

**ADDENDUM NO. 1
TO THE
BIDDING DOCUMENTS
FOR
VERNON HILLS WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE
FOR
LAKE COUNTY PUBLIC WORKS**

LAKE COUNTY CONTRACT NO. 19062

DATE: April 29, 2019

BID CLOSING DATE & TIME: 11:00 AM local time, May 15, 2019

TO ALL BIDDERS BIDDING ON THE ABOVE PROJECT:

All Bidders submitting a Bid on the above Contract shall carefully read this Addendum and give it consideration in the preparation of their Bid.

I. The following are for informational purposes only:

- A. See agenda and sign-in sheet from Pre-Bid Meeting held on April 23, 2019 at 10:00 AM attached to this Addendum.
- B. See 1972 drawings attached to this Addendum titled WATER WORKS IMPROVEMENTS CONTRACT NO. 5 RESERVOIR AND PUMPING STATION, including 18 pages prepared by Consoer, Townsend & Associates for existing drawings of physical conditions relating to the Hawthorn Center Reservoir structure.

II. The following are revisions to the Invitation To Bid:

- A. Page INV-1, paragraph entitled "DUE DATE", delete the words "May 13, 2019 @ 2:00 PM" and replace with the words, "May 15, 2019 @ 11:00 AM".

III. The following are revisions to the Specifications:

- A. The following revisions shall be made to SECTION 01110 – SUMMARY OF WORK:
 - a. Page 01110-5, subparagraph 1.08.A., add the following sentence after "...included in the Appendix.":

"The paint on the piping, valves, and pumps is considered lead based paint and Contractor shall base his or her bid on that assumption."
- B. The following revisions shall be made to SECTION 01520 – CONSTRUCTION FACILITIES
 - a. Page 01520-3, paragraph 2.09.C., add the following subparagraph immediately after 2.09.C.4.:

"5. Construction Entrance for Hawthorn Center Reservoir

 - a. Provide access driveway from New Century Street to parking area on top of reservoir. Coordinate location with Owner.
 - b. No construction traffic is allowed through the golf outlet parking lot.

- c. Protect or cut and replace curb on New Century Street after completion of project.
- d. Access driveway shall be minimum 24-foot width.
- e. See C121 Detail A on Drawing 999-S-4 for driveway construction.
- f. After completion of project, driveway to be removed and area restored to preconstruction conditions.”

C. The following revisions shall be made to SECTION 01735 – ALTERATION AND DEMOLITION PROCEDURES:

- a. Page 01735-3, add the following subparagraphs immediately after 2.01.C.11.:

- “12. (BWT) Generator
- 13. (HWT) Motor control center and control panel
- 14. (HWT) Contractor is not required salvage any other scrap metal from the Hawthorn Water Tower building other than the items specifically named above (generator, unit heaters, motor control center, and control panel).”

D. The following revisions shall be made to SECTION 13402 – PROCESS CONTROL SYSTEM:

- a. Page 13402-5, delete subparagraph 2.01.B.1 in its entirety.
- b. Page 13402-6, add the following as paragraph 2.01.C.:

“C. PLC-Based Control Panel OIU Functionality

- 1. Each panel shall have an OIU configured to allow Operator to view the entire connected water distribution system. OIU screens shall mirror the HMI in style and be consistent between all sites. HMI functionality shall only be available at the OIU for the local equipment. References to “HMI” in the functional descriptions shall also be meant to refer to the local and (for display) remote OIU’s.
- 2. OIU display data shall be derived entirely from the local PLC. A data table in the PLC shall store information gathered from the remote sites, and the PLC shall update that table on a set schedule. The update schedule shall be configurable, and set to not overburden the radio network with traffic. Coordinate with the Owner to find an acceptable update rate for the screens.
 - a. The data table in the PLC shall be time-stamped each time it is updated, and this time shall be visible on all remote site screens.
 - b. In the event of radio network failure the OIU shall indicate as such on all remote site screens, making it clear to the Operator they are unable to be updated.”

E. Page 13402-6, Paragraph 2.03.A.2., delete “...36”H...” and replace with “...48”H...”.

F. Page 13402-9:

- a. Paragraph 2.04.A.2., delete “...36”H...” and replace with “...48”H...”.
- b. Paragraph 2.04.C.6., add the following sentence after “existing, to be relocated.”:

“Reuse existing antenna cable and lightning arrestors.”

G. Page 13402-12, Paragraph 2.05.A.2., delete “...30”H x 24W...” and replace with “...36”H x 30”W...”

H. Page 13402-13, Paragraph 2.06.C.6, add the following sentence after “existing, to be relocated.”:

“Reuse existing antenna cable and lightning arrestor.”

I. Page 13402-17, Paragraph 2.07.C.6, add the following sentence after “existing, to be re-mounted.”:

“Reuse existing antenna cable and lightning arrestor.”

J. Page 13402-21, Paragraph 2.08.C.6, add the following sentence after “existing, to be re-mounted.”:

“Reuse existing antenna cable and lightning arrestors.”

K. Page 13402-24, Paragraph 2.09.C.6., add the following sentence after “existing, to be relocated.”:

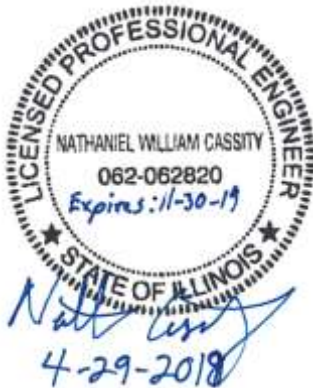
“Reuse existing antenna cable and lightning arrestors.”

IV. The following are revisions to the Drawings: None

V. Any revisions to any of the Contract Documents made by this Addendum shall be considered as the same revision to any and all related areas of the Contract Documents not specifically called out in this Addendum.

VI. The Bidder shall acknowledge receipt of this Addendum by filling out and including the Addendum Acknowledgement form, located in the Bid Specifications, as an attachment to the Bid.

DONOHUE & ASSOCIATES, INC.



Nathan Cassity, P.E



Michael Stohl, P.E



Timothy J. Bates, S.E.

END OF ADDENDUM #1

Lake County Public Works
Vernon Hills Water System Electrical and Mechanical Upgrade
Pre-Bid Conference Agenda
April 23, 2019, 10:00 AM

- I. Please be sure to sign in on the sign-in sheet.
- II. Verbal instructions, discussions, or clarifications made by either Owner or Engineer during the bid period and/or the Pre-Bid Meeting are non-binding. Only written Addenda are made part of the Contract Documents.
- III. Bidding Documents are available through Lake County Purchasing Portal (www.lakecountypurchasingportal.com) contract number 19062.
- IV. Bid Closing: This date has been revised and will be included in Addendum 1. Sealed Bids will be received until 11:00 a.m. Local Time on May 15th, 2019 at the Lake County Public Works Department office located at 650 West Winchester Road, Libertyville, Illinois 60048. After the official Bid closing time, the Bids will be publicly opened and read aloud.
- V. Deadline for submitting bidding questions is May 8th (one week prior to bid opening). Any questions submitted after this day cannot be answered.
- VI. The work for which Bids are being requested is summarized as follows:
 1. Improvements at water distribution facility buildings including mainly electrical, instrumentation, and control upgrades along with some sitework, structural, architectural, process piping, plumbing, heating, ventilation, and air conditioning upgrades.
- VII. Bidders to review, plan for, and budget for the construction sequencing and constraints identified in Section 01110 — Summary of Work. Note that the sequencing and constraints are complex.
 1. Only one location can be taken out of service at a time
 2. Each location has a defined allowable shutdown duration
 3. Some systems are not allowed to be taken out of service and will require temporary power.
- VIII. Project Times
 1. Substantial Completion 485 days (approximately 16 months) after Contract Times commence.
 2. Final Completion 545 days (approximately 18 months) after Contract Times commence.
 3. See Agreement
- IX. Liquidated Damages
 1. Substantial Completion: \$400 per day
 2. Final Completion: \$200 per day
 3. See Agreement

- X. Wage Rates
1. Contractor and Subcontractors shall pay wages not less than the prevailing hourly wage rate for each classification of employee engaged on the Work as determined by the State of Illinois Department of Labor.
 2. See Wage Rate Requirements
- XI. Allowances – Section 01 21 00
1. ComEd electrical service work, \$40,000
 2. North Shore Gas service work, \$2,000
 3. Dixon Engineering review of water tower penetrations, \$2,500
- XII. Scrap Metal Dumpsters: See Section 01735 for requirements to place all scrap metal into dumpsters provided by Lake County for recycling.
- XIII. Lake County staff will not accept or sign for any deliveries. The Contractor must receive the delivery and provide proper storage.
- XIV. Refer to the Instructions to Bidders for detailed instructions on the preparation and submittal of Bid and other bidding matters.
- XV. Bid Envelopes shall include:
1. Bid Form:
 - Fill in Bid Price Schedule (all item numbers along with total in both words and figures at the bottom)
 - Fill in Base Bid Material and Equipment Schedule, both supplier's price and installed cost
 - Fill in the blanks for type and amount of Bid Security
 - Fill in bidder's name and contact information
 - Execute the Bid. Properly fill out and sign the Bid based on your entity.
 2. Bid Security – certified check or bid bond
 3. Evidence of Bidder's authority and qualification to do business in the state of Illinois
 4. Contractor Qualification Form
 5. Addendum Acknowledgement Form
 6. Vendor Disclosure Form
- XVI. Bids are subject to acceptance for 90 days after the bid opening date. This item will be clarified in Addendum 1.

- XVII. All verbal comments made today are to be used at Contractors discretion. Only written documentation in the form of addenda will be binding.

Bidding Questions Contact:
Lake County Purchasing
Phone: (847) 377-2929
Email: Purchasing@lakecountyil.gov

- XVIII. Site Visits: See Site Visits Schedule attached.

XIX. Questions.

XX. Site Visits.

SITE VISIT SCHEDULE

BID#19062 PW#2015.050

VERNON HILLS WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE

Dated: 3/28/19

Location	Time at Site Minutes	Tuesday (1) 4/23/2019 Group 1		Tuesday (1) 4/23/2019 Group 2		Tuesday (1) 4/23/2019 Group 3 If Needed		Fridayday (2) 4/26/2019 Site Specific Times			Remarks / Comments
1 NCT Vernon Hills Plant	60	10:00	11:00	10:00	11:00	10:00	11:00	N/A	N/A		Pre-bid Meeting 4/23/19 10:00 AM
2 Corporate Woods Reservoir	20	11:10	11:30	3:10	3:30	2:30	2:50	10:00	11:00	Dave	Limited parking on private drive
3 South Delivery Structure	20	11:40	Noon	2:40	3:00	11:10	11:30	10:00	11:00	Mark	Limited parking on private drive
4 Hawthorn Tower and Building	20	12:10	12:30	2:10	2:30	11:40	Noon	11:15	12:15	Dave	Limited parking on private drive
5 Butterfield Tower	30	12:40	1:10	1:30	2:00	12:10	12:40	11:15	12:15	Mark	Parking not an issue / locked gate
6 Gregg's Landing Reservoir	30	1:20	1:50	12:50	1:20	3:00	3:30	12:30	1:30	Dave	Main Gate Code / OP's to leave open
7 Grainger Reservoir	20	2:00	2:20	12:20	12:40	12:50	1:10	12:30	1:30	Mark	OP's must clear with Grainger
8 Hawthorn Mall Center Reservoir	60	2:30	3:30	11:10	12:10	1:20	2:20	1:45	3:00	Dave / Mark	Parking in lot north of reservoir
		Tour Leader: Mark O		Tour Leader: David H		Tour Leader: TBD					

Dated: 3/28/19

(1) Guided tour of sites on 4/23/19 per schedule

(2) Contractors option to revisit sites on 4/26/19 per time frames noted on schedule

LAKE COUNTY PUBLIC WORKS
VERNON HILLS WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE



Pre-Bid Conference Meeting, 10:00 AM on Tuesday, April 23, 2019

Sign-In Sheet

<u>Attendee</u>	<u>Representing</u>	<u>Telephone Number/email address</u>
1. <u>Brad Pordh</u>	<u>Krause Electric</u>	<u>847 960-1351 bporch@krauseelectric.com</u>
2. <u>Marc Gilman</u>	<u>JJ Henderson</u>	<u>847-214-3722 MarcusG@JHenderson.com</u>
3. <u>Joe Henderson</u>	<u>Boller</u>	<u>847 662 5566 estimating@bollerconstruction.com</u>
4. <u>Bill Graham</u>	<u>Wunderlich-Malec</u>	<u>847-691-9542 Bill.Graham@wmeng.com</u>
5. <u>KEVIN VIGNOCCHI</u>	<u>KENO & SONS</u>	<u>847.615.8509 TED.KENOSONS@SPLGLOBAL.NET</u>
6. <u>MIKE MORONG</u>	<u>LEYDEN ELECTRIC</u>	<u>630-3650200 mmorong@leydenelectric.com</u>
7. <u>JOE LABEL</u>	<u>McWilliams</u>	<u>630-816-7368 jlabel@mcwelec.com</u>
8. <u>ANDY BEAN</u>	<u>PIGPER ELECT.</u>	<u>847-599-1774 ANDY.BEAN@PIGPERPOWER.COM</u>
9. <u>NICK SKENDER</u>	<u>INDEPENDENT MECH</u>	<u>774-256-8967 NSKENDER@INDEPENDENTMECH.COM</u>
10. <u>Nathan Cassity</u>	<u>Donohue</u>	<u>9208037370 ncassity@donohue-associates.com</u>

LAKE COUNTY PUBLIC WORKS
VERNON HILLS WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE



Pre-Bid Conference Meeting, 10:00 AM on Tuesday, April 23, 2019

Sign-In Sheet

<u>Attendee</u>	<u>Representing</u>	<u>Telephone Number/email address</u>
11. <u>Mark Ottersen</u>	<u>LCPW</u>	<u>847-309-5498 / mottersen@lakecountyl.gov</u>
12. <u>DAVID HUMBERT</u>	<u>LCPW</u>	<u>847-307-7145 / dhumbert@lakecountyl.gov</u>
13. <u>Michael K Grinnell</u>	<u>LCPW</u>	<u>847 ⁷¹⁵/309-6484 / mgrinnell@lakecountyl.gov</u>
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____
17. _____	_____	_____
18. _____	_____	_____
19. _____	_____	_____
20. _____	_____	_____

**LAKE COUNTY, ILLINOIS
PUBLIC WORKS DEPARTMENT**

1972

**WATER WORKS IMPROVEMENTS
CONTRACT NO. 5**

RESERVOIR AND PUMPING STATION

**VERNON HILLS
NEW CENTURY TOWN**

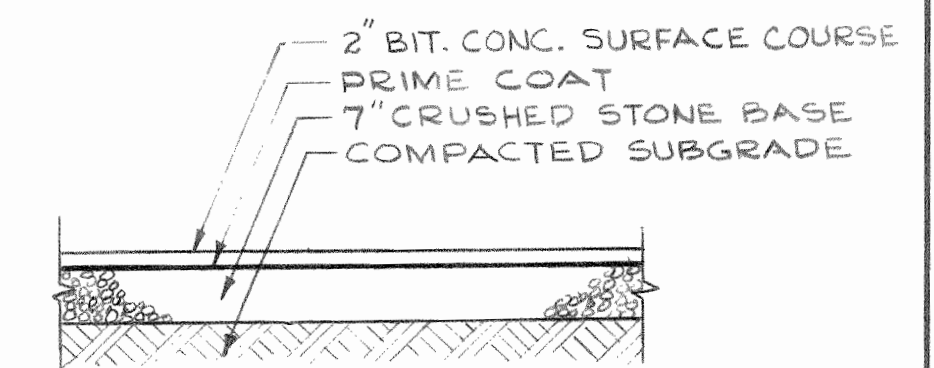
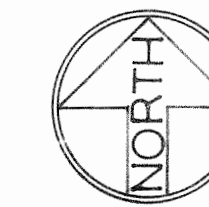
**CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS**

**360 EAST GRAND AVENUE
CHICAGO, ILLINOIS 60611**

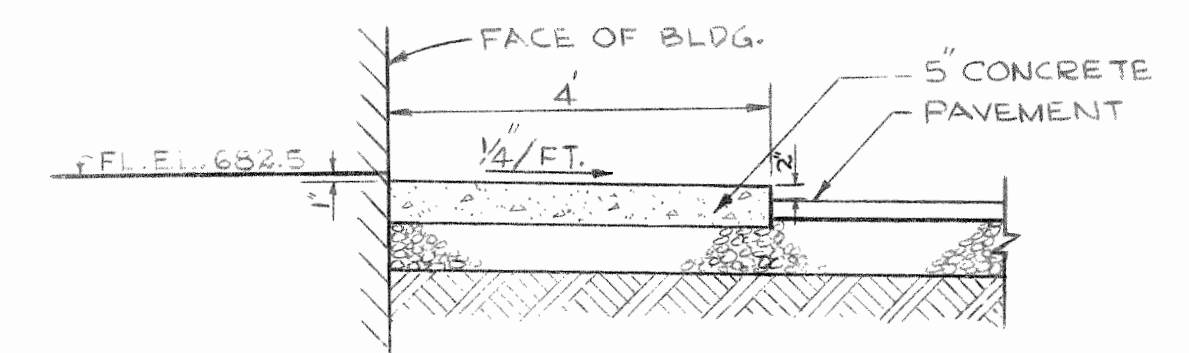
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7 OF 18	STRUCTURAL, ROOF SLAB PLAN
8 OF 18	STRUCTURAL, SECTIONS
9 OF 18	STRUCTURAL, SECTIONS AND DETAILS
10 OF 18	STRUCTURAL, RETAINING WALLS
11 OF 18	STRUCTURAL, NOTES AND DETAILS
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**VOLUME II OF
CONTRACT DOCUMENTS**



PAVEMENT SECTION



SIDEWALK SECTION
SCALE: 1"=2'

BM#3: RR SPIKE IN W. FACE OF TREE TRUMP 135' W. OF P.C. NEAR S.W. CORNER OF SHOPPING CENTER ON N. LINE OF EXIST. R.O.W. OF RTE. 60 ELEV. 683.58
BM#6: SQ. CUT ON E. END OF CONC. BASE OF CONC. RAILING ON S. SIDE OF RTE. 60 ON SEAVEY DITCH CULVERT. ELEV. 683.67

LEGEND

- 684--- EXISTING CONTOUR
- 690— PROPOSED FINAL CONTOUR (BY OTHERS)
- - -681- - - PROPOSED CONTOUR
- - - - - PROPERTY LINE
- 692 FINISHED GRADE ELEVATION (BY OTHERS)
- T/W 695.5 TOP ELEVATION OF RETAINING WALL
- PROPOSED PAVEMENT
- CONCRETE SIDEWALK
- T/SW 682.5 TOP ELEVATION OF SIDEWALK
- PAV 682.2 FINISHED PAVEMENT ELEVATION
- PROPOSED WATER MAIN
- PROPOSED SEWER SERVICE

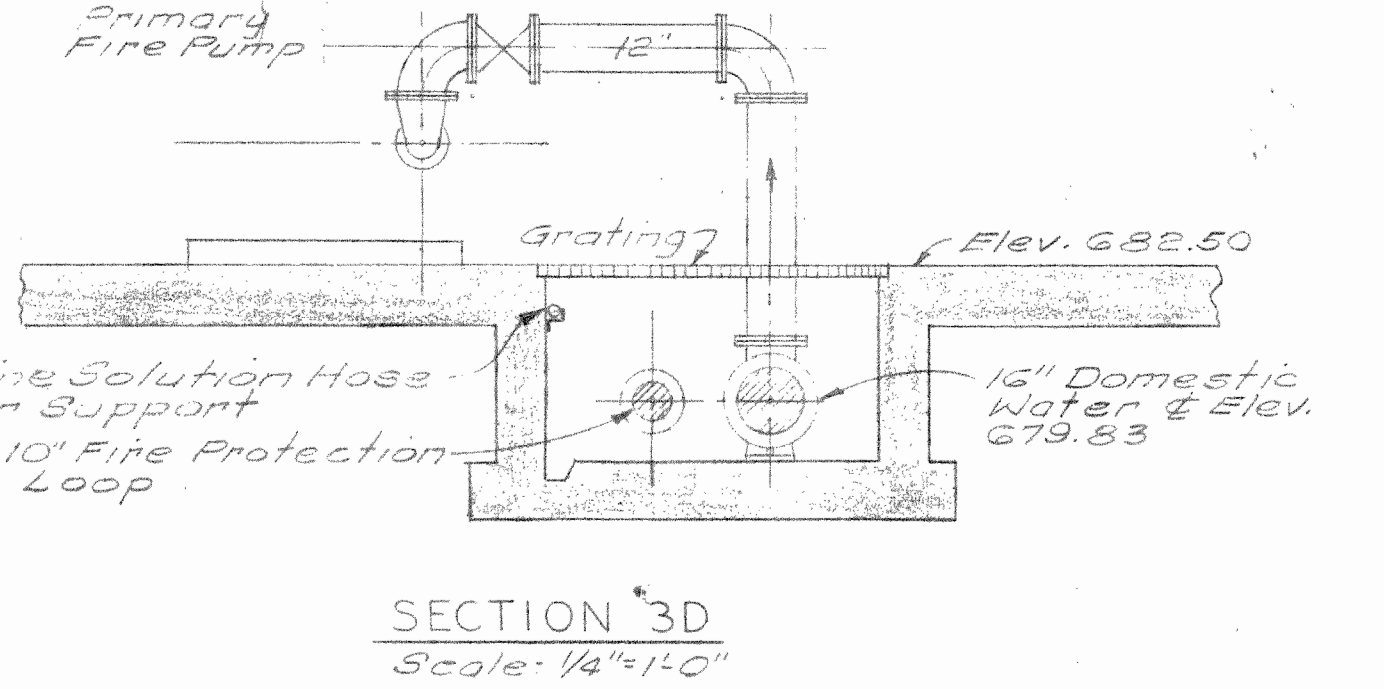
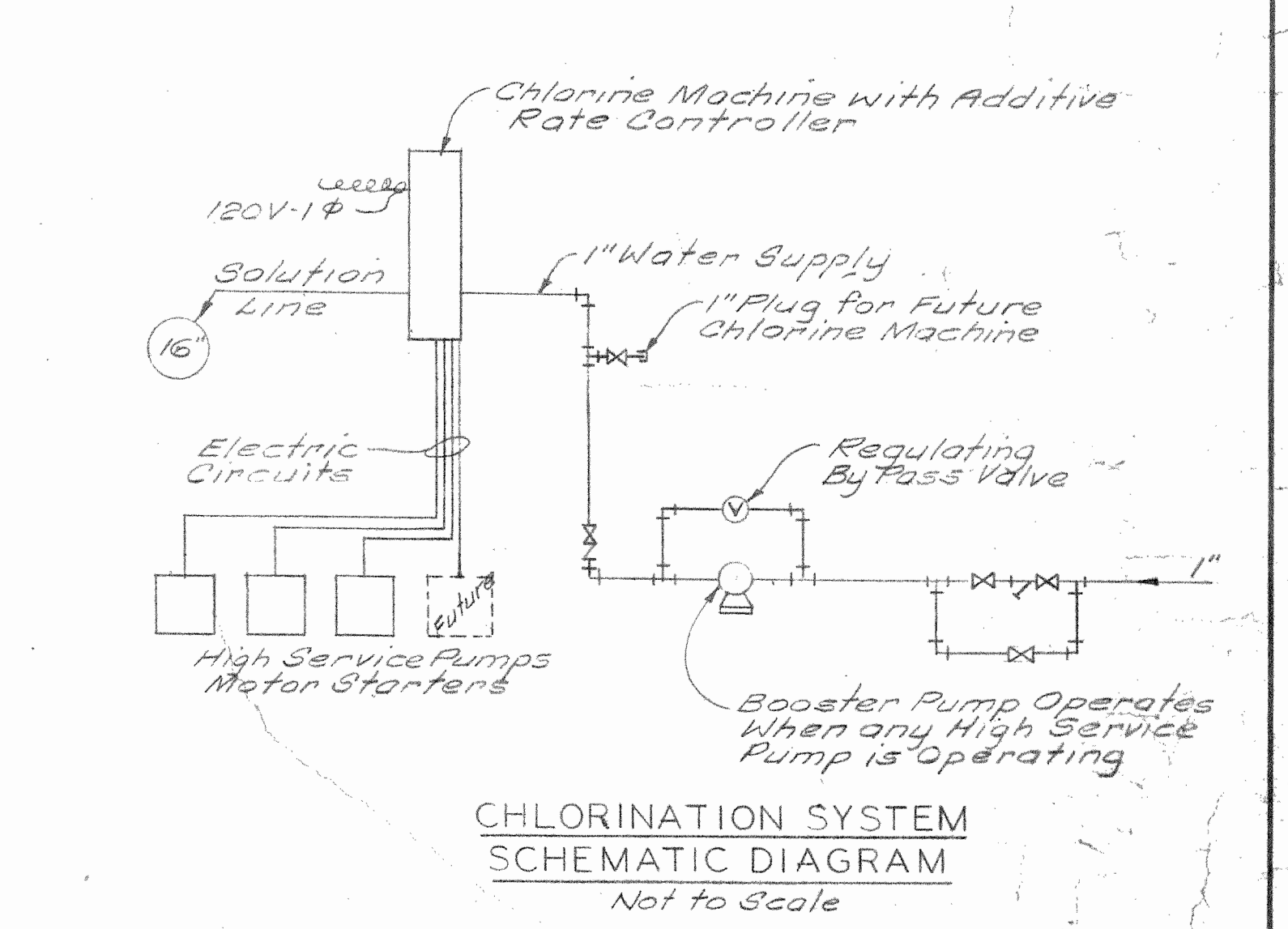
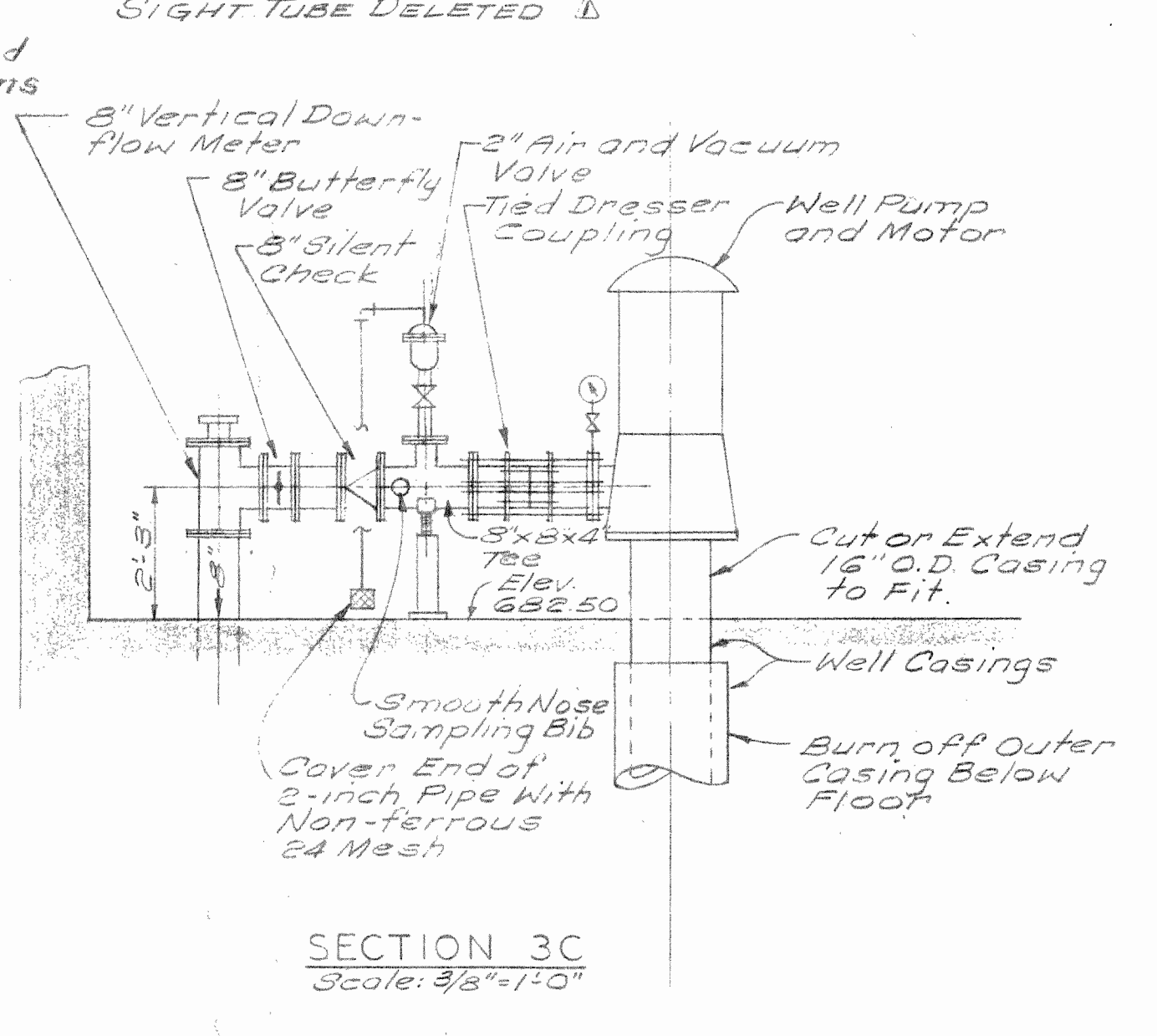
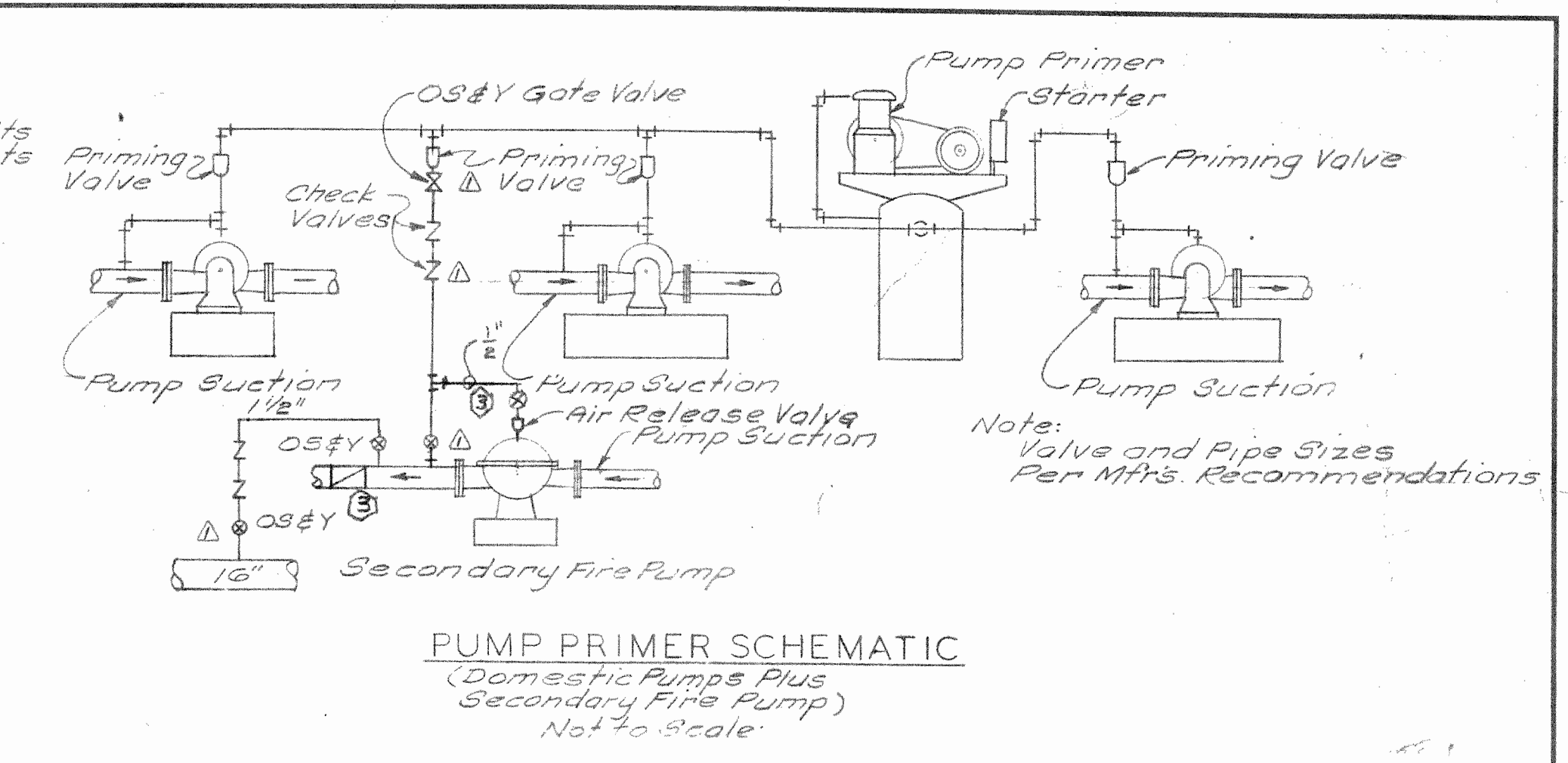
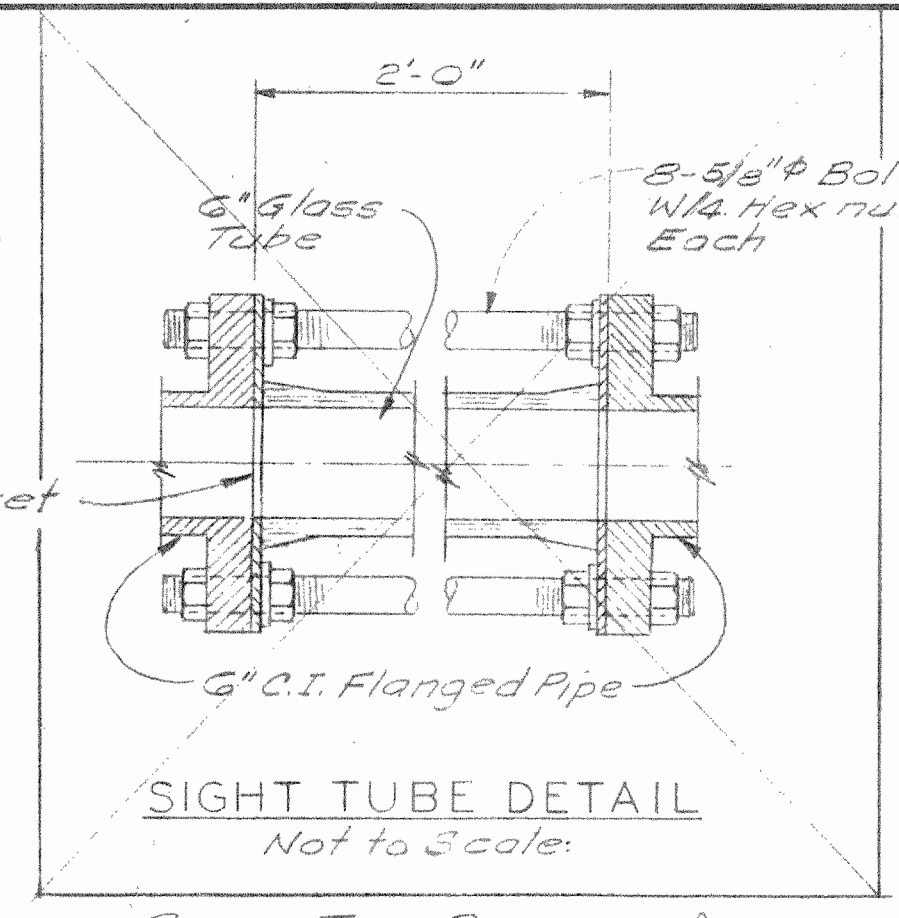
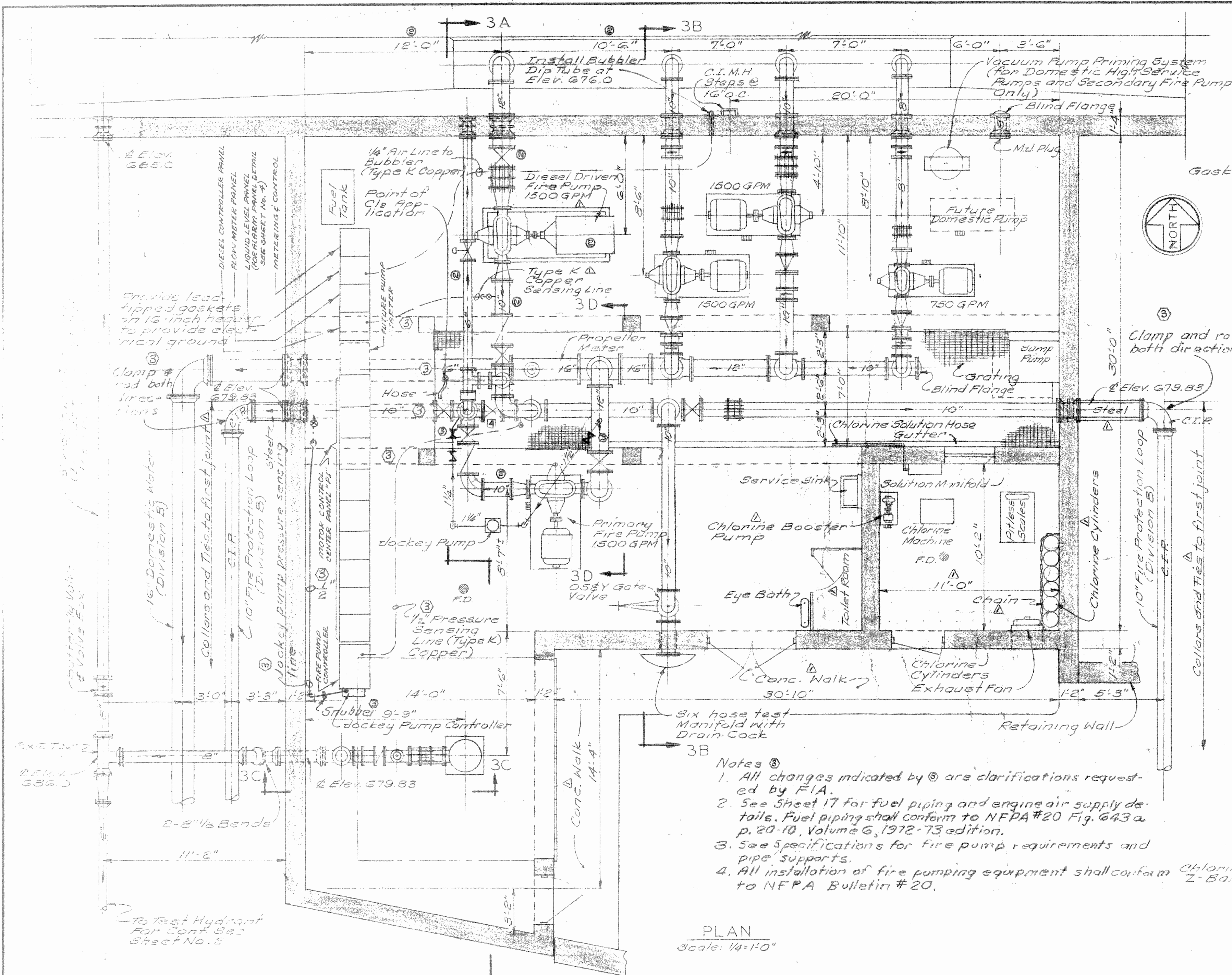
Note: This Contract does not include any placement of fill, grading, top soiling, nor graving outside of the reservoir walls, pumping station walls, and retaining walls.

