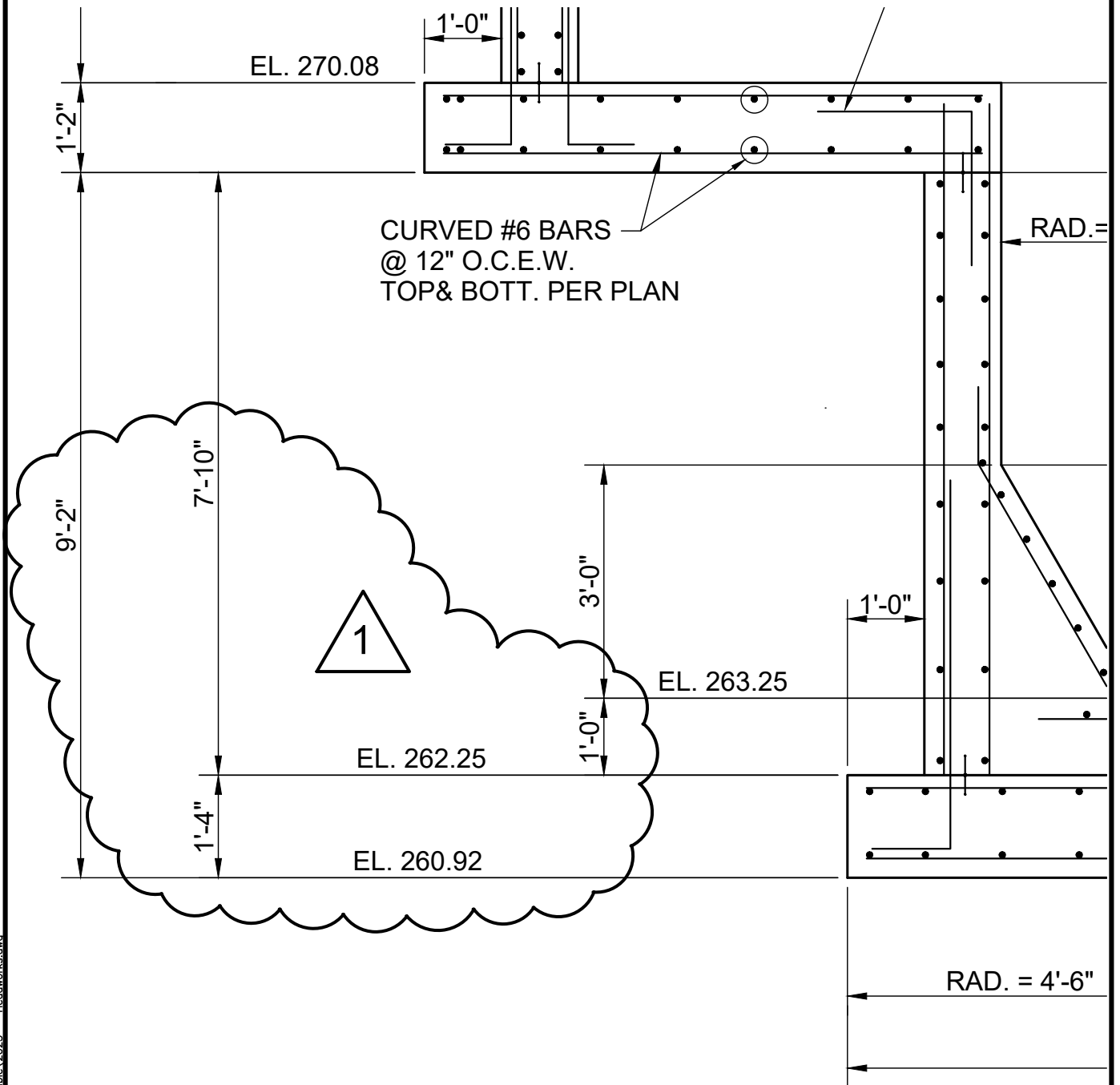
1/2" = 1'-0"



		CRIST ENGINEERS, INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
HGL SECTIONS (1)			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S4	
CHECKED: MER			

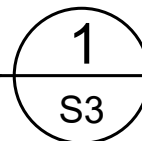
D:\ACAD\CRIST\Project Folders\2023 - Paragould Light, Water & Cable\2023 - Headworks.dwg

D:\ACAD\CRIST\Project Folders\2023 - Paragould Light, Water & Cable\2023 - Headworks.dwg



SECTION

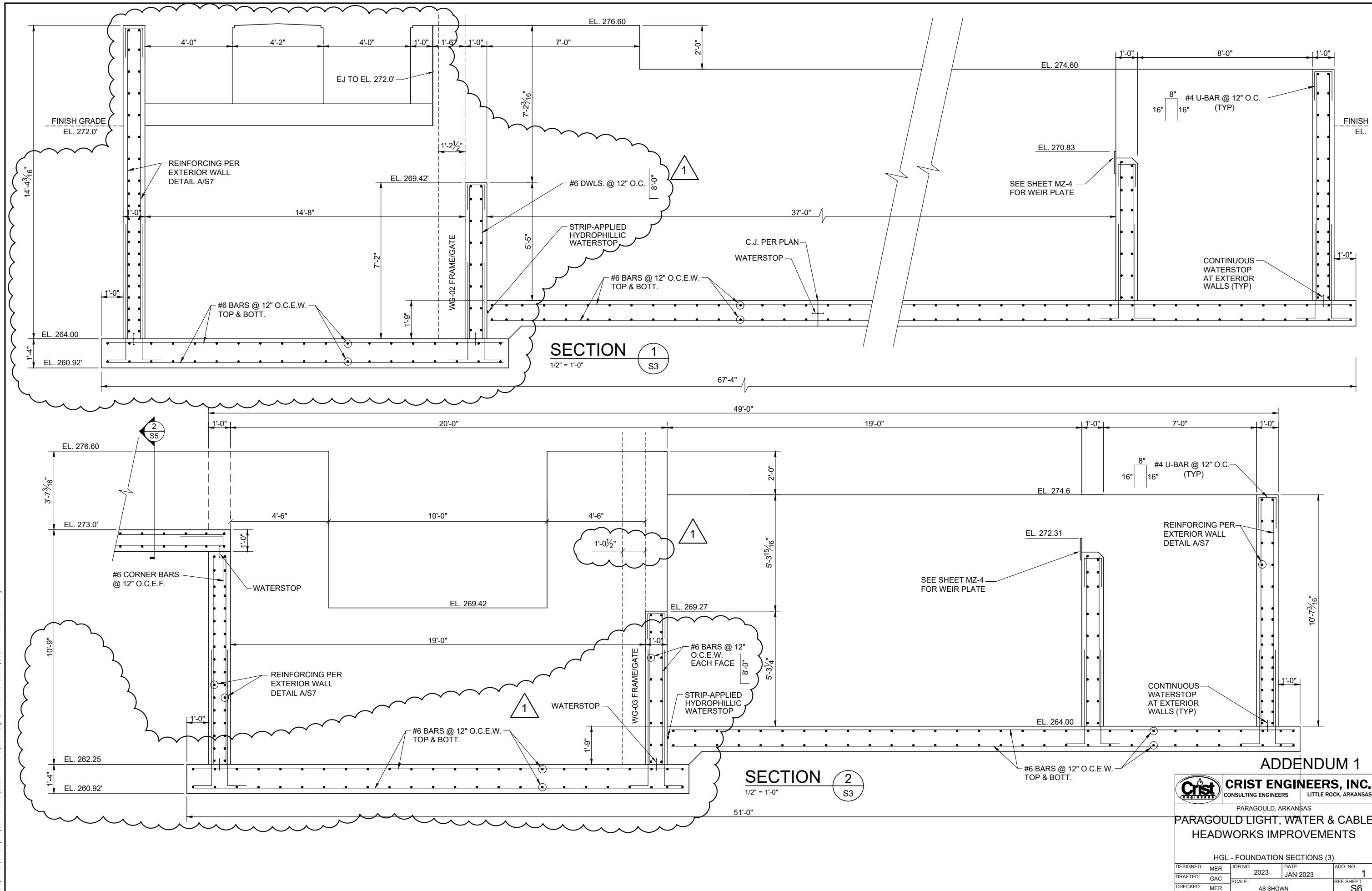
1/2" = 1'-0"



