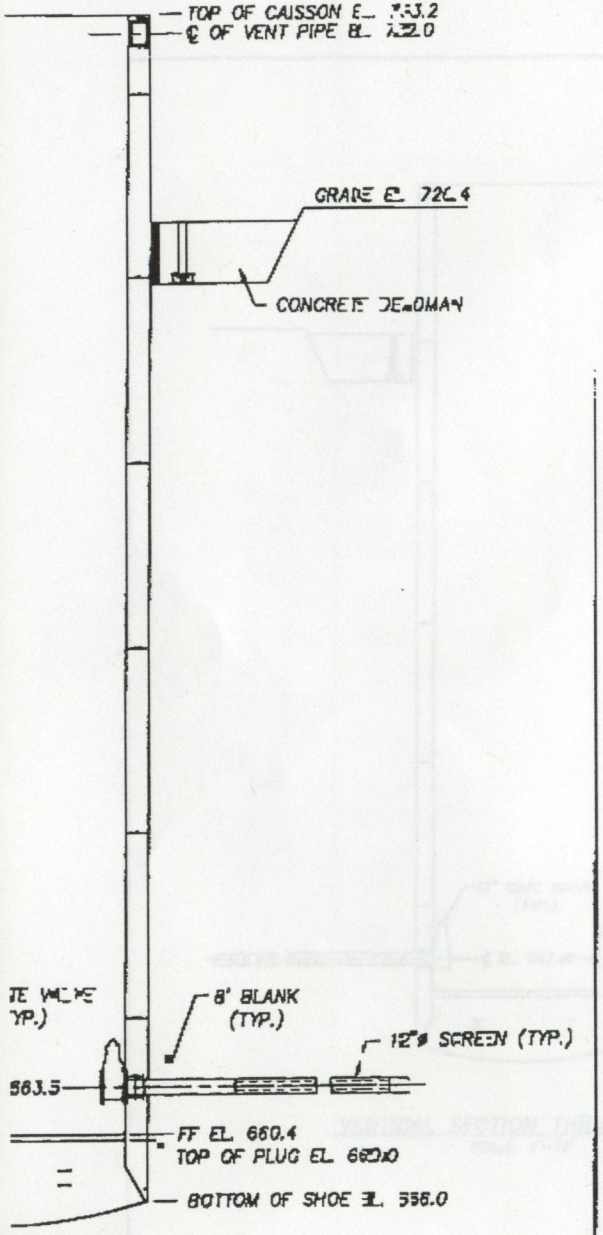
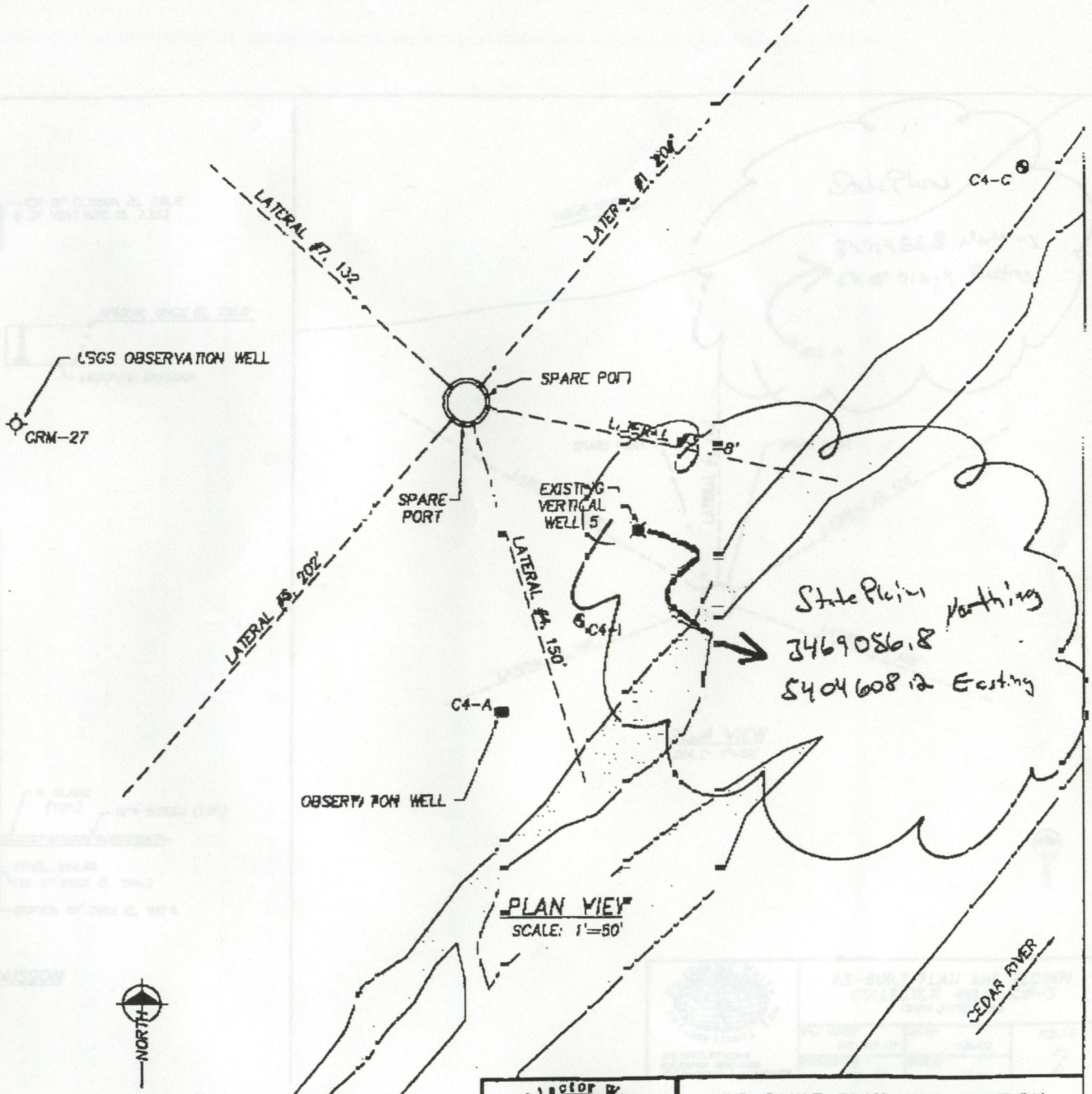


