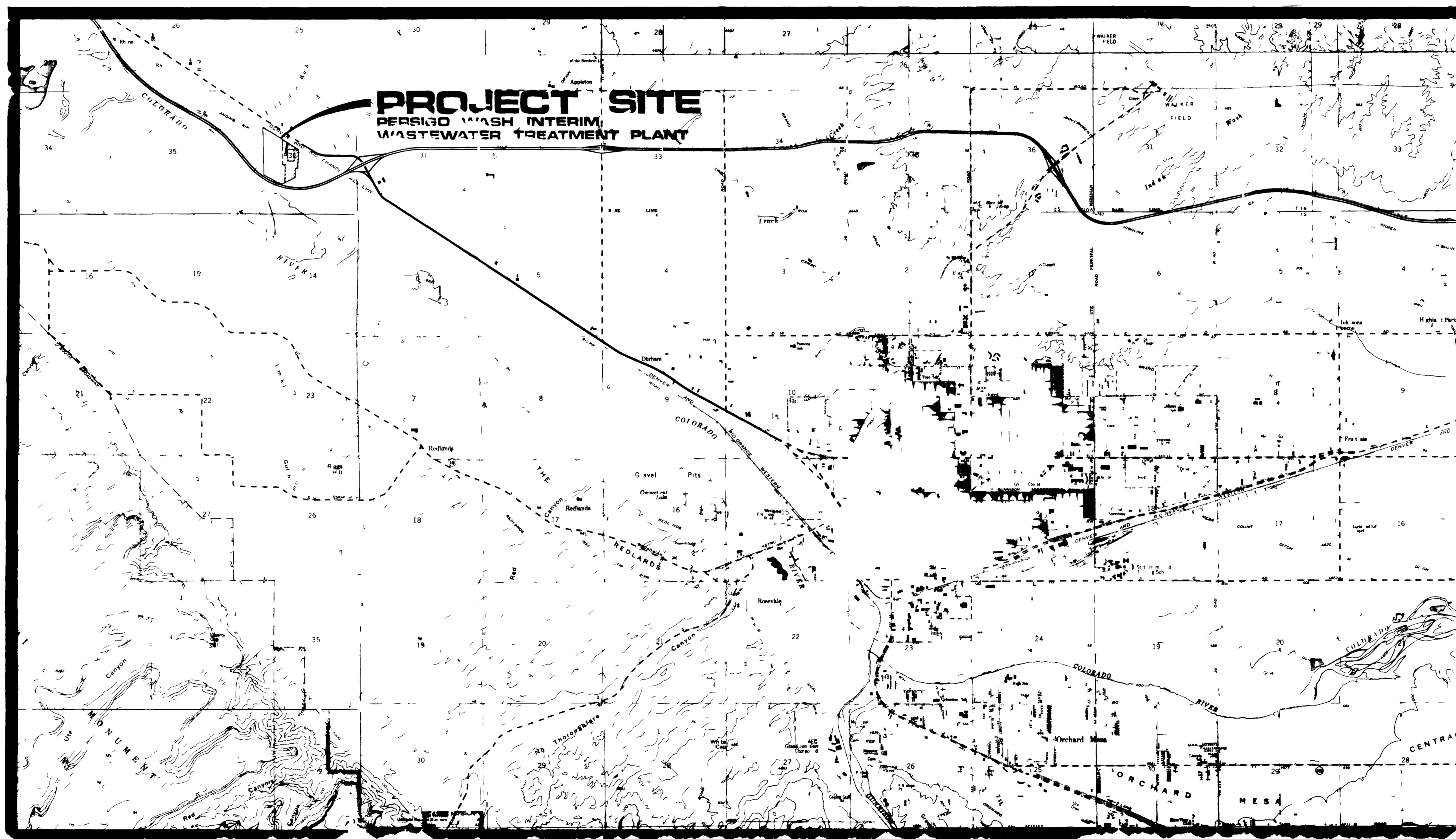


# GRAND JUNCTION / MESA COUNTY COLORADO

## PERSIGO WASH INTERIM WASTEWATER TREATMENT PLANT 1980



GRAND JUNCTION & VICINITY MAP

**HENNINGSON, DURHAM & RICHARDSON**  
ENGINEERS · PLANNERS · CONSULTANTS  
DENVER · GRAND JUNCTION

INDEX TO DRAWINGS  
SHEET NO. TITLE

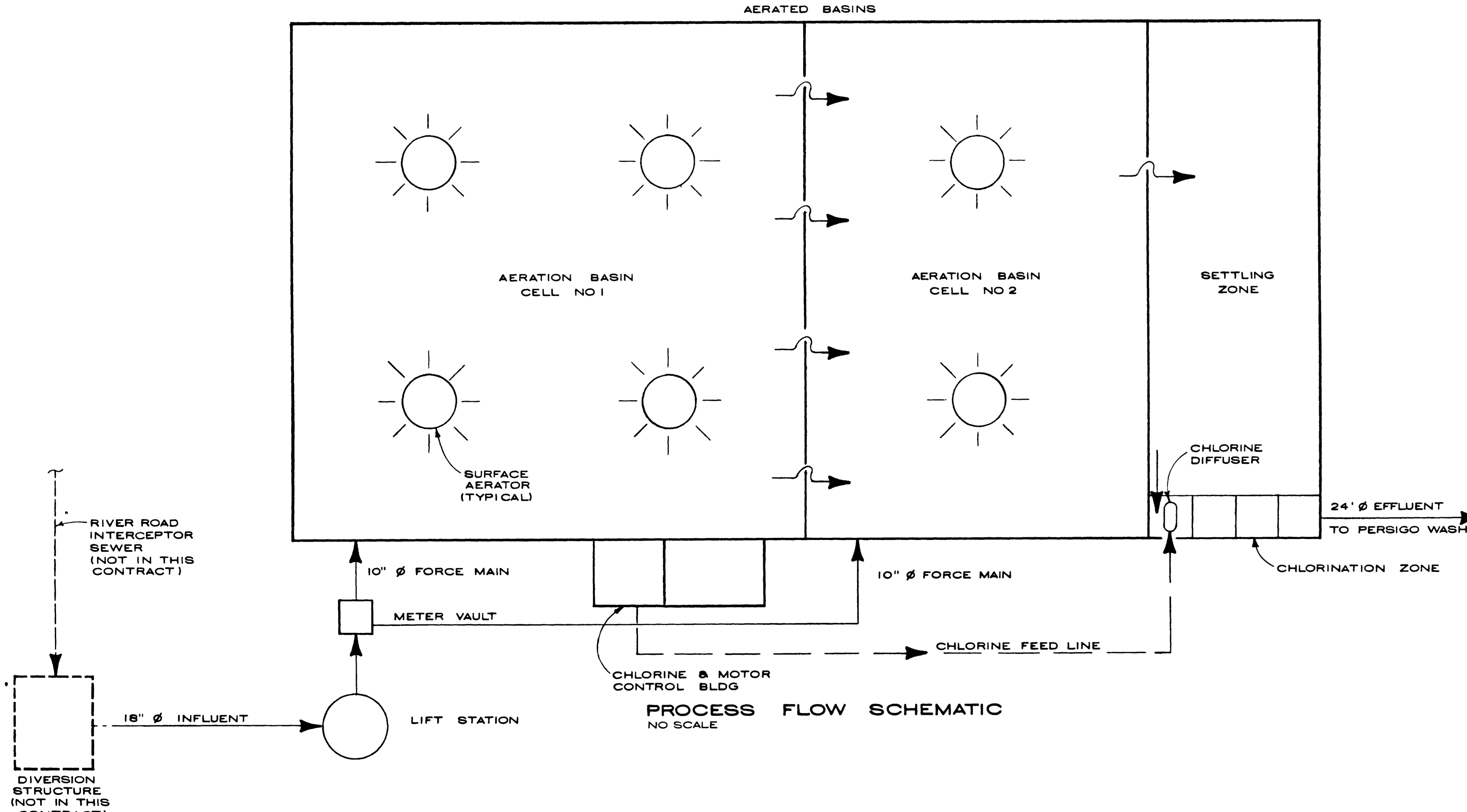
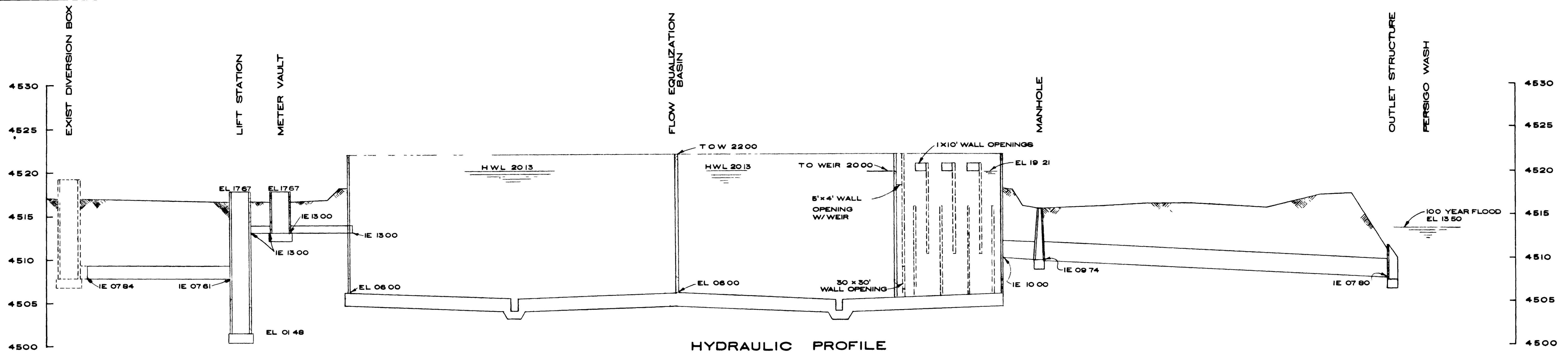
- GENERAL**
- 1 COVER SHEET - LOCATION MAP - INDEX
  - 2 HYDRAULIC PROFILE - PROCESS FLOW SCHEMATIC
  - 3 OVERALL SITE PLAN
  - 4 GRADING AND LAYOUT PLAN
  - 5 GRADING AND LAYOUT PLAN
  - 6 YARD PIPING PLAN
  - 7 YARD PIPING PLAN
  - 8 YARD PIPING PROFILES
  - 9 MISCELLANEOUS SITE DETAILS - WEST SIDE PLAN - EMISSION STRUCTURE
- ARCHITECTURAL**
- 10 CHLORINE MOTOR CONTROL BUILDING - PLAN - ELEVATIONS - SECTIONS
  - 11 CHLORINE MOTOR CONTROL BUILDING - SECTIONS - DETAILS
- STRUCTURAL**
- 12 AERATED BASIN - CELL NO 1 - FOUNDATION PLAN
  - 13 AERATED BASIN - CELL NO 2 - FOUNDATION PLAN
  - 14 CHLORINE MOTOR CONTROL BUILDING AND INLET STRUCTURE - PLANS - SECTIONS - DETAILS
  - 15 AERATED BASINS - SECTIONS - DETAILS
  - 16 MISCELLANEOUS DETAILS
- PROCESSING**
- 17 AERATED BASIN PLAN - CELL NO 1
  - 18 AERATED BASIN PLAN - CELL NO 2
  - 19 AERATED BASINS - SECTIONS - DETAILS
  - 20 AERATED BASINS - SECTIONS - DETAILS
  - 21 CHLORINE MOTOR CONTROL BUILDING - PLANS - SECTIONS - DETAILS
  - 22 LIFT STATION & METER VAULT - PLANS - SECTIONS - DETAILS
- MECHANICAL**
- 23 CHLORINE MOTOR CONTROL BUILDING - FLOOR PLAN - SECTIONS
- ELECTRICAL**
- 24 AERATED BASINS SITE PLAN
  - 25 AERATED BASIN CELL NO 1 - LIGHTING - POWER PLAN
  - 26 AERATED BASIN CELL NO 2 - LIGHTING - POWER PLAN
  - 27 AERATED BASINS - MISCELLANEOUS - PLANS - SECTIONS - DETAILS
  - 28 ONE LINE DIAGRAM FOR MCC-II



13111

FILED WITH THE CITY OF GRAND JUNCTION AND MESA COUNTY, COLORADO, JULY 9, 1980  
DATE  
APPROVED *James E. Little*  
CITY OF GRAND JUNCTION AND MESA COUNTY  
DATE: JULY 9, 1980

"RECORDED"  
FROM RECORDATION  
PROVIDED BY THE  
ENGINEERS  
DATE: February 1982



**"AS RECORDED"**  
 PROVIDED FOR  
 PROVIDE TO THE  
 CONTRACTORS  
 DATE February 1982

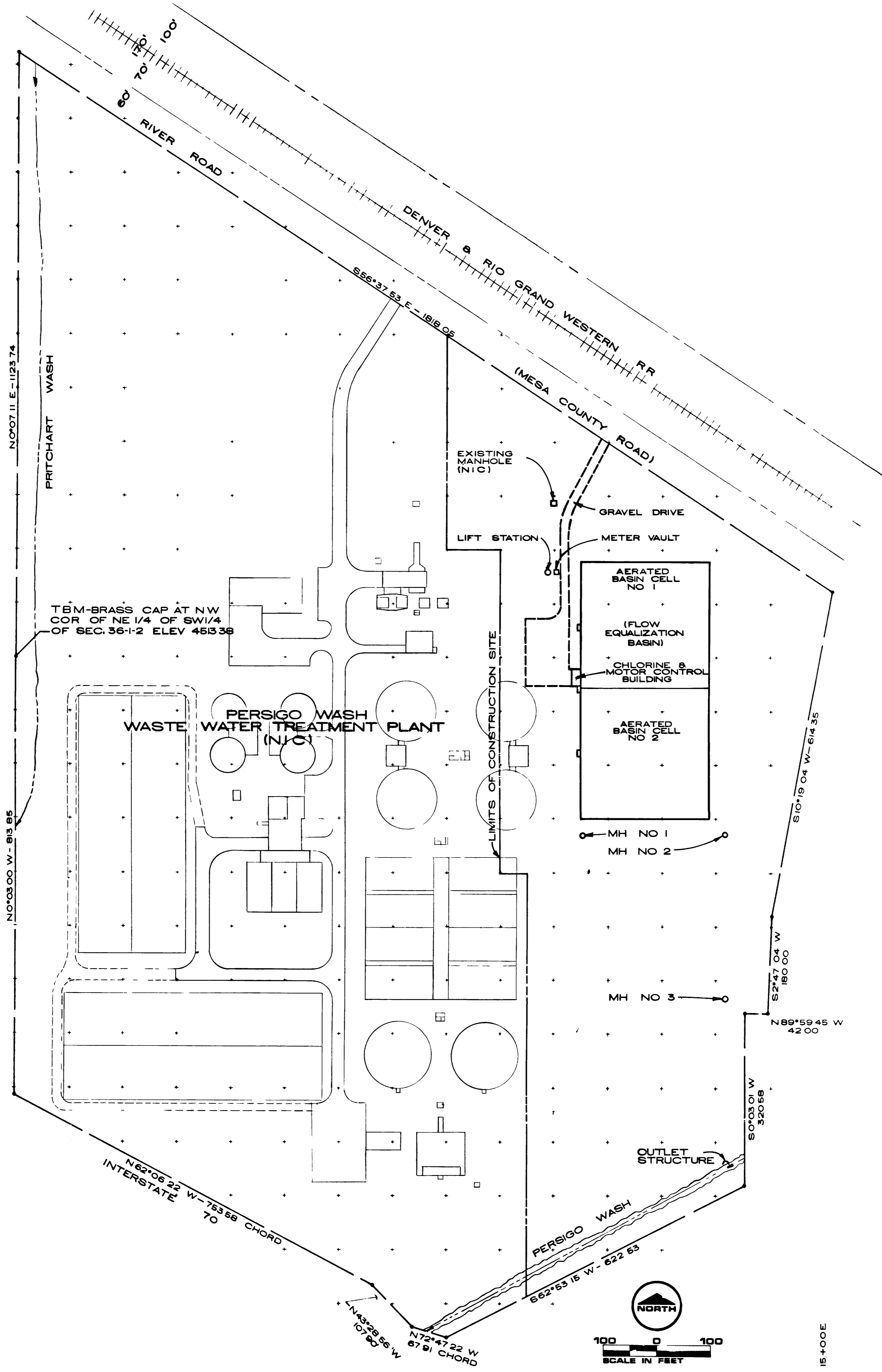
PROFILE SCALE  
 HORIZONTAL SCALE NONE  
 VERTICAL SCALE 1"=5'-0"

**GRAND JUNCTION / MESA COUNTY,  
 COLORADO**  
**PERSIGO WASH INTERIM  
 WASTEWATER TREATMENT  
 PLANT**  
 GENERAL  
 HYDRAULIC PROFILE &  
 PROCESS FLOW  
 SCHEMATIC

**HERRINGTON, DURHAM & RICHARDSON, INC.**  
 ENGINEERS PLANNERS CONSULTANTS  
 DENVER COLORADO GRAND JUNCTION COLORADO

JOB	DESIGNED J. HORST	CHECKED J. HORST	DATE
735510	APPROVED S. HENRICHSEN	DATE	JAN. 31. 80
DETAILED P. KREMER		2 of 28	

11+00 N  
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9+00 S  
10+00 S  
11+00 S  
12+00 S



- LEGEND**
- PROPOSED STRUCTURES
  - FUTURE STRUCTURES
  - PROPOSED GRAVEL DRIVE
  - PROPERTY LINE

"AS RECORDED"  
FROM THE ORIGINAL  
PROVIDED BY THE  
CONTRACTORS  
DATE February 1982



**GRAND JUNCTION / MESA COUNTY, COLORADO**  
**PERSIGO WASH INTERIM WASTEWATER TREATMENT PLANT**  
GENERAL

**OVERALL SITE PLAN**

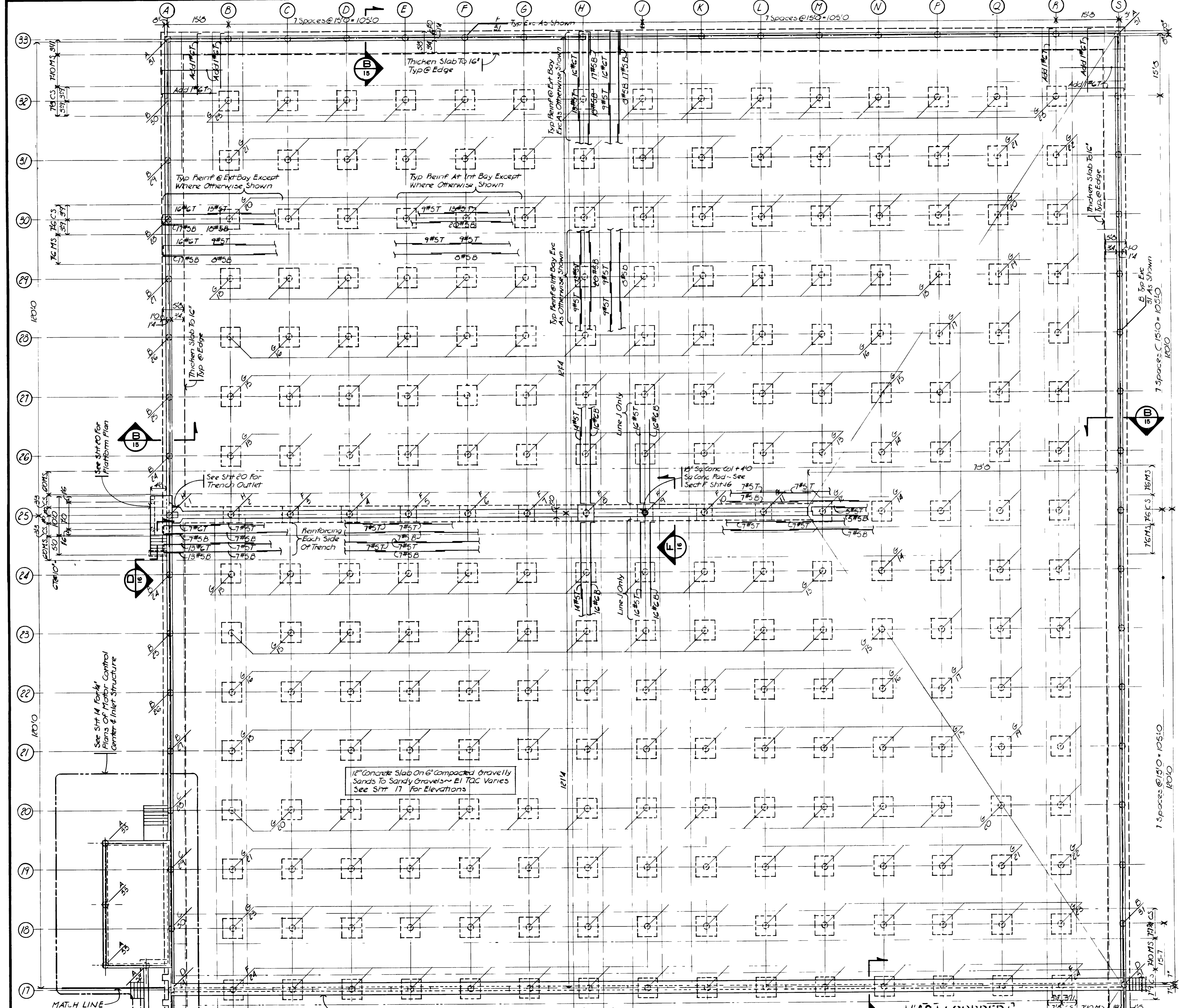
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**HENNINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS PLANNERS CONSULTANTS  
DENVER, COLORADO GRAND JUNCTION COLORADO

JOB NO. 735510	DESIGNED BY J. HORST	CHECKED BY J. HORST	DATE JAN 31, 82
DETAILS BY HINMAN	APPROVED BY K. HEINRICHSEN	DATE JAN 31, 82	