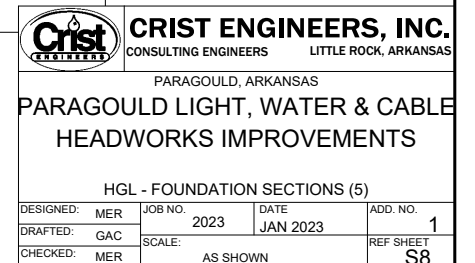
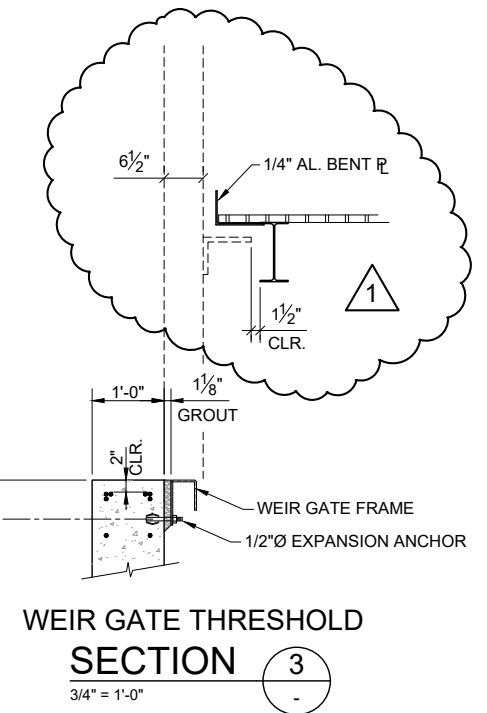
ADDENDUM 1

		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
HGL SECTIONS (2)			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S5	
CHECKED: MER			

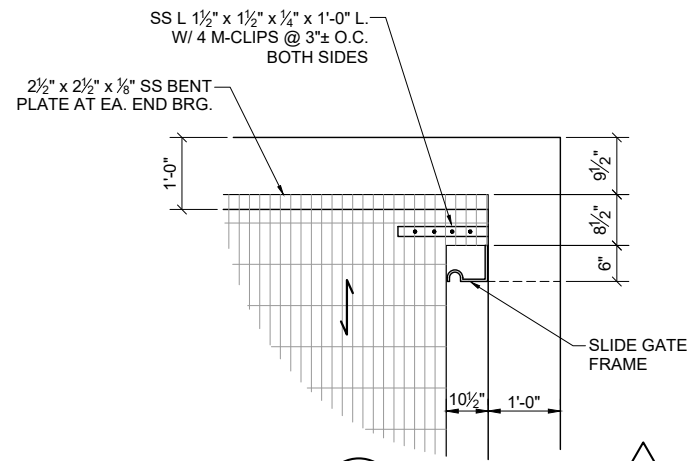
D:\ACAD\CRIST\Project Folders\2023 - Paragoild Light, Water & Cable\2023 - Headworks.dwg



CRIST ENGINEERS, INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS	
PARAGOILD, ARKANSAS	
PARAGOILD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS	
HGL - FOUNDATION SECTIONS (3)	
DESIGNED: MER	JOB NO. 2023
DRAFTED: GAC	DATE JAN 2023
CHECKED: MER	SCALE: AS SHOWN
ADD. NO. 1	
REF SHEET S6	

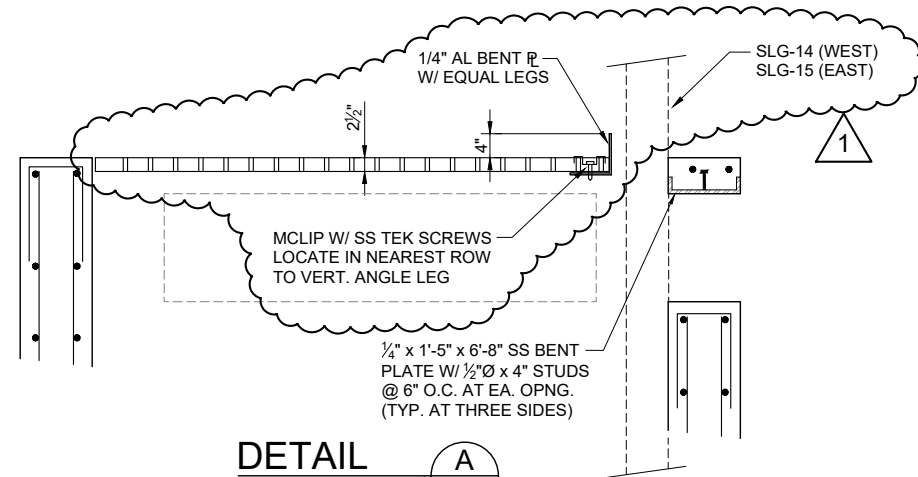


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DETAIL B

3/4" = 1'-0"

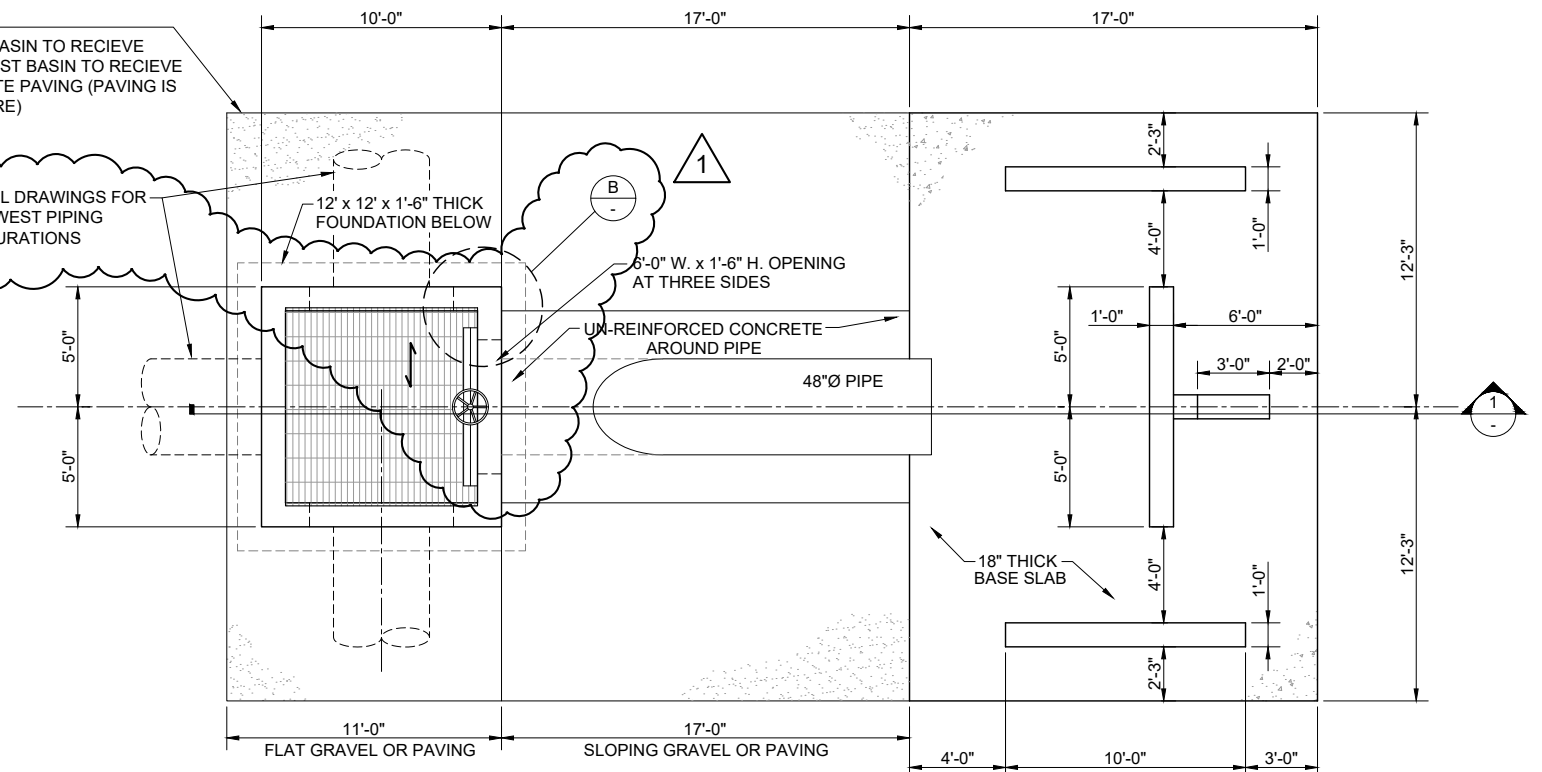


DETAIL A

3/4" = 1'-0"

NOTE:
WEST EQ. BASIN TO RECIEVE
GRAVEL, EAST BASIN TO RECIEVE
4" CONCRETE PAVING (PAVING IS
SHOWN HERE)