W-56471

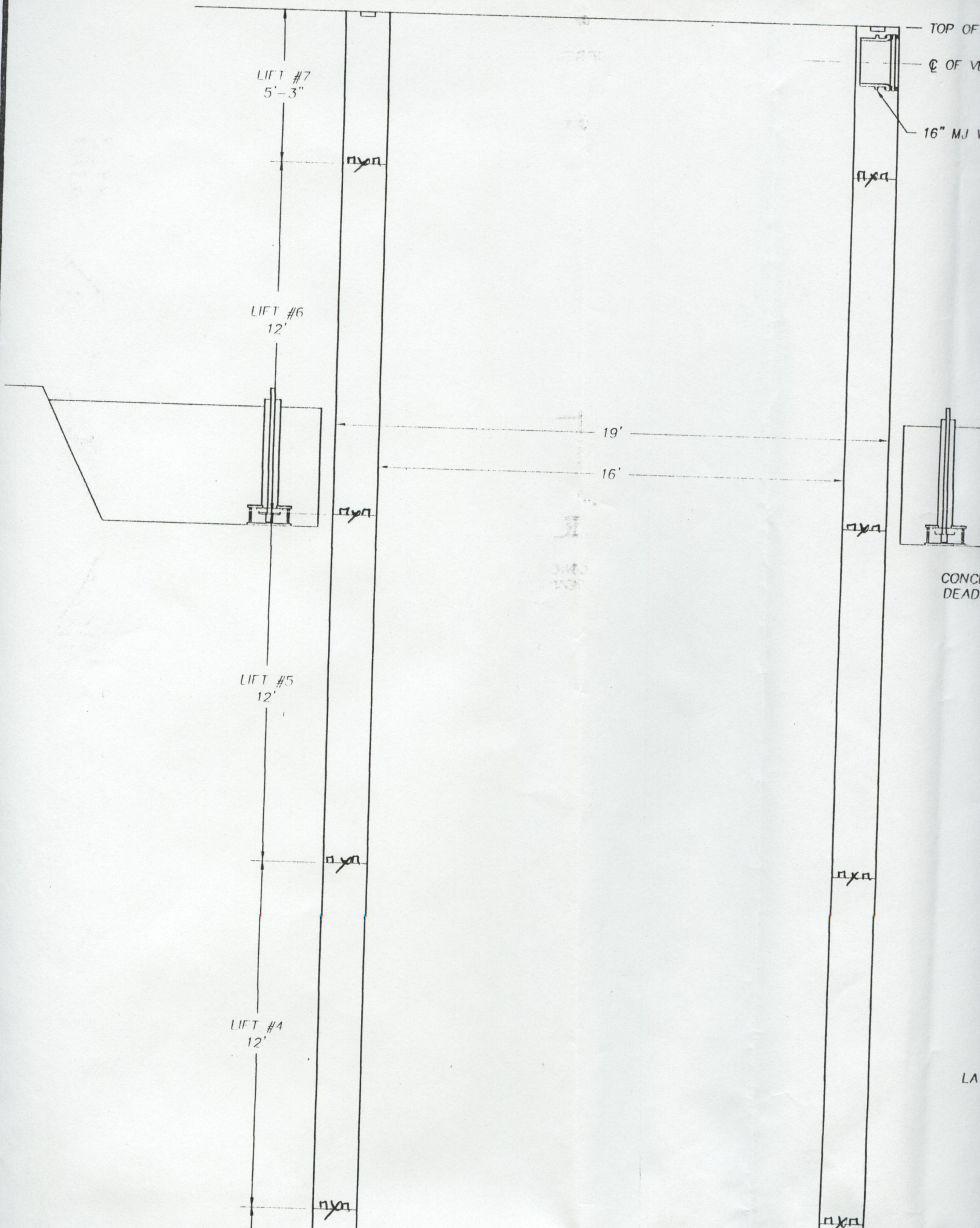


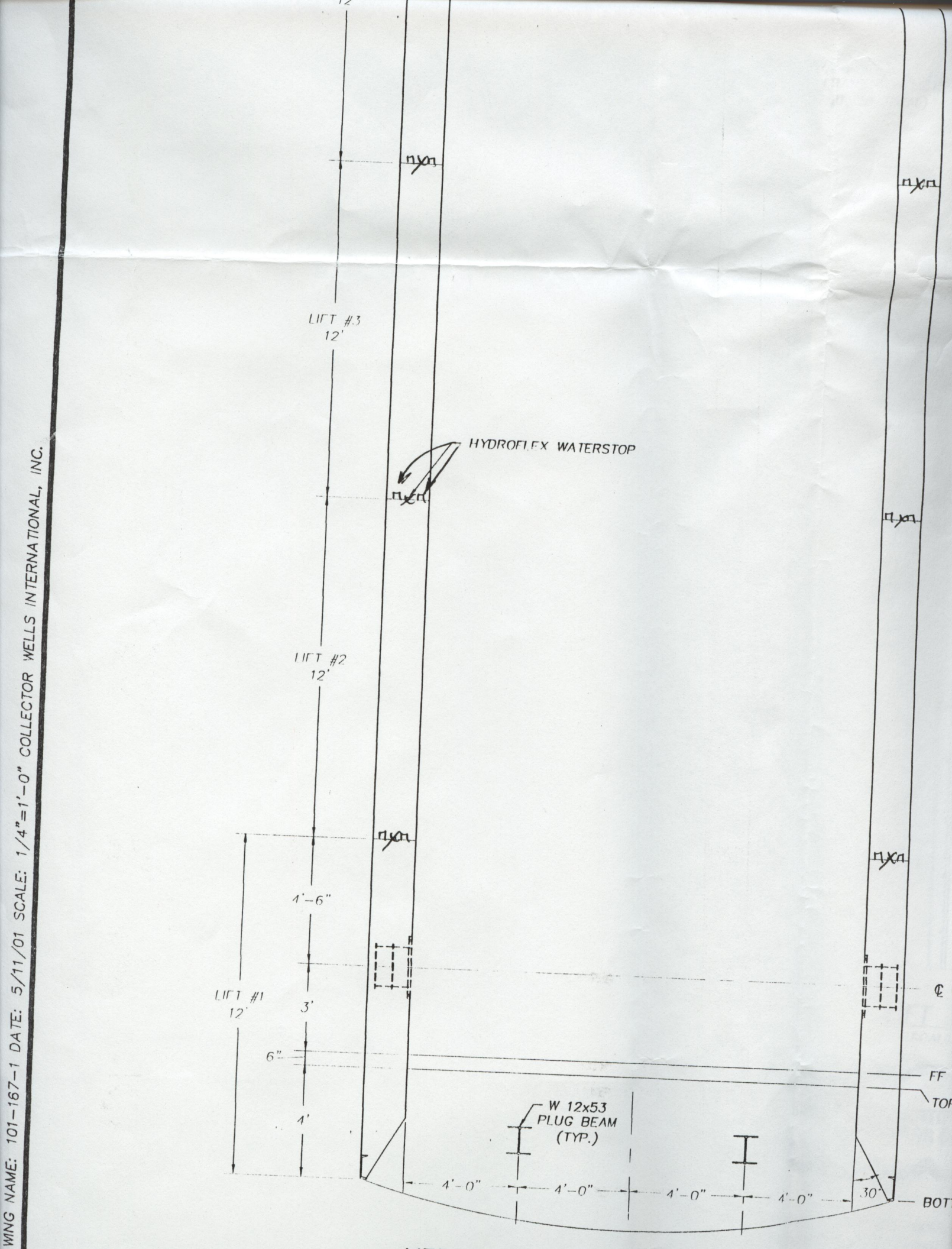
Collector Well International Inc
6650 HUNTLEY ROAD
COLUMBUS, OHIO 43229
(614) 888-4260 / FAX (614) 888-9261