COUNTY OF LAKE, ILLINOIS
VERNON HILLS NEW CENTURY TOWN
WATER WORKS IMPROVEMENTS CONTRACT NO. 5

SITE AND GRADING PLAN

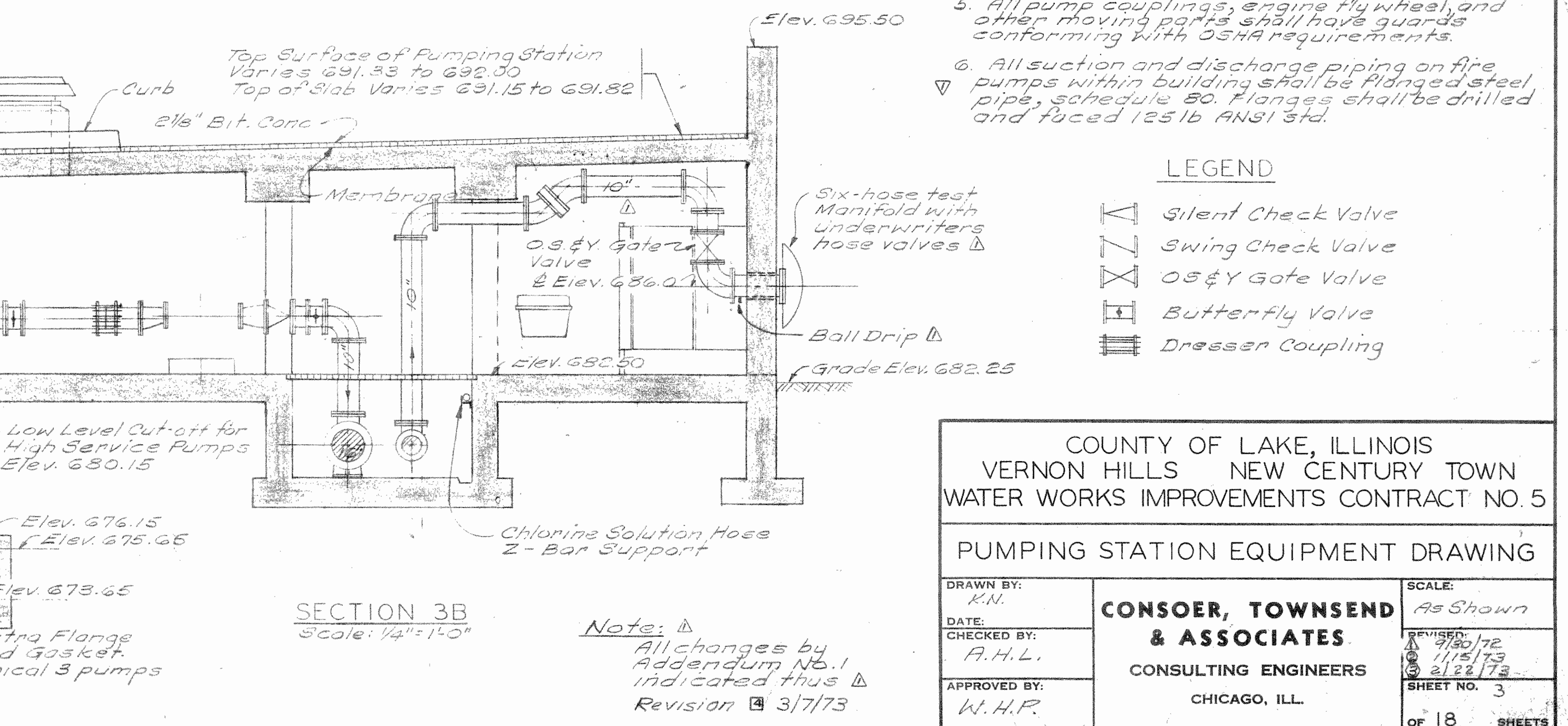
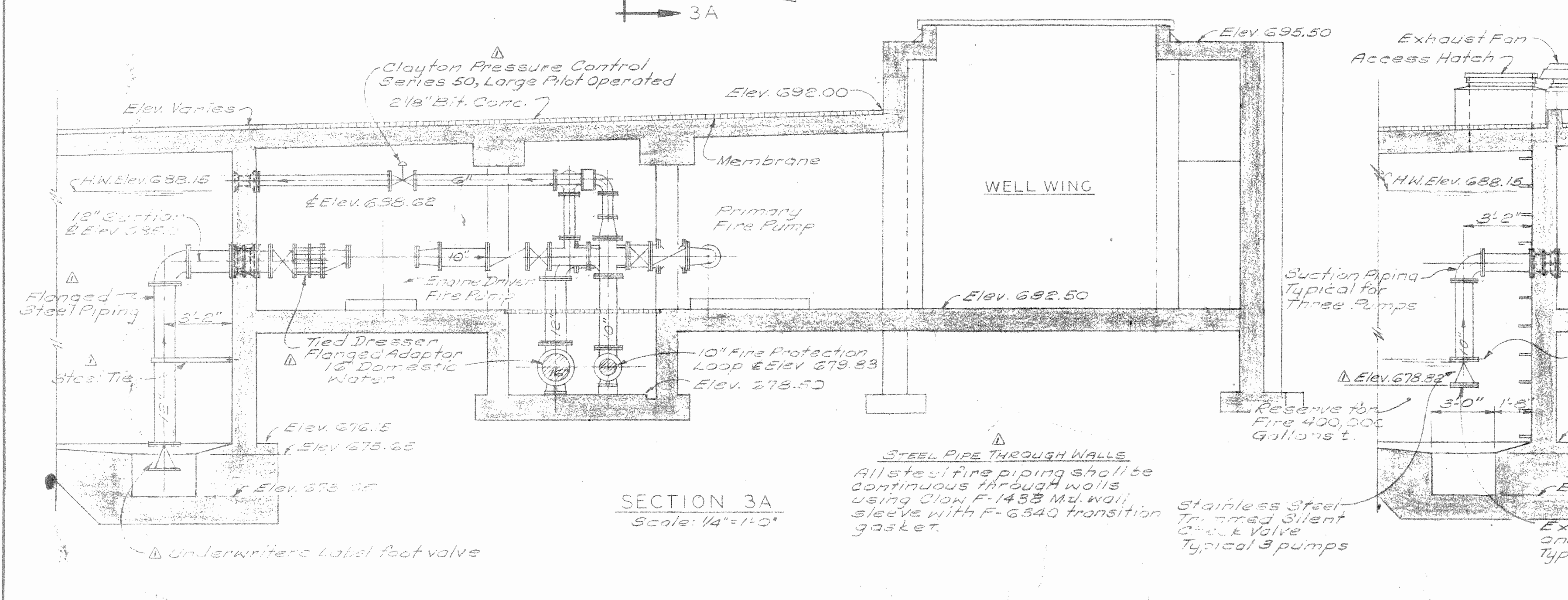
DRAWN BY: T.S.H.	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: 1" = 10'
DATE: SEPT. 1972		REVISED: 1-30-73
CHECKED BY: F.A.A.		T.S.H. 2-8-73
APPROVED BY: W.H.P.		8.2 2-16-73
		SHEET NO. 2
		OF 18 SHEETS





- GENERAL NOTES**
- Suction and discharge piping shall be insulated from pump flange to Elev. 682.50. This includes well pump discharge. No insulation required on fire piping.
 - Each domestic high service pump shall have 3/4" diam. suction and discharge gages. Suction gages shall be compound - 20 to 80 psi. Discharge gages shall be 0-100 psi. Furnish also pressure gage for well pump discharge 0-25 psi. Each gage shall have shut-off cock.
 - Gages for fire pumps shall comply with NFPA Bulletin 20.
 - Fire Pumps, fire piping, jockey pump, fuel tank, and fire pump controls shall be painted red.
 - All pump couplings, engine fly wheel, and other moving parts shall have guards conforming with OSHA requirements.
 - All suction and discharge piping on fire pumps within building shall be flanged steel pipe, schedule 80. Flanges shall be drilled and faced 125 lb ANSI 3rd.

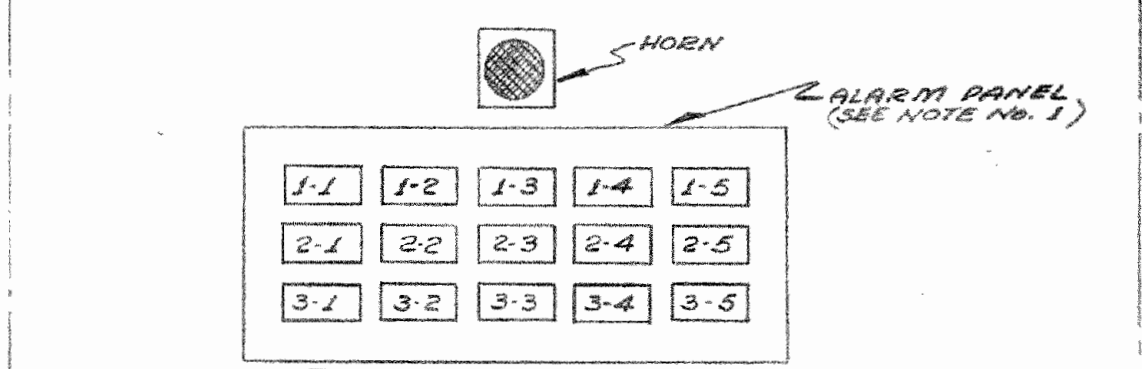
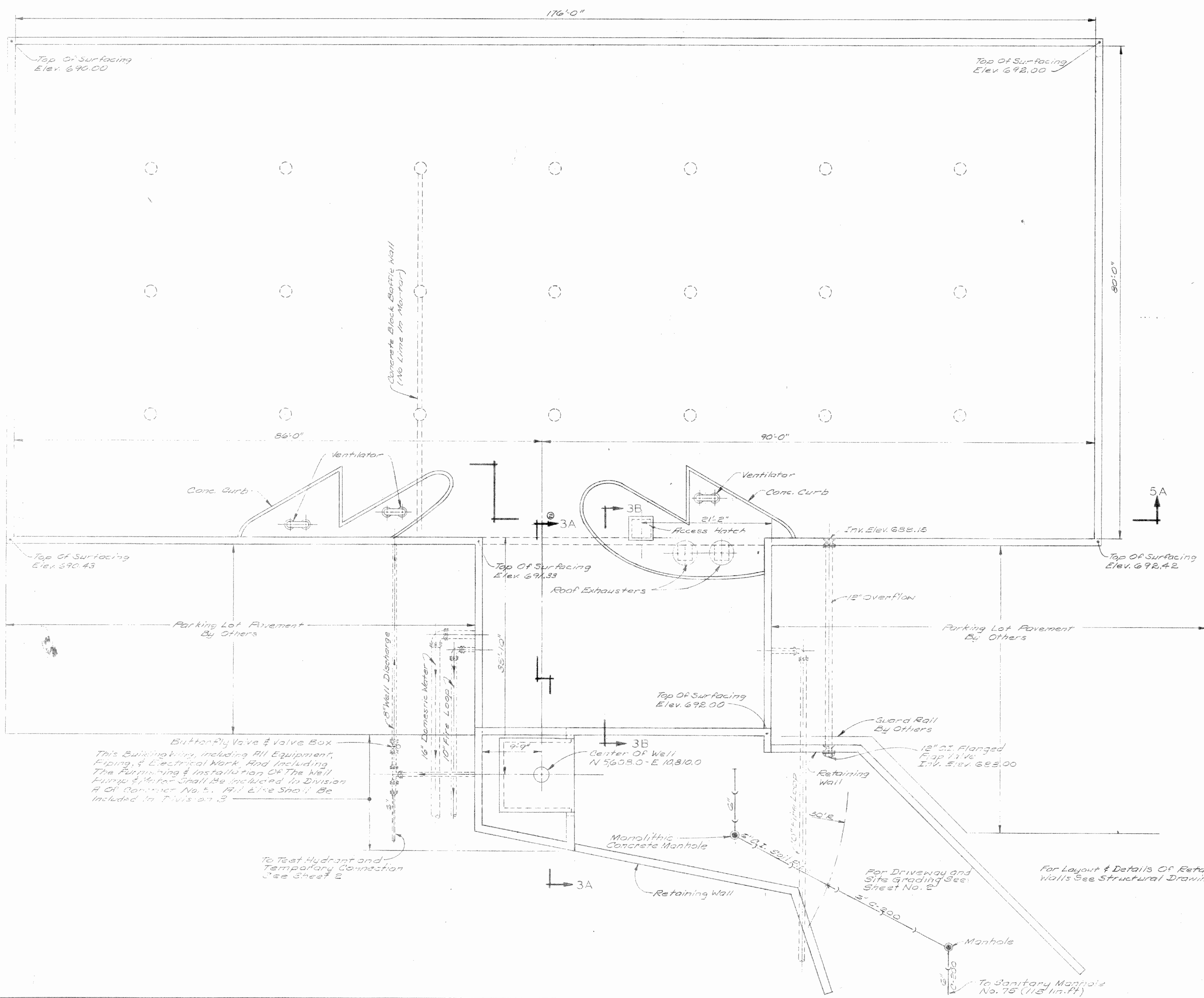
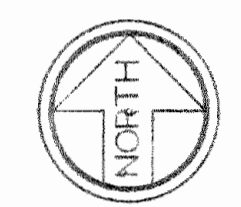
- LEGEND**
- Silent Check Valve
 - Swing Check Valve
 - OS&Y Gate Valve
 - Butterfly Valve
 - Dresser Coupling



COUNTY OF LAKE, ILLINOIS
VERNON HILLS NEW CENTURY TOWN
WATER WORKS IMPROVEMENTS CONTRACT NO. 5

PUMPING STATION EQUIPMENT DRAWING

DRAWN BY: K.M.	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: As Shown
DATE:		REVISION: 1/15/72
CHECKED BY: A.H.L.		2/22/73
APPROVED BY: W.H.P.		SHEET NO. 3
		OF 18 SHEETS



SILENCE SQUARE 'D' TYPE KE-16 WITH 1-KA-1 CONTACT BLOCK & TYPE KT-166 LIGHT.

TEST-SQUARE 'D' TYPE KE-16 WITH 1-KA-1 CONTACT BLOCK & TYPE KT-166 LIGHT.

ALARM PANEL SCHEDULE	
I-1	WELL PUMP MOTOR STARTER
I-2	HIGH SERVICE PUMP No. 1 MOTOR STARTER
I-3	HIGH SERVICE PUMP No. 2 MOTOR STARTER
I-4	HIGH SERVICE PUMP No. 3 MOTOR STARTER
I-5	HIGH SERVICE PUMP No. 4 MOTOR STARTER
2-1	WELL PUMP MOTOR BEARINGS
2-2	H1 RESERVOIR
2-3	L0 RESERVOIR
2-4	SPARE
2-5	SPARE
3-1	SPARE
3-2	SPARE
3-3	SPARE
3-4	SPARE
3-5	FLASHER RELAY

ALARM PANEL
 Not to Scale
 To be installed in cabinet of flow meter receiving instrument

NOTES:
 1. SCAM INSTRUMENT CORPORATION, SERIES 10, MODEL 11, SEQUENCE RA, RS, ALARM RELAYS AND COMPLETE WITH "SILENCE" & "TEST" B.S., AND ALARM HORN WITH TIME DELAY RELAY TO AUTOMATICALLY SILENCE HORN, TIME DELAY DIAL RANGE 1-30 SECONDS, EARLE SIGNAL COMPANY, BULLETIN 155, W. CG 53096.

Butterfly Valve & Valve Box
 This Building Work, including All Equipment, Piping, & Electrical Work, And Including The Furnishing & Installation Of The Well Pump & Motor Shall Be Included In Division A Of Contract No. 5. All Else Shall Be Included In Division B.

To Test Hydrant and Temporary Connection See Sheet 2

For Driveway and Site Grading See Sheet No. 2

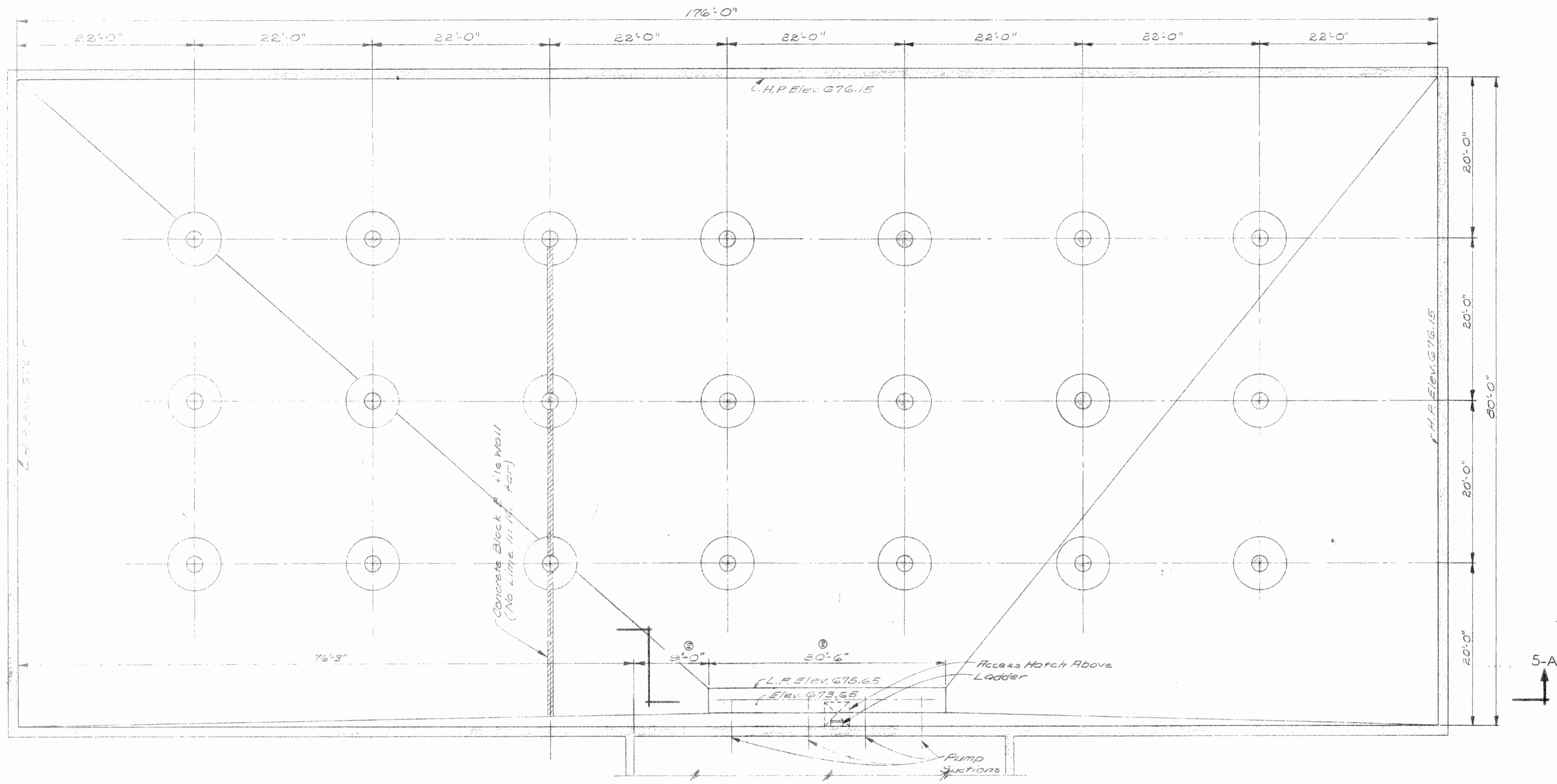
For Layout & Details Of Retaining Walls See Structural Drawings

To Sanitary Manhole No. 15 (115 in. dia)

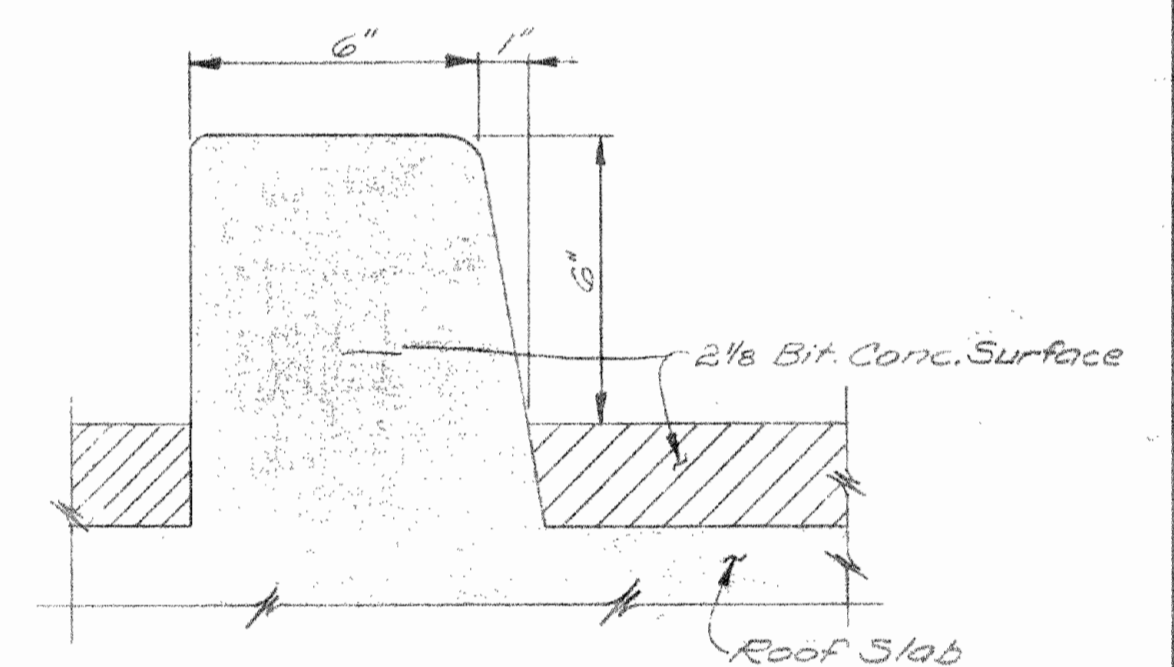
COUNTY OF LAKE, ILLINOIS
 VERNON HILLS NEW CENTURY TOWN
 WATER WORKS IMPROVEMENTS CONTRACT NO. 5

ROOF PLAN RESERVOIR & PUMPING STATION

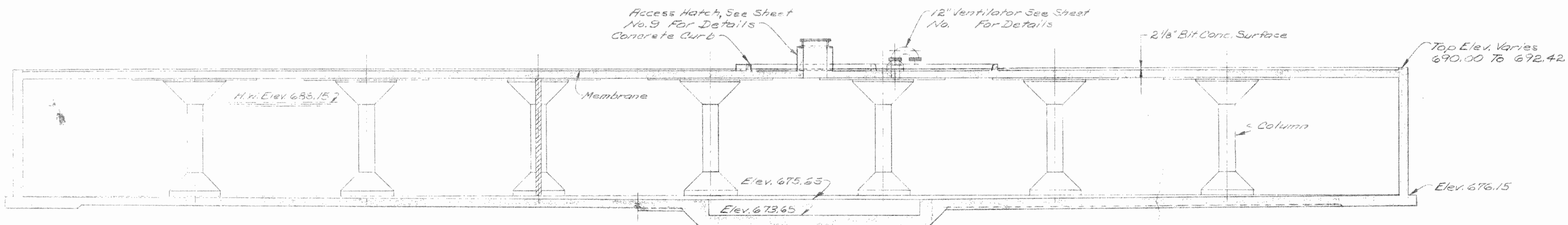
DRAWN BY: T.D.C.	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: 1/8" = 1'-0"
DATE: CHECKED BY: R.H.L.		REVISED: 11/16/73
APPROVED BY: W.H.P.		SHEET NO. 4 OF 18 SHEETS



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

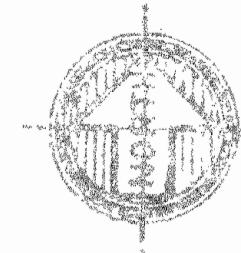
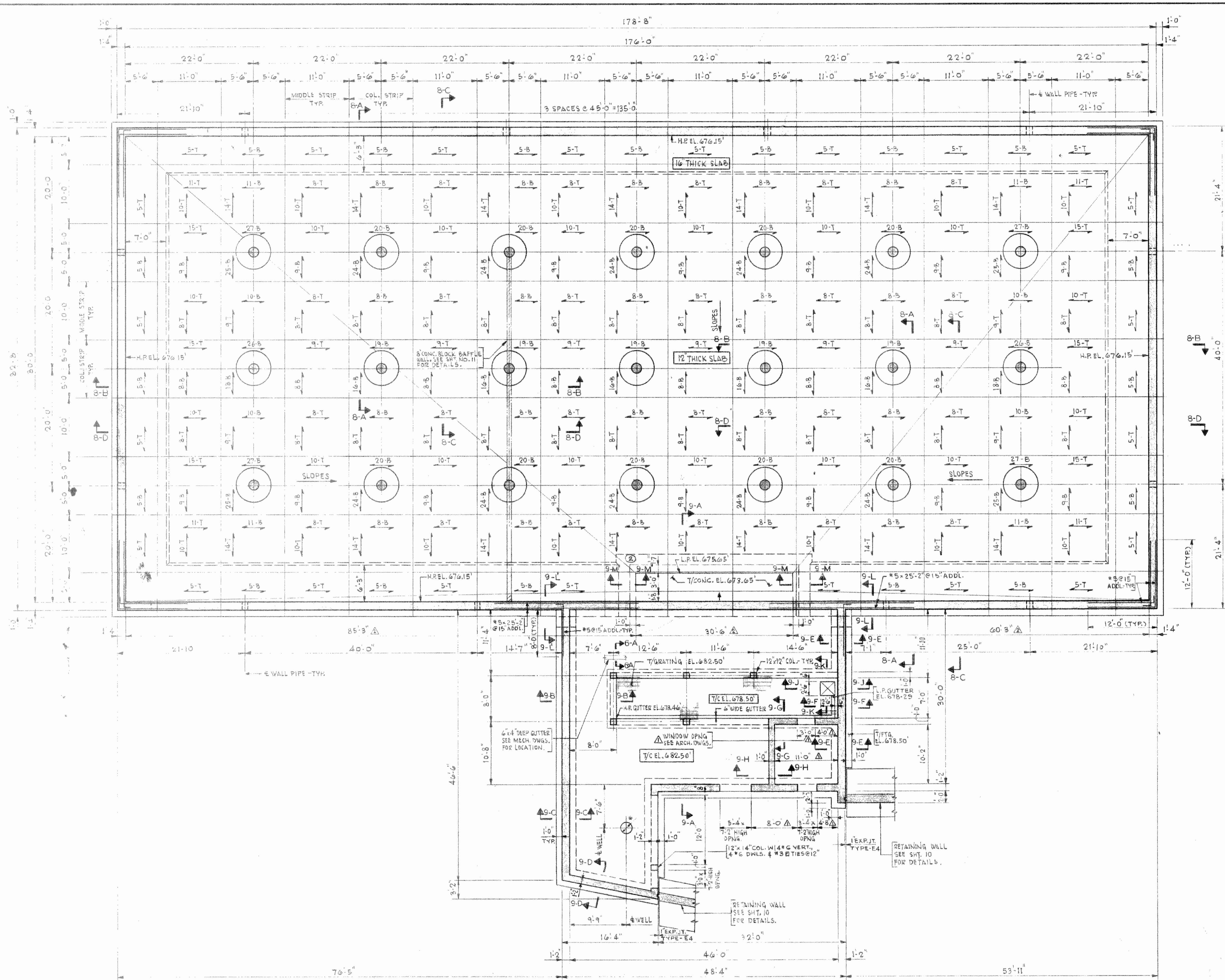


CURB DETAIL
(Not To Scale)

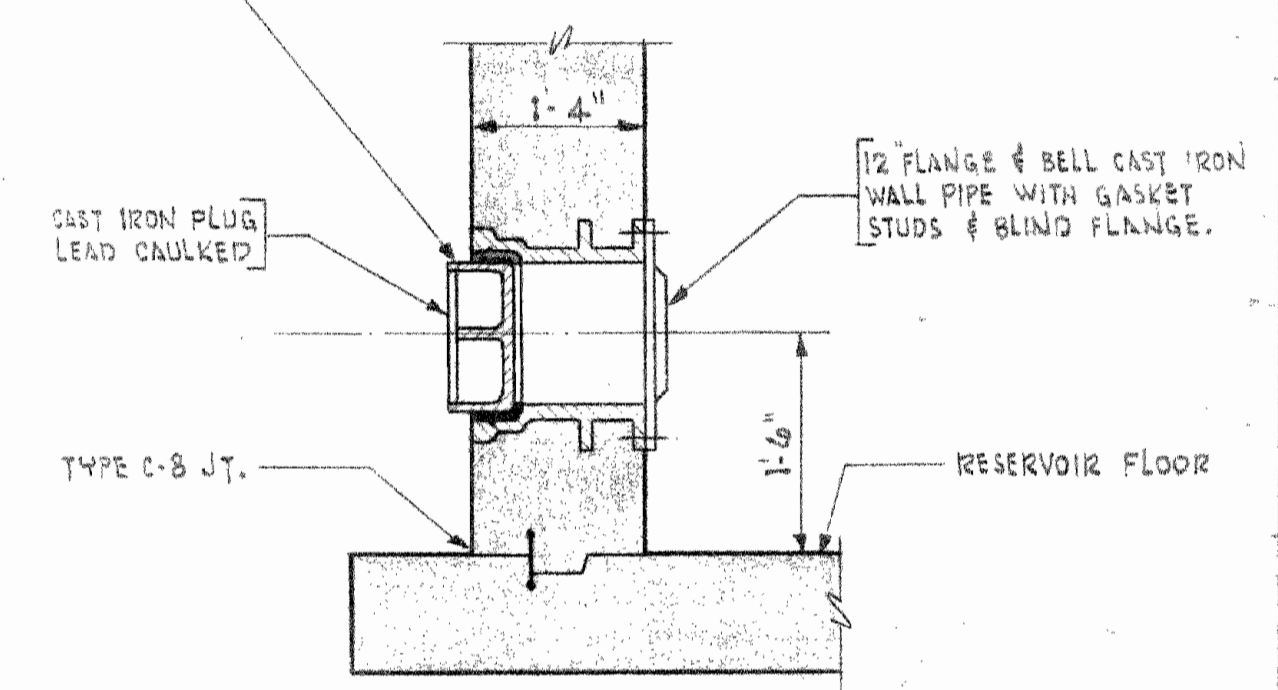


SECTION 5A
Scale: 1/8"=1'-0"

COUNTY OF LAKE, ILLINOIS VERNON HILLS NEW CENTURY TOWN WATER WORKS IMPROVEMENTS CONTRACT NO. 5		
RESERVOIR FLOOR PLAN AND SECTION		
DRAWN BY: T.D.C. DATE: CHECKED BY: A.H.L. APPROVED BY: V.H.P.	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: 1/8"=1'-0" REVISED: 11/15/73 SHEET NO. 5 OF 18 SHEETS



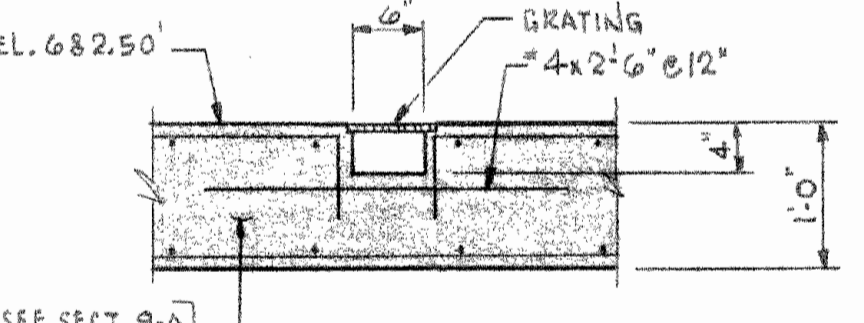
INSTALL PLUG AFTER RESERVOIR IS COMPLETE AND BEFORE STERILIZATION. THE CONTRACTOR SHALL NOT COMMENCE BACKFILLING UNTIL AFTER STERILIZATION AND WITHOUT APPROVAL FROM THE ENGINEER. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO INSURE THAT THE EXCAVATION REMAINS DEWATERED UNTIL BACKFILLING IS COMPLETED.



NOTE: SEE BASE SLAB PLAN FOR LOCATIONS.

WALL PIPE DETAIL

NO SCALE



SECTION 6-A

3/4" x 1'-0"

REINFORCING STEEL:
ALL REINFORCING TO BE #6 UNLESS NOTED OTHERWISE.
ALL SPLICES SHALL LAP A MINIMUM OF 40 BAR DIAMETERS.