SEE CIVIL DRAWINGS FOR
EAST & WEST PIPING
CONFIGURATIONS



EQUALIZATION BASIN
INLET PIPE & BAFFLES

PLAN

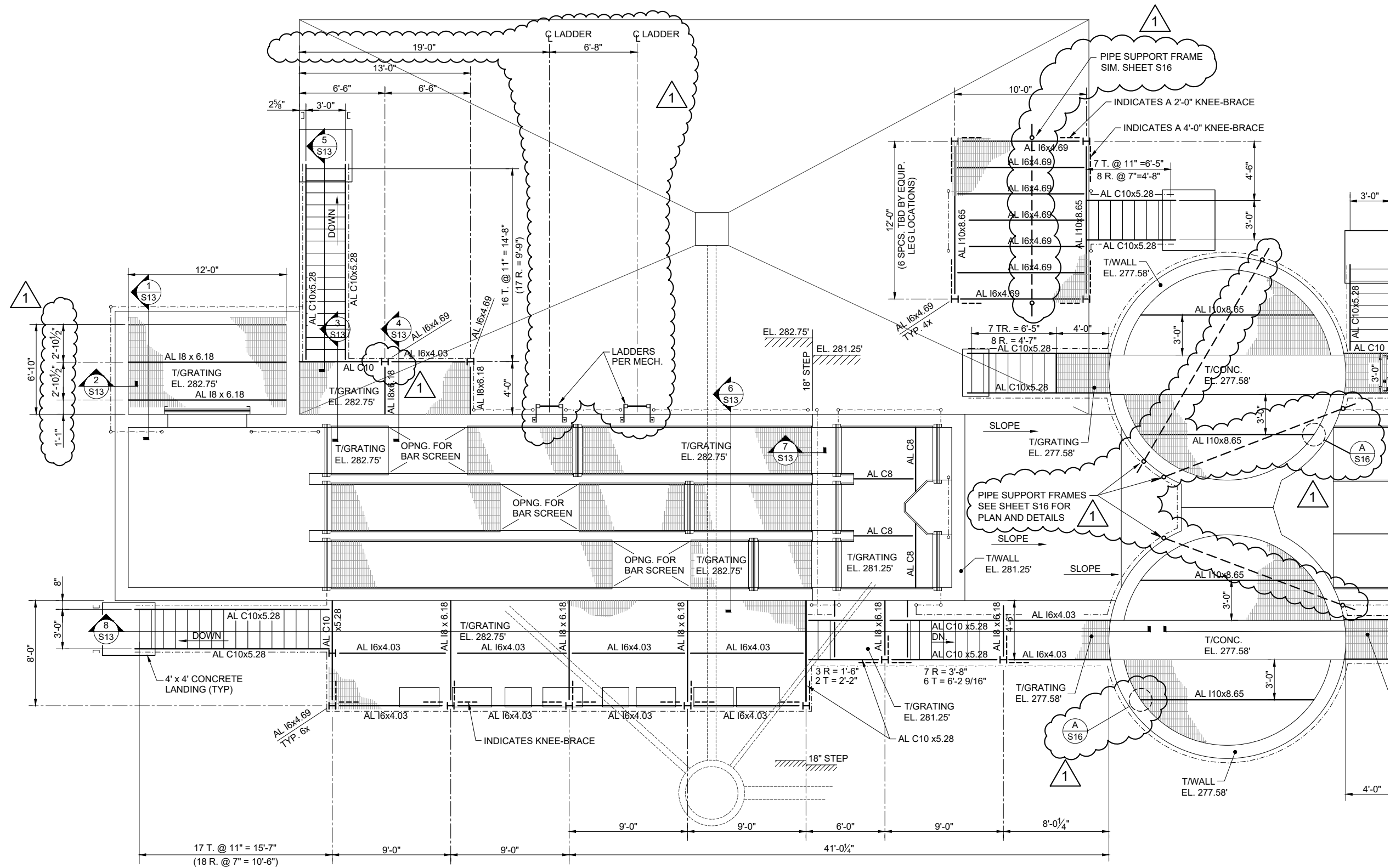
1/4" = 1'-0"

SEE FOUNDATION NOTE
5, SHEET S0

ADDENDUM 1

		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
EQUALIZATION BASIN INLET & BAFFLES			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S10	
CHECKED: MER			

D:\ACAD\CRIST\Project Folders\2023 - Paragould Light, Water & Cable\2023 - Headworks - Platforms.dwg



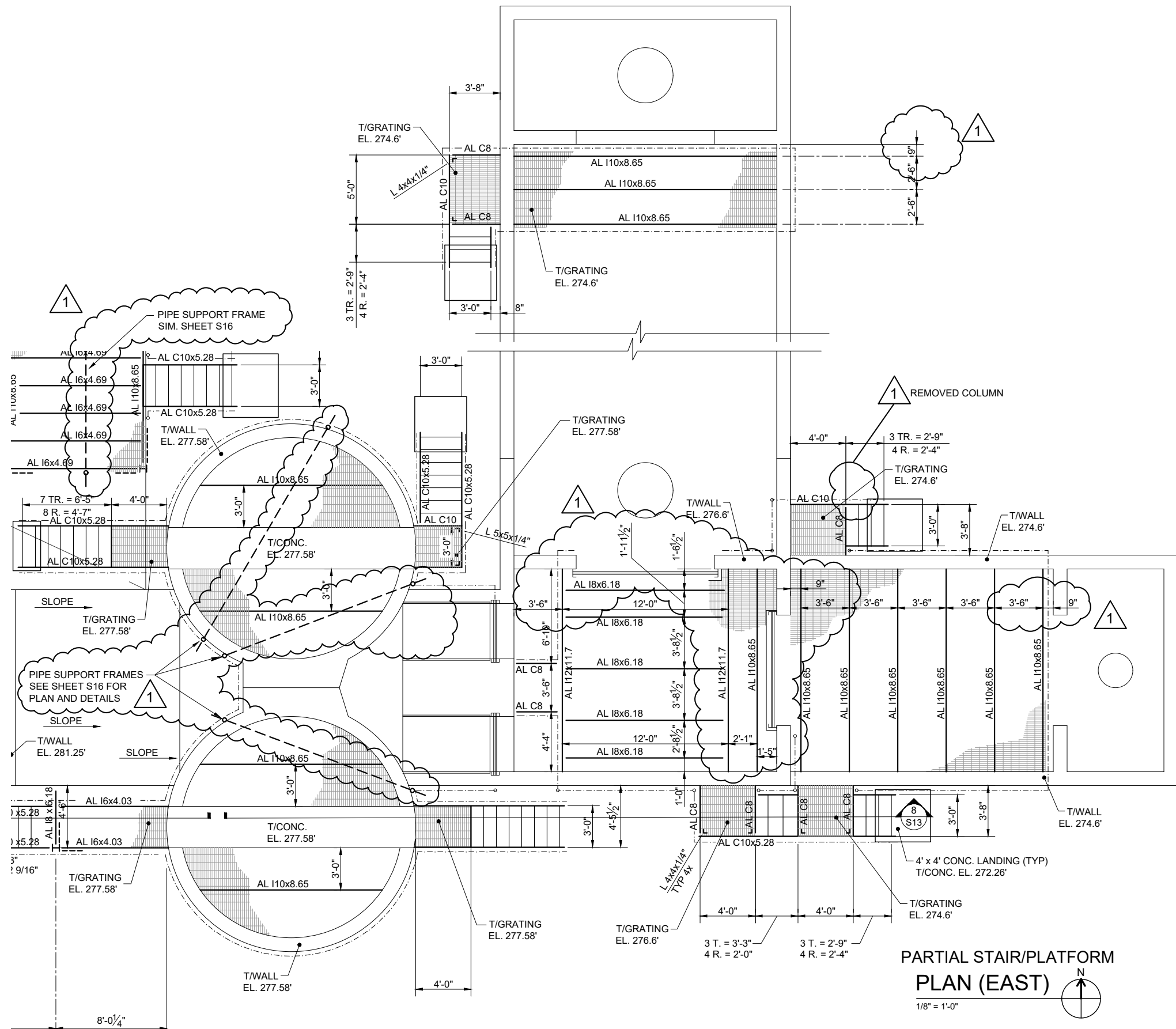
PARTIAL STAIR/PLATFORM
PLAN (WEST)

1/4" = 1'-0"

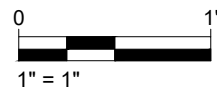


ADDENDUM 1

		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
PARTIAL PLATFORM FRAMING PLAN (WEST)			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S11	
CHECKED: MER			