AS-BUILT PLAN AND SECTION COLLECTOR WELL HCW-4

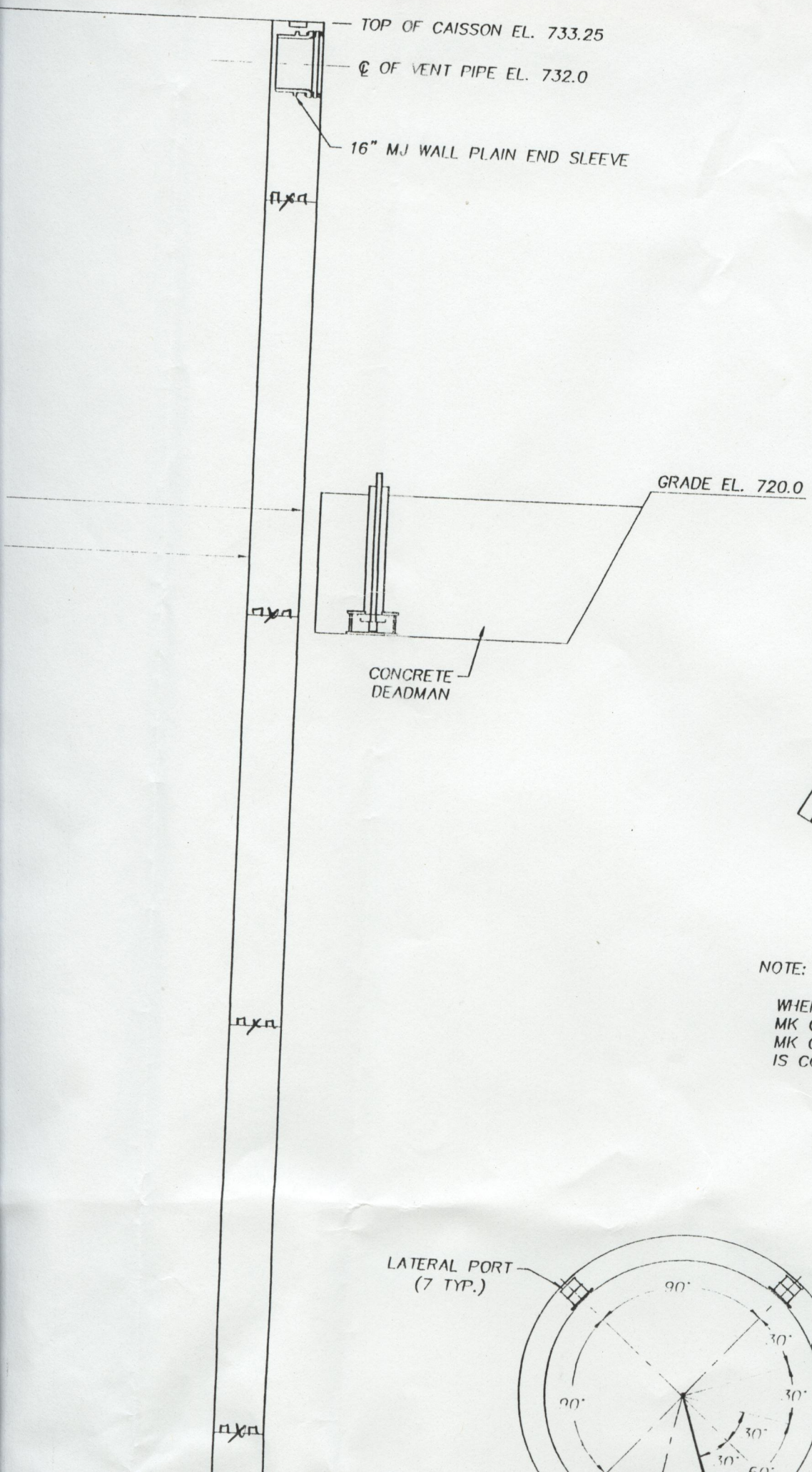
CEDAR RAPIDS, IOWA

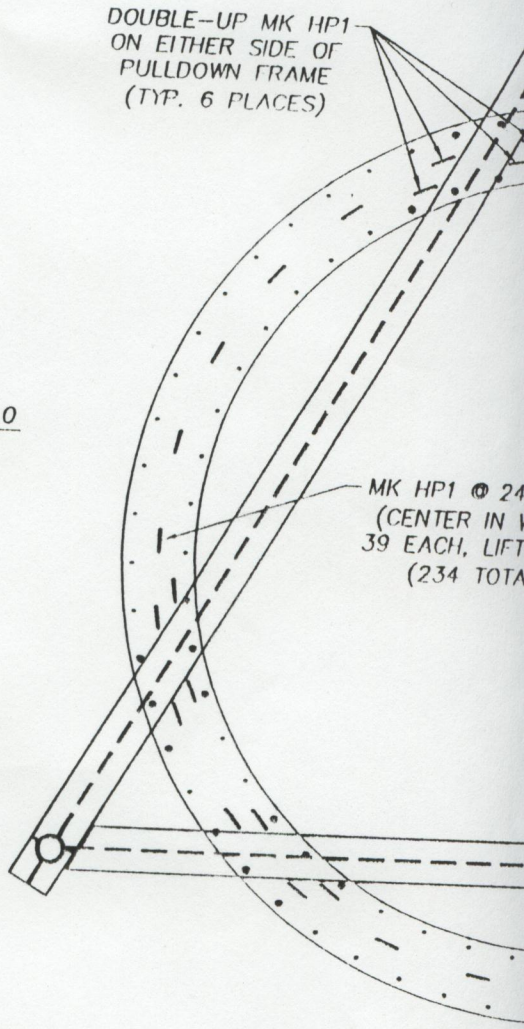
FILE NAME: 101-167-10	DATE: 4/5/02	FIGURE 3
PROJECT #: 101-167	SCALE: 1"=10'	


LIFT #7
5'-3"
LIFT #6
12'
LIFT #5
12'
LIFT #4
12'
19'
16'
TOP OF
℄ OF V
16" MJ
CONC
DEAD
LA



DRAWING NAME: 101-167-1 DATE: 5/11/01 SCALE: 1/4"=1'-0" COLLECTOR WELLS INTERNATIONAL, INC.





NOTE:

WHERE FRAME CONFLICTS WITH VERTICAL REB
MK C8 IN PLACE OF STANDARD MARK REBAR.
MK C9 INTO MK C8 IN NEXT LIFT, AFTER PUL
IS COMPLETE (SEE THREADED COUPLER DETAI

HAIRPIN & THREADED

SCALE: 1

CEDAR RIVER

SPARE PORT

BASELINE

CEDAR RIVER

EXISTING VERTICAL WELL

Potential Con
with monitor

NOTE:

ALIGN THE POSITION OF THE WALL PORTS OFF THE BASELINE THROUGH THE VERTICAL WELL. POSITION NOT TO INTERFERE WITH THE VERTICAL WELL.

