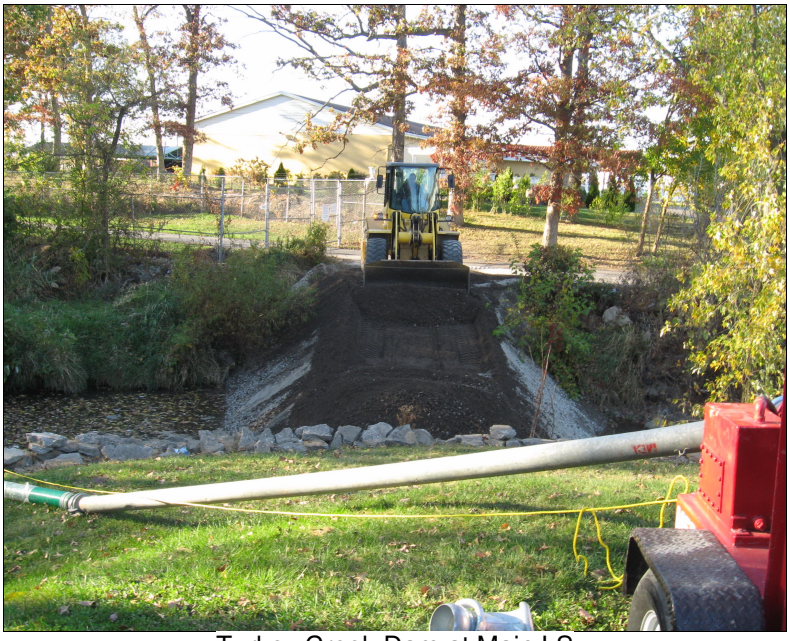
REL FIELD INVESTIGATION - 10/20/10

MH 20044

MH 20044

MH 20044



Turkey Creek Dam at Main LS

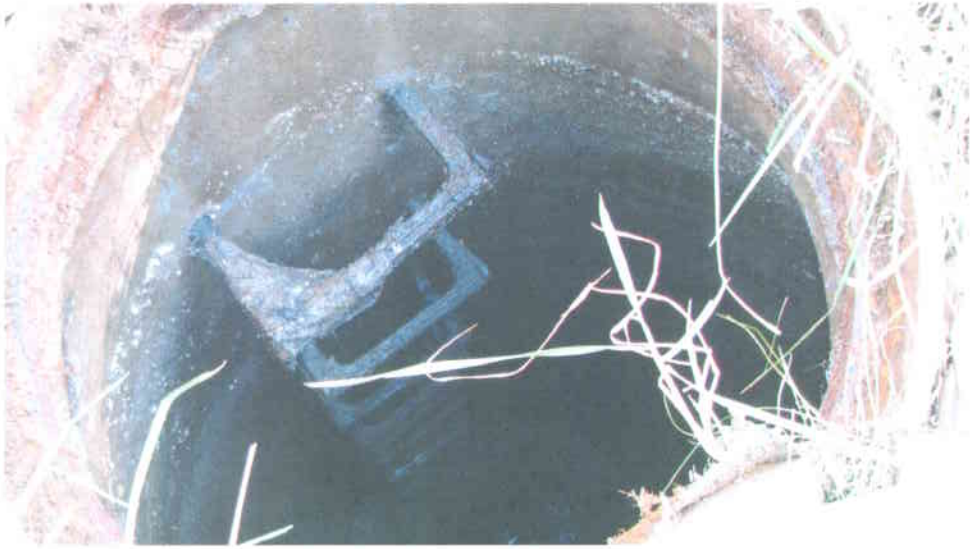
Turkey Creek Dam at Main LS

Turkey Creek Dam at Main LS

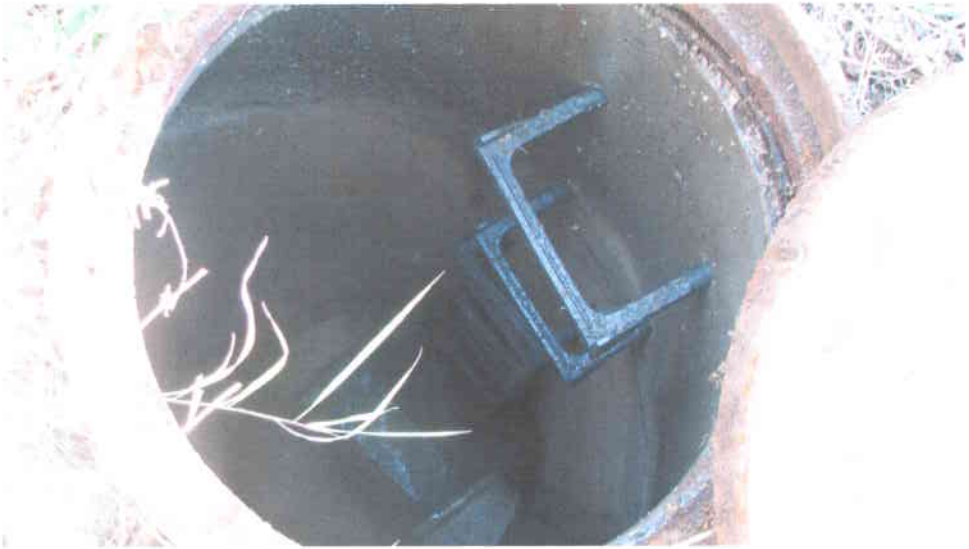
REL FIELD INVESTIGATION - 10/20/10

Turkey Creek Dam at Main LS

MCD FIELD INVESTIGATION - 10/21/10



MCD FIELD INVESTIGATION - 10/21/10



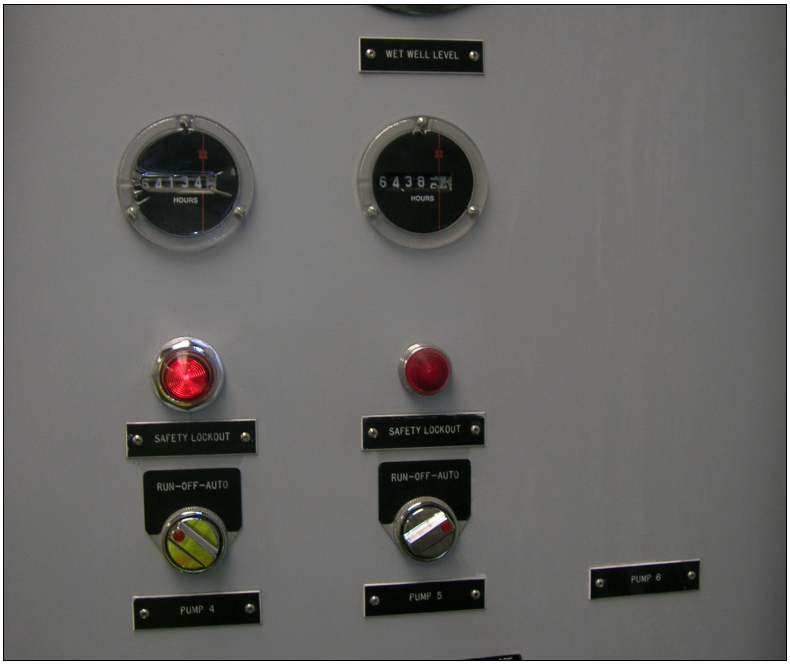
MCD FIELD INVESTIGATION - 10/21/10

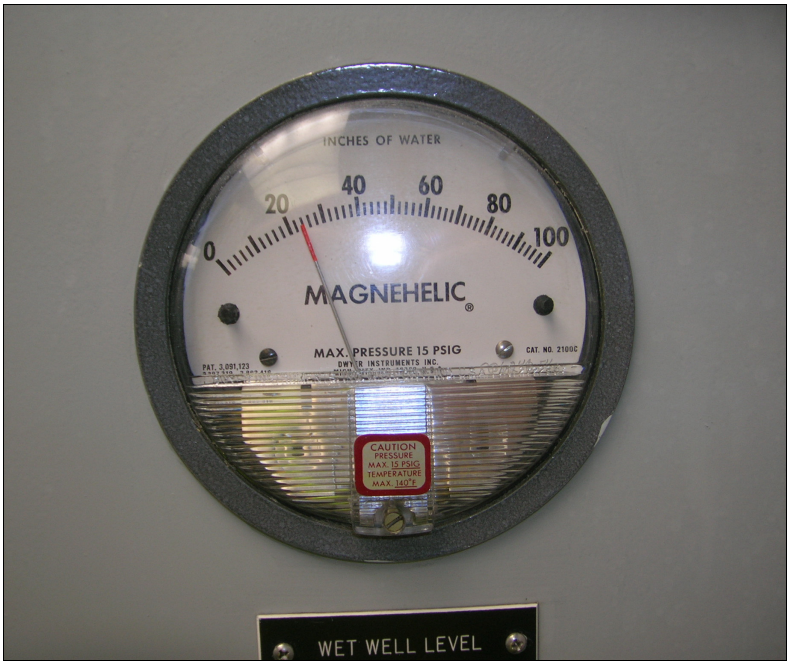
MCD FIELD INVESTIGATION - 10/21/10

APPENDIX B

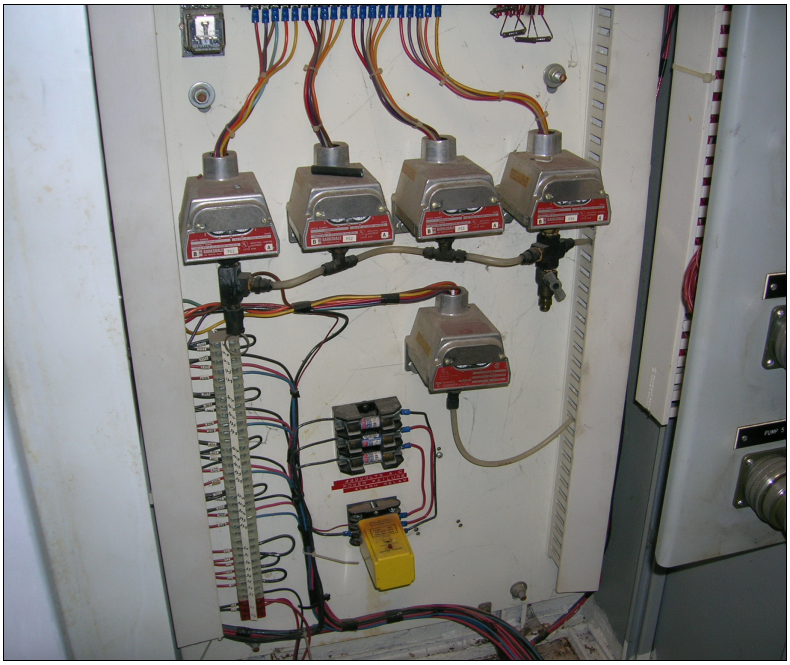
FLOWMATCHER SYSTEM PHOTOGRAPHS

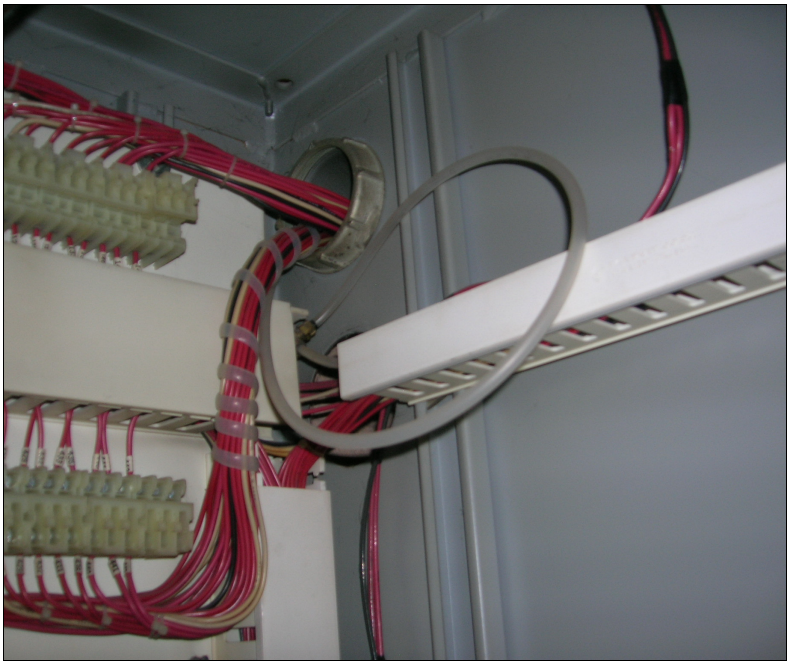
FLOWMATCHER SYSTEM - 11/8/10



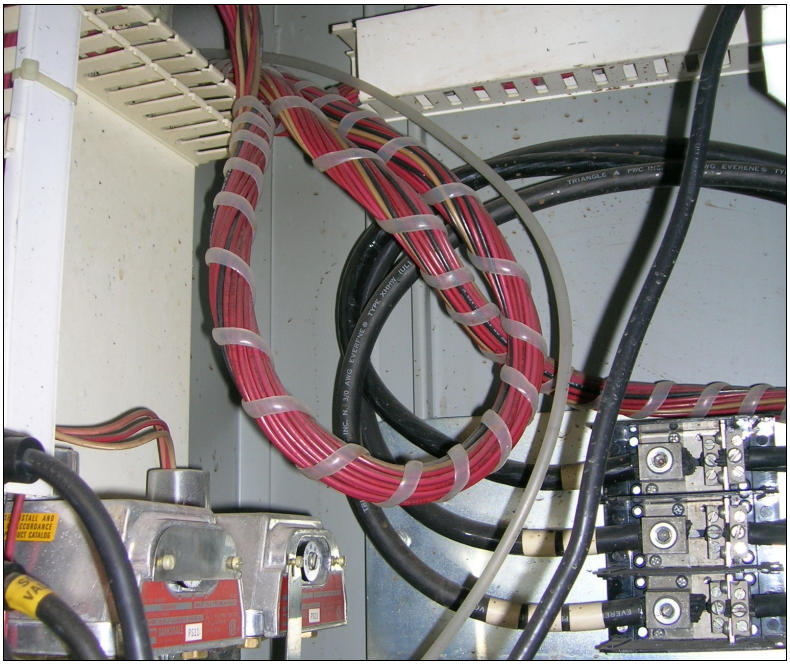


FLOWMATCHER SYSTEM - 11/8/10





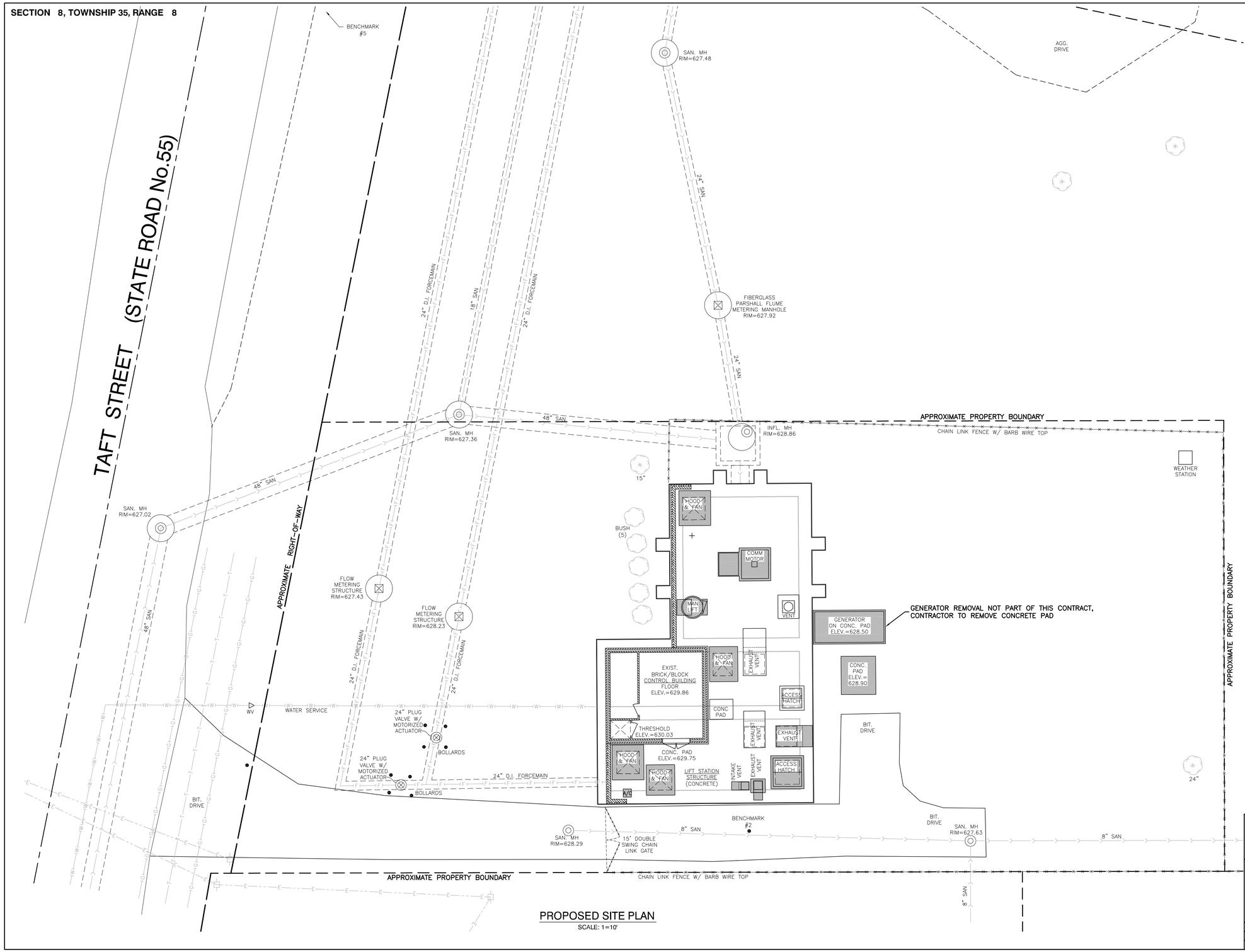
FLOWMATCHER SYSTEM - 11/8/10



APPENDIX C

TAFT ST. LIFT STATION DRAWINGS – EXISTING LIFT STATION

SECTION 8, TOWNSHIP 35, RANGE 8



PROPOSED SITE PLAN

SCALE: 1=10'

PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

James M. Clark 1/28/10

JAMES M. CLARK JR. REGISTERED NO. PE 10200253 STATE OF INDIANA PROFESSIONAL ENGINEER

LICENSE EXPIRES: 7/31/10

N

BENCH MARKS:

BENCHMARK #2
MAG NAIL SET IN CENTER OF DRIVEWAY, 31.8' EAST OF GATES, & 6.3' SOUTH OF CONCRETE BUILDING PAD EDGE.
ELEVATION = 628.48

BENCHMARK #5
TOP OF R.R. SPIKE IN EAST FACE OF UTILITY POLE NO. 907/300, LOCATED 240'± NORTH OF THE CENTER OF TREATMENT PLANT DRIVEWAY ALONG THE CENTERLINE OF TAFT STREET AND 35'± WEST OF SAID CENTERLINE.
ELEVATION = 626.64 (NAVD 88)

NOTES:
1. SHADED ITEMS TO BE DEMOLISHED AND DISPOSED OF.
2. THE ENTIRE LIFT STATION PROPERTY LIES OUTSIDE THE 100–YEAR FLOODWAY AND FLOODPLAIN.
3. THE 100–YEAR FLOODPLAIN ELEVATION RANGES FROM APPROXIMATELY 624 FEET TO 625 FEET ADJACENT TO THE SITE.

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TAFT STREET LIFT STATION
EXPANSION TO 25 MGD
C-1 EXISTING SITE & DEMOLITION PLAN

MERRILLVILLE, INDIANA

Drawn by:	JJB	Date:	11-24-09
Checked by:	JMC	Scale:	1"=10'
Sheet	2 of 42	Project No.	08-526.01

REVISIONS

No.	Date	Remarks

08526_01-PLAN-01 - P-SITE

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LICENSE EXPIRES: 7/31/10

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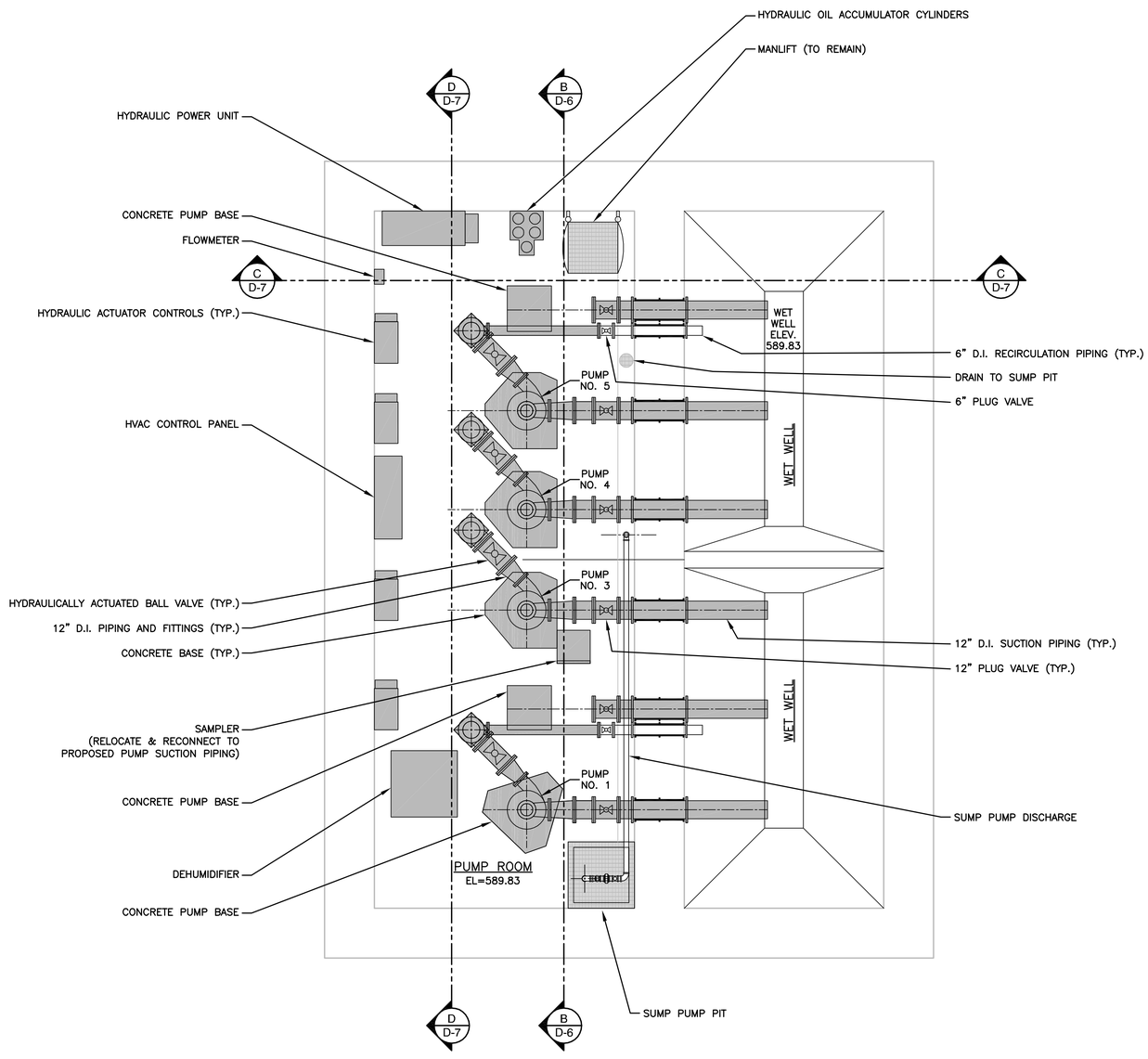

LOWER LEVEL PLAN

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

NOTES:
1. SHADED ITEMS TO BE DEMOLISHED AND DISPOSED OF.

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TAFT STREET LIFT STATION
EXPANSION TO 25 MGD
D-1 LOWER LEVEL

MERRILLVILLE, INDIANA

Drawn by:	JJB	Date:	11-24-09
Checked by:	JMC	Scale:	1/4"=1'-0"
Sheet	4 of 42	Project No.	08-526.01

REVISIONS

No.	Date	Remarks

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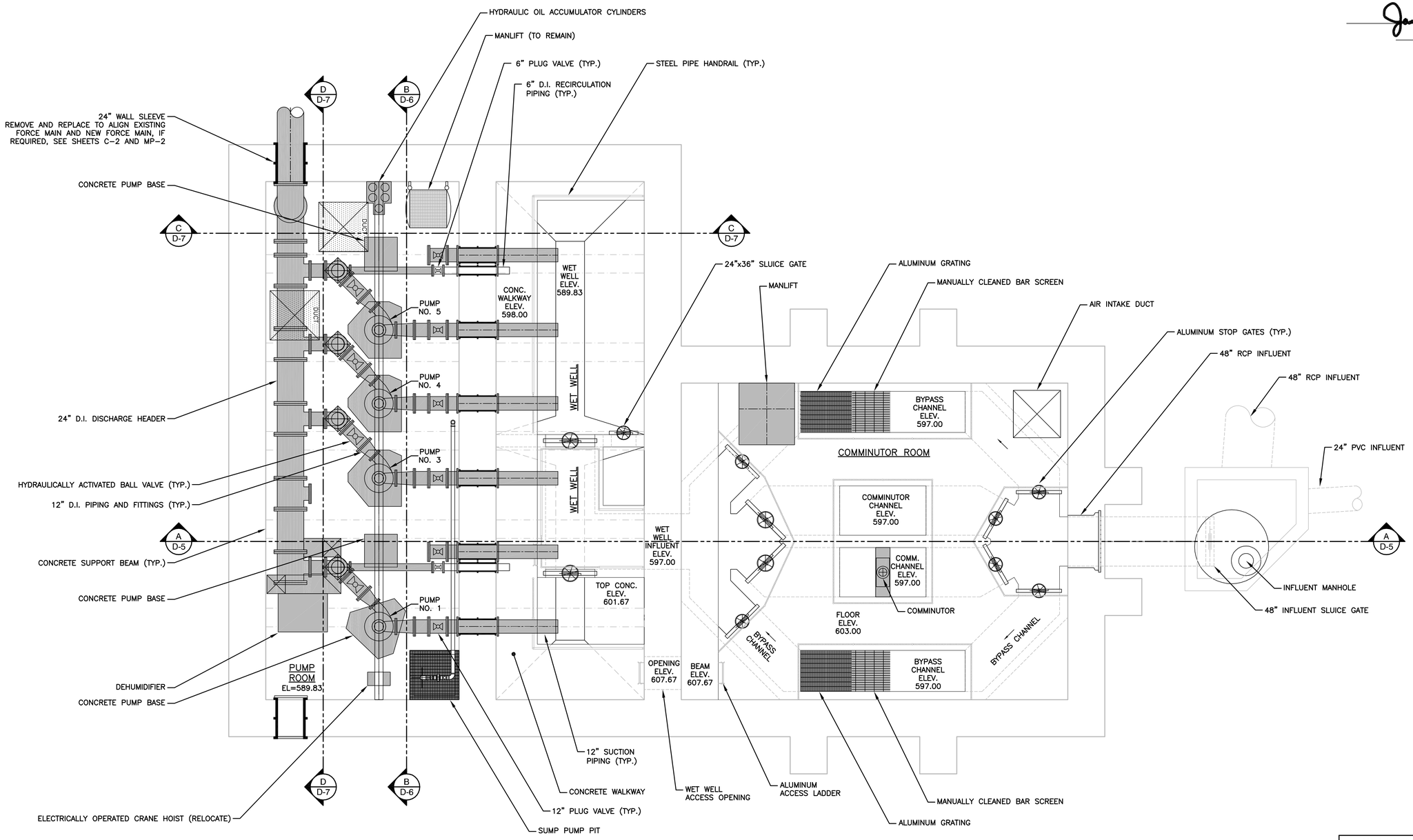
James M. Clark 1/28/10

JAMES M. CLARK IV REGISTERED NO. PE 10200253 STATE OF INDIANA PROFESSIONAL ENGINEER

LICENSE EXPIRES: 7/31/10

N



INTERMEDIATE LEVEL PLAN

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

NOTES:
1. SHADED ITEMS TO BE DEMOLISHED AND DISPOSED OF.