LEGEND:

4-B - 4 STRAIGHT BARS BOTTOM
7-T - 7 STRAIGHT BARS TOP

ORDER OF PLACING REINFORCING:

1. E-W. BOTTOM BARS
 2. N-S. BOTTOM BARS
 3. N-S. TOP BARS
 4. E-W. TOP BARS
- N-S. = NORTH-SOUTH DIRECTION
E-W. = EAST-WEST DIRECTION

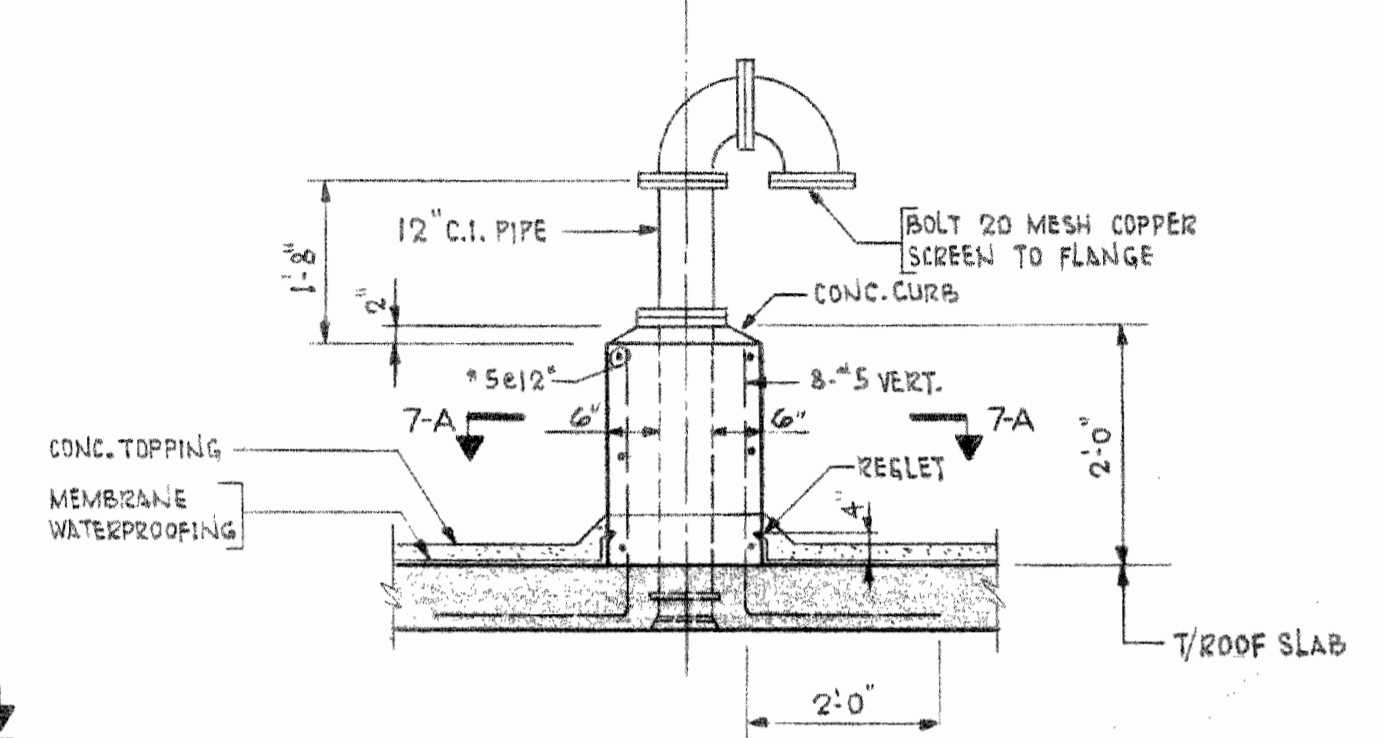
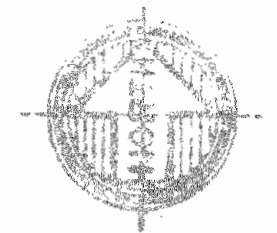
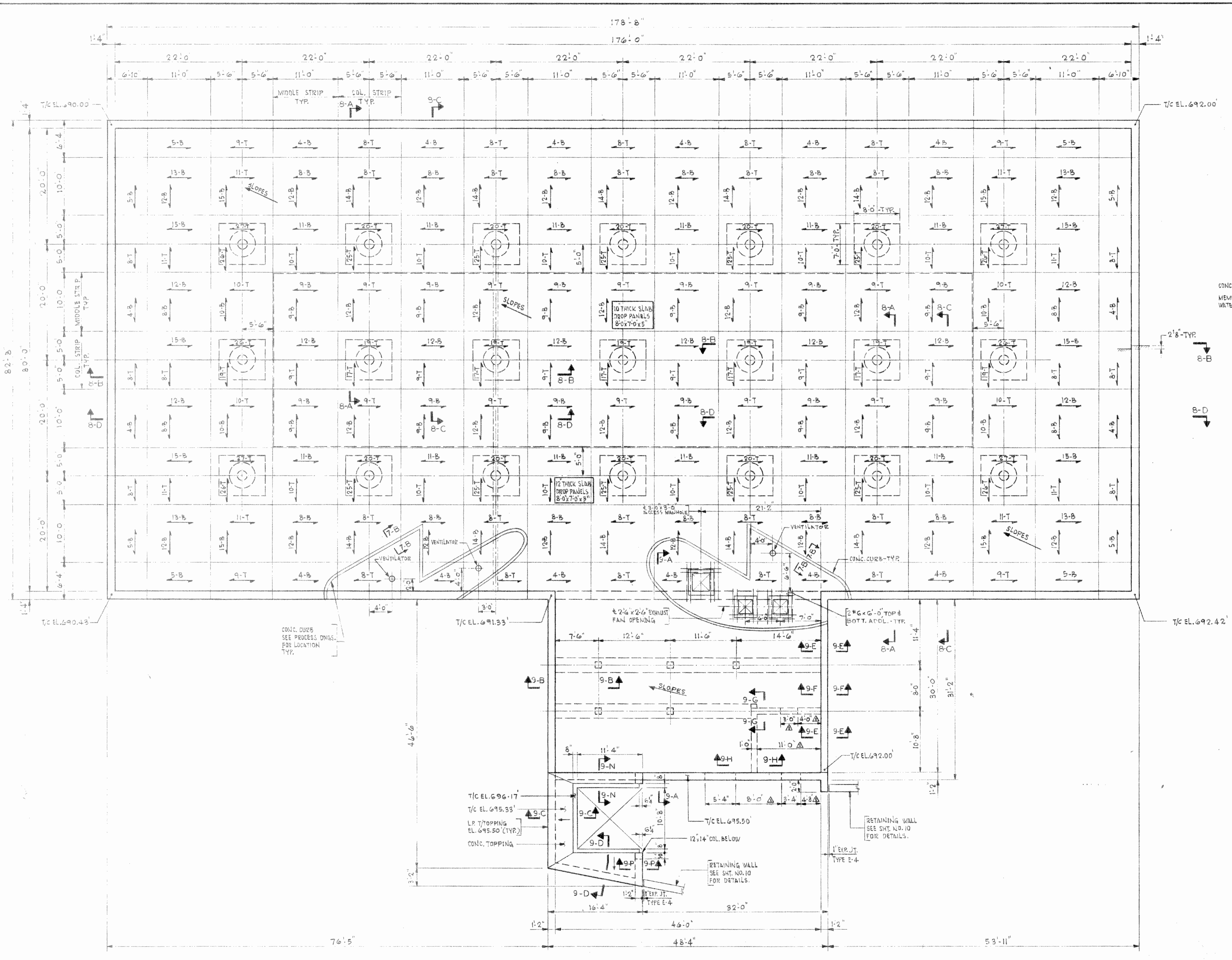
NOTES:
ALL REINFORCING MARKED ADDITIONAL SHALL BE IN ADDITION TO THAT SHOWN IN SECTIONS AND ON SHEET NO. 11

COUNTY OF LAKE, ILLINOIS
VERNON HILLS NEW CENTURY TOWN
WATER WORKS IMPROVEMENTS CONTRACT NO. 5

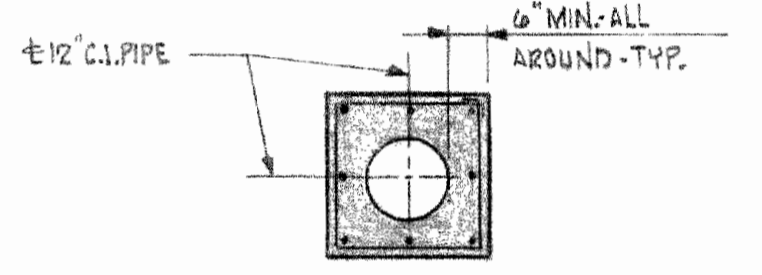
BASE SLAB PLAN

DRAWN BY: J.V.N.	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: 1/8" = 1'-0"
CHECKED BY: M.A.		UNLESS NOTED REVISED: 9-30-72 1-15-73
APPROVED BY: H.S.		SHEET NO. 6 OF 18 SHEETS

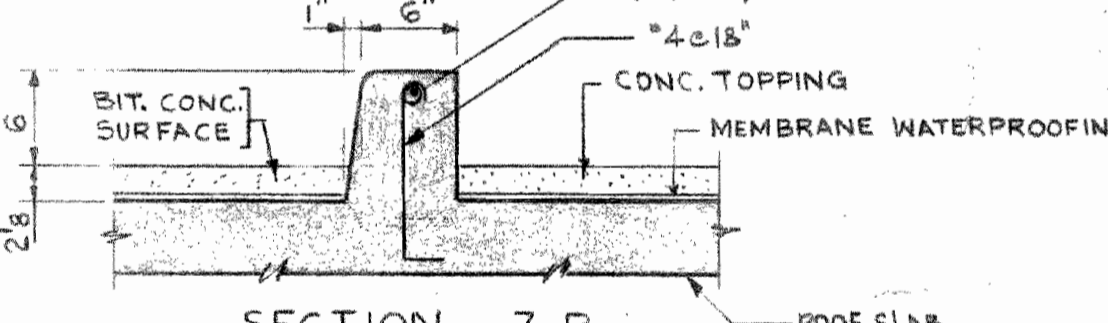
BASE SLAB PLAN



VENTILATOR DETAIL
NO SCALE



SECTION 7-A
NO SCALE



SECTION 7-B
TYP. CONC. CURB DETAIL

REINFORCING STEEL:
ALL REINFORCING TO BE #6 BARS UNLESS NOTED OTHERWISE.
ALL SPLICES SHALL LAP A MINIMUM OF 40 BAR DIAMETERS.

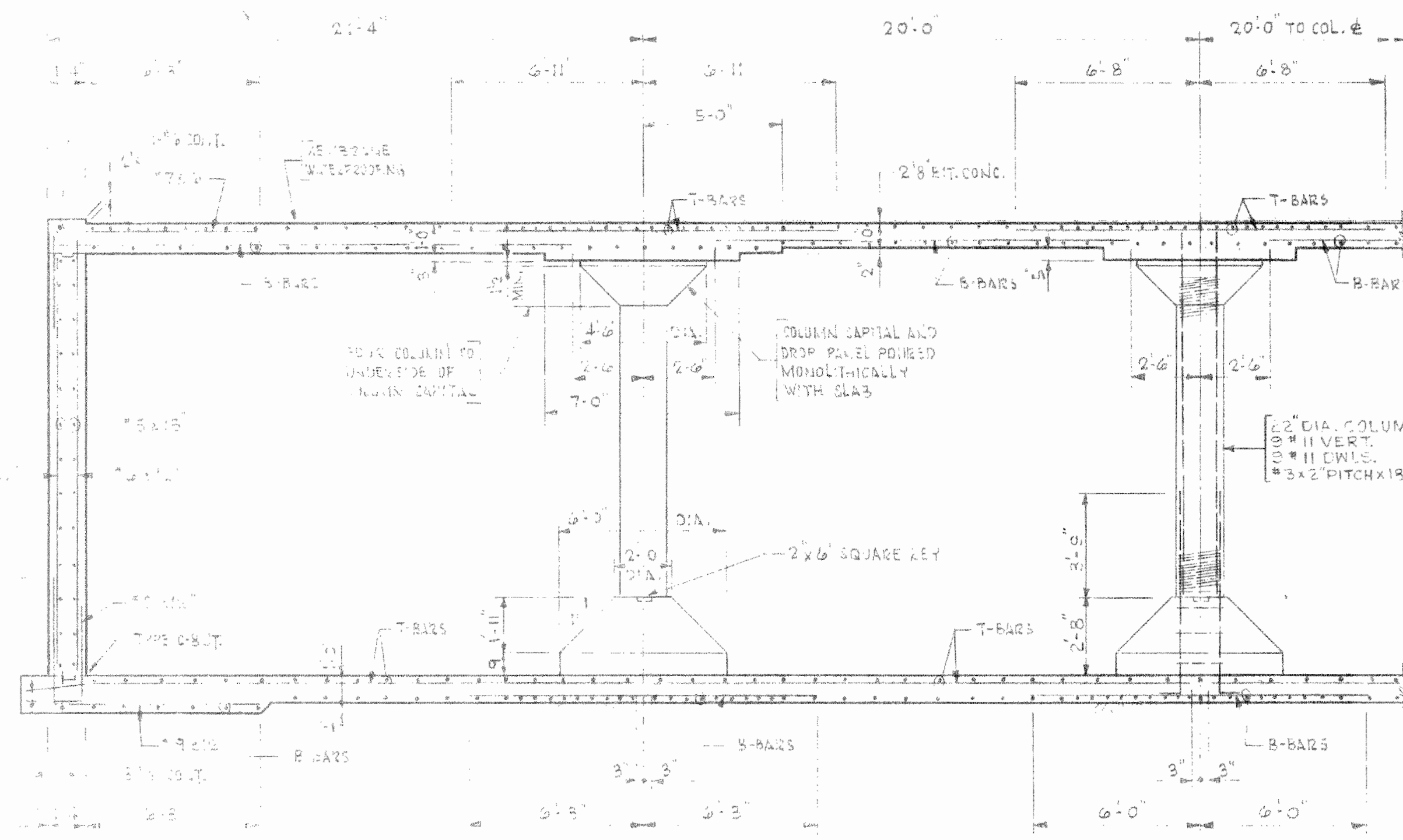
LEGEND:
4-B - 4-STRAIGHT BARS BOTTOM
7-T - 7-STRAIGHT BARS TOP

ORDER OF PLACING REINFORCING:
1. E-W. BOTT. BARS
2. N-S. BOTT. BARS
3. N-S. TOP BARS
4. E-W. TOP BARS
N-S. = NORTH SOUTH DIRECTION
E-W. = EAST WEST DIRECTION

NOTES:
ALL REINFORCING MARKED ADDITIONAL SHALL BE IN ADDITION TO THAT SHOWN IN SECTIONS AND ON SHEET NO. 11.
SEE SHEET NO. 9 FOR ACCESS MANHOLE DETAILS.
SEE MECH. DWGS. FOR SIZE AND LOCATION OF EXH. FAN OPNGS. IN PUMPING STATION WALLS.

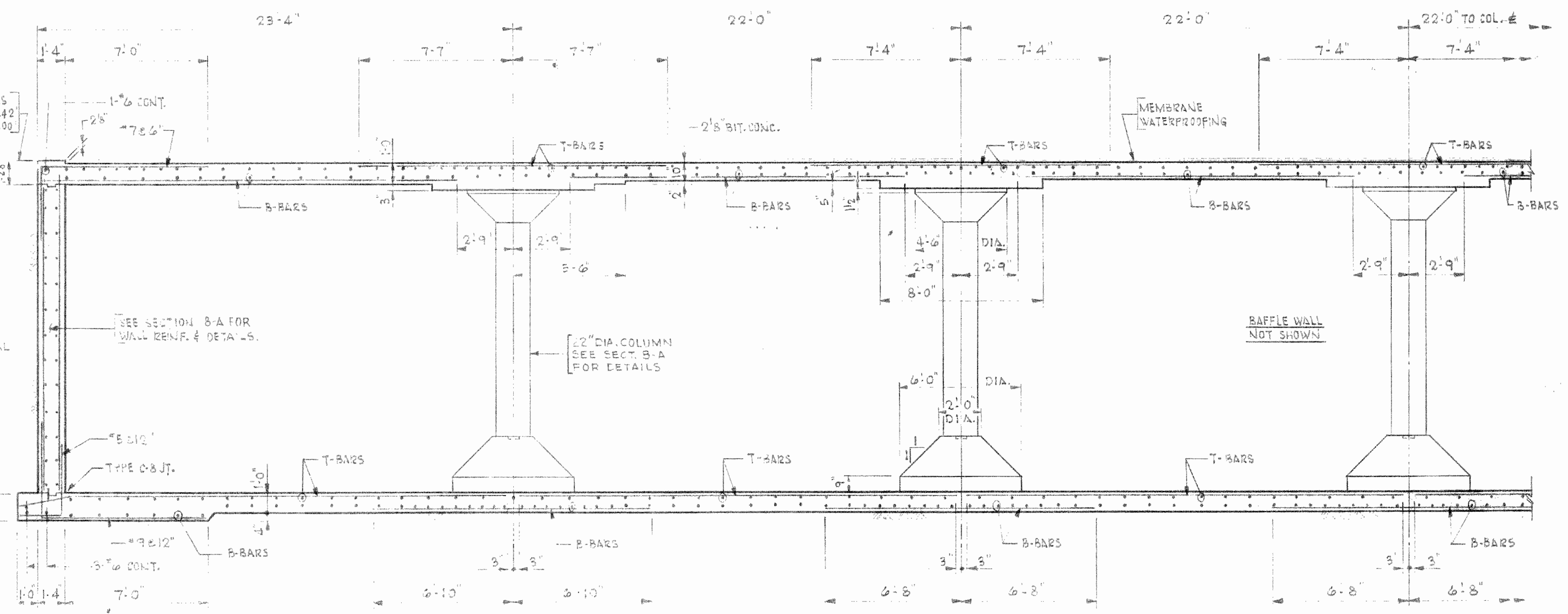
ROOF SLAB PLAN

COUNTY OF LAKE, ILLINOIS VERNON HILLS NEW CENTURY TOWN WATER WORKS IMPROVEMENTS CONTRACT NO. 5		
ROOF SLAB PLAN		
DRAWN BY: J.V.N.	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: 1/8" = 1'-0"
CHECKED BY: M.H.		REVISED: 9-30-72
APPROVED BY: H.W.S.		SHEET NO. 7
		OF 18 SHEETS



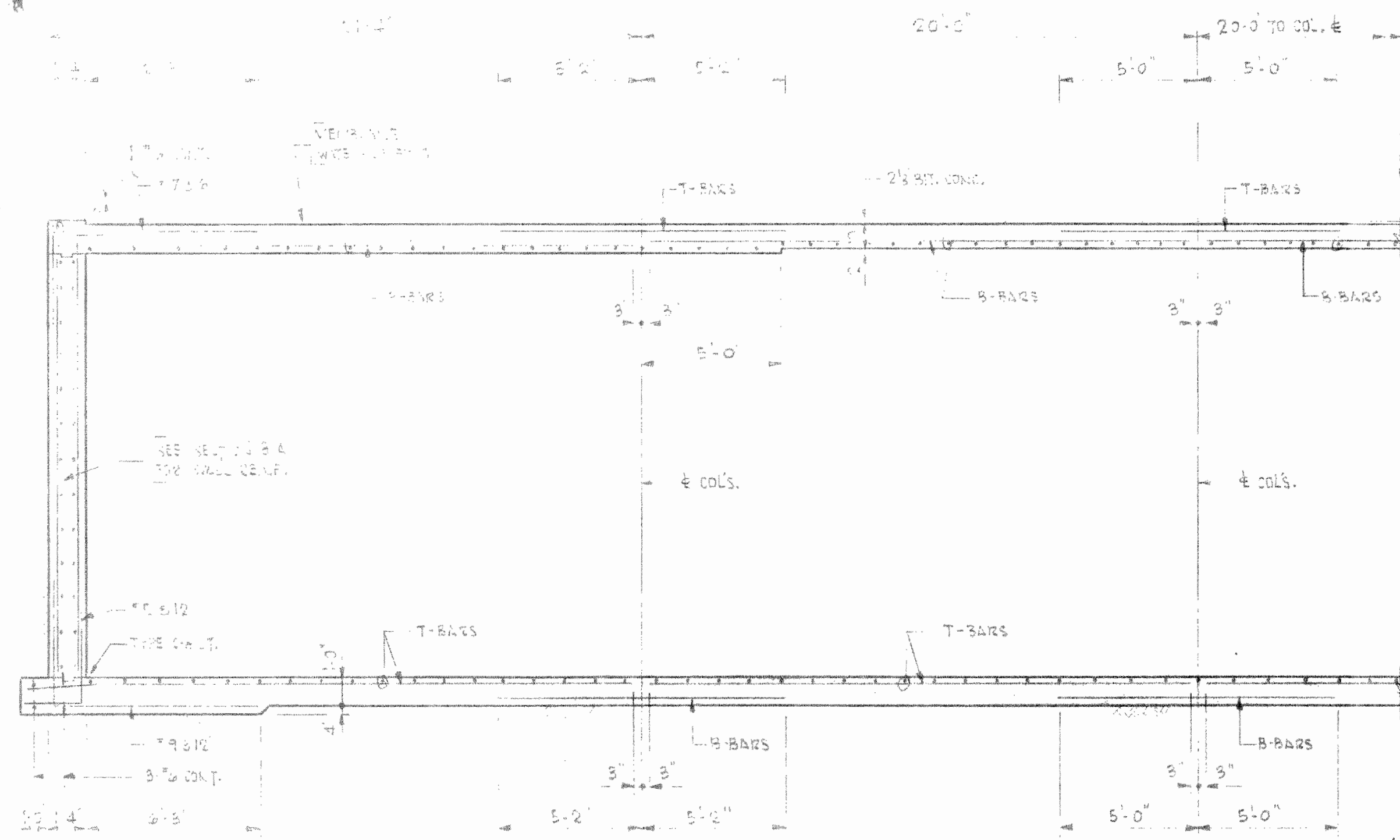
SECTION 8-A

TYPICAL NORTH-SOUTH COLUMN STRIP REINFORCING DETAILS



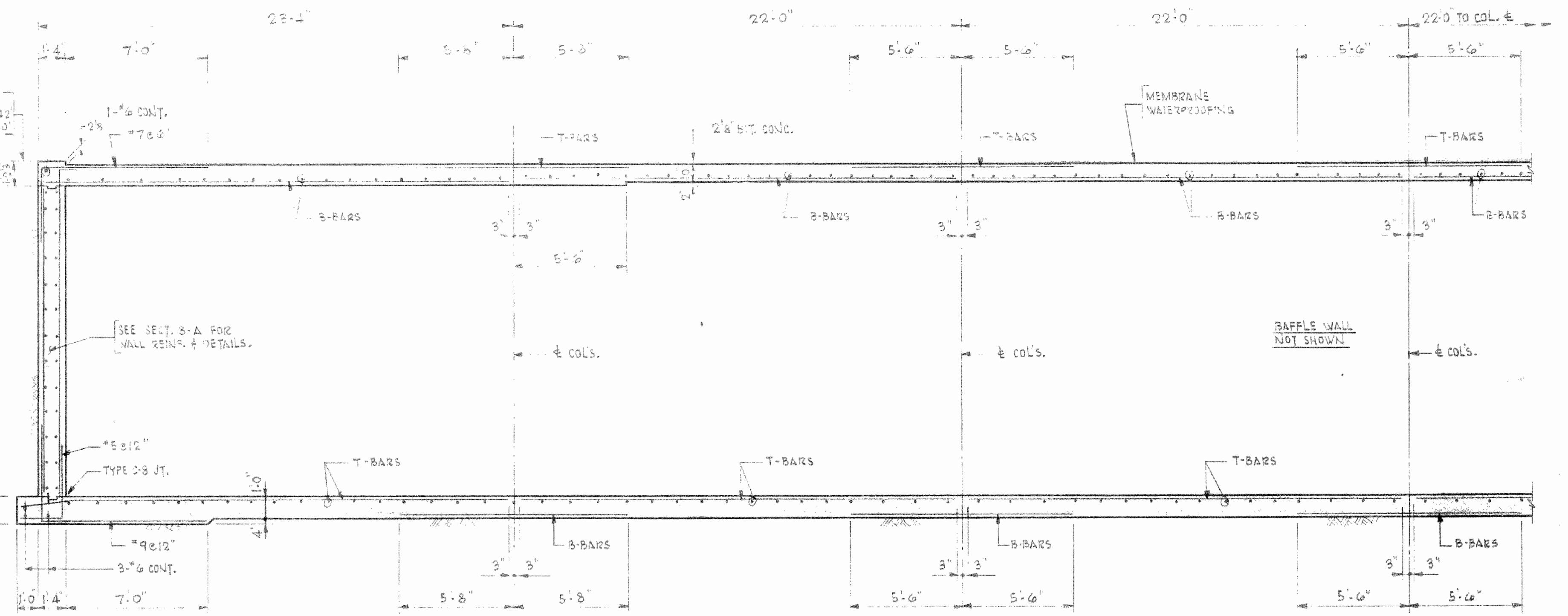
SECTION 8-B

TYPICAL EAST-WEST COLUMN STRIP REINFORCING DETAILS



SECTION 8-C

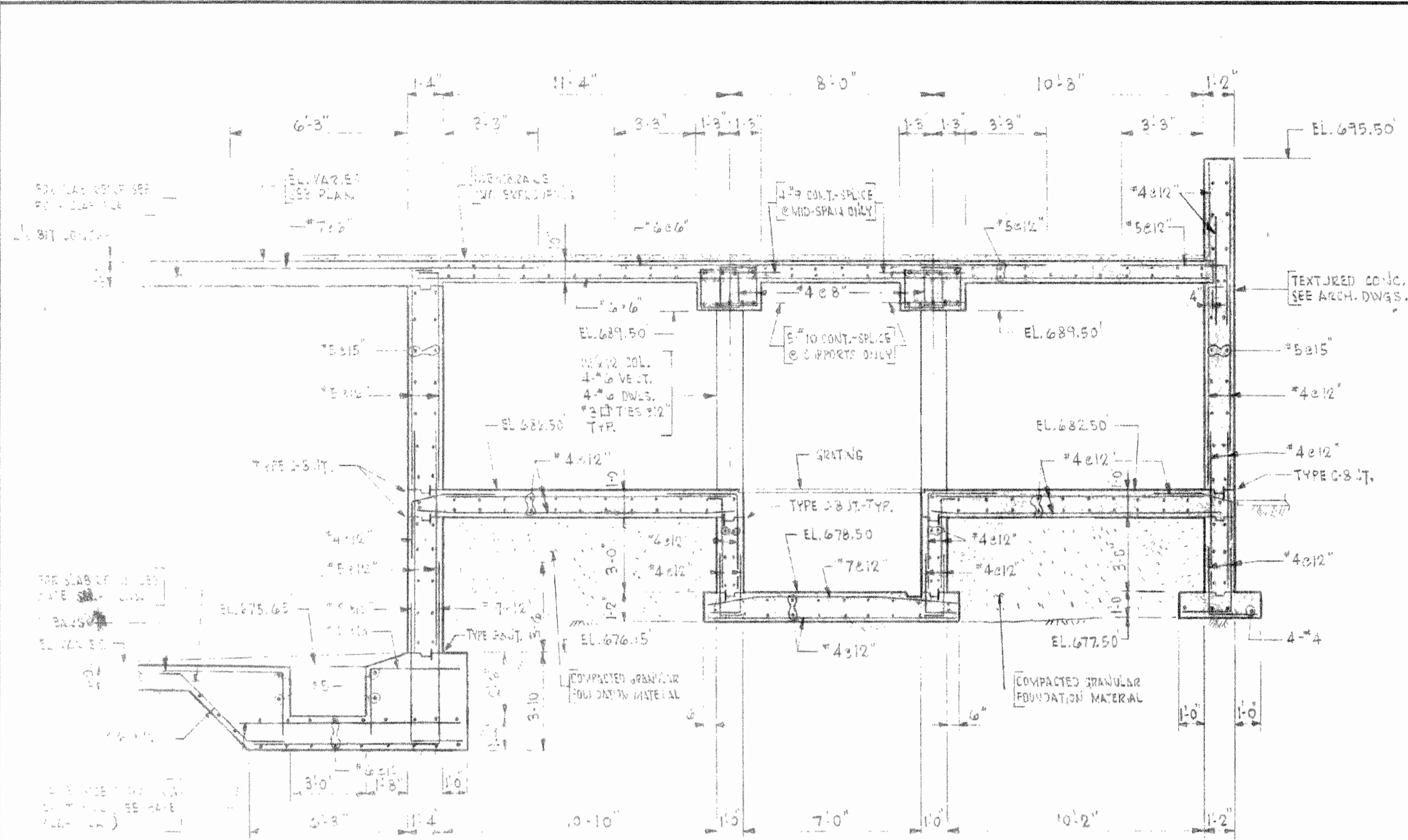
TYPICAL NORTH-SOUTH MIDDLE STRIP REINFORCING DETAILS



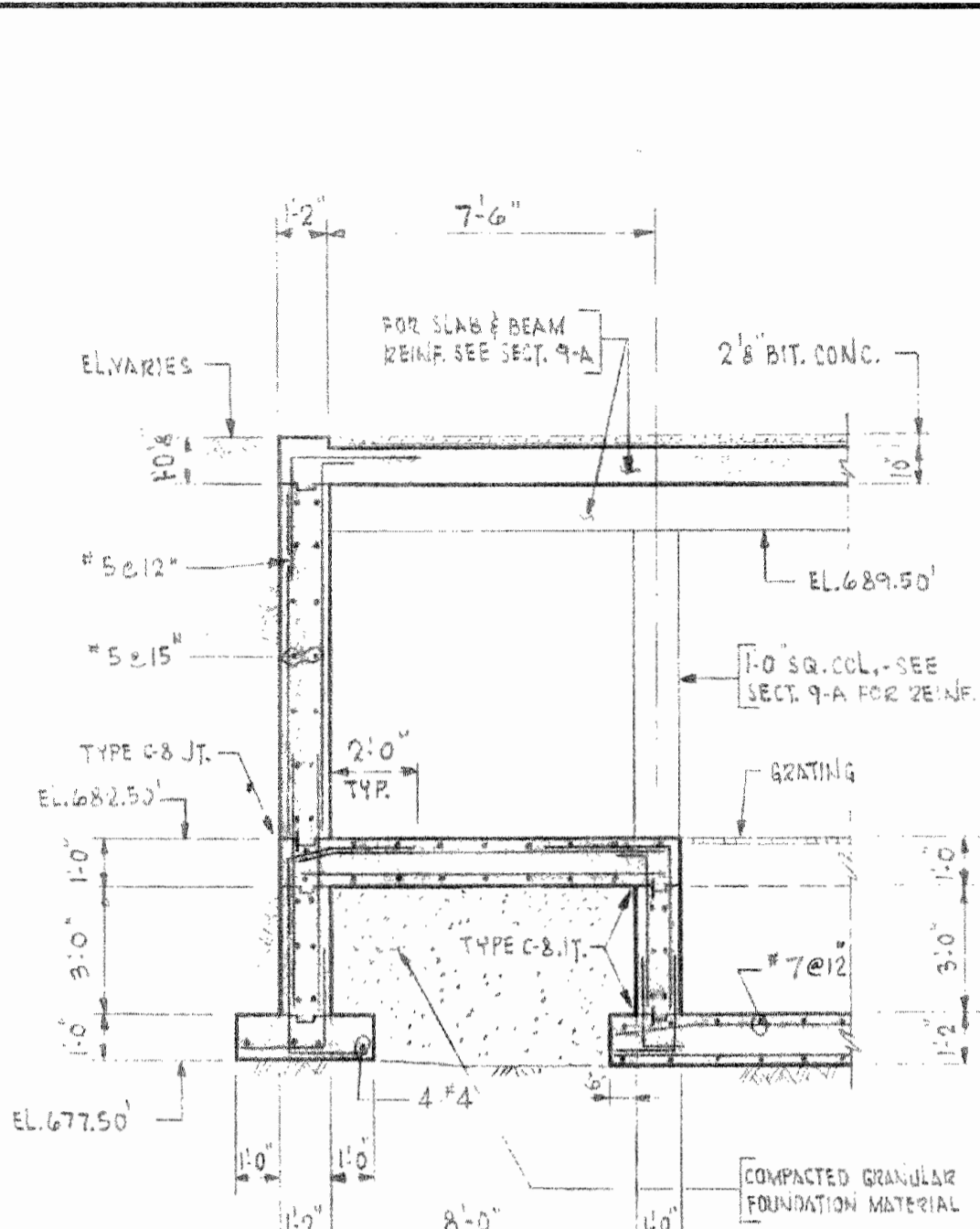
SECTION 8-D

TYPICAL EAST-WEST MIDDLE STRIP REINFORCING DETAILS

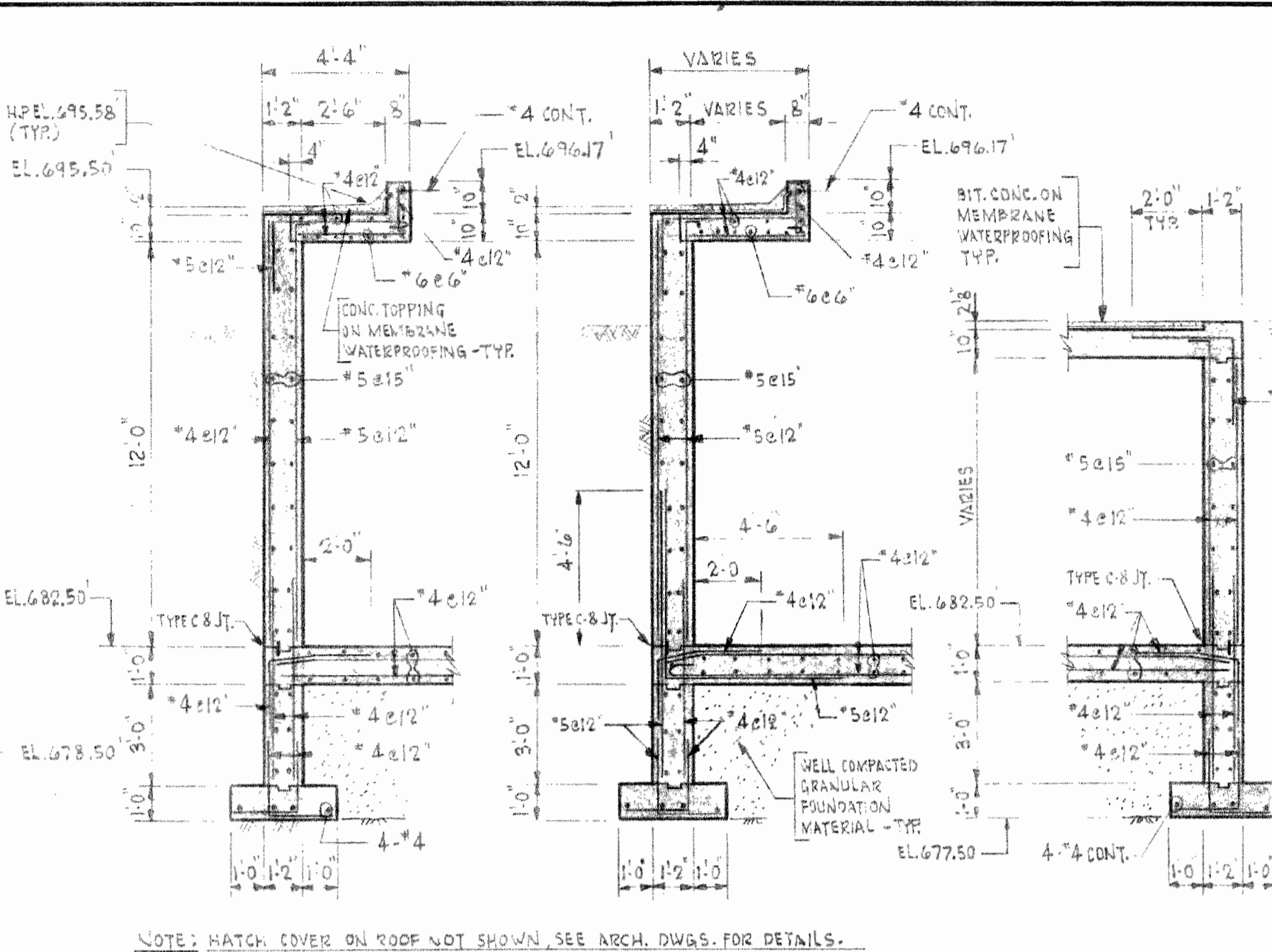
COUNTY OF LAKE, ILLINOIS VERNON HILLS NEW CENTURY TOWN WATER WORKS IMPROVEMENTS CONTRACT NO. 5		
SECTIONS		
DRAWN BY: DATE: CHECKED BY: M.H. APPROVED BY: H.S.	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: 1/4" = 1'-0" REVISED: SHEET NO. 8 OF 18 SHEETS



SECTION 9-A



SECTION 9-B



SECTION 9-C

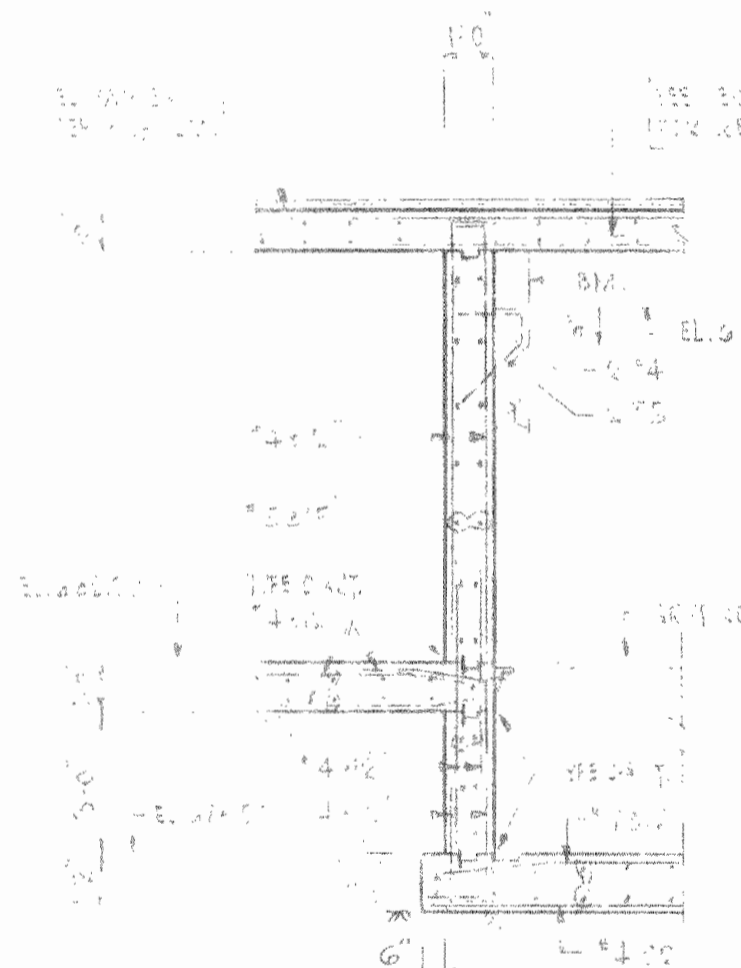
SECTION 9-D

SECTION 9-E

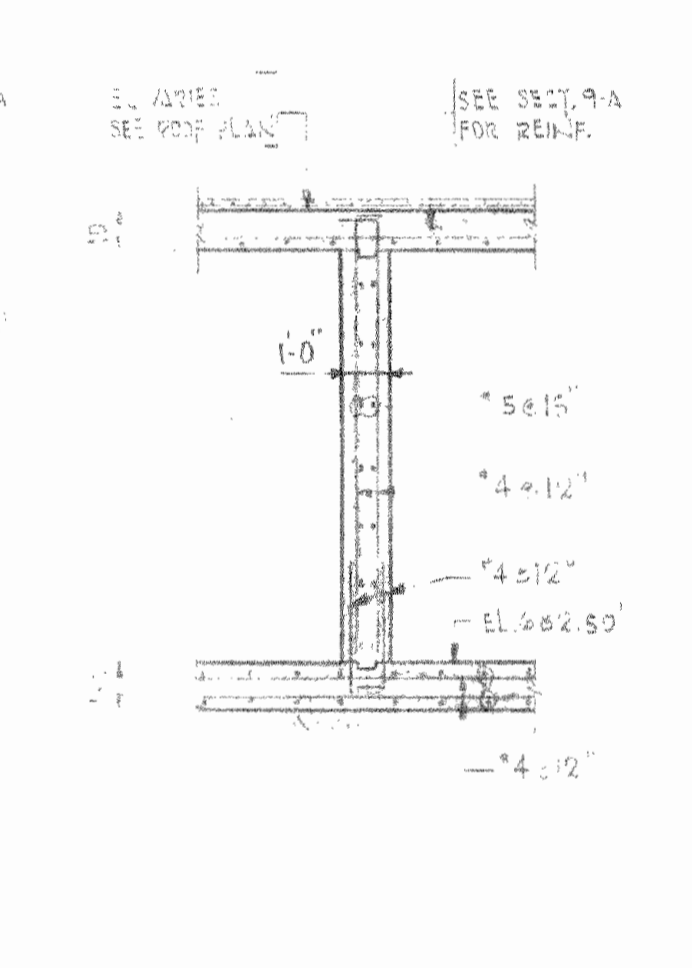
SECTION 9-F

NOTE: HATCH COVER ON ROOF NOT SHOWN, SEE ARCH. DWGS. FOR DETAILS.