CH-B

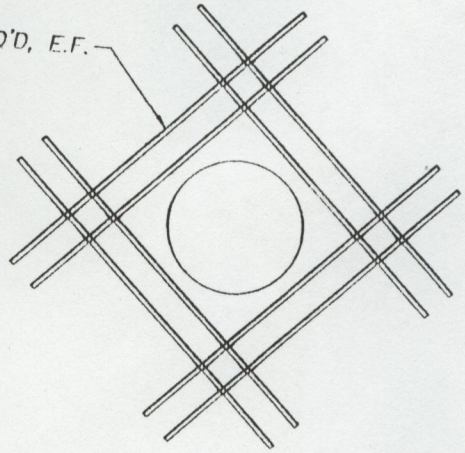
2'

NORTH

PLAN VIEW OF PORT LOCATIONS

SCALE: N.T.S.

MK C7 – 8 REQ'D, E.F. (TYP)



TYPICAL WALL PORT REINFORCING

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

℄ OF LATERALS EL. 663.5

FF EL. 660.5

TOP OF PLUG EL. 660.0

BOTTOM OF SHOE EL. 656.0

OLSSON ASSOCIATES

LICENSED PROFESSIONAL ENGINEER
JOHN S. OLSSON
15340l
5/15/01
IOWA

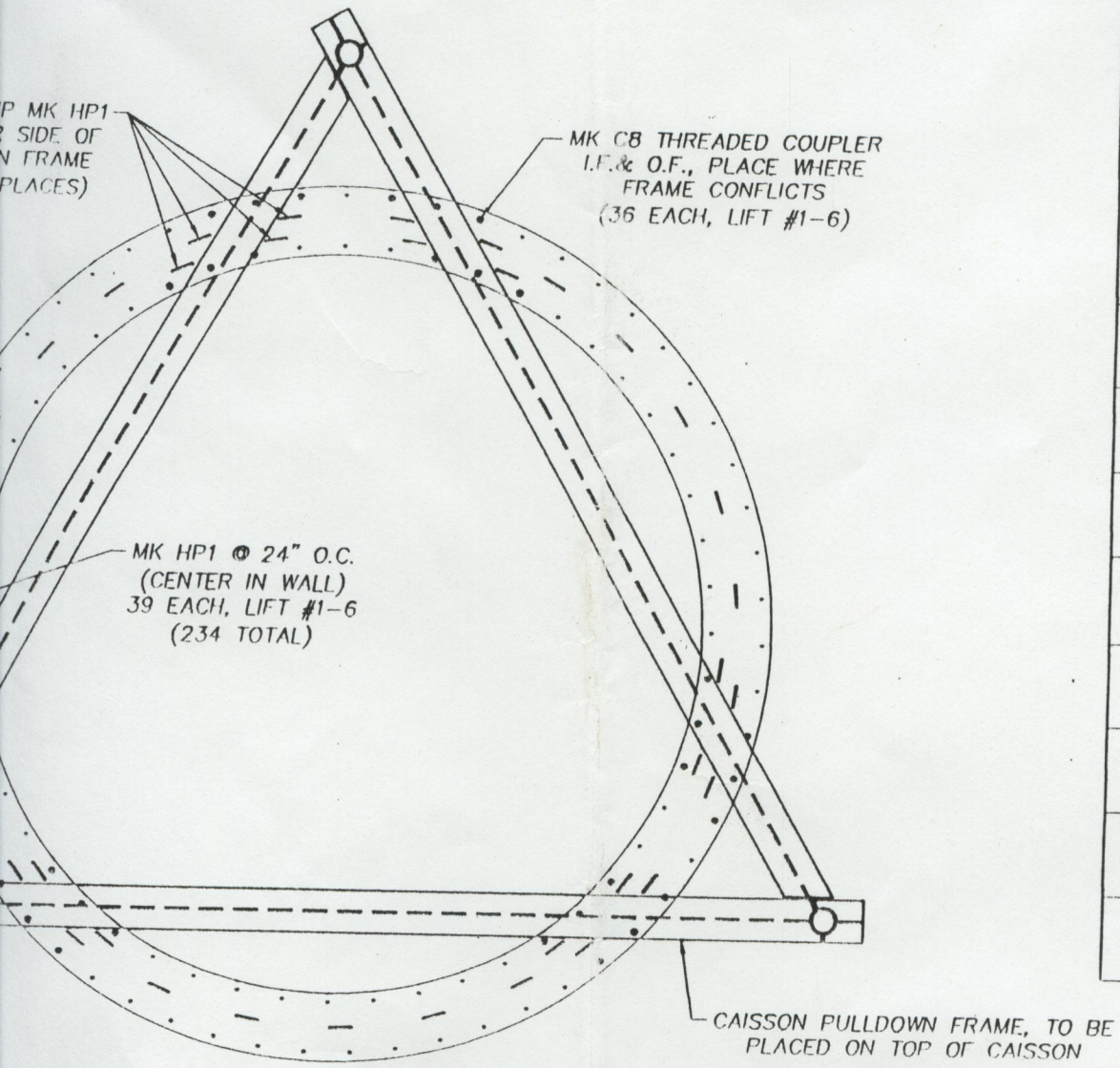
I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

(signature) John S. Olsson 5/15/01 (da

Printed or typed name JOHN S. OLSSON

My license renewal date is December 31, 2001.

Pages or sheets covered by this seal: THIS SHEET

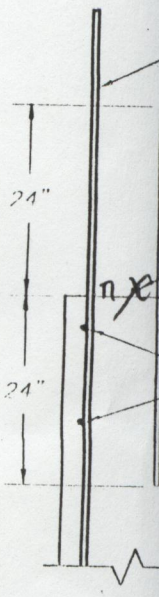


MARK	BAR SIZE	NO. REQ'D	LENGTH	A
C1	6	32	14'–11"	12'–5"
C2	6	18	11'–8"	9'–2"
C3	6	412	15'–0"	–
C4	6	18	11'–2"	–
C5	6	180	11'–10"	–
C6	6	110	5'–1"	–
C7	6	128	4'–0"	–
C8	6	216	3'–0"	WITH FE
C9	6	216	3'–0"	WITH M
HB1	7	110	7'–0"	L

FLICTS WITH VERTICAL REBAR, PLACE
F STANDARD MARK REBAR. THREAD
IN NEXT LIFT, AFTER PULLDOWN
THREADED COUPLER DETAIL).