PARTIAL STAIR/PLATFORM
PLAN (EAST) 

$$\overline{1/8'' = 1'-0''}$$


ADDENDUM 1



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

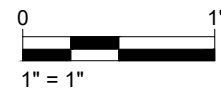
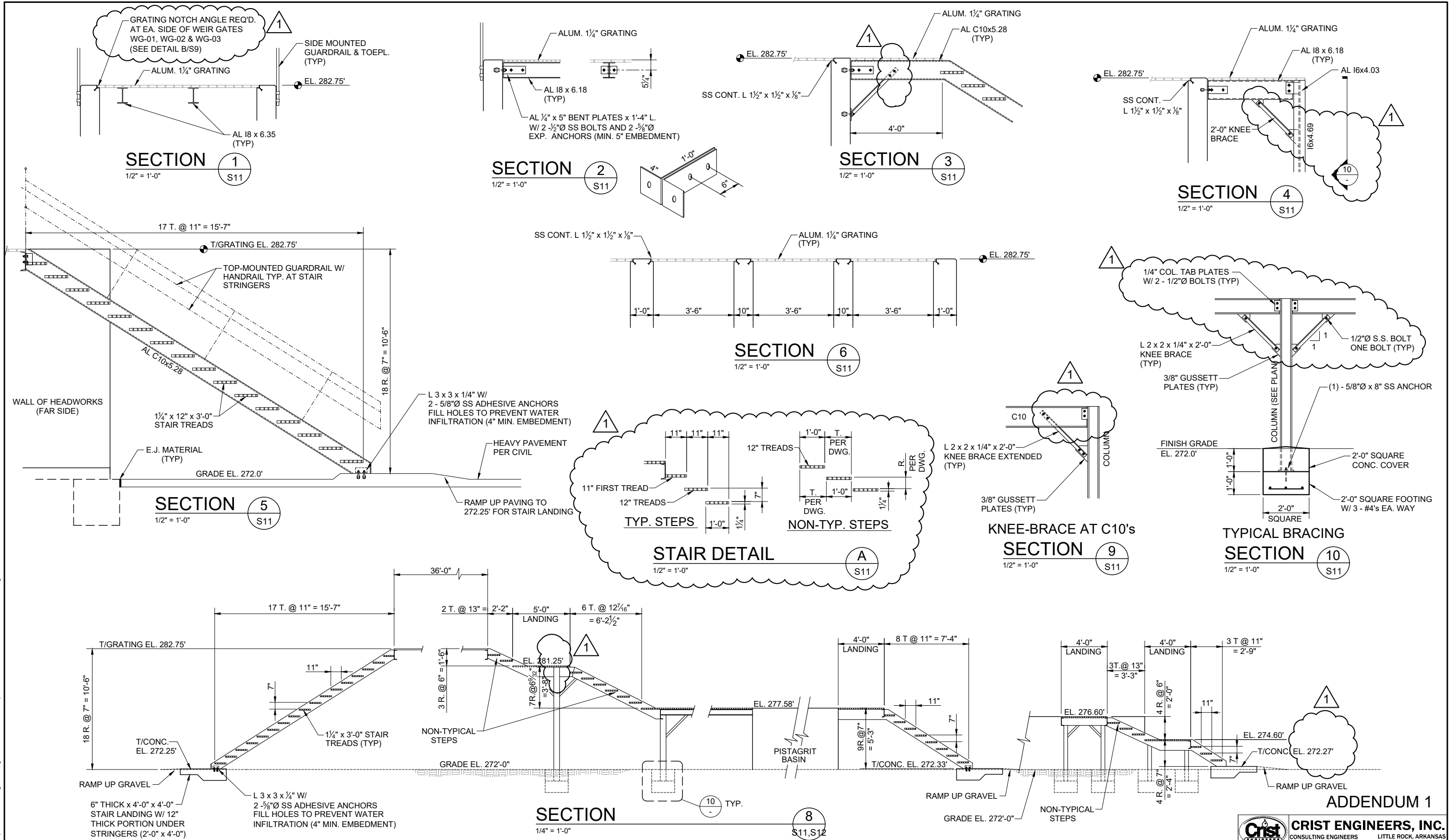
PARAGOULD, ARKANSAS

PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS

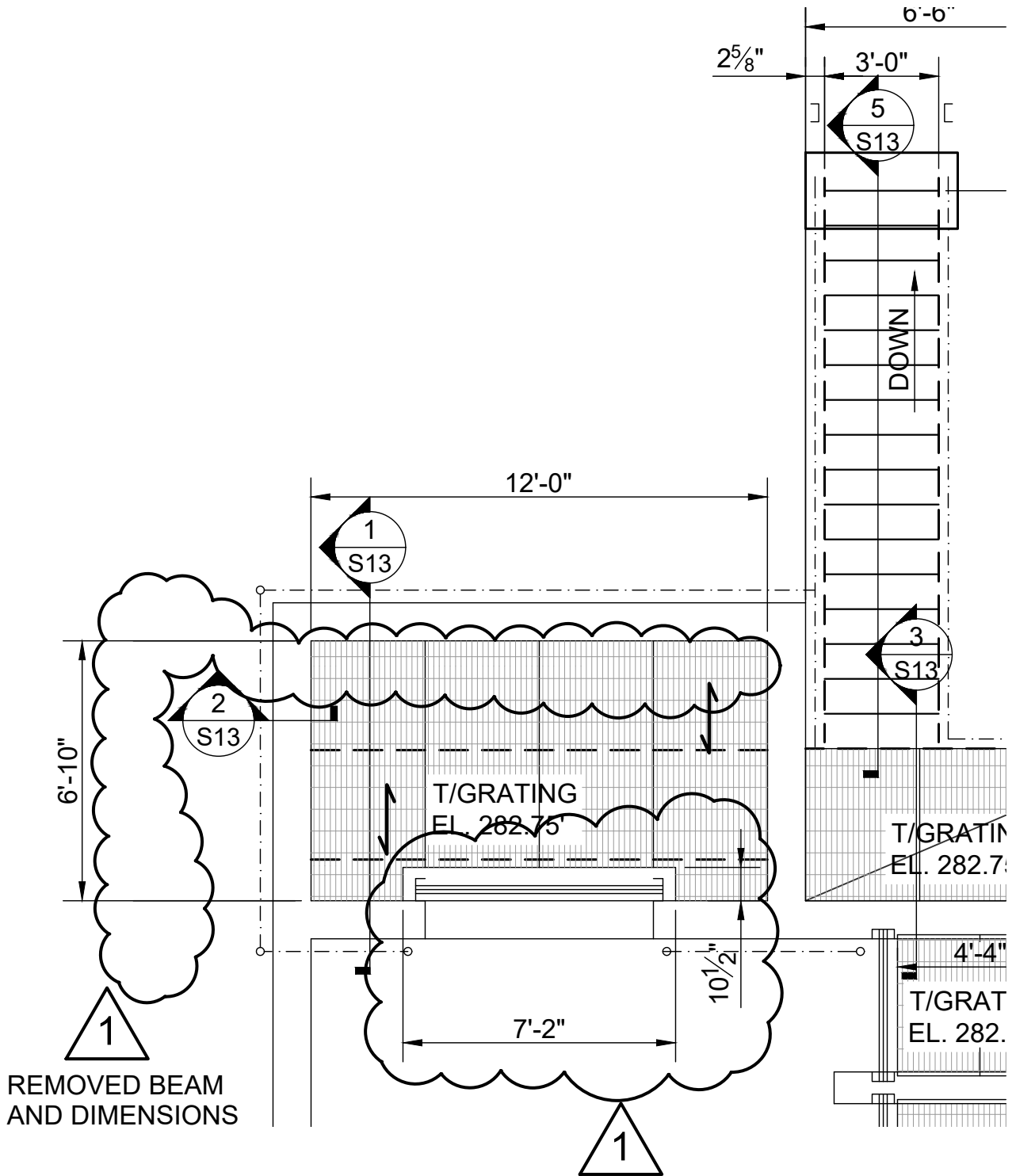
PARTIAL PLATFORM FRAMING PLAN (EAST)

DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN		REF SHEET S12
CHECKED: MER			

D:\ACAD\CRIST\Project Folders\2023 - Paragould Light, Water & Cable\2023 - Headworks - Platforms.dwg

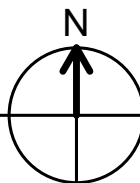


		CRIST ENGINEERS, INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
PLATFORM FRAMING SECTIONS			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S13	
CHECKED: MER			



PARTIAL GRATING PLAN (WEST)