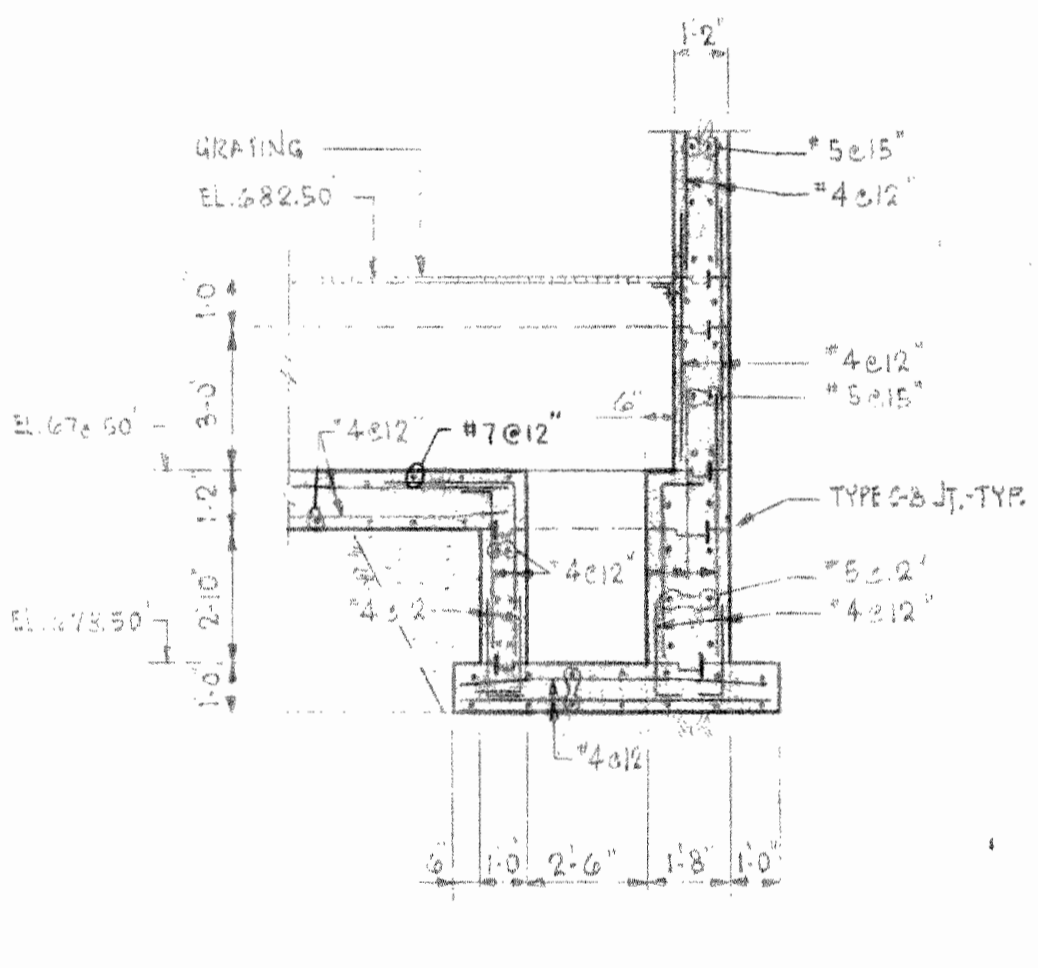
NOTE: ALL REIN. SHOWN TO BE #4@12 UNLESS NOTED OTHERWISE



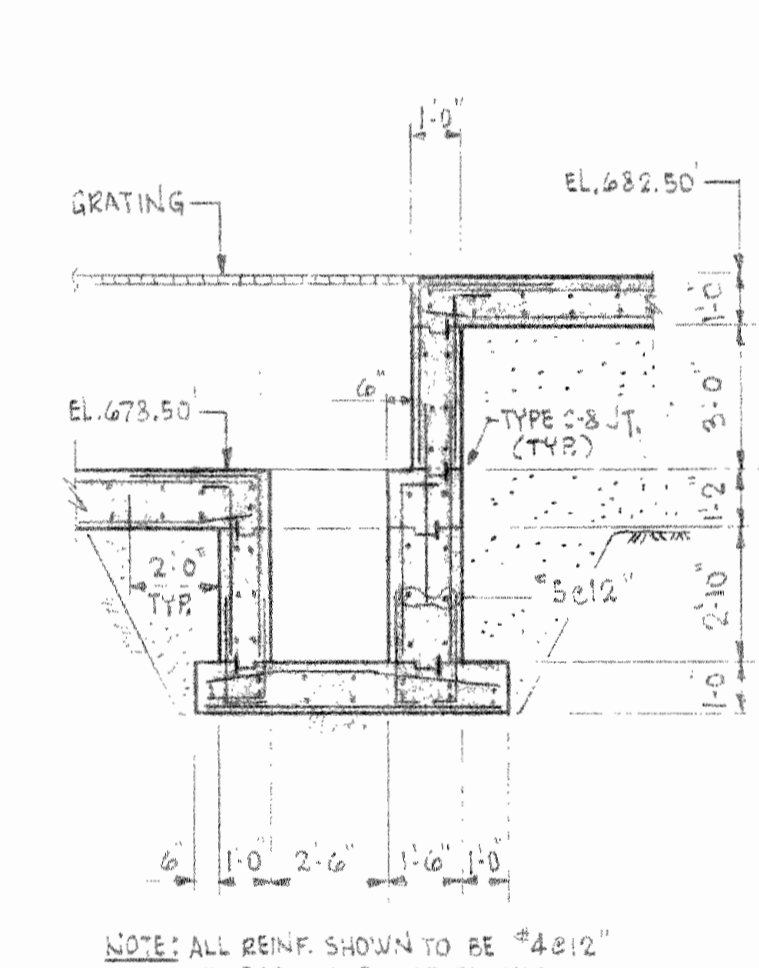
SECTION 9-G



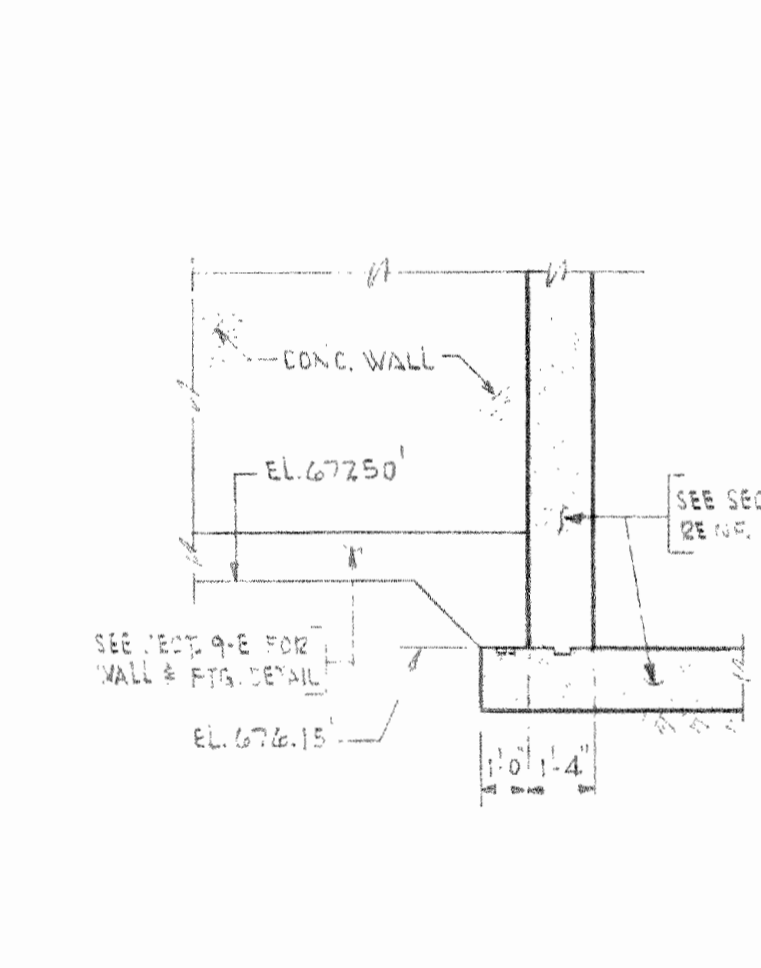
SECTION 9-H



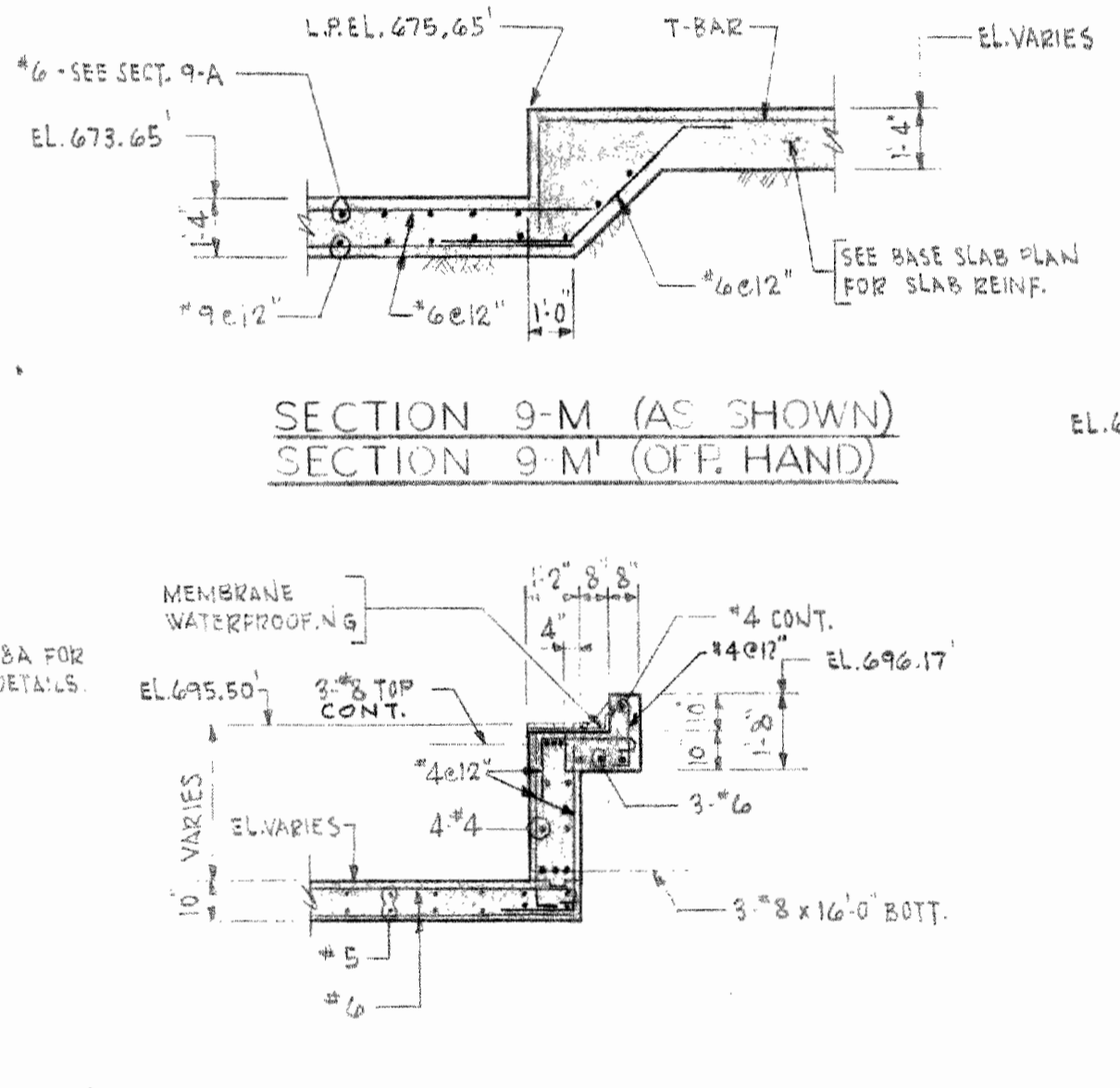
SECTION 9-I



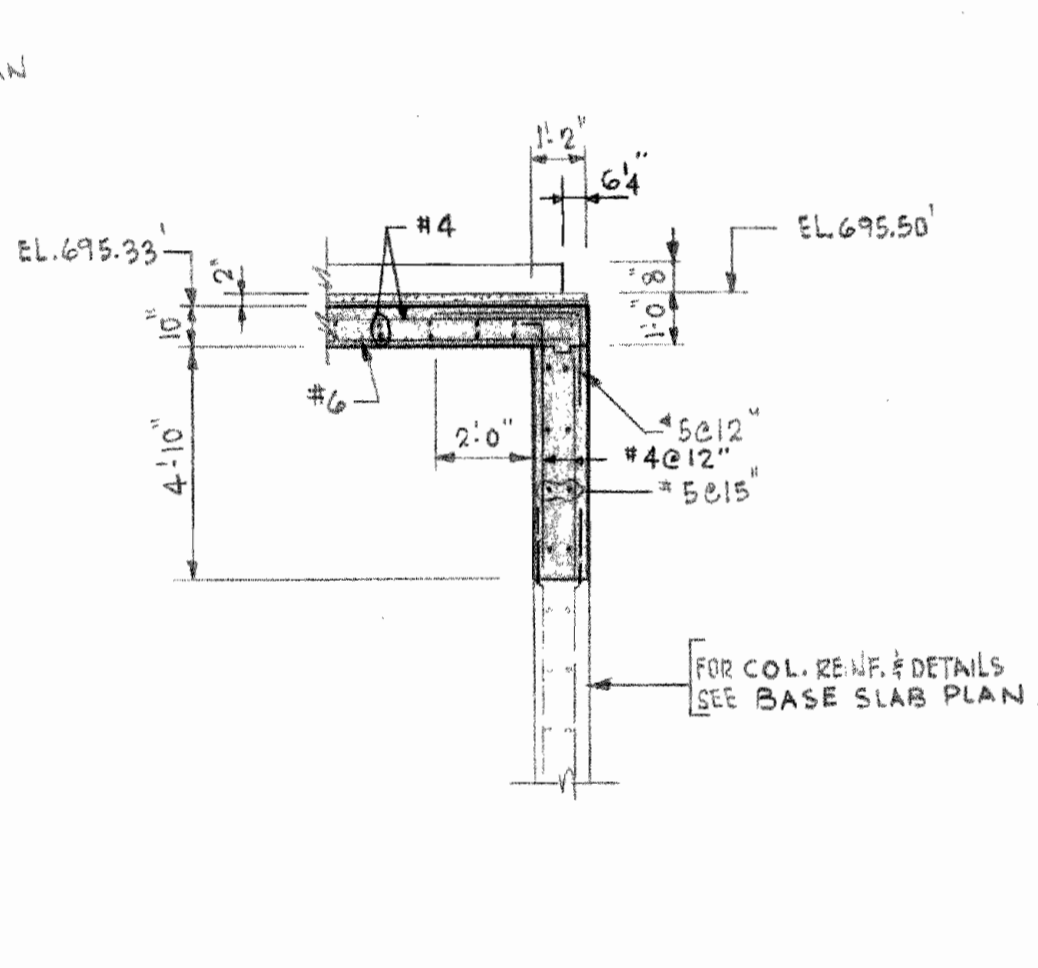
SECTION 9-K



SECTION 9-L (AS SHOWN)
SECTION 9-L' (OPP. HAND)

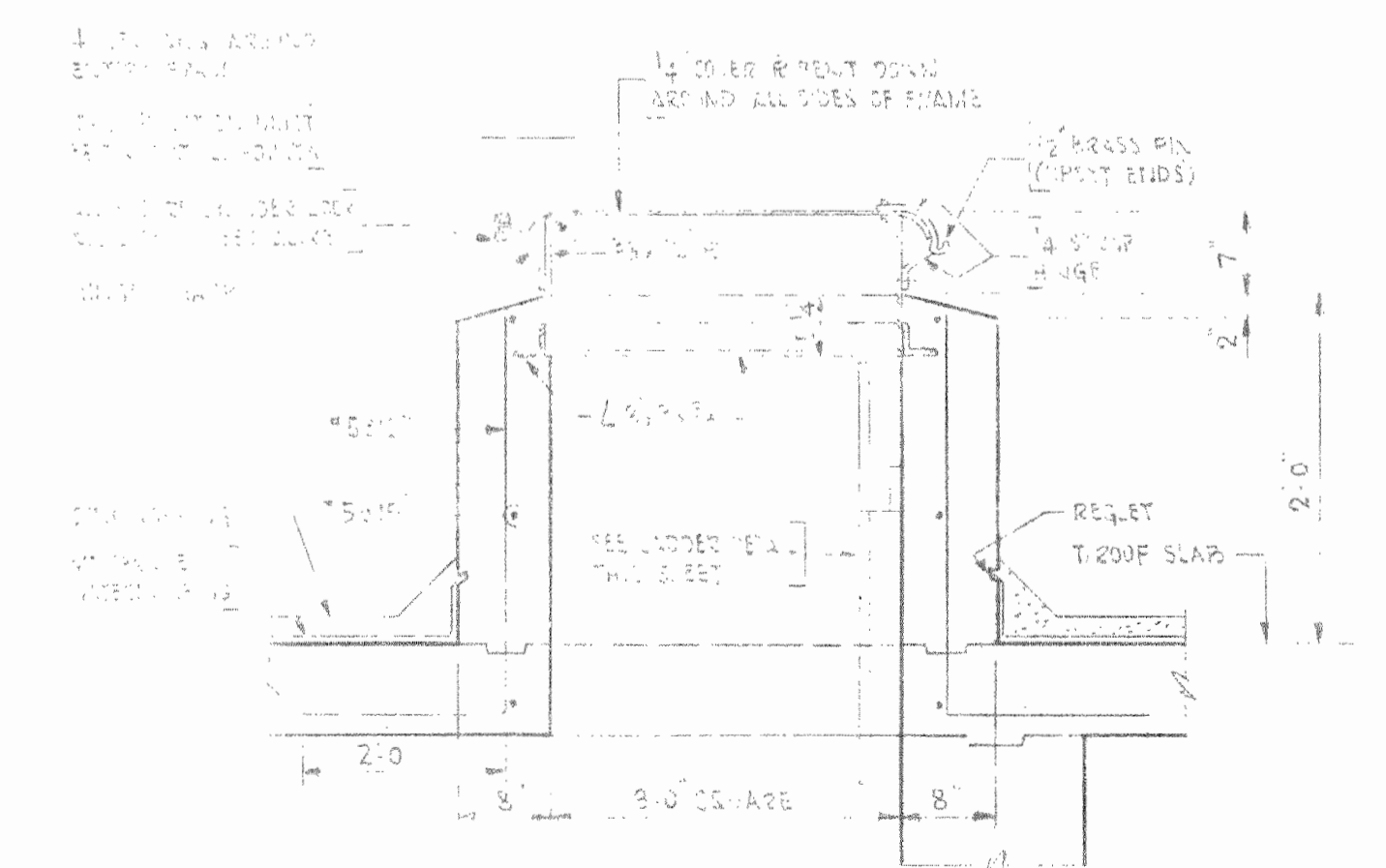


SECTION 9-M (AS SHOWN)
SECTION 9-M' (OFF. HAND)

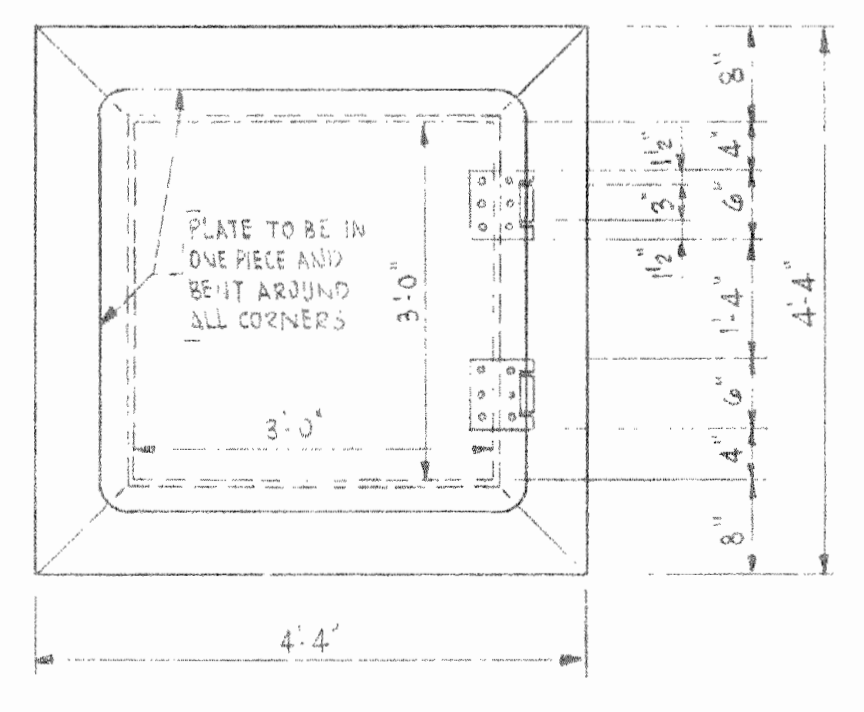


SECTION 9-P

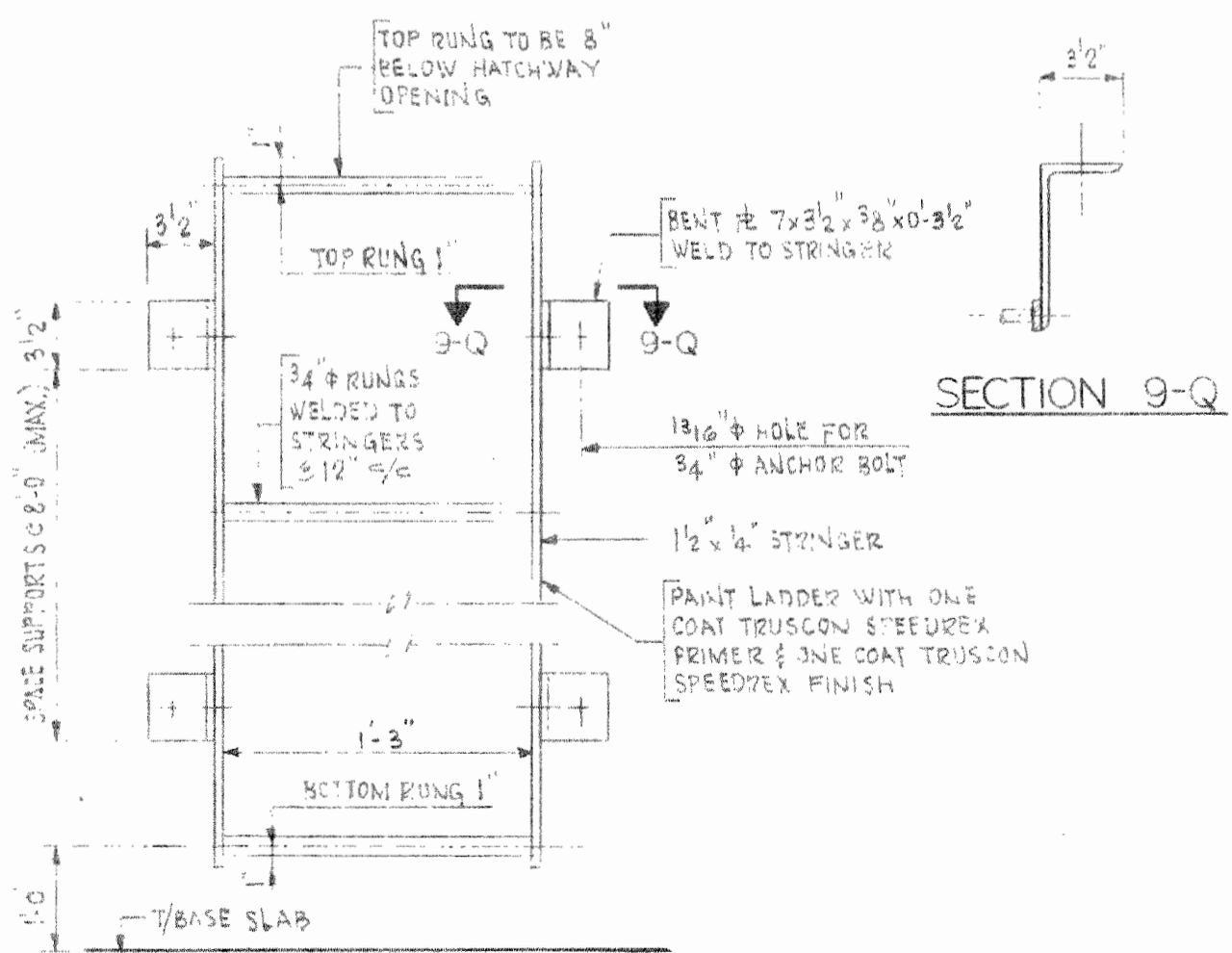
NOTE: ALL REIN. SHOWN TO BE #4@12 UNLESS NOTED OTHERWISE.



SECTION
ACCESS MANHOLE AND FRAME
NO SCALE

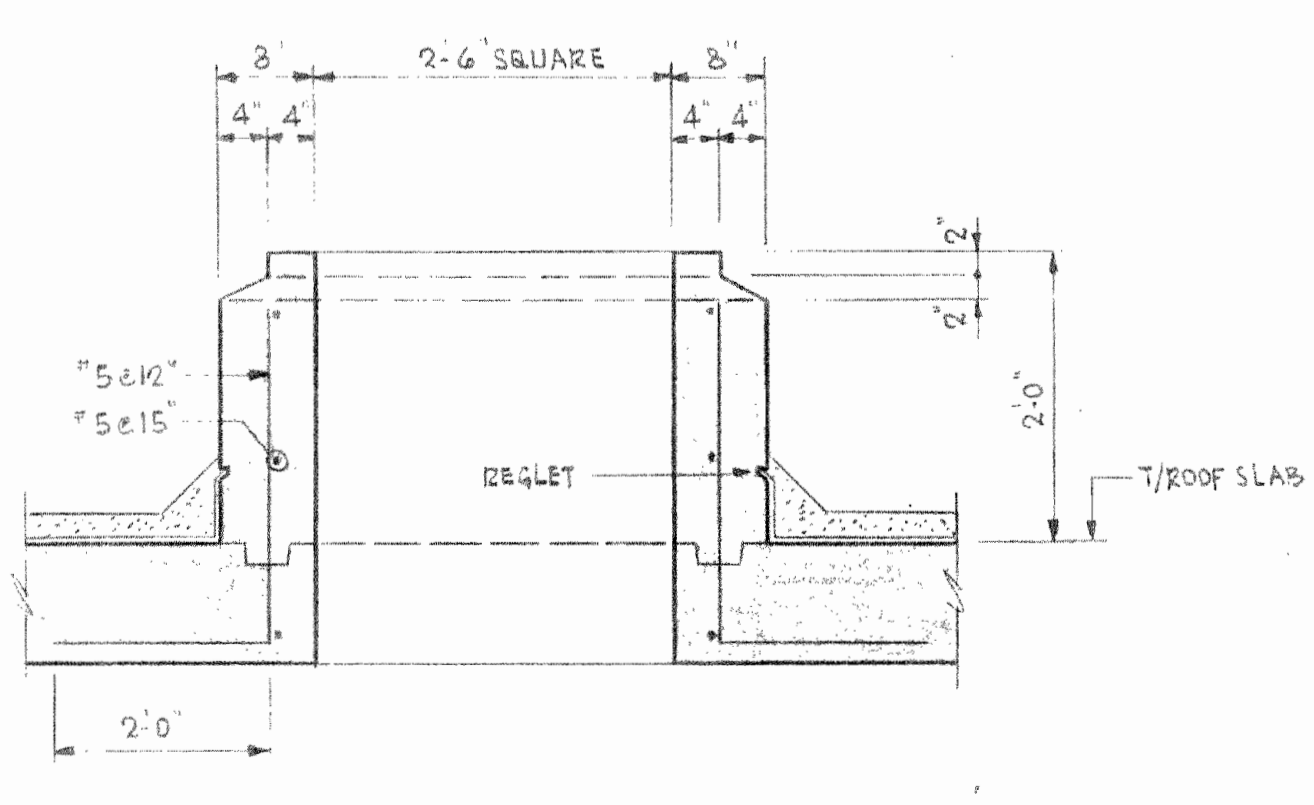


PLAN



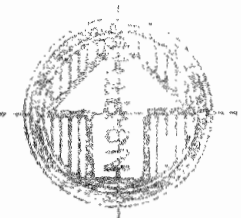
SECTION 9-Q
LADDER DETAIL
NO SCALE

NOTE: ALL BOLTS TO BE CADMIUM PLATED OR GALVANIZED

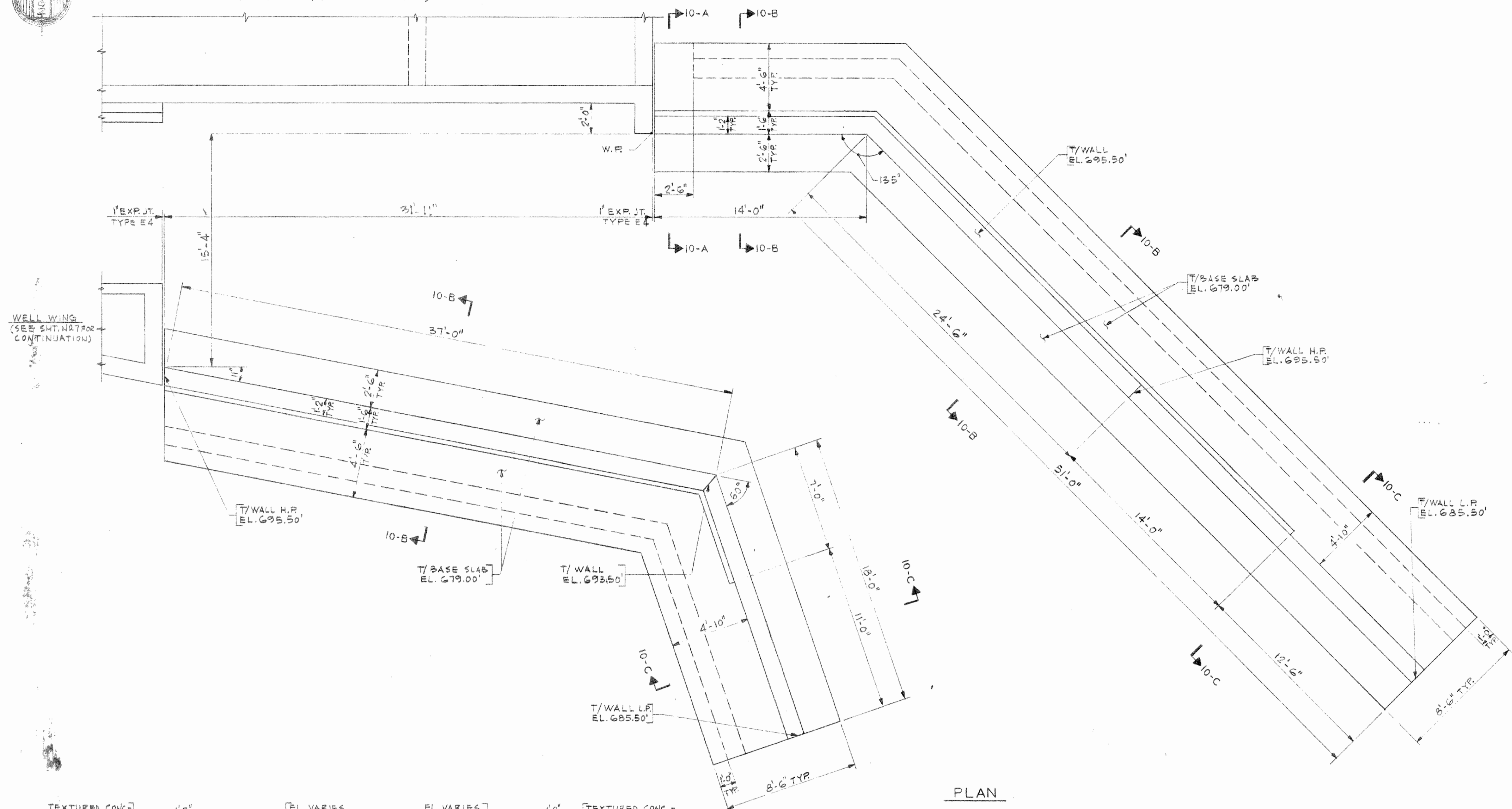


EXHAUST FAN OPENING DETAIL
NO SCALE

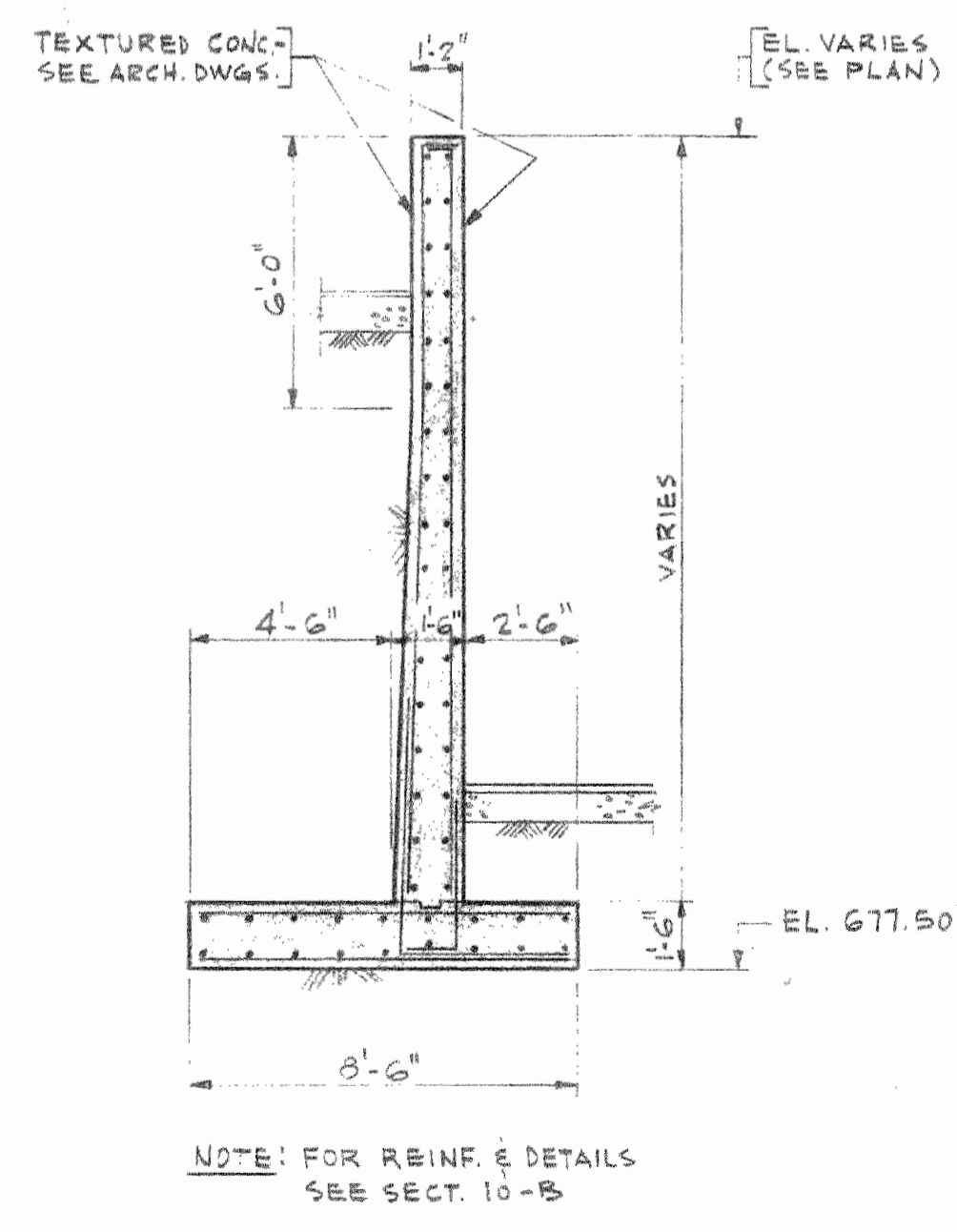
COUNTY OF LAKE, ILLINOIS VERNON HILLS NEW CENTURY TOWN WATER WORKS IMPROVEMENTS CONTRACT NO. 5	
SECTIONS AND DETAILS	
DRAWN BY: J.V.N.	SCALE: 1/4" = 1'-0"
CHECKED BY: M.A.	REVISED:
APPROVED BY: H.A.S.	SHEET NO. 9 OF 18 SHEETS
CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	