N & THREADED COUPLER LOCATIONS

SCALE: 1/4"=1'–0"

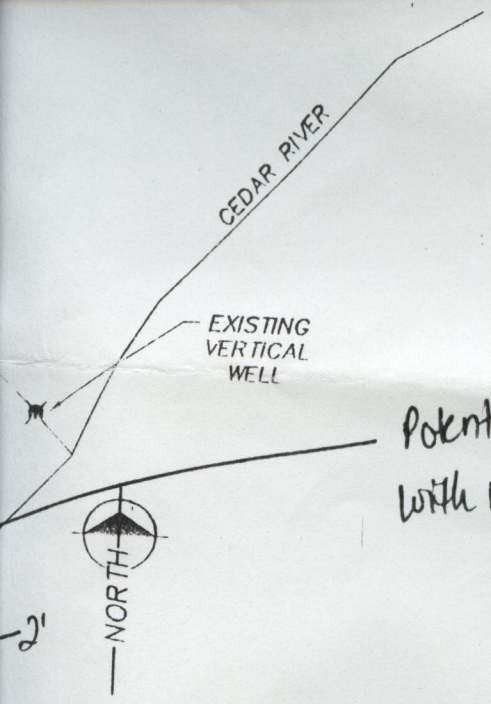


PORT

CEDAR RIVER

MK HP1 & W

S

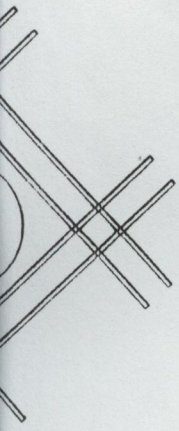


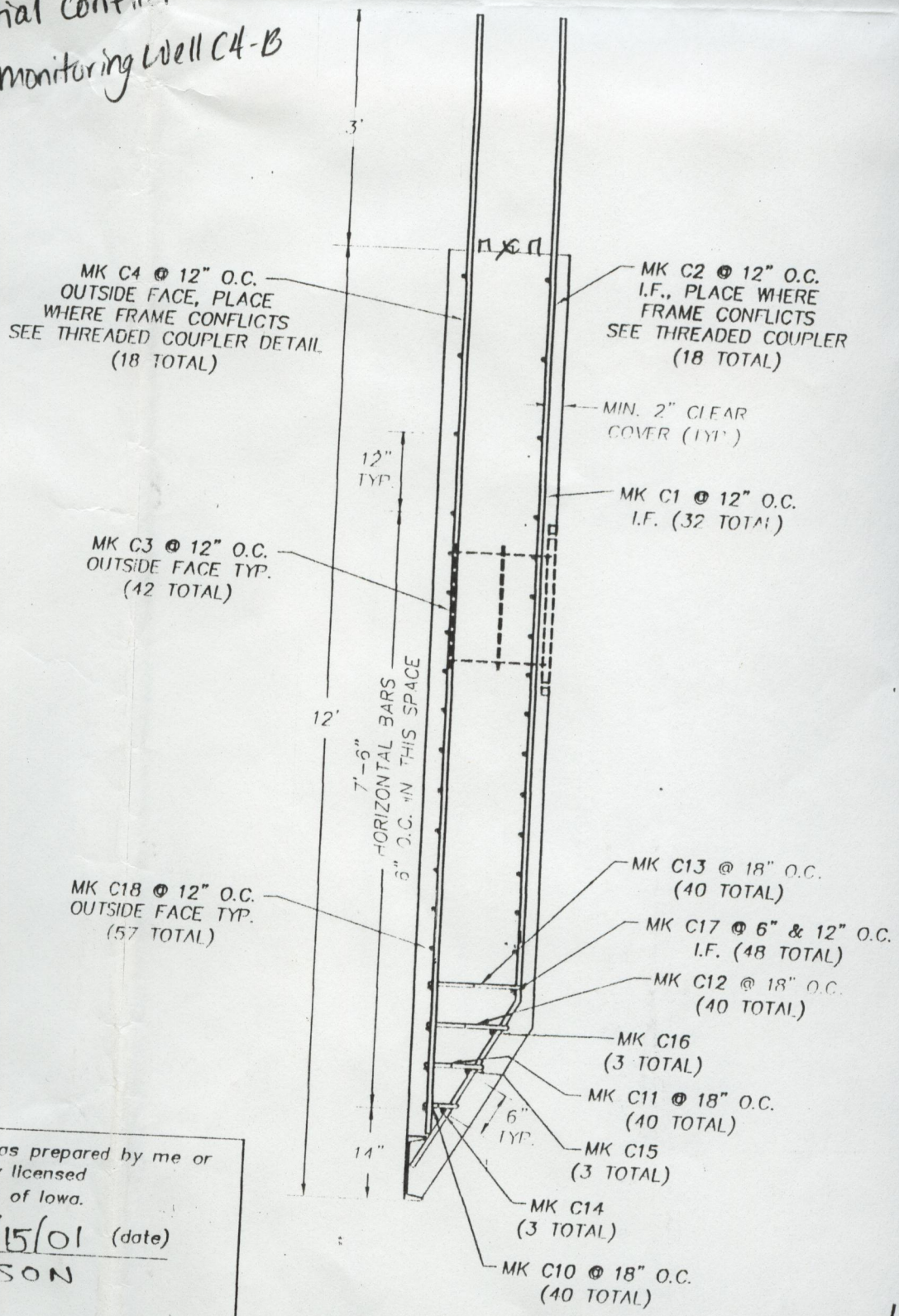
Potential Conflict with monitoring well C4-B

MK HP1 &

CATIONS

T REINFORCING
1'-0"





LIFT DETAIL #1
SCALE: 1/2"=1'-0"

LIFT

OLSSON ASSOCIATES

certify that this engineering document was prepared by me or
y direct supervision and that I am a duly licensed
nal Engineer under the laws of the State of Iowa.

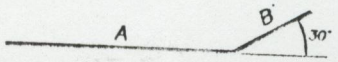
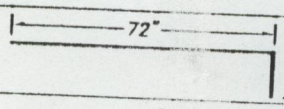
e) John S. Olsson 5/15/01 (date)

typed name JOHN S. OLSSON

renewal date is December 31, 2001.