SHEET 3 OF 28

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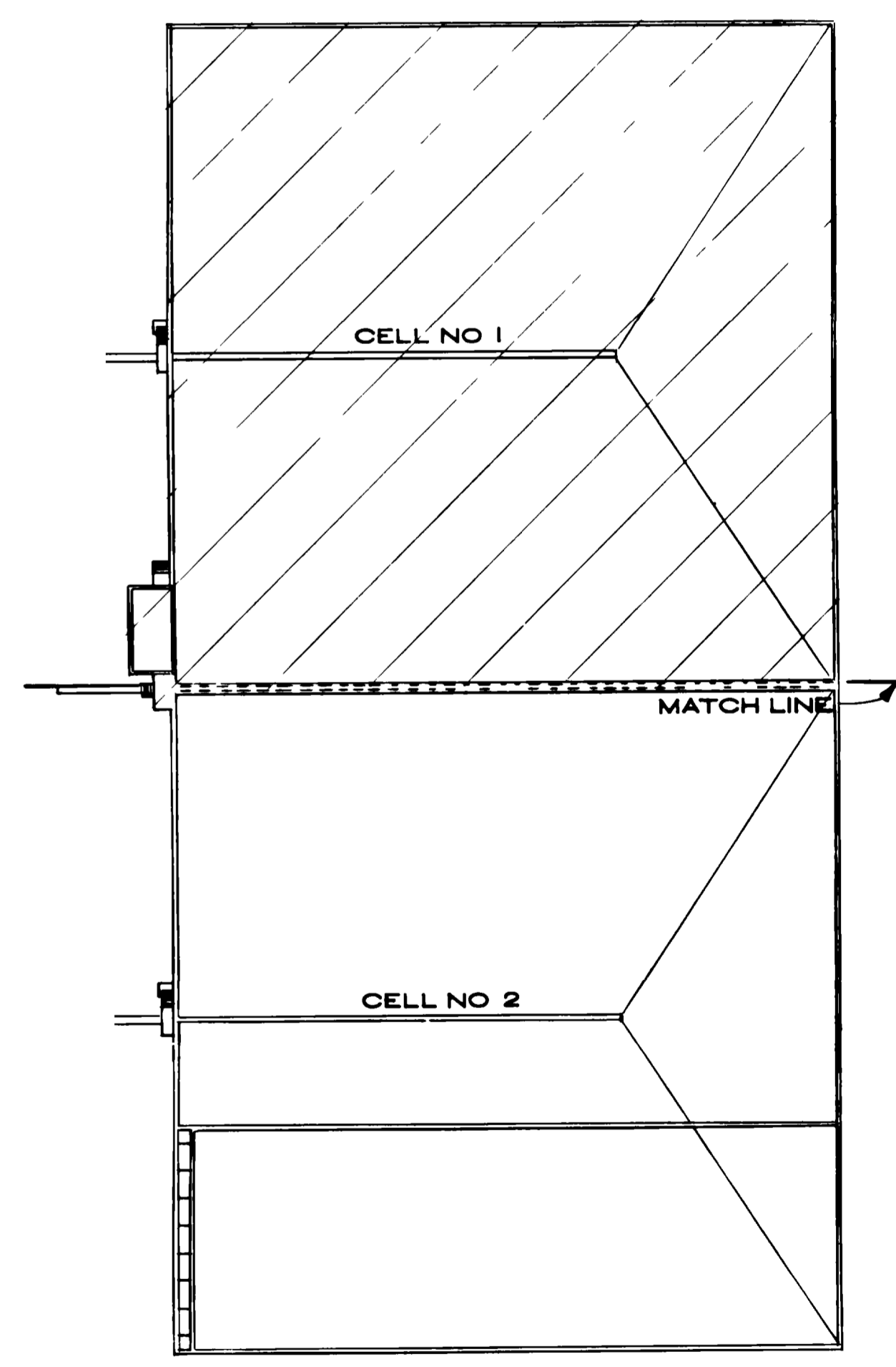


### CAISSON SCHEDULE

Penetration And Reinforcing			Top Of Caisson Elevation				
Mark	Penetration	Vert Reinf	Ties	Mark	Elev	Mark	Elev
A	4'	4#5	#3@10"	1	450200	13	450363
B	5'	4#5	do	2	204	14	369
C	6'	4#5	do	3	208	15	370
D	7'	4#5	do	4	212	16	378
E	7'	6#7	#3@10"	5	216	17	381
F	8'	6#7	#3@10"	6	219	18	385
G	8'	6#7	#3@10"	7	223	19	392
H	9'	6#7	#3@10"	8	226	20	393
				9	231	21	400
				10	234	22	403
				11	238	23	408
				12	242	24	414

Notes 1 See Section F, Sht 15 For Caisson Detail  
 2 All Caissons shall be 24" dia

PLAN NOTES  
 1 Slab Shall Be Placed In Checkerboard Pattern In 30 Foot Square Sections, See Det 2 Sht 15 For Keyed Construction Joints  
 2 Walls Shall Be Placed In Alternate 60 Foot Long Sections See Det 3 Sht 15 For Keyed Construction Joints



KEY MAP  
SCALE 1" = 50'



AERATED BASIN PLAN CELL NO. 1  
SCALE 1" = 10'  
(FLOW EQUALIZATION BASIN)

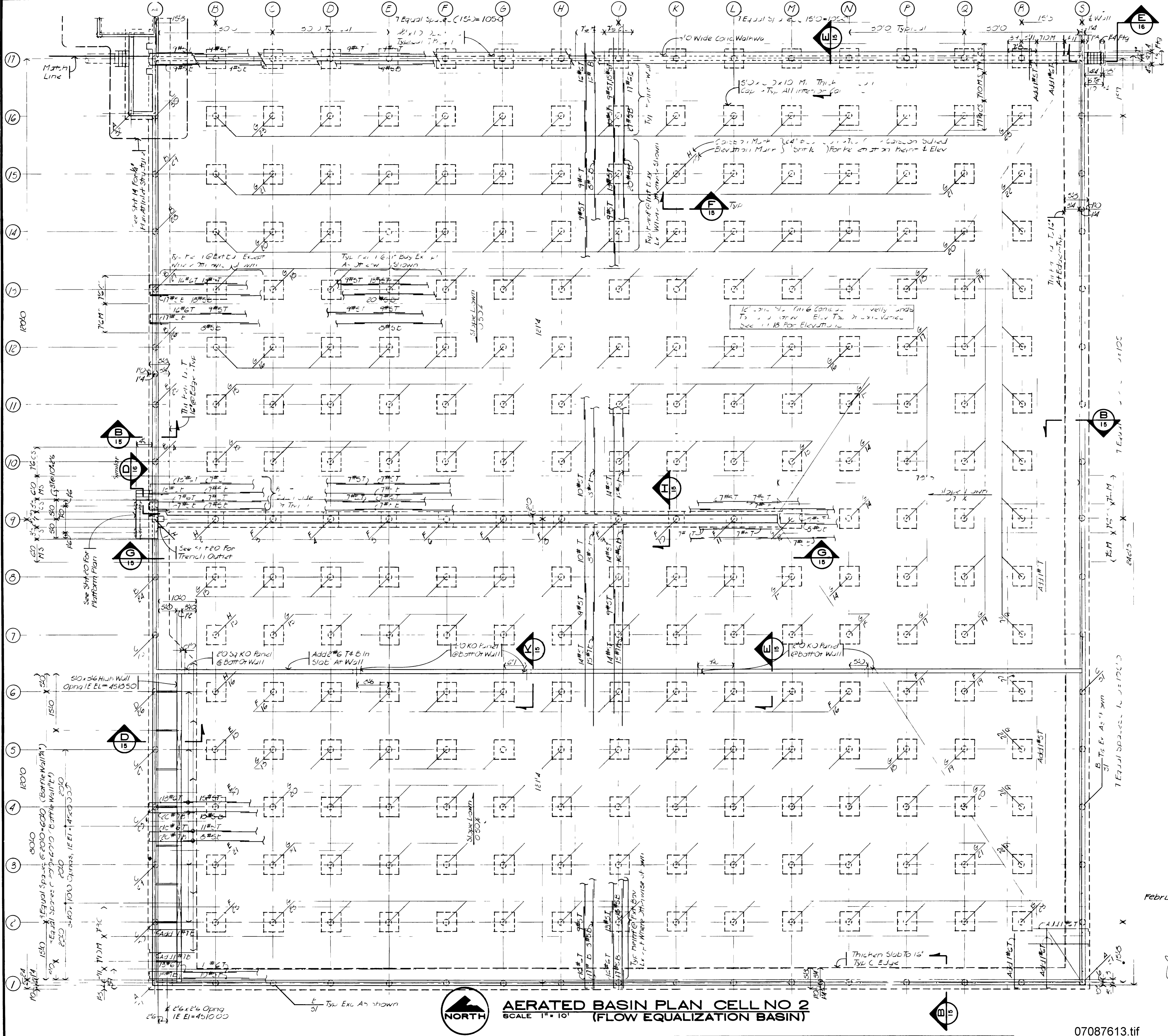
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FOR INFORMATION  
PROVIDED BY THE  
CONTRACTORS  
DATE: February 1982

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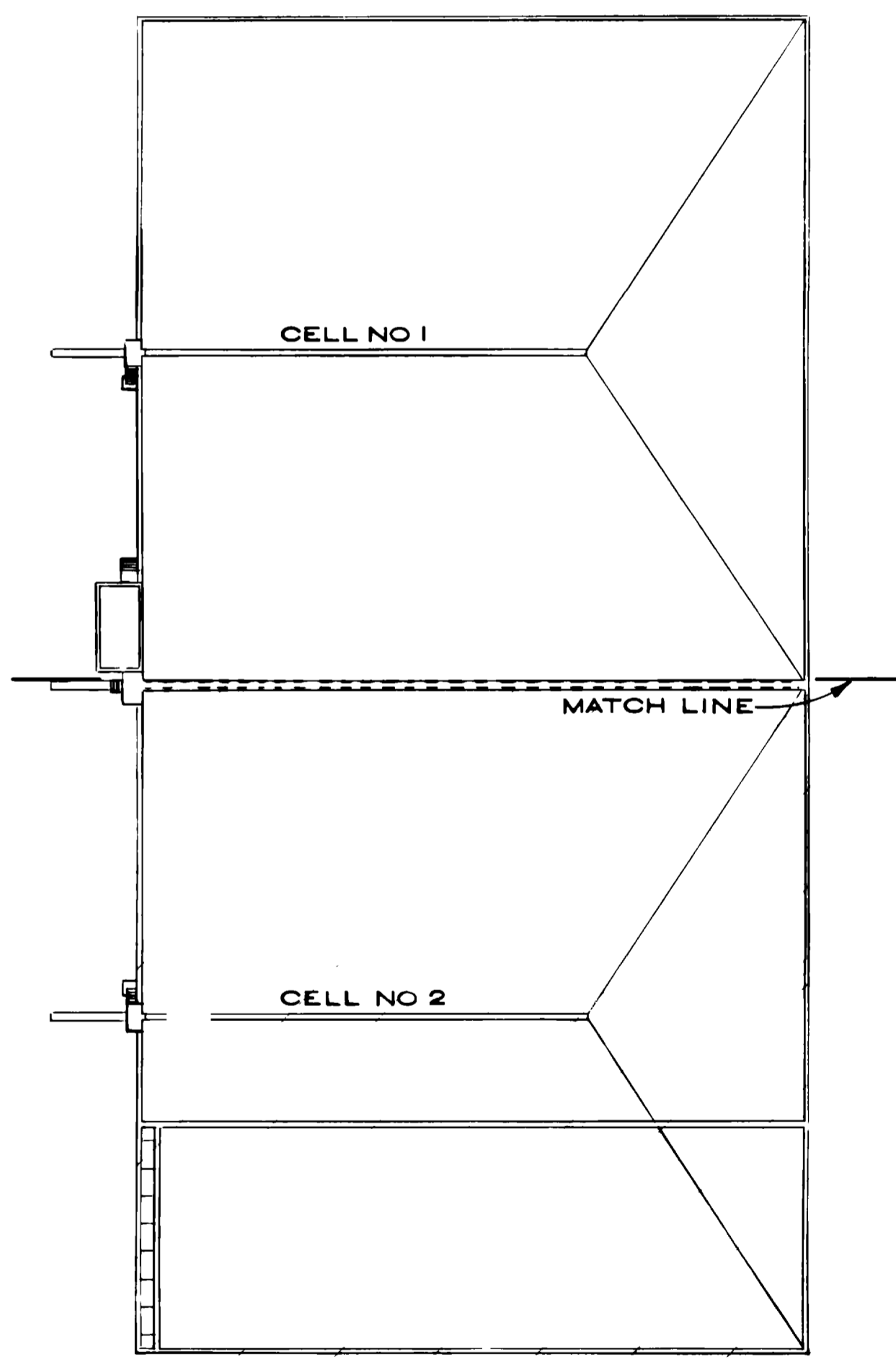
GRAND JUNCTION / MESA COUNTY,  
COLORADO  
**PERSIGO WASH INTERIM  
WASTEWATER TREATMENT  
PLANT**  
STRUCTURAL  
**AERATED BASIN  
CELL NO. 1  
(FLOW EQUALIZATION BASIN)  
FOUNDATION PLAN**

HENNINGSON DURHAM & RICHARDSON, INC.  
ENGINEERS PLANNERS CONSULTANTS  
DENVER COLORADO GRAND JUNCTION COLORADO

JOB DESIGNED: R.L.S. CHECKED: J.M.K. SHEET  
735510 DETAILED: R.N.T. APPROVED: [Signature] DATE: MARCH 2, 1982 12 OF 28



**PLAN NOTES**  
 1. Slab shall be placed in checkerboard pattern in 30 foot square sections. See Det. 2 Sht. 15 For keyed construction joints.  
 2. Wall - shall be placed in alternate 60 foot long sections. See Det. 3 Sht. 15 For keyed construction joints.



**KEY MAP**  
 SCALE 1" = 50'

GRAND JUNCTION / MESA COUNTY,  
 COLORADO  
**PERSIGO WASH INTERIM  
 WASTEWATER TREATMENT  
 PLANT**  
 STRUCTURAL  
**AERATED BASIN  
 CELL NO 2  
 (FLOW EQUALIZATION BASIN)**  
 FOUNDATION PLAN

**HENNINGSON, DURHAM & RICHARDSON, INC.**  
 ENGINEERS PLANNERS CONSULTANTS  
 DENVER COLORADO GRAND JUNCTION COLORADO

JOB 735510 DESIGNED RLS CHECKED JMH SHEET 13 OF 28  
 APPROVED [Signature] DATE [Blank]

February 1982

*Johnson/Hestey*

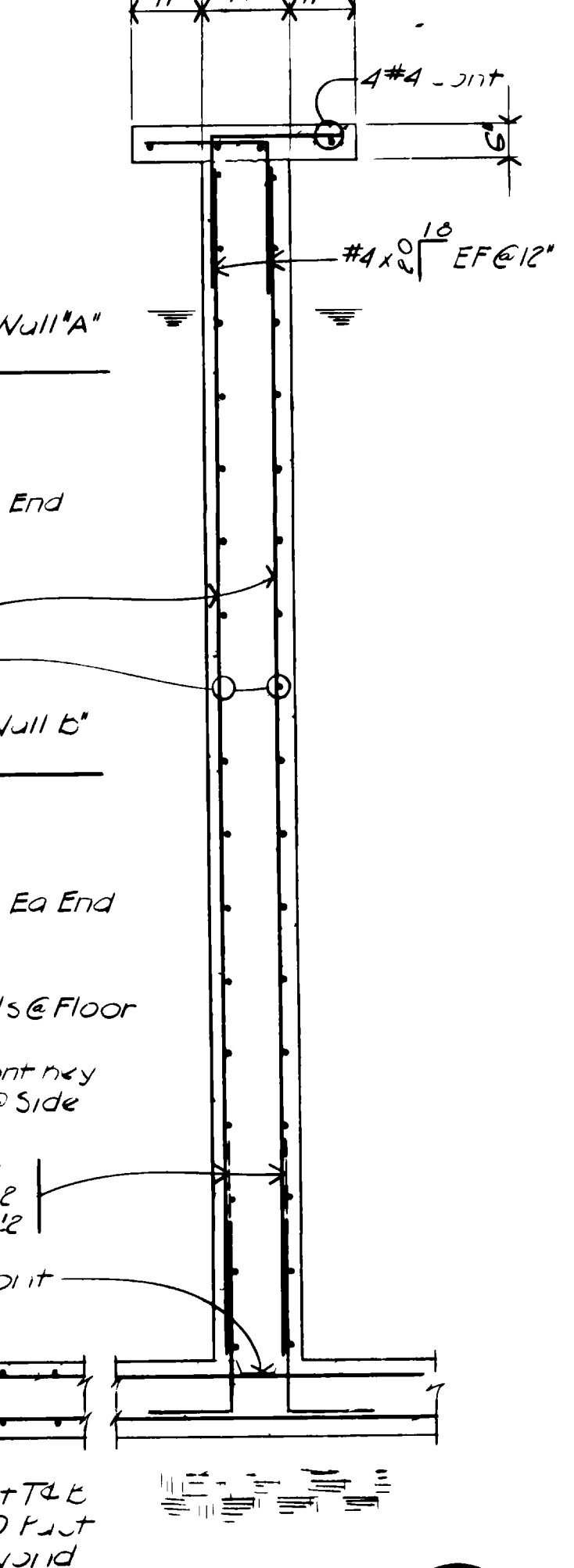
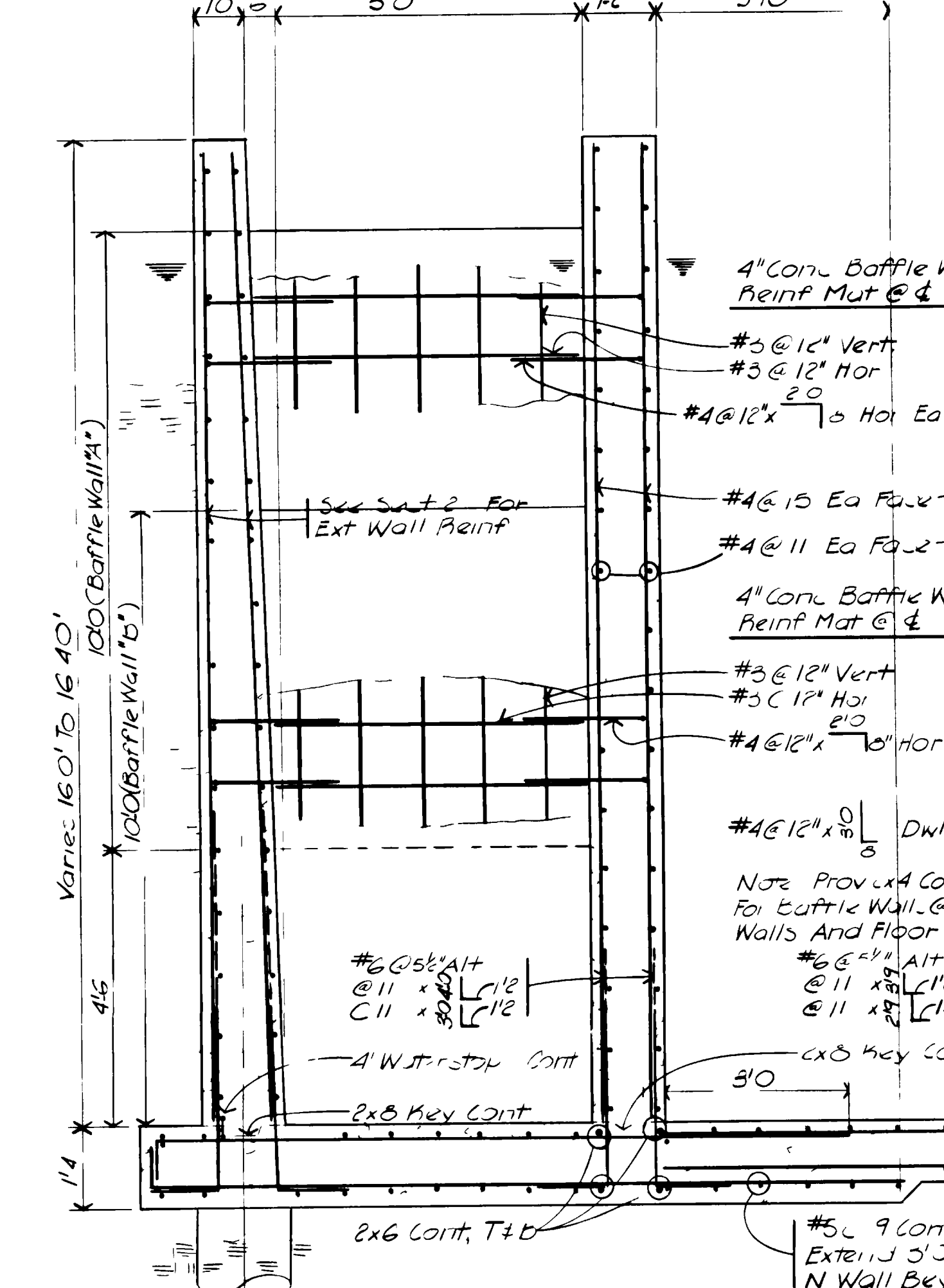
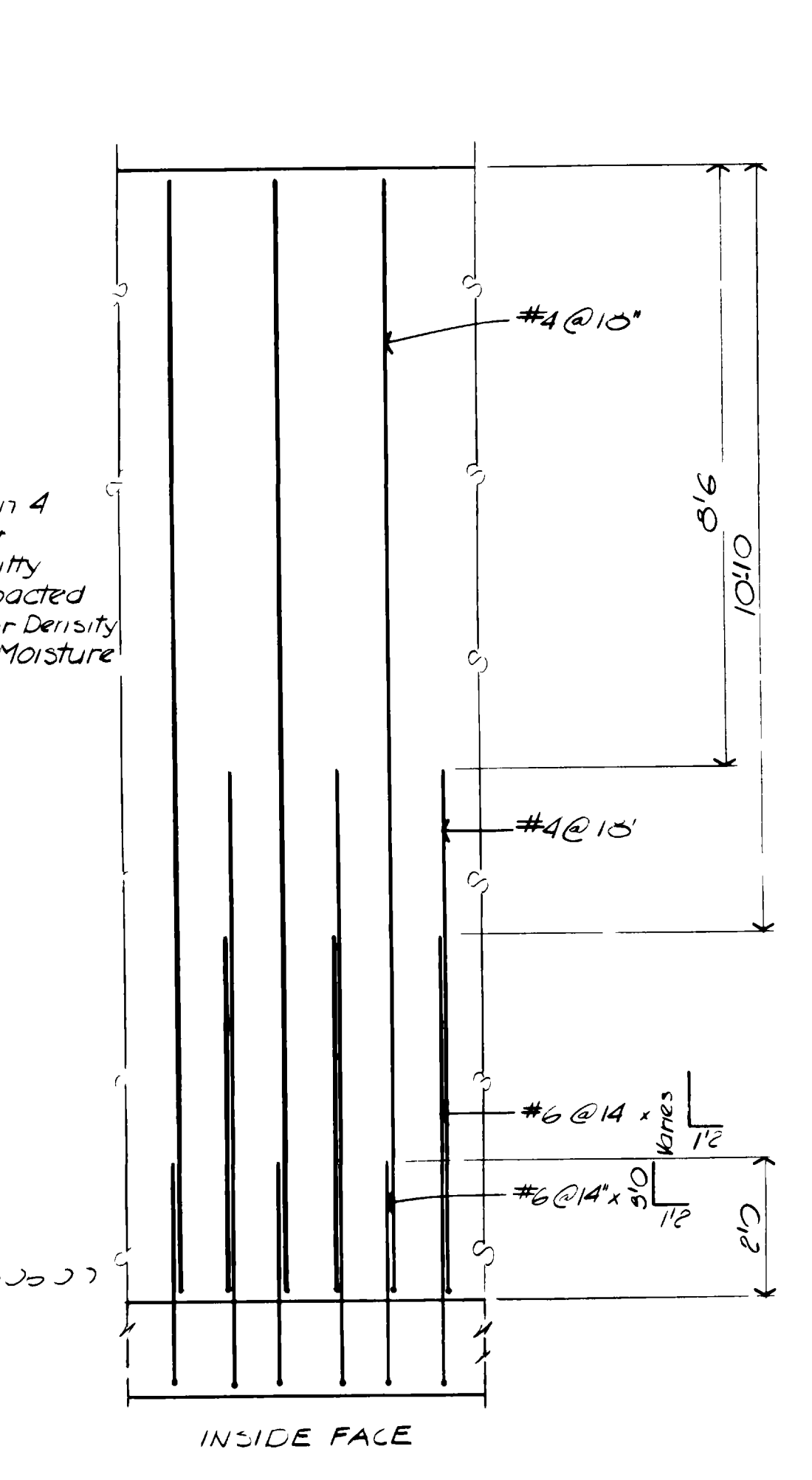
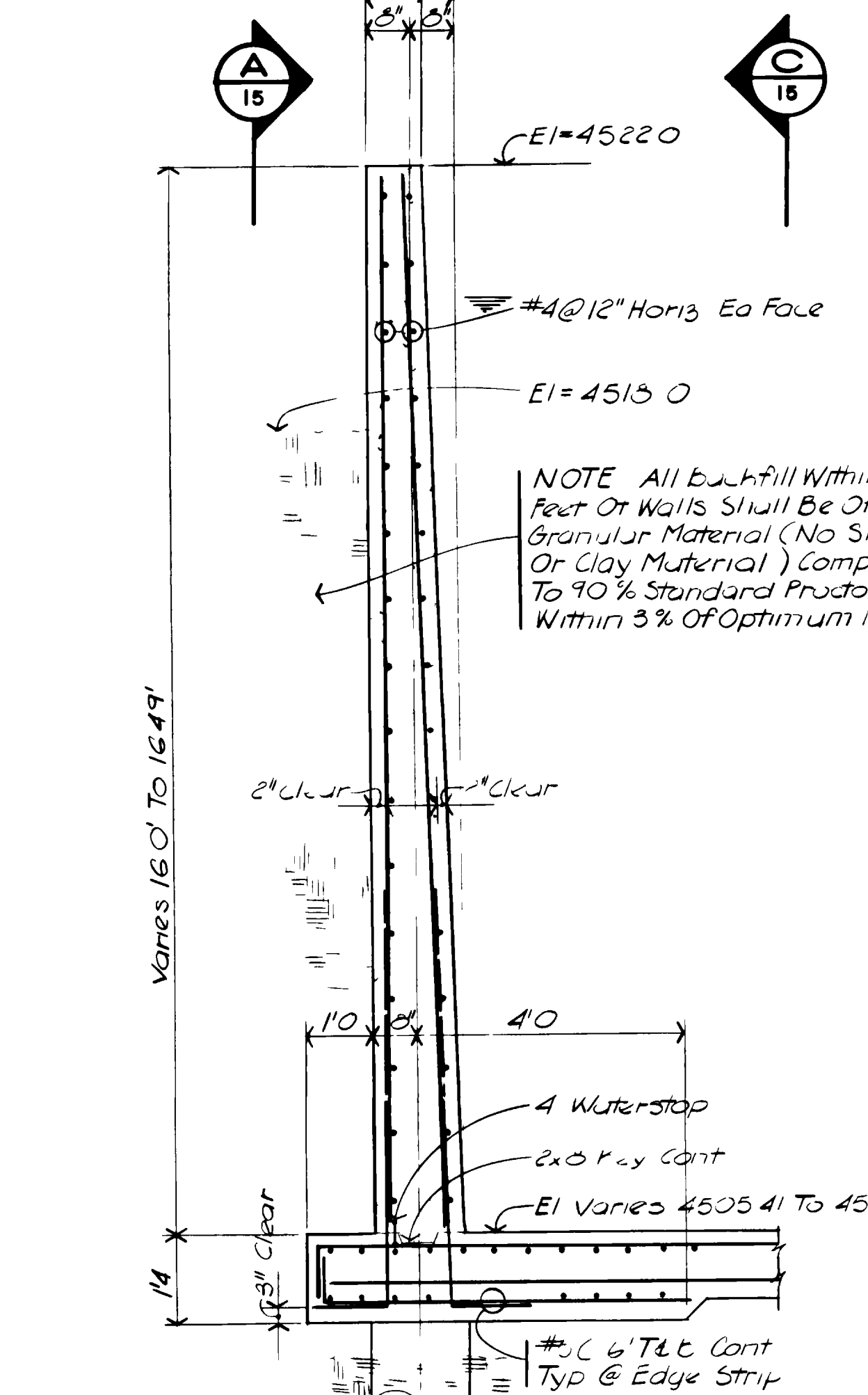
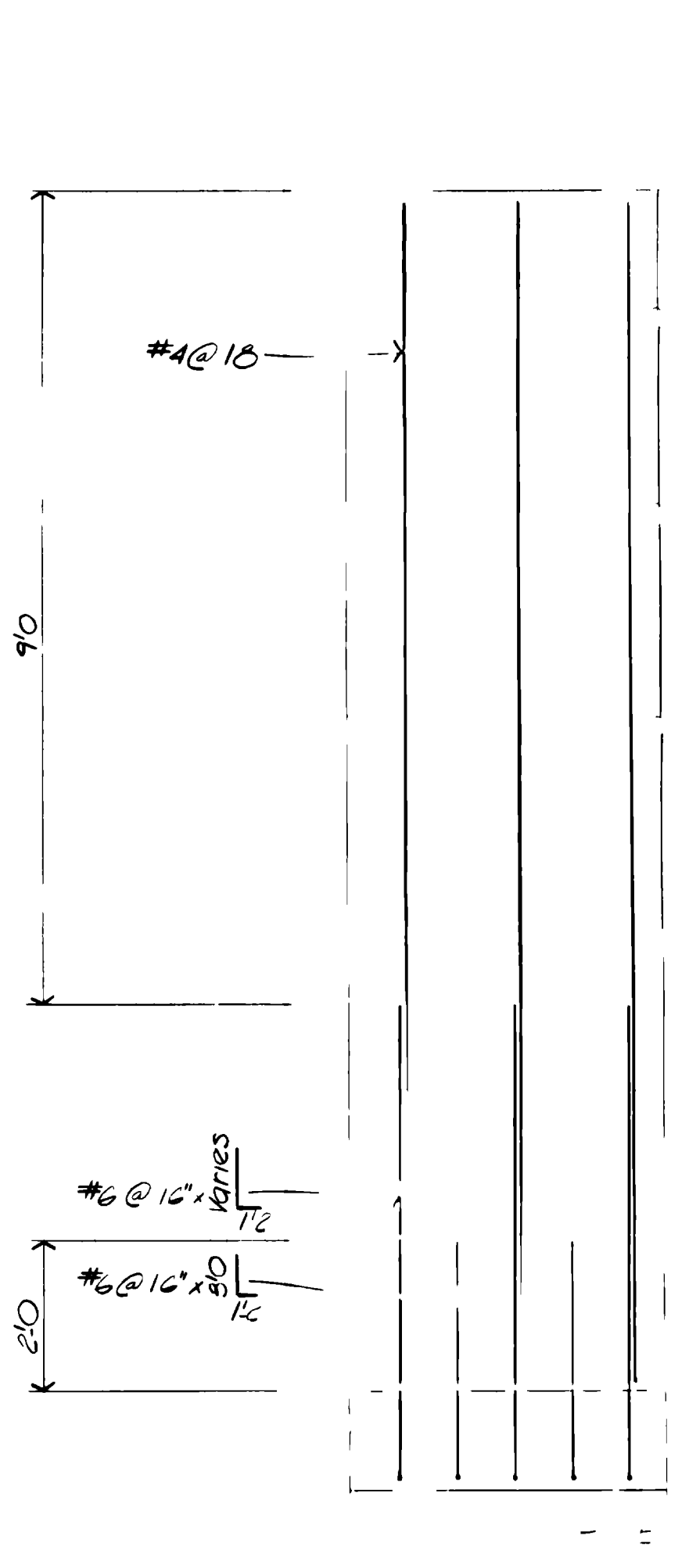
**AERATED BASIN PLAN CELL NO 2  
 (FLOW EQUALIZATION BASIN)**  
 SCALE 1" = 10'