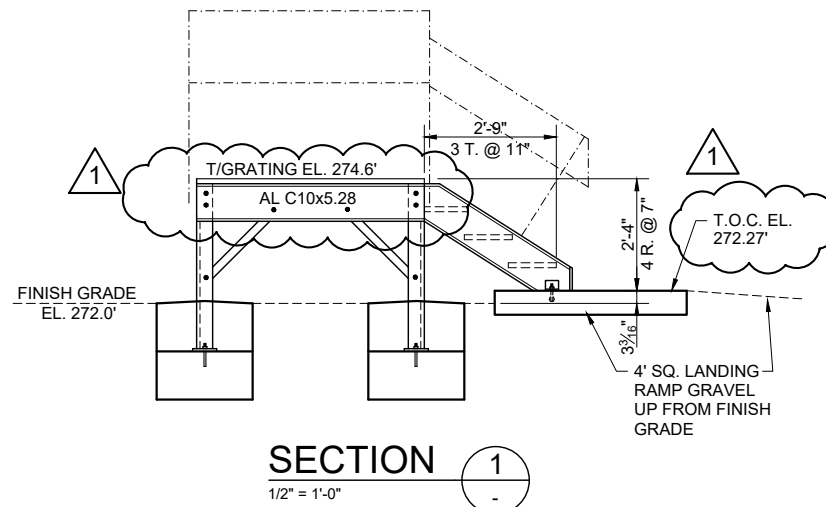
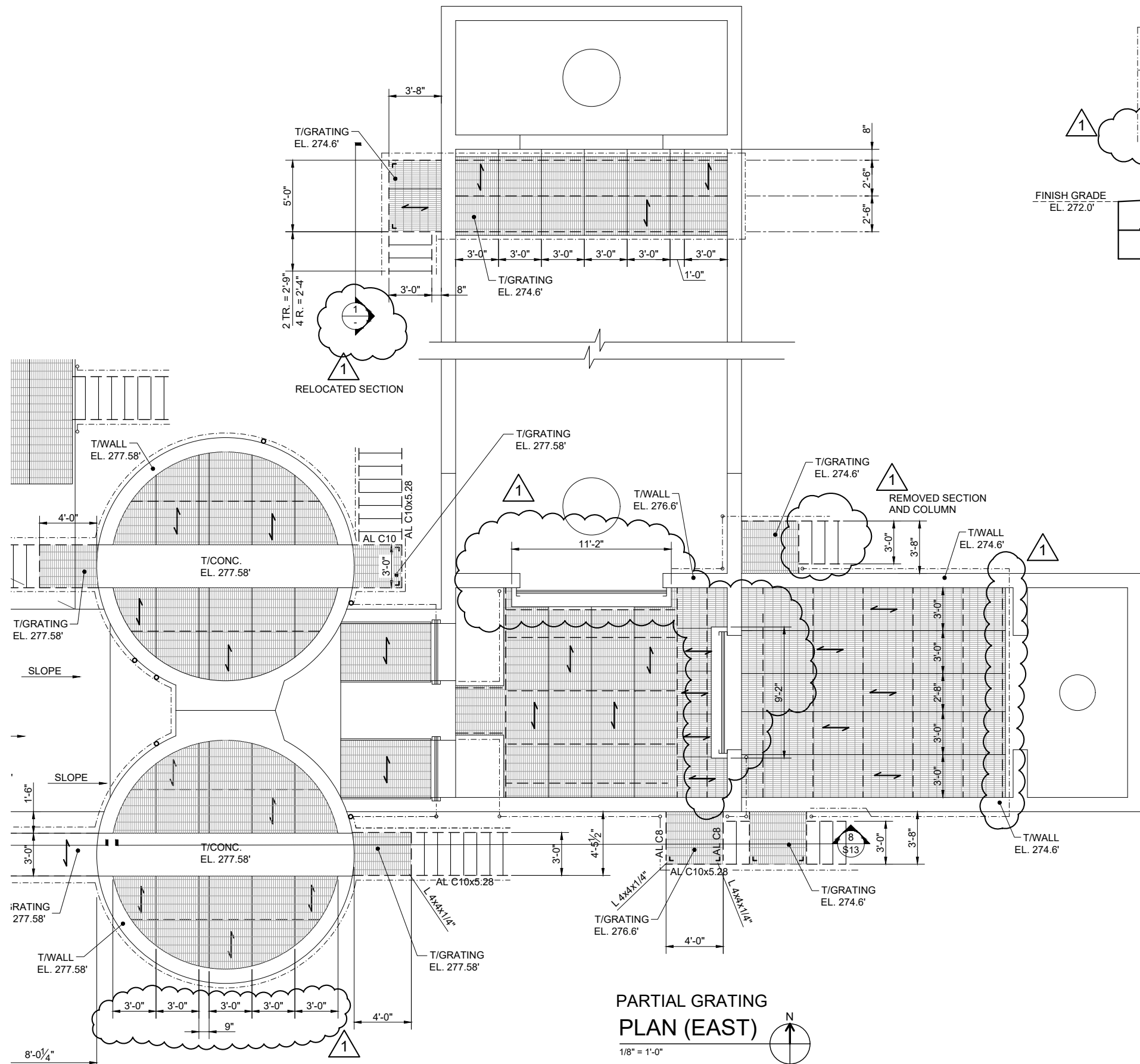
1/4" = 1'-0"



ADDENDUM 1

CRIST ENGINEERS, INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS			
PARAGOULD, ARKANSAS PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
PARTIAL GRATING PLAN (WEST)			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S14	
CHECKED: MER			