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TAFT STREET LIFT STATION
EXPANSION TO 25 MGD
D-2 INTERMEDIATE LEVEL

MERRILLVILLE, INDIANA

Drawn by:	JJB	Date:	11-24-09
Checked by:	JMC	Scale:	1/4"=1'-0"
Sheet	5 of 42	Project No.	08-526.01

REVISIONS

No.	Date	Remarks

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James M. Czarnik 1/28/10

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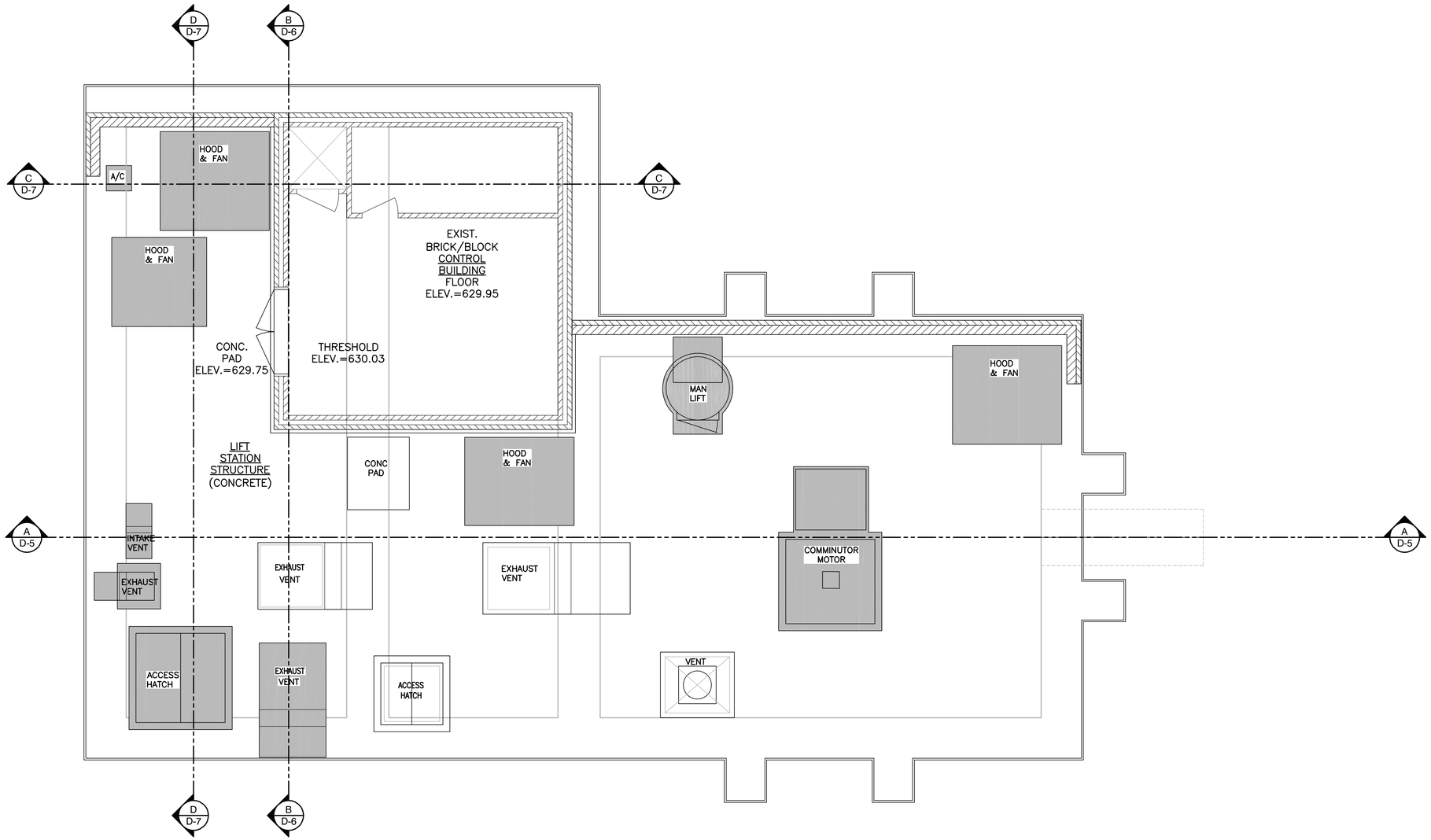
LICENSE EXPIRES: 7/31/10

N



GRADE LEVEL PLAN

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

NOTES:

1. SHADED ITEMS TO BE DEMOLISHED AND DISPOSED OF.

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TAFT STREET LIFT STATION
EXPANSION TO 25 MGD
D-3 GRADE LEVEL

MERRILLVILLE, INDIANA

Drawn by:	JJB	Date:	11-24-09
Checked by:	JMC	Scale:	1/4"=1'-0"
Sheet	6 of 42	Project No.	08-526.01

REVISIONS

No.	Date	Remarks

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James M. Clark 1/28/10

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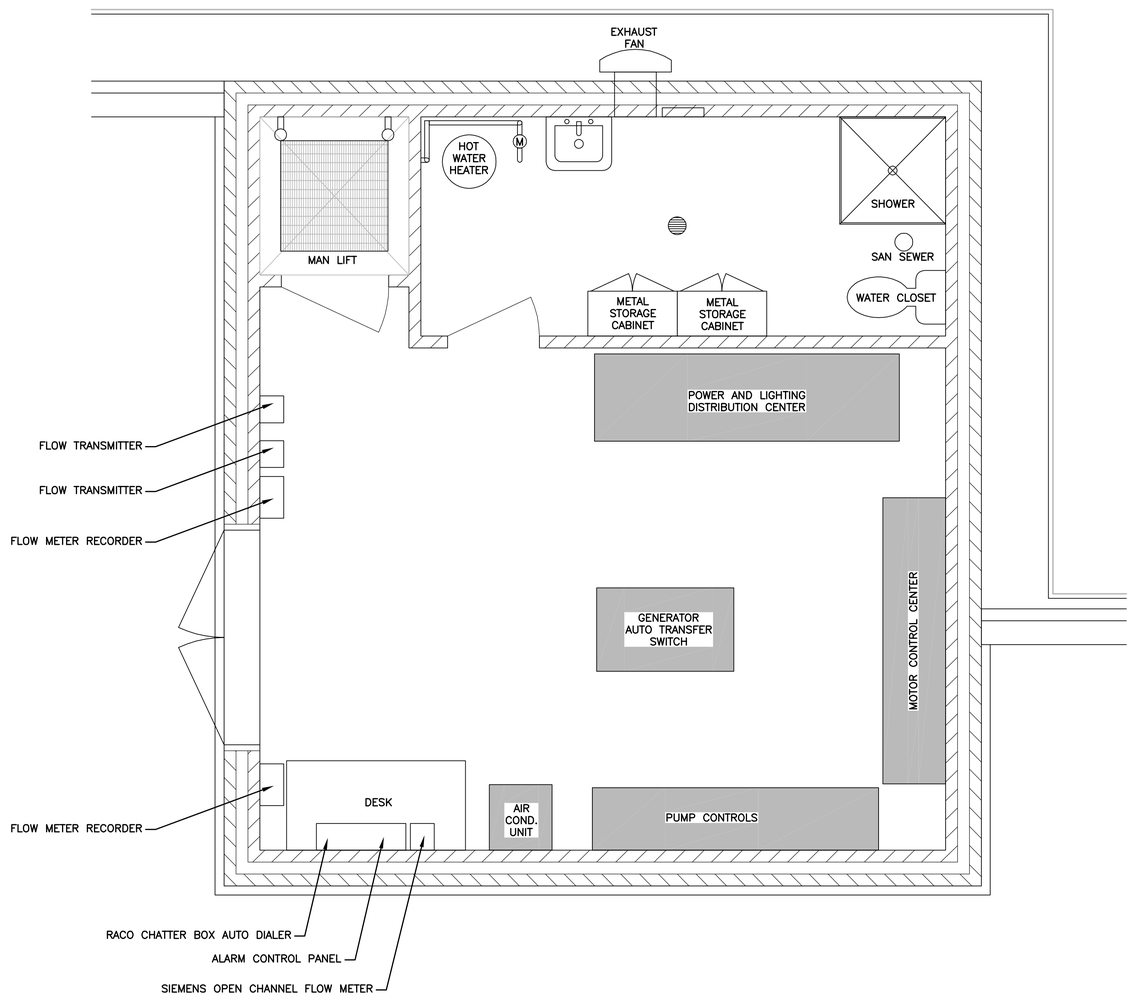
LICENSE EXPIRES: 7/31/10

N



NOTES:
1. SHADED ITEMS TO BE DEMOLISHED AND DISPOSED OF.

GRADE LEVEL CONTROL ROOM PLAN

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

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TAFT STREET LIFT STATION
EXPANSION TO 25 MGD
D-4 CONTROL ROOM

MERRILLVILLE, INDIANA

Drawn by: JJB	Date: 11-24-09
Checked by: JMC	Scale: 1/2"=1'-0"
Sheet 7 of 42	Project No. 08-526.01

REVISIONS

No.	Date	Remarks

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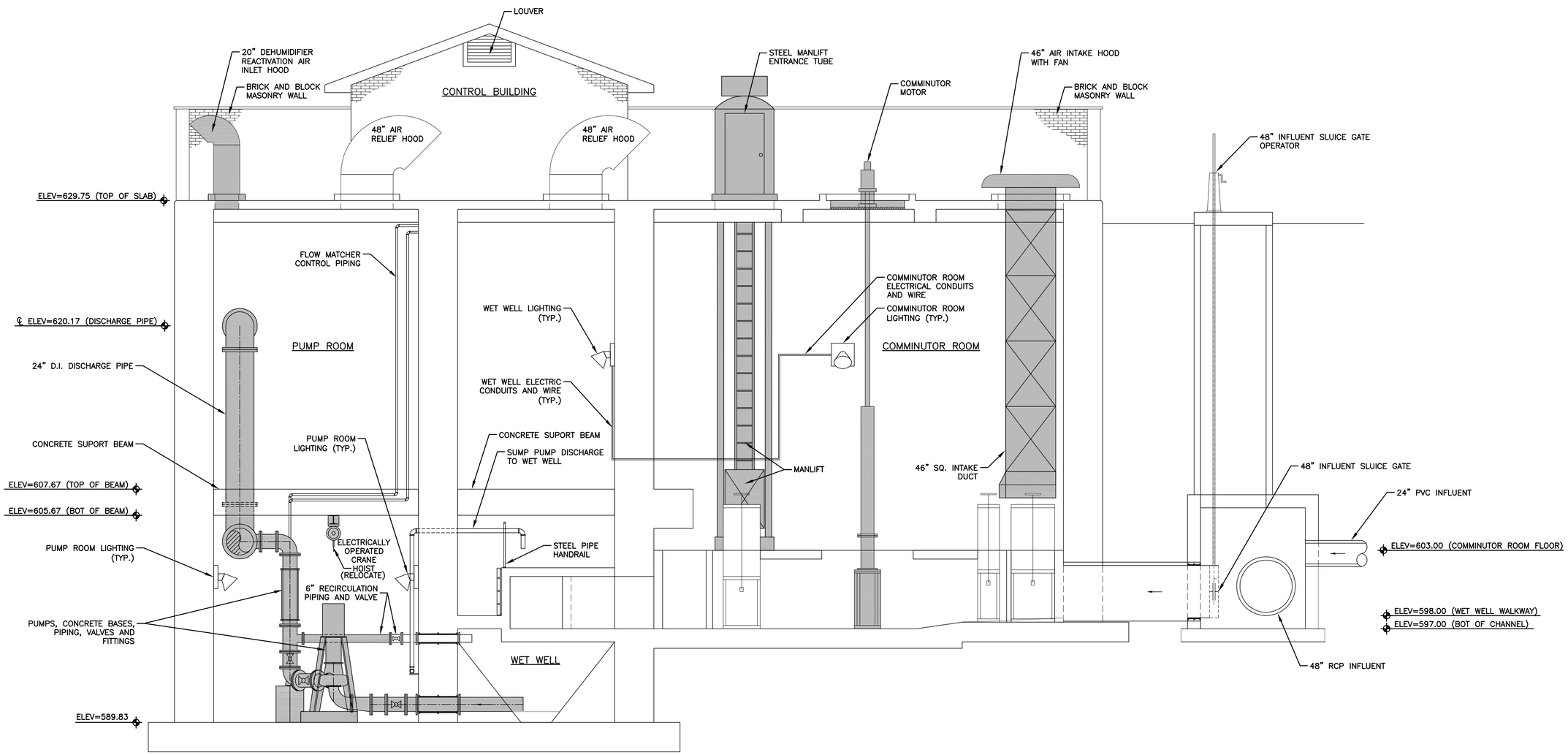
LICENSE EXPIRES: 7/31/10



NOTES:
1. SHADED ITEMS TO BE DEMOLISHED AND DISPOSED OF.

A SECTION: EXISTING CONDITIONS & DEMOLITION
SCALE: 1/4" = 1'-0"

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TAFT STREET LIFT STATION
EXPANSION TO 25 MGD
D-5 SECTION A

MERRILLVILLE, INDIANA

Drawn by:	JJB	Date:	11-24-09
Checked by:	JMC	Scale:	1/4"=1'-0"
Sheet	8 of 42	Project No.	08-526.01

REVISIONS

No.	Date	Remarks

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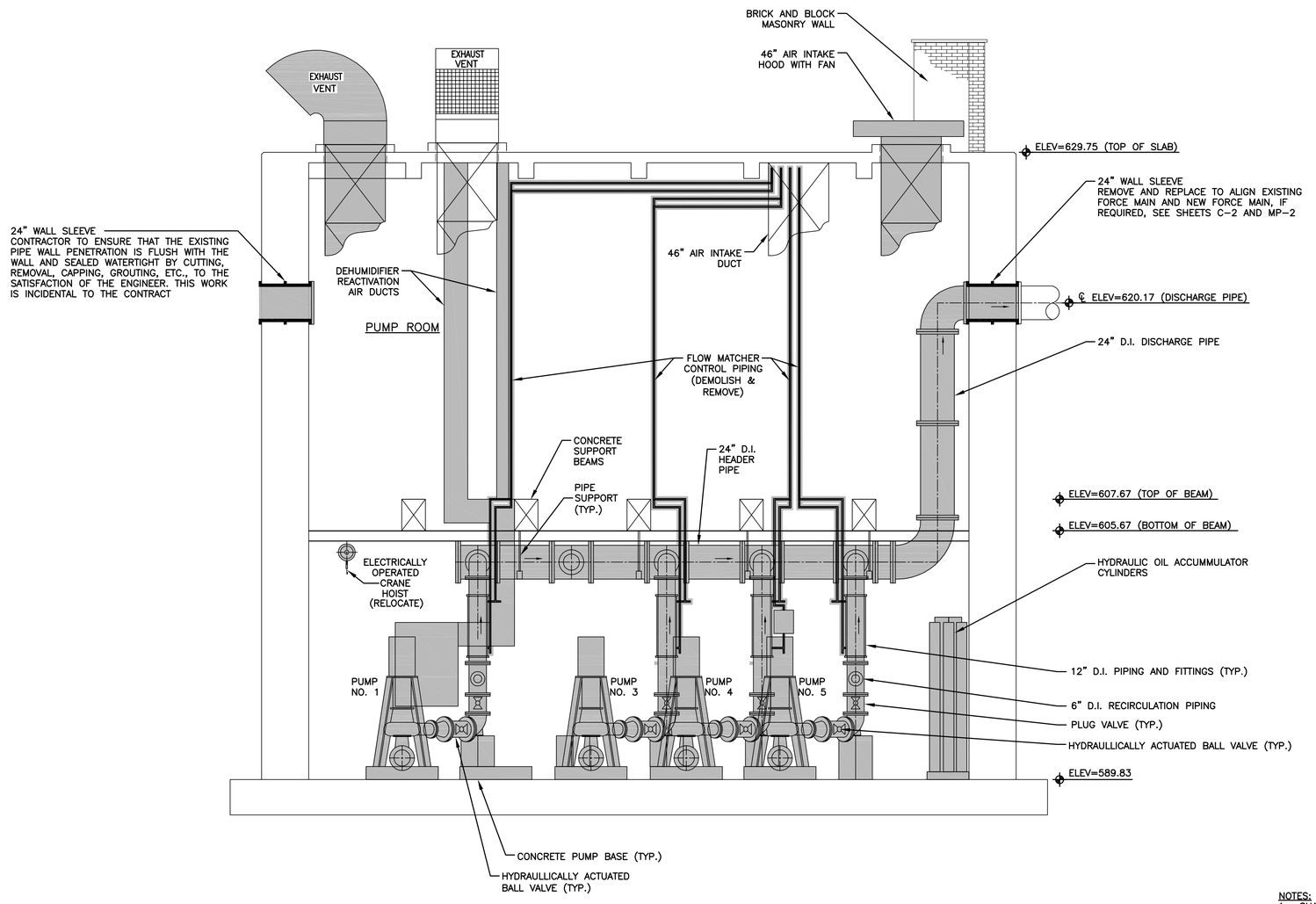
LICENSE EXPIRES: 7/31/10



NOTES:
1. SHADED ITEMS TO BE DEMOLISHED AND DISPOSED OF.

B SECTION: EXISTING CONDITIONS & DEMOLITION
SCALE: 1/4" = 1'-0"

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TAFT STREET LIFT STATION
EXPANSION TO 25 MGD
D-6 SECTION B

MERRILLVILLE, INDIANA

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Checked by:	JMC	Scale:	1/4"=1'-0"
Sheet	9 of 42	Project No.	08-526.01

REVISIONS

No.	Date	Remarks

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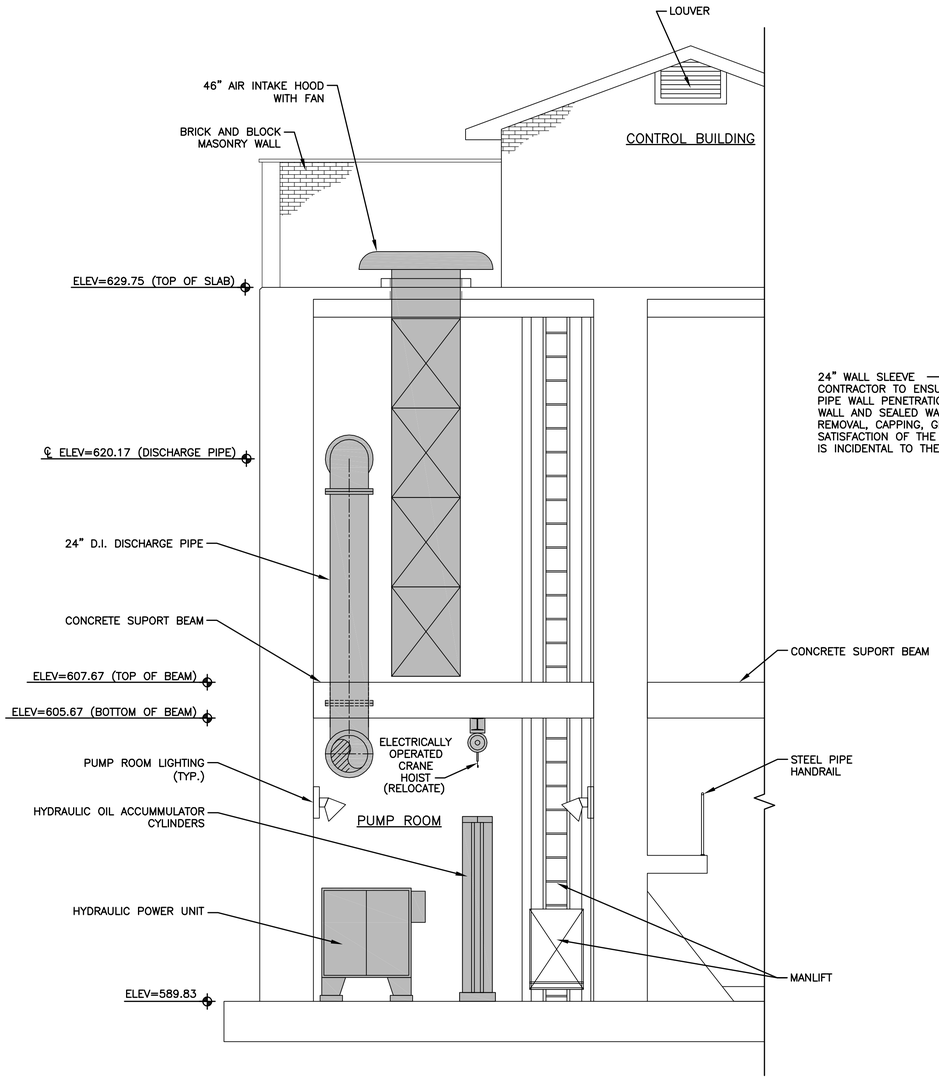
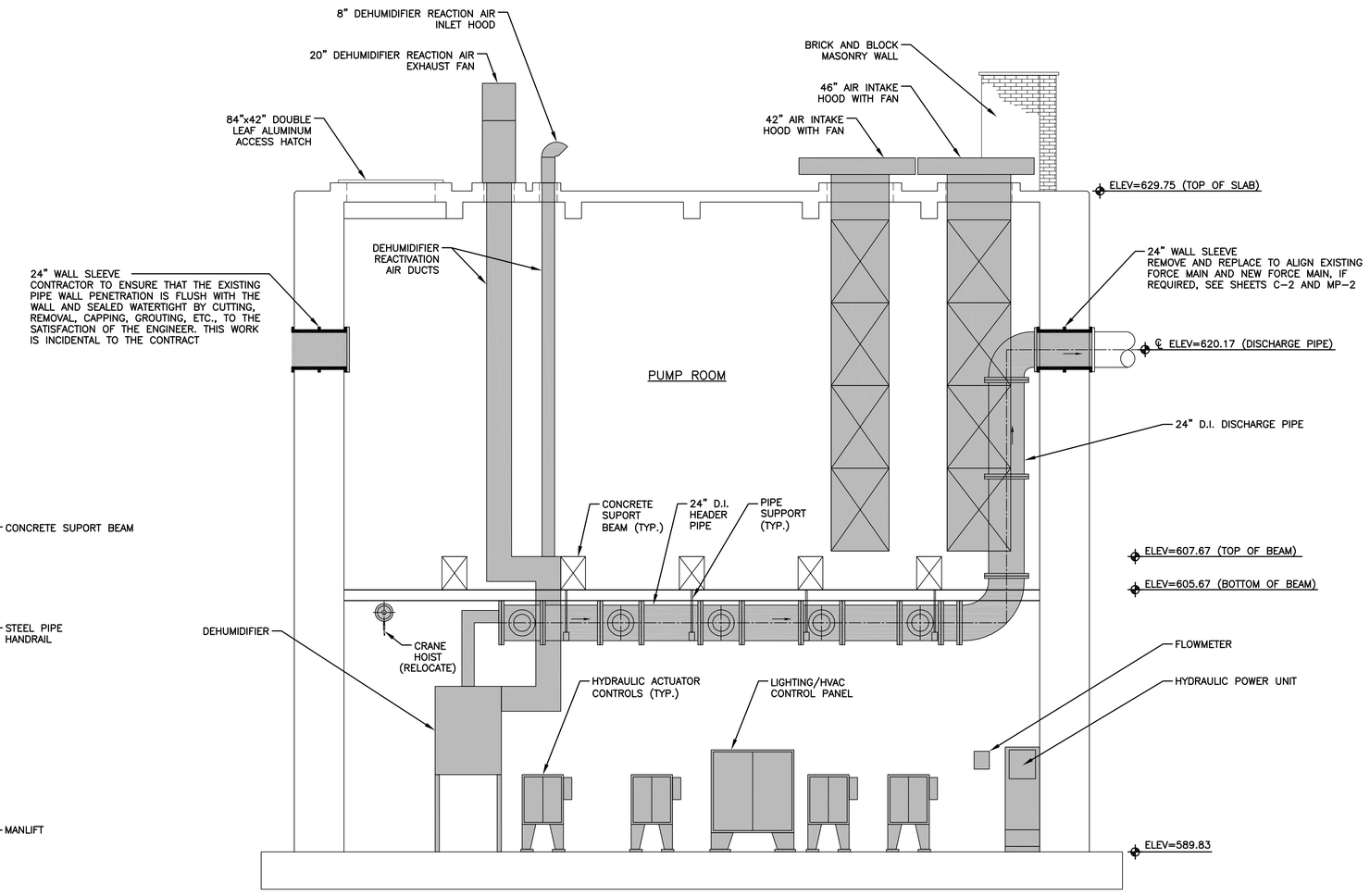


C SECTION: EXISTING CONDITIONS & DEMOLITION
SCALE: 1/4" = 1'-0"



NOTES:
1. SHADED ITEMS TO BE DEMOLISHED AND DISPOSED OF.