07087613.tif



- LIVE LOADS USED IN DESIGN
 

1 MOTOR CONTROL CENTER	B BASIN
2 ROOF 30 psf (SNOW)	1 HIGH WATER LINE E1 4520 00
3 WIND 20 psf	2 HIGH WATER TABLE E1 4515 00
3 SEISMIC Zone 1	3 LATERAL EARTH PRESSURE (DRY SAND - 35 psf) (WET SAND - 85 psf)
- CONCRETE
  - ALL CONCRETE SHALL BE MADE WITH STONE AGGREGATE AND TYPE II CEMENT AND SHALL DEVELOP 4000 PSI COMPRESSIVE STRENGTH IN 28 DAYS
  - ALL REINFORCING SHALL BE HIGH STRENGTH DEFORMED BARS (GRADE 60 ASTM A615-76a) WITH 60 000 PSI MINIMUM YIELD POINT
  - REINFORCEMENT PROTECTION
    - CONCRETE POURED AGAINST EARTH
    - CONCRETE POURED IN FORMS BUT EXPOSED TO WEATHER OR EARTH
      - IF BARS ARE LARGER THAN No 5
      - IF BARS ARE No 5 OR SMALLER
  - SLABS (TOP BARS)
    - ALL BAR LENGTHS ARE DRAWN TO SCALE UNLESS NOTED - NO SPLICES OF REINFORCEMENT SHALL BE MADE EXCEPT AS DETAILED OR AS AUTHORIZED BY THE STRUCTURAL ENGINEER. LAP SPLICES WHERE PERMITTED SHALL BE A MINIMUM OF 36 BAR DIAMETERS OR AS DETAILED. MAKE ALL BARS CONTINUOUS AROUND CORNERS
    - DETAIL BARS IN ACCORDANCE WITH ACI DETAILING MANUAL AND ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE - LATEST EDITIONS
    - PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCING AT POSITIONS SHOWN ON THE PLANS
    - PLACE 2-No 5 (1 EACH FACE) WITH 2'-0" PROJECTION AROUND ALL OPENINGS IN CONCRETE
    - SLABS AND WALLS SHALL NOT HAVE JOINTS IN A HORIZONTAL PLANE. ANY STOP IN CONCRETE WORK MUST BE MADE AT CENTER OF SPAN WITH VERTICAL BULKHEADS AND HORIZONTAL KEYS UNLESS OTHERWISE SHOWN. ALL CONSTRUCTION JOINTS SHALL BE AS DETAILED OR AS APPROVED BY THE ARCHITECT
    - WIRE MESH REINFORCEMENT MUST LAP ONE FULL MESH AT SIDE AND END LAPS AND SHALL BE WIRED TOGETHER
- STEEL
  - ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM SPECIFICATION A36
  - STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION AND CODE OF STANDARD PRACTICE
  - USE STANDARD FRAMED BEAM CONNECTIONS WITH 3/4" Ø BOLTS (OR WELDED EQUIVALENT) UNLESS OTHERWISE NOTED. SELECT CONNECTIONS TO SUPPORT ONE HALF THE TOTAL LOAD CAPACITY FOR EACH GIVEN BEAM AND SPAN. THE EFFECT OF CONCENTRATED LOADS SHALL ALSO BE CONSIDERED
  - STEEL JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH STEEL JOIST INSTITUTE SPECIFICATIONS
  - STEEL DECK
    - ALL STEEL DECK SHALL BE ERECTED IN ACCORDANCE WITH DECK MANUFACTURER'S SUGGESTED SPECIFICATIONS
    - STEEL DECK BY OTHER MANUFACTURERS MAY BE SUPPLIED IN LIEU OF THAT SHOWN PROVIDED SECTION PROPERTIES ARE SIMILAR TO THOSE OF DECK SPECIFIED AND IF APPROVED BY THE ARCHITECT
    - DECK SUPPLIER SHALL PROVIDE ALL ADDITIONAL FRAMING AS REQUIRED FOR OPENINGS THROUGH DECK
  - DECK WELDING SHALL BE AS FOLLOWS FOR 1/4" METAL DECK
    - AT EXTERIOR SUPPORTS WELD EDGE OF DECK WITH 3/4" PUDDLE WELDS AT 12" O.C. AND END OF DECK WITH 3/4" PUDDLE WELDS SPACED 4" PER PANEL
    - AT INTERIOR SUPPORTS WELD WITH 3/4" PUDDLE WELDS SPACED 4" PER PANEL
    - AT DECK JOINTS BUTT PUNCH OR 1/4" SEAM WELD AT 24" O.C. AT ADJACENT DECK MEMBERS
  - ALL WELDERS SHALL HAVE EVIDENCE OF PASSING THE AWS STANDARD QUALIFICATION TESTS
  - SEE ARCHITECTURAL DRAWINGS FOR NAILER HOLES, ETC.
- FOUNDATIONS
  - MAXIMUM CAISSON END BEARING PRESSURE USED IN DESIGN 40 000 psf
  - MAXIMUM CAISSON SIDE SHEAR FOR LENGTH OF PENETRATION INTO BEDROCK USED IN DESIGN 4 000 psf (3000 psf TO RESIST HYDROSTATIC UPLIFTS)
  - BASED ON REPORT No. 16747 PREPARED BY CHEN & ASSOCIATES CONSULTING ENGINEERS INC DATED August 31 1978
  - ALL DIMENSIONS ON STRUCTURAL DRAWINGS SHALL BE CHECKED AGAINST ARCHITECTURAL & MECHANICAL
  - VERIFY ALL OPENINGS THROUGH WALLS WITH MECHANICAL CONTRACTORS



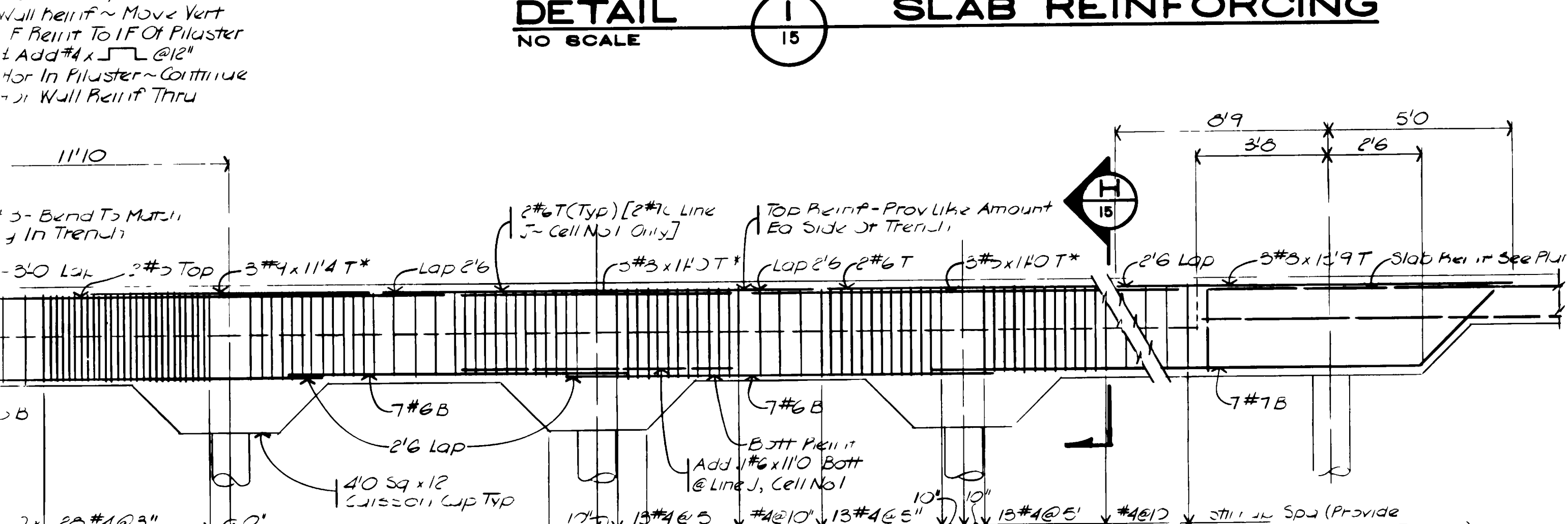
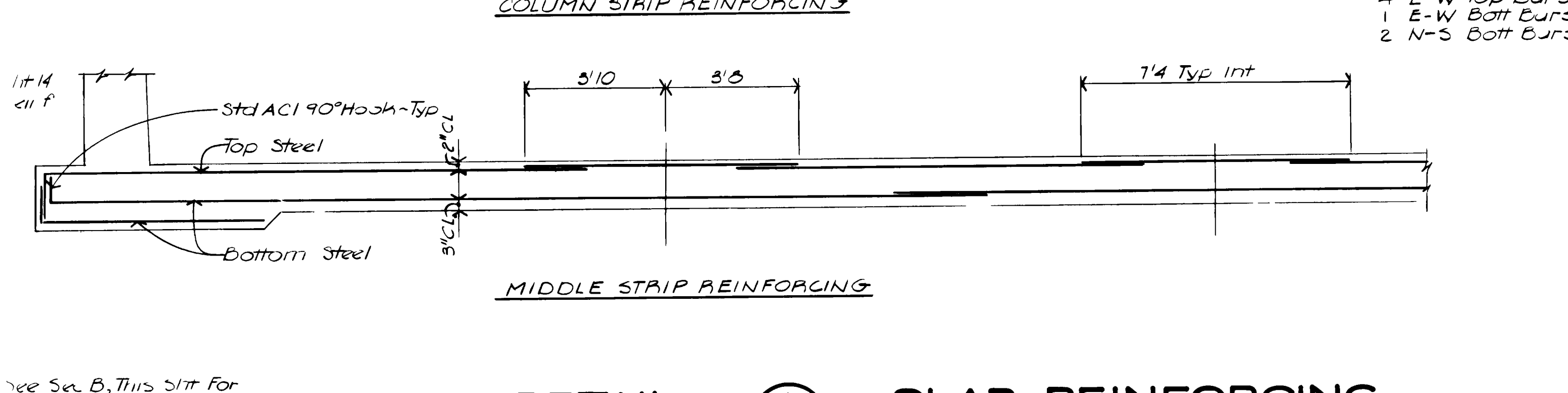
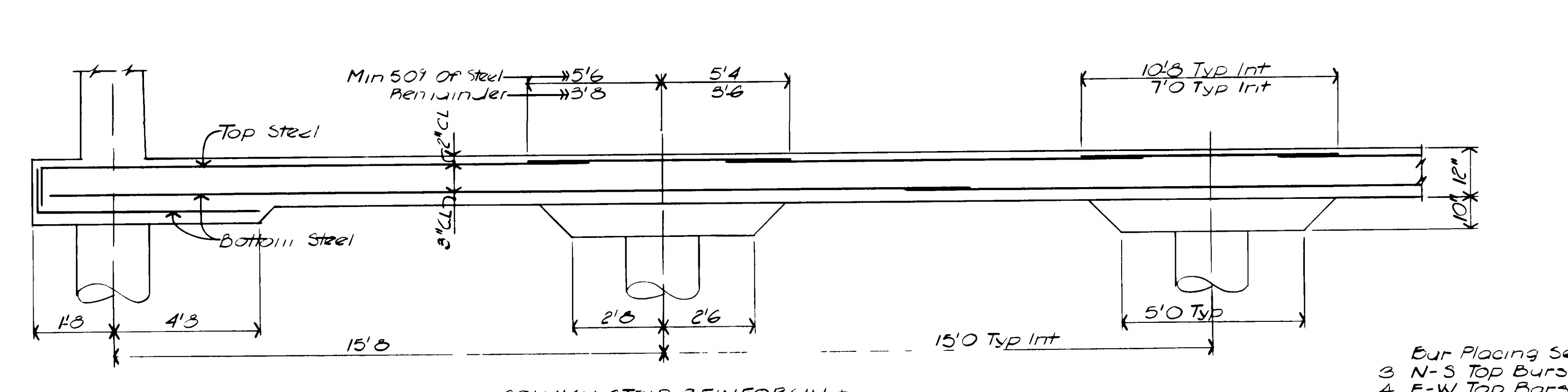
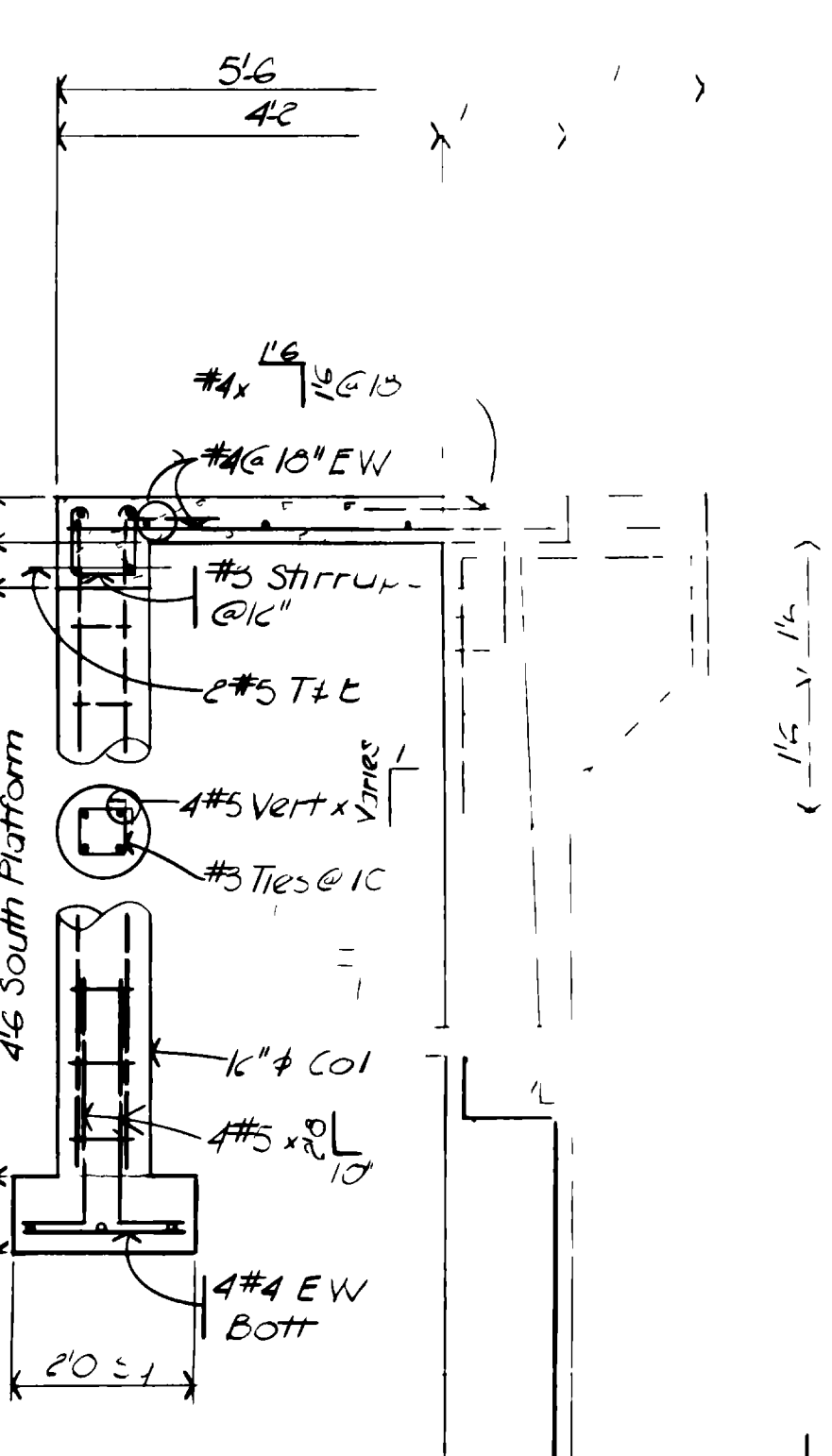
SECTION A  
SCALE: 1/2" = 1'-0"