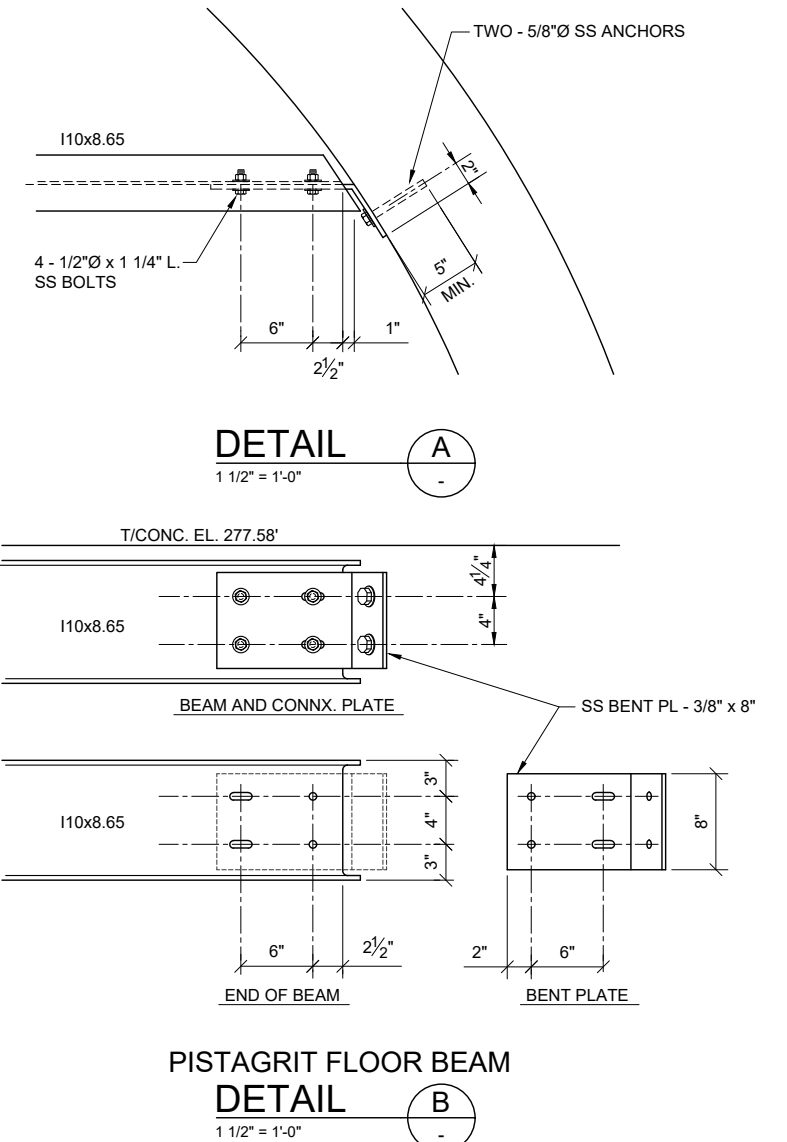
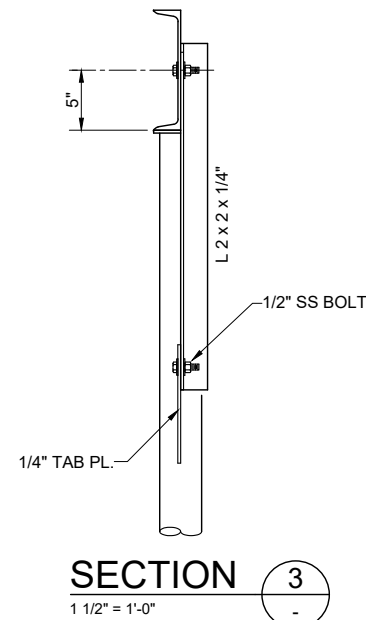
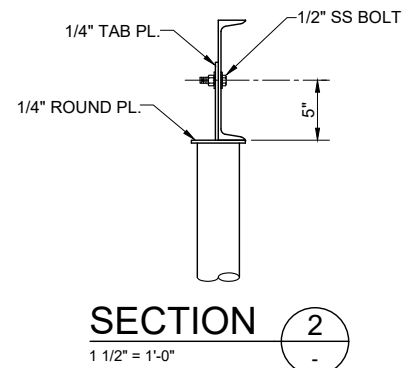
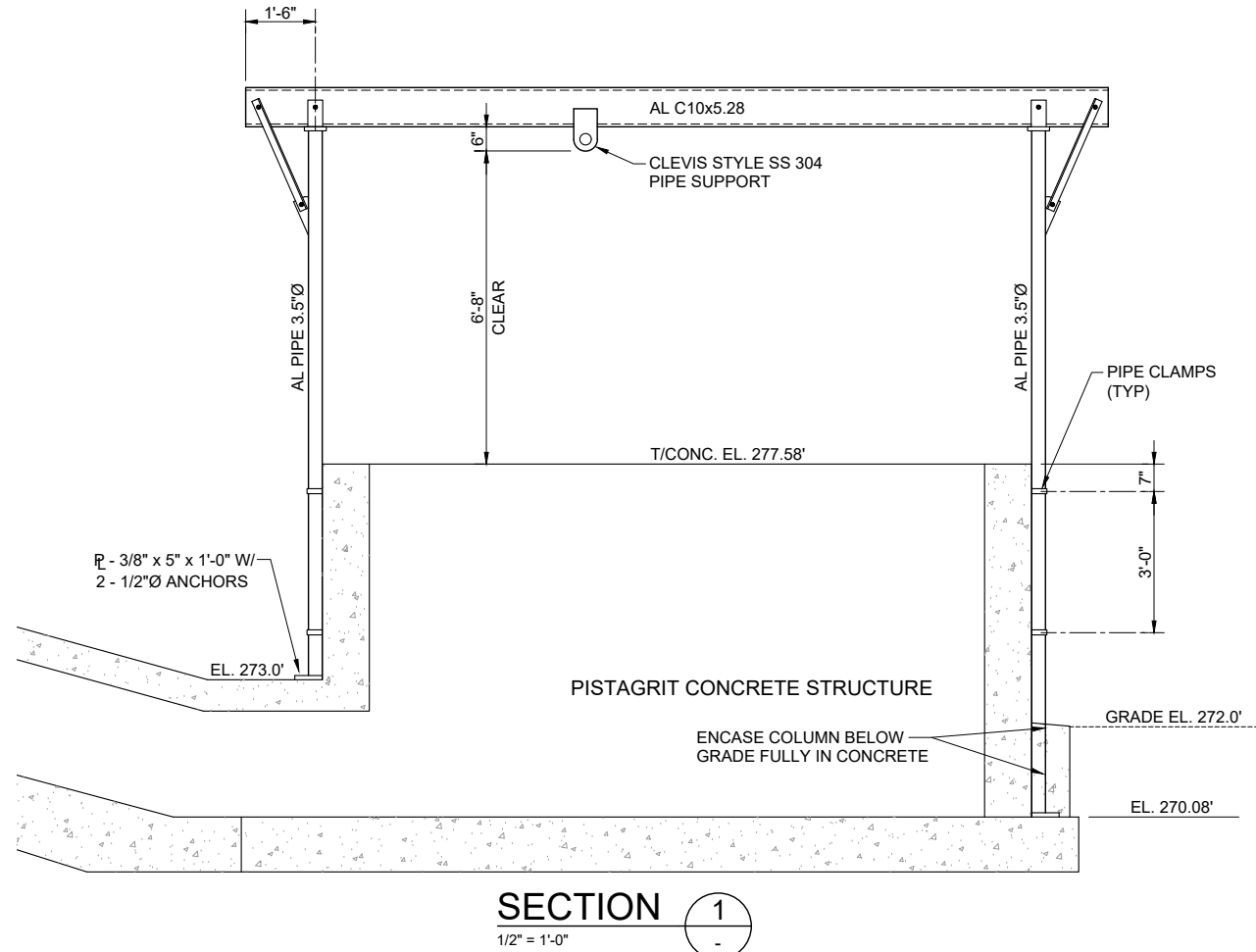
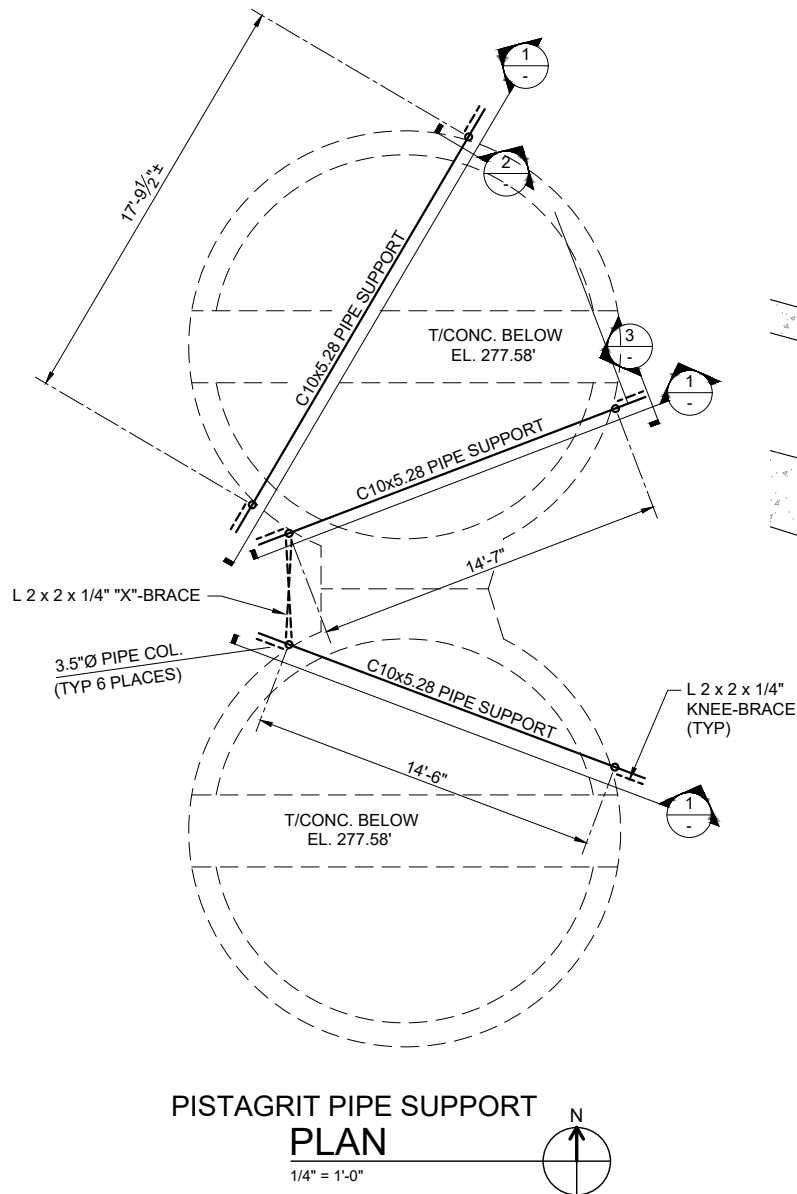
D:\ACAD\CRIST\Project Folders\2023 - Paragould Light, Water & Cable\2023 - Headworks - Platforms.dwg



ADDENDUM 1

		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
PARTIAL GRATING PLAN (EAST)			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S15	
CHECKED: MER			

D:\ACAD\CRIST\Project Folders\2023 - Paragould Light, Water & Cable\2023 - Headworks - Platforms.dwg



PISTAGRIT FLOOR BEAM
DETAIL B
1 1/2" = 1'-0"