D SECTION: EXISTING CONDITIONS & DEMOLITION
SCALE: 1/4" = 1'-0"

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TAFT STREET LIFT STATION
EXPANSION TO 25 MGD
D-7 SECTIONS C & D

MERRILLVILLE, INDIANA

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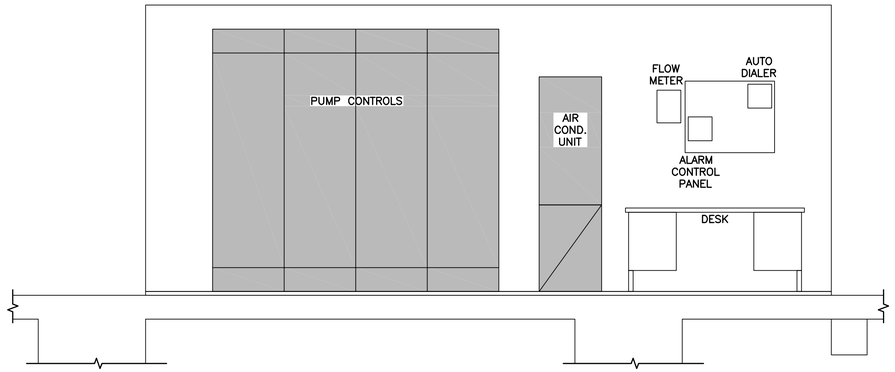
Checked by:	JMC	Scale:	1/4"=1'-0"
Sheet	10 of 42	Project No.	08-526.01

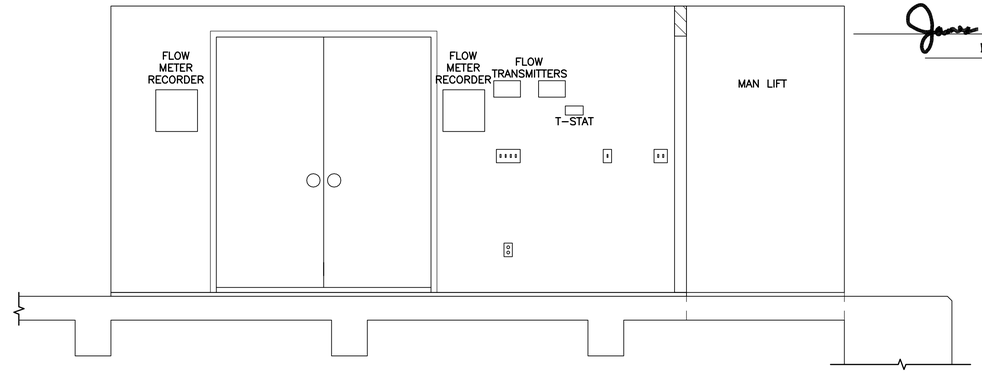
REVISIONS

No.	Date	Remarks



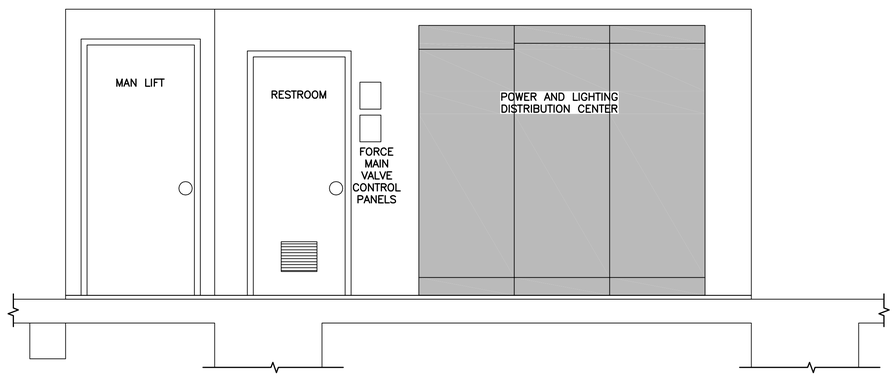
EAST ELEVATION - CONTROL ROOM

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



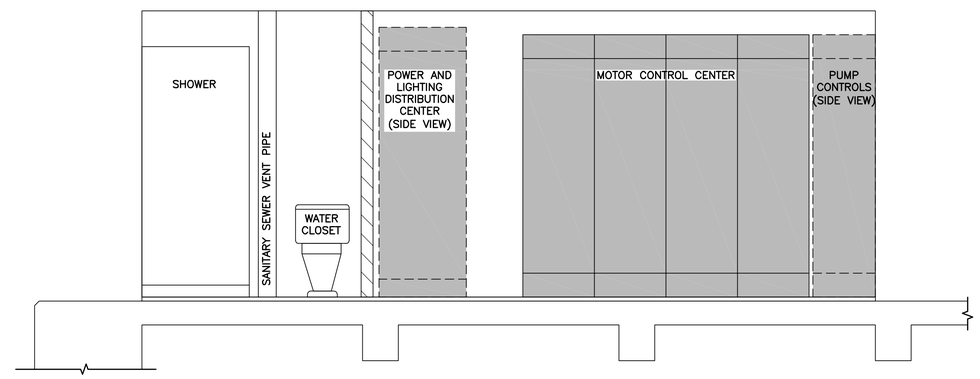
SOUTH ELEVATION - CONTROL ROOM

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



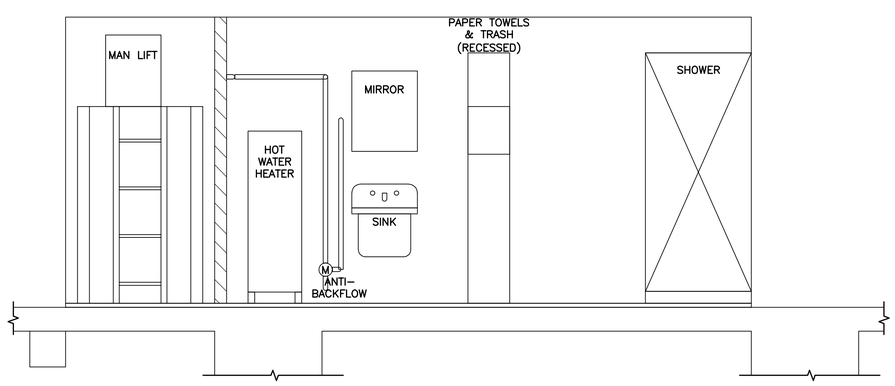
WEST ELEVATION - CONTROL ROOM

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



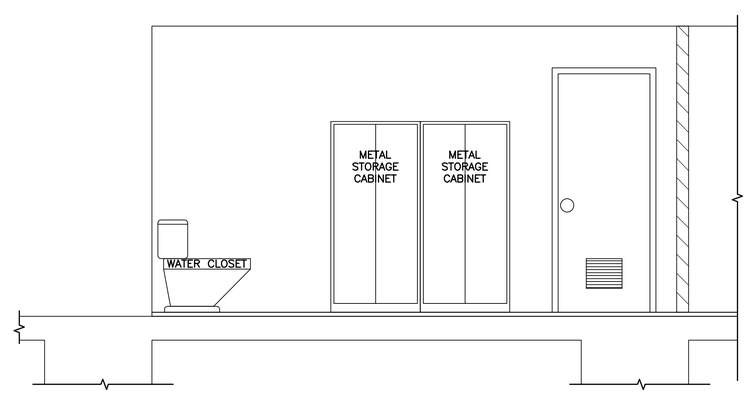
NORTH ELEVATION - RESTROOM/CONTROL ROOM

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



WEST ELEVATION - RESTROOM

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



EAST ELEVATION - RESTROOM

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

PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

James M. Gai 1/28/10

JAMES M. GAIAITIS REGISTERED NO. PE 10200253 STATE OF INDIANA PROFESSIONAL ENGINEER

LICENSE EXPIRES: 7/31/10

NOTES:
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TAFT STREET LIFT STATION
EXPANSION TO 25 MGD
D-8 CONTROL ROOM ELEVATIONS

MERRILLVILLE, INDIANA

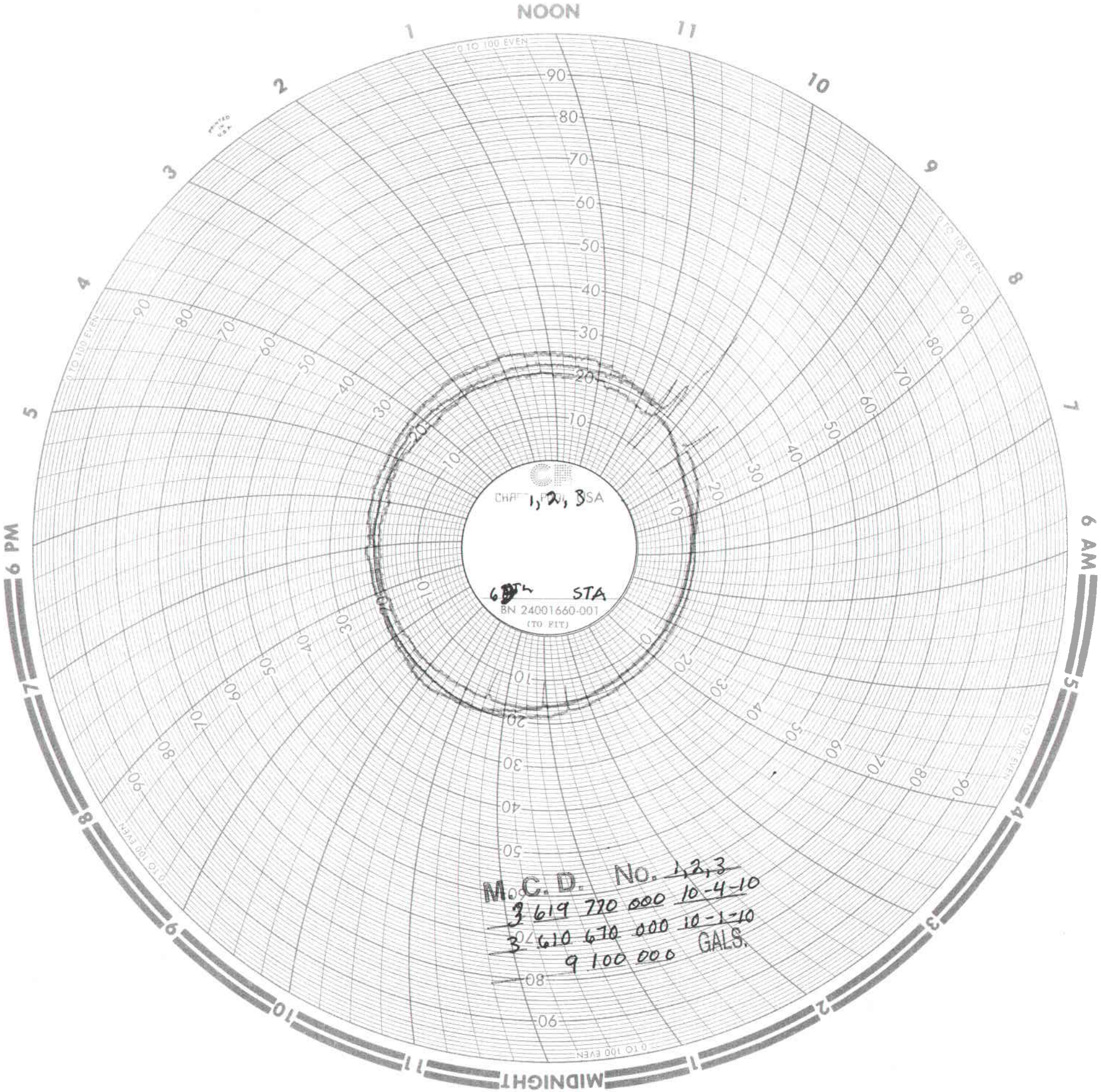
Drawn by:	ACAD	Date:	11-24-09
Checked by:	JMC	Scale:	1/4"=1'-0"
Sheet	11 of 42	Project No.	08-526.01

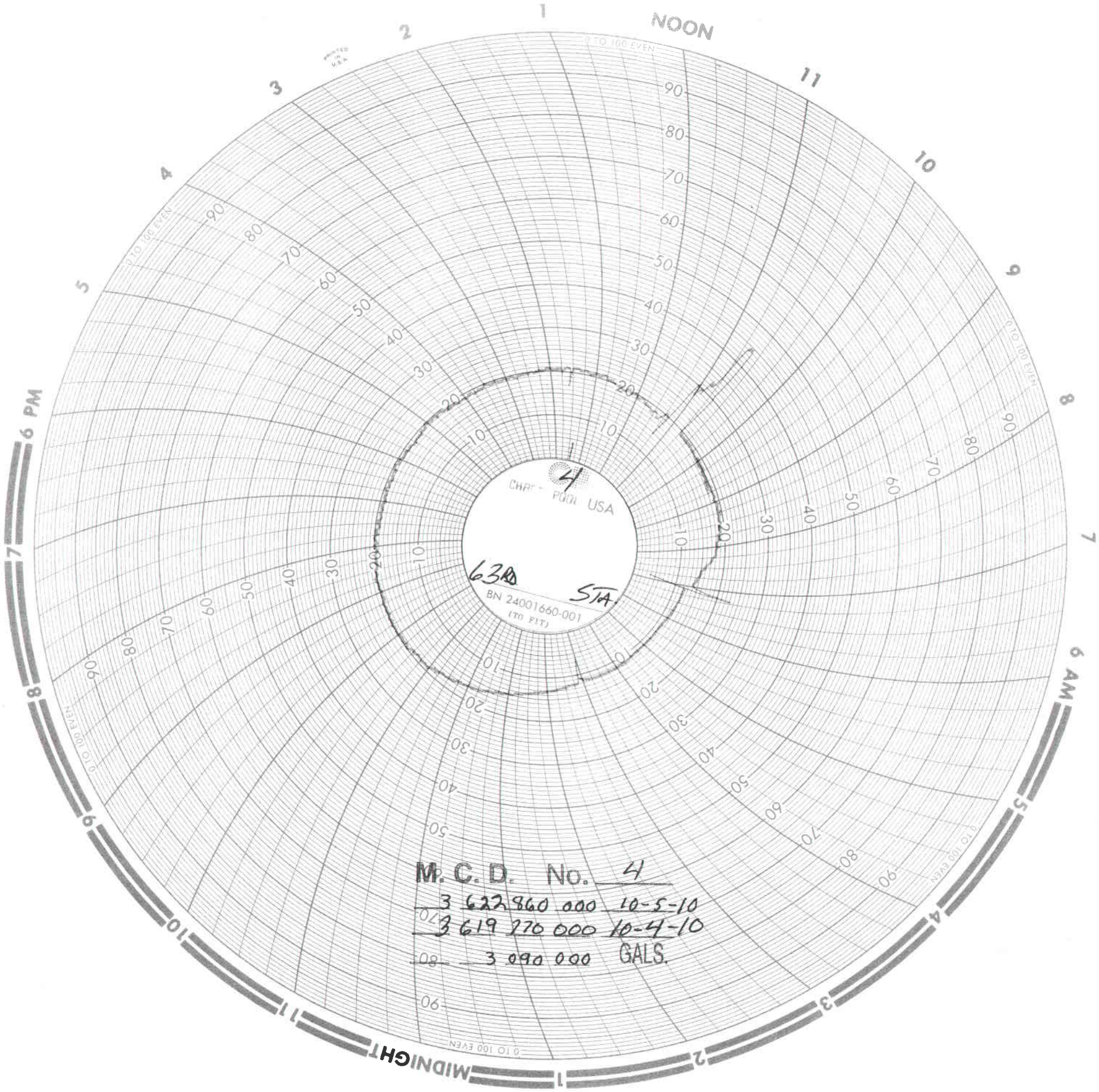
REVISIONS

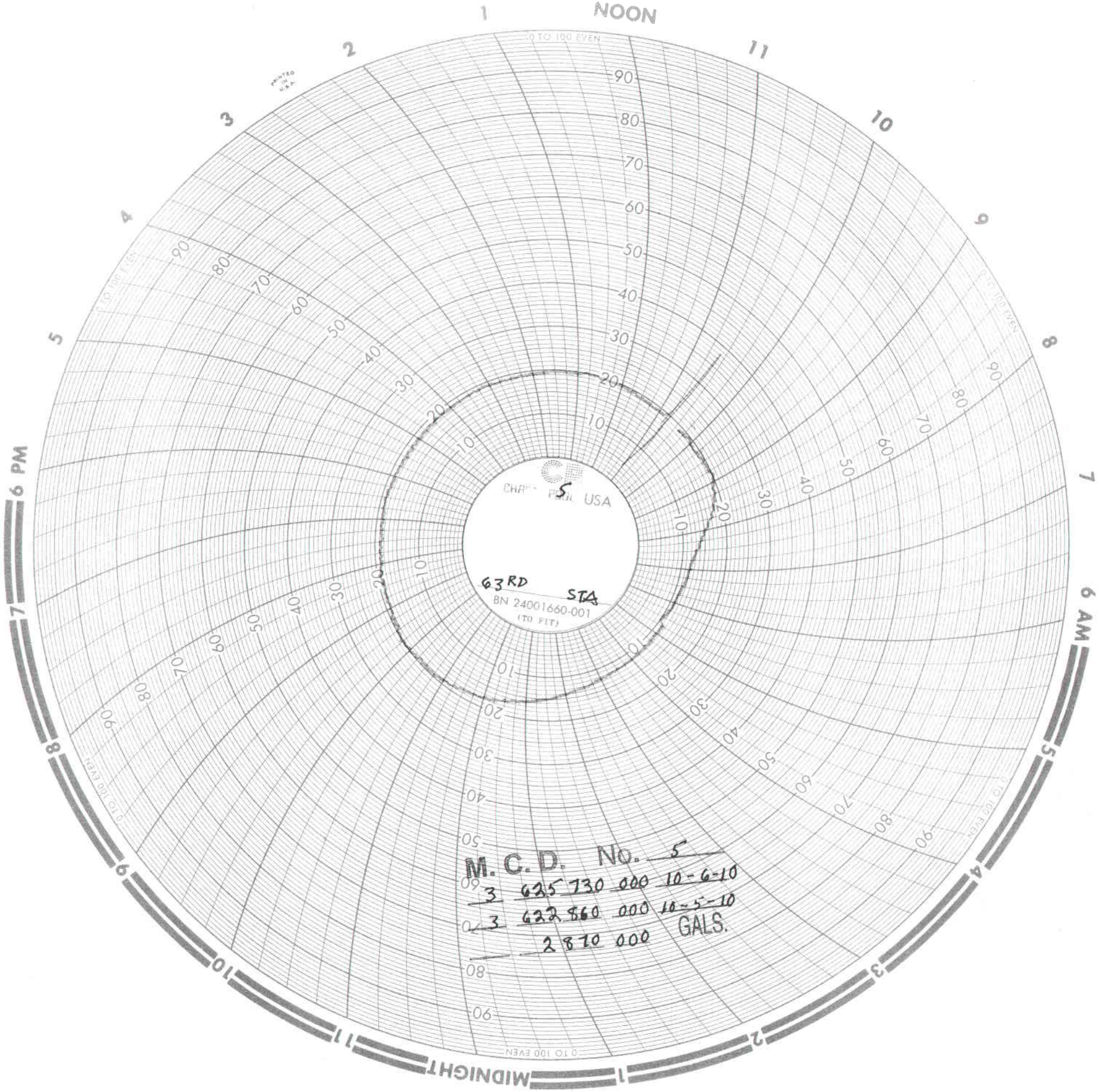
No.	Date	Remarks

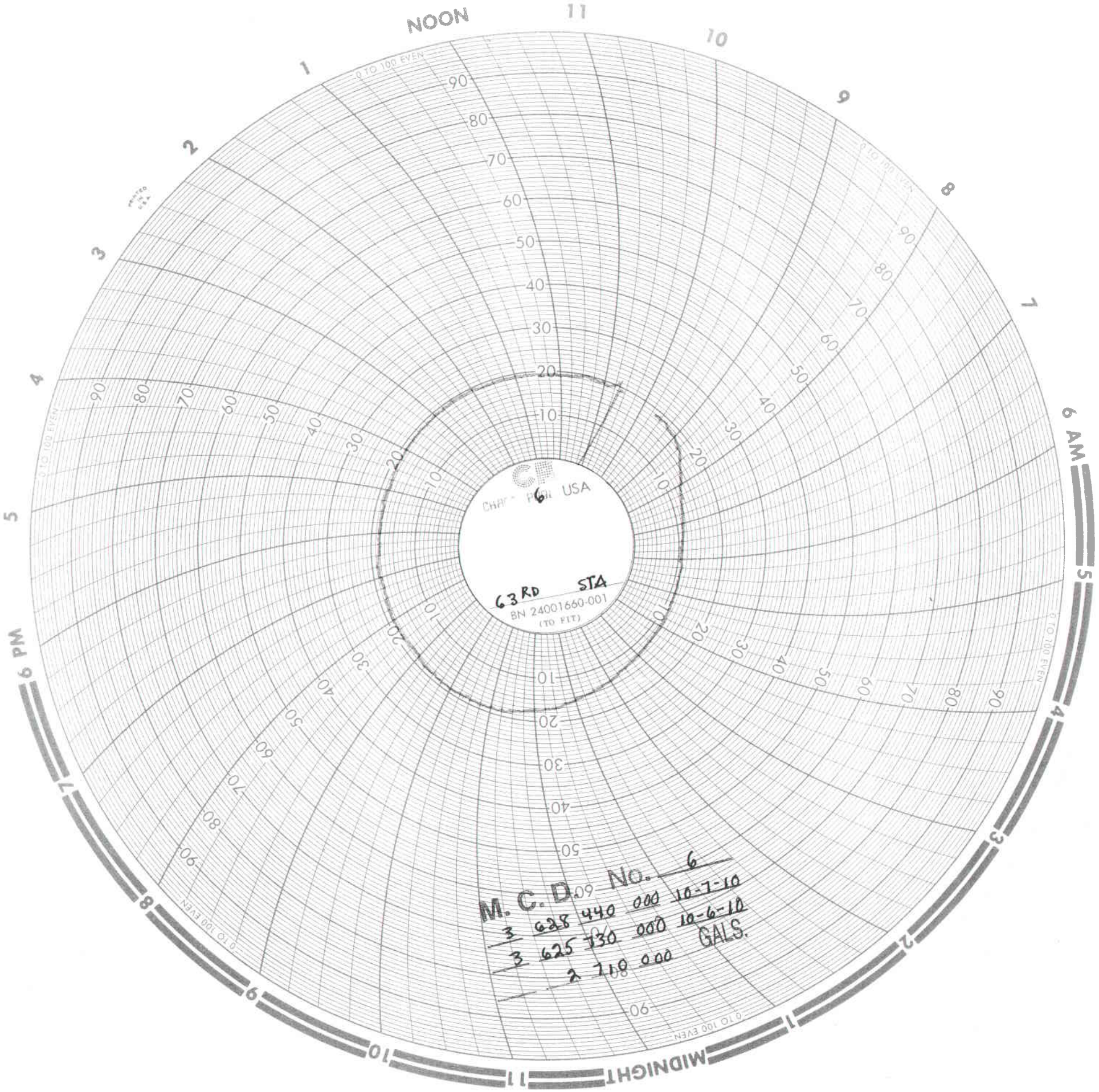
APPENDIX D

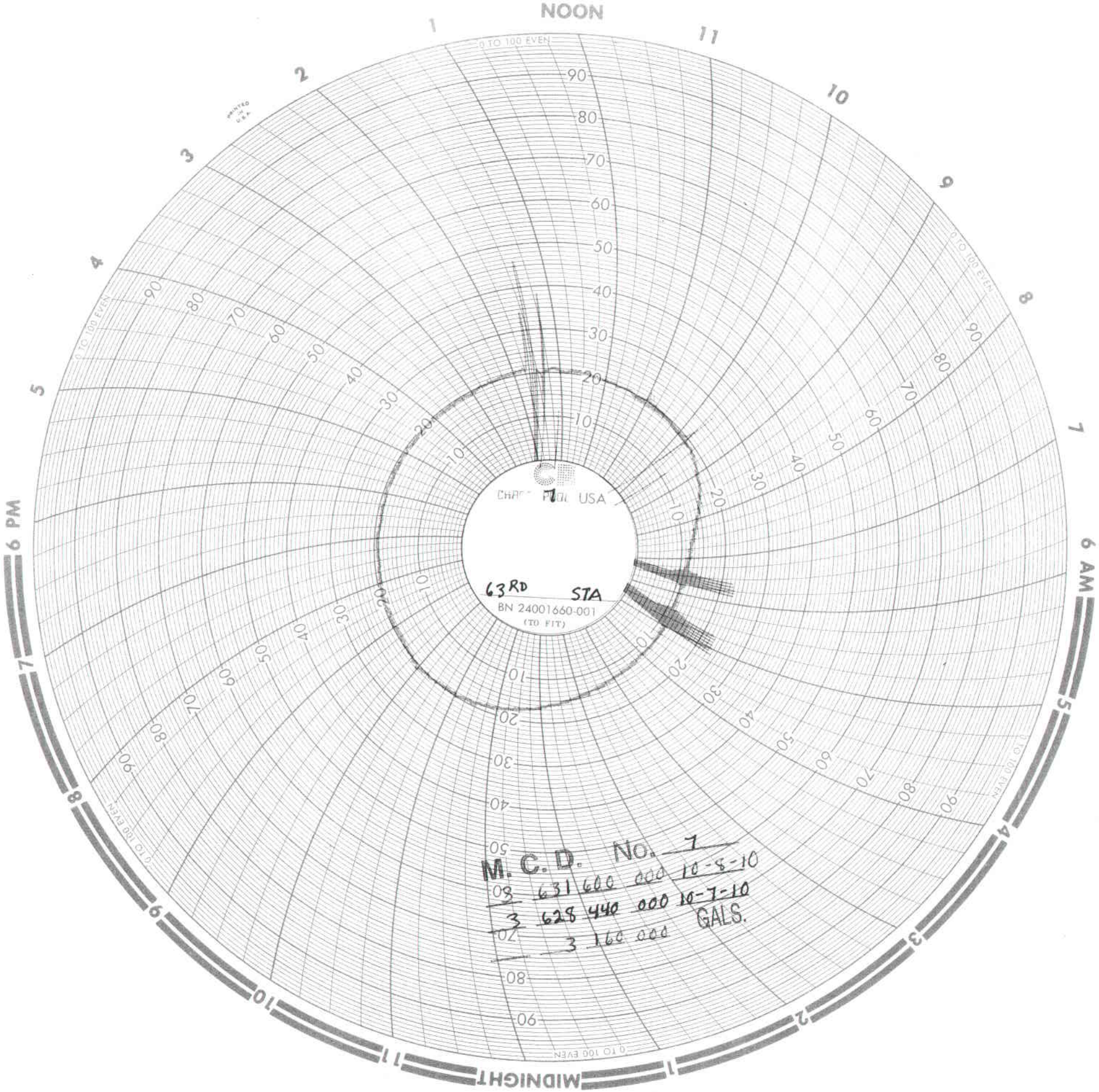
TAFT ST. LIFT STATION
CIRCULAR FLOW CHARTS

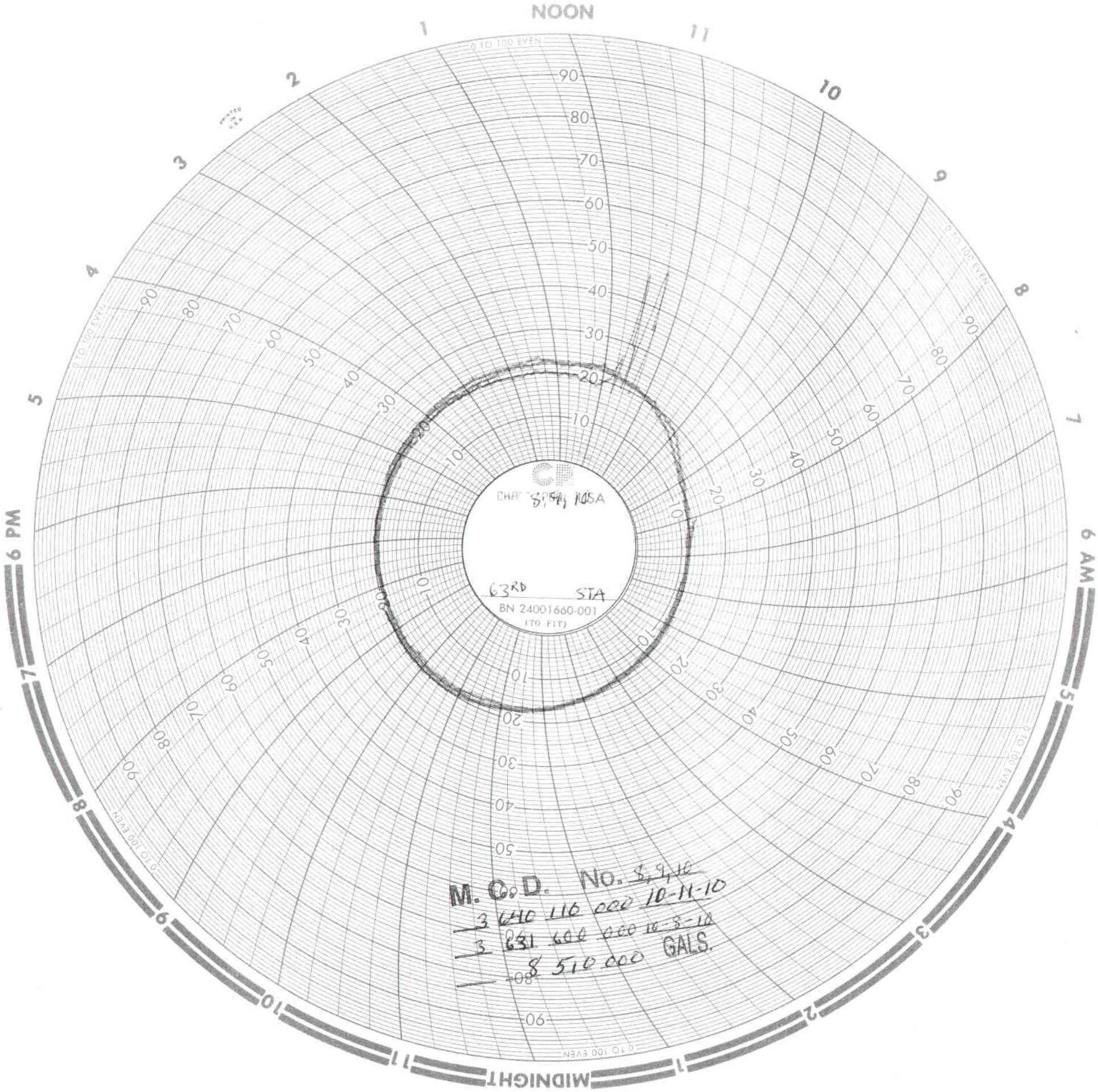

NOON
6 AM
MIDNIGHT
6 PM
0 TO 100 EVEN
1, 2, 3 SA
6th STA
BN 24001660-001
(TO FIT)
M.C.D. No. 1,2,3
3 619 770 000 10-4-10
3 610 670 000 10-1-10
9 100 000 GALS.