SECTION B  
SCALE: 1/2" = 1'-0"

SECTION C  
SCALE: 1/2" = 1'-0"

SECTION D  
SCALE: 1/2" = 1'-0"

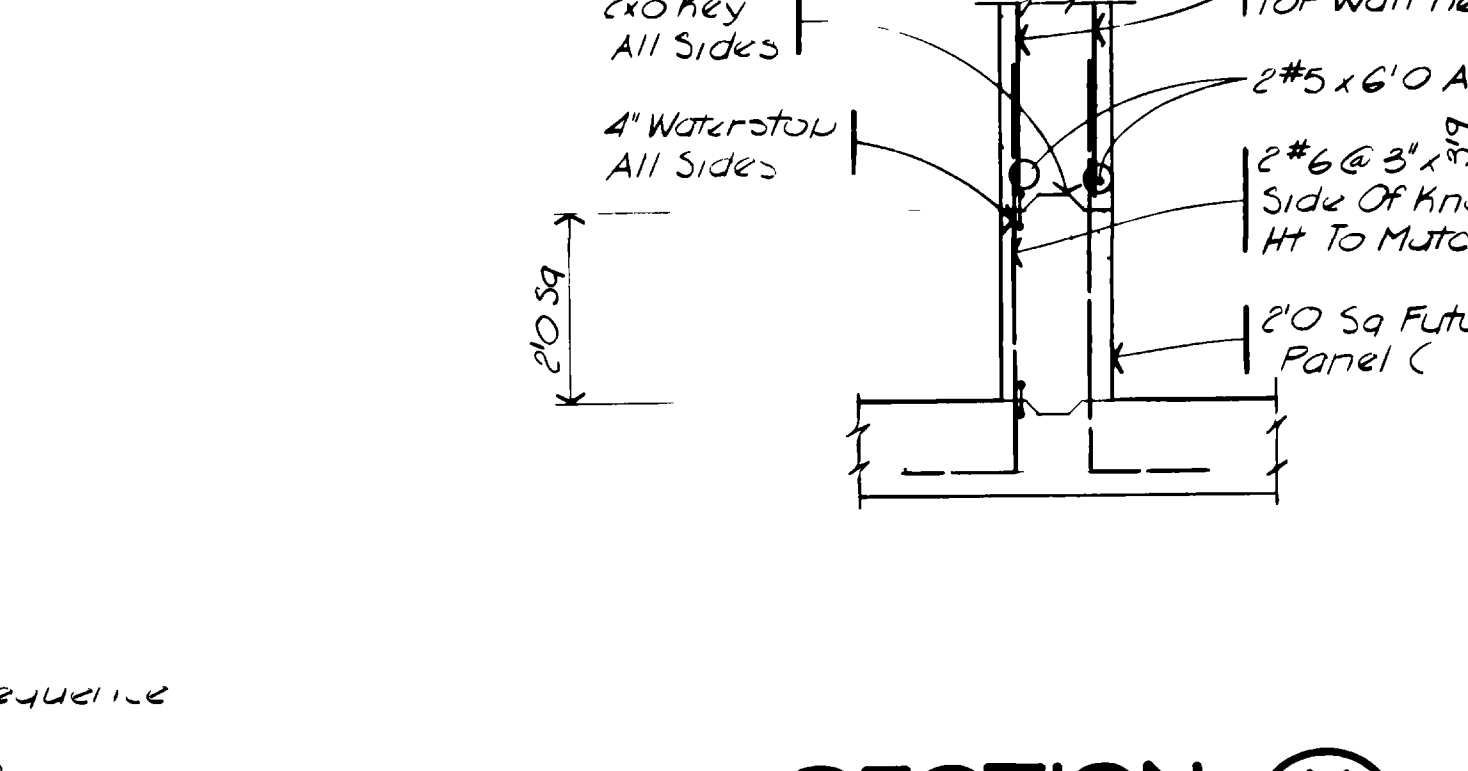
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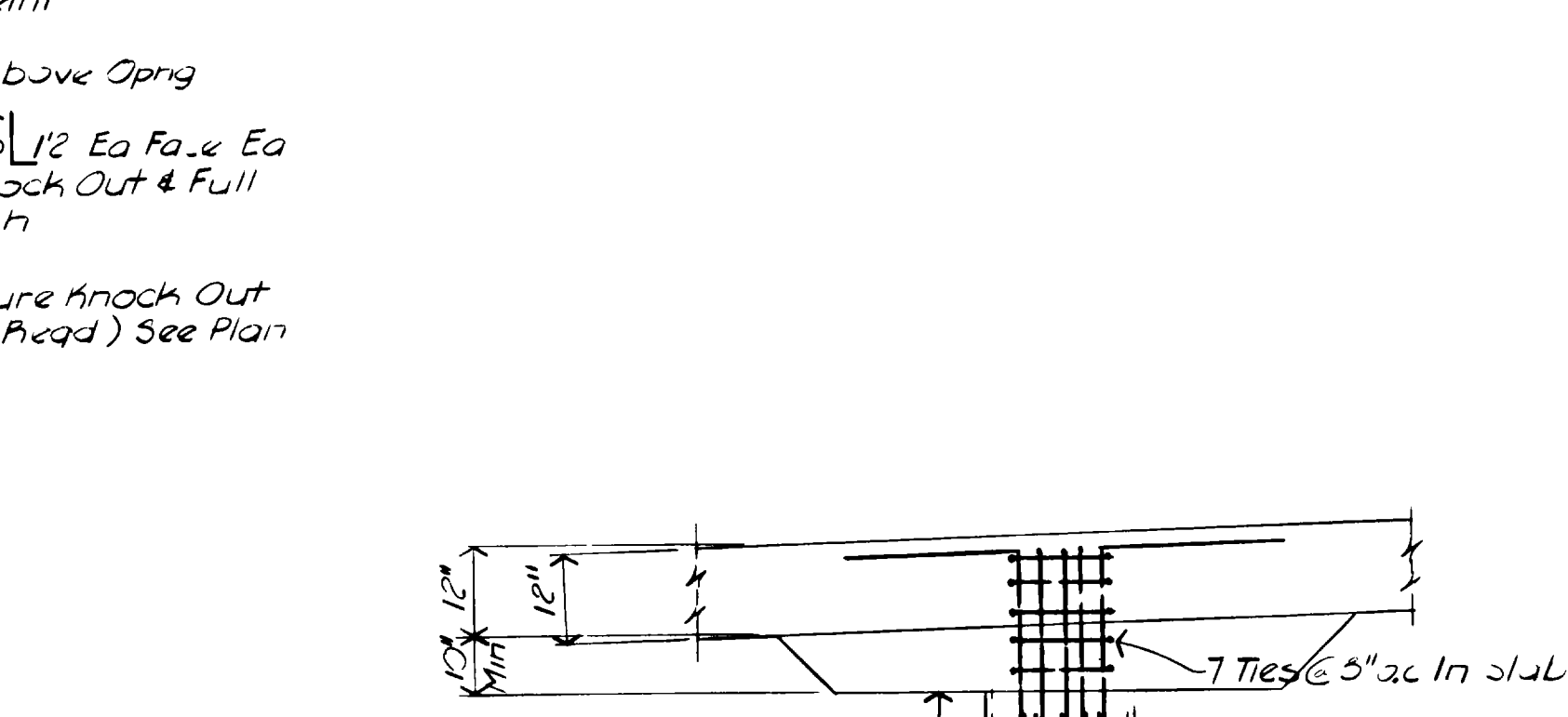
DETAIL I  
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DETAIL 2  
NO SCALE

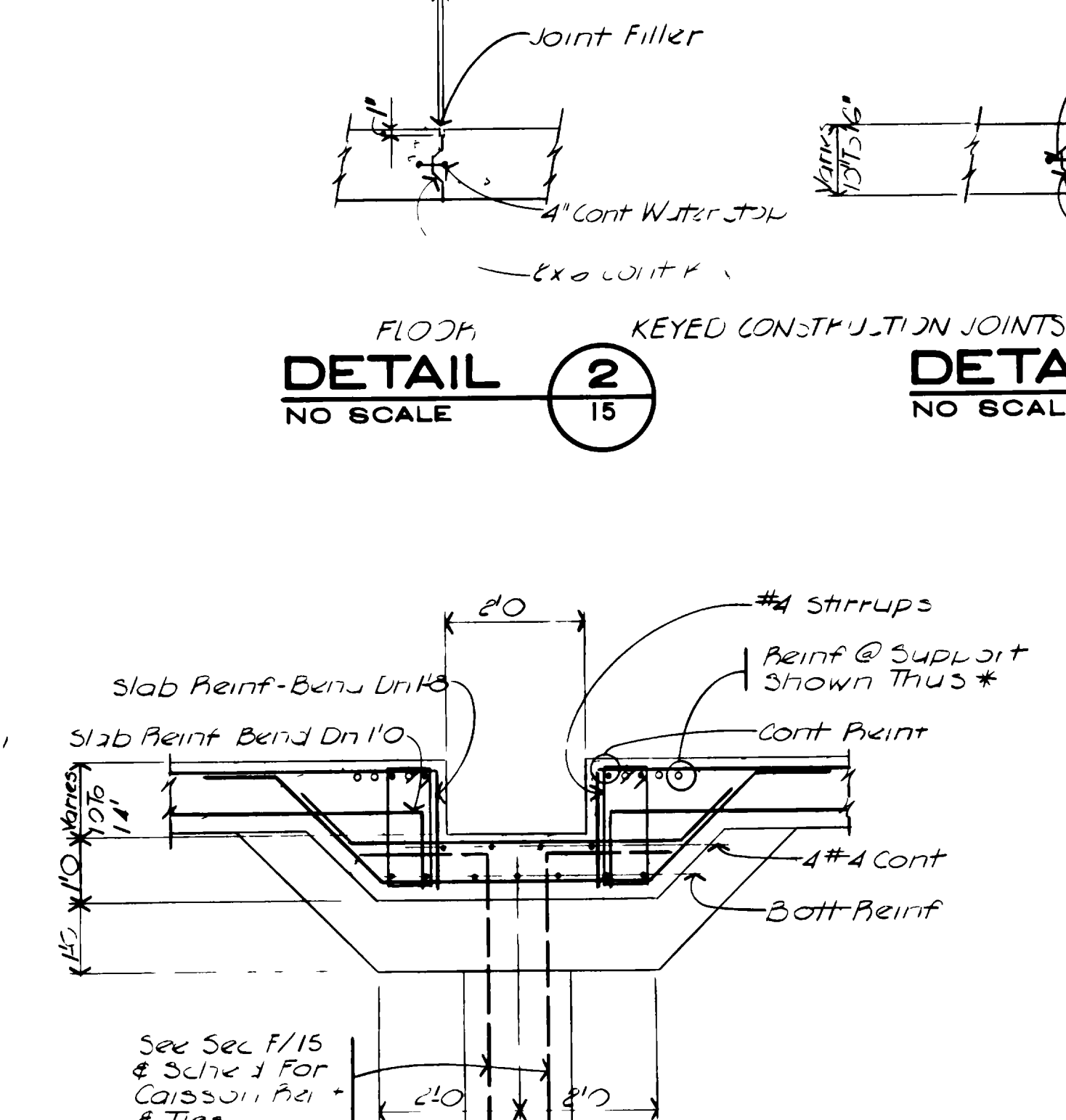
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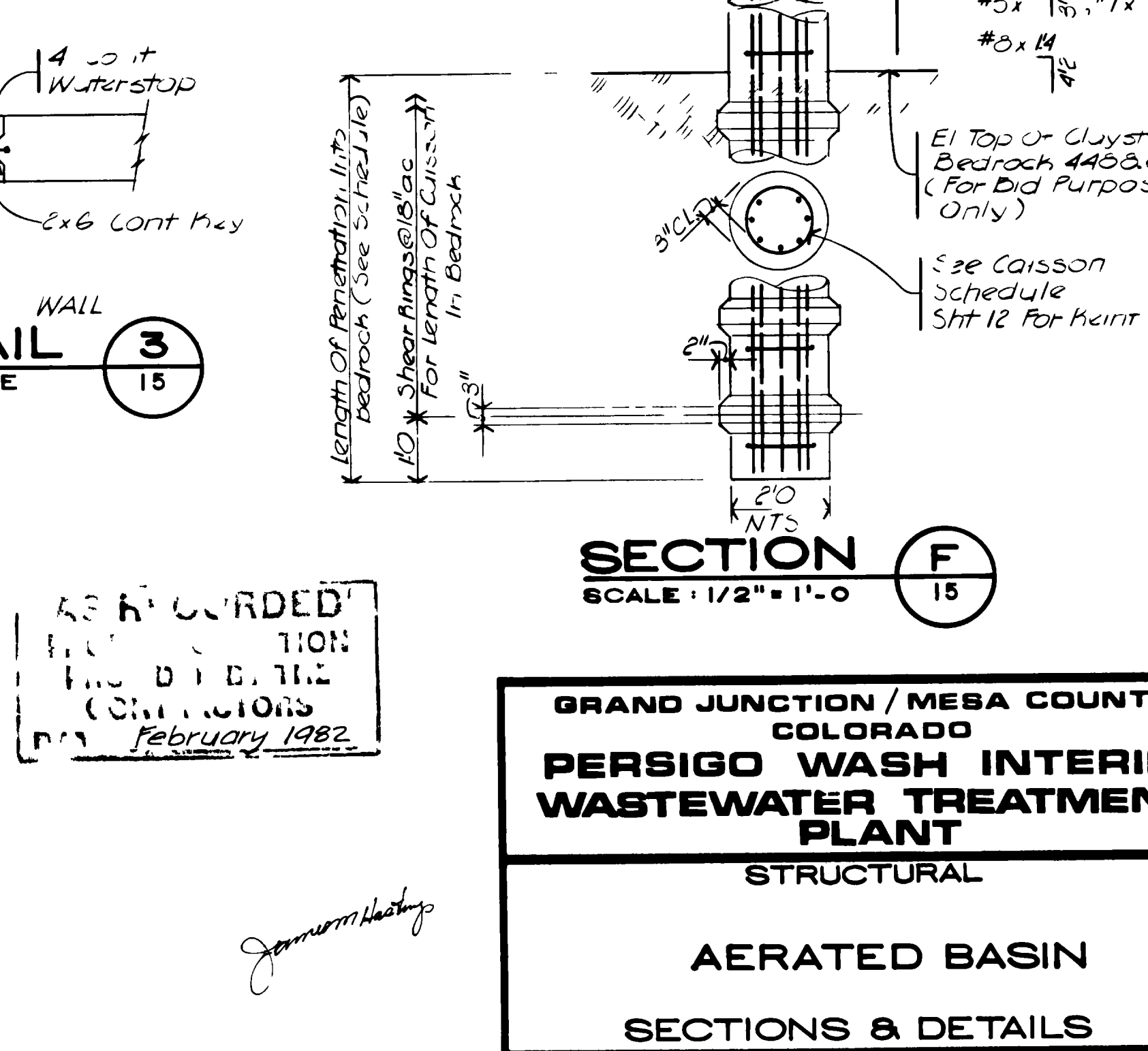
SECTION K  
NO SCALE



SECTION F  
SCALE: 1/2" = 1'-0"



SECTION H  
SCALE: 1/2" = 1'-0"



SECTION G  
NO SCALE

RECORDED  
INDEXED  
FEBRUARY 1982

GRAND JUNCTION / MESA COUNTY, COLORADO  
**PERSIGO WASH INTERIM WASTEWATER TREATMENT PLANT**  
 STRUCTURAL

**AERATED BASIN**

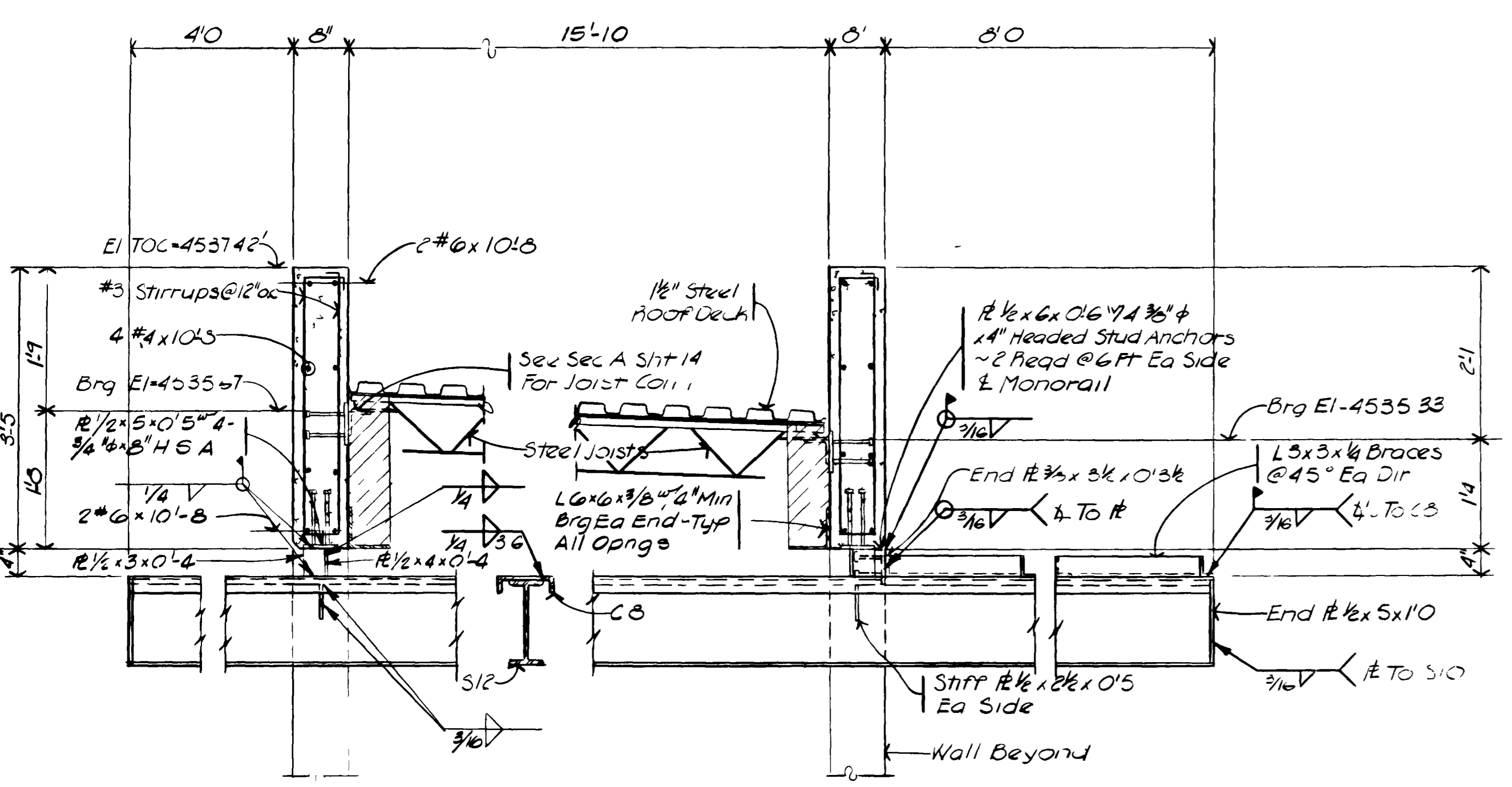
SECTIONS & DETAILS

**HENNINGSON, DURHAM & RICHARDSON, INC.**  
 ENGINEERS, PLANNERS & CONSULTANTS  
 DENVER, COLORADO GRAND JUNCTION, COLORADO