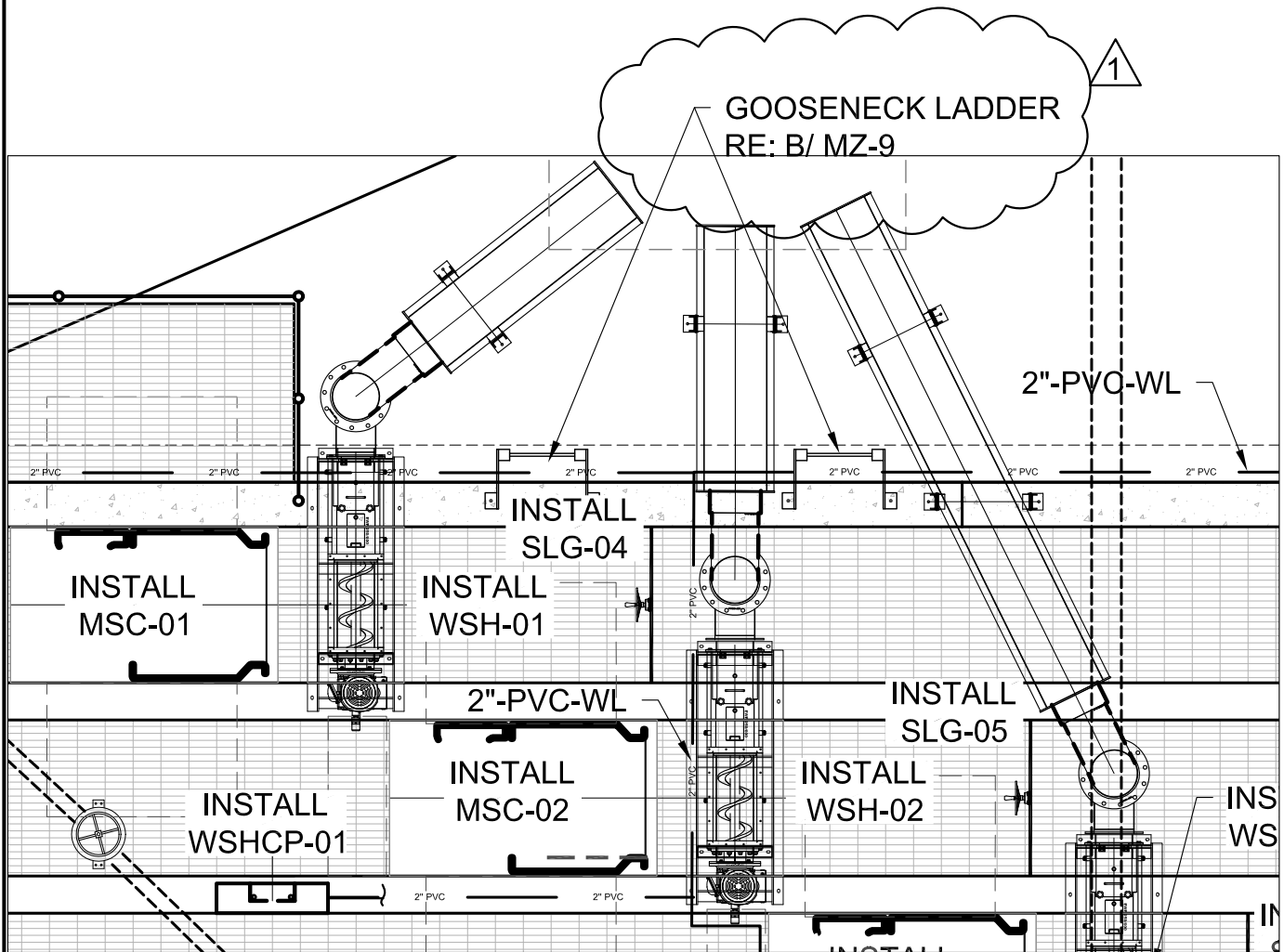
1 ADDED NEW SHEET S16



ADDENDUM 1

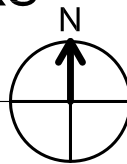
		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD LIGHT, WATER & CABLE HEADWORKS IMPROVEMENTS			
PISTAGRIT FRAMING DETAILS			
DESIGNED: MER	JOB NO. 2023	DATE JAN 2023	ADD. NO. 1
DRAFTED: GAC	SCALE: AS SHOWN	REF SHEET S16	
CHECKED: MER			

P:\2020 Projects\2023 - PLWC WTP Improvements - Headworks\06 - CADD\02 - Civil\2023 - HEADWORKS.dwg



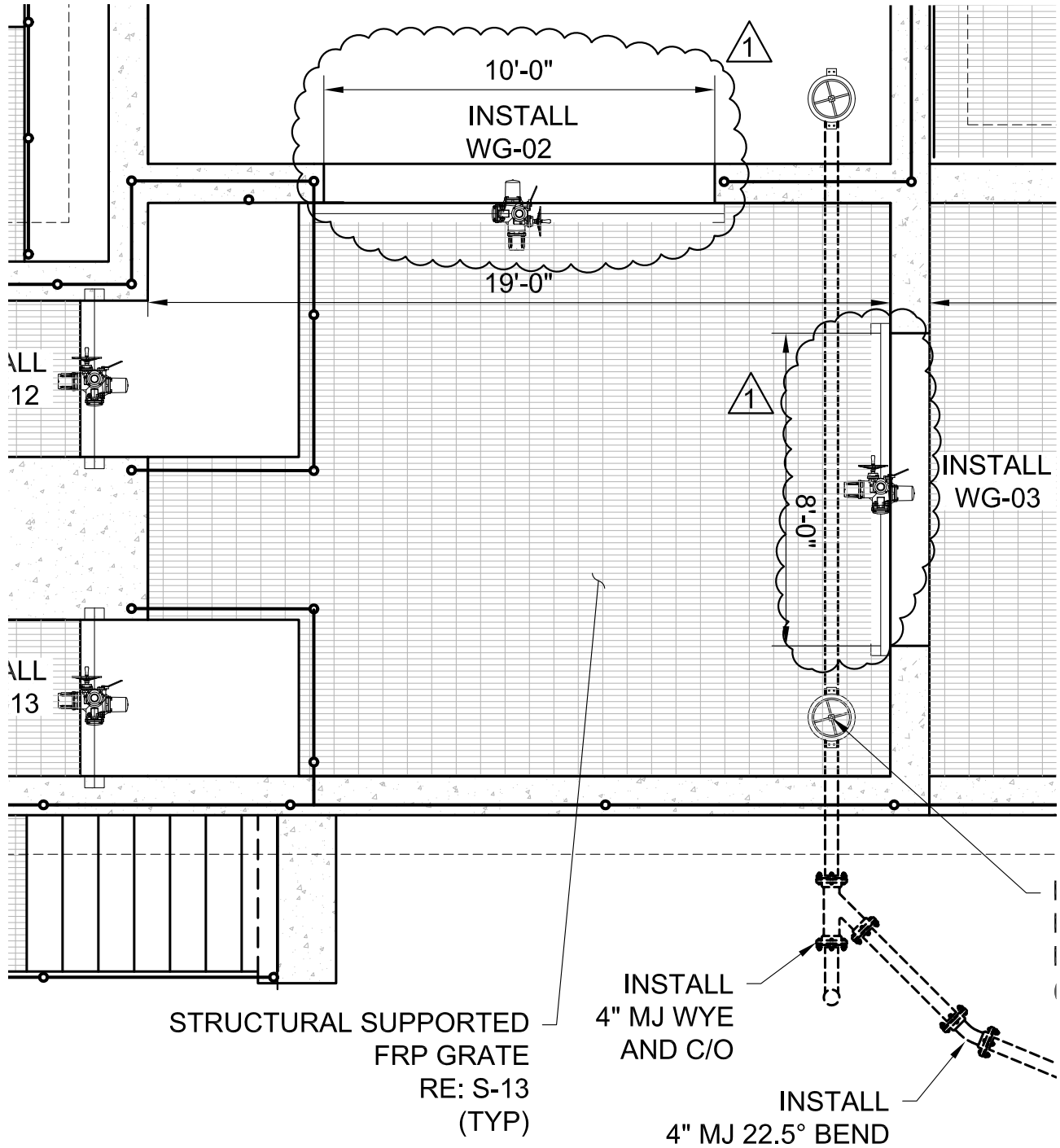
HEADWORKS PLAN M-2

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



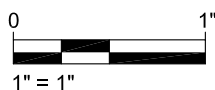
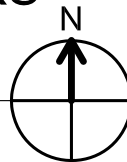
ADDENDUM 1

		CRIST ENGINEERS, INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS			
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS			
PLAN			
DESIGNED: CAJ	JOB NO. 2023	DATE JAN. 2023	ADD. NO. 1
DRAFTED: SBM	SCALE: AS SHOWN		REF SHEET M-2
CHECKED: CAJ			