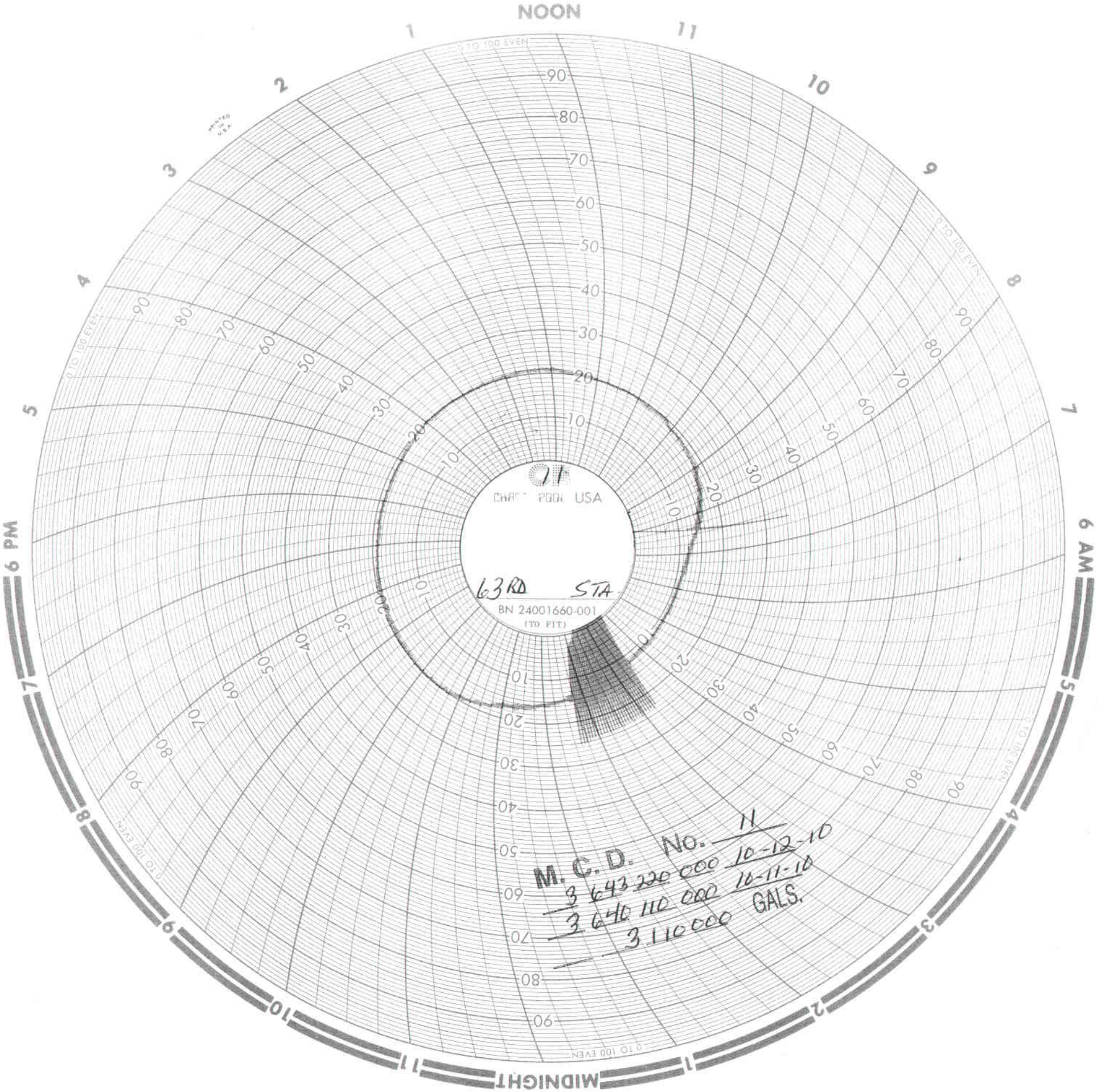

NOON
6 PM
MIDNIGHT
6 AM
0 TO 100 EVEN
CHART - POOL USA
4
63RD STA.
BN 24001660-001
(TO FIT)
M. C. D. No. 4
3 622 860 000 10-5-10
3 619 770 000 10-4-10
3 090 000 GALS.

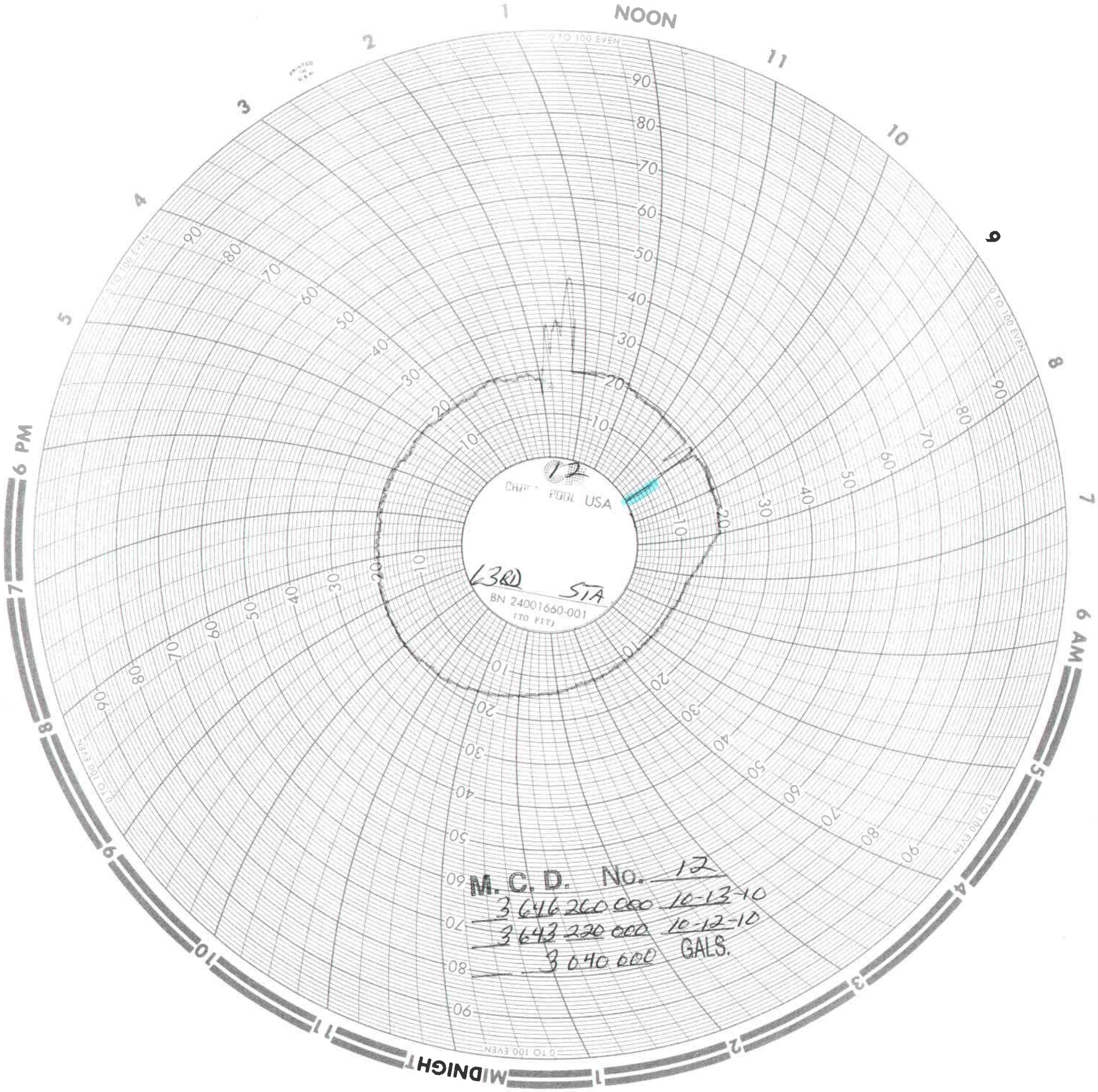

NOON
6 PM
6 AM
MIDNIGHT
0 TO 100 EVEN
CHART PAPER USA
63RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 5
3 635 730 000 10-6-10
3 632 860 000 10-5-10
2 870 000 GALS.


NOON
11
10
9
8
7
6 AM
5
4
3
2
1
MIDNIGHT
10
9
8
7
6 PM
5
4
3
2
1
0 TO 100 EVEN
CHART PAPER USA
6
63RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 6
3 628 440 000 10-7-10
3 625 730 000 10-6-10
2 710 000
GALS.


NOON
MIDNIGHT
6 PM
6 AM
0 TO 100 EVEN
CHART MFG. USA
63RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 7
03 631 600 000 10-8-10
03 628 440 000 10-7-10
3 160 000 GALS.


NOON
6 PM
6 AM
MIDNIGHT
0 TO 100 EVEN
CHART SPEC. USA
63RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 8, 9, 10
3 640 116 000 10-11-10
3 631 606 000 10-8-10
8 510 000 GALS.


NOON
6 AM
MIDNIGHT
6 PM
0 TO 100 EVEN
CHART POOL USA
63RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 11
3 643 220 000 10-12-10
3 640 110 000 10-11-10
3 110 000 GALS.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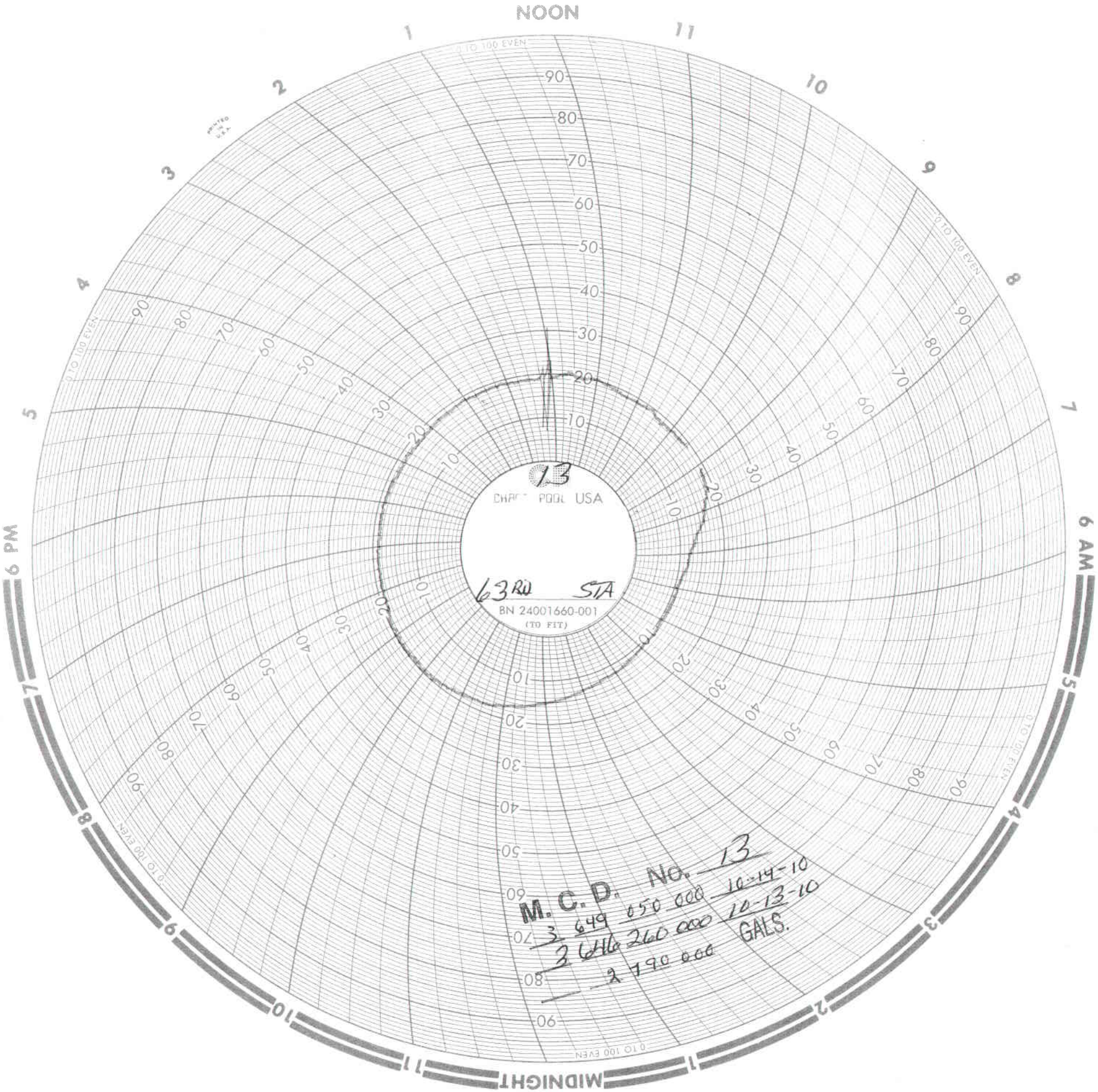
6 PM
6 AM
MIDNIGHT
0 TO 100 EVEN
CHART POOL USA
BN 24001660-001
(TO FIT)
12
3RD STA
M. C. D. No. 12
3 646 260 000 10-13-10
3 643 220 000 10-12-10
3 040 000 GALS.


NOON
6 AM
MIDNIGHT
6 PM
0 TO 100 EVEN
13
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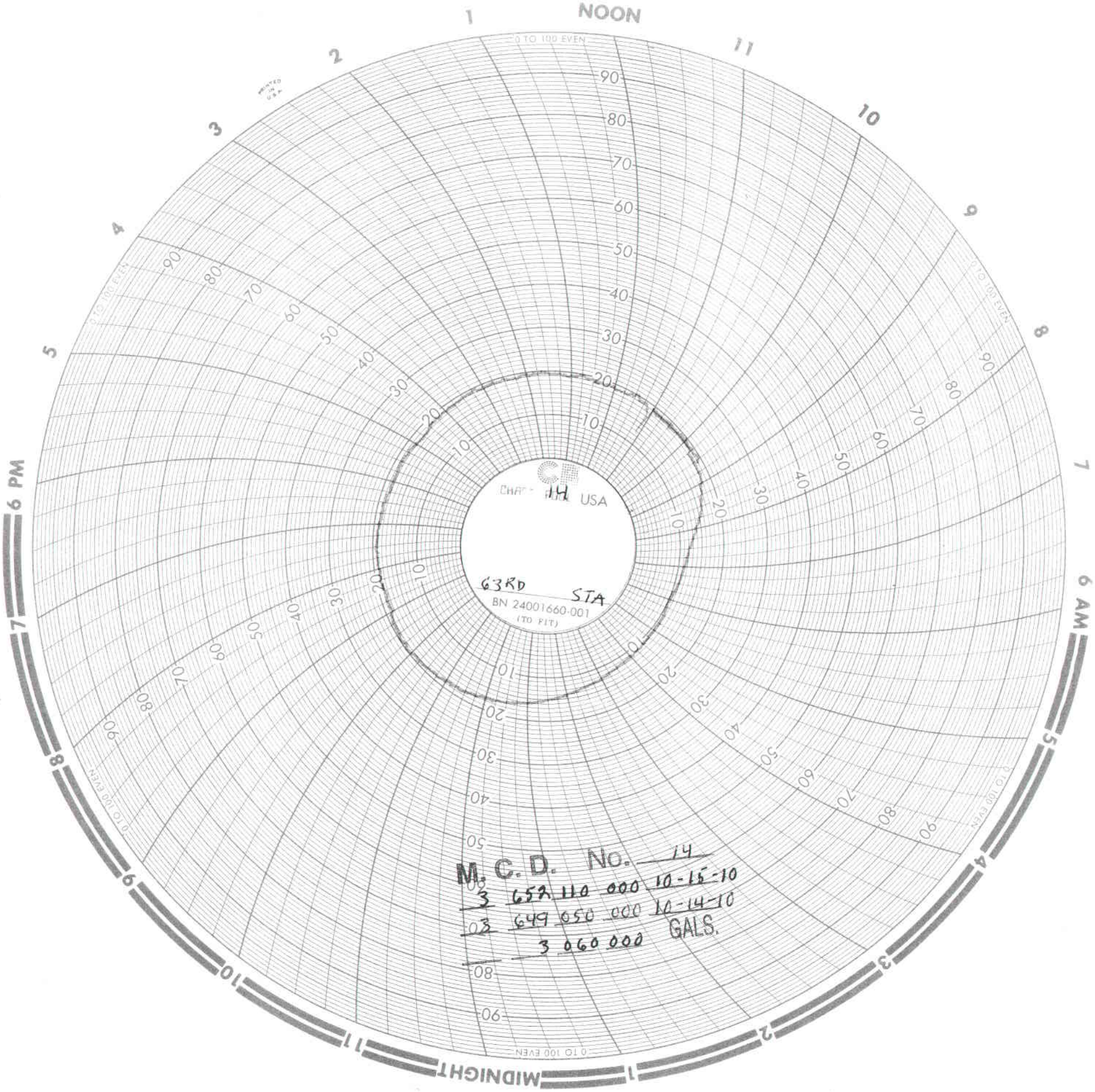
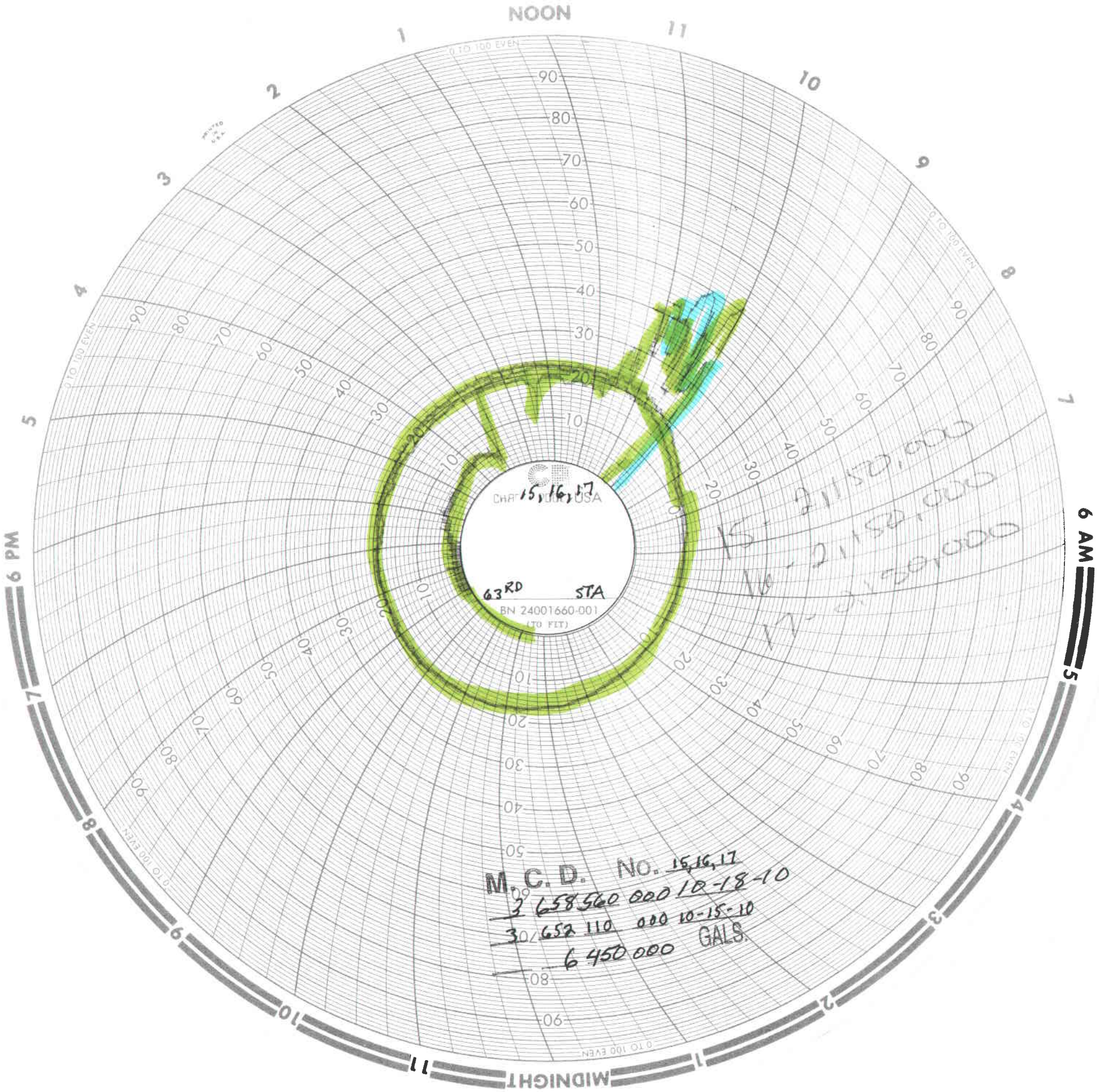
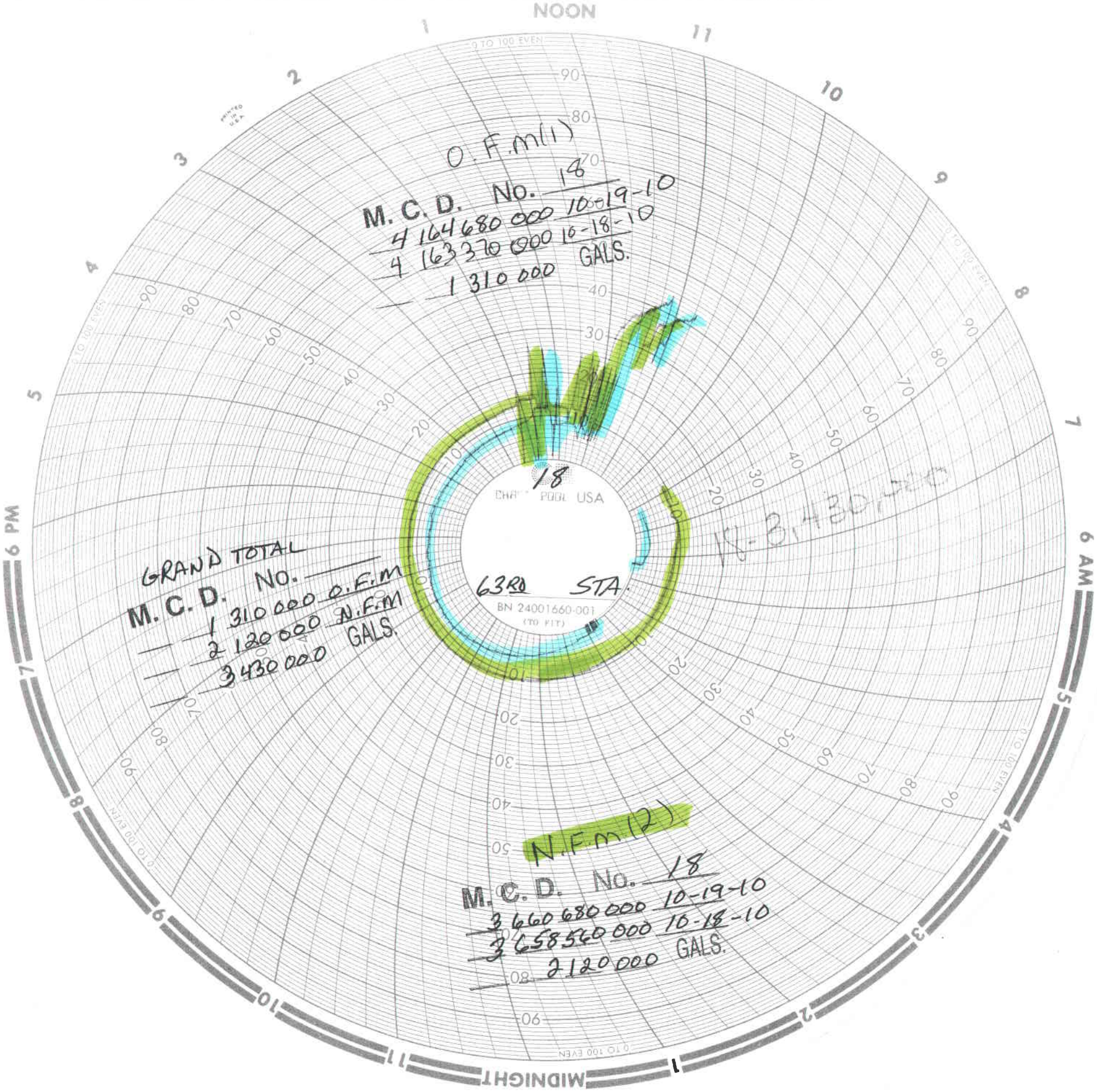
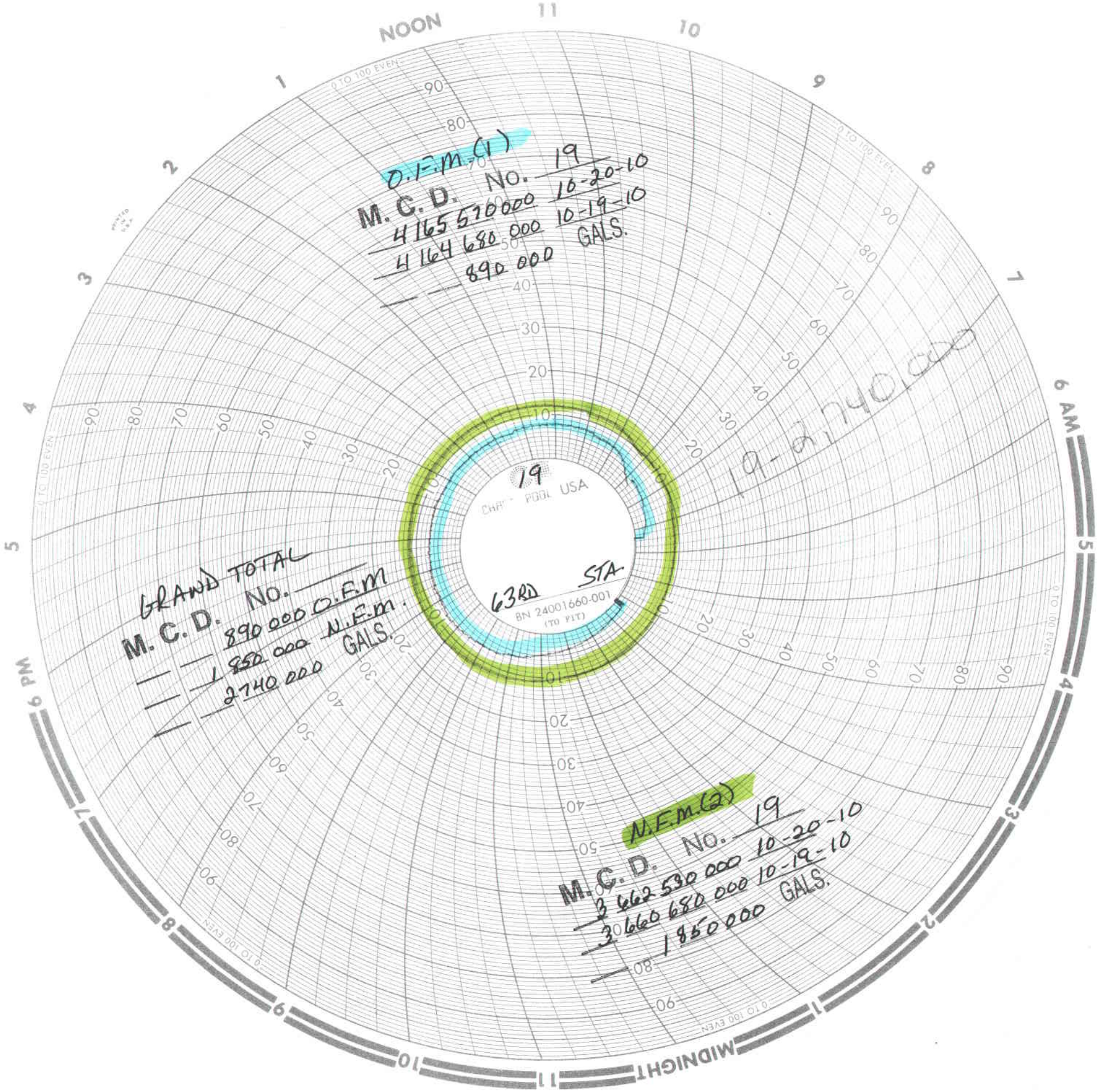
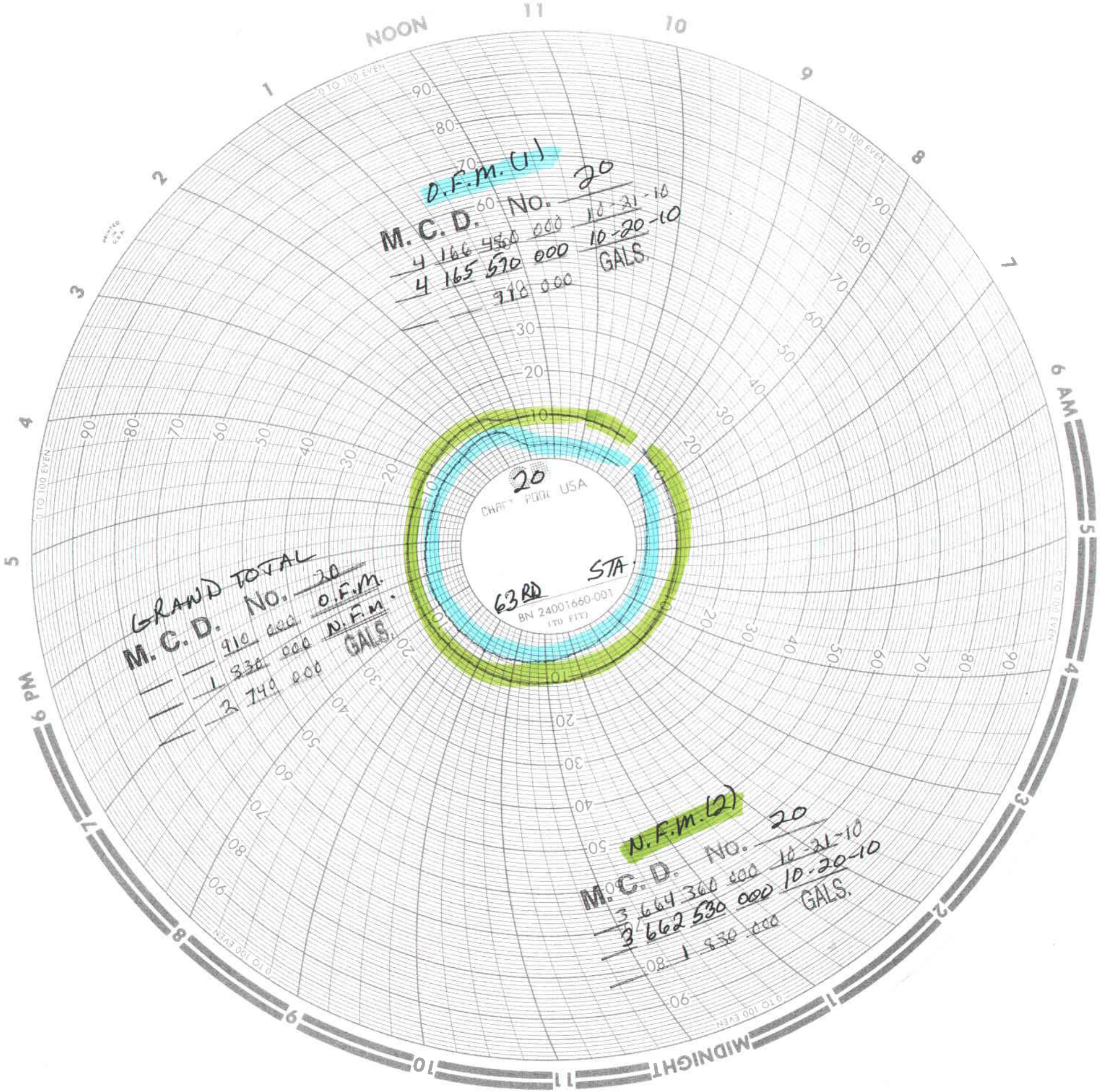
63RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 13
3 649 050 000 10-14-10
3 644 260 000 10-13-10
2 790 000 GALS.