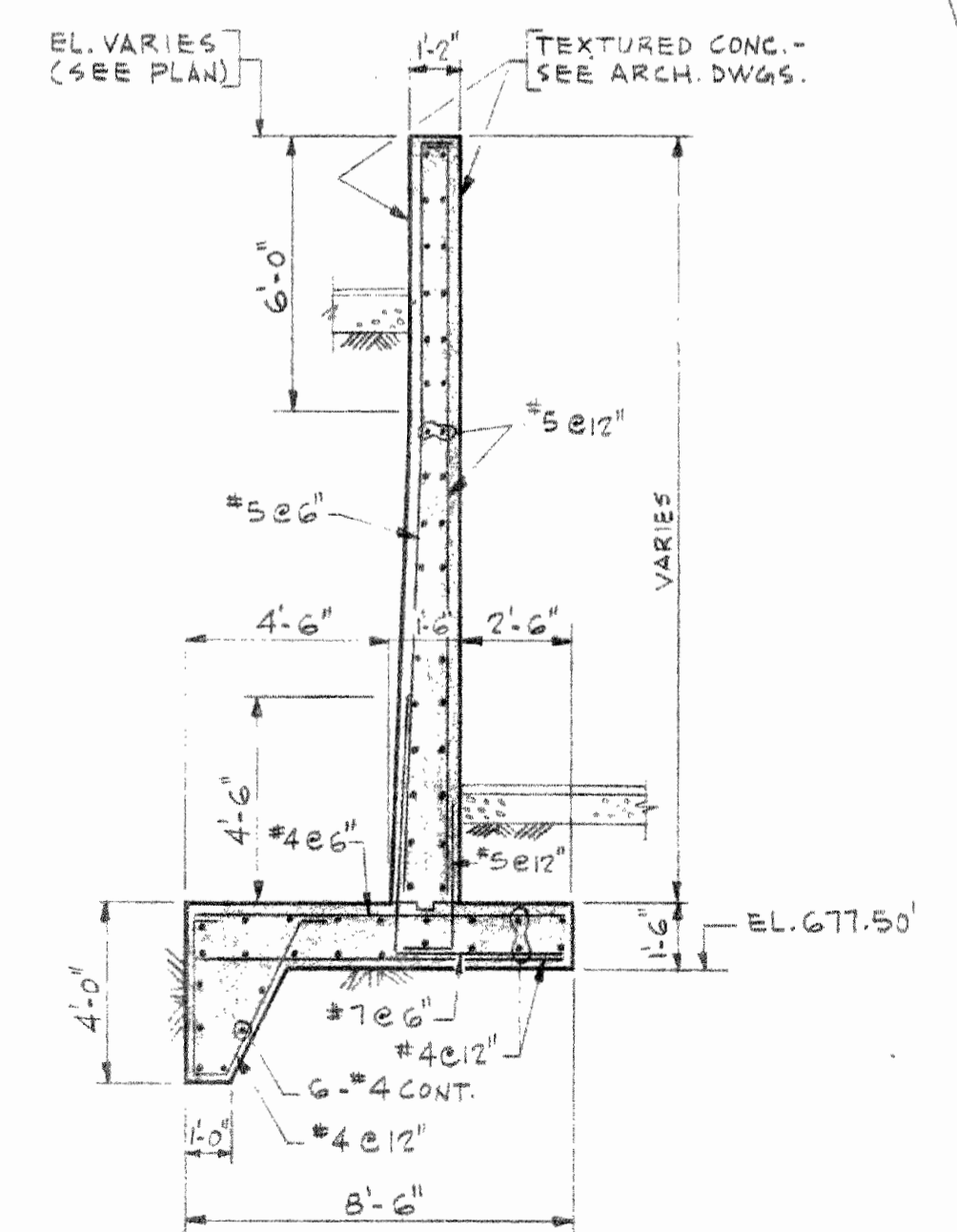
PUMPING STATION
(SEE SHT. NO. 7 FOR CONTINUATION)



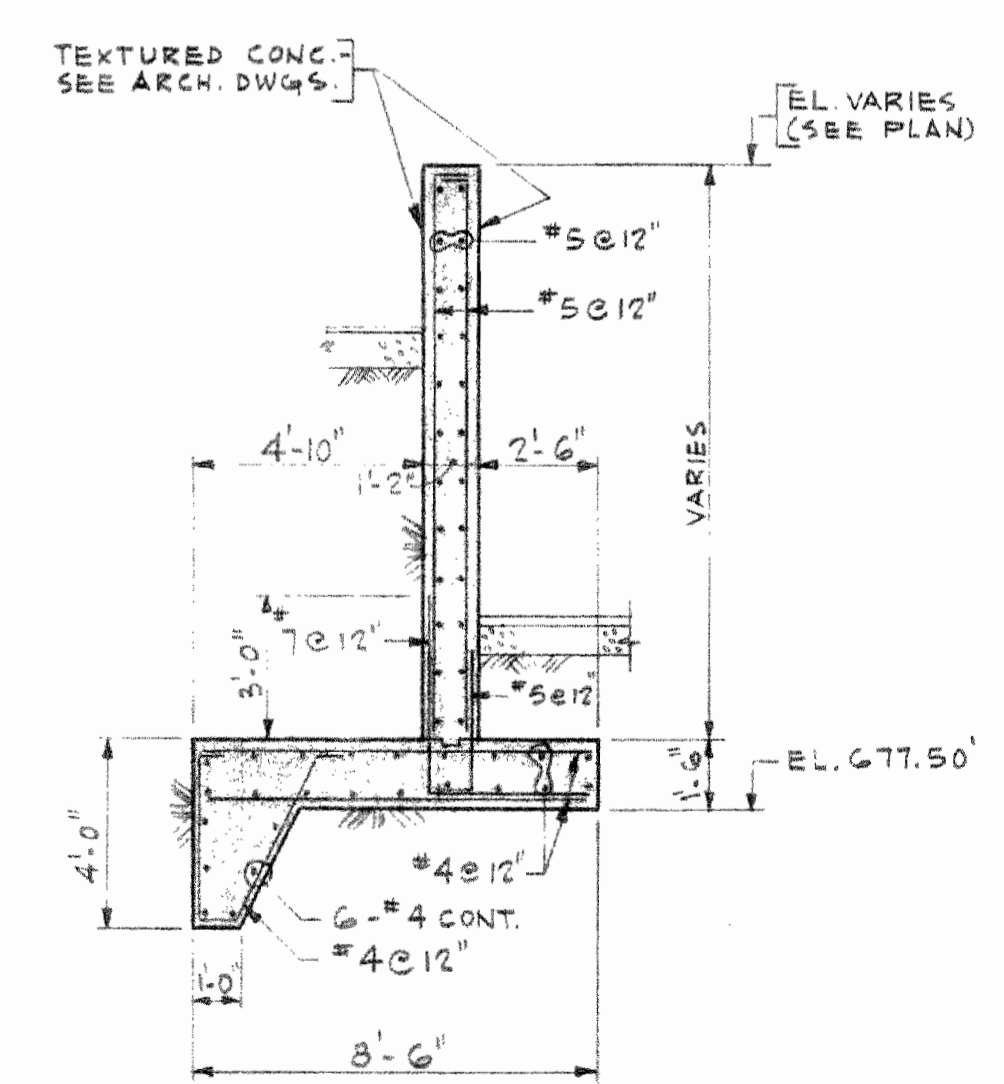
PLAN



SECTION 10-A



SECTION 10-B



SECTION 10-C

NOTE: FOR REINF. & DETAILS
SEE SECT. 10-B

COUNTY OF LAKE, ILLINOIS VERNON HILL NEW CENTURY TOWN WATER WORKS IMPROVEMENTS CONTRACT NO. 18		
RETAINING WALLS - PLAN & SECTIONS		
DRAWN BY: V.P.	CONSOR, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: 1/4" = 1'-0"
DATE: M.A.		REVISED:
CHECKED BY: M.A.		SHEET NO. 10
APPROVED BY: H.M.S.		OF 18 SHEETS

GENERAL NOTES FOR STRUCTURES

CONCRETE
 DESIGN AND CONSTRUCTION SHALL CONFORM TO THE LATEST BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE OF THE AMERICAN CONCRETE INSTITUTE.
 ALL REINFORCING BARS SHALL BE 60,000 PSI YIELD STRENGTH HOT ROLLED STEEL BILLET STEEL SPALLS SHALL BE COLD WEATHERED.
 ARRANGEMENT AND DETAILS OF REINFORCING STEEL INCLUDING BAR SUPPORTS AND SPACERS SHALL BE IN ACCORDANCE WITH THE LATEST A.C.I. DETAILING MANUAL.
 ALL 5 BAR 6" DIA. BEAM REINFORCING SHALL HAVE A MINIMUM 2" EXTENSION AT THE SUPPORT IN ACCORDANCE WITH THE LATEST A.C.I. DETAILING MANUAL. IF NOT POSSIBLE BARS SHALL BE LAPED IN STANDARD MANNER.
 HORIZONTAL WALL REINFORCEMENT AND GENERAL REINFORCEMENT SHALL LAP A MINIMUM OF 2 BAR DIAMETERS AT ALL DOVELL, COLUMN AND WALL BAR EXTENSIONS AND ALL SPICES SHALL BE DOVELLED TO THE MINIMUM BAR DIAMETERS UNLESS OTHERWISE SPECIFIED.
 UNLESS OTHERWISE SHOWN, THE REINFORCEMENT SHALL BE AS FOLLOWS:
 SLABS: TOP AND BOTTOM OF FORMED SURFACES SHALL BE IN CONTACT WITH SURFACES IN CONTACT WITH BOTTOM OF SLABS ON FILL.
 FOOTINGS: TOP AND BOTTOM
 WALLS: LESS THAN 12" THICK 12" OR OVER IF THICKNESS WITHIN 10 FEET HIGH 12" OR OVER IF THICKNESS WITHIN 10 FEET HIGH
 BEAMS AND GIRDS: MINIMUM COVER AT TOP AND BOTTOM OF REINFORCEMENT
 TIED COLUMNS: MINIMUM COVER FOR VERTICAL BARS
 SPIRAL COLUMNS: MINIMUM COVER FOR SPIRAL

UNLESS OTHERWISE NOTED, TEMPERATURE STEEL SHALL BE AS FOLLOWS:
 UP TO 5" SLAB - 4 # AT 12"
 5" TO 8" SLAB - 4 # AT 12"
 8" TO 10" SLAB - 4 # AT 12"
 HORIZONTAL CONSTRUCTION JOINTS SHOWN OR NOTED SHALL BE RECOMMENDED. ANY DEVIATION FROM THOSE SHOWN SHALL BE APPROVED BY THE ENGINEER.
 ANY STOP IN FRAMED CONCRETE WORK SHALL BE APPROVED BY THE ENGINEER. REINFORCING SHALL EXTEND THROUGH THESE JOINTS TO MAINTAIN CONTINUITY.
 ALL EXPOSED EDGES OF BEAMS, COLUMNS, SHAFTS AND WALLS SHALL BE CHAMFERED 3" UNLESS OTHERWISE NOTED.
 REFER TO HYDRAULIC, MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL SLEEVES, PIPES, CONDUITS AND MISCELLANEOUS PENETRATIONS TO BE INCORPORATED IN THE CONSTRUCTION.
 CONCRETE WALLS AND PARTITIONS SHALL BE POURED IN MAXIMUM 8' TO 10' FT BETWEEN VERTICAL CONSTRUCTION JOINTS.
 USE TYPE C.B. JOINT FOR VERT. CONSTR. JOINTS IN WALLS WHICH SEPARATE FROM PERMANENTLY DRY AREAS SUCH AS TUNNELS, GALLERIES, BASEMENT ROOMS, ETC. USE TYPE C.G. JOINT AT ALL OTHER CONSTRUCTION JOINTS UNLESS OTHERWISE SPECIFICALLY NOTED ON DRAWINGS.
 WHERE ONE WAY SLABS RUN PARALLEL WITH BEAMS OR WALLS, THEY SHALL OVER THESE BEAMS OR WALLS AT RIGHT ANGLES TO SAME.
 * DIMENSIONS NOTED THUS TO BE DETERMINED BY EQUIPMENT MANUFACTURER.
 COLUMNS SHALL HAVE DOWELS FROM FOUNDATIONS OR CONSTRUCTION BELOW TO MAINTAIN A SPACING AS COLUMN VERTICAL STEEL. SEE COLUMN SCHEDULE.

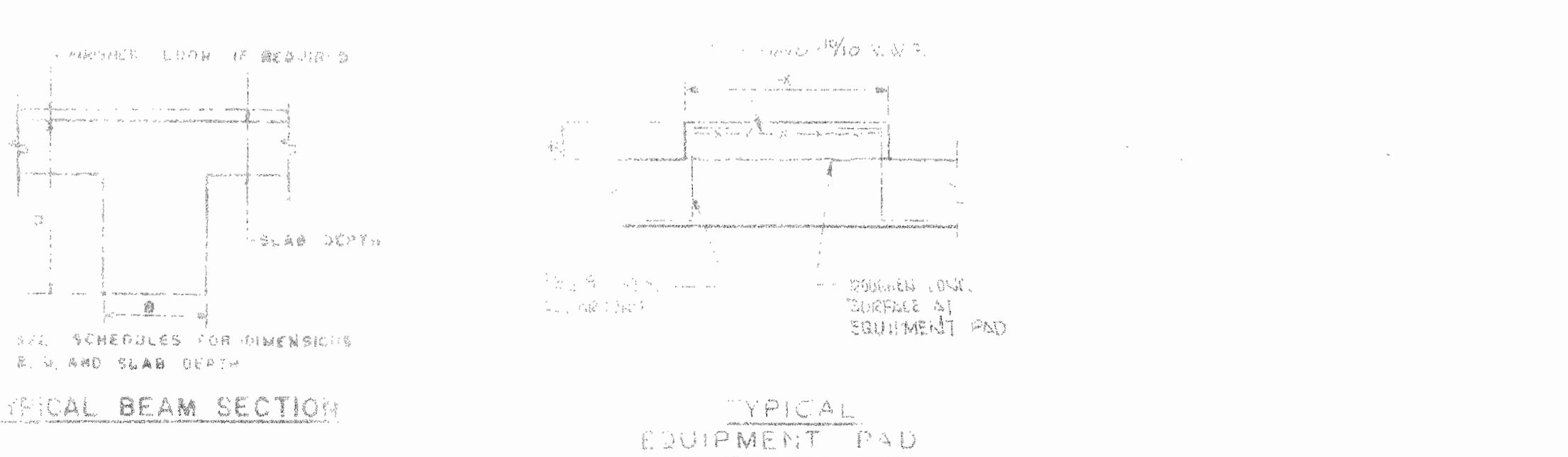
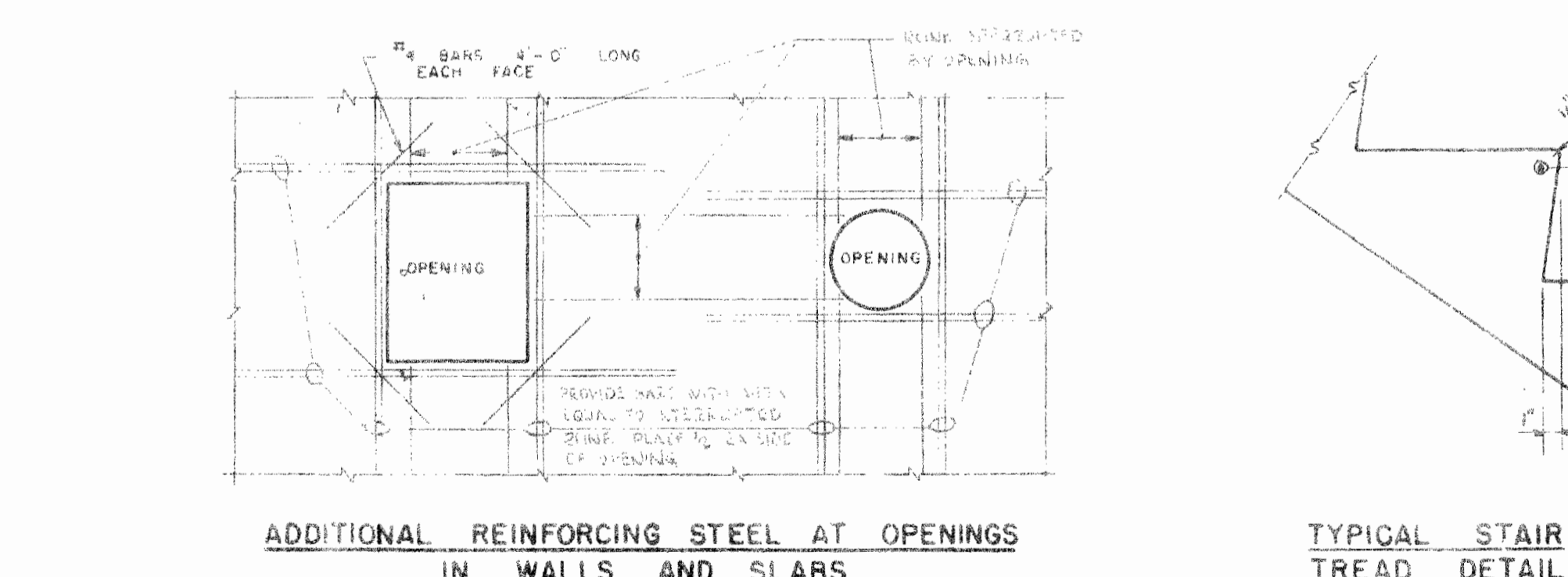
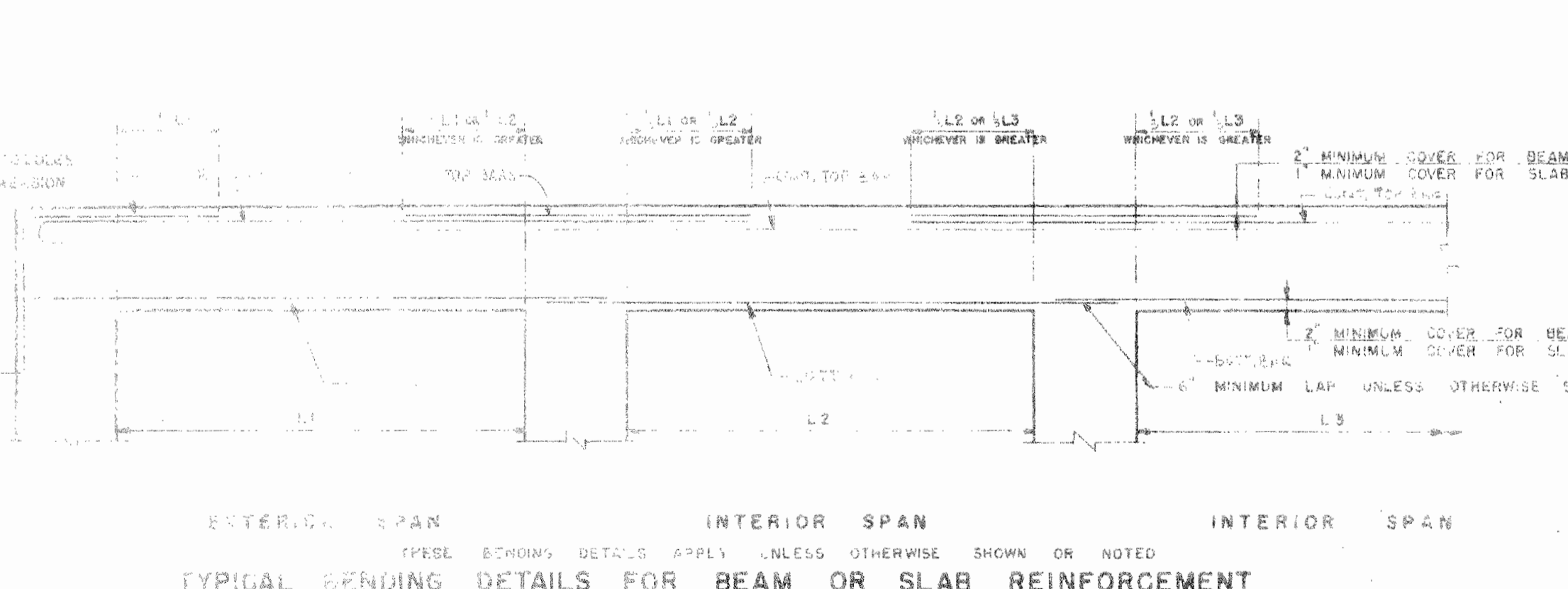
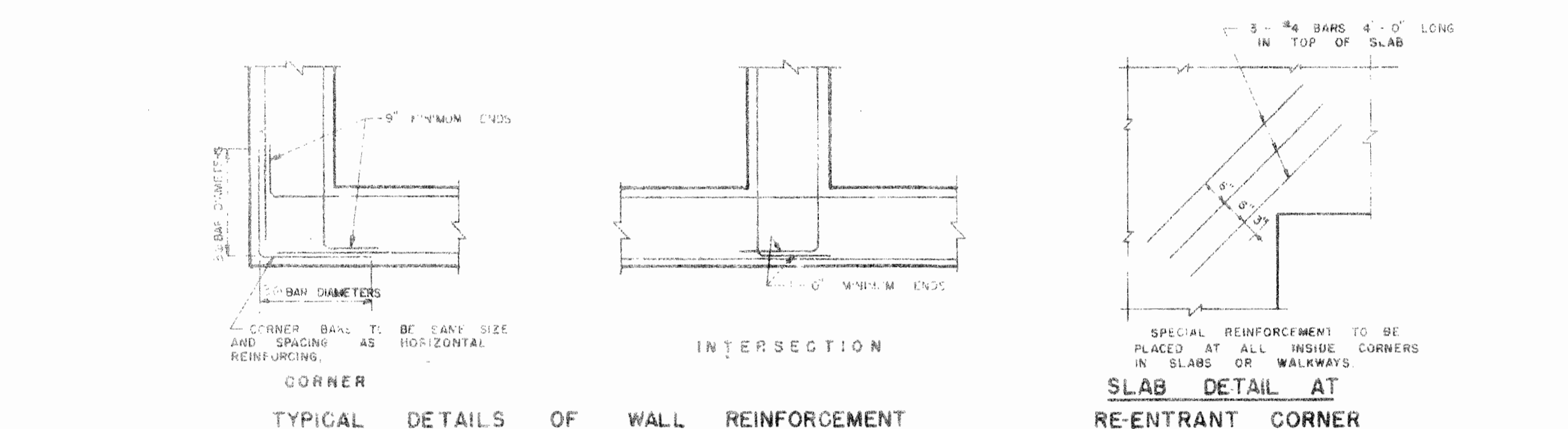
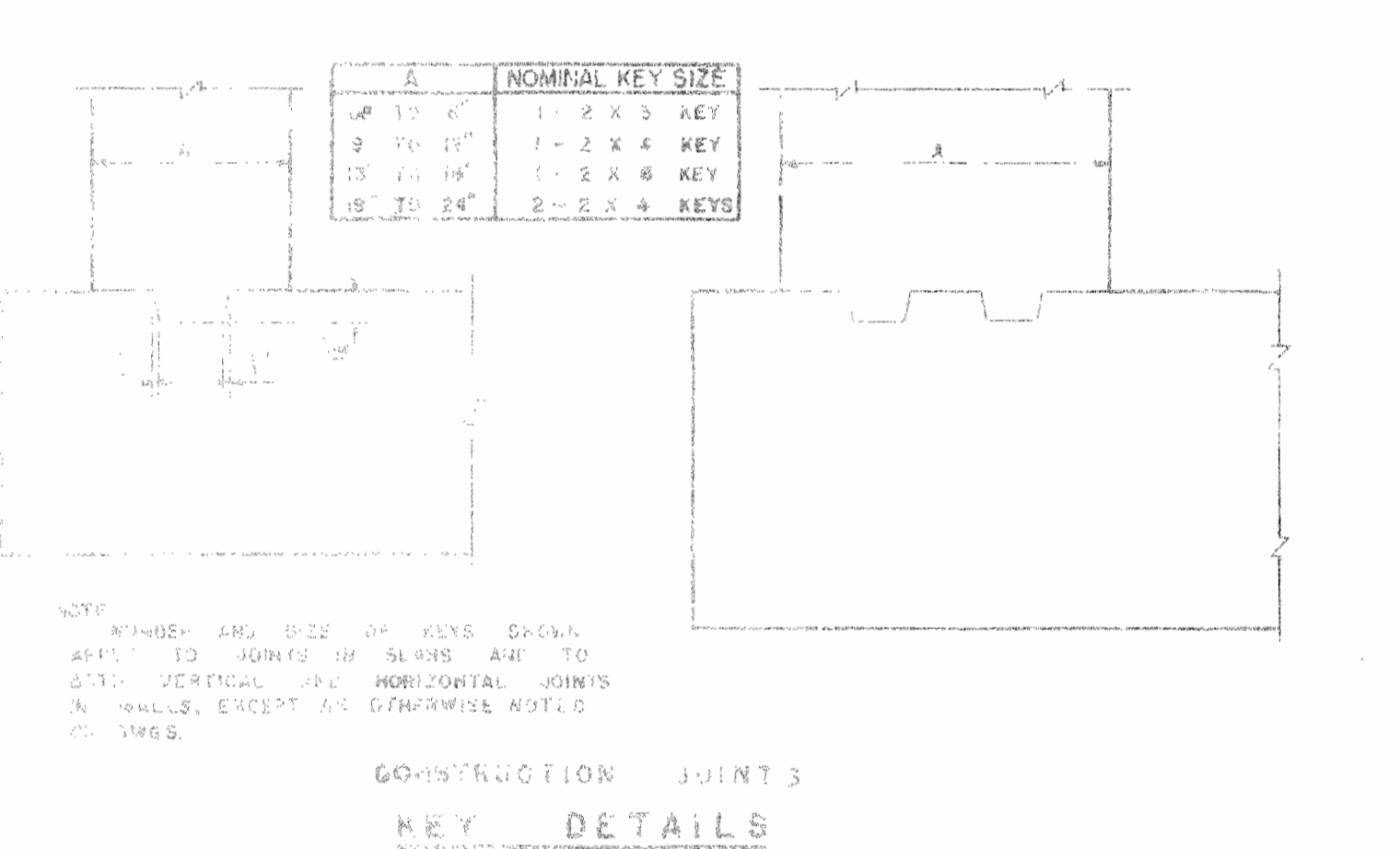
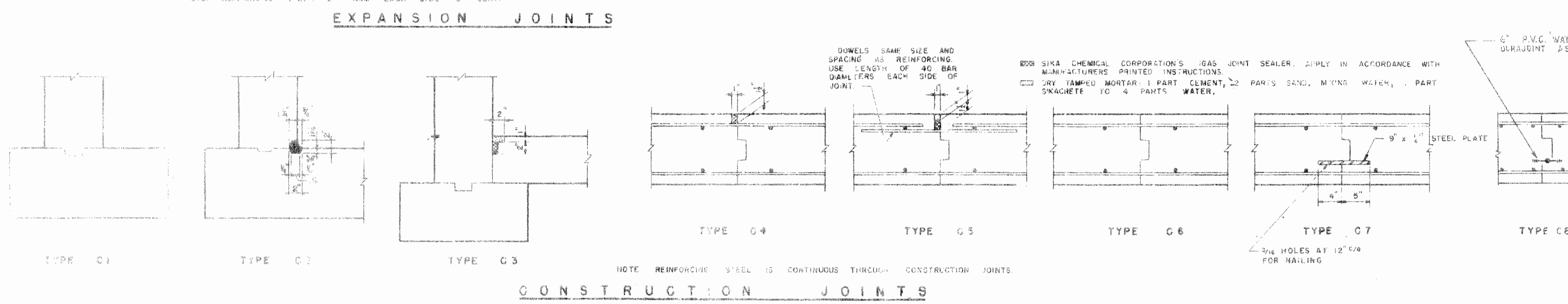
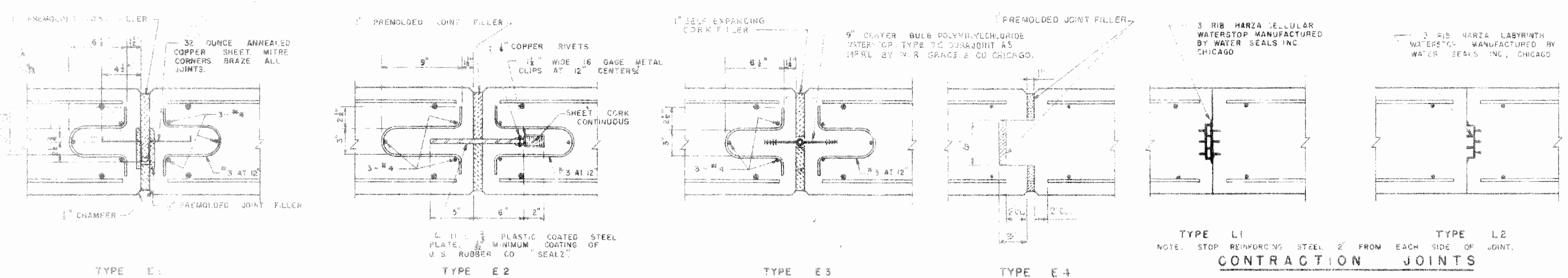
STRUCTURAL STEEL
 STRUCTURAL STEEL SHALL CONFORM TO THE LATEST A.C.I. SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL PLATE BUILDINGS.
 ELEVATIONS OF STEEL BEAMS SHALL SHOW ON FRAMING PLANS, SECTION TOP OF FLANGE, UNLESS OTHERWISE NOTED.
 FIELD CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH THE LATEST SPECIFICATION OF THE AMERICAN WELDING SOCIETY.
 ALL WELDING SHALL CONFORM TO THE LATEST SPECIFICATION OF THE AMERICAN WELDING SOCIETY.
 LOOSE UNITS SHALL BE SEAL WITH MINIMUM OF 5" OR WELDED UNLESS OTHERWISE NOTED.
 WALL BEARING BEAMS SHALL HAVE STANDARD ANGLE WALL ANCHORS UNLESS OTHERWISE NOTED.

FOUNDATION
 ALL OPEN TANKS AND FLUMES SUPPORTED ON SOIL SHALL BE PROTECTED AGAINST FROST ACTION AND DANGER FROM HEAVING BY INSULATING THE BOTTOM SLAB WITH A LAYER OF INSULATING MATERIAL PLACED WITHIN THE 1" OR THICK ENOUGH TO PREVENT FROST PENETRATION.
 ALL EXCAVATION FOR STRUCTURES SHALL BE KEPT DEWATERED DURING CONSTRUCTION OPERATIONS UNTIL BACKFILL IS IN PLACE.
 ALL FLOOR SLABS 8" OR LESS IN THICKNESS REINFORCED WITH WIRE MESH ONLY POURED AGAINST SOIL SHALL BE POURED IN A CHECKERBOARD PATTERN OF 25 FEET OR LESS IN EACH DIRECTION.
 ALL CONCRETE SLABS OVER 8" IN THICKNESS, REINFORCED WITH BARS AND POURED AGAINST SOIL, SHALL BE POURED IN A CHECKERBOARD PATTERN OF 60 FEET OR LESS IN EACH DIRECTION.