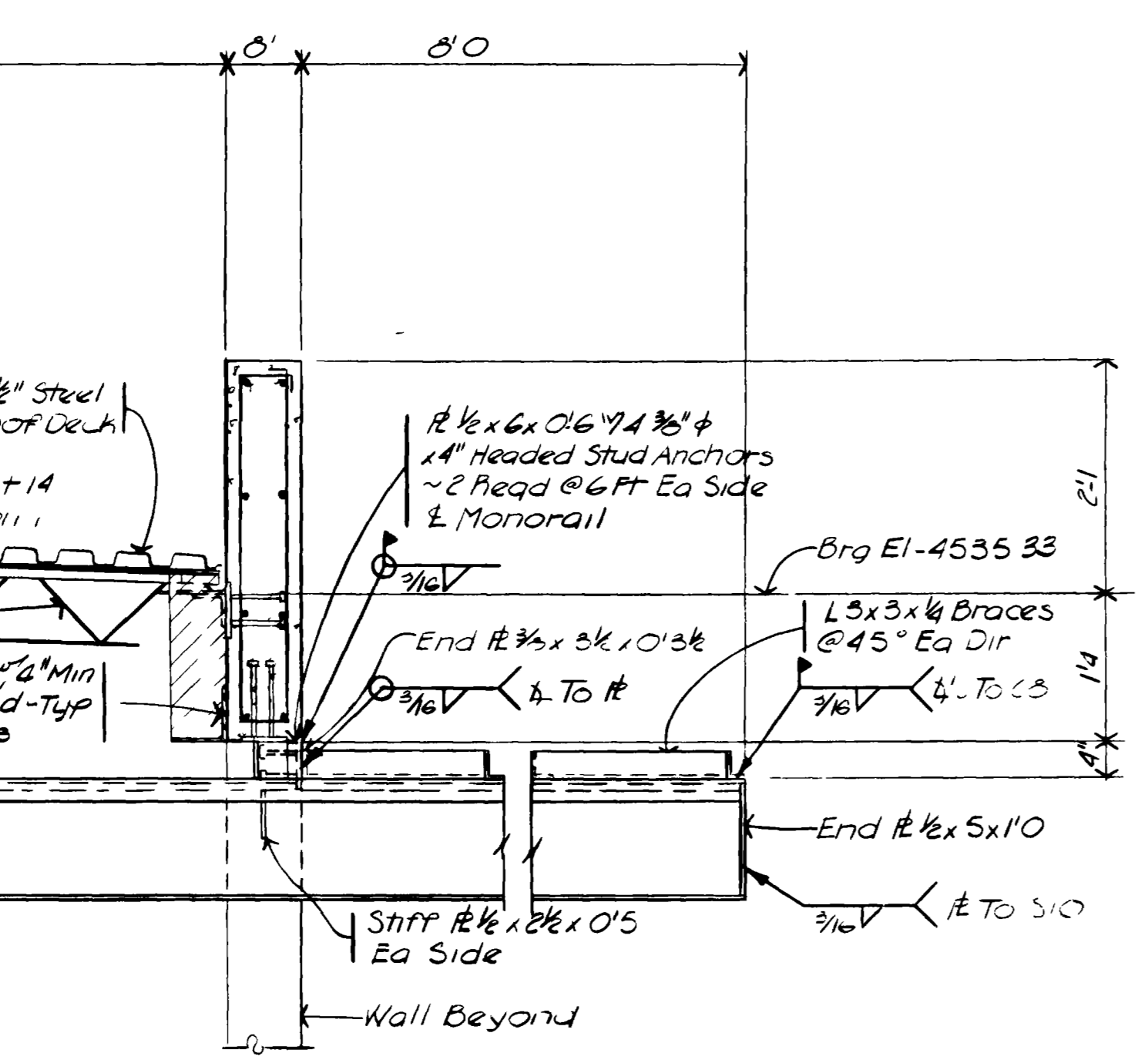
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 735510  
 APPROVED: J.M.H.  
 735510  
 DATE: February 1982

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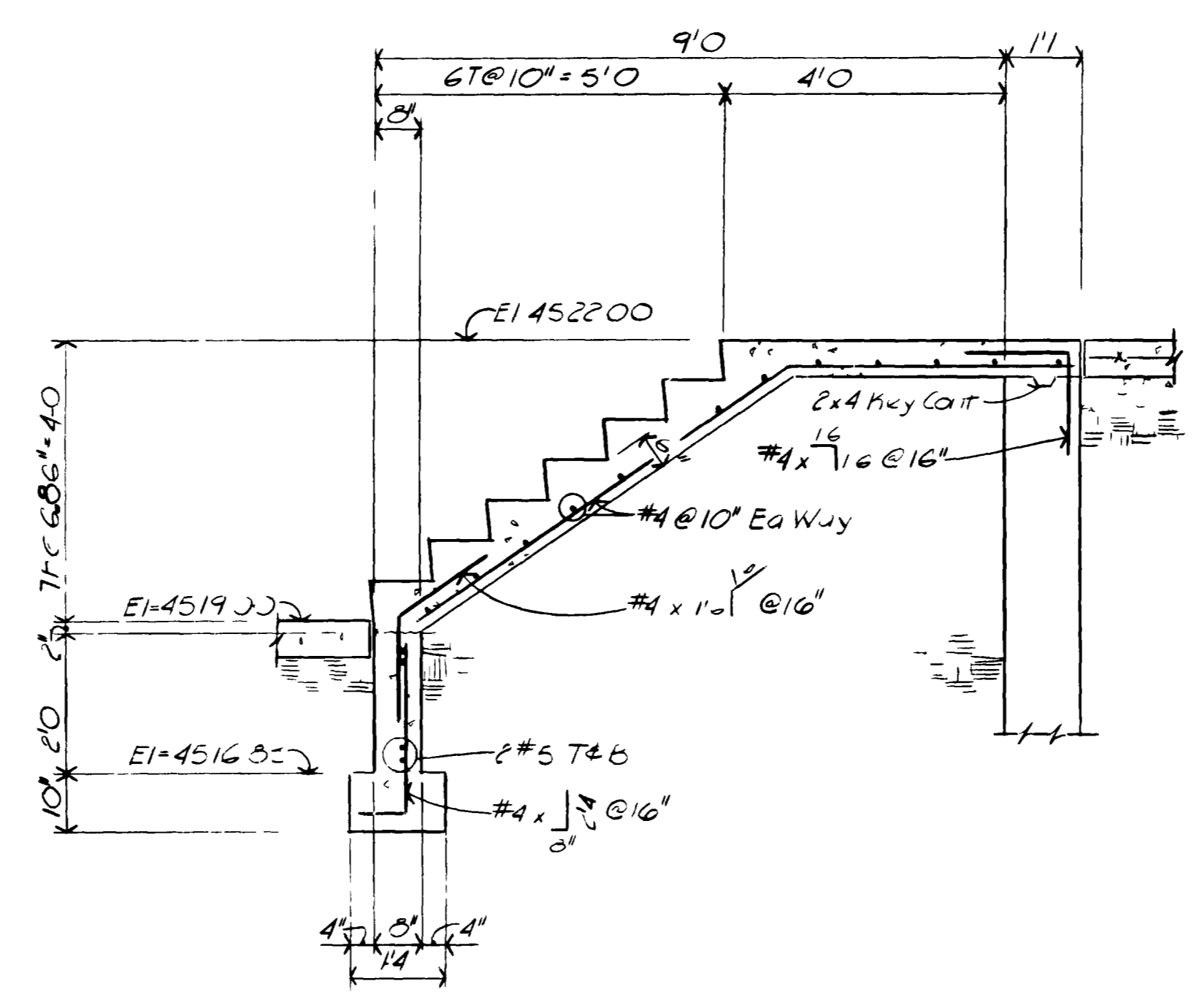
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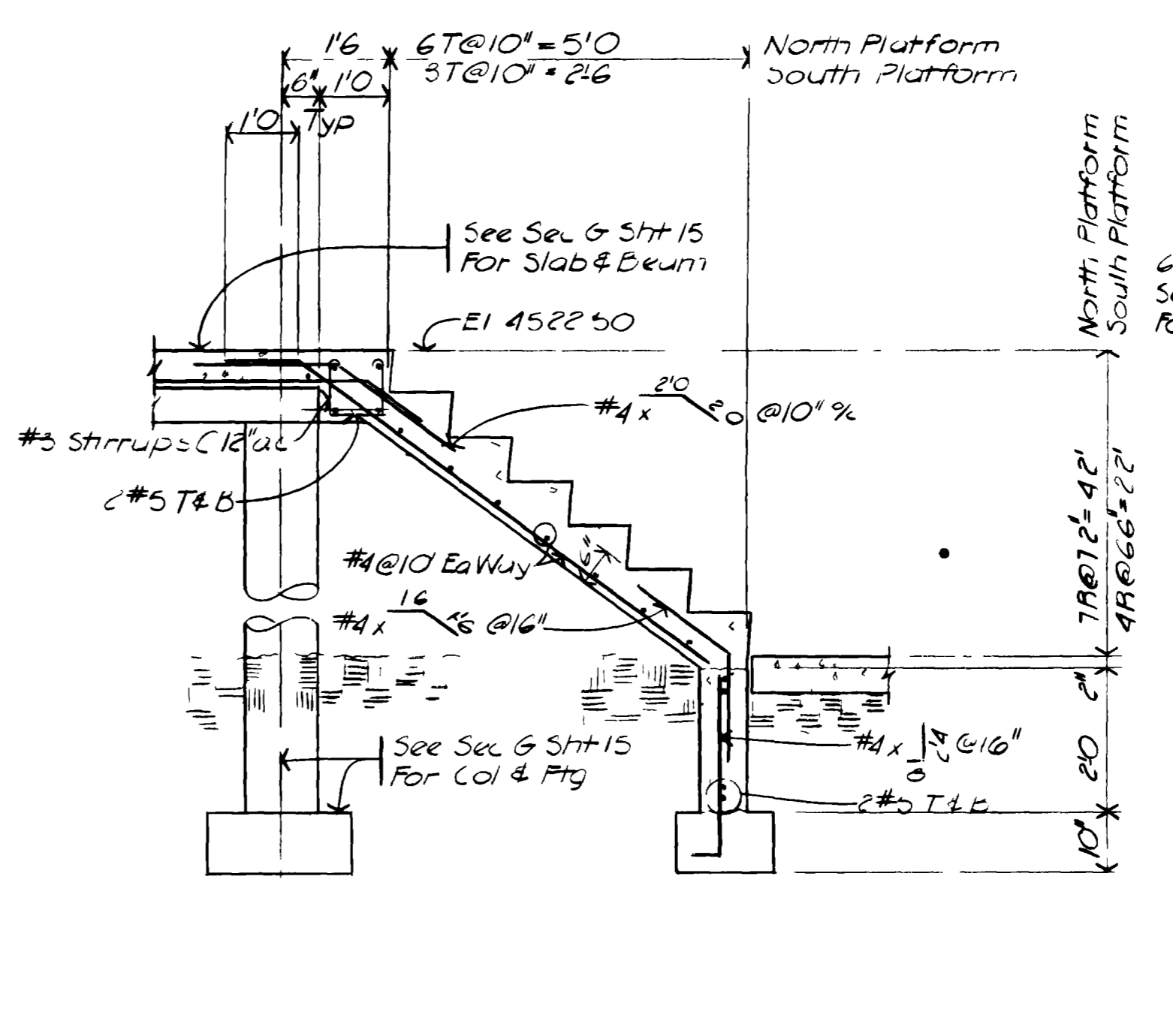
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SCALE: 3/4" = 1'-0"  
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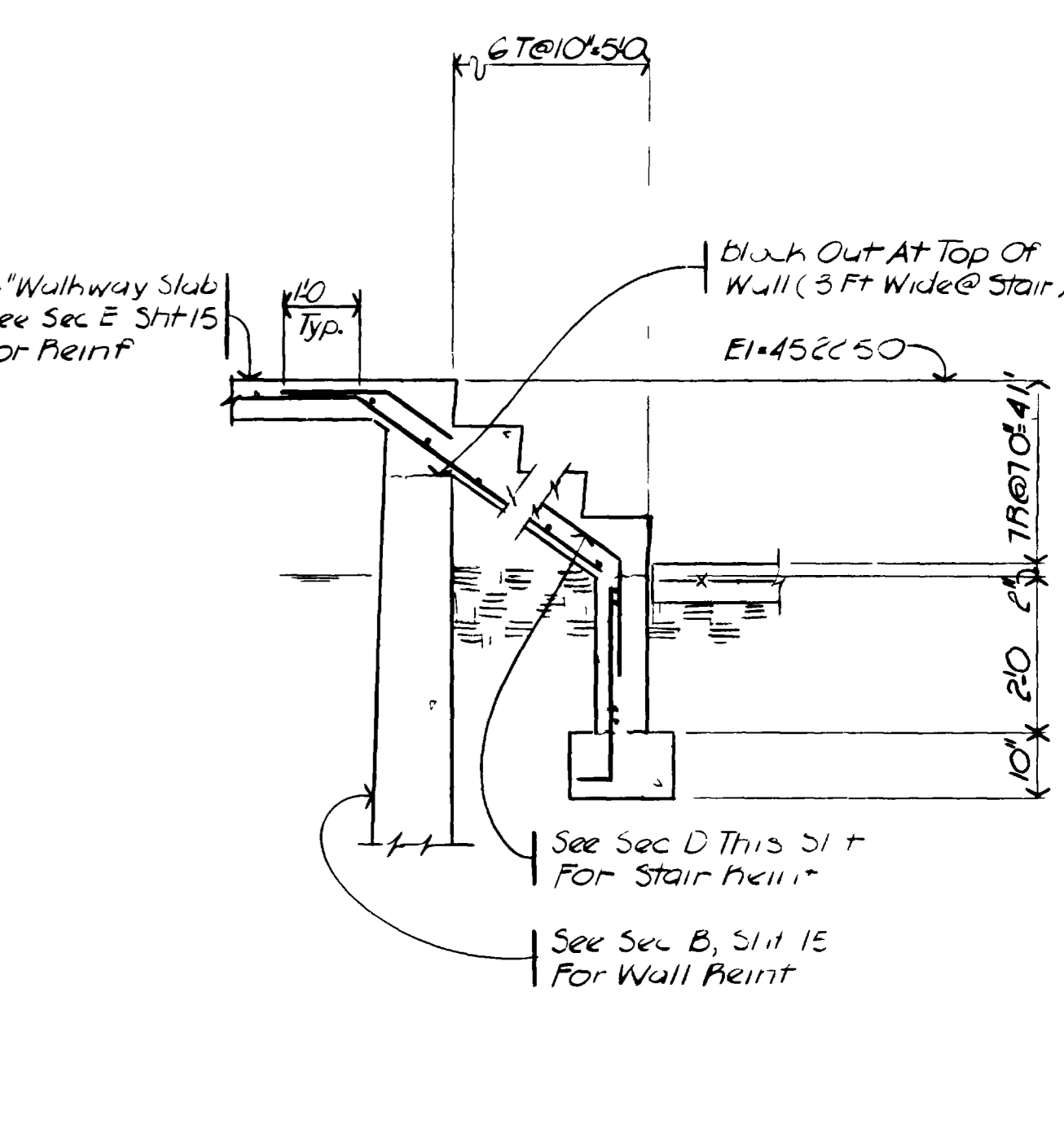
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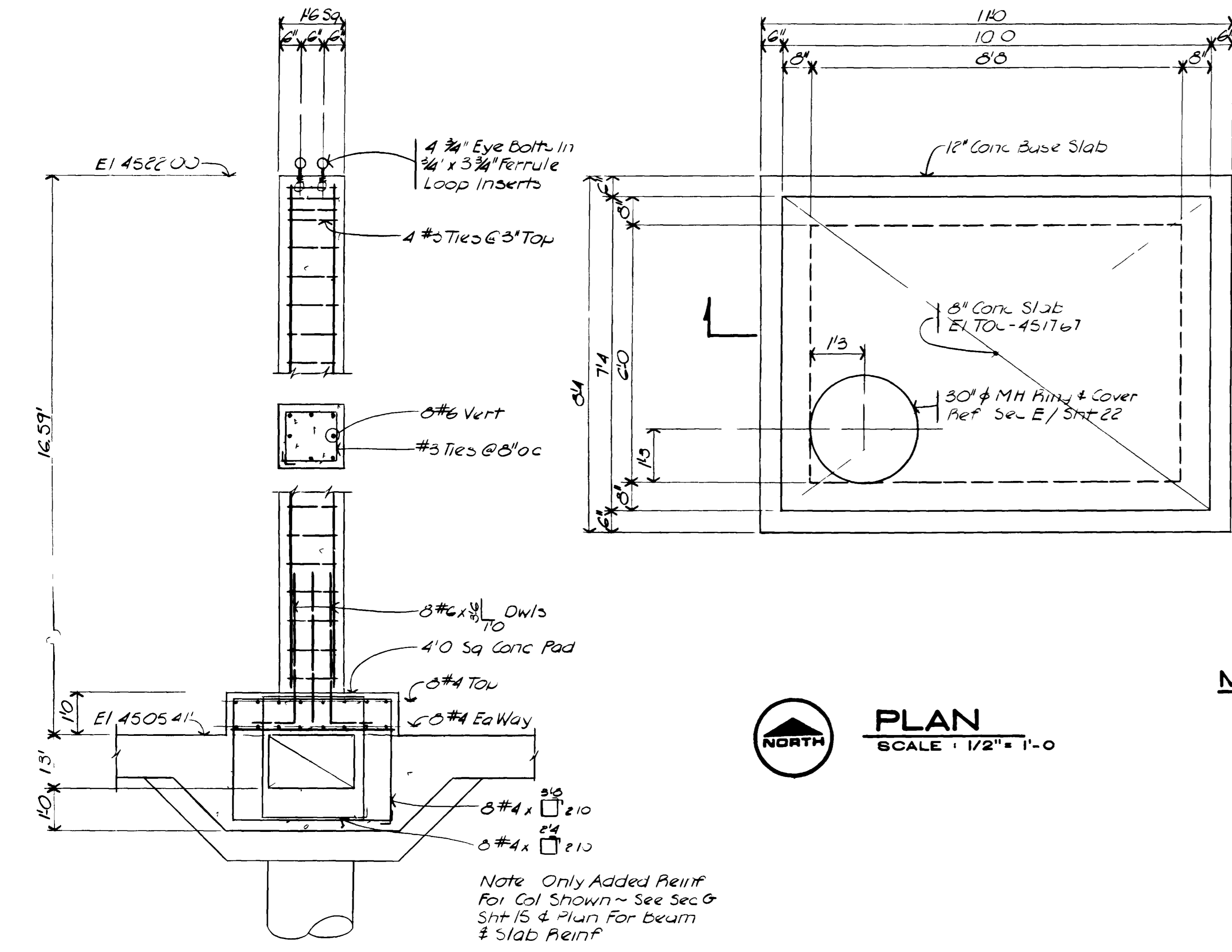
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**SECTION D**  
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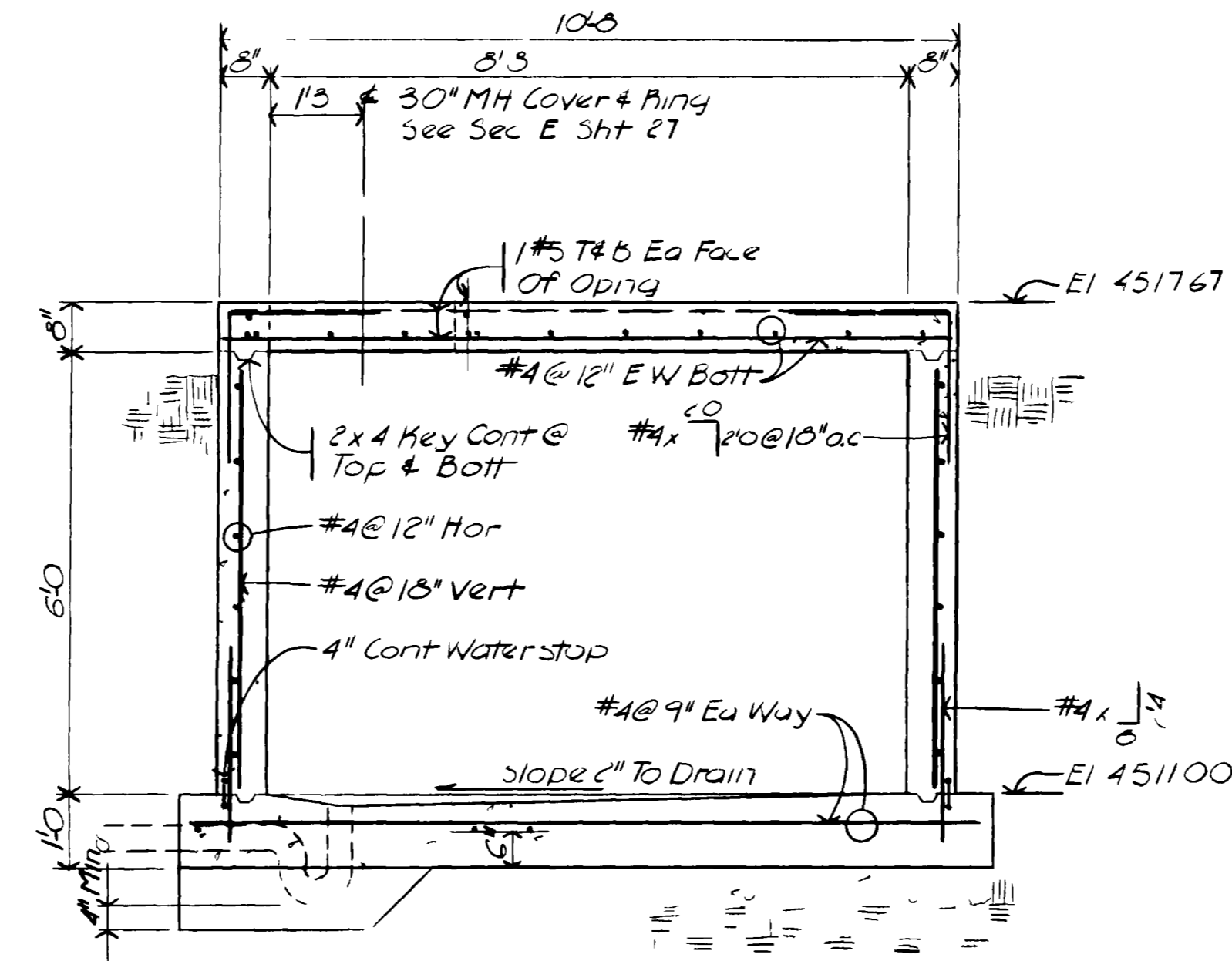