NOON
6 AM
MIDNIGHT
6 PM
0 TO 100 EVEN
CHART USA
63RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 14
3 652 110 000 10-15-10
3 649 050 000 10-14-10
3 060 000 GALS.


NOON
6 AM
MIDNIGHT
6 PM
0 TO 100 EVEN
CHART
15, 16, 17
63RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 15,16,17
3 658 560 000 10-18-10
3 652 110 000 10-15-10
6 450 000 GALS.

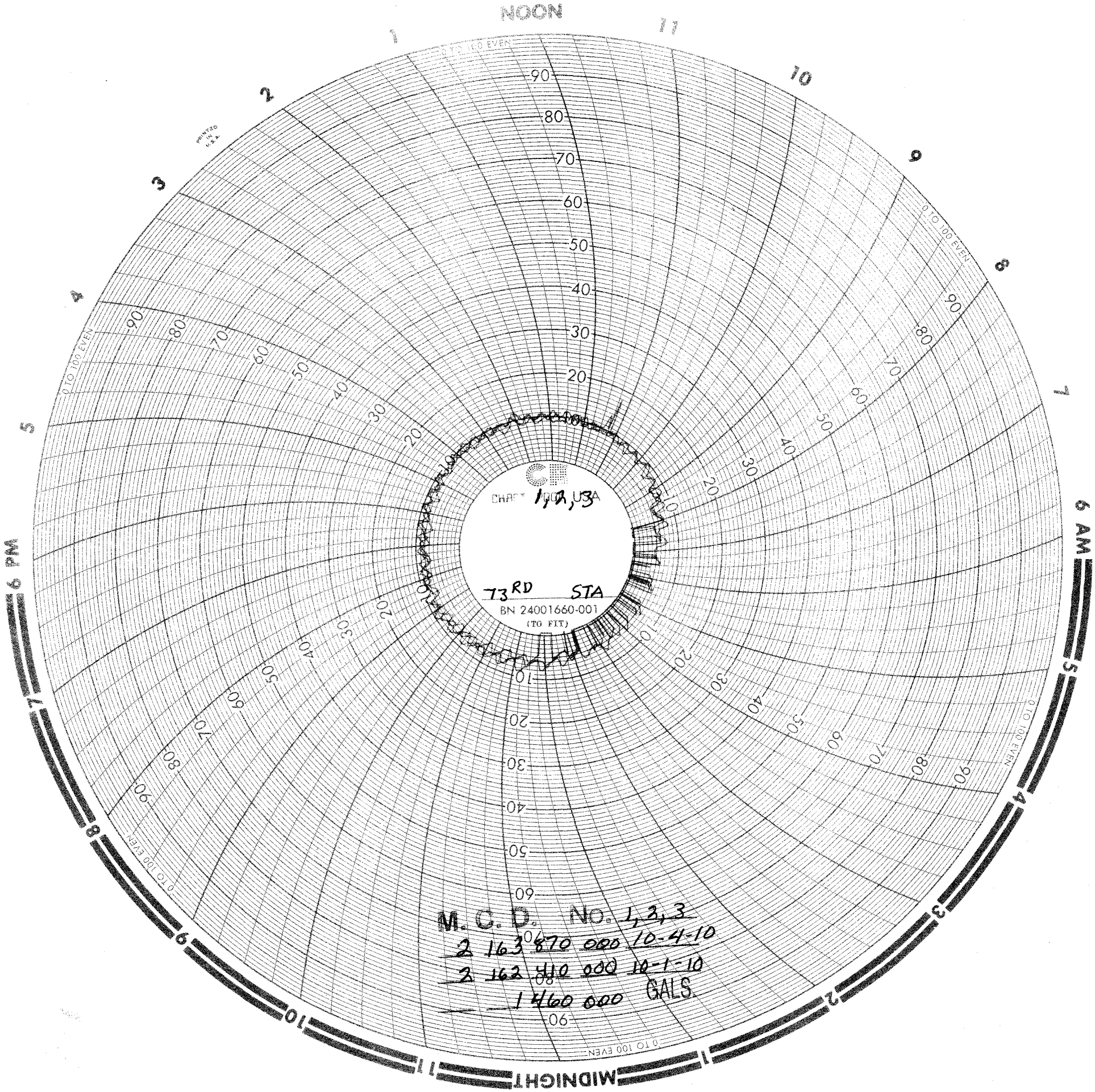

NOON
6 PM
6 AM
MIDNIGHT
O.F.M(1)
M. C. D. No. 18
4 164 680 000 10-19-10
4 163 370 000 10-18-10
1 310 000 GALS.
18
CHART POOL USA
63RD STA.
BN 24001660-001
(TO FIT)
GRAND TOTAL
M. C. D. No.
1 310 000 O.F.M
2 120 000 N.F.M
3 430 000 GALS.
N.F.M(2)
M. C. D. No. 18
3 660 680 000 10-19-10
3 658 560 000 10-18-10
2 120 000 GALS.

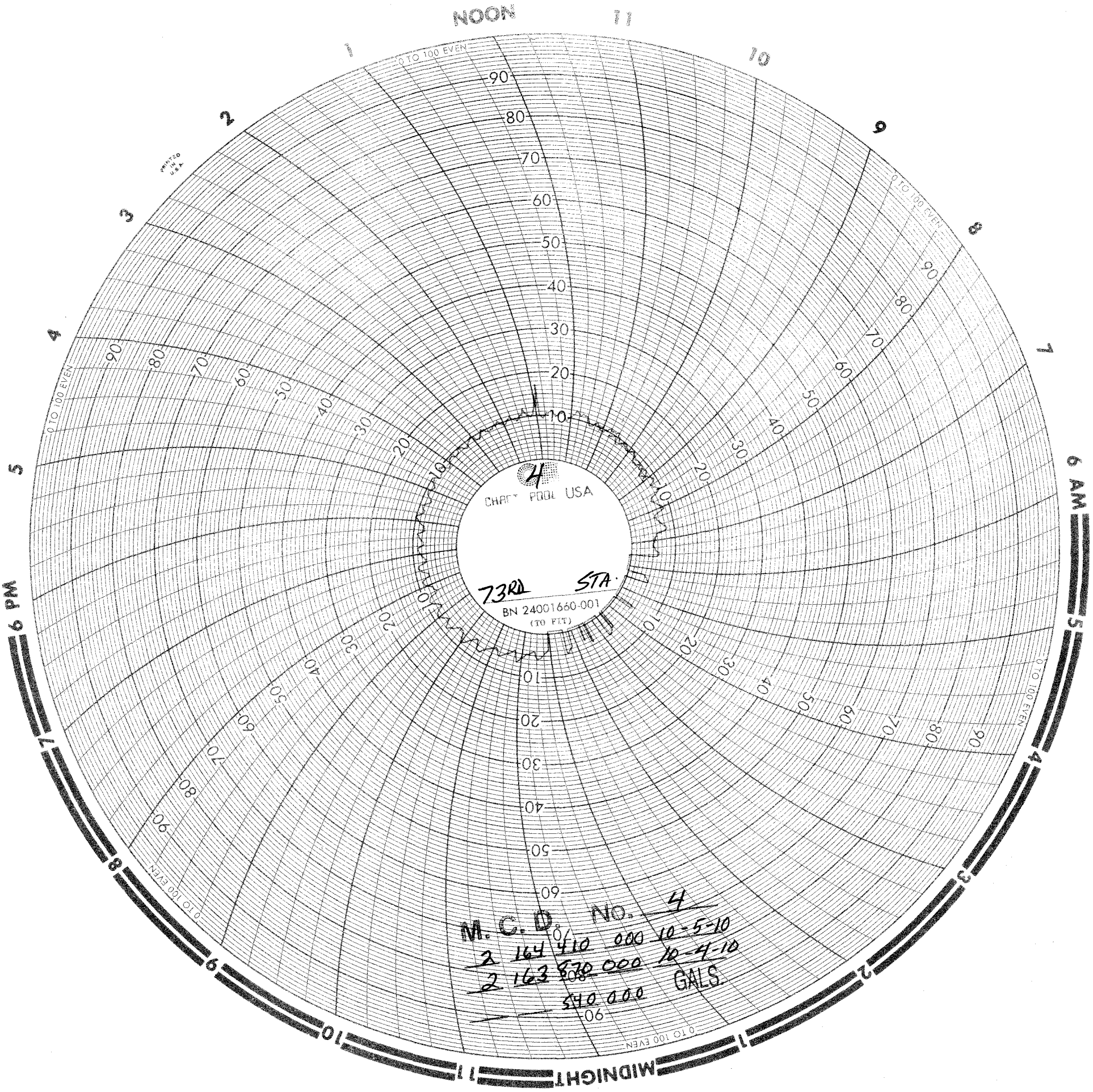

NOON
11
10
9
8
7
6 AM
5
4
3
2
1
MIDNIGHT
11
10
9
6 PM
7
8
0 TO 100 EVEN
PRINTED IN U.S.A.
19
CHART POOL USA
63RD STA.
BN 24001660-001
(TO PIT)
O.F.M.(1)
M. C. D. No. 19
4 165 570 000 10-20-10
4 164 680 000 10-19-10
890 000 GALS.
10-2740000
GRAND TOTAL
M. C. D. No.
890 000 O.F.M
1 850 000 N.F.M.
2740 000 GALS.
N.F.M.(2)
M. C. D. No. 19
3 662 530 000 10-20-10
3 660 680 000 10-19-10
1 850 000 GALS.

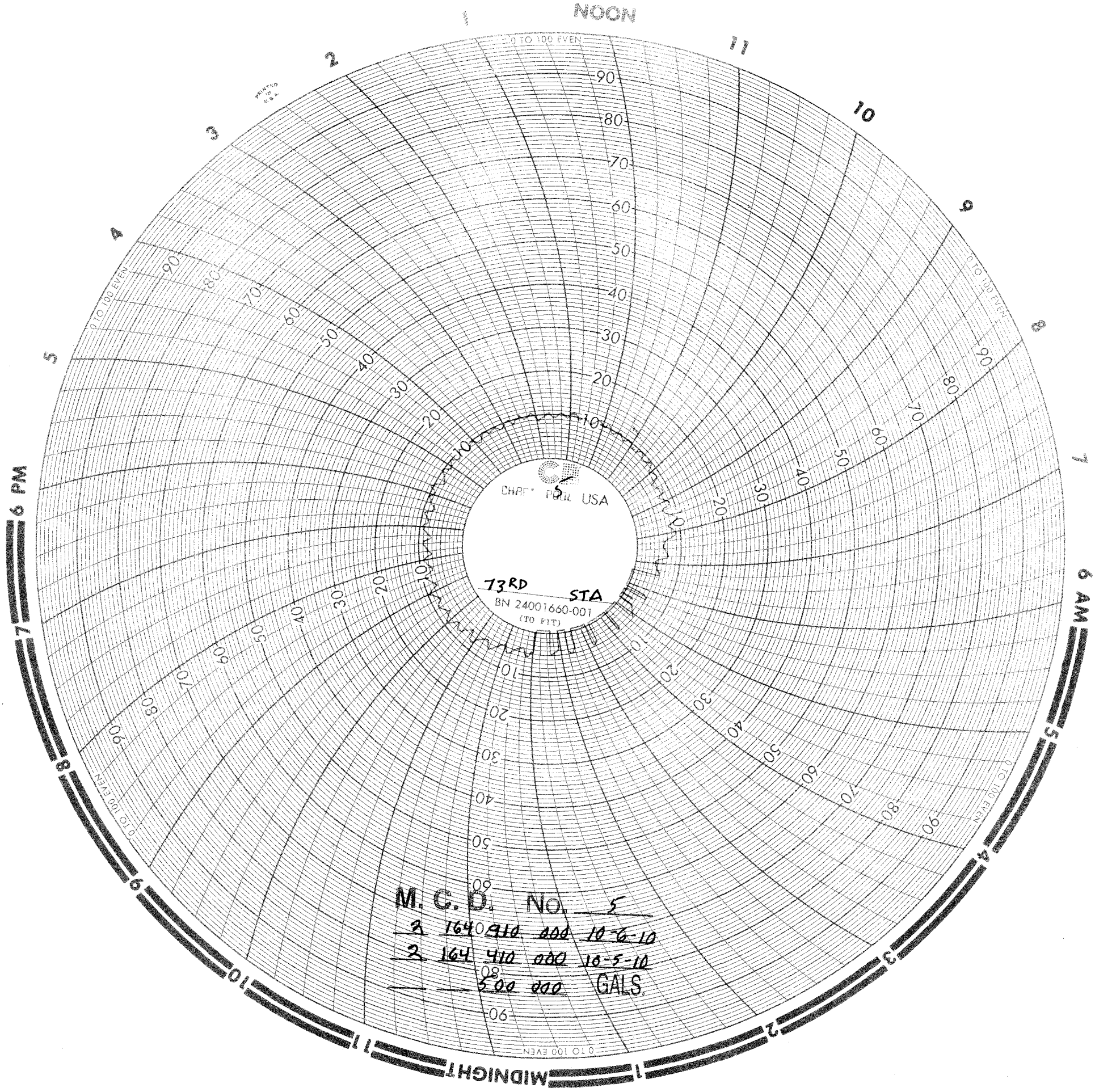

NOON
MIDNIGHT
6 AM
6 PM
0 TO 100 EVEN
CHART POOL USA
BN 24001660-001
(TO FIT)
O.F.M. (1)
M. C. D. No. 20
4 166 950 000 10-21-10
4 165 570 000 10-20-10
1 380 000
GALS.
20
63RD STA.
GRAND TOTAL
M. C. D. No. 20
910 000 O.F.M.
1 830 000 N.F.M.
3 740 000 GALS.
N.F.M. (2)
M. C. D. No. 20
3 664 360 000 10-21-10
3 662 530 000 10-20-10
1 830 000 GALS.

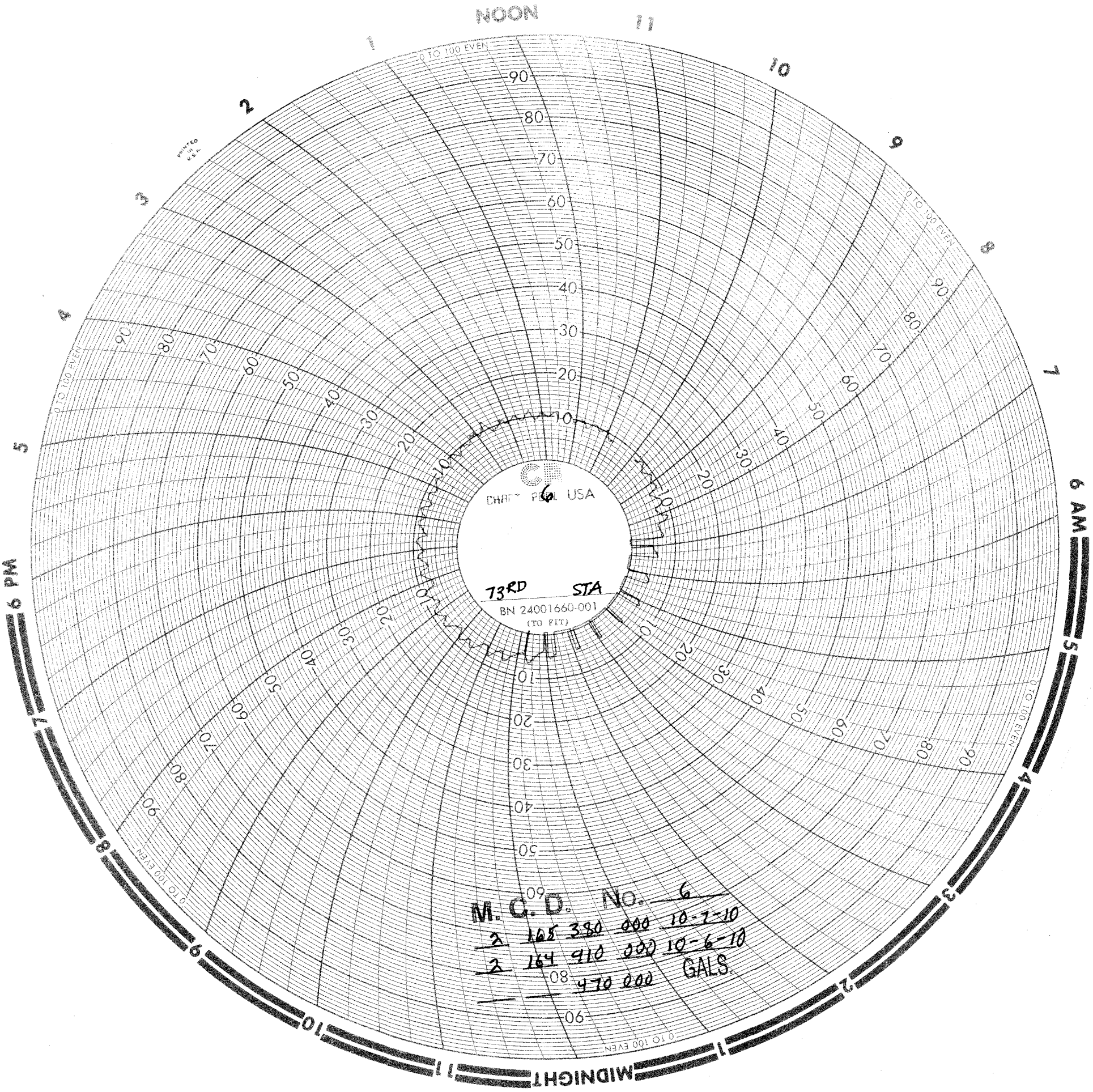
APPENDIX E

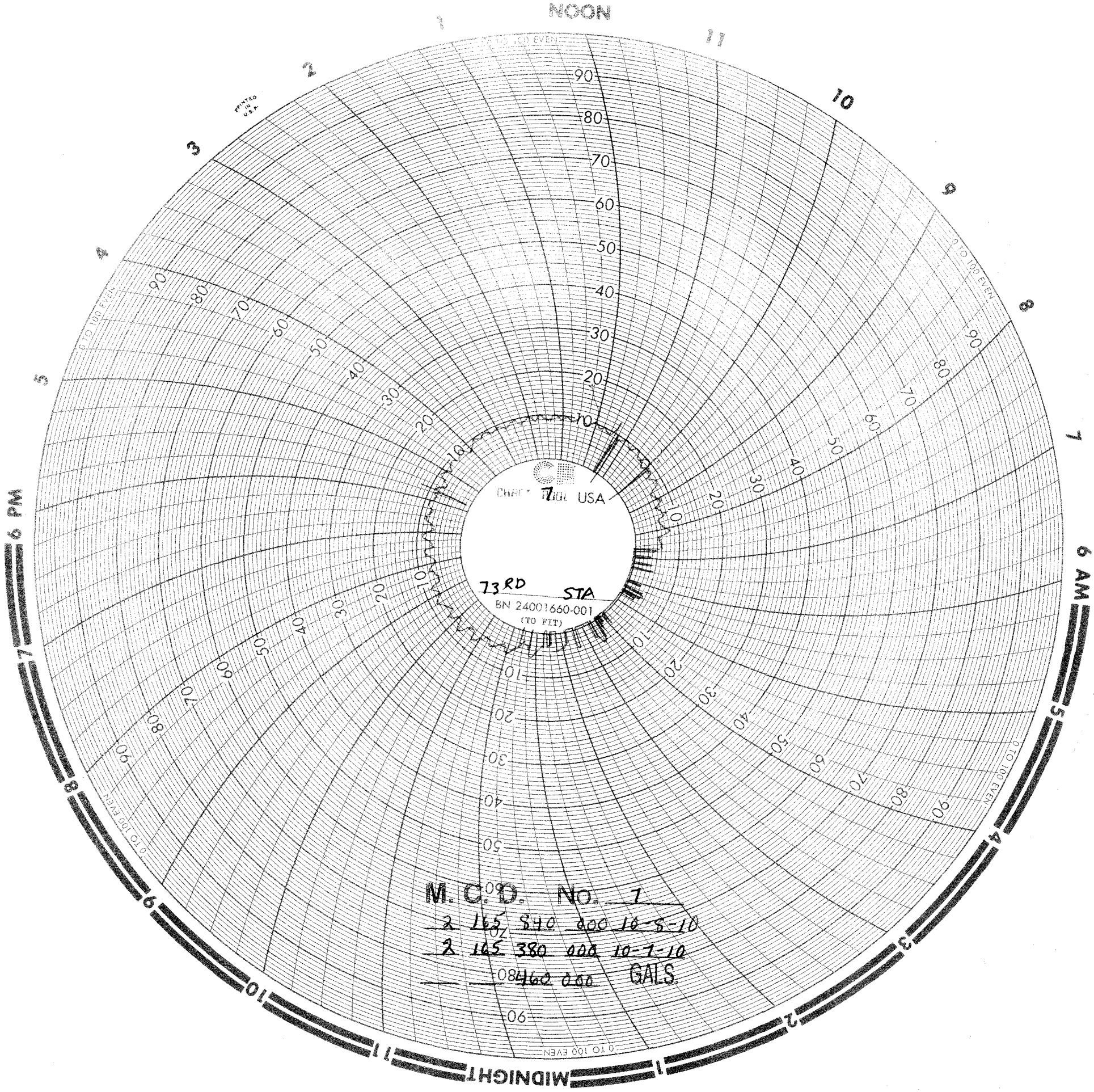
MADISON ST. LIFT STATION
CIRCULAR FLOW CHARTS