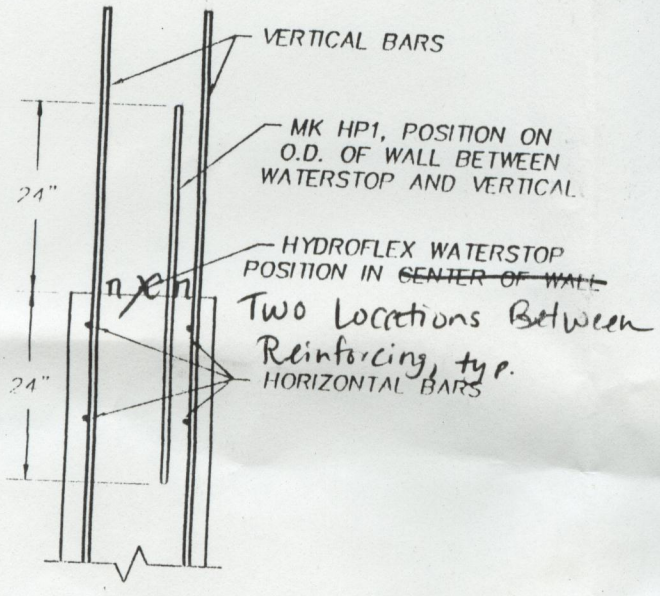
sheets covered by this seal: THIS SHEET

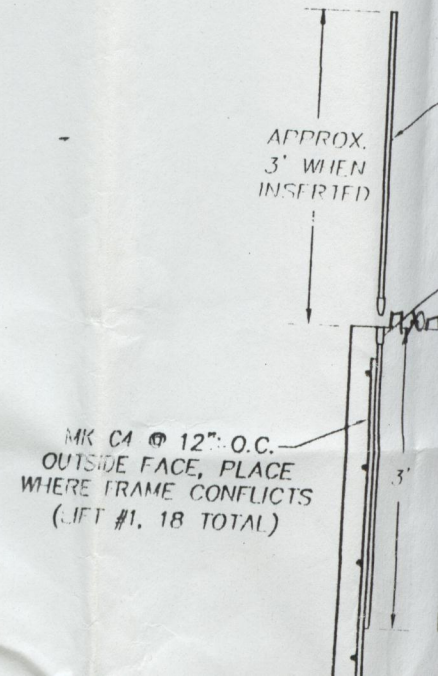
REINFORCING STEEL SCHEDULE

MARK	BAR SIZE	NO. REQ'D	LENGTH	A	B	C	DESCRIPTION
C1	6	32	14'-11"	12'-5"	2'-6"	–	
C2	6	18	11'-8"	9'-2"	2'-6"	–	
C3	6	412	15'-0"	–	–	–	STRAIGHT BARS
C4	6	18	11'-2"	–	–	–	
C5	6	180	11'-10"	–	–	–	
C6	6	110	5'-1"	–	–	–	
C7	6	128	4'-0"	–	–	–	
C8	6	216	3'-0"	WITH FEMALE COUPLER			
C9	6	216	3'-0"	WITH MALE COUPLER			
HB1	7	110	7'-0"	L	–	–	

MARK	BAR SIZE	NO. REQ'D	LENGTH	A
C10	4	10	20 3/8"	5 3/8"
C11	4	10	25 1/2"	8 3/4"
C12	4	10	30 1/4"	12 1/4"
C13	4	10	32 1/2"	14 1/2"
C14	6	3	21'-6"	16'-10"
C15	6	3	20'-11"	16'-4"
C16	6	3	20'-4"	15'-10"
C17	6	213	19'-10"	15'-5"
C18	6	252	22'-0"	17'-3"
HP1	6	234	11'-0"	–

E, TO BE
ISSON





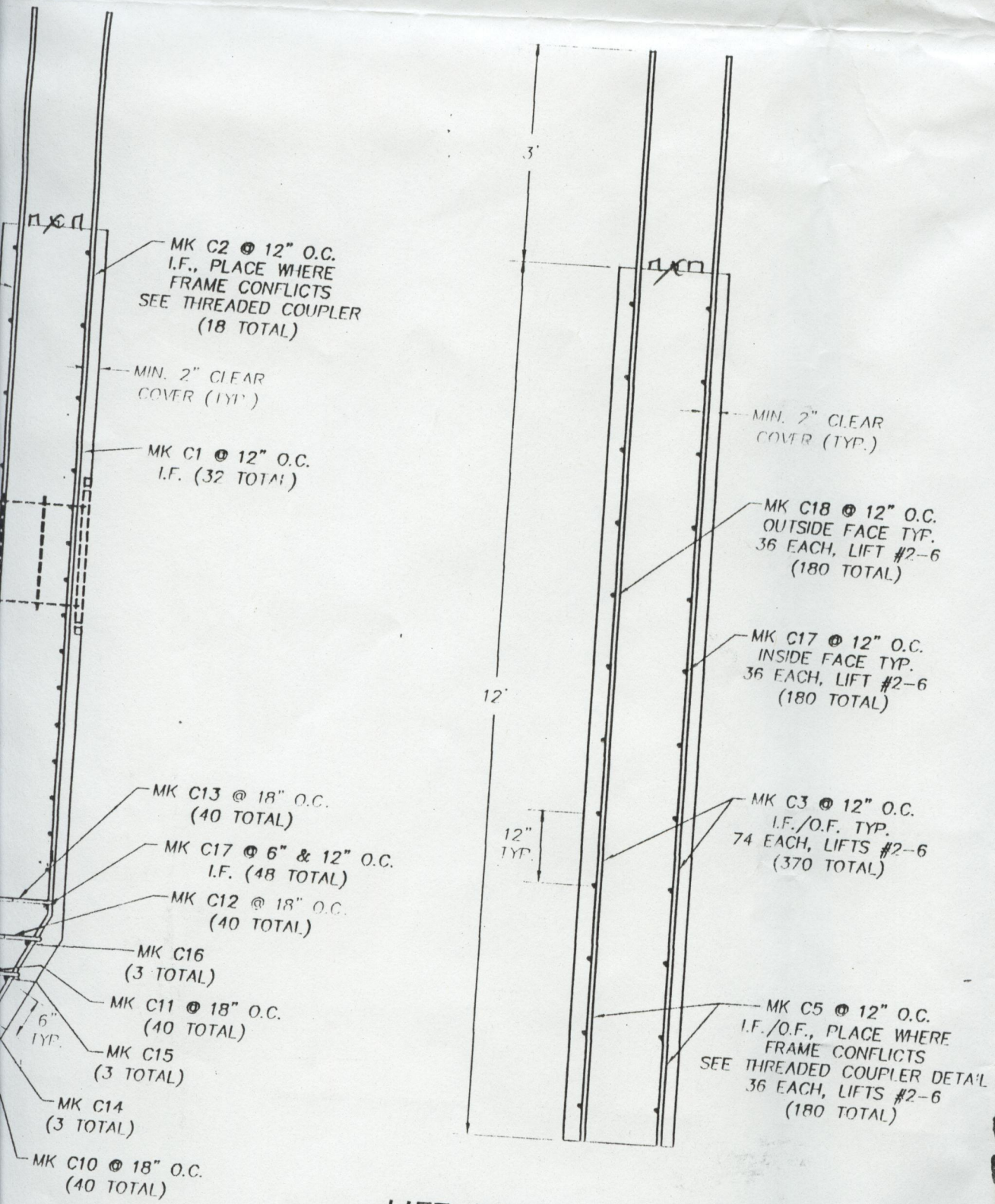
MK HP1 & WATERSTOP LOCATION

SCALE: N.T.S.

MK C4 @ 12" O.C.
OUTSIDE FACE, PLACE
WHERE FRAME CONFLICTS
(LIFT #1, 18 TOTAL)

MK HP1 & WATERSTOP LOCATION

SCALE: N.T.S.