**SECTION E**  
SCALE: 1/2" = 1'-0"  
16



**SECTION F**  
SCALE: 1/2" = 1'-0"  
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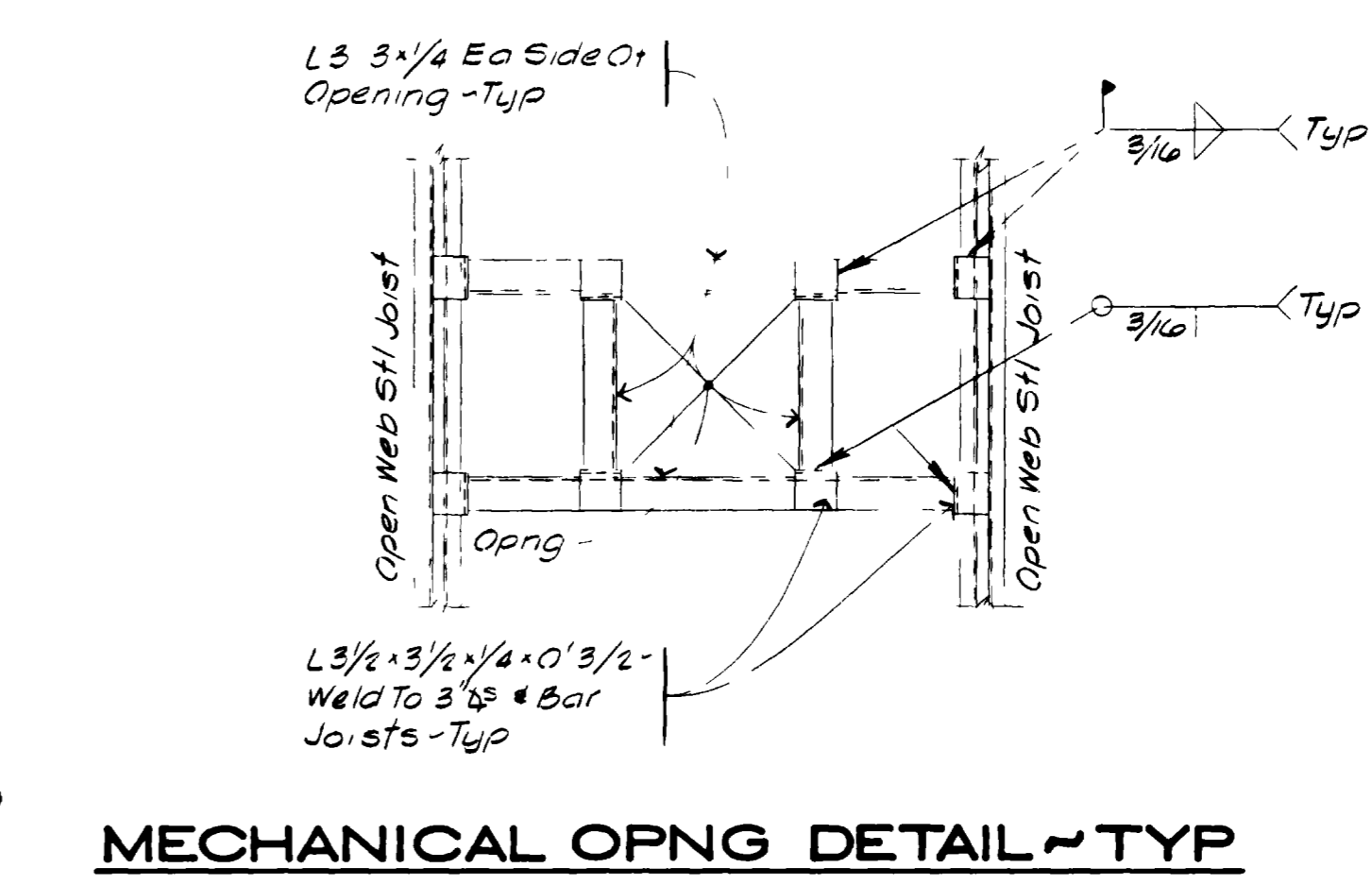
Note: Only Added Reinf For Col Shown - See Sec G Sht 15 & Plan For beam & Slab Reinf



**SECTION G**  
SCALE: 1/2" = 1'-0"  
16

**METER VAULT**

**PLAN**  
SCALE: 1/2" = 1'-0"  
16



**MECHANICAL OPNG DETAIL - TYP**

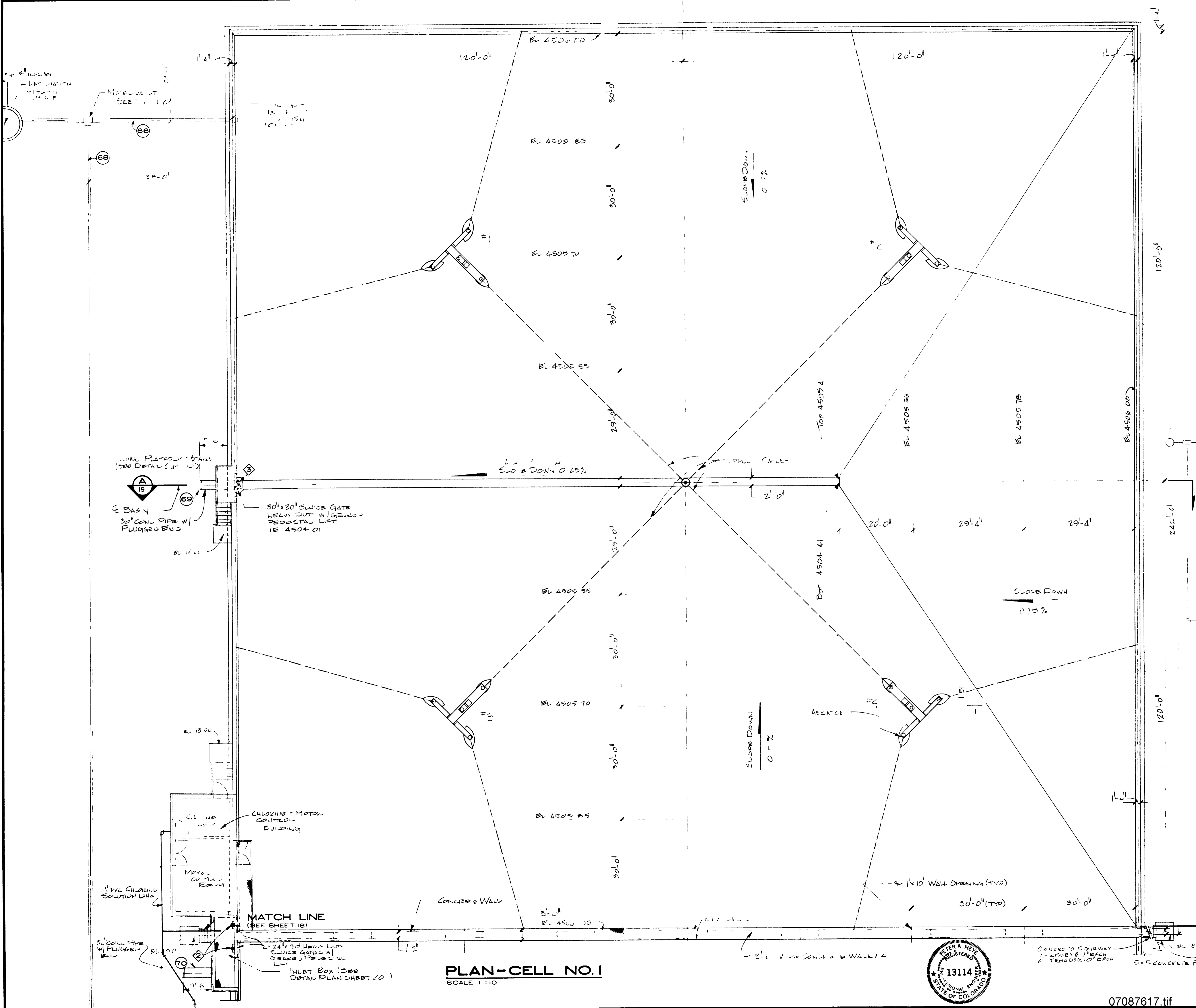
**PLAN SECTION H**  
NO SCALE  
16

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DATE February 1982

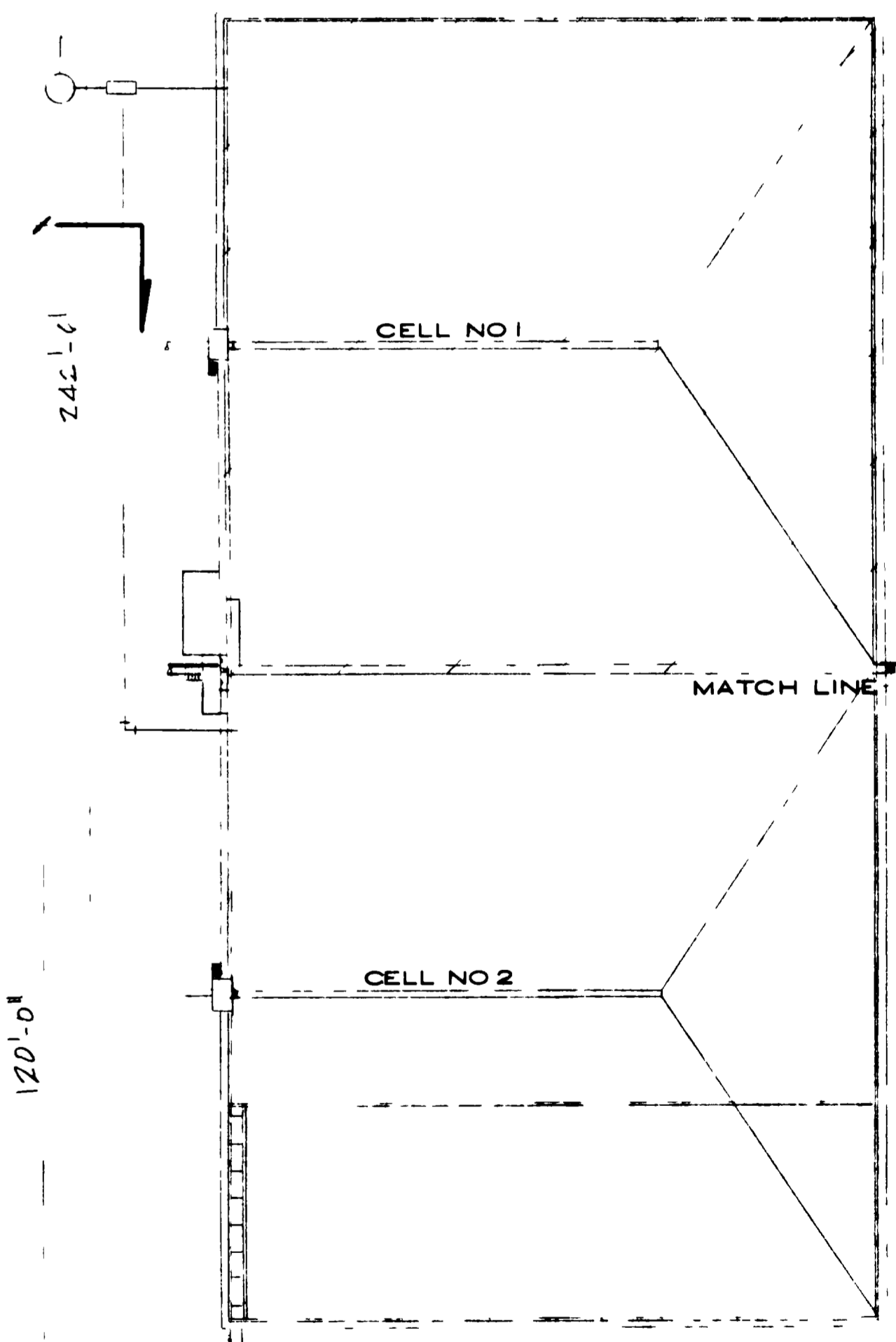
**GRAND JUNCTION / MESA COUNTY, COLORADO**  
**PERSIGO WASH INTERIM WASTEWATER TREATMENT PLANT**  
STRUCTURAL  
**AERATED BASIN**  
MISCELLANEOUS DETAILS  
**HENNINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS PLANNERS CONSULTANTS  
DENVER COLORADO GRAND JUNCTION COLORADO

JOB NO. 735510	DESIGNED RLS	CHECKED JMH	DRAWN RNT	DATE 12/15/81	SHEET 16 OF 28
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KEY MAP  
SCALE 1" = 50'



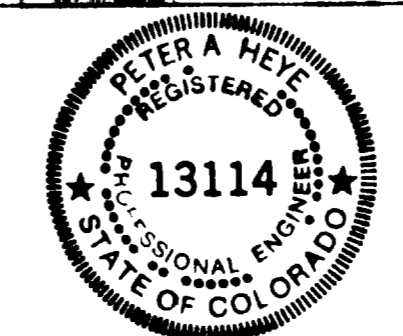
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FROM FOUNDATION  
PROVIDED BY THE  
CONTRACTORS  
DATE February 1982

GRAND JUNCTION / MESA COUNTY,  
COLORADO  
**PERSIGO WASH INTERIM  
WASTEWATER TREATMENT  
PLAN**  
PROCESSING  
AERATED BASIN PLAN  
CELL NO 1  
(FLOW EQUALIZATION BASIN)

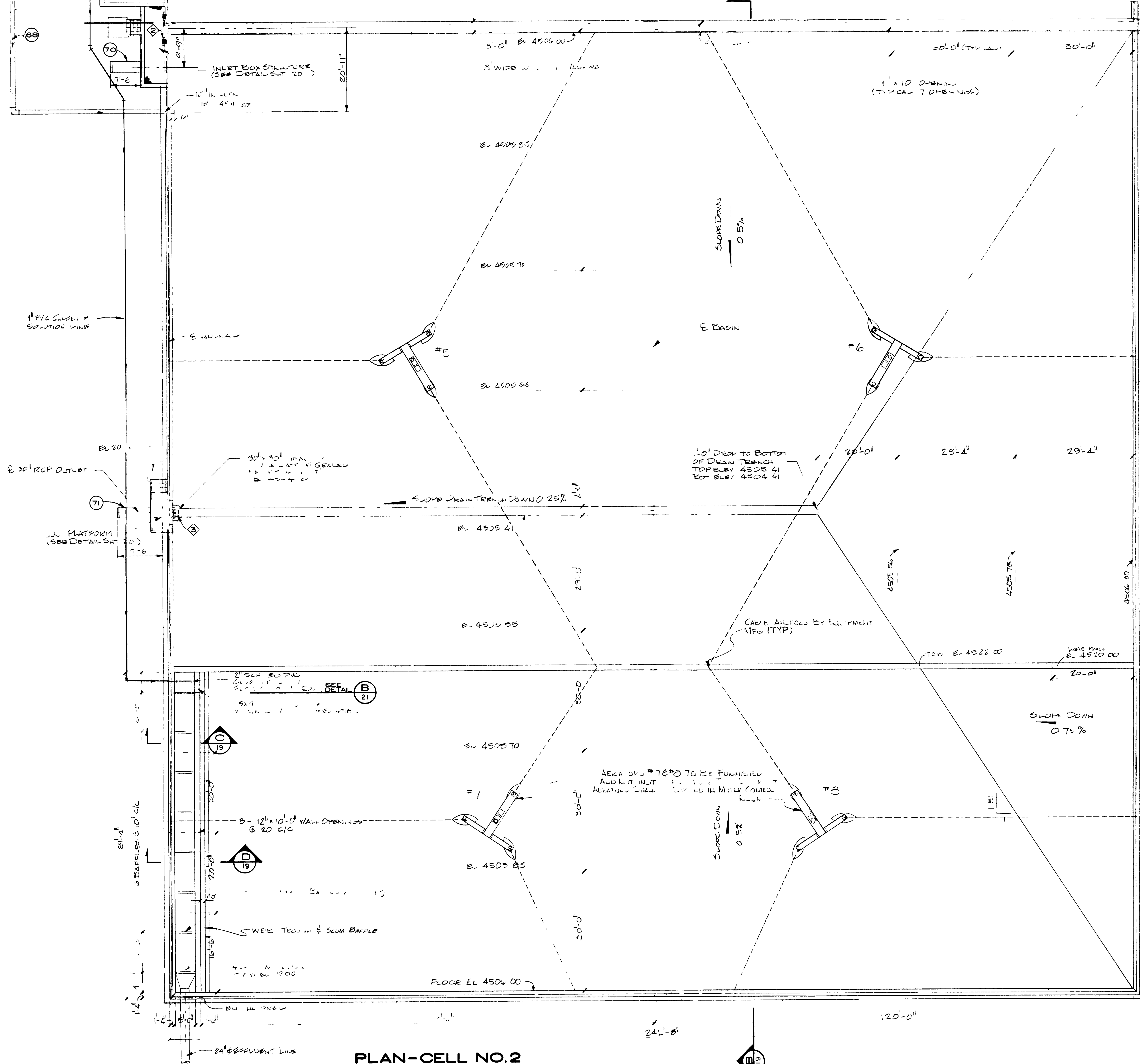
HENNINGSON, DURHAM & RICHARDSON, INC.  
ENGINEERS PLANNERS CONSULTANTS  
DENVER COLORADO GRAND JUNCTION COLORADO

JOB 735510 DESIGNED J. HOSST CHECKED J. HOSST SHEET 17 of 28  
APPROVED S. HENRICHSEN DATE JAN. 31, 80 DETAILED & MEASOR

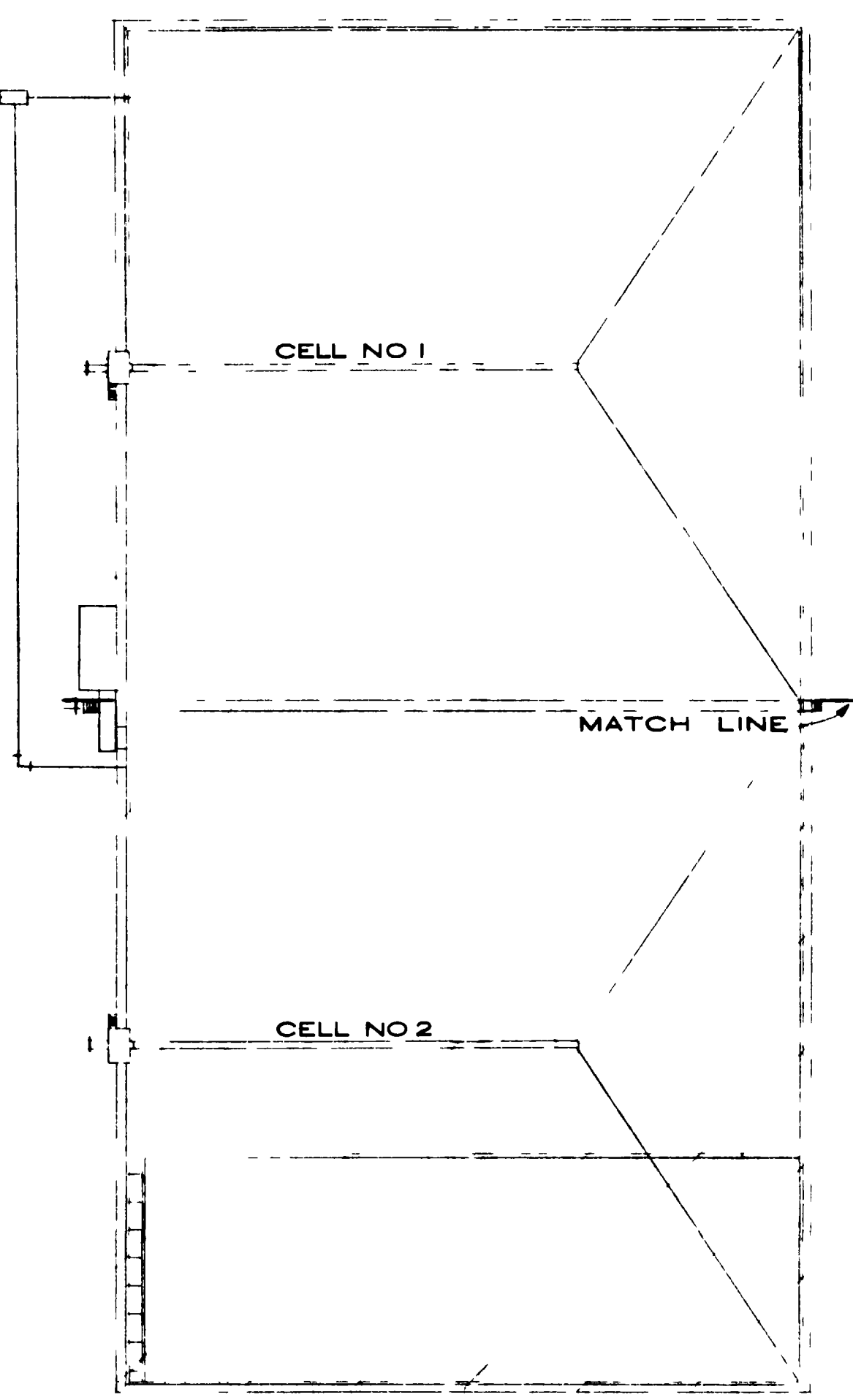
PLAN-CELL NO. 1  
SCALE 1" = 10'



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MATCH LINE  
(SEE SHEET 17)



KEY MAP  
SCALE 1 = 50



"AS RECORDED"  
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PROVIDED BY THE  
CONTRACTORS  
DATE February 1982

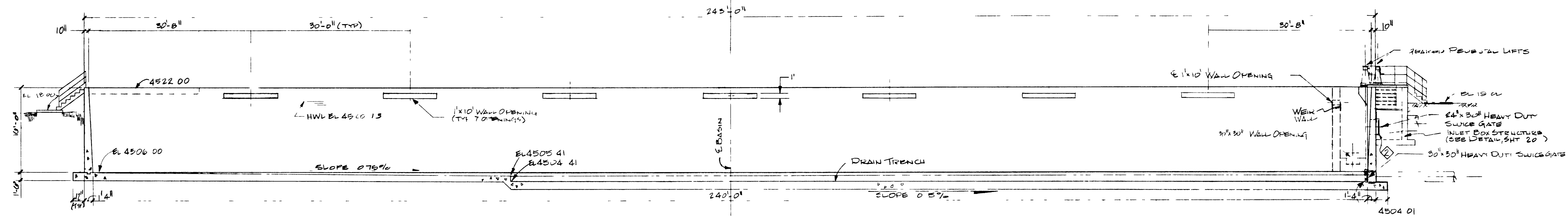


GRAND JUNCTION / MEBA COUNTY,  
COLORADO  
**PERSIGO WASH INTERIM  
WASTEWATER TREATMENT  
PLAN 1**  
PROCESSING  
**AERATED BASIN PLAN  
CELL NO 2**  
(FLOW EQUALIZATION BASIN)

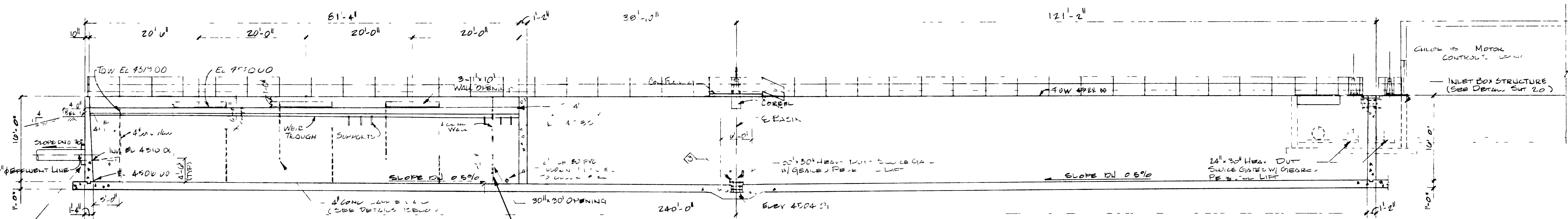
**HENNINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS PLANNERS CONSULTANTS  
DENVER COLORADO GRAND JUNCTION COLORADO