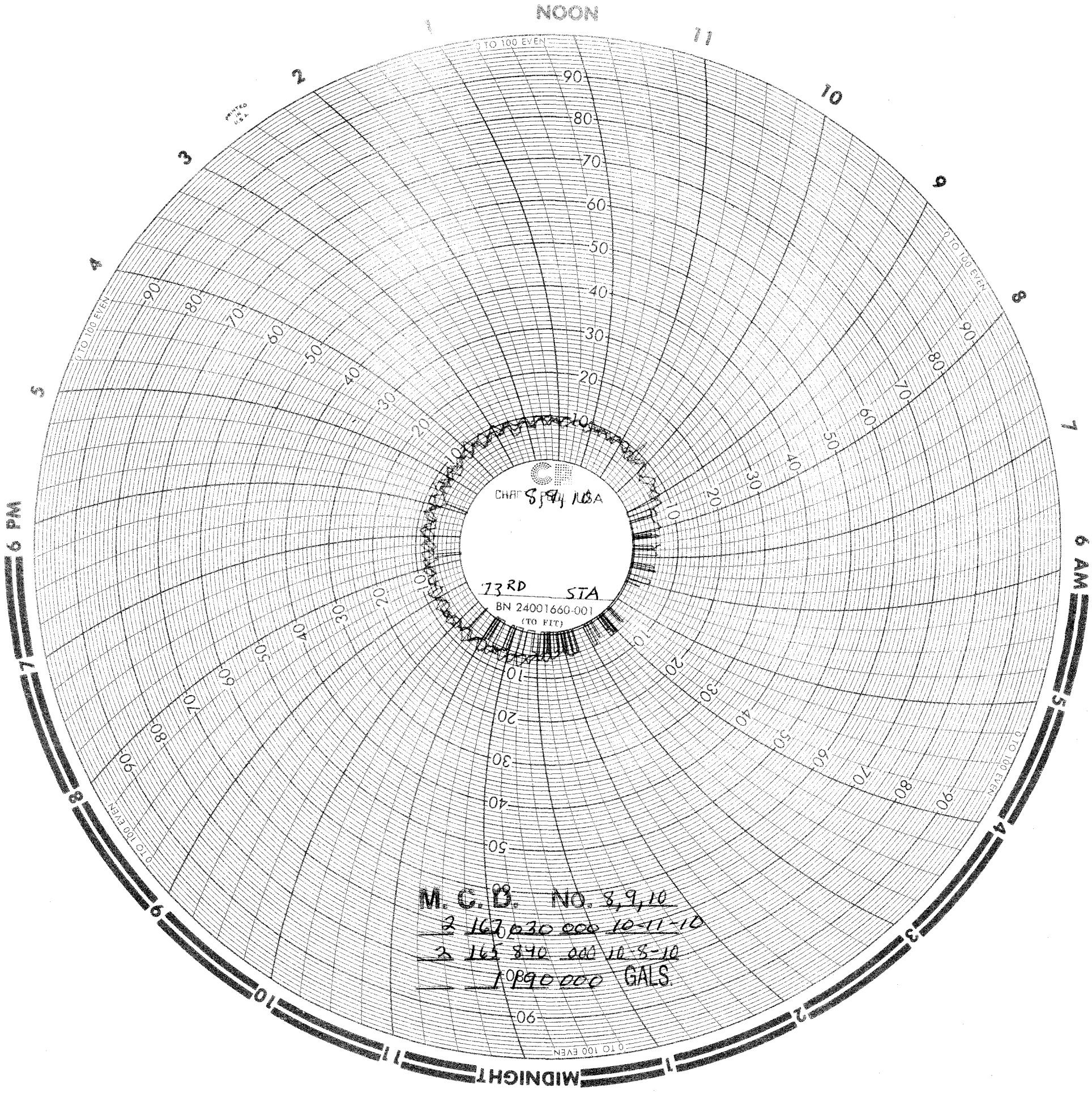

NOON
6 AM
6 PM
MIDNIGHT
0 TO 100 EVEN
CHART 1,02,U3A
73RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 1,3,3
2 163 870 000 10-4-10
2 163 810 000 10-1-10
1 460 000 GALS.

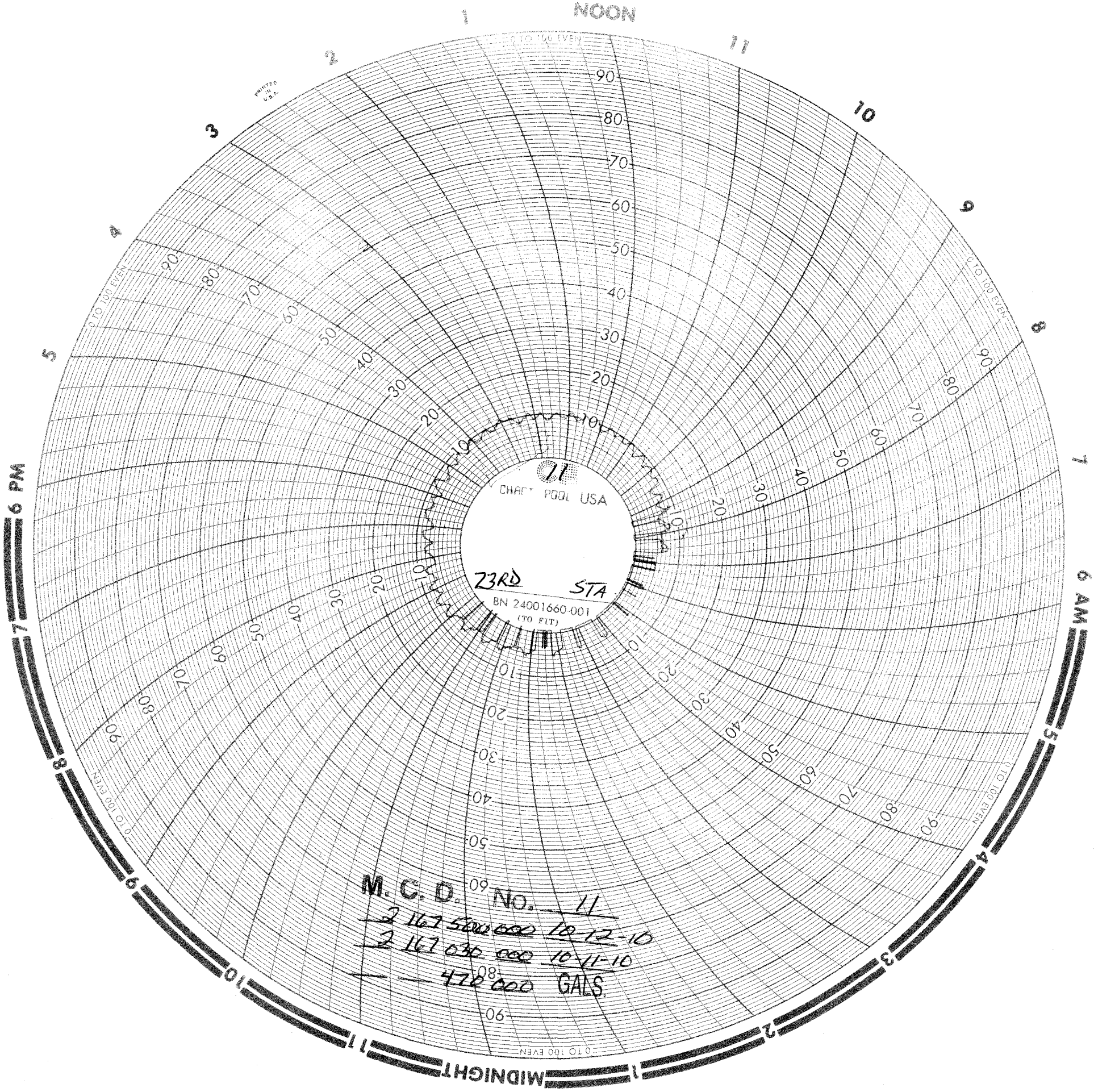

NOON
11
10
9
8
7
6 AM
5
4
3
2
1
MIDNIGHT
11
10
9
8
7
6 PM
5
4
3
2
1
0 TO 100 EVEN
PRINTED IN U.S.A.
CHART POOL USA
BN 24001660-001
(TO FIT)
73RD STA.
M. C. D. NO. 4
2 164 410 000 10-5-10
2 163 870 000 10-4-10
540 000 GALS.

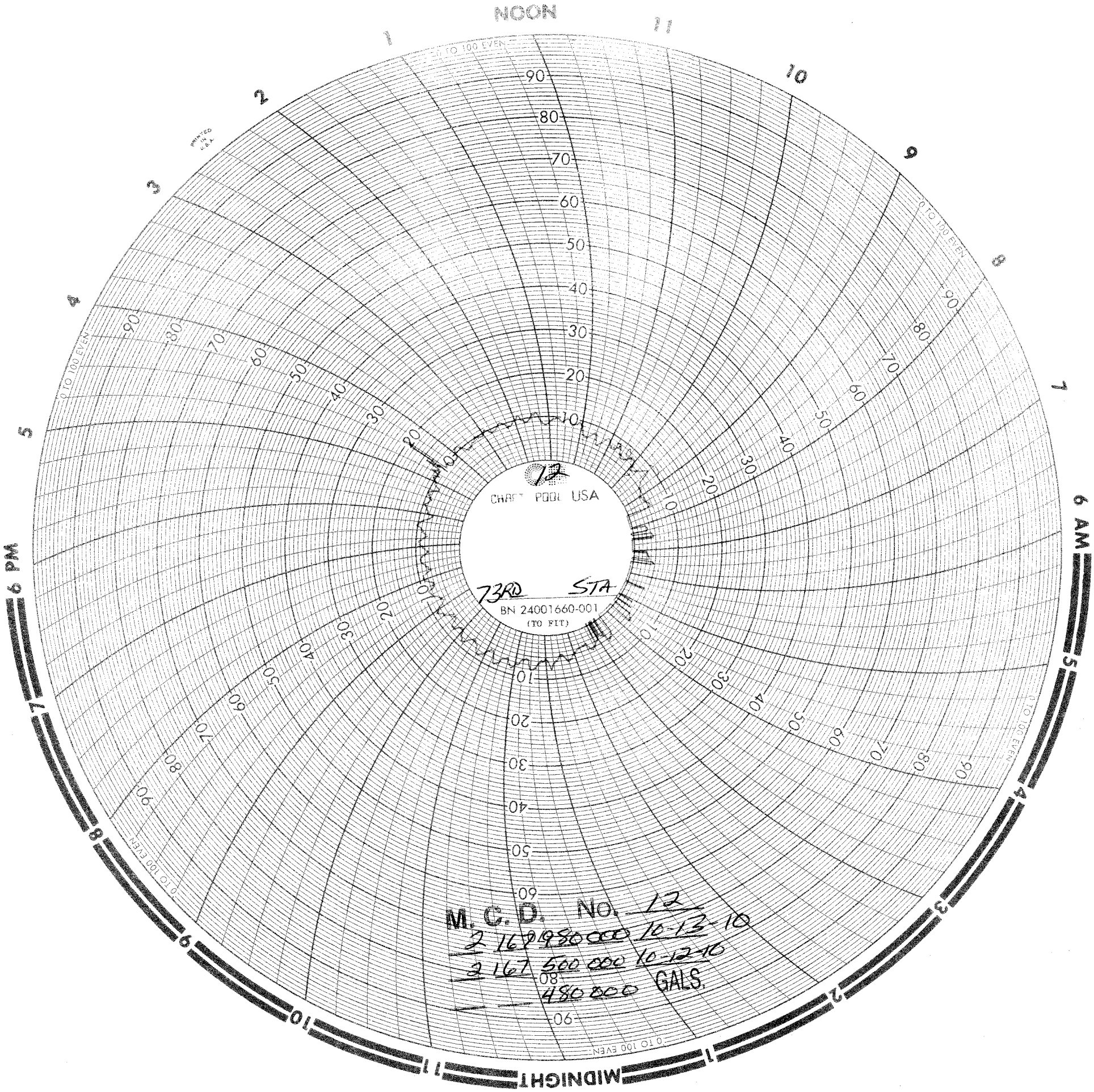

NOON
MIDNIGHT
6 AM
6 PM
0 TO 100 EVEN
CHART PROD USA
73RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 5
2 164 910 000 10-6-10
2 164 410 000 10-5-10
500 000 GALS.


NOON
MIDNIGHT
6 AM
6 PM
0 TO 100 EVEN
CHART PAPER USA
73RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 6
2 165 380 000 10-2-10
2 164 910 000 10-6-10
470 000 GALS.


NOON
MIDNIGHT
6 PM
6 AM
0 TO 100 EVEN
PRINTED IN U.S.A.
CHART PROD USA
73RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 7
2 165 840 000 10-5-10
2 165 380 000 10-7-10
460 000 GALS.


NOON
MIDNIGHT
6 AM
6 PM
0 TO 100 EVEN
PRINTED IN U.S.A.
CHART 8,9,10 USA
73RD STA
BN 24001660-001
(TO FIT)
M. C. B. NO. 8,9,10
2 167 030 000 10-11-10
2 165 840 000 10-8-10
1 890 000 GALS.


NOON
6 AM
MIDNIGHT
6 PM
0 TO 100 EVEN
PRINTED IN U.S.A.
11
CHART POOL USA
23RD STA
BN 24001660-001
(TO FIT)
M. C. D. NO. 11
2 167 500 000 10-12-10
2 167 030 000 10-11-10
478 000 GALS.


NOON
1
11
10
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7
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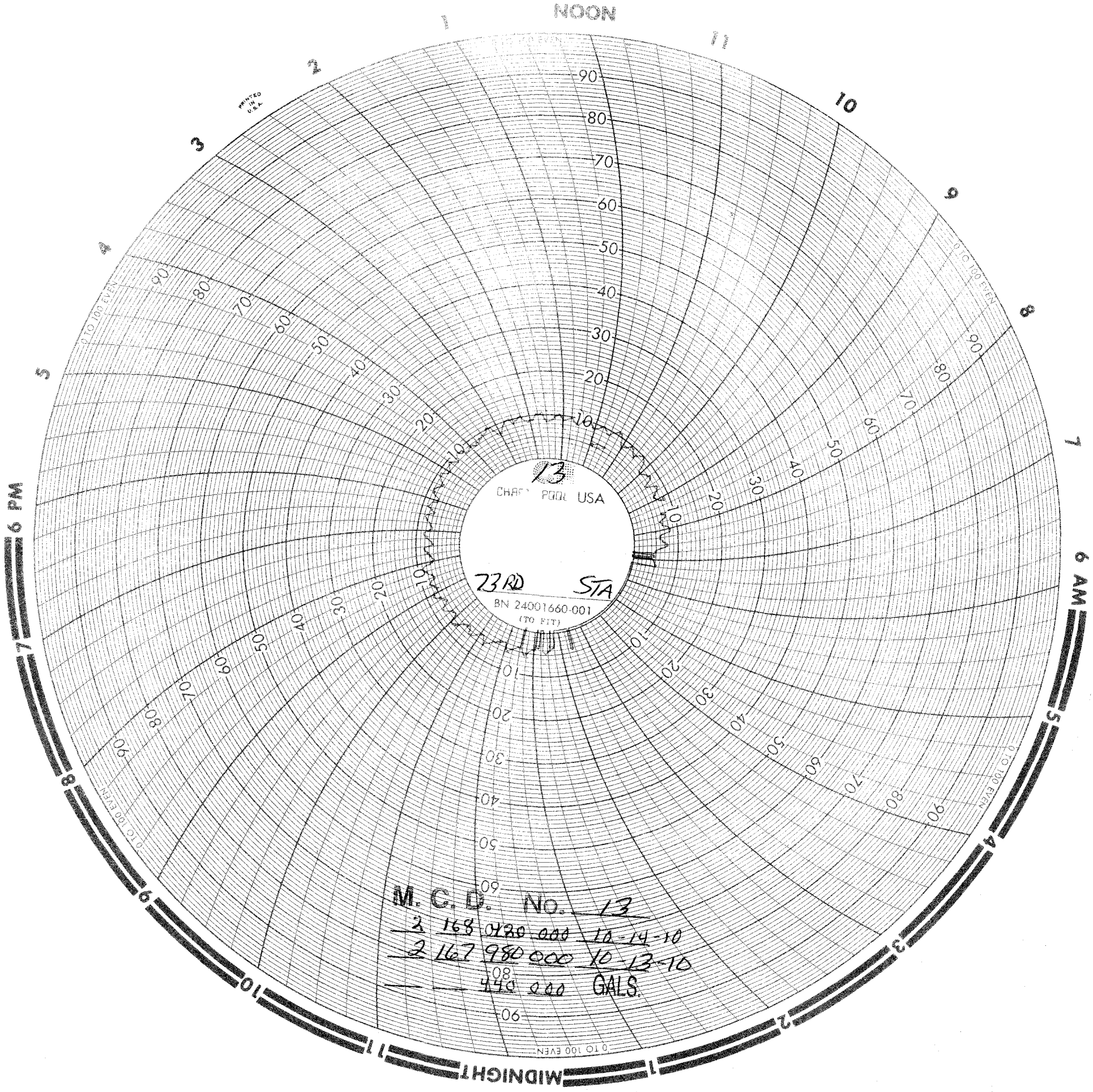
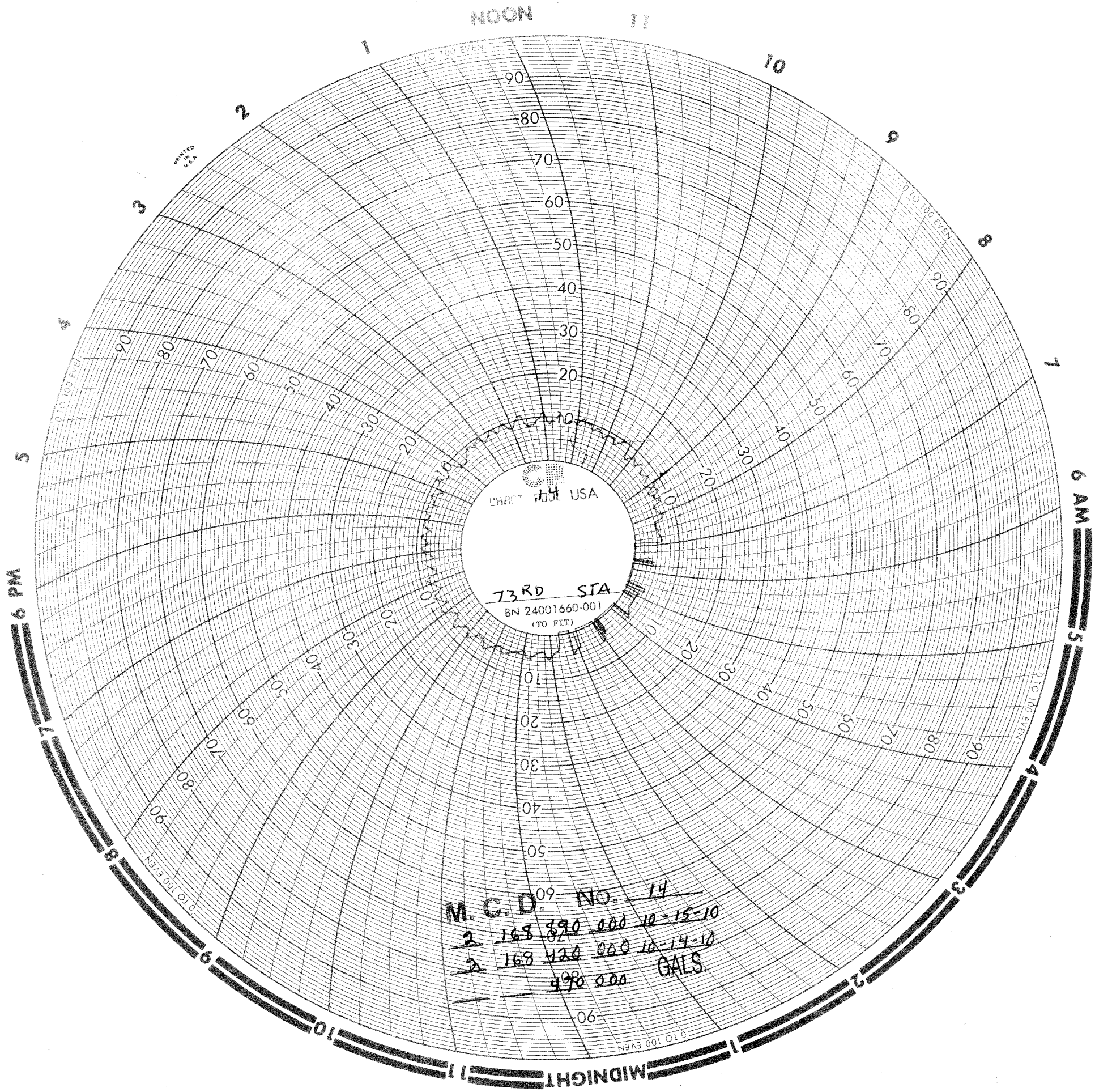
6 AM
6 PM
MIDNIGHT
0 TO 100 EVEN
PRINTED IN U.S.A.
12
CHART POOL USA
73RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 12
2 169 980 000 10-13-10
2 167 500 000 10-12-10
08 480 000 GALS.


NOON
MIDNIGHT
6 AM
6 PM
0 TO 100 EVEN
PRINTED IN U.S.A.
13
CHART POOL USA
23RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 13
2 168 020 000 10-14-10
2 167 980 000 10-13-10
440 000 GALS.