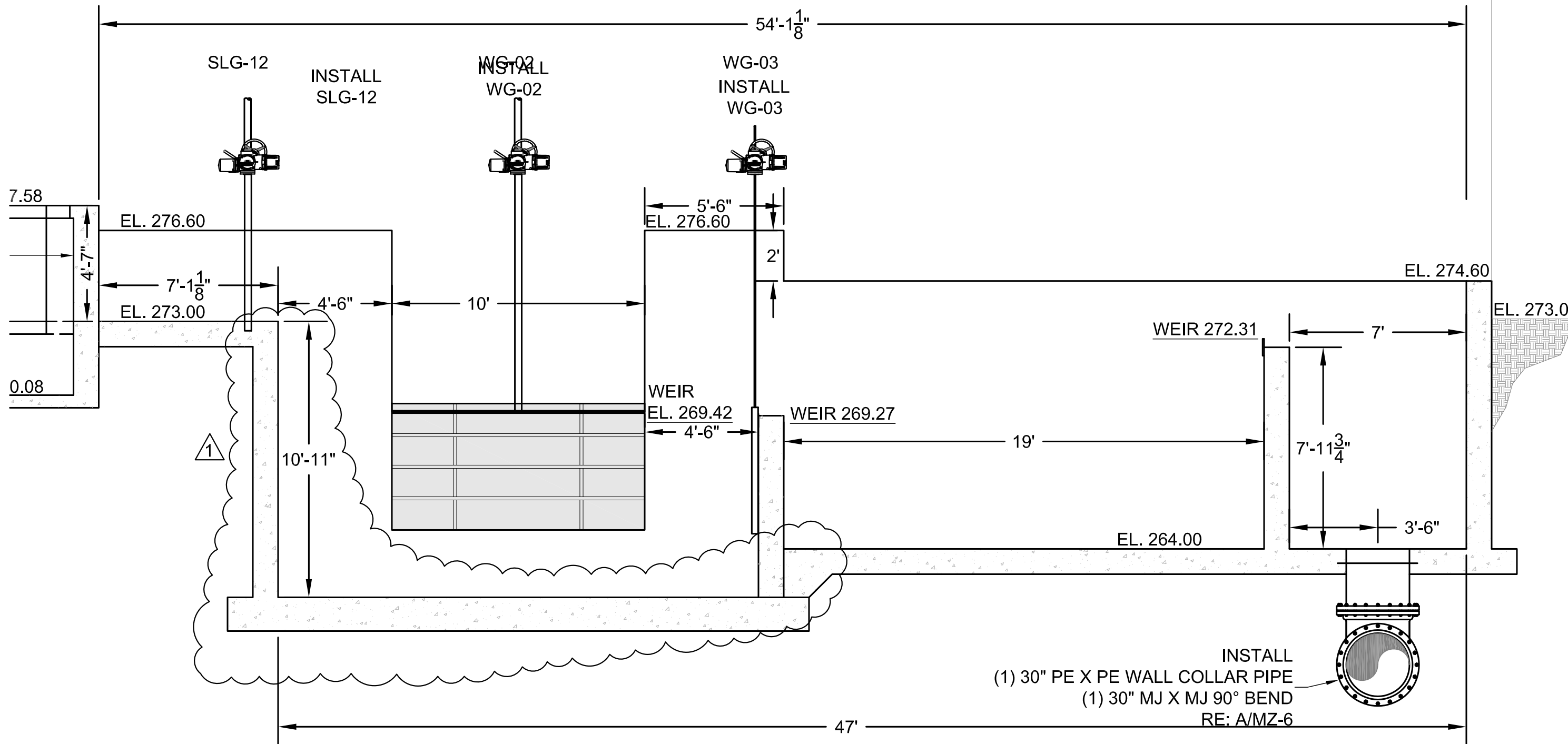
HEADWORKS PLAN III M-6

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



ADDENDUM 1

		CRIST ENGINEERS, INC. CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS					
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS					
PLAN III					
DESIGNED: CAJ		JOB NO. 2023		DATE JAN. 2023	
DRAFTED: SBM		SCALE:		ADD. NO. 1	
CHECKED: CAJ		AS SHOWN		REF SHEET M-6	



HEADWORKS SECTION IV M-7

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

1

M-6

ADDENDUM 1

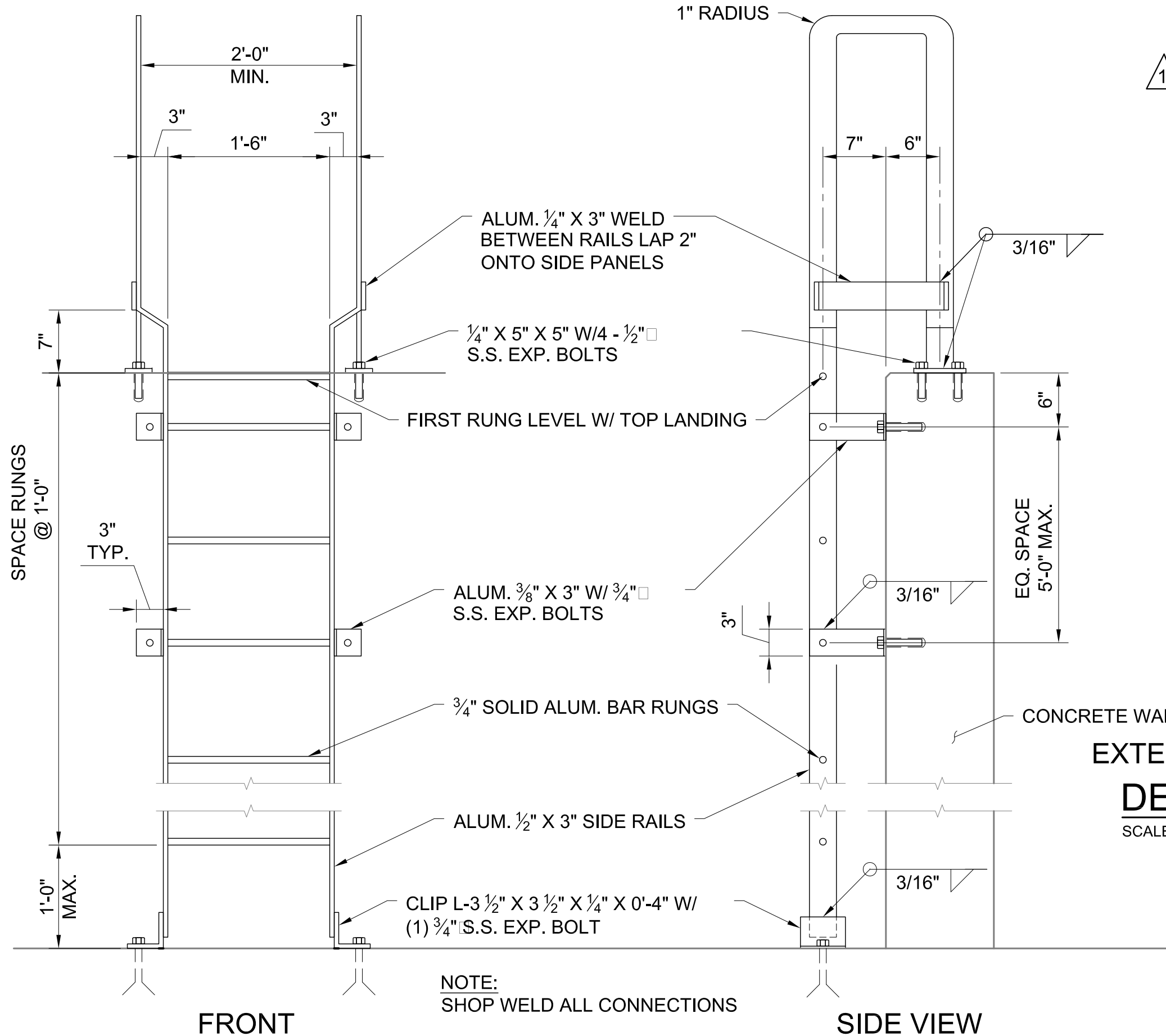
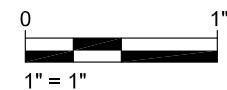
		CRIST ENGINEERS, INC. CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
PARAGOULD, ARKANSAS					
PARAGOULD, LIGHT WATER & CABLE HEADWORKS IMPROVEMENTS					
SECTION IV					
DESIGNED: CAJ		JOB NO. 2023		DATE JAN. 2023	
DRAFTED: SBM		SCALE:		REF SHEET	
CHECKED: CAJ		NOT TO SCALE		M-7	



ADDENDUM 1

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EXTERIOR ALUM LADDER
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