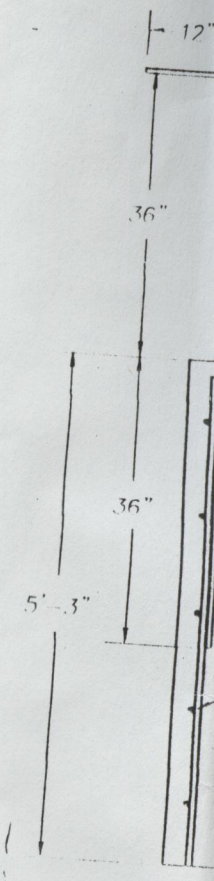
LIFT DETAIL #2 THRU #6

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

L #1

'-0"

REBAR
COUP
SCA



LIFT D
SCALE:

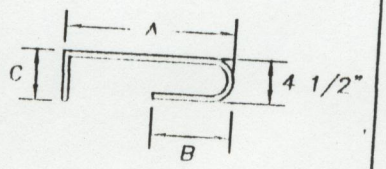
AISO—
SEE BLACK & VEATCH
LETTER FOR CO

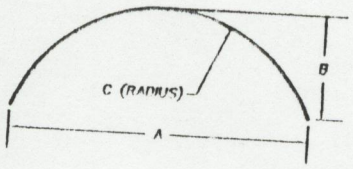
NOTES:

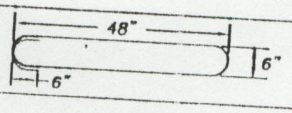
1. REINFORCING STEEL WILL COMPLY
2. CONCRETE WILL BE 4000 PSI, 28
3. ALL THREADED REBAR COUPLINGS
THE YIELD STRENGTH OF

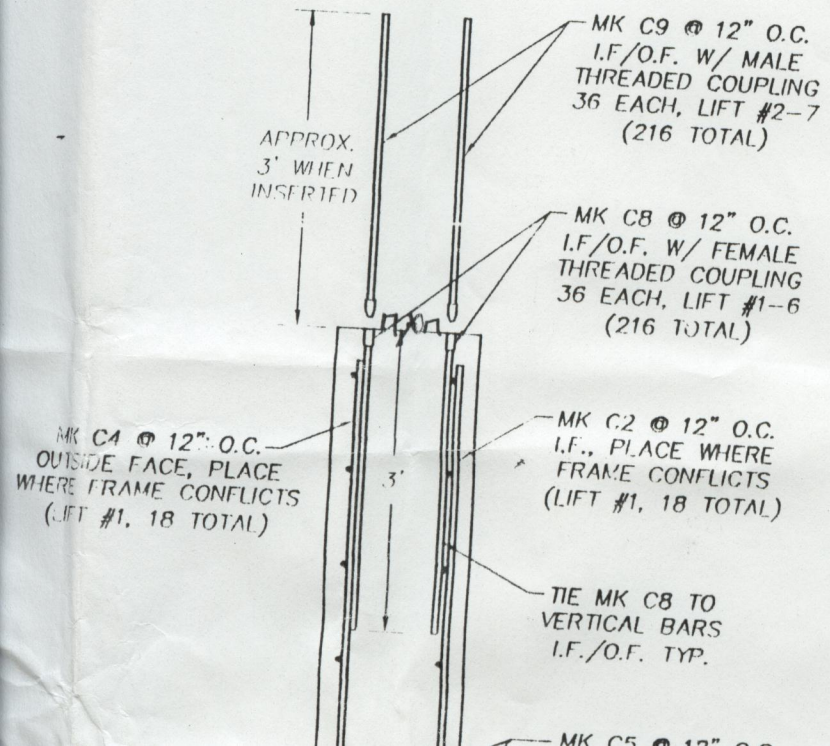
L SCHEDULE

MARK	BAR SIZE	NO. REQ'D	LENGTH	A	B	C	DESCRIPTION
C10	4	40	20 3/8"	5 3/8"	3"	5"	
C11	4	40	25 1/2"	8 3/4"	4 3/4"	5"	
C12	4	40	30 1/4"	12 1/4"	6"	5"	
C13	4	40	32 1/2"	14 1/2"	6"	5"	
C14	6	3	21'–6"	16'–10"	5'–8"	9'–1"	
15	6	3	20'–11"	16'–4"	5'–6"	8'–10"	
16	6	3	20'–4"	15'–10"	5'–5"	8'–6"	
7	6	213	19'–10"	15'–5"	5'–3"	8'–3"	
8	6	252	22'–0"	17'–3"	5'–9"	9'–4"	
1	6	234	11'–0"	–	–	–	





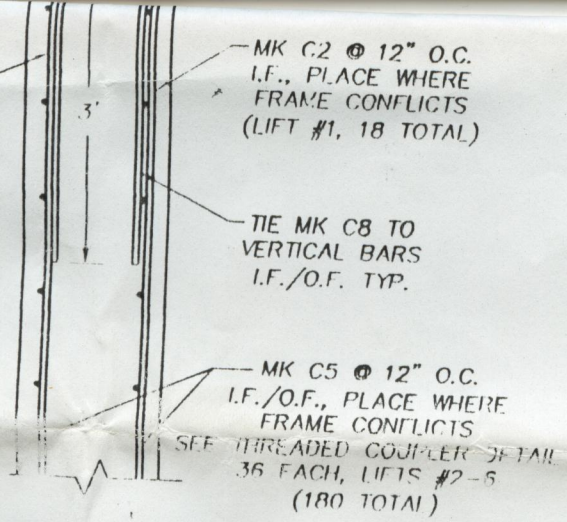




Collector Wells International, Inc.
6360 HUNTLEY ROAD
COLUMBUS, OHIO 43229
(614) 888-6263 / FAX (614) 888-9208

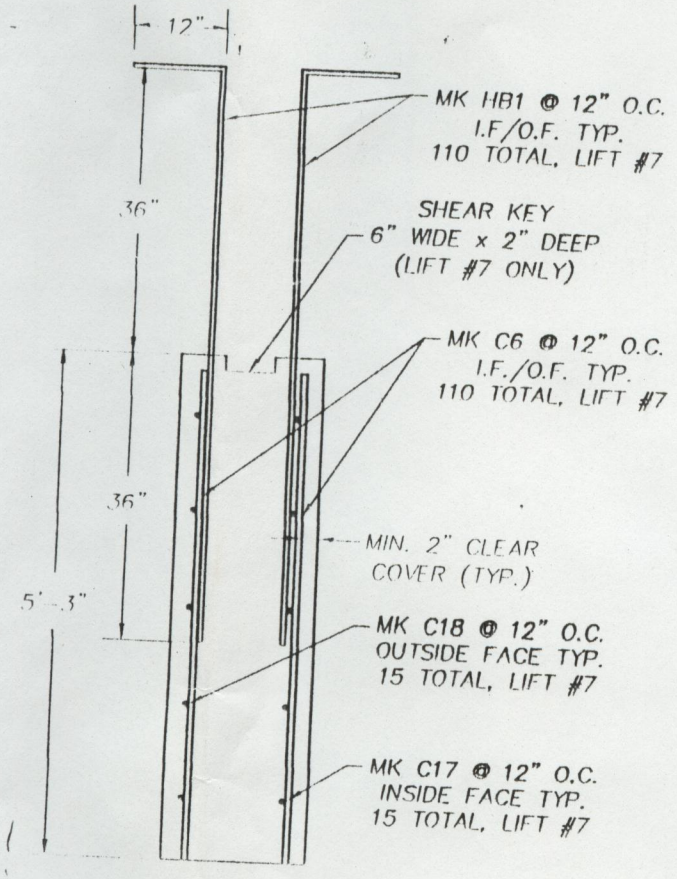
#101–167
HORIZONTAL COLLECTOR WELLS
CAISSON CONTRACT NO. 625038–02
CEDAR RAPIDS IOWA