MIDNIGHT
1
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6 AM
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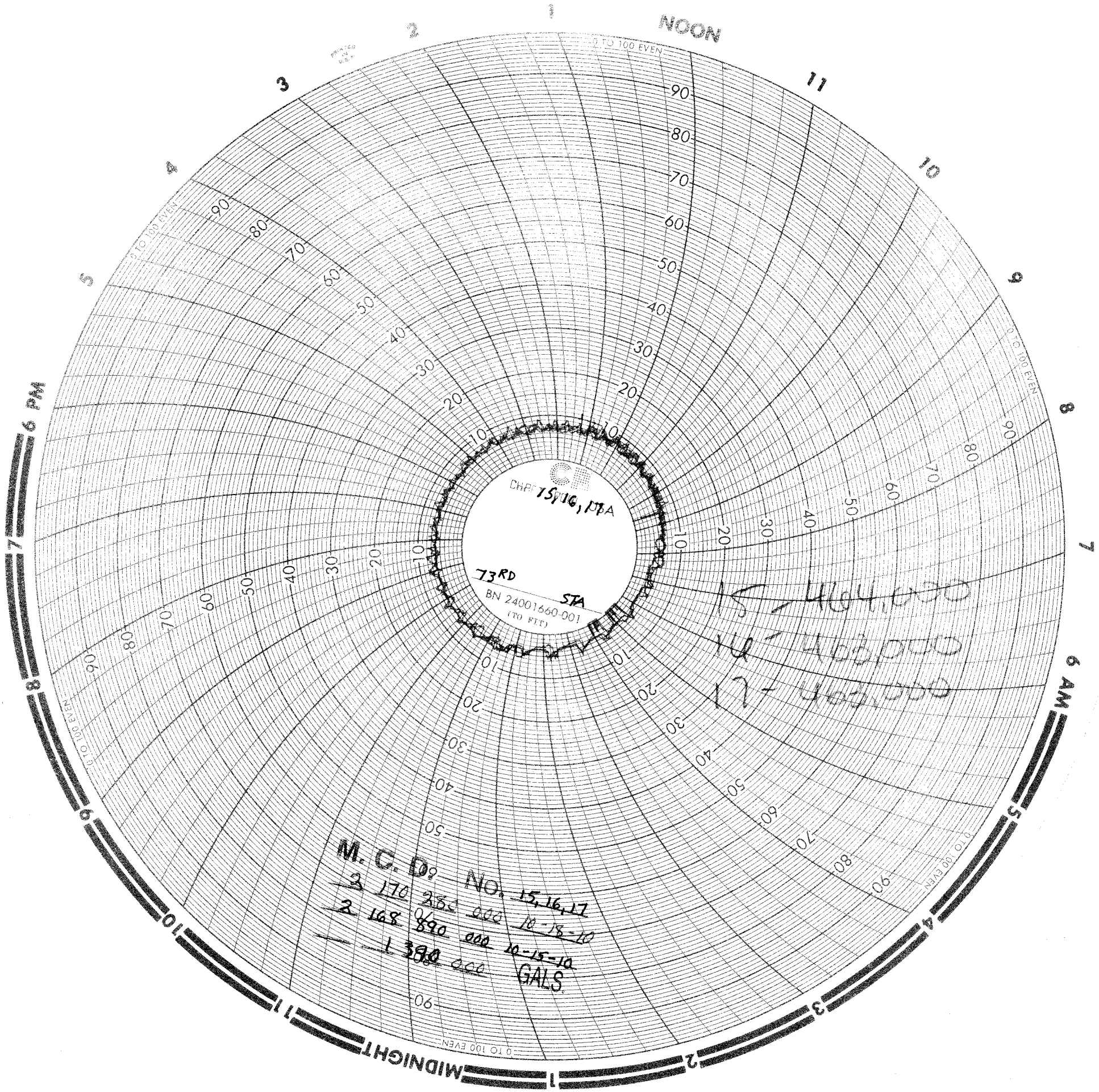
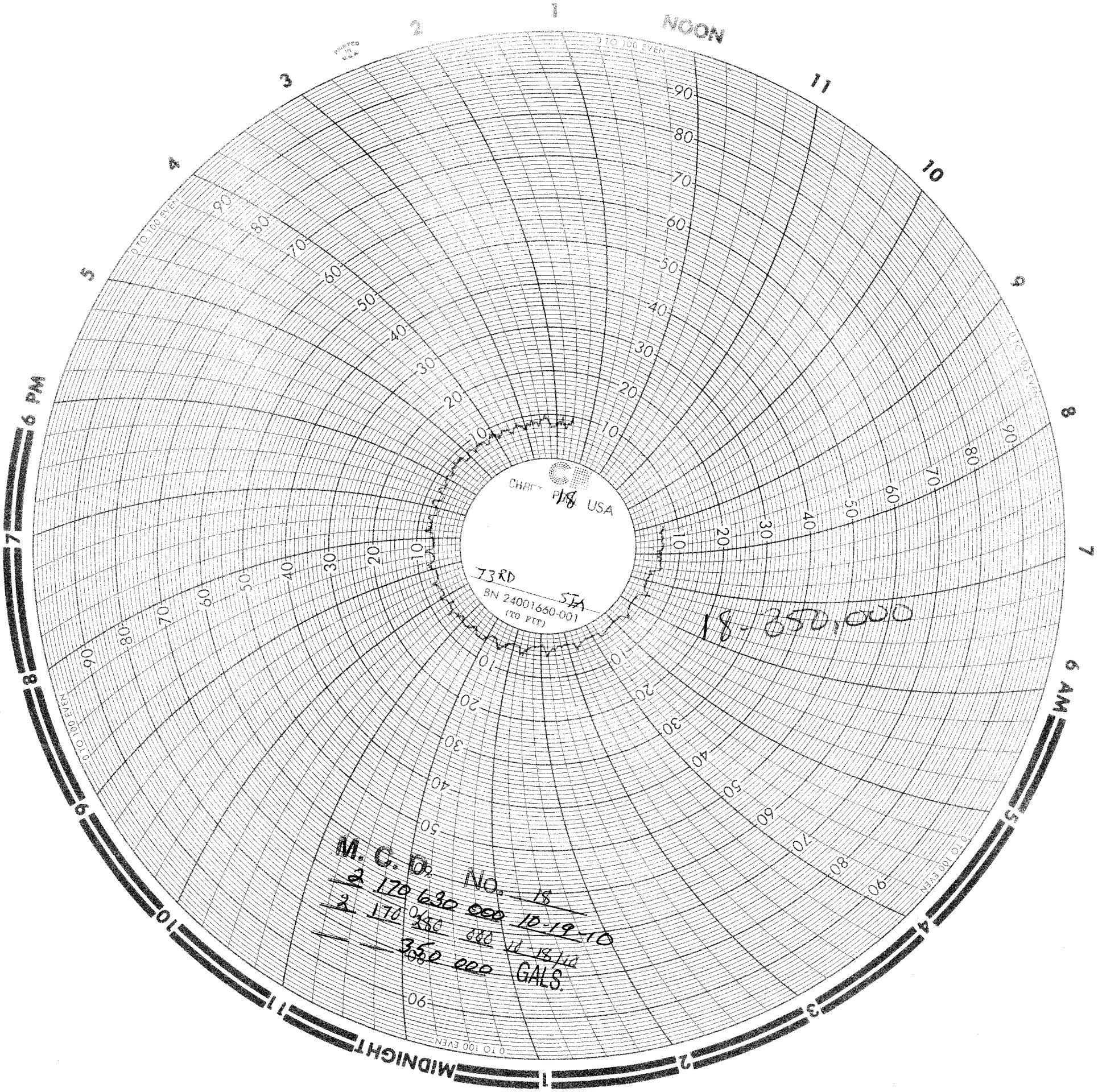
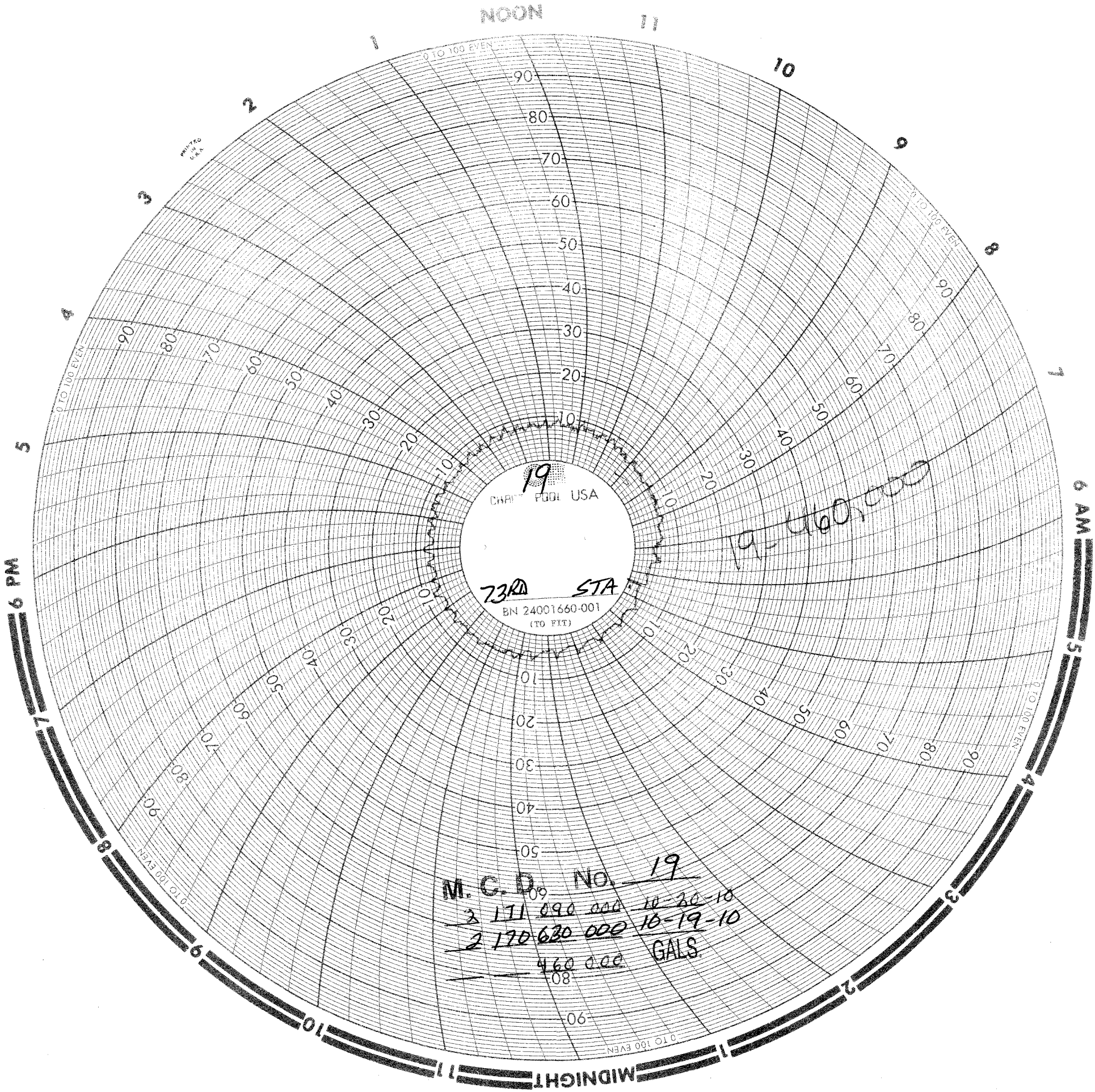
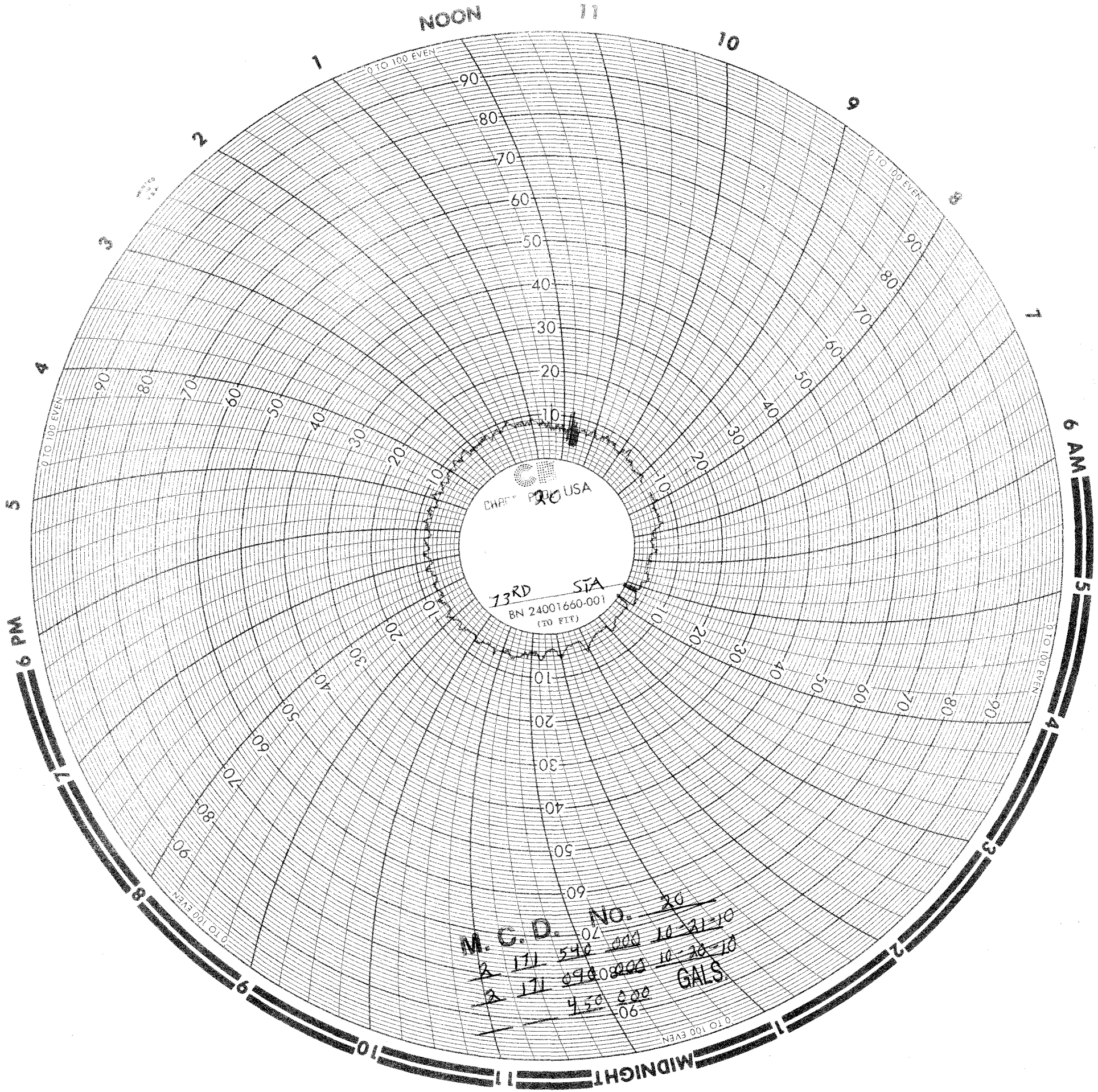
10
11
NOON
6 PM
0 TO 100 EVEN
PRINTED IN U.S.A.
CHART CORP. USA
73RD STA
BN 24001660-001
(TO FIT)
M. C. D. NO. 14
2 168 890 000 10-15-10
2 168 420 000 10-14-10
998 000 GALS.


MIDNIGHT
1
2
3
4
5
6 AM
7
8
9
10
11
NOON
1
2
3
4
5
6 PM
7
8
9
10
11
0 TO 100 EVEN
CHART
73RD STA
BN 24001660-001
(TO FILL)
M. C. D. No. 15, 16, 17
3 170 250 000 10-18-10
2 168 890 000 10-15-10
1 390 000
GALS


MIDNIGHT
6 AM
NOON
6 PM
0 TO 100 EVEN
PRINTED IN U.S.A.
CHART PIN USA
73RD STA
BN 24001650-001
(TO FIT)
18-350,000
M. C. D. No. 18
2 170 630 000 10-19-10
2 170 350 000 10-18-10
350 000 GALS.


NOON
MIDNIGHT
6 PM
6 AM
0 TO 100 EVEN
PRINTED IN U.S.A.
19
CHART POOL USA
73RD STA
BN 24001660-001
(TO FIT)
M. C. D. No. 19
2 171 090 000 10-20-10
2 170 630 000 10-19-10
460 000 GALS.


MIDNIGHT
1
2
3
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6 AM
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NOON
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6 PM
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0 TO 100 EVEN
CHART PRODUCTS USA
73RD STA
BN 24001660-001
(TO FIT)
M.C.D. NO. 20
GALS.

APPENDIX F

IHCD FLOW DATA

IHCD DAILY COMBINED FLOWS OCTOBER 2010

DATE	LINCOLN	IHCD	TOTAL	RAIN	SNOW
10/2/2010	446,300	598,900	1,045,200	TRACE	
10/3/2010	446,700	587,000	1,033,700	.7"	
10/4/2010	478,500	610,700	1,089,200		
10/5/2010	430,500	577,900	1,008,400		
10/6/2010	411,200	574,300	985,500		
10/7/2010	398,900	572,400	971,300		
10/8/2010	487,300	566,400	1,053,700		
10/9/2010	320,400	569,300	889,700		
10/10/2010	418,500	621,100	1,039,600		
10/11/2010	428,400	615,400	1,043,800		
10/12/2010	438,600	609,800	1,048,400		
10/13/2010	413,000	606,400	1,019,400	TRACE	
10/14/2010	420,000	584,000	1,004,000		
10/15/2010	431,400	608,100	1,039,500		
10/16/2010	392,800	548,200	941,000		
10/17/2010	418,100	601,500	1,019,600		
10/18/2010	455,200	639,900	1,095,100		
10/19/2010	413,400	595,500	1,008,900		
10/20/2010	398,700	597,600	996,300		
10/21/2010	392,600	603,300	995,900		
10/22/2010			-		
10/23/2010			-		
10/24/2010			-		
10/25/2010			-		
10/26/2010			-		
10/27/2010			-		
10/28/2010			-		
10/29/2010			-		
			-		
			-		
			-		
			-		
			-		
			-		
			-		
			-		
TOTAL	8,440,500	11,887,700	20,328,200		
DAILY AVERAGE	422,025	594,385	580,806		

APPENDIX G

SYSTEM STORAGE

SYSTEM STORAGE

APPENDIX H

MCD'S TURKEY CREEK SAMPLING RESULTS

October 21, 2010

Merrillville Conservancy District
6250 Broadway
Merrillville, IN 46410-

Work Order No.: 10J0627

Re: Turkey Creek

Dear Chuck Stojakovich:

Microbac Laboratories, Inc. - Chicagoland Division received 10 sample(s) on 10/19/2010 3:45:00PM for the analyses presented in the following report as Work Order 10J0627.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

Sincerely,
Microbac Laboratories, Inc.

Bill Walsh
Managing Director

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX.219.769.1664

Microbac

WORK ORDER SAMPLE SUMMARY

Date: *Thursday, October 21, 2010*

Client: Merrillville Conservancy District
Project: Turkey Creek
Lab Order: 10J0627

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
10J0627-01	6250 Broadway Back River	1	10/19/2010 13:52	10/19/2010 3:45:00PM
10J0627-02	Turkey Creek Golf Under Bridge	2	10/19/2010 14:20	10/19/2010 3:45:00PM
10J0627-03	Bridge Turkey Creek/Inbrook	3	10/19/2010 14:32	10/19/2010 3:45:00PM
10J0627-04	Woodill Lane (ManHole)	4	10/19/2010 15:02	10/19/2010 3:45:00PM
10J0627-05	Hendricks By Road	5	10/19/2010 15:20	10/19/2010 3:45:00PM

Microbac®

CASE NARRATIVE

Date: *Thursday, October 21, 2010*

Client: Merrillville Conservancy District
Project: Turkey Creek
Lab Order: 10J0627

The ending method blanks associated with the 6250 Broadway Back River, Turkey Creek Golf Under Bridge, and Bridge Turkey Creek/Inbrook samples, contained Fecal Coliform at a level above the reporting limit. This is due to the high concentration of coliform which was found in the samples. Method blanks preceeded each individual sample and all were Non-Detect. Carryover contamination of ending blanks did not affect samples.

Microbac®

Analytical Results

Date: *Thursday, October 21, 2010*

Client: Merrillville Conservancy District
Client Project: Turkey Creek
Client Sample ID: 6250 Broadway Back River
Sample Description: 1
Matrix: Aqueous

Work Order/ID: 10J0627-01
Sampled: 10/19/2010 13:52
Received: 10/19/2010 15:45

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: SM 9222D Rev 18				Analyst: RJC	
Fecal Coliform by Membrane Filtration		Prep Method: APHA 9222D				Prep Date/Time: 10/19/2010 18:12	
Fecal Coliform	A	*> 60000*	10		/100ml	1	10/19/2010 18:12
		Method: EPA 350.1 Rev 2.0				Analyst: GJM	
Nitrogen, Ammonia as N		Prep Method: Aqueous Ammonia Distillation				Prep Date/Time: 10/20/2010 06:05	
Nitrogen, Ammonia (As N)	A	*3.6*	0.10		mg/L	1	10/20/2010 12:38

Microbac

Analytical Results

Date: *Thursday, October 21, 2010*

Client:	Merrillville Conservancy District		
Client Project:	Turkey Creek		
Client Sample ID:	Turkey Creek Golf Under Bridge	**Work Order/ID:**	10J0627-02
Sample Description:	2	**Sampled:**	10/19/2010 14:20
Matrix:	Aqueous	**Received:**	10/19/2010 15:45

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: **SM 9222D Rev 18**				Analyst: **RJC**	
Fecal Coliform by Membrane Filtration		Prep Method: **APHA 9222D**				Prep Date/Time: **10/19/2010 18:12**	
Fecal Coliform	A	***> 60000***	10		/100ml	1	10/19/2010 18:12
		Method: **EPA 350.1 Rev 2.0**				Analyst: **GJM**	
Nitrogen, Ammonia as N		Prep Method: **Aqueous Ammonia Distillation**				Prep Date/Time: **10/20/2010 06:05**	
Nitrogen, Ammonia (As N)	A	***5.4***	0.10		mg/L	1	10/20/2010 12:40

Microbac

Analytical Results

Date: *Thursday, October 21, 2010*

Client:	Merrillville Conservancy District		
Client Project:	Turkey Creek		
Client Sample ID:	Bridge Turkey Creek/Inbrook	**Work Order/ID:**	10J0627-03
Sample Description:	3	**Sampled:**	10/19/2010 14:32
Matrix:	Aqueous	**Received:**	10/19/2010 15:45

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: **SM 9222D Rev 18**				Analyst: **RJC**	
		Prep Method: **APHA 9222D**				Prep Date/Time: **10/19/2010 18:12**	
Fecal Coliform by Membrane Filtration							
Fecal Coliform	A	***47000***	10		/100ml	1	10/19/2010 18 12
		Method: **EPA 350.1 Rev 2.0**				Analyst: **GJM**	
		Prep Method: **Aqueous Ammonia Distillation**				Prep Date/Time: **10/20/2010 06:05**	
Nitrogen, Ammonia as N							
Nitrogen, Ammonia (As N)	A	***0.24***	0.10		mg/L	1	10/20/2010 12:42

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX.219.769.1664

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Analytical Results

Date: *Thursday, October 21, 2010*

Client: Merrillville Conservancy District
Client Project: Turkey Creek
Client Sample ID: Woodill Lane (ManHole)
Sample Description: 4
Matrix: Aqueous

Work Order/ID: 10J0627-04
Sampled: 10/19/2010 15:02
Received: 10/19/2010 15:45

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: **SM 9222D Rev 18**				Analyst: **RJC**	
Fecal Coliform by Membrane Filtration		Prep Method: **APHA 9222D**				Prep Date/Time: **10/19/2010 18:12**	
Fecal Coliform	A	***3500***	10		/100ml	1	10/19/2010 18:12
		Method: **EPA 350.1 Rev 2.0**				Analyst: **GJM**	
Nitrogen, Ammonia as N		Prep Method: **Aqueous Ammonia Distillation**				Prep Date/Time: **10/20/2010 06:05**	
Nitrogen, Ammonia (As N)	A	***ND***	0.10		mg/L	1	10/20/2010 12:44

250 West 84th Drive, Merrillville, IN 46410 TEL:800.536.8379 TEL:219.769.8378 FAX:219.769.1664

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Analytical Results

Date: *Thursday, October 21, 2010*

Client: Merrillville Conservancy District
Client Project: Turkey Creek
Client Sample ID: Hendricks By Road
Sample Description: 5
Matrix: Aqueous

Work Order/ID: 10J0627-05
Sampled: 10/19/2010 15:20
Received: 10/19/2010 15:45

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: **SM 9222D Rev 18**				Analyst: **RJC**	
Fecal Coliform by Membrane Filtration		Prep Method: **APHA 9222D**				Prep Date/Time: **10/19/2010 18:12**	
Fecal Coliform	A	*100*	10		/100ml	1	10/19/2010 18:12
		Method: **EPA 350.1 Rev 2.0**				Analyst: **GJM**	
Nitrogen, Ammonia as N		Prep Method: **Aqueous Ammonia Distillation**				Prep Date/Time: **10/20/2010 06:05**	
Nitrogen, Ammonia (As N)	A	*0.16*	0.10		mg/L	1	10/20/2010 12:49

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FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA	=	Not Analyzed
mg/L	=	Milligrams per Liter (ppm)
mg/Kg	=	Milligrams per Kilogram (ppm)
U	=	Undetected
J	=	Analyte concentration detected between RL and MDL (Metals / Organics)
B	=	Detected in the associated method Blank at a concentration above the routine PQL/RL
D	=	Dilution performed on sample
ND	=	Not Detected at the Reporting Limit (or the Method Detection Limit, if used)
E	=	Value above quantitation range
H	=	Analyte was prepared and/or analyzed outside of the analytical method holding time
I	=	Matrix Interference
R	=	RPD outside accepted recovery limits
S	=	Spike recovery outside recovery limits
Surr	=	Surrogate
DF	=	Dilution Factor

ANALYTE TYPES

A,B	=	Target Analyte
I	=	Internal Standard
M	=	Summation Analyte
S	=	Surrogate
T	=	Tentatively Identified Compound (TIC, concentration estimated)

QC SAMPLE IDENTIFICATIONS

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
OPR	=	Ongoing Precision and Recovery Standard			

CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #100435)
Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)
Indiana DEM approved support laboratory for solid waste and wastewater analyses
Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)
Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)
Kentucky DEP for the chemical analysis of drinking water (lab #90147)
Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)
*New York SDH for the chemical analysis of air and emissions (lab #11909)
North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)
Tennessee DEC for the chemical analysis of drinking water (lab #04017)
Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)

Microbac

COOLER INSPECTION

Date: Thursday, October 21, 2010

Client Name: Merrillville Conservancy District

Date/Time Received: 10/19/2010 15:45

Work Order Number: 10J0627

Received by: Dave Bryant

Checklist completed by: 10/19/2010 4:39:00PM | Dave Bryant

Reviewed by: 10/20/2010 | BW

Carrier Name: Microbac

Cooler ID: Default Cooler

Container/Temp Blank Temperature: 5.00°C

After-Hour Arrival?	Yes	☐	No	☑		
Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present	☐
Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	Not Present	☑
Custody seals intact on sample containers?	Yes	☐	No	☐	Not Present	☑
COC present?	Yes	☑	No	☐		
COC included sufficient client identification?	Yes	☑	No	☐		
COC included sufficient sample collector information?	Yes	☑	No	☐		
COC included a sample description?	Yes	☑	No	☐		
COC agrees with sample labels?	Yes	☑	No	☐		
COC identified the appropriate matrix?	Yes	☑	No	☐		
COC included date of collection?	Yes	☑	No	☐		
COC included time of collection?	Yes	☑	No	☐		
COC identified the appropriate number of containers?	Yes	☑	No	☐		
Samples in proper container/bottle?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		
All samples received within holding time?	Yes	☑	No	☐		
If the samples are preserved, are the preservatives identified?	Yes	☑	No	☐		
COC included the requested analyses?	Yes	☑	No	☐		

If No, adjusted by? _____

COC signed when relinquished and received?	Yes	☑	No	☐		
Samples received on ice?	Yes	☑	No	☐		
Samples properly preserved?	Yes	☑	No	☐		
Voa vials for aqueous samples have zero headspace?	Yes	☐	No	☐	No VOA vials submitted	☑

Cooler Comments:

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.