JOB 735510 DESIGNED J. HORST CHECKED J. HORST APPROVED K. HENRICHSEN  
DATE JAN 31, 80 DETAILED K. MEADOR

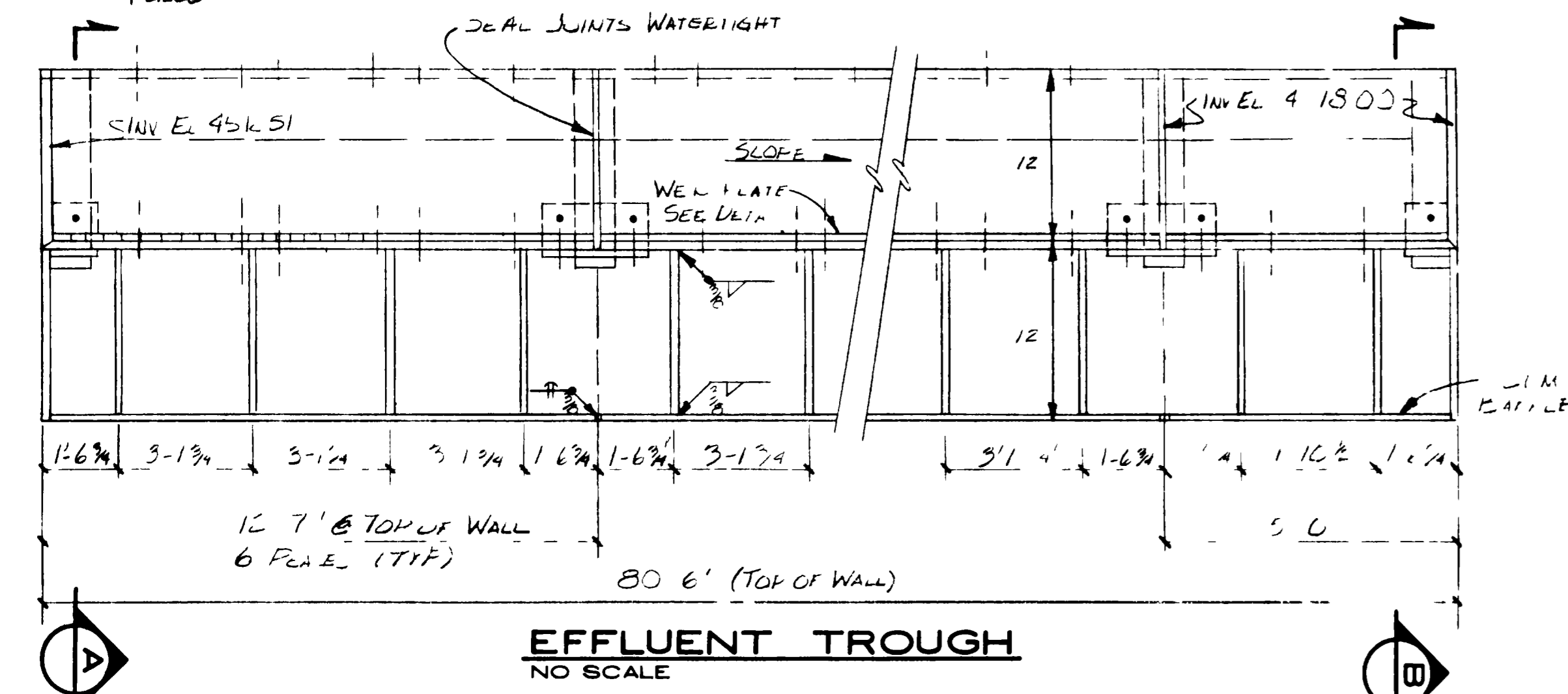
**PLAN-CELL NO. 2**  
SCALE 1 = 10



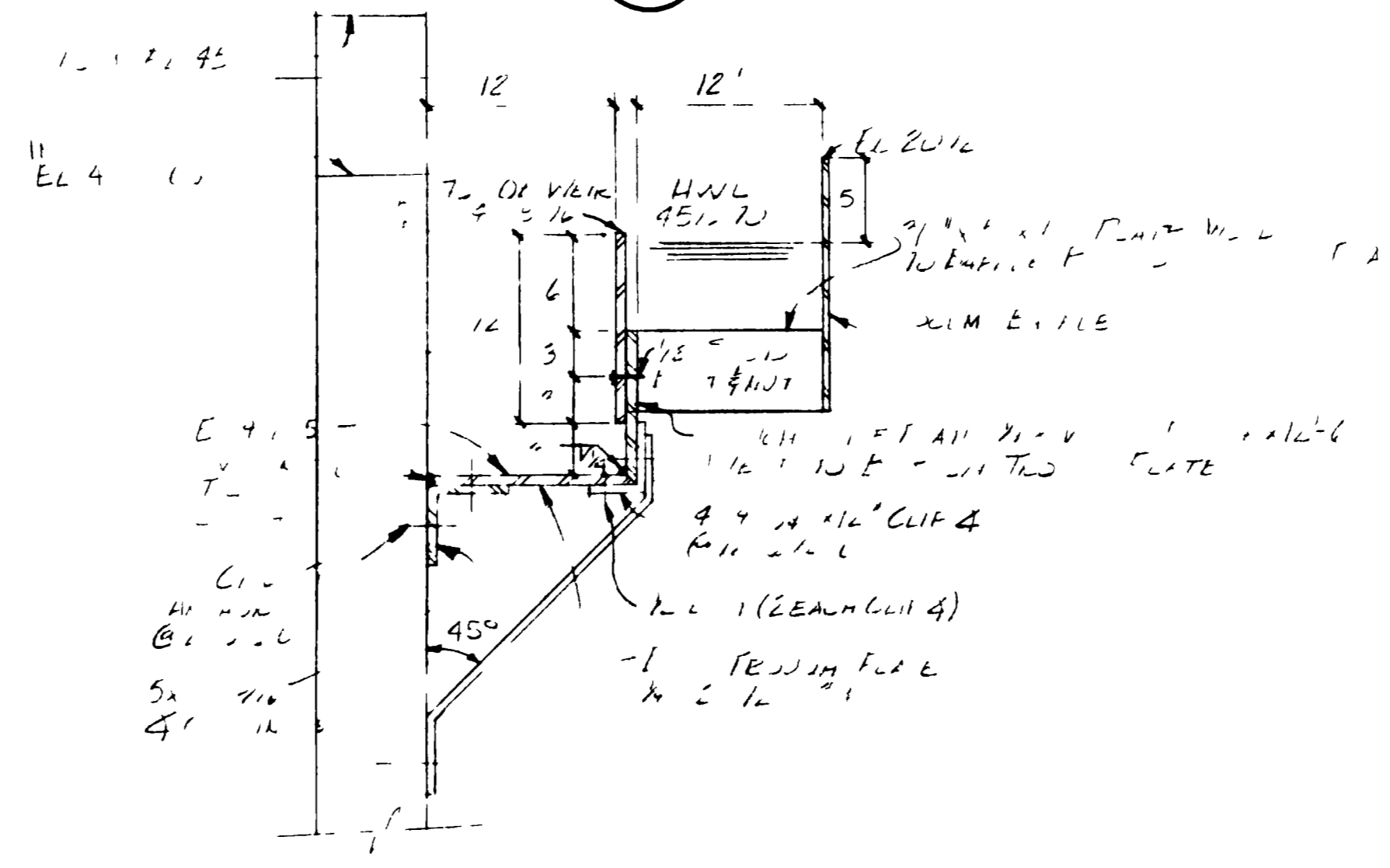
**SECTION A**  
SCALE 1/8" = 1'-0"  
19



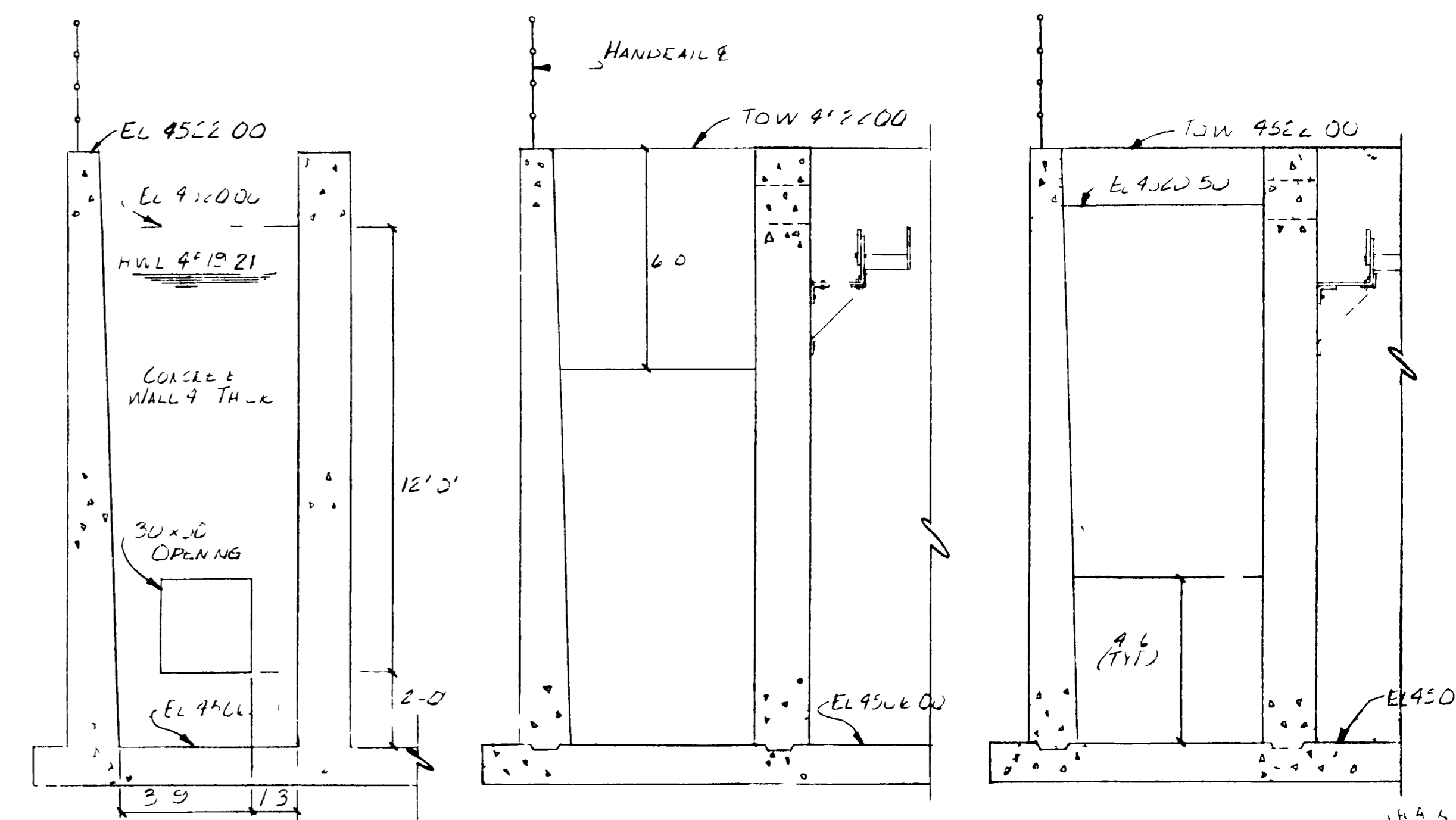
**SECTION B**  
SCALE 1/8" = 1'-0"  
19



**EFFLUENT TROUGH**  
NO SCALE



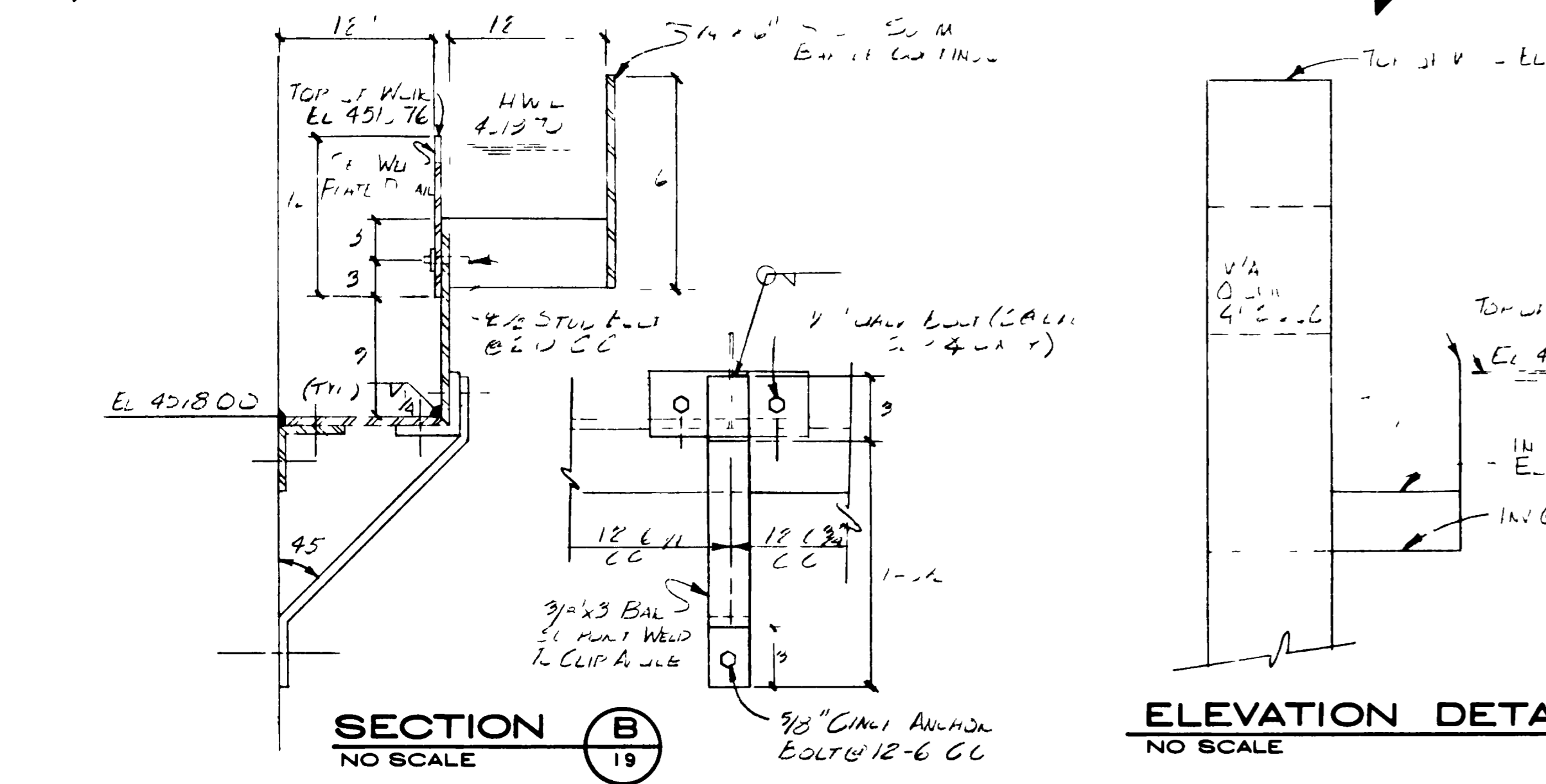
**SECTION A**  
NO SCALE  
19



**DETAIL I**  
NO SCALE  
19

**SECTION C**  
NO SCALE  
19

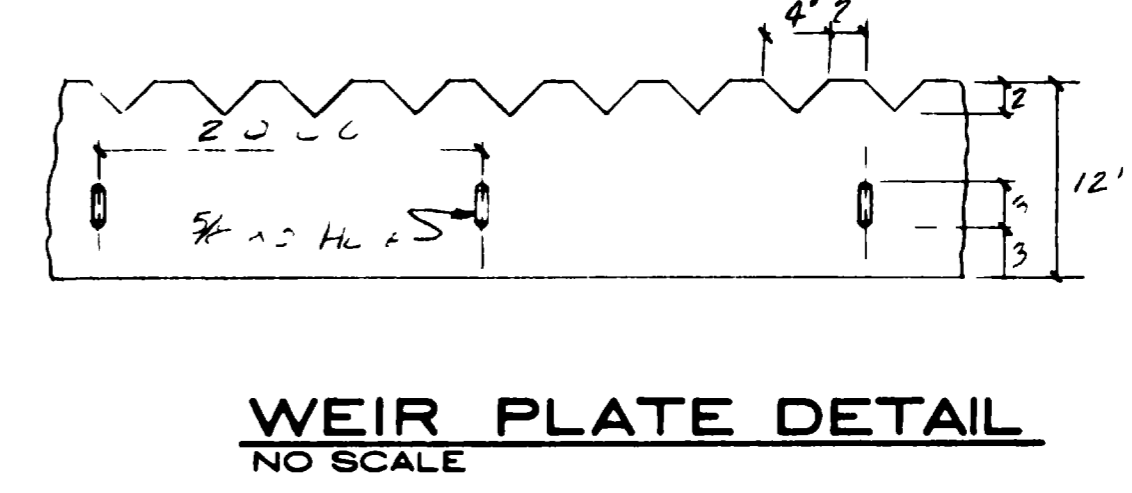
**SECTION D**  
NO SCALE  
19



**SECTION B**  
NO SCALE  
19

**ELEVATION DETAIL**  
NO SCALE

DESIGNED BY  
CHECKED BY  
DATE: February 1982



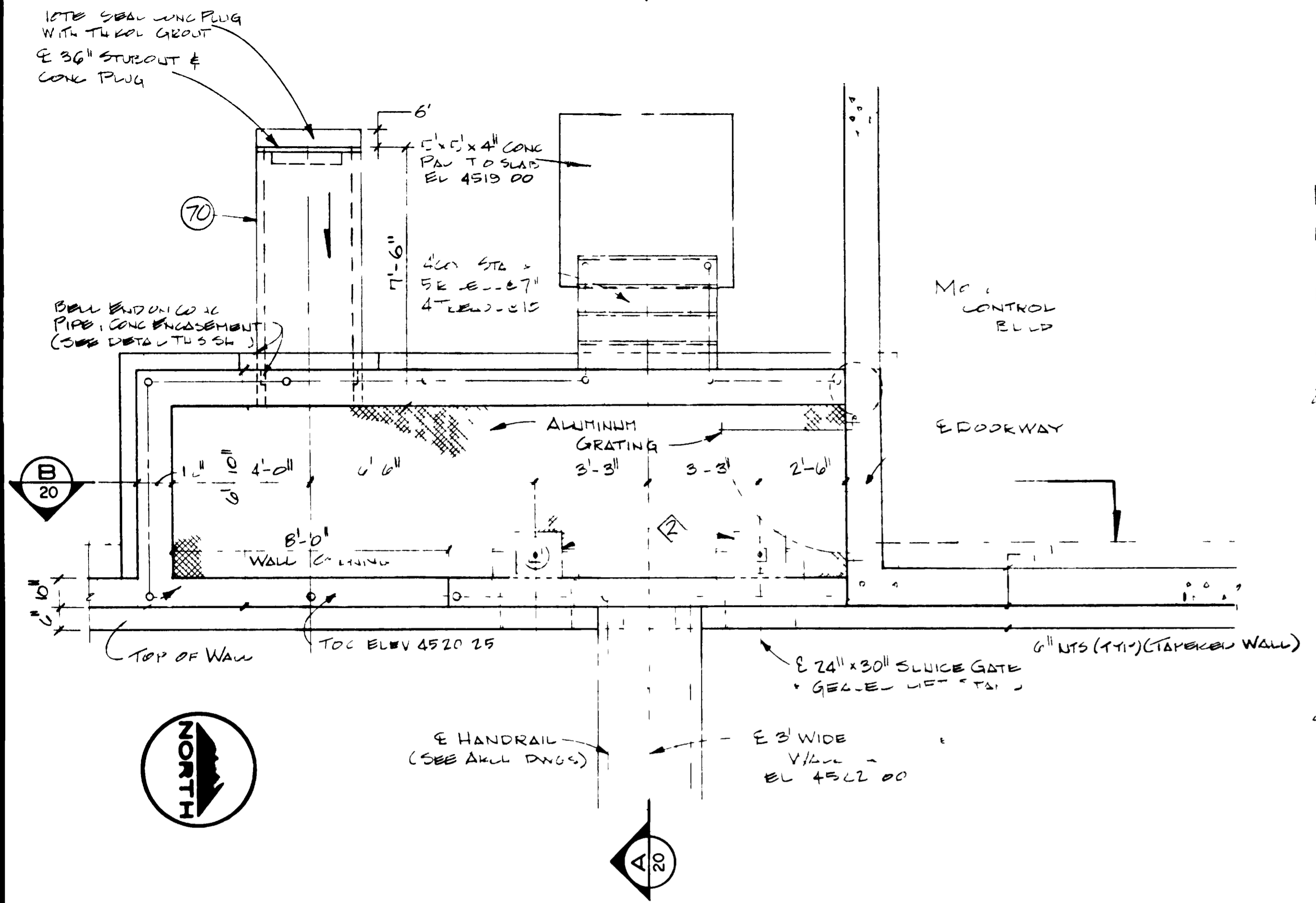
**WEIR PLATE DETAIL**  
NO SCALE

**GRAND JUNCTION / MESA COUNTY, COLORADO**  
**PERSIGO WASH INTERIM WASTEWATER TREATMENT PLANT**  
PROCESSING  
AERATED BASINS