CITY OF CEDAR RAPIDS



REBAR W/ THREADED COUPLER DETAIL

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



LIFT DETAIL #7

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

Also—
SEE BLACK & VEATCH CORPORATION
LETTER FOR COMMENTS

☐ NO EXCEPTIONS NOTED
☒ EXCEPTIONS NOTED
☐ RETURNED FOR CORRECTION
☐ RECORD COPY

MAY 3 1 2001

REVIEW DOES NOT RELIEVE CONTRACTOR FROM SOLE RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS.
BLACK & VEATCH CORPORATION

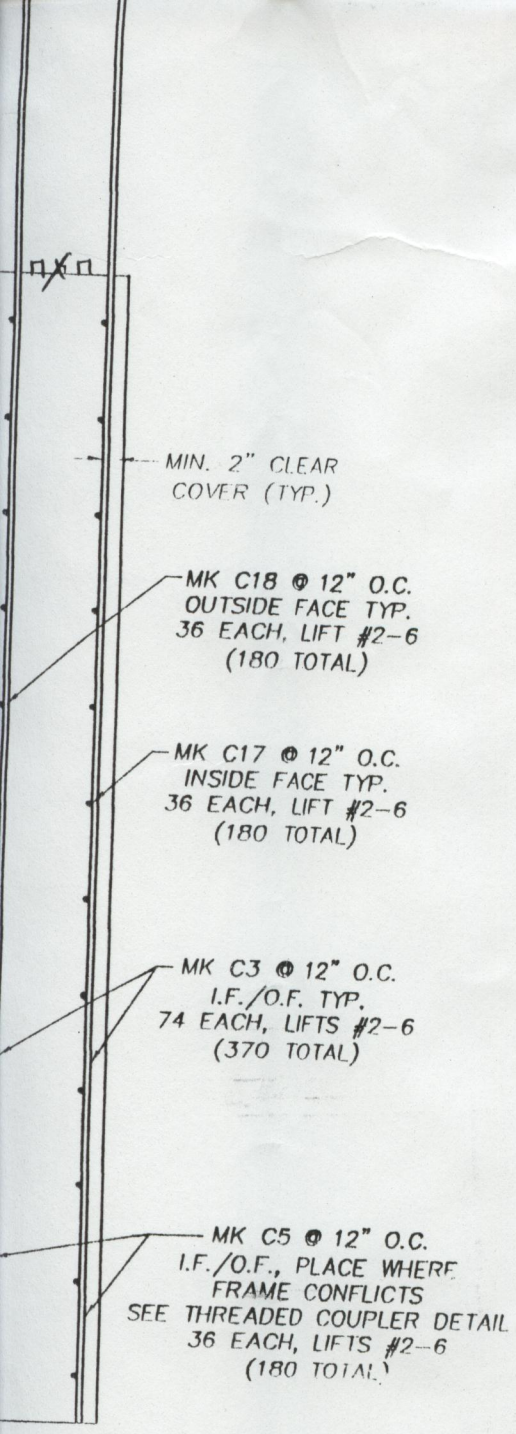
Project Reference: #101-167
HORIZONTAL
CAISSON CO
CEDAR RAPI

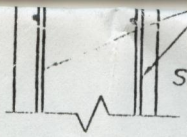
Client: CITY OF CE

CAISSON REINFORCING FOR HCW-4 IN THE SEMINOLE WELLFIELD

NOTES:

1. REINFORCING STEEL WILL COMPLY WITH ASTM A-615, GRADE 60.
2. CONCRETE WILL BE 4000 PSI, 28 DAY COMPRESSIVE STRENGTH, MINIMUM





I.F./O.F., PLACE WHERE FRAME CONFLICTS SEE THREADED COUPLER DETAIL 36 EACH, LIFTS #2-6 (180 TOTAL)

REBAR W/ THREADED COUPLER DETAIL

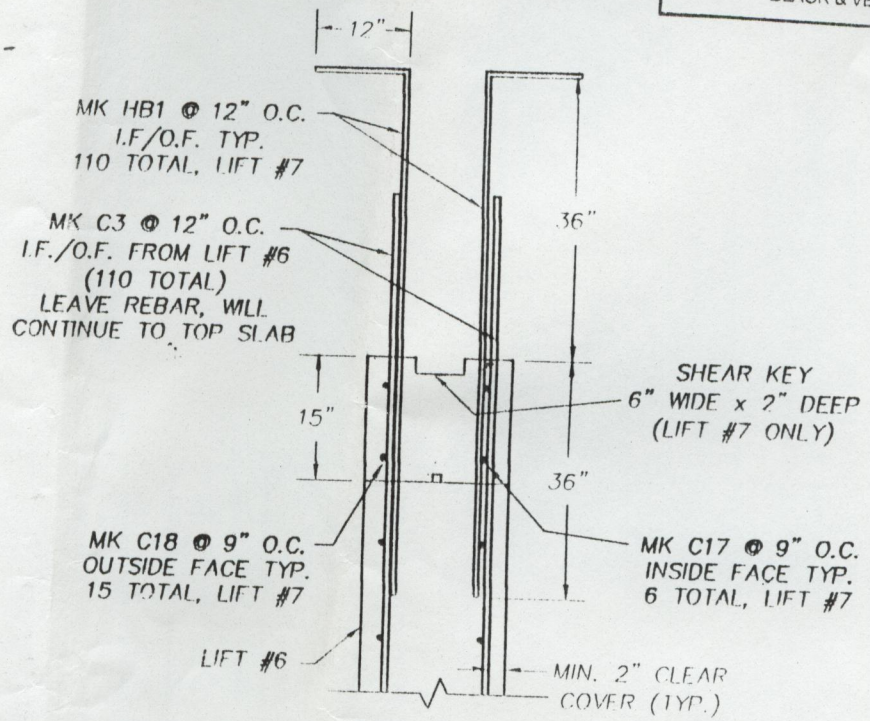
SCALE: 1/2"=1'-0"

Also—
SEE BLACK & VEATCH CORPORATION LETTER FOR COMMENTS

☐ NO EXCEPTIONS NOTED
☒ EXCEPTIONS NOTED
☐ RETURNED FOR CORRECTION
☐ RECORD COPY

MAY 3 1 2001

REVIEW DOES NOT RELIEVE CONTRACTOR FROM SOLE RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS. BLACK & VEATCH CORPORATION



LIFT DETAIL #7 AND TOP OF LIFT #6

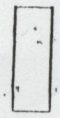
SCALE: 1/2"=1'-0"

#2 THRU #6

/2"=1'-0"

NOTES:

1. REINFORCING STEEL WILL COMPLY WITH ASTM A-615, GRADE 60.
2. CONCRETE WILL BE 4000 PSI, 28 DAY COMPRESSIVE STRENGTH, MINIMUM.
3. ALL THREADED REBAR COUPLINGS SHALL DEVELOP AT LEAST 125% OF THE YIELD STRENGTH OF THE REINFORCING BAR.



Project Re

CC