ABBREVIATIONS
 E.F. = EACH FACE
 B.Y. = BENT
 S.T.R. = STRAIGHT
 T/S/L = TOP OF SLAB
 T/F/B = TOP OF BEAM
 EL. = ELEVATION
 C/C = CENTER TO CENTER
 BOTT. = BOTTOM
 BY = BENT
 STR. = STRAIGHT
 A.L.T. = ALTERNATE BARS BENT
 P.L.T. = PILE-UP-OFF FILE WITH
 C/C = CENTER TO CENTER

CONSTRUCTION DETAILS
 DETAILS SHOWN ON THIS SHEET AND TYPICAL DETAILS NOTE THAT ONLY THE TYPES OF EXPANSION JOINTS, CONTRACTION JOINTS AND CONSTRUCTION JOINTS SPECIFICALLY CALLED FOR ON THE PLANS AND SECTIONS ARE INCLUDED IN THE WORK.

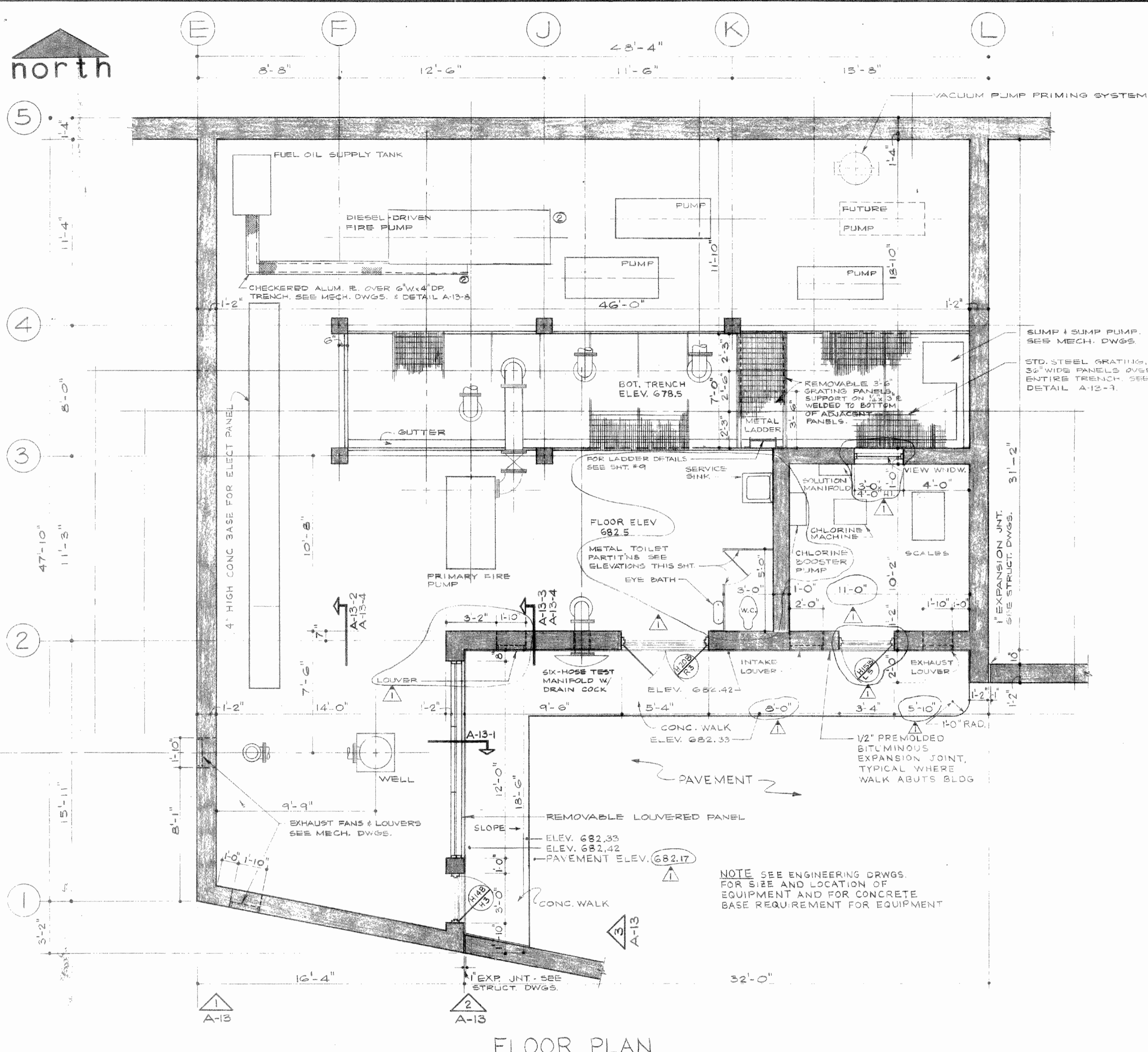
GENERAL
 ALL OPEN TANKS AND FLUMES SUPPORTED ON SOIL SHALL BE PROTECTED AGAINST FROST ACTION AND DANGER FROM HEAVING BY INSULATING THE BOTTOM SLAB WITH A LAYER OF INSULATING MATERIAL PLACED WITHIN THE 1" OR THICK ENOUGH TO PREVENT FROST PENETRATION.
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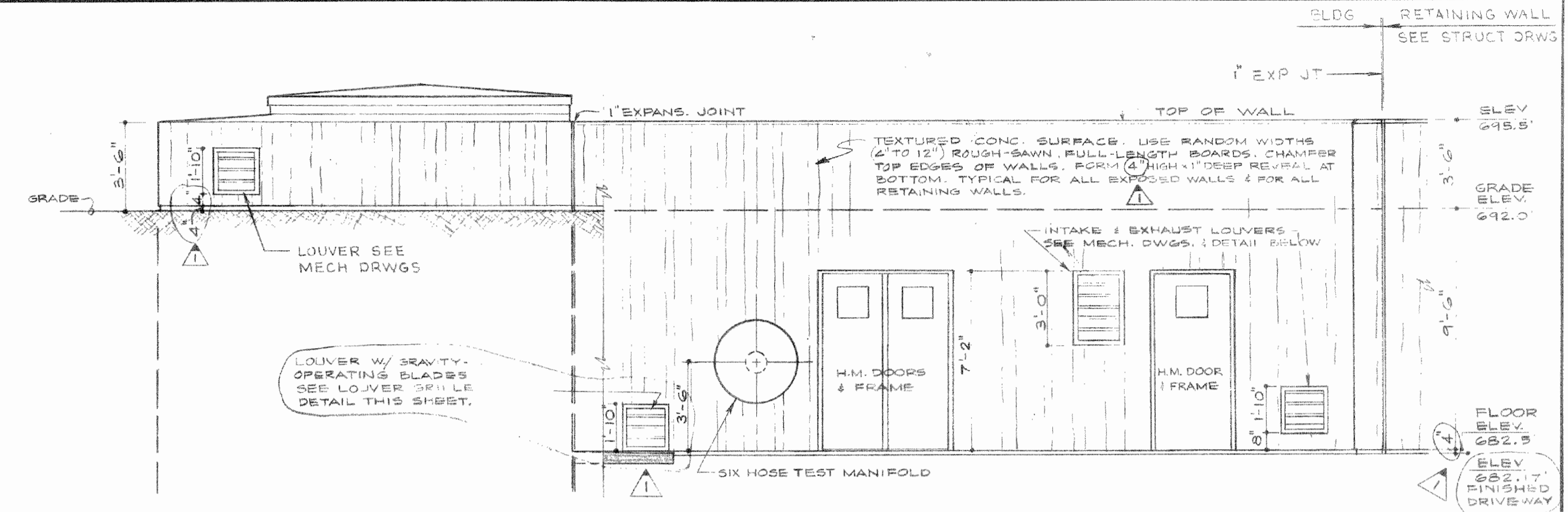
COUNTY OF LAKE, ILLINOIS
 VERNON HILLS, NEW CENTURY
 WATER WORKS IMPROVEMENTS CONTRACT

STRUCTURAL NOTES & DETAILS

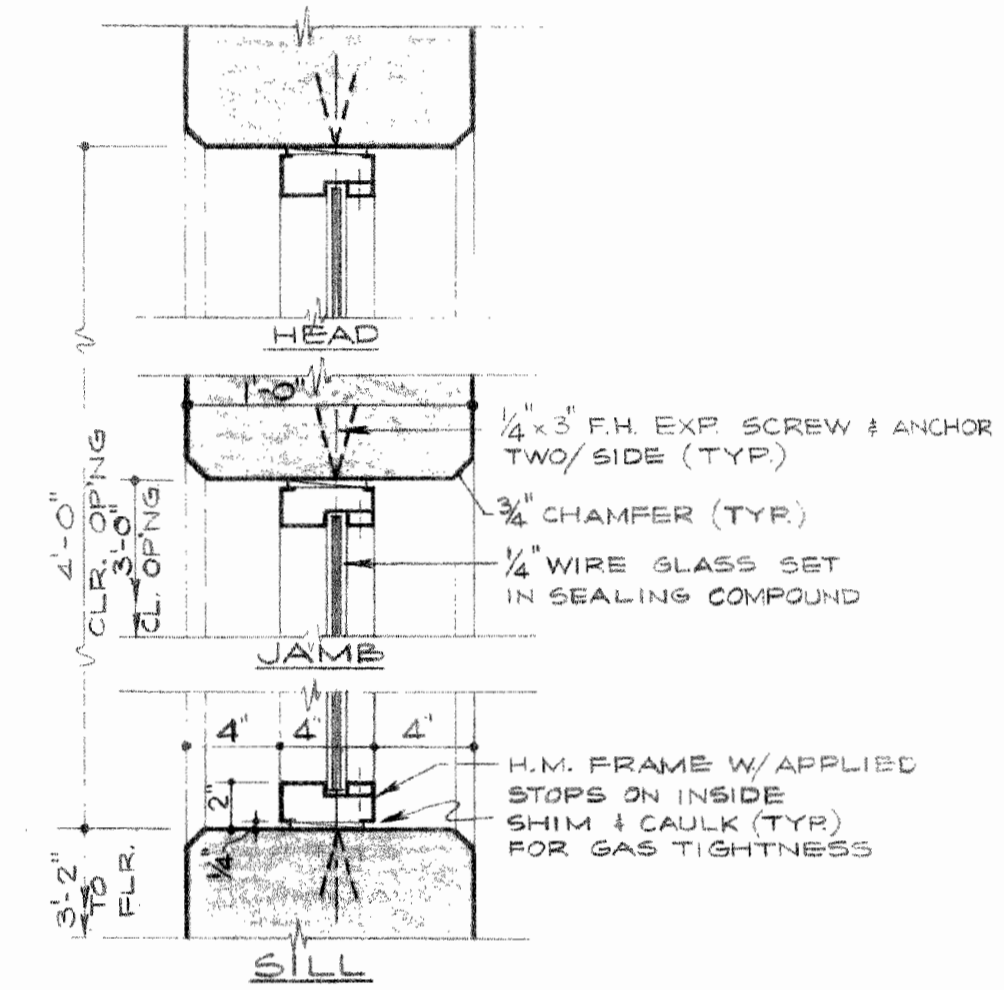
DRAWN BY K.C.	COSGER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE AS SHOWN
CHECKED BY K.C.		REVISED
APPROVED BY K.C.		DATE



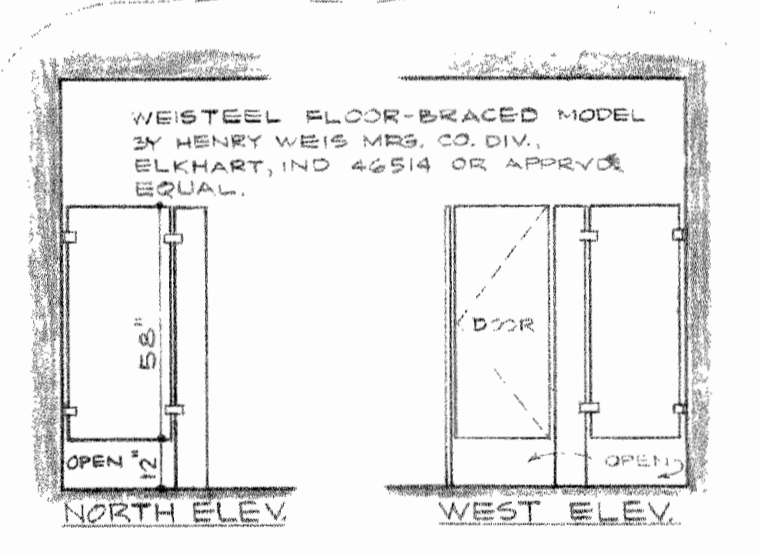
FLOOR PLAN



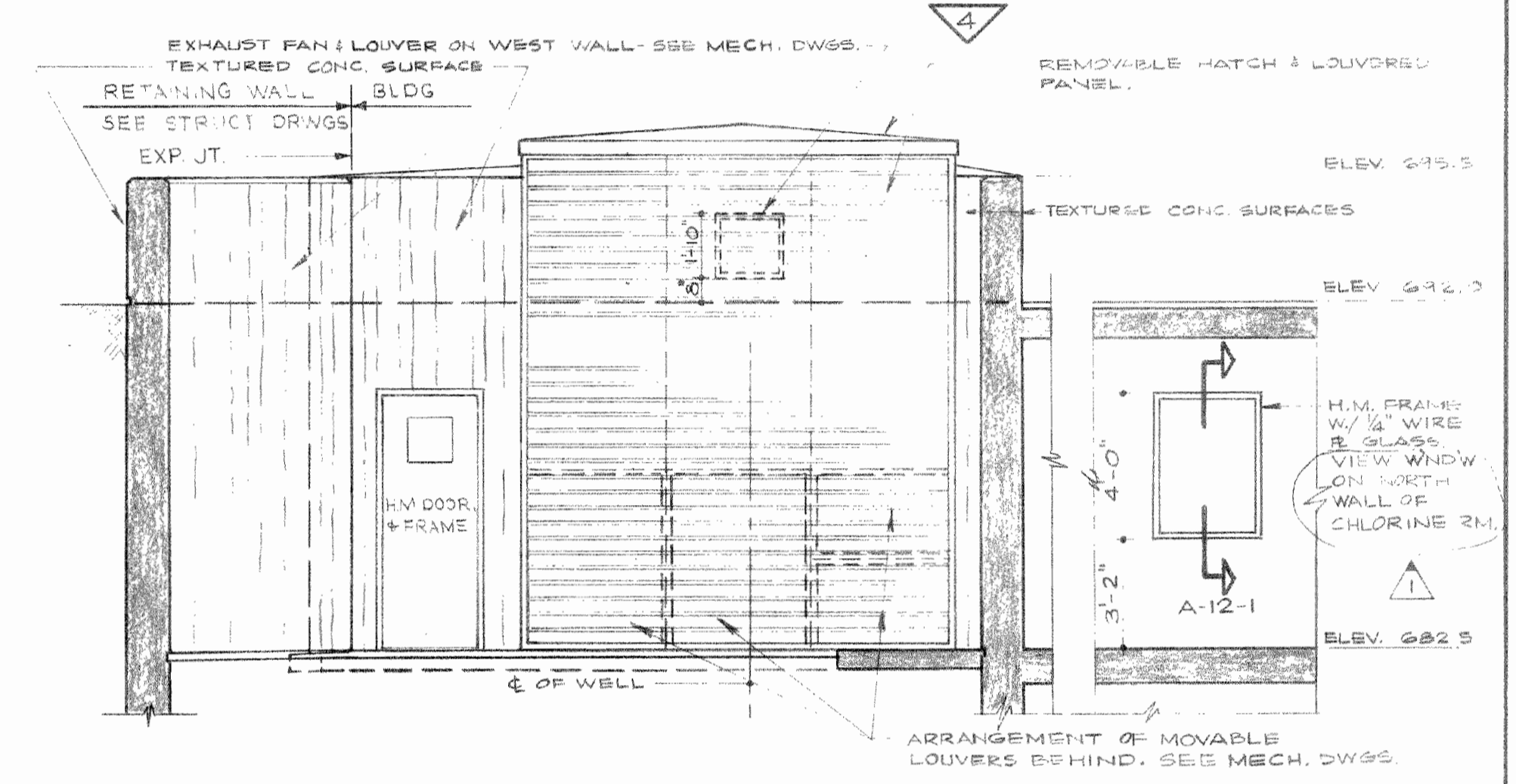
SOUTH ELEVATION SCALE - 1/4" = 1'-0"



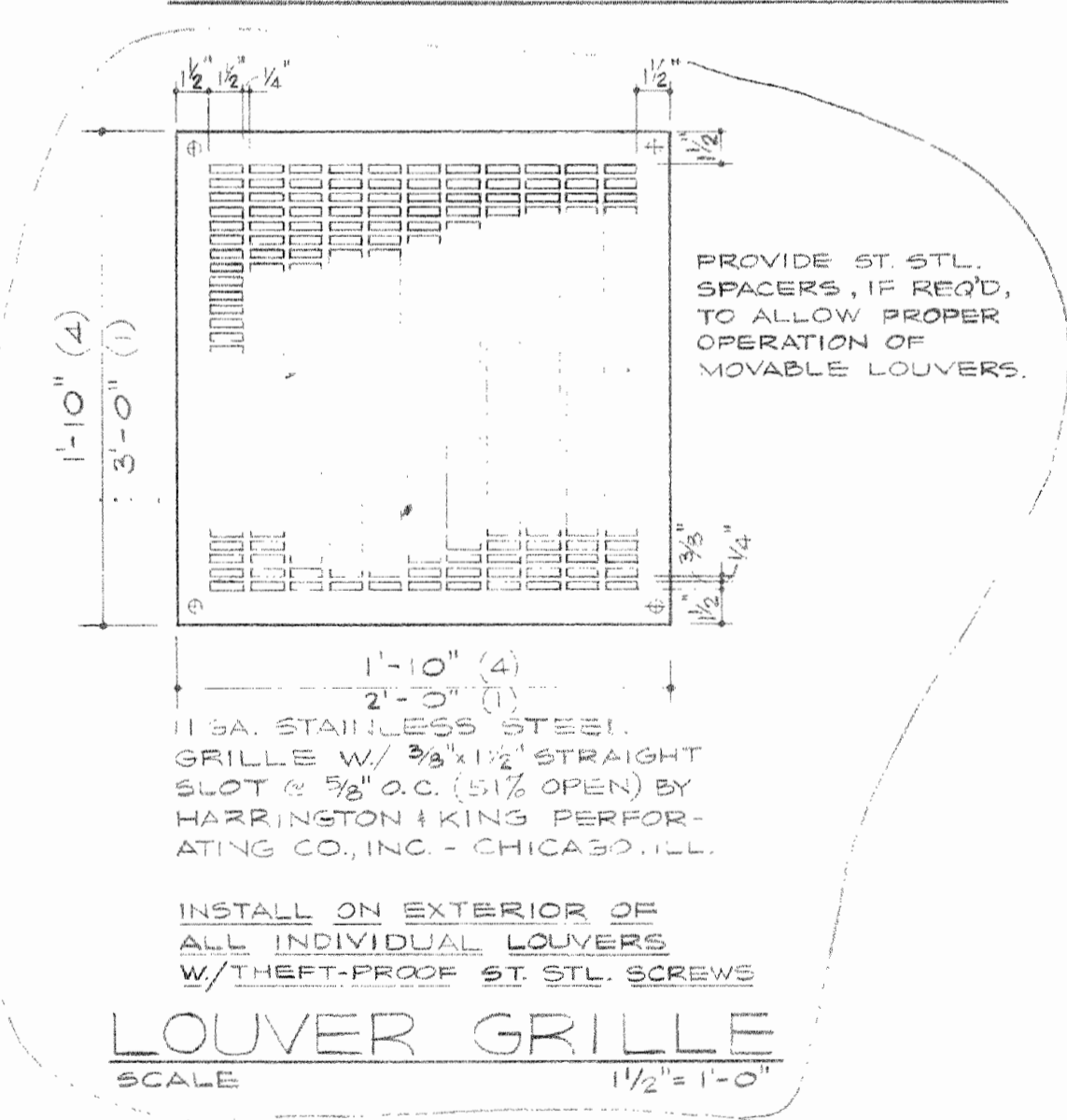
SECTION A-12-1 SCALE - 1 1/2" = 1'-0"



ELEVATIONS OF METAL PARTITIONS SCALE 1/4" = 1'-0"

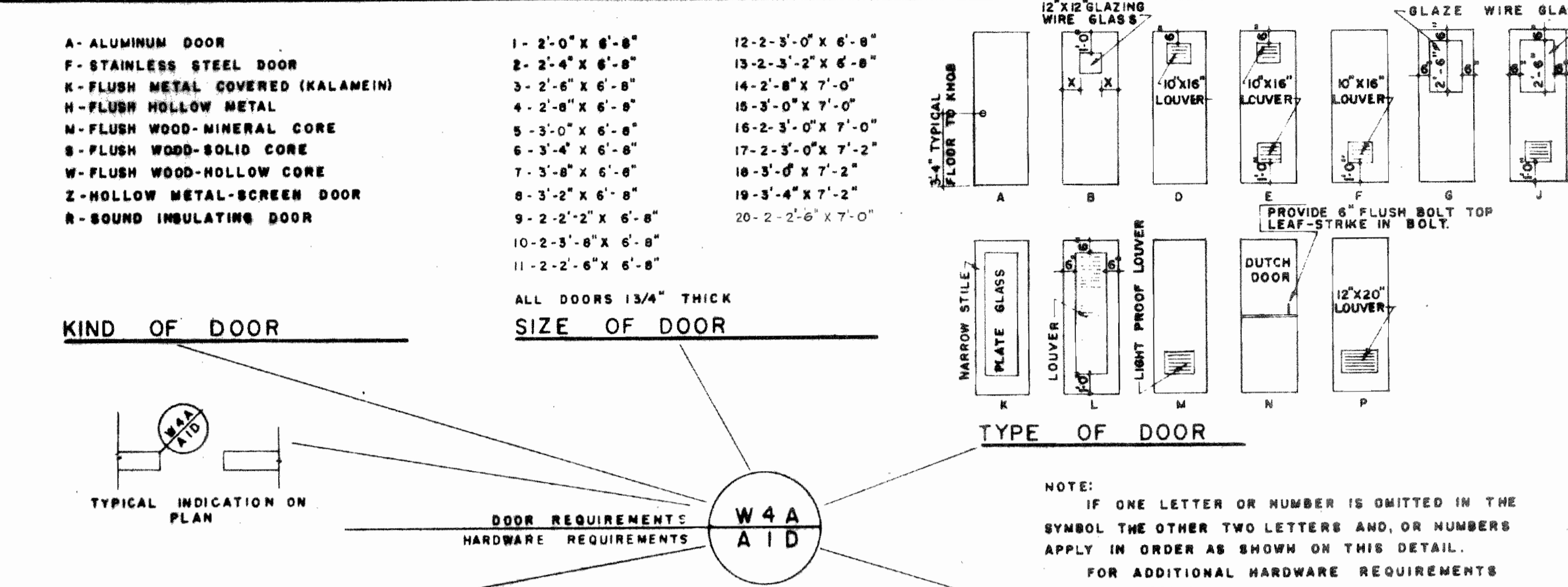
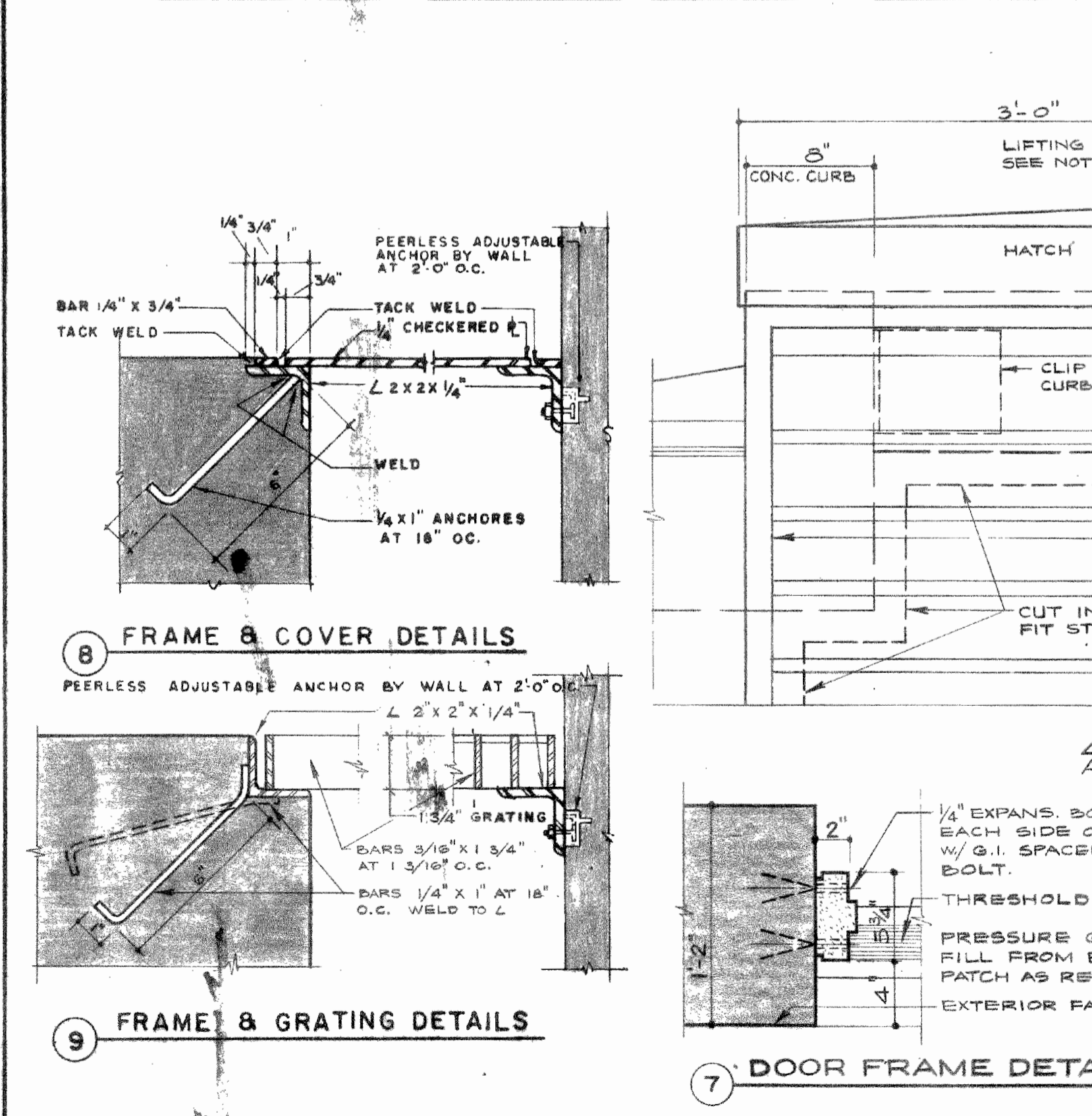
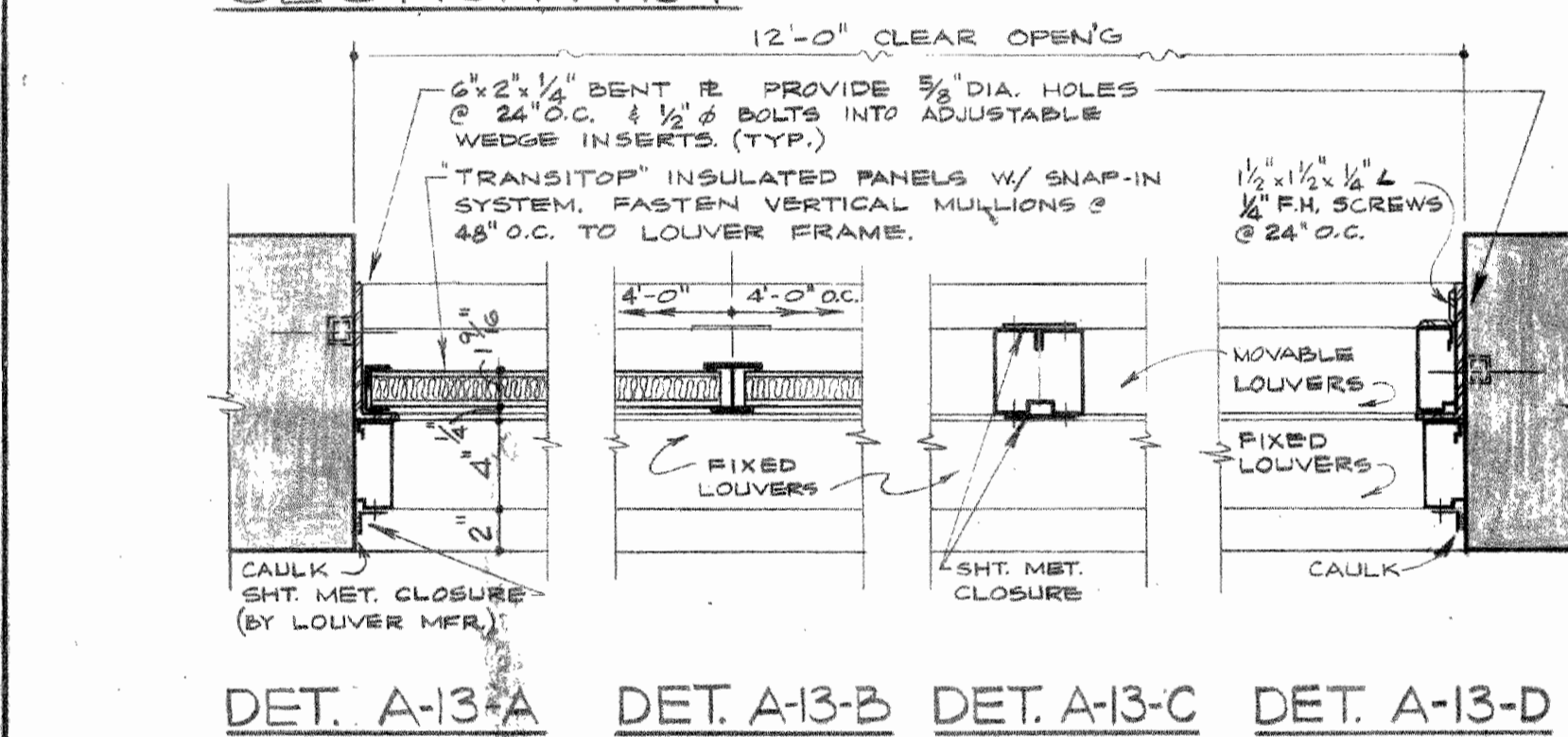
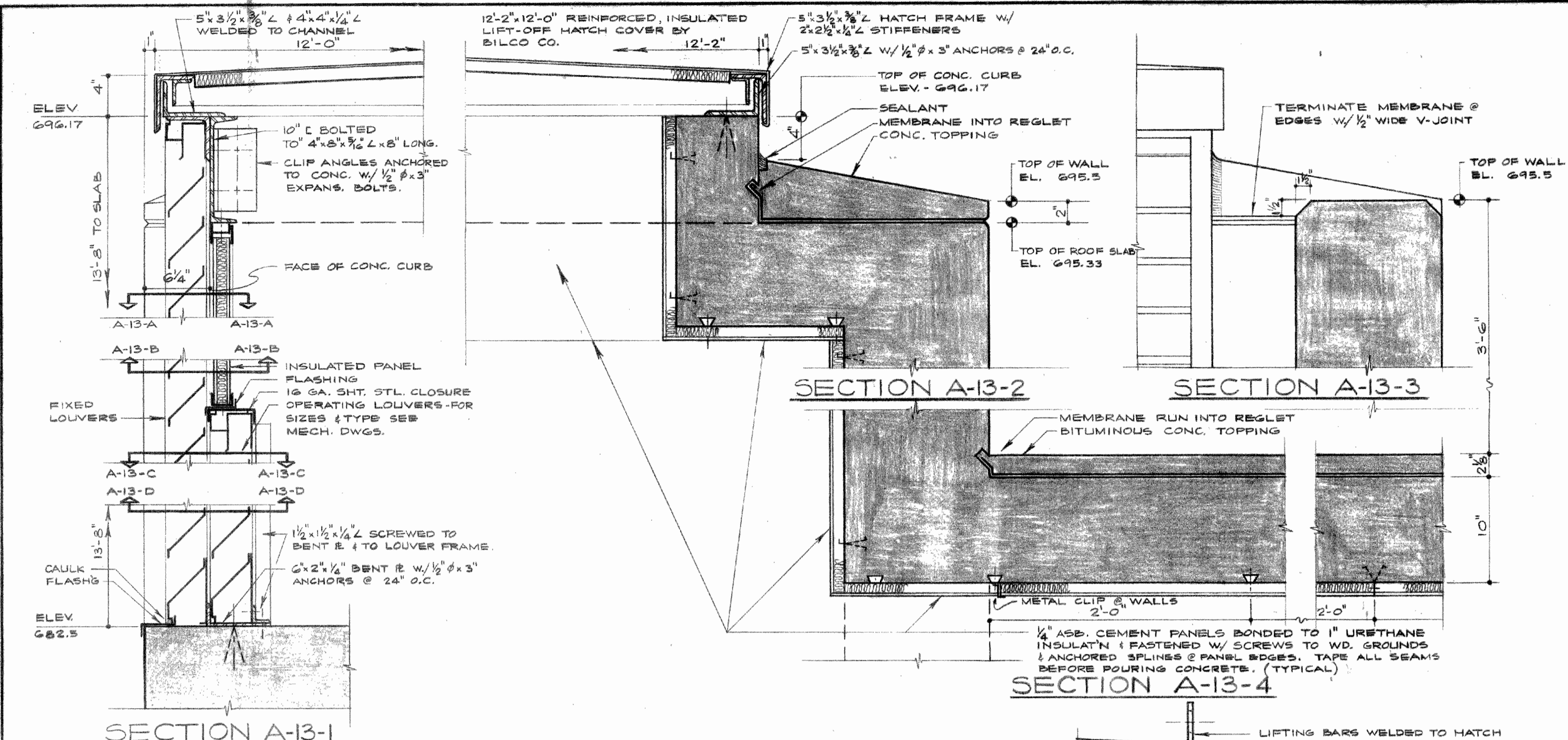


EAST ELEVATION



LOUVER GRILLE SCALE 1 1/2" = 1'-0"

COUNTY OF LAKE, ILLINOIS VERNON HILLS NEW CENTURY TOWN WATER WORKS IMPROVEMENTS CONTRACT NO. 5		
ARCHITECTURAL FLOOR PLAN, ELEVATIONS		
DRAWN BY: A.S.	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: 1/4" = 1'-0" OR AS NOTED
DATE: CHECKED BY: R.O.M.		REVISED: 9/20/72 11/15/73
APPROVED BY:		SHEET NO. 12
		OF 18 SHEETS



- LOCKSETS AND BOLTS**
- A-PASSAGE LATCH
 - B-BATHROOM LOCKSET
 - D-DORMITORY LOCKSET
 - E-CLASSROOM LOCKSET
 - F-STOREROOM LOCKSET
 - G-DEADLOCK
 - H-EXTERIOR DOOR LOCKSET
 - K-COMMUNICATING DOOR LOCKSET
 - J-6" FLUSH BOLT TOP AND BOTTOM INACTIVE LEAF DOUBLE CYLINDER DEADLOCK ACTIVE LEAF
 - L-PANIC HARDWARE VONDUPRIN TYPE NC, NARROW STILE DOORS TYPE 88 SINGLE DOOR OR TYPE 82 FOR DOUBLE DOORS AS REQUIRED
 - M-6" FLUSH BOLT TOP AND BOTTOM INACTIVE LEAF HASP ACTIVE LEAF
 - R-6" FLUSH BOLT TOP AND BOTTOM INACTIVE LEAF EXTERIOR LOCKSET ACTIVE LEAF
 - S-STORE DOOR LOCKSET
 - T-DOUBLE CYLINDER DEADLOCK
 - V-6" FLUSH BOLTS EACH LEAF-ROOMSIDE
 - X-ONEWAY DEADLOCK
 - Y-6" FLUSH BOLTS TOP AND BOTTOM INACTIVE LEAF, SCHOOL HOUSE DEADLOCK ACTIVE LEAF.
- STOPS, HOLDERS & CLOSERS**
- (EACH LEAF)
- 1-SINGLE ACTING FLOOR CHECK
 - 2-FRICTION DOOR HOLDER
 - 3-CLOSER (OVERHEAD) & DOOR STOP
 - 4-DOOR STOP
 - 5-DOOR STOP AND HOLDER
 - 6-DOOR STOP AND HOLDER AND CLOSER
 - 7-DOOR STOP AND HOLDER AND CLOSER ACTIVE LEAF
 - 8-DOUBLE ACTING FLOOR CHECK
 - 9-SINGLE ACTING FLOOR CHECK DOOR STOP AND HOLDER
- (EACH LEAF)
- A-2 PUSH PLATES
 - C-KICK PLATE
 - D-2 KICK PLATES
 - E-2 PUSH PLATES
 - G-KICK PLATE DOOR PULL
 - H-KICK PLATE
 - J-PUSH PLATE DOOR PULL
 - K-DOOR PULL
 - L-KICK PLATE PUSH PLATE DOOR PULL
 - M-PUSH PLATE DOOR PULL
 - N-2 PUSH BARS DOOR PULL
- ACCESSORIES**
- NOTE:**
 IF CLOSER WILL NOT MOUNT ON HINGED SIDE OF DOOR, PROVIDE PARALLEL BRMS FOR SOFFIT MOUNTING AND MOUNT ON RECESSED SIDE OF DOOR.
 ALL DOOR SHALL OPEN 90°
 ALL CLOSERS, EXCEPT FOR TOILET ROOMS, TO HAVE HOLD OPEN ACTION
 CLOSERS FOR STAIRWELLS MUST HAVE A FUSIBLE LINK ON HOLD OPEN ACTION.
 PROVIDE INTERMEDIATE HINGE WITH SINGLE ACTION FLOOR CHECKS
 ALL FLOOR CHECKS TO HAVE 90° HOLD OPEN ACTION
 PROVIDE ASTRAGALS FOR ALL EXTERIOR DOUBLE DOORS

5 HARDWARE AND DOOR SCHEDULE

- 12 ARCHITECTURAL SYMBOLS**
- FACING TILE, CERAMIC TILE OR FACED CONCRETE BLOCK
 - CLAY TILE (BACK UP)
 - FACE BRICK
 - COMMON BRICK
 - CONCRETE BLOCK
 - STONE
 - MARBLE TERRA COTTA OR ACOUSTIC TILE
 - INSULATION
 - GROUT OVER PRECAST SLAB
 - CONCRETE IN SECTION
 - TERRAZZO
 - POURED GYPSUM ON FORM BOARD
 - BLOCKING
 - FINISHED WOOD
 - CHECKERED PLATE
 - GRATING
 - STRUCTURAL STEEL
 - METAL SHAPES
 - EARTH
 - GRAVEL
- 13 KEY TO ROOM FINISHES**
 (SEE ROOM FINISH SCHEDULE)
- HC -HARDENED CONCRETE
 - MF -METALLIC FLOOR FINISH
 - CF -CONDUCTIVE FLOOR FINISH
 - PCT -PORTLAND CEMENT TERRAZZO
 - MT -MAGNESITE TERRAZZO
 - AT -ASPHALT TILE
 - RF -RUBBER FLOORING
 - VT -VINYL TILE
 - VAT -VINYL ASBESTOS TILE
 - LIM -LIMOLEUM
 - COR -CORK TILE
 - WF -WOOD FLOORING
 - NCT -NATURAL CLAY FLOOR TILE
 - VCT -VITREOUS CERAMIC FLOOR TILE
 - QT -QUARRY TILE
 - TC -ARCHITECTURAL TERRA COTTA
 - CT -CERAMIC GLAZED WALL TILE
 - CB -CONCRETE MASONRY UNITS CONC-CONCRETE
 - FT-1-CERAMIC COLOR GLAZED FACING TILE
 - FT-2-CLEAR GLAZED FACING TILE
 - FT-3-SALT GLAZED FACING TILE
 - FT-4-SMOOTH UNGLAZED FACING TILE
 - FB -FACE BRICK
 - IB -INTERIOR BRICK
 - MAR -MARBLE
 - WP -WOOD PANELING
 - MW -METAL WALL PANELING
 - PS -GYPSUM PLASTER
 - PK -KEENE CEMENT PLASTER
 - PC -PORTLAND CEMENT PLASTER
 - PA -ACOUSTICAL PLASTER
 - UNP -UNPAINTED MASONRY OR CONCRETE FINISH
 - CS -CONCRETE SURFACE TO BE GROUND AND SPACKLED
 - PSC -PAINT STRUCTURAL CEILING
 - AMT -ACOUSTICAL TILE-METAL
 - AMF -ACOUSTICAL TILE-MINERAL FIBERED
 - AMP -ACOUSTICAL TILE-MINERAL PERFORATED
 - AFP -ACOUSTICAL TILE-FIBERED PERFORATED
 - AU -ACOUSTICAL FORM FOR GYPSUM DECK
 - AX -ACOUSTICAL UNIT, LONG SPAN
- 14 GENERAL NOTES**
- 1-ALL EXTERIOR MASONRY TO OVERHANG FOUNDATION BY 1/4".
 - 2-ALL OPENINGS REQUIRED FOR WINDOWS, DOORS OR EQUIPMENT SHALL BE SIZED FROM SHOP DRAWINGS, DIMENSIONS SHOWN ON PLAN ARE NOMINAL.
 - 3-THE TYPICAL DETAILS ON THIS SHEET ARE TO BE USED WHEN CALLED FOR ON THE PLANS AND ELEVATIONS.