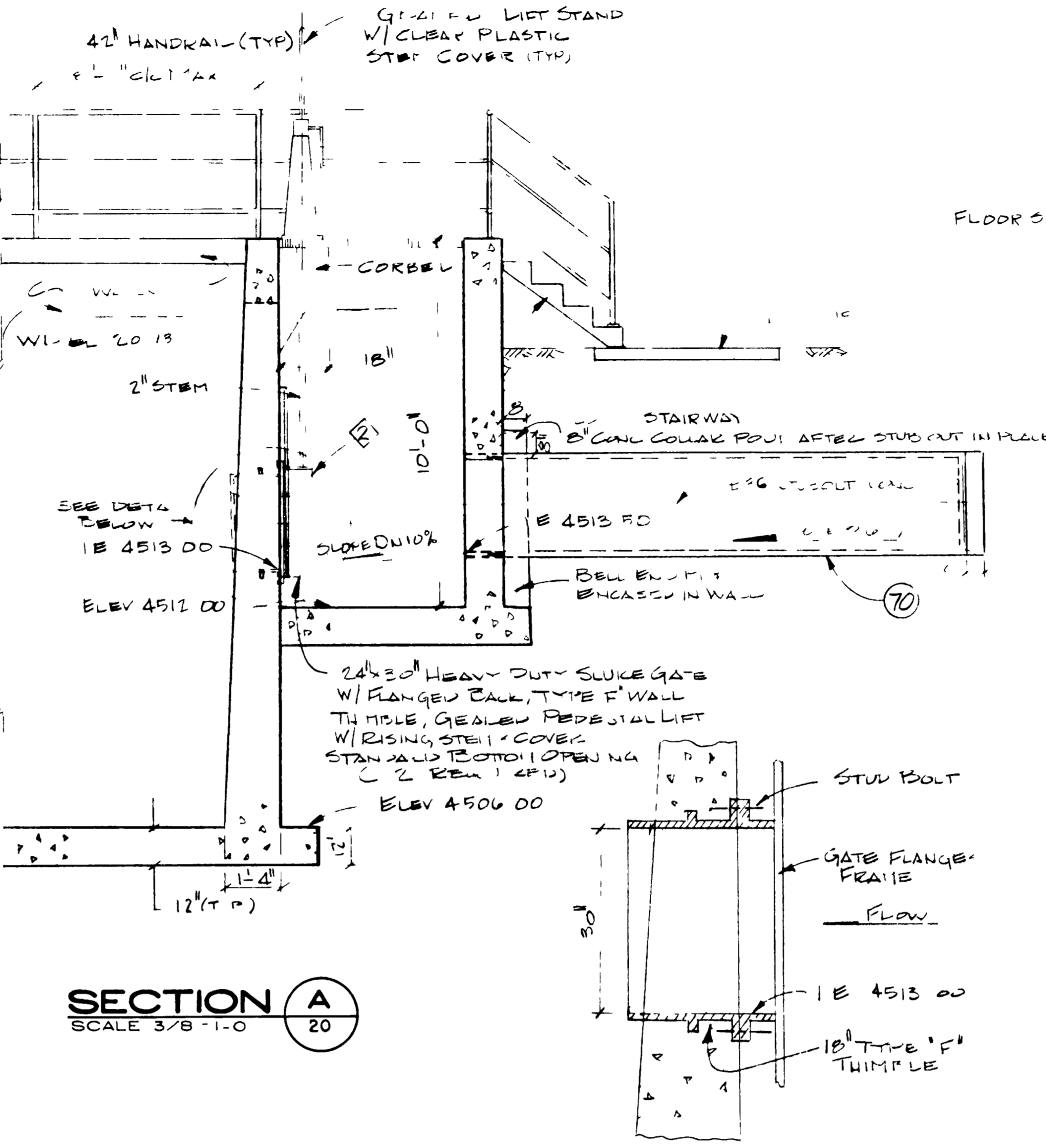
**SECTIONS**      **DETAILS**

**HENNINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS PLANNERS CONSULTANTS  
DENVER COLORADO      GRAND JUNCTION COLORADO

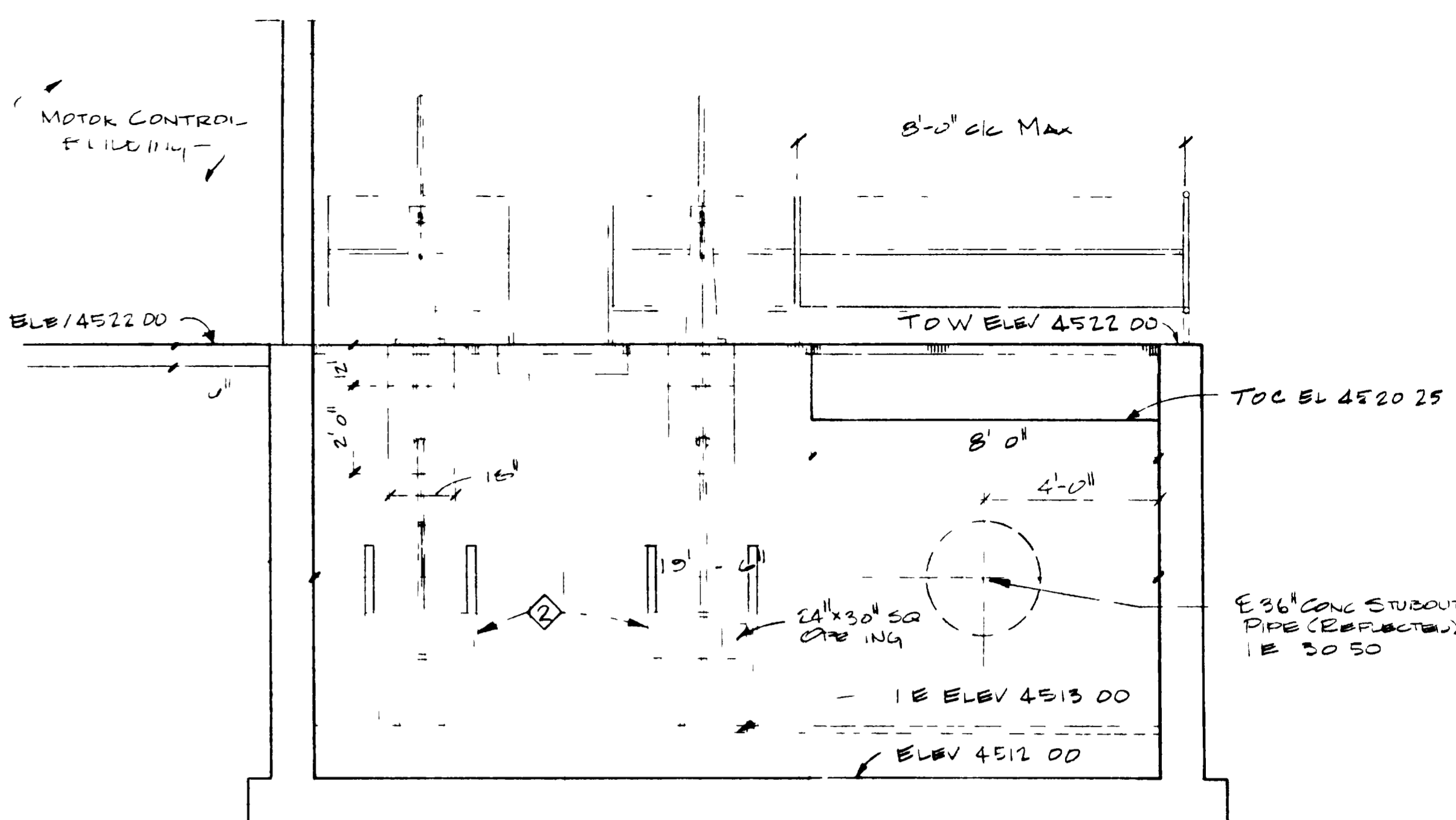
JOB: 735510      DESIGNED BY: J. HORST      CHECKED BY: J. HORST      SHEET: 19 OF 28  
DATE: JAN 31 82      APPROVED BY: HENNINGSON      DATE: JAN 31 82



**INLET STRUCTURE PLAN**  
SCALE 3/8" = 1'-0"

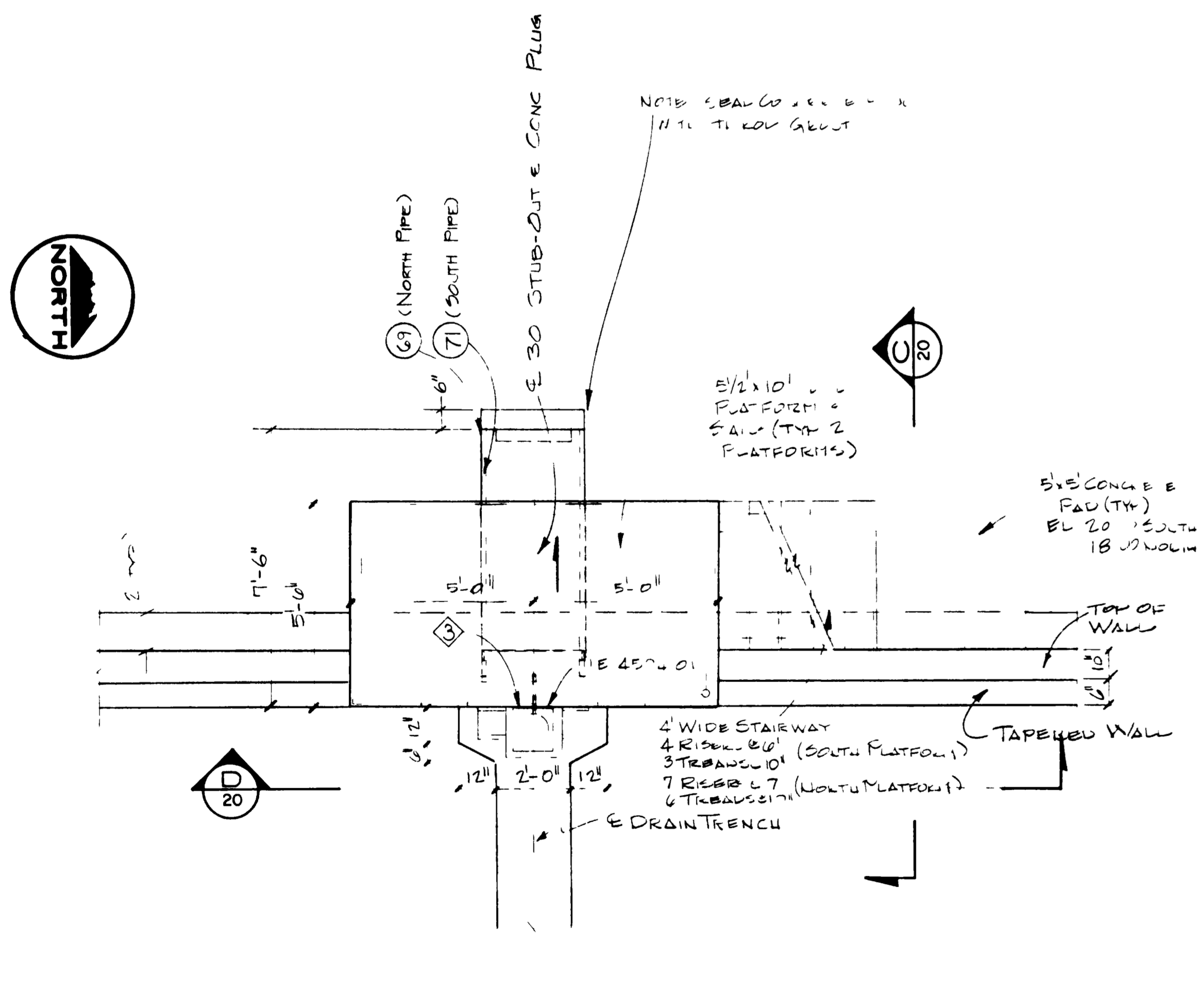


**SECTION A**  
SCALE 3/8" = 1'-0"

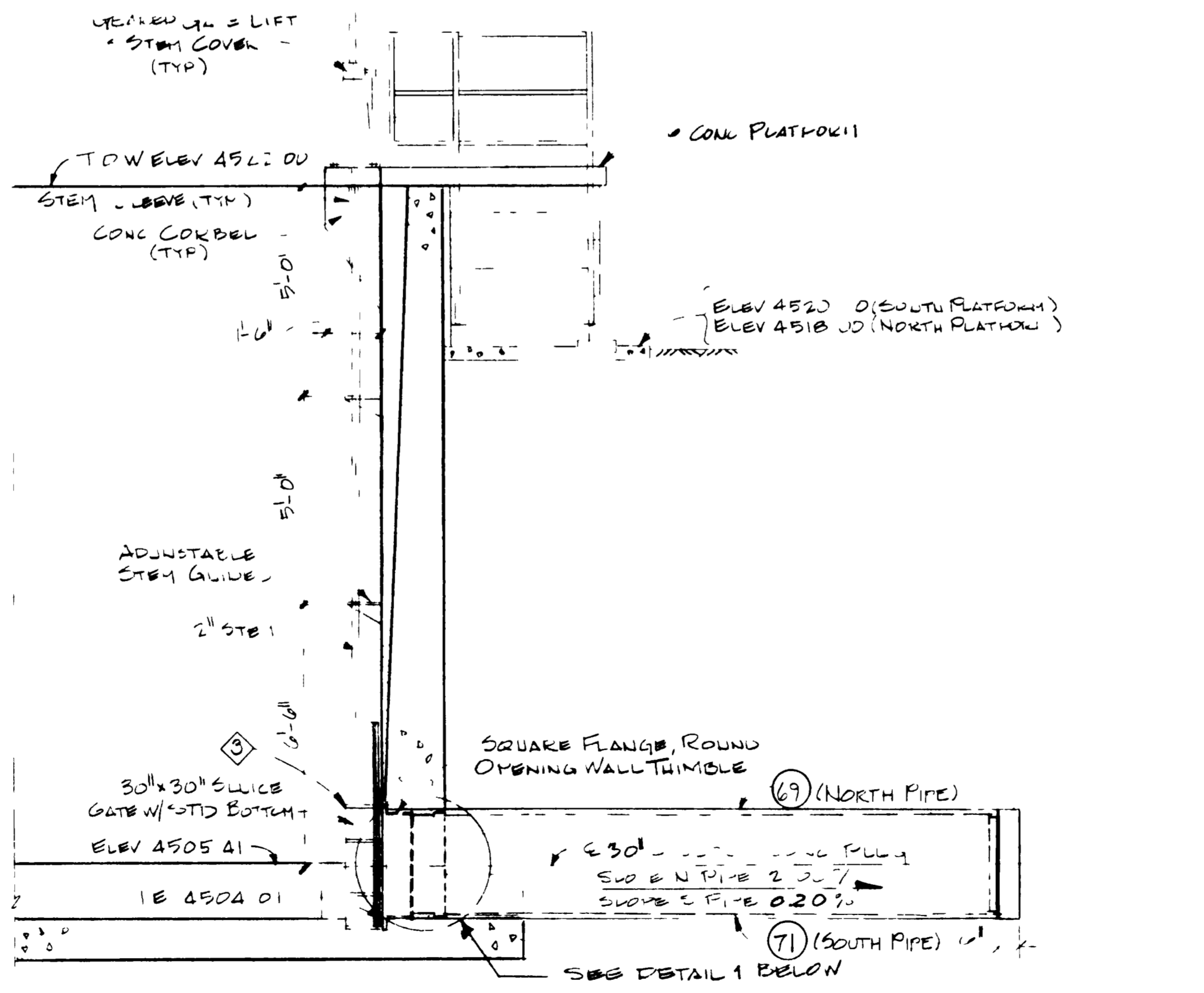


**SECTION B**  
SCALE 3/8" = 1'-0"

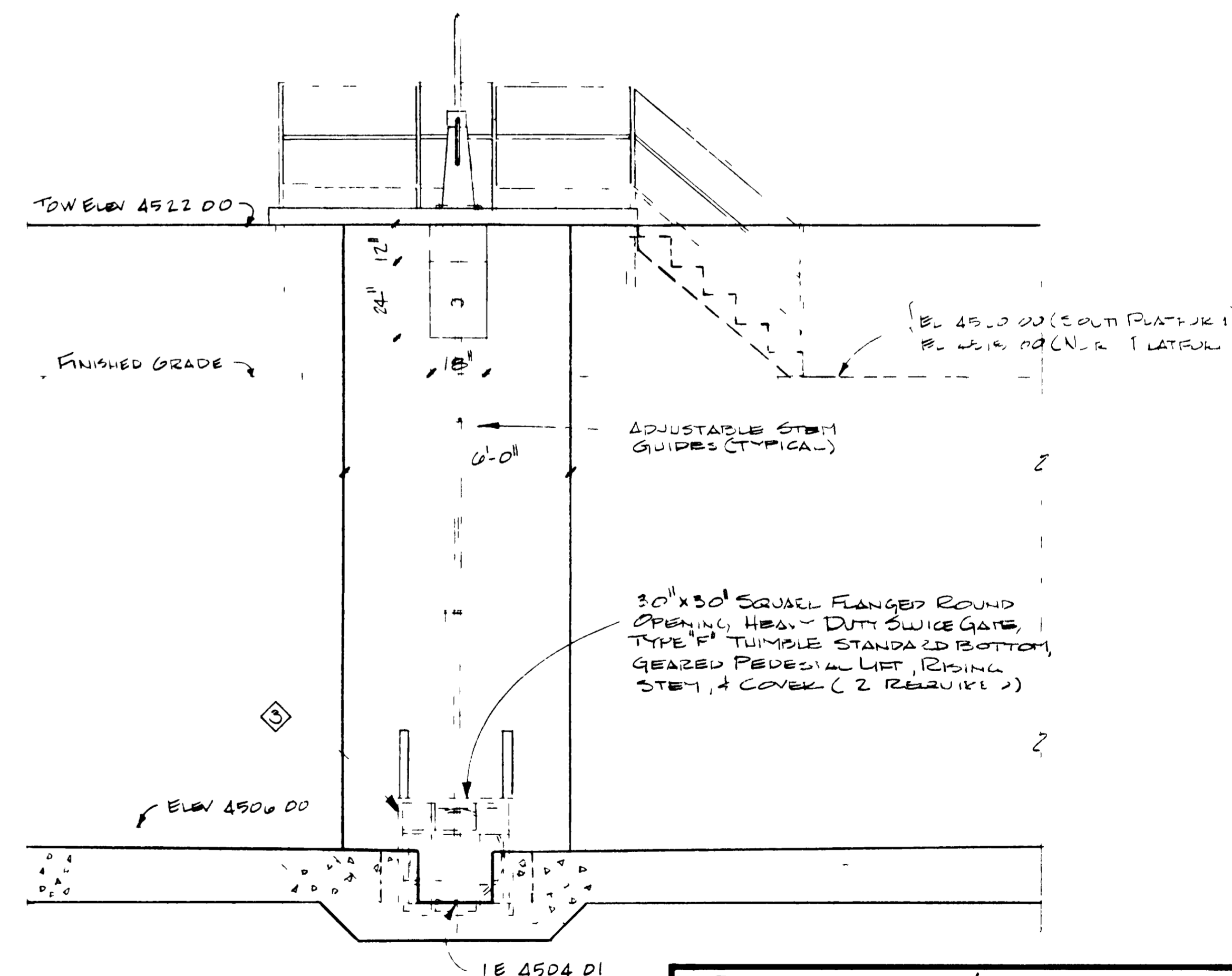
**WALL THIMBLE DETAIL**  
NO SCALE



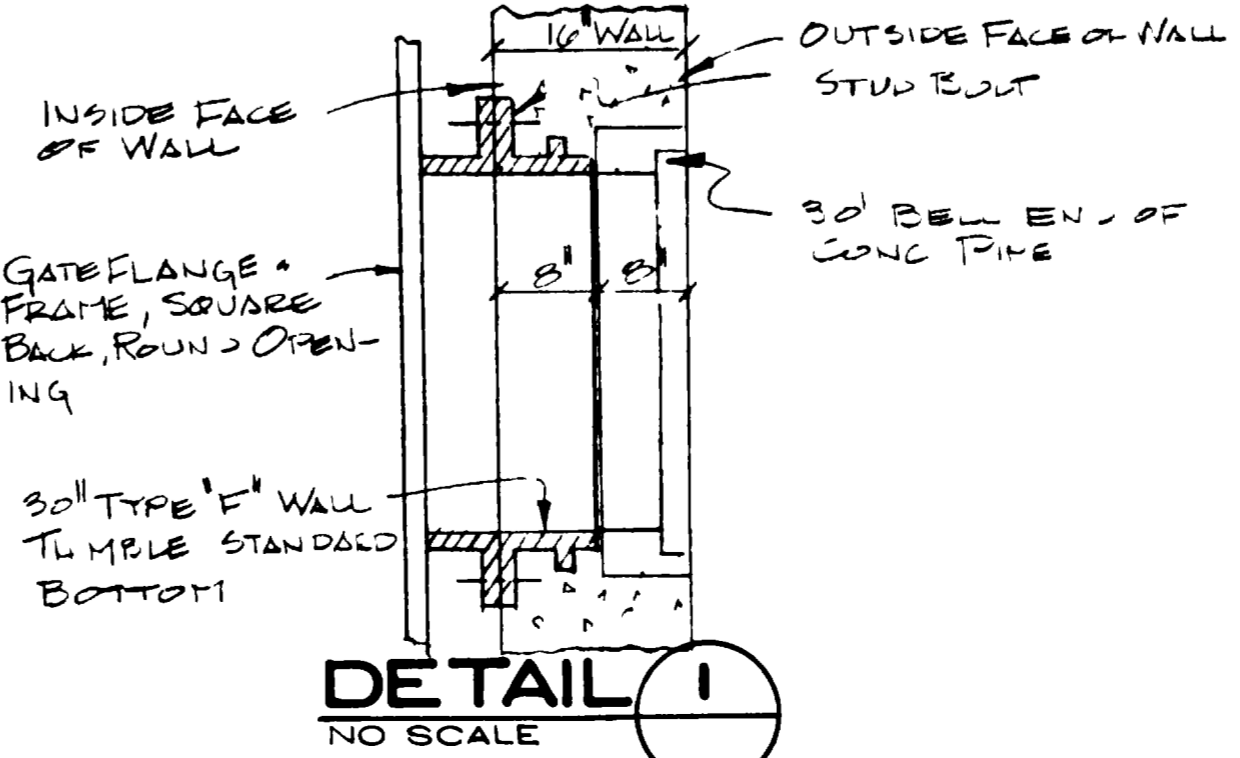
**DRAIN TRENCH OUTLET**  
SCALE 3/8" = 1'-0"  
TYPICAL TWO PLACES



**SECTION C**  
SCALE 3/8" = 1'-0"



**SECTION D**  
SCALE 3/8" = 1'-0"



**DETAIL I**  
NO SCALE

**"AS RECORDED"**  
FROM INFORMATION  
PROVIDED BY THE  
CONTRACTORS  
DATE FEBRUARY 1982

<b>GRAND JUNCTION / MESA COUNTY, COLORADO</b> <b>PERSIGO WASH INTERIM WASTEWATER TREATMENT PLANT</b> PROCESSING <b>AERATED BASINS</b>			
SECTIONS		DETAILS	
<b>HENNINGSON, DURHAM &amp; RICHARDSON, INC.</b> BUSINESS PLANNERS CONSULTANTS DENVER COLORADO GRAND JUNCTION COLORADO			
JOB NO. 735510	DESIGNED BY J. HORST	CHECKED BY J. HORST	DRAWN BY
DATE JUN. 3, 80	APPROVED BY K. MEADOR	APPROVED BY K. MEADOR	DATE JUN. 3, 80
			20 of 28