15 SECTION NOTATION DETAIL NOTATION

THIS CONTRACT INCLUDES ITEMS CHECKED IN FOLLOWING TABLE

NO.	DESCRIPTION	NO.	DESCRIPTION	NO.	DESCRIPTION
1	SKYLIGHT DETAIL-PLASTIC DOME	9	FRAME AND GRATING DETAILS		
2	SCUTTYLE DETAILS	10			
3	LADDER DETAILS	11	WELDED PIPE HANDRAIL DETAILS		
4		12	ARCHITECTURAL SYMBOLS		
5	HARDWARE & DOOR DETAILS	13	KEY TO ROOM FINISH SCHEDULE		
6	SHOWER DETAILS	14	GENERAL NOTES		
7	DOOR FRAME DETAILS	15	SECTION & DETAIL NOTATION		
8	FRAME AND COVER DETAILS	16			

COUNTY OF LAKE, ILLINOIS
 VERNON HILLS NEW CENTURY TOWN
 WATER WORKS IMPROVEMENTS CONTRACT NO. 5

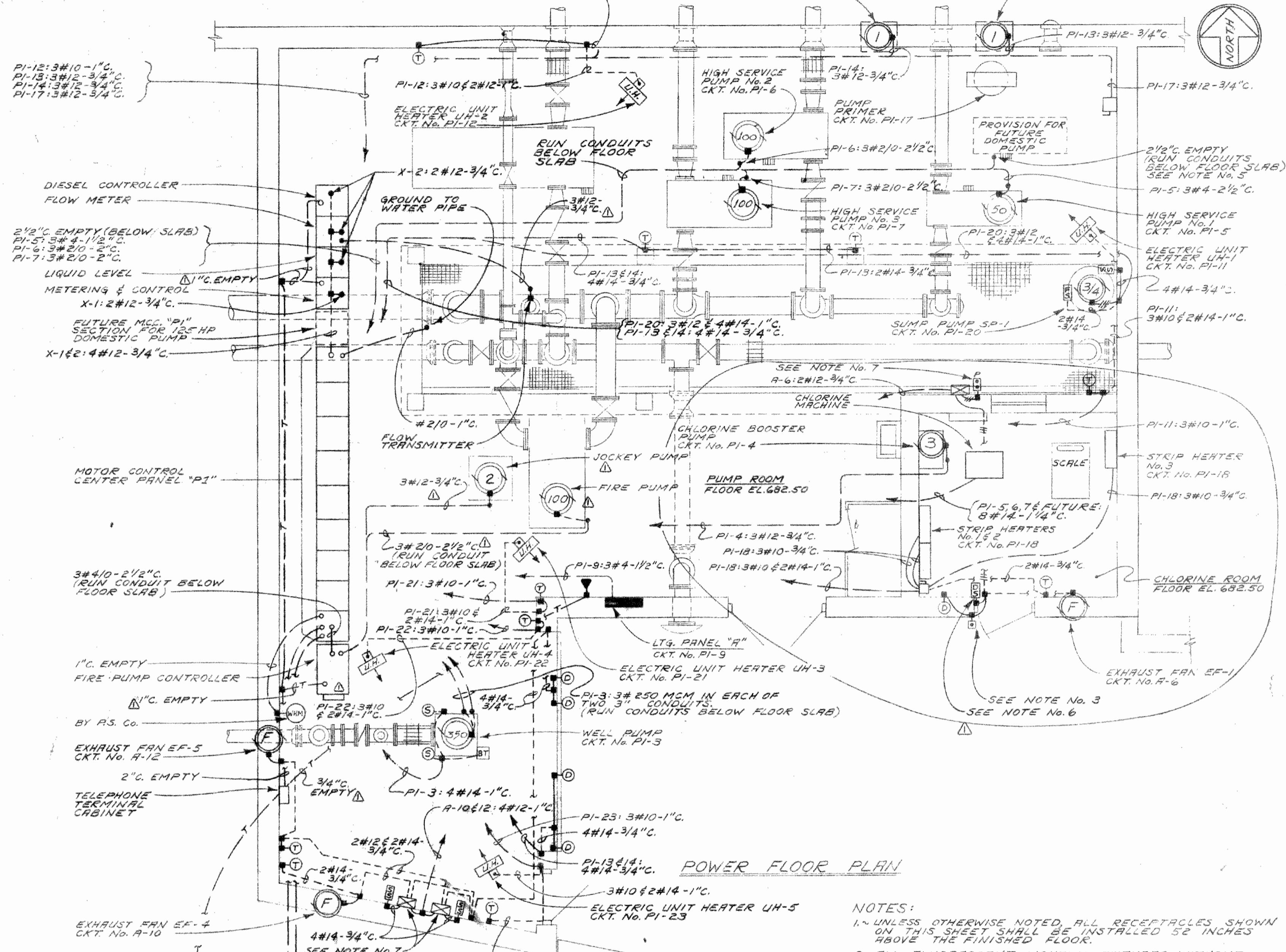
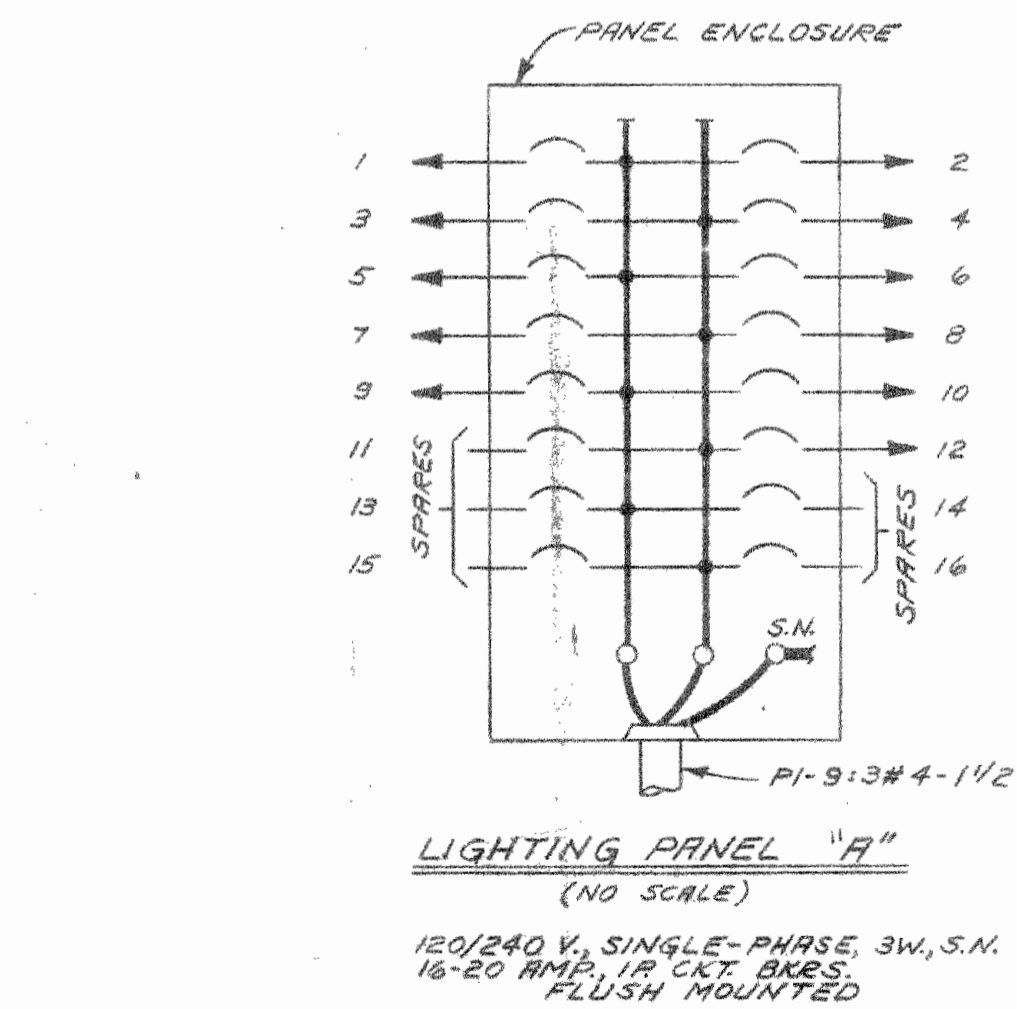
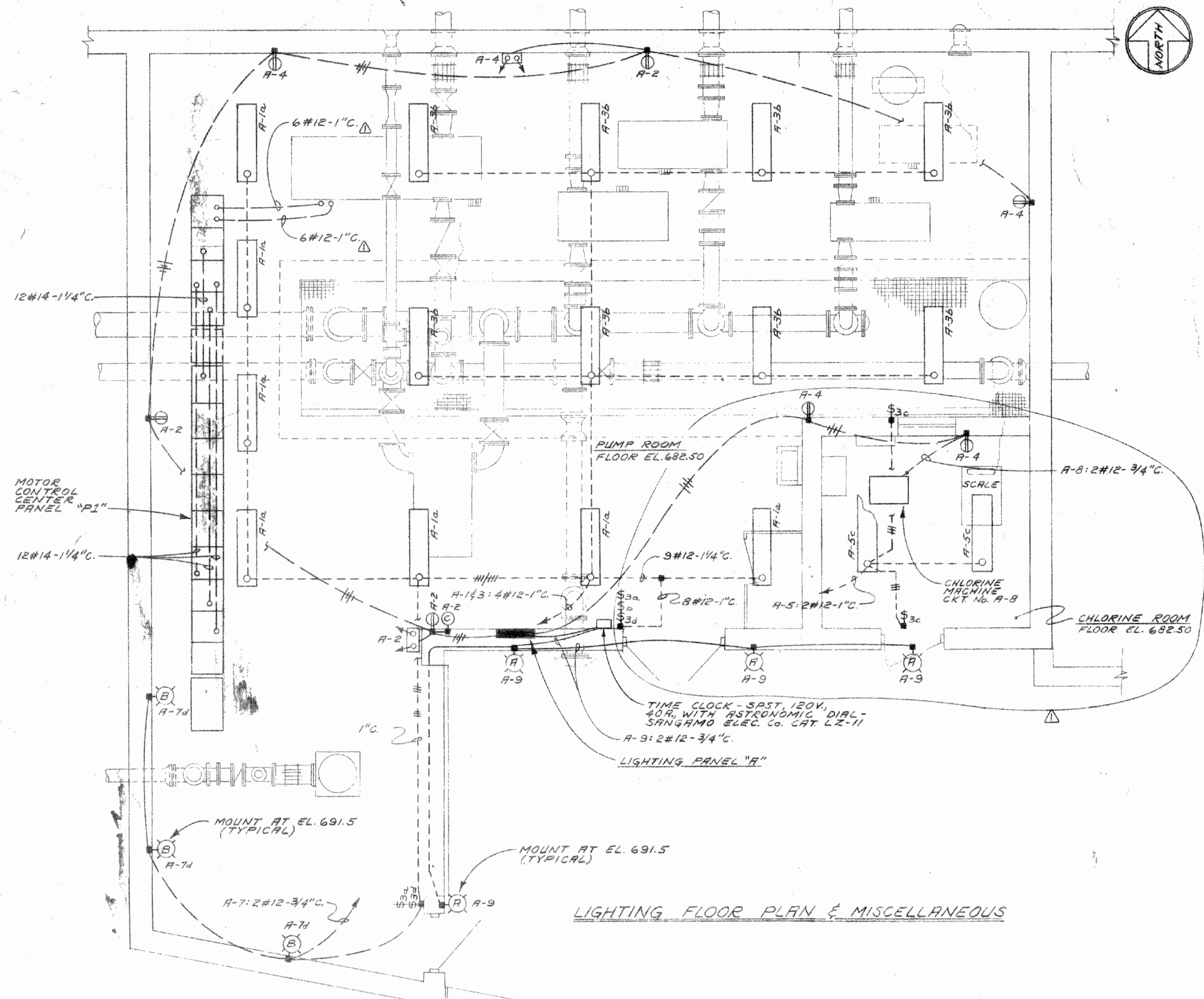
ARCHITECTURAL DETAILS

SCALE 1/2" = 1'-0"

CONSOER, TOWNSEND & ASSOCIATES
 CONSULTING ENGINEERS
 CHICAGO, ILLINOIS

DATE: A.S.
 CHECKED BY: R.O.M.
 APPROVED BY: h

SHEET NO. 13 OF 18 SHEETS



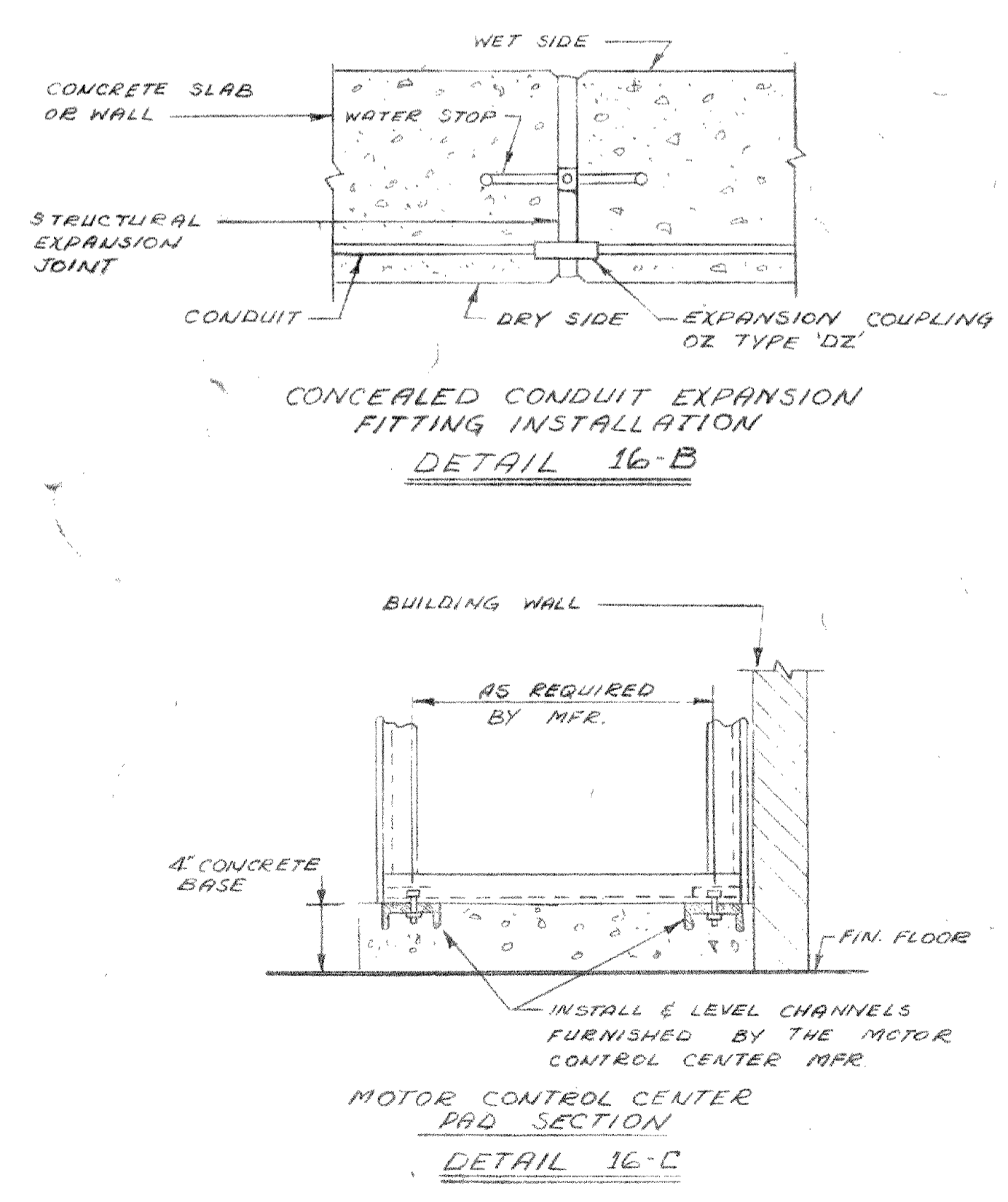
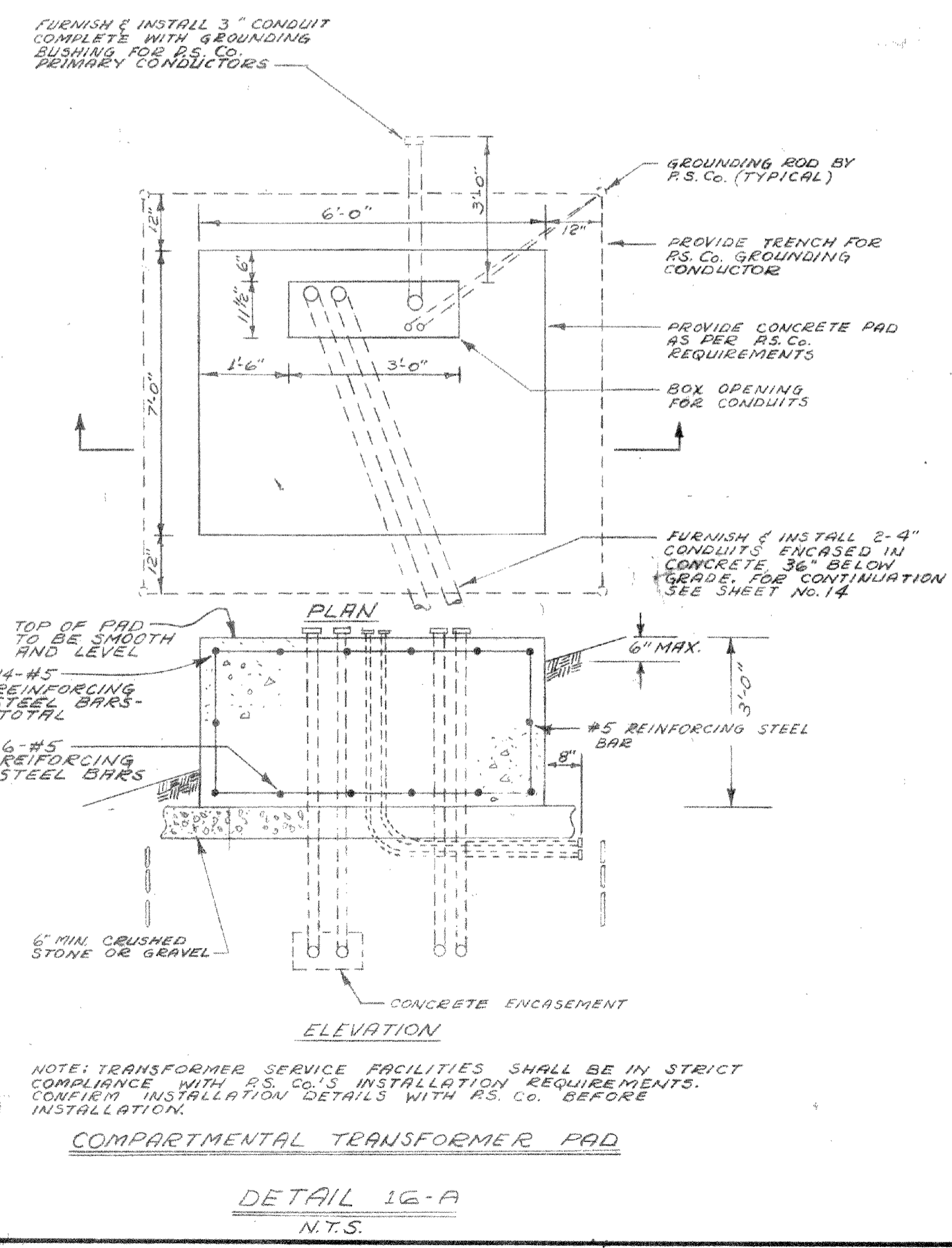
- NOTES:
- UNLESS OTHERWISE NOTED, ALL RECEPTACLES SHOWN ON THIS SHEET SHALL BE INSTALLED 50 INCHES ABOVE THE FINISHED FLOOR.
 - ALL FLUORESCENT LIGHTING FIXTURES WITHOUT EXHAUSTION INDICATION SHOWN ON THIS SHEET SHALL BE TYPE "A" AND SHALL BE SURFACE MOUNTED.
 - "STOP" HEAVY DUTY OIL-TIGHT TYPE PUSHBUTTON WITH GREEN INDICATING LIGHT IN NEMA 4 ENCLOSURE PROVIDE NAMEPLATE TO READ "DO NOT ENTER UNLESS EXHAUST FAN IS RUNNING." SEE NOTE NO. 4.
 - THE ENGRAVED NAMEPLATES SHALL BE TWO COLOR RED WITH WHITE LETTERS, LAMINATED PLASTIC OR ANODIZED ALUMINUM.
 - TERMINATE CONDUITS FOR FUTURE EQUIPMENT FLUSH WITH THE FLOOR WITH APPLETON CAT. NO. ELMFL-90 ELBOW AND RECESSED PLUG.
 - OIL TIGHT HEAVY DUTY LIMIT SWITCH OF THE ADJUSTABLE ROLLER LEVER TYPE WITH SPRING RETURN LIMIT SHALL CLOSE WHEN DOOR OPENS, ALLEN BRADLEY BULLETIN No. 802T, OR AN APPROVED EQUAL.
 - SINGLE PHASE 120VOLT SIZE 1 MAGNETIC MOTOR STARTER SQUARE D TYPE "S" CLASS B336 IN NEMA 1 ENCLOSURE, SURFACE MOUNTED. STARTER SHALL BE FURNISHED WITH 2 N.O. & 2 N.C. AUXILIARY CONTACTS.

COUNTY OF LAKE, ILLINOIS VERNON HILLS NEW CENTURY TOWN WATER WORKS IMPROVEMENTS CONTRACT NO. 5	
ELECTRICAL PUMPING STATION EQUIPMENT	
DESIGNED BY: A.E. MONTANERAZ M.E.P. DATE: CHECKED BY: Z.R.M. APPROVED BY: F.H.S.	SCALE: 1/4" = 1'-0" REVISED: 9/30/72 SHEET NO. 14 OF 18 SHEETS
CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	

INCANDESCENT						FLUORESCENT					
TYPE	MANUFACTURER	CATALOG NUMBER	LAMP SIZE	MOUNTING	REMARKS	TYPE	MANUFACTURER	CATALOG NUMBER	LAMP SIZE	MOUNTING	REMARKS
A	PERFECLITE	MVR-28-9 -GD-TP	438- 438/C	WALL	MERCURY VAPOR - WITH TAMPER-PROOF SCREWDRIVER	A	BENJAMIN	FL-1024-4U	4 FT/12 1CW4	SURFACE	
B	PERFECLITE	VC-29	200A	WALL							
C	BATTERY POWERED EMERGENCY LIGHT WITH TROUING SWEL-BUS BEAM	ESGN40	2 HEADS	WALL							

ELECTRICAL SYMBOLS

<p>INCANDESCENT OR MERCURY VAPOR FIXTURE. LETTER INDICATES TYPE AS SPECIFIED OR SHOWN IN FIXTURE SCHEDULE ON CONTRACT DRAWINGS. (A-1A INDICATES CIRCUIT NO. 1 FROM PANEL "A" ON SWITCH LEG "A")</p> <p>BRACKET MOUNTED INCANDESCENT FIXTURE. DITTO FOR DESIGNATION.</p> <p>FLUORESCENT FIXTURE. DITTO FOR DESIGNATION.</p> <p>STREET LIGHT STANDARD AS INDICATED ON THE CONTRACT DRAWINGS AND AS SPECIFIED.</p> <p>LUMINAIRE POLE MOUNTED. FOR POLE TYPE SEE FIXTURE SCHEDULE. INSTALL RECEPTACLES AND SWITCHES OF THE TYPE AND WHERE INDICATED ON THE CONTRACT DRAWINGS.</p> <p>§ SINGLE POLE TUMBLER SWITCH.</p> <p>§₂ TWO POLE TUMBLER SWITCH.</p> <p>§₃ THREE-WAY TUMBLER SWITCH.</p> <p>§₄ FOUR-WAY TUMBLER SWITCH.</p> <p>§_T MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION.</p> <p>§_{MC} MOMENTARY CONTACT SWITCH.</p> <p>CONDUIT EXPOSED.</p> <p>CONDUIT CONCEALED IN CEILING OR WALL.</p> <p>CONDUIT IN FLOOR SLAB OR UNDERGROUND.</p> <p>HORN TO PANEL BOARD OR AS INDICATED.</p> <p>UNDERFLOOR DUCT AND JUNCTION BOX. NUMBER OF PARALLEL LINES INDICATES NUMBER OF DUCTS.</p> <p>UNDERGROUND DUCT LINE: SIZE - 4" UNLESS NOTED, NUMBER AS INDICATED. SIZE AND NUMBER OF CONDUCTORS AS NOTED ON CONTRACT DRAWINGS.</p>	<p>SINGLE CONVENIENCE OUTLET.</p> <p>DUPLEX CONVENIENCE OUTLET.</p> <p>FLOOR SINGLE CONVENIENCE OUTLET.</p> <p>FLOOR DUPLEX CONVENIENCE OUTLET.</p> <p>CLOCK NUMBER OUTLET. INSTALL 8 FT. ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. CLOCK: EDWARDS CAT. NO. JB72</p> <p>SINGLE SPECIAL PURPOSE OUTLET. SUBSCRIPT INDICATES TYPE OF RECEPTACLE AND USAGE.</p> <p>FLOOR OUTLET DITTO FOR DESIGNATION.</p> <p>LIGHTING PANEL.</p> <p>POWER PANEL.</p> <p>TERMINAL CABINET OR PULL BOX AS INDICATED.</p> <p>OUTLET OR JUNCTION BOX.</p> <p>ELECTRIC MOTOR, NUMBER INDICATES HP.</p> <p>MAGNETIC MOTOR STARTER.</p> <p>SAFETY SWITCH, 3P-30A., 600 V., UNFUSED UNLESS OTHERWISE NOTED.</p> <p>"STOP" PUSHBUTTON STATION WITH L.O. PROVISION UNLESS OTHERWISE NOTED.</p> <p>"START-STOP" PUSHBUTTON STATION.</p> <p>"FAST-SLOW-STOP" PUSHBUTTON STATION UNLESS OTHERWISE NOTED.</p> <p>SELECTOR SWITCH, "HAND-OFF-AUTO" UNLESS OTHERWISE NOTED.</p> <p>LIMIT SWITCH.</p> <p>TORQUE SWITCH.</p> <p>PRESSURE SWITCH.</p> <p>FLOAT SWITCH.</p> <p>VACUUM SWITCH.</p> <p>ELECTRO-PNEUMATIC SWITCH.</p> <p>DOOR SWITCH</p>	<p>UNIT HEATER.</p> <p>TEMPERATURE ACTUATED DEVICE.</p> <p>ROOM THERMOSTAT.</p> <p>SOLENOID VALVE.</p> <p>DAMPER MOTOR</p> <p>MOTORIZED OR MODULATING VALVE.</p> <p>RELAY.</p> <p>HORN.</p> <p>ALARM BELL.</p> <p>TELEPHONE OUTLET.</p> <p>FLOOR TELEPHONE OUTLET.</p> <p>TELEPHONE CABINET.</p> <p>TELEPHONE SYSTEM CONDUIT.</p> <p>INTERPHONE OUTLET.</p> <p>FLOOR INTERPHONE OUTLET.</p> <p>INTERPHONE CABINET.</p> <p>INTERPHONE SYSTEM CONDUIT.</p> <p>INDICATES WITH PILOT LIGHT.</p> <p>INDICATES VAPOR TIGHT.</p> <p>INDICATES WEATHERPROOF.</p> <p>INDICATES EXPLOSIONPROOF.</p> <p>INDICATES REDUCED VOLTAGE.</p> <p>INDICATES REVERSING.</p> <p>INDICATES TWO SPEED.</p> <p>INDICATES "LOCK-OUT" IN STOP POSITION.</p>	<p>SYMBOLS APPLYING TO SINGLE LINE WIRING DIAGRAM</p> <p>VOLTMETER AND POLYPHASE SWITCH.</p> <p>AMMETER AND POLYPHASE SWITCH.</p> <p>WATT HOUR METER.</p> <p>COMBINATION MANUALLY OPERATED AIR CIRCUIT BREAKER AND MAGNETIC MOTOR STARTER.</p> <p>MANUALLY OPERATED AIR CIRCUIT BREAKER.</p> <p>TRANSFORMER.</p> <p>GROUND CONNECTION TO SUITABLE WATER PIPE OR GROUND RODS AS INDICATED OR SPECIFIED.</p> <p>OPEN PHASE RELAY CONTACT</p> <p>OVERLOAD RELAY CONTACT</p> <p>MOTOR BEARING TEMPERATURE RELAY CONTACT</p> <p>MOTOR STARTER OPERATING COIL</p> <p>MOTOR STARTER CONTROL RELAY</p> <p>MOTOR STARTER OPERATING COIL MACHINE TOOL RELAY WITH 3 N.O. CONTACTS SQUARE "D" CLASS B501</p> <p>ELAPSED TIME METER 0-99,999 HRS.</p> <p>WELL PUMP LUBE-OIL SOLENOID VALVE</p> <p>WELL PUMP COOLING WATER SOLENOID VALVE</p> <p>GREEN INDICATING PILOT LIGHT WITH "EUN" LEGEND</p> <p>GENERAL NOTES</p> <p>1. WHEN INSTALLED BELOW GRADE OR EXPOSED TO THE WEATHER, ALL SWITCHES, PUSHBUTTON STATIONS, SELECTOR SWITCHES, PULL AND JUNCTION BOXES, ETC. SHALL BE VAPOR-TIGHT AND ALL RECEPTACLES SHALL BE WEATHERPROOF, UNLESS OTHERWISE NOTED OR SPECIFIED, AND ALL SHALL BE INSTALLED WITH CAST METAL OR WALLEABLE IRON BOXES AND COVERS WITH GASKETS.</p> <p>2. EQUIPMENT FURNISHED UNDER OTHER THAN THE ELECTRICAL SECTION THAT REQUIRES WIRING SHALL BE WIRED AND CONNECTED IN ACCORDANCE WITH THE ELECTRICAL SECTION OF THE SPECIFICATIONS, THE CONTRACT DRAWINGS AND/OR AS SHOWN ON THE MANUFACTURERS SHOP DRAWINGS.</p>
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CONDUIT NOTES

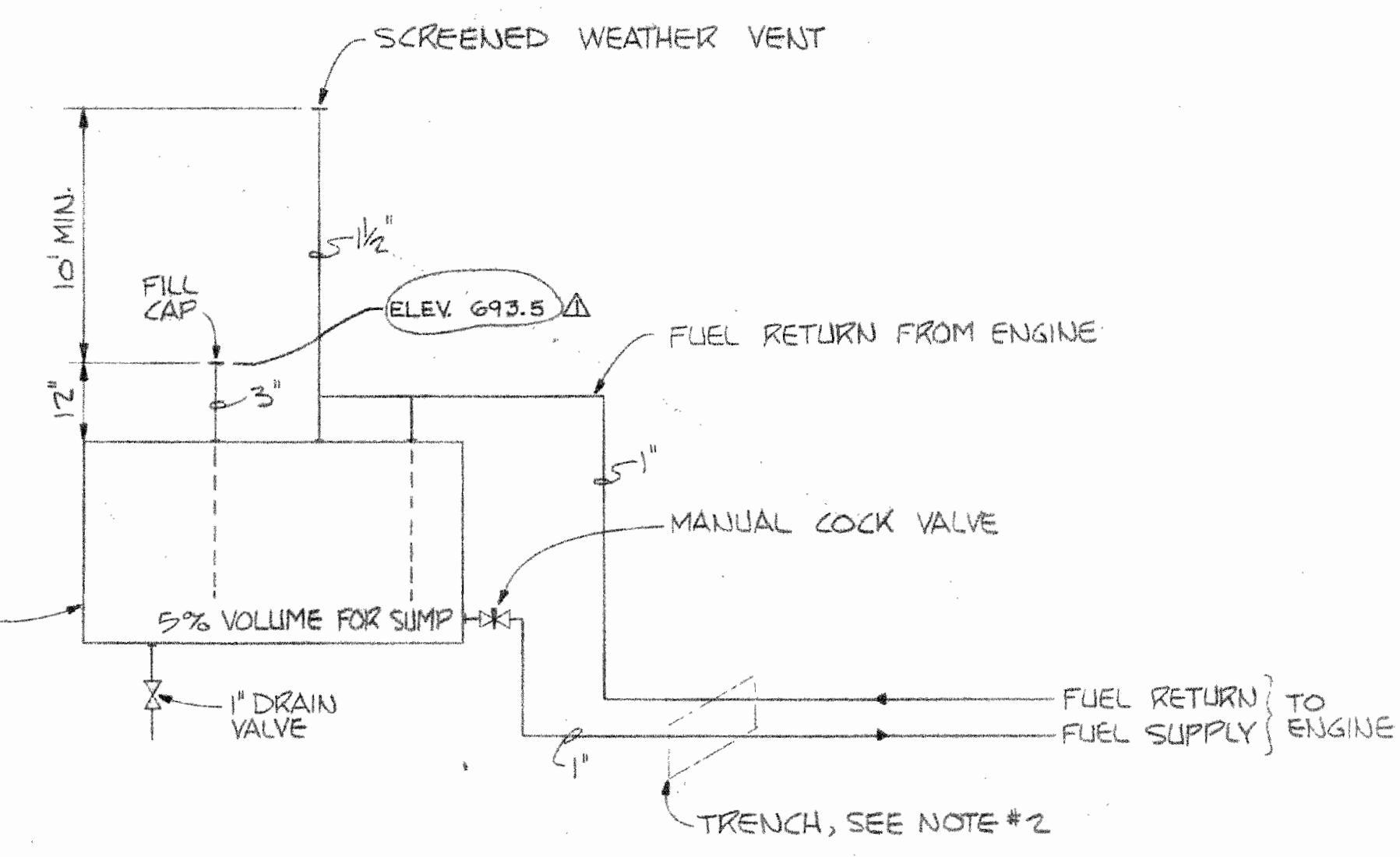
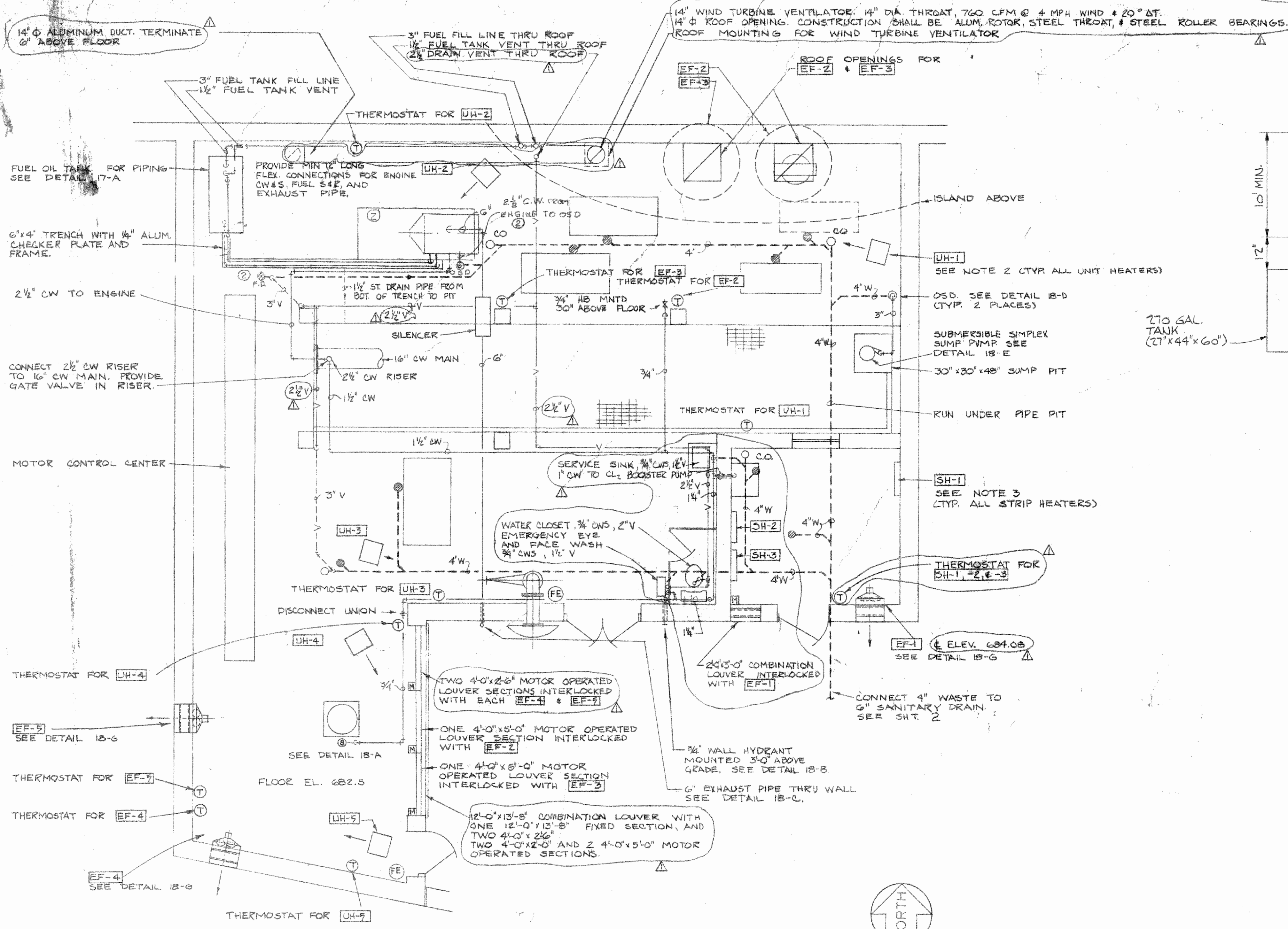
1. ANY CONDUIT WITHOUT FURTHER DESIGNATION INDICATES A TWO-WIRE CIRCUIT. GREATER NUMBER OF WIRES ARE INDICATED AS FOLLOWS: (3 WIRES), (4 WIRES), (5 WIRES), (6 WIRES), (7 WIRES), (8 WIRES), (9 WIRES), (10 WIRES), (11 WIRES), (12 WIRES), (13 WIRES), (14 WIRES), (15 WIRES), (16 WIRES), (17 WIRES), (18 WIRES), (19 WIRES), (20 WIRES), (21 WIRES), (22 WIRES), (23 WIRES), (24 WIRES), (25 WIRES), (26 WIRES), (27 WIRES), (28 WIRES), (29 WIRES), (30 WIRES), (31 WIRES), (32 WIRES), (33 WIRES), (34 WIRES), (35 WIRES), (36 WIRES), (37 WIRES), (38 WIRES), (39 WIRES), (40 WIRES), (41 WIRES), (42 WIRES), (43 WIRES), (44 WIRES), (45 WIRES), (46 WIRES), (47 WIRES), (48 WIRES), (49 WIRES), (50 WIRES), (51 WIRES), (52 WIRES), (53 WIRES), (54 WIRES), (55 WIRES), (56 WIRES), (57 WIRES), (58 WIRES), (59 WIRES), (60 WIRES), (61 WIRES), (62 WIRES), (63 WIRES), (64 WIRES), (65 WIRES), (66 WIRES), (67 WIRES), (68 WIRES), (69 WIRES), (70 WIRES), (71 WIRES), (72 WIRES), (73 WIRES), (74 WIRES), (75 WIRES), (76 WIRES), (77 WIRES), (78 WIRES), (79 WIRES), (80 WIRES), (81 WIRES), (82 WIRES), (83 WIRES), (84 WIRES), (85 WIRES), (86 WIRES), (87 WIRES), (88 WIRES), (89 WIRES), (90 WIRES), (91 WIRES), (92 WIRES), (93 WIRES), (94 WIRES), (95 WIRES), (96 WIRES), (97 WIRES), (98 WIRES), (99 WIRES), (100 WIRES).

2. CONDUITS IMBEDDED IN STRUCTURAL CONCRETE (FLOOR SLABS, ETC.) SHALL BE SO LOCATED SO AS NOT TO UNDULY IMPAIR THE STRENGTH OF THE CONSTRUCTION, AND SHALL BE SPACED NOT LESS THAN TWO TIMES THE CONDUIT O.D. BETWEEN ADJACENT CONDUITS EXCEPT WHERE CROSSING OR OTHERWISE APPROVED BY THE ENGINEER.

COUNTY OF LAKE, ILLINOIS
VERNON HILLS NEW CENTURY TOWN
WATER WORKS IMPROVEMENTS CONTRACT NO.5

ELECTRICAL DETAILS

DRAWN BY: R.S. MAINTENANCE DATE:	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: NONE
CHECKED BY: Z.R.M.		REVISED:
APPROVED BY: F.H.S.		SHEET NO. 16 OF 18 SHEETS



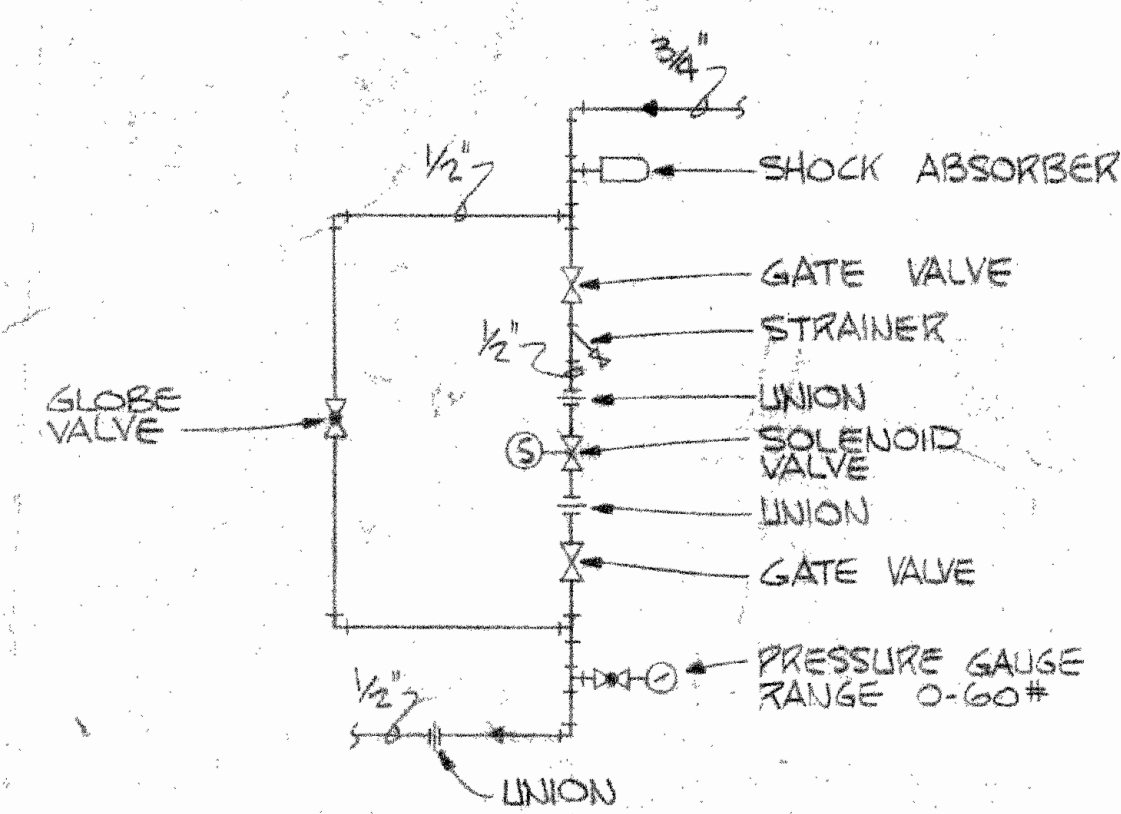
NOTE: 1) SEE ALSO BULLETIN 20, APPENDIX C
 2) FUEL SUPPLY & RETURN LINES ARE LAID IN 6"x4" GRATED TRENCH FROM TANK TO ENGINE PAD

DETAIL 17-A
 FUEL FLOW DIAGRAM
 NOT TO SCALE

- NOTES:
1. ALL FLOOR DRAINS ARE 4" TYPE "A"
 2. ELECTRIC UNIT HEATERS UH-1 THRU UH-5 SHALL HAVE A HEATING CAPACITY OF 75 KW AT 480V, 3Φ, WITH A 1/10 HP FAN MOTOR 480V, 3Φ; MOUNTING HEIGHTS ARE UH-1 THRU UH-3 AS HIGH AS POSSIBLE BOTTOMS OF HEATERS +691.0 UH-4, UH-5
 3. ELECTRIC STRIP HEATERS SH-1 THRU SH-3 SHALL HAVE A HEATING CAPACITY OF 2 KW AT 480V, 3Φ. THEY SHALL BE MOUNTED SUCH THAT THE BOTTOM OF THE HEATER IS 5" ABOVE THE FINISHED FLOOR.
 4. WHEN THERMOSTATS ARE MOUNTED ON EXTERIOR WALLS OR WALLS AGAINST GRADE OR WATER CONTAINING TANKS THEY SHALL BE MOUNTED WITH 1" MIN. AIR SPACE BETWEEN THERMOSTAT AND WALL SURFACE.

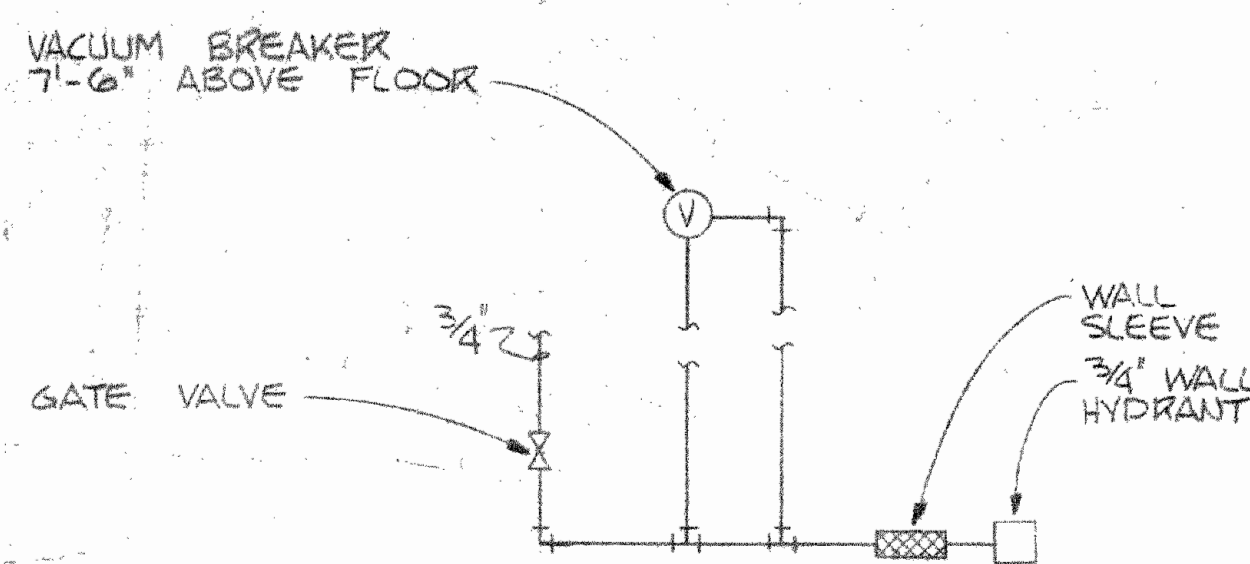
PLAN
 SCALE: 1/4"=1'-0"

COUNTY OF LAKE, ILLINOIS VERNON HILLS NEW CENTURY TOWN WATER WORKS IMPROVEMENTS CONTRACT NO. 5		
HEATING - VENTILATION - PLUMBING PLAN		
DRAWN BY: O.F.S.	CONSOER, TOWNSEND & ASSOCIATES CONSULTING ENGINEERS CHICAGO, ILL.	SCALE: AS SHOWN
DATE: SEPT. 72		REVISED: 30 SEPT. 72
CHECKED BY: I.J.L.		1-15-75
APPROVED BY: <i>[Signature]</i>		SHEET NO. 17 OF 18 SHEETS

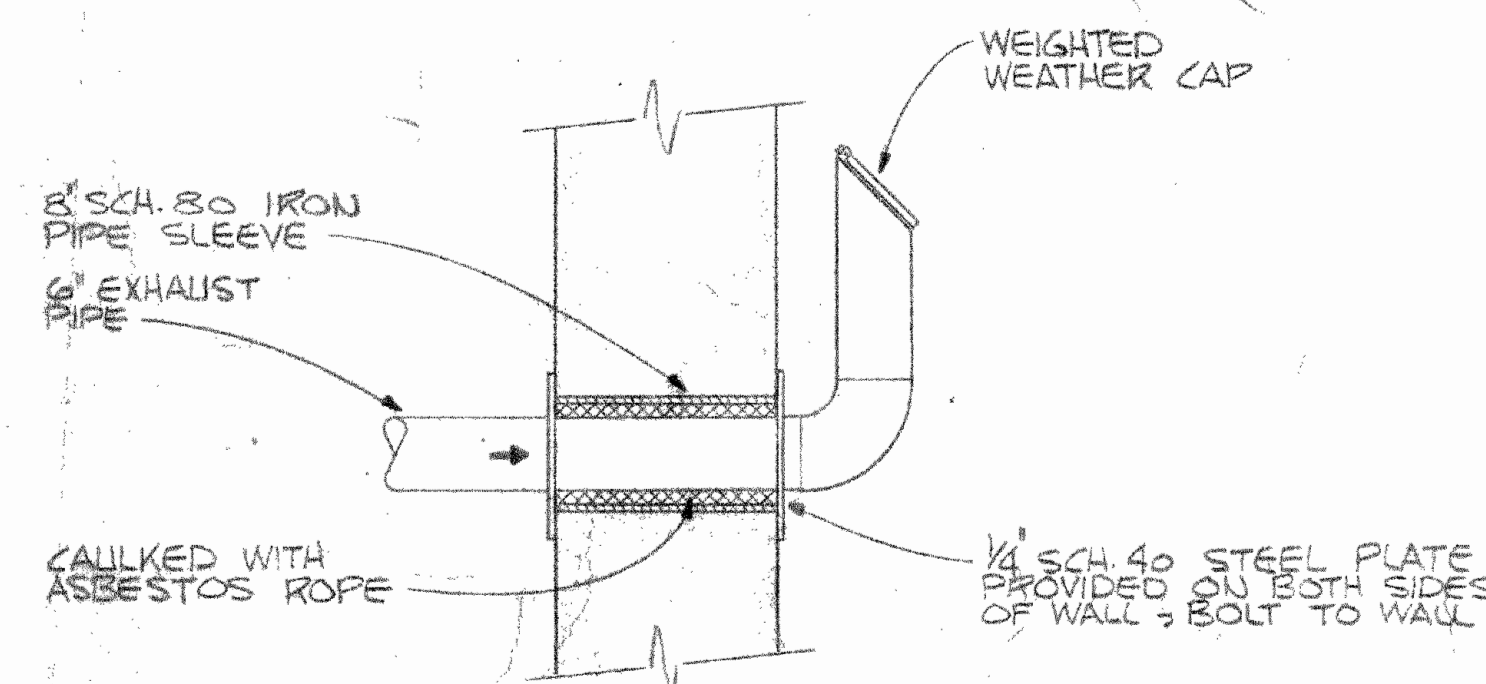


WELL PUMP OIL COOLER SOLENOID WASTE TO WELL BY PUMP VENDOR

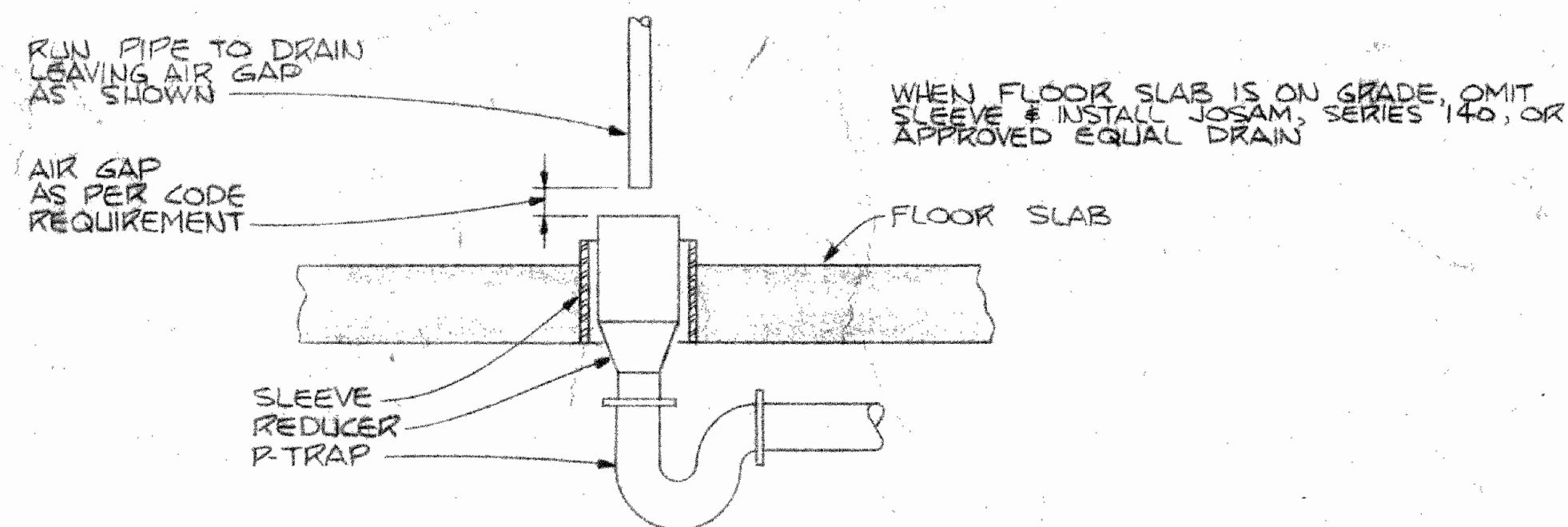
DETAIL 18-A
SOLENOID CONTROL STATION



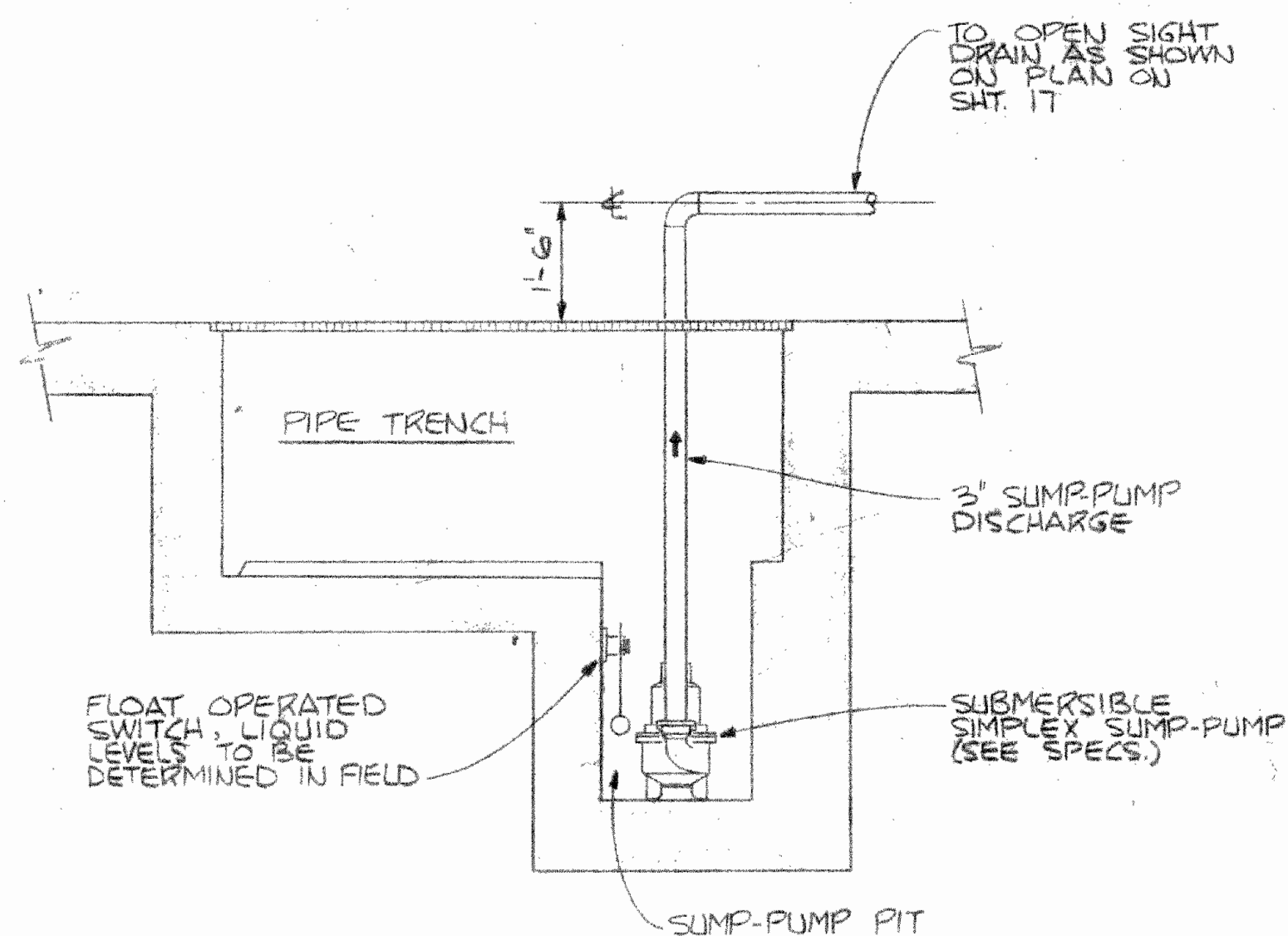
DETAIL 18-B
WALL HYDRANT



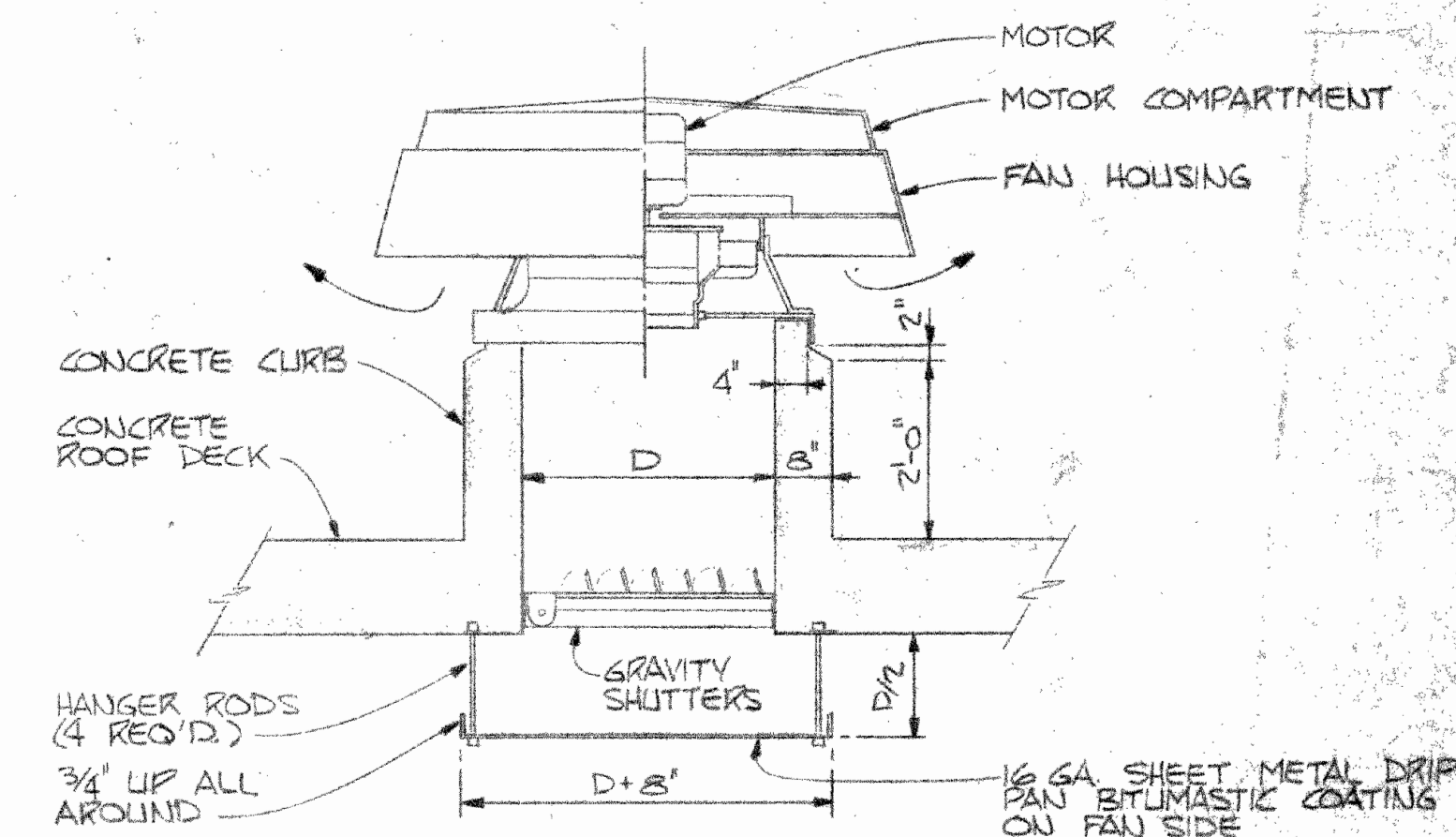
DETAIL 18-C
EXHAUST PIPE SLEEVE



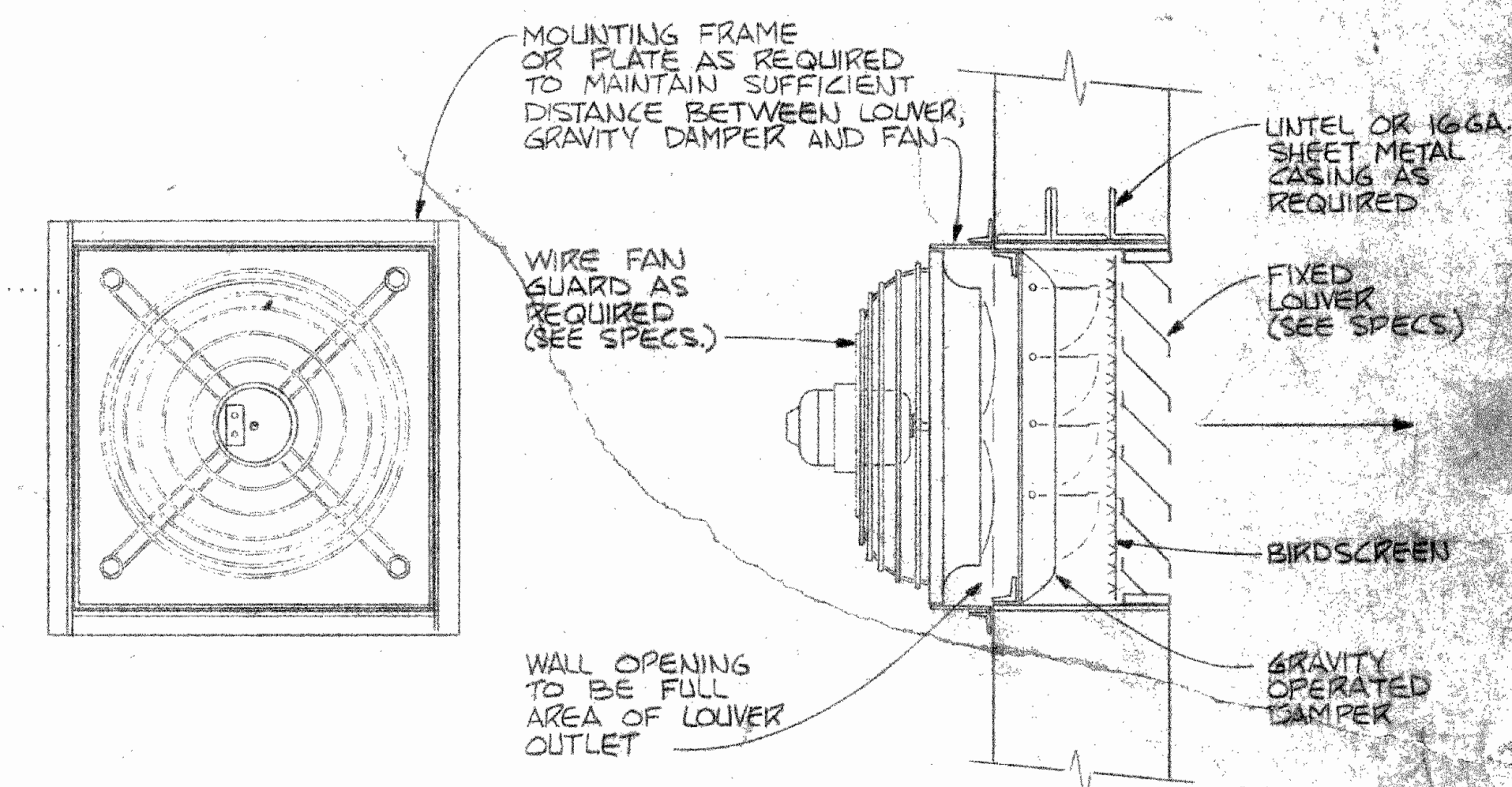
DETAIL 18-D
OPEN SIGHT DRAIN



DETAIL 18-E
SUMP PUMP



DETAIL 18-F
POWER ROOF VENTILATOR



DETAIL 18-G
WALL MOUNTED PROPELLER EXHAUST FAN

FAN SCHEDULE													
SYMBOL	LOCATION	TYPE	RPM	S.P. INS. W.G.	CAPACITY C.F.M. STD. AIR	TIP VELOCITY F.P.M.	WHEEL DIA. INCHES	DRIVE	MOTOR			REMARKS	
									HP	VOLTS	PH. HZ.		
EF-1	CHLORINE ROOM	P	1725	0.25	1200	-	16	DIRECT	1/3	120	1	60	
EF-2	MAIN PUMP ROOM	PRV	591	0.375	5100	4176	27	BELT	1	460	3	60	
EF-3	MAIN PUMP ROOM	PRV	591	0.375	5100	4176	27	BELT	1	460	3	60	
EF-4	WELL PUMP ROOM	P	1725	0.25	2115	-	16	DIRECT	1/3	120	1	60	
EF-5	WELL PUMP ROOM	P	1725	0.25	2115	-	16	DIRECT	1/3	120	1	60	

NOTE:
PRV-POWER ROOF VENTILATOR
P-PROPELLER FAN

COUNTY OF LAKE, ILLINOIS
VERNON HILLS NEW CENTURY TOWN
WATER WORKS IMPROVEMENTS CONTRACT NO. 5

HEATING-VENTILATION-PLUMBING - DETAILS

DRAWN BY: L. JIM FELTS
SEPT. 72
CHECKED BY:

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS
CHICAGO, ILL.

SCALE: NONE
REVISED:
SHEET NO. 18
OF 18 SHEETS