Sample ID	Client Sample ID	Comments
10J0627-01	6250 Broadway Back River	
10J0627-02	Turkey Creek Golf Under Bridge	
10J0627-03	Bridge Turkey Creek/Inbrook	
10J0627-04	Woodill Lane (ManHole)	
10J0627-05	Hendricks By Road	
10J0627-06	6250 Broadway Back River	
10J0627-07	Turkey Creek Golf Under Bridge	
10J0627-08	Bridge Turkey Creek/Inbrook	
10J0627-09	Woodill Lane (ManHole)	
10J0627-10	Hendricks By Road	

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Analytical QC Summary

Client: Merrillville Conservancy District
Work Order: 10J0627
Project: Turkey Creek

Bacteriology/Microbiology - Quality Control

Batch: B007383 **Prep:** APHA 9222D

Fecal Coliform by Membrane Filtration

Sample ID: MB1 (B007383-BLK1) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	ND	1.0	/100ml							

Sample ID: MB1A (B007383-BLK2) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	2.0	1.0	/100ml							

Sample ID: MB2 (B007383-BLK3) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	ND	1.0	/100ml							

Sample ID: MB2A (B007383-BLK4) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	9.0	1.0	/100ml							

Sample ID: MB3 (B007383-BLK5) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	ND	1.0	/100ml							

Sample ID: MB3A (B007383-BLK6) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	2.0	1.0	/100ml							

Sample ID: MB4 (B007383-BLK7) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	ND	1.0	/100ml							

Sample ID: MB4A (B007383-BLK8) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	ND	1.0	/100ml							

Sample ID: MB5 (B007383-BLK9) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	ND	1.0	/100ml							

Microbac

Analytical QC Summary

Client: Merrillville Conservancy District
Work Order: 10J0627
Project: Turkey Creek

Bacteriology/Microbiology - Quality Control

Batch: B007383 **Prep:** APHA 9222D

Sample ID: MB5A (B007383-BLKA) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	ND	1.0	/100ml							

Sample ID: LCS (B007383-BS1) **Method:** SM 9222D Rev 18 **Prepped:** 10/19/2010 18:12
Source: **Analyzed:** 10/19/2010 18:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Fecal Coliform	Present	1.0	/100ml				100-100			

Microbac

Analytical QC Summary

Client: Merrillville Conservancy District
Work Order: 10J0627
Project: Turkey Creek

Wet Chemistry - Quality Control

Batch: B007398 **Prep:** Aqueous Ammonia Distillation

Nitrogen, Ammonia as N

Sample ID: Blank (B007398-BLK1) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/20/2010 06:53
Source: **Analyzed:** 10/20/2010 12:15

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	ND	0.10	mg/L							

Sample ID: LCS (B007398-BS1) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/20/2010 06:53
Source: **Analyzed:** 10/20/2010 12:17

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	3.85	0.10	mg/L	4.000		96.2	82.8-110			

Sample ID: Matrix Spike (B007398-MS1) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/20/2010 06:53
Source: 10J0581-33 **Analyzed:** 10/20/2010 12:28

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	4.32	0.10	mg/L	4.000	0.120	105	80.8-110			

Sample ID: Matrix Spike (B007398-MS2) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/20/2010 06:53
Source: 10J0627-04 **Analyzed:** 10/20/2010 12:46

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	3.78	0.10	mg/L	4.000	0.0893	92.4	80.8-110			

Sample ID: Matrix Spike Dup (B007398-MSD1) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/20/2010 06:53
Source: 10J0581-33 **Analyzed:** 10/20/2010 12:30

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	3.80	0.10	mg/L	4.000	0.120	91.9	80.8-110	12.9	20	

Sample ID: Matrix Spike Dup (B007398-MSD2) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/20/2010 06:53
Source: 10J0627-04 **Analyzed:** 10/20/2010 12:48

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	3.77	0.10	mg/L	4.000	0.0893	92.1	80.8-110	0.320	20	

10J0627 Bill Walsh
MCD - Merrillville, IN
Turkey Creek
10/19/2010

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Samples Submitted to: [X] 250 West 84th Drive, Merrillville, IN 46410, Tel: 219-769-8378, Fax: 219-769-1664
[ ] 5713 West 85th Street, Indianapolis, IN 46278, Tel: 317-872-1375, Fax: 317-872-1379

Chain of Custody Record

RUSH

Number 99546

Instructions on back

Client Name: MCD	Project	Turnaround Time	Report Type
Address	Location	[ ] Routine (7 working days)	[ ] Results Only [ ] Level II
City, State, Zip	PO #	[X] RUSH* (notify lab)	[ ] Level III [ ] Level III CLP-like
Contact: Chuck	Compliance Monitoring? [ ] Yes(1) [ ] No	(needed by)	[ ] Level IV [ ] Level IV CLP-like
Telephone #	(1)Agency/Program		[ ] EDD

Sampled by (PRINT): James Meyer Sampler Signature: [signature] Sampler Phone #

Send Report via [ ] Mail [ ] Telephone [ ] Fax (fax #) [ ] e-mail (address)

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

	Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analyses → Preservative Types **	NH4	Fecal Coliform							For Lab Use Only
1	6250 Broadway Back River	AQ	X			10/19/10	13:52	1	2	X								10J0627 01
	↓	↓	↓			↓	↓	1	8		X							1
2	Turkey Creek Golf Under Bridge						14:20	1	2	X								02
	↓						↓	1	8		X							1
3	Bridge Turkey Creek/Innbrook Fence						14:32	1	2	X								03
	↓						↓	1	8		X							1
4	Woodhill Lane (manhole)						15:02	1	2	X								04
	↓						↓	1	8		X							1
5	Hendricks by road						15:20	1	2	X								05
	↓	↓	↓			↓	↓	1	8		X							1

Possible Hazard Identification [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive Sample Disposition [ ] Dispose as appropriate [ ] Return [ ] Archive

Comments	Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
	[signature]	10/19/10 1545		
	Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
	Relinquished By (signature)	Date/Time	Received for Lab By (signature)	Date/Time
Sample temperature upon receipt in degrees C = 6°C ±1			[signature]	

rev. 11/04/04

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Samples Submitted to: [ ] 250 West 84th Drive, Merrillville, IN 46410, Tel: 219-769-8378, Fax: 219-769-1664 [ ] 5713 West 85th Street, Indianapolis, IN 46278, Tel: 317-872-1375, Fax: 317-872-1379

Chain of Custody Record

RUSH

Number 99545

Instructions on back

Client Name MCD	Project
Address	Location
City, State, Zip	PO #
Contact Chuck	Compliance Monitoring? [ ] Yes(1) [ ] No
Telephone #	(1)Agency/Program

Turnaround Time: [ ] Routine (7 working days) [X] RUSH* (notify lab) _____ (needed by)

Report Type: [ ] Results Only [ ] Level II [ ] Level III [ ] Level III CLP-like [ ] Level IV [ ] Level IV CLP-like [ ] EDD

Sampled by (PRINT) James Meyer Sampler Signature [signature] Sampler Phone # _____

Send Report via [ ] Mail [ ] Telephone [ ] Fax (fax #) _____ [ ] e-mail (address) _____

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

	Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analyses → Preservative Types ** ↓	Additional Sample								For Lab Use Only
#1	6250 Broadway Back River	AQ	X			10/19/10	13:52	1	U	X								10J0627
2	Turkey Creek Golf under Bridge	↓	↓			↓	14:20	1	U	↓								06
3	Bridge Turkey Creek / Tinybrook Park						14:32	1	U									07
4	Windill Lane (manhole)						15:02	1	U									08
5	Hendricks by Road	↓	↓			↓	15:20	1	U	↓								09
																		10

Possible Hazard Identification [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive

Sample Disposition [ ] Dispose as appropriate [ ] Return [ ] Archive

Comments

Sample temperature upon receipt in degrees C = 6°C OI

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
[signature]	10/19/10 1545		
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received for Lab By (signature)	Date/Time
		[signature]	10/19/10 1545

rev. 11/04/04

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FIELD SERVICE LOG

Client: MCD

Contact: Chuck

Date	10/19/10			
Technician	J. Meyer			
Time IN	1340			
Time OUT	1530			

Travel: (One Way)

- [x] 0 - 20 Miles
- [ ] 20 - 50 Miles
- [ ] 50 - 100
- [ ] 100+

Weather Conditions: Sunny 64°F

Equipment:

- [ ] Baller Type:
- [ ] Auger

Sample Frequency:			Calibration:
	[ ]	Autosampler	Delivery Volume: (ml)
	[ ]	ISCO	
	[ ]	1 bottle	Volume
	[ ]	4 bottle	pumped
	[ ]	8 bottle	pumped (cal)

[ ]	Flow Meter	Level: (ft)
[ ]	Bubbler	Level
[ ]	Ultrasonic	Read
[ ]	Other:	Read(cal)

Comments: Sampling with MCD "EMERGENCY"

APPENDIX I

MCD'S TAFT ST. LIFT STATION WASTEWATER SAMPLING RESULTS

October 21, 2010

Merrillville Conservancy District
6250 Broadway
Merrillville, IN 46410-

Work Order No.: 10J0397

Re: Weekly Analysis

Dear Peggy Mayersky:

Microbac Laboratories, Inc. - Chicagoland Division received 3 sample(s) on 10/13/2010 10:30:00AM for the analyses presented in the following report as Work Order 10J0397.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

Sincerely,
Microbac Laboratories, Inc.

Bill Walsh
Managing Director

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX.219.769.1664

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WORK ORDER SAMPLE SUMMARY

Date: *Thursday, October 21, 2010*

Client: Merrillville Conservancy District
Project: Weekly Analysis
Lab Order: 10J0397

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
10J0397-01	Lift Station 62		10/13/2010 09:15	10/13/2010 10:30:00AM
10J0397-02	Lift Station 61		10/13/2010 09:32	10/13/2010 10:30:00AM
10J0397-03	Lift Station 63		10/13/2010 10:00	10/13/2010 10:30:00AM

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Field Results

Date: *Thursday, October 21, 2010*

Client:	Merrillville Conservancy District	**Work Order:**	10J0397
Client Project:	Weekly Analysis		

Client Sample ID:	Lift Station 62	**Work Order/ID:**	10J0397-01
Sample Description:		**Sampled:**	10/13/2010 09:15
Matrix:	Aqueous	**Received:**	10/13/2010 10:30

Analyses	Result	Units
pH	7.39	pH Units

Client Sample ID:	Lift Station 61	**Work Order/ID:**	10J0397-02
Sample Description:		**Sampled:**	10/13/2010 09:32
Matrix:	Aqueous	**Received:**	10/13/2010 10:30

Analyses	Result	Units
pH	6.97	pH Units

Client Sample ID:	Lift Station 63	**Work Order/ID:**	10J0397-03
Sample Description:		**Sampled:**	10/13/2010 10:00
Matrix:	Aqueous	**Received:**	10/13/2010 10:30

Analyses	Result	Units
pH	7.35	pH Units

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Analytical Results

Date: Thursday, October 21, 2010

Client: Merrillville Conservancy District
Client Project: Weekly Analysis
Matrix: Aqueous

Work Order/ID: 10J0397
Sampled: 10/13/2010
Received: 10/13/2010

Analyte	Sample ID: Lift Station 61 (Concentration (mg/L))	Lift Station 62	Lift Station 63	Method	Quant Limit	Analyzed	Analyst
Carbonaceous Biochemical Oxy	130	130	74	SM5210B Rev 18	2.0	10/14/2010	ZZZ
Nitrogen, Ammonia (As N)	19	22	17	EPA 350.1 Rev 2.0	0.20	10/14/2010	GJM
Phosphorus, Total (As P)	4.0	6.2	3.3	EPA 365.1 Rev 2.0	0.20	10/19/2010	GJM
Total Suspended Solids	44	60	84	SM 2540D Rev 18	1.0	10/15/2010	cstas

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX.219.769.1664

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA	=	Not Analyzed
mg/L	=	Milligrams per Liter (ppm)
mg/Kg	=	Milligrams per Kilogram (ppm)
U	=	Undetected
J	=	Analyte concentration detected between RL and MDL (Metals / Organics)
B	=	Detected in the associated method Blank at a concentration above the routine PQL/RL
D	=	Dilution performed on sample
ND	=	Not Detected at the Reporting Limit (or the Method Detection Limit, if used)
E	=	Value above quantitation range
H	=	Analyte was prepared and/or analyzed outside of the analytical method holding time
I	=	Matrix Interference
R	=	RPD outside accepted recovery limits
S	=	Spike recovery outside recovery limits
Surr	=	Surrogate
DF	=	Dilution Factor

ANALYTE TYPES

A,B	=	Target Analyte
I	=	Internal Standard
M	=	Summation Analyte
S	=	Surrogate
T	=	Tentatively Identified Compound (TIC, concentration estimated)

QC SAMPLE IDENTIFICATIONS

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
OPR	=	Ongoing Precision and Recovery Standard			

CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #100435)
Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)
Indiana DEM approved support laboratory for solid waste and wastewater analyses
Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)
Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)
Kentucky DEP for the chemical analysis of drinking water (lab #90147)
Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)
*New York SDH for the chemical analysis of air and emissions (lab #11909)
North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)
Tennessee DEC for the chemical analysis of drinking water (lab #04017)
Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)

Microbac®

COOLER INSPECTION

Date: Thursday, October 21, 2010

Client Name: Merrillville Conservancy District

Date/Time Received: 10/13/2010 10:30

Work Order Number: 10J0397

Received by: Ken Smith

Checklist completed by: 10/13/2010 10:36:00AM | Ken Smith

Reviewed by: 10/13/2010 | BW

Carrier Name: Microbac

Cooler ID: Default Cooler

Container/Temp Blank Temperature: 6.00°C

After-Hour Arrival?	Yes	☐	No	☑		
Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present	☐
Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	Not Present	☑
Custody seals intact on sample containers?	Yes	☐	No	☐	Not Present	☑
COC present?	Yes	☑	No	☐		
COC included sufficient client identification?	Yes	☑	No	☐		
COC included sufficient sample collector information?	Yes	☑	No	☐		
COC included a sample description?	Yes	☑	No	☐		
COC agrees with sample labels?	Yes	☑	No	☐		
COC identified the appropriate matrix?	Yes	☑	No	☐		
COC included date of collection?	Yes	☑	No	☐		
COC included time of collection?	Yes	☑	No	☐		
COC identified the appropriate number of containers?	Yes	☑	No	☐		
Samples in proper container/bottle?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		
All samples received within holding time?	Yes	☑	No	☐		
If the samples are preserved, are the preservatives identified?	Yes	☑	No	☐		
COC included the requested analyses?	Yes	☑	No	☐		

If No, adjusted by? _____

COC signed when relinquished and received?	Yes	☑	No	☐		
Samples received on ice?	Yes	☑	No	☐		
Samples properly preserved?	Yes	☑	No	☐		
Voa vials for aqueous samples have zero headspace?	Yes	☐	No	☐	No VOA vials submitted	☑

Cooler Comments:

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.

Sample ID	Client Sample ID	Comments
10J0397-01	Lift Station 62	
10J0397-02	Lift Station 61	
10J0397-03	Lift Station 63	

Analytical QC Summary

Client: Merrillville Conservancy District
Work Order: 10J0397
Project: Weekly Analysis

Wet Chemistry - Quality Control

Batch: B007159 **Prep:** Aqueous Ammonia Distillation

Nitrogen, Ammonia as N

Sample ID: Blank (B007159-BLK1) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/14/2010 05:30
Source: **Analyzed:** 10/14/2010 11:13

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	ND	0.10	mg/L							

Sample ID: LCS (B007159-BS1) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/14/2010 05:30
Source: **Analyzed:** 10/14/2010 11:20

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	3.51	0.10	mg/L	4.000		87.6	82.8-110			

Sample ID: Matrix Spike (B007159-MS1) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/14/2010 05:30
Source: 10J0408-02 **Analyzed:** 10/14/2010 11:43

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	3.70	0.10	mg/L	4.000	0.0930	90.1	80.8-110			

Sample ID: Matrix Spike Dup (B007159-MSD1) **Method:** EPA 350.1 Rev 2.0 **Prepped:** 10/14/2010 05:30
Source: 10J0408-02 **Analyzed:** 10/14/2010 11:45

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Nitrogen, Ammonia (As N)	3.89	0.10	mg/L	4.000	0.0930	95.0	80.8-110	5.14	20	

Batch: B007175 **Prep:** SM-5210B 18th Ed

Carbonaceous Biochemical Oxygen Demand

Sample ID: Blank (B007175-BLK1) **Method:** SM5210B Rev 18 **Prepped:** 10/14/2010 09:19
Source: **Analyzed:** 10/14/2010 09:19

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Carbonaceous Biochemical Oxygen Demand	ND	2.0	mg/L							

Sample ID: LCS (B007175-BS1) **Method:** SM5210B Rev 18 **Prepped:** 10/14/2010 09:19
Source: **Analyzed:** 10/14/2010 09:19

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Carbonaceous Biochemical Oxygen Demand	150		mg/L	198.0		75.6	55.2-125			

Sample ID: Duplicate (B007175-DUP1) **Method:** SM5210B Rev 18 **Prepped:** 10/14/2010 09:19
Source: 10J0423-01 **Analyzed:** 10/14/2010 09:19

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Carbonaceous Biochemical Oxygen Demand	21.4	2.0	mg/L		22.3			4.39	20	

Batch: B007230

Analytical QC Summary

Client: Merrillville Conservancy District
Work Order: 10J0397
Project: Weekly Analysis

Wet Chemistry - Quality Control

Batch: B007230

Total Suspended Solids

Sample ID: Blank (B007230-BLK1) **Method:** SM 2540D Rev 18 **Prepped:** 10/15/2010 10:10
Source: **Analyzed:** 10/15/2010 10:13

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Total Suspended Solids	ND	1.0	mg/L							

Sample ID: LCS (B007230-BS1) **Method:** SM 2540D Rev 18 **Prepped:** 10/15/2010 10:10
Source: **Analyzed:** 10/15/2010 10:13

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Total Suspended Solids	102	1.0	mg/L	100.0		102	90-110			

Sample ID: Duplicate (B007230-DUP1) **Method:** SM 2540D Rev 18 **Prepped:** 10/15/2010 10:10
Source: 10J0510-05 **Analyzed:** 10/15/2010 10:13

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Total Suspended Solids	1400	1.0	mg/L		1440			2.82	16.4	

Batch: B007357 **Prep:** Aqueous Phosphorous Digestion

Total Phosphorus as P

Sample ID: Blank (B007357-BLK1) **Method:** EPA 365.1 Rev 2.0 **Prepped:** 10/19/2010 09:24
Source: **Analyzed:** 10/19/2010 11:34

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Phosphorus, Total (As P)	ND	0.20	mg/L							

Sample ID: LCS (B007357-BS1) **Method:** EPA 365.1 Rev 2.0 **Prepped:** 10/19/2010 09:24
Source: **Analyzed:** 10/19/2010 11:35

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Phosphorus, Total (As P)	1.35	0.20	mg/L	1.303		104	90-110			

Sample ID: Matrix Spike (B007357-MS1) **Method:** EPA 365.1 Rev 2.0 **Prepped:** 10/19/2010 09:24
Source: 10J0410-02 **Analyzed:** 10/19/2010 11:42

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Phosphorus, Total (As P)	2.11	0.20	mg/L	1.303	0.757	104	90-110			

Sample ID: Matrix Spike Dup (B007357-MSD1) **Method:** EPA 365.1 Rev 2.0 **Prepped:** 10/19/2010 09:24
Source: 10J0410-02 **Analyzed:** 10/19/2010 11:43

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Phosphorus, Total (As P)	2.15	0.20	mg/L	1.303	0.757	107	90-110	1.73	20	

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Samples Submitted to: [x] 250 West 84th Drive, Merrillville, IN 46410, Tel: 219-769-8378, Fax: 219-769-1664

[ ] 5713 West 85th Street, Indianapolis, IN 46278, Tel: 317-872-1375, Fax: 317-872-1379

Chain of Custody Record

Number

Instructions on back

10J0397 Bill Walsh
MCD - Merrillville, IN
MCD - Weekly Sampling

10/13/2010

Client Name	Merrillville Conservancy District	Project	Weekly Split
Address	6250 Broadway	Location	Lift Stations 61/62/63
City, State, Zip	Merrillville, Indiana 46410	PO #	
Contact	Christine Savarese	Compliance Monitoring?	[X] Yes [ ] No
Telephone #	219-980-5220	(1)Agency/Program	WREP

Turnaround Time: [X] Routine (7 working days); [ ] RUSH* (notify lab) _____ (needed by)

Report Type: [ ] Results Only; [ ] Level II; [ ] Level III; [ ] Level III CLP-like; [ ] Level IV; [ ] Level IV CLP-like; [ ] EDD

Sampled by (PRINT) Tim Ho Sampler Signature [signature] Sampler Phone # _____

Send Report via [ ] Mail [ ] Telephone [ ] Fax (fax #) _____ [ ] e-mail (address) _____

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analyses → Preservative Types ** ↓	CBOD/TSS	Ammonia/T Phos.							For Lab Use Only 10J0397
Lift Station 62	Aq		X	N	10/13/10	915	1	U	X								01
pH 7.39	Aq		X	N	↓	↓	1	2		X							↓
Lift Station 61	Aq		X	N	↓	932	1	U	X								02
pH 6.97	Aq		X	N	↓	↓	1	2		X							↓
Lift Station 63	Aq		X	N	↓	1000	1	U	X								03
pH 7.35	Aq		X	N	↓	↓	1	2		X							↓

Possible Hazard Identification [ ] Hazardous [X] Non-Hazardous [ ] Radioactive

Sample Disposition [X] Dispose as appropriate [ ] Return [ ] Archive

Comments	Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
	[signature]	10/13/10 1030		
	Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
	Relinquished By (signature)	Date/Time	Received for Lab By (signature)	Date/Time
Sample temperature upon receipt in degrees C =			[signature]	10/13/10 1030

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FIELD SERVICE LOG

Client: BCD

Contact:

Date	10/13/10			
Technician	Tw. Ha			
Time IN	845			
Time OUT	1015			

Travel: (One Way)

- [x] 0 - 20 Miles
- [ ] 20 - 50 Miles
- [ ] 50 - 100
- [ ] 100+

Weather Conditions:

Equipment:

- [ ] Bailer
  - Type:
- [ ] Auger

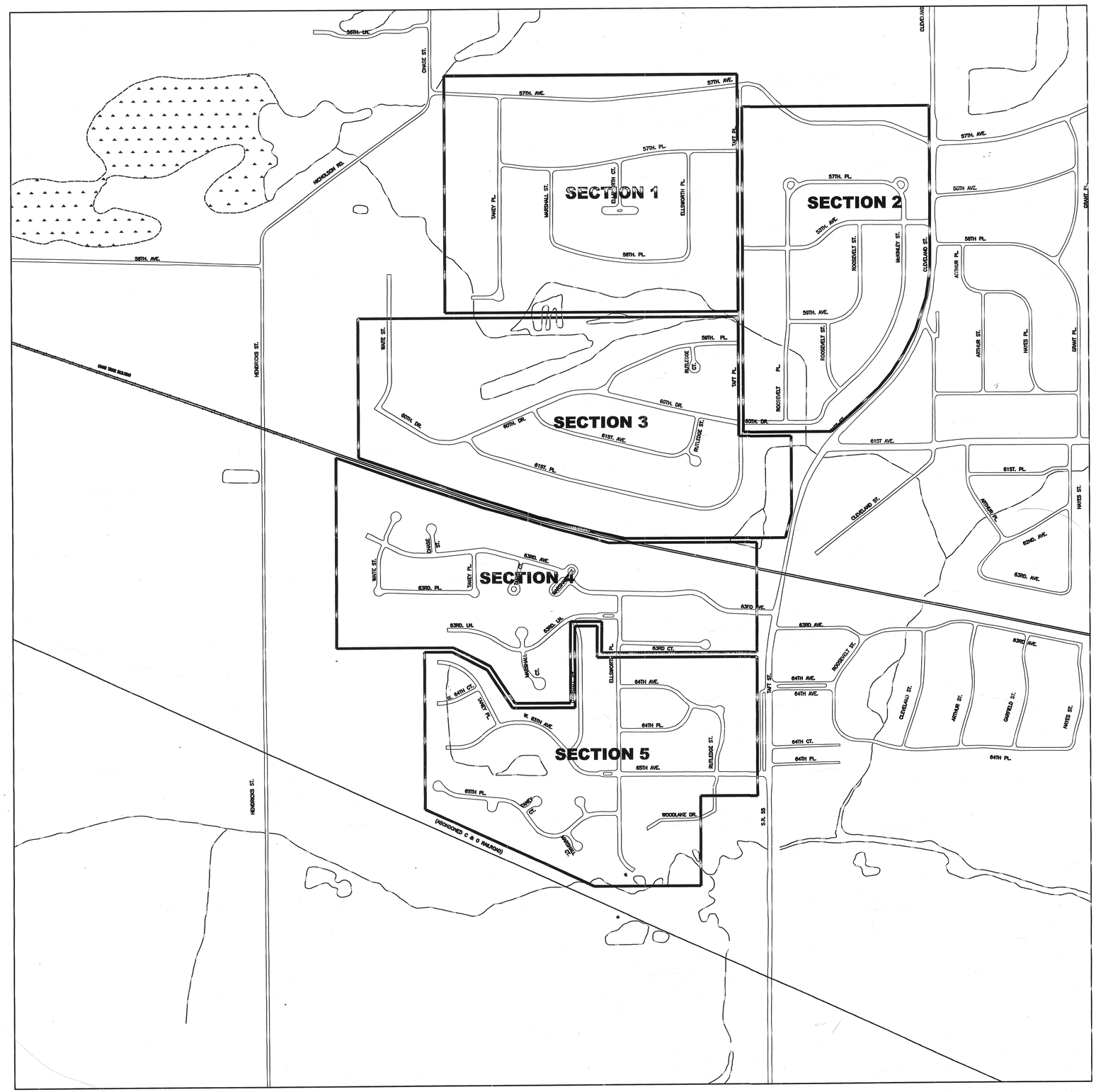
Sample Frequency:			Calibration:
		Autosampler	Delivery Volume: (ml)
		ISCO	
		1 bottle	Volume :
		4 bottle	pumped:
		8 bottle	pumped (cal):

	Flow Meter	Level: (ft)
	Bubbler	Level:
	Ultrasonic	Read:
	Other:	Read(cal):

Comments:

APPENDIX J

MCD'S I/I REDUCTION PROGRAM
CONTRACT PLANS, RESULTS, AND RECOMMENDATIONS



GRAPHIC SCALE

0 150 300 600

SCALE: 1"=300'

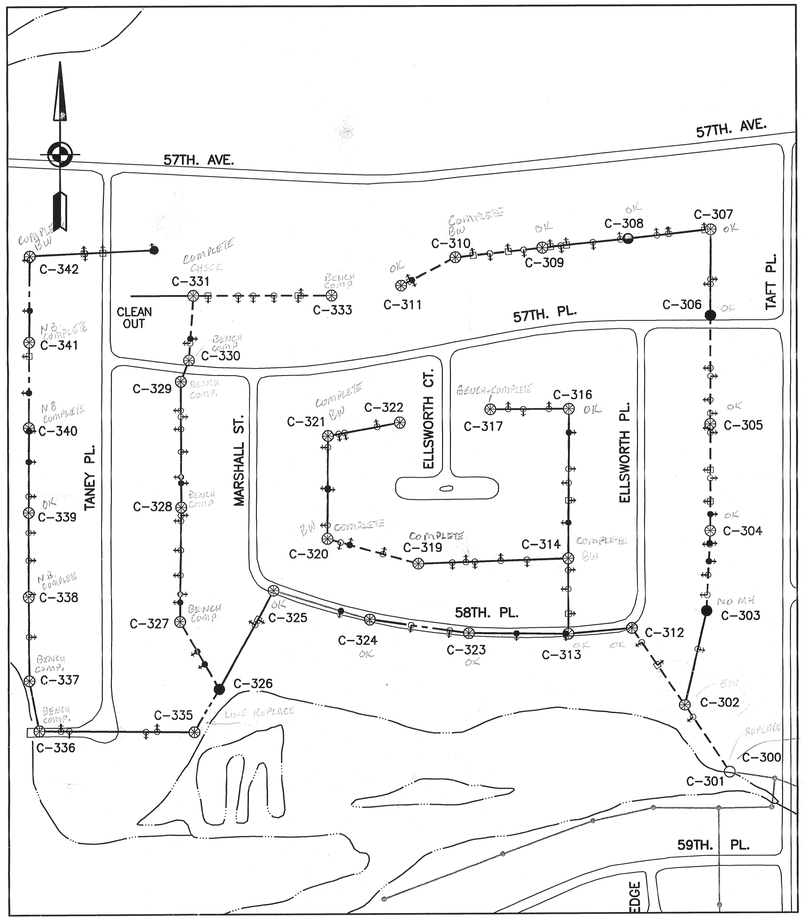
COMMUNITY UTILITIES SERVICE AREA
SANITARY SEWER REHABILITATION PROJECT

KEY MAP

JOB NO.	20016400	DRAWN	RWP	SCALE:	1"=400'
DATE	1/03	DESIGNED		APPROVED	

AIRPORTS • ARCHITECTURE • ENVIRONMENTAL • TRANSPORTATION
R.W. ARMSTRONG
2801 S. PENNSYLVANIA STREET
INDIANAPOLIS, INDIANA 46225 (317) 788-0461

MANHOLE BENCH PRINT



PIPE REHABILITATION

Downstream MH	Upstream MH	Pipe Material	Feet of 18" pipe	Feet of 15" pipe	Feet of 12" pipe	Feet of 10" pipe	Feet of 8" pipe	Line	Replace	Point Repair Location	Service Connection Locations	Connection Repair: Grout	Connection Repair: Replace	Protruding Tap
C-300	C-301	Concrete		127.0					127.0				X	
C-301	C-302	Concrete		224.0				224.0			41.0	X		X
C-302	C-303	Concrete			272.0						47.5	X		X
C-302	C-312	Concrete		263.0				263.0			48.8	X		
											125.8	X		
C-325	C-326	Concrete			315.0						205.8	X		X
											223.0	X		
C-326	C-327	Concrete				219.0		219.0			97.0			
											138.0			
C-326	C-335	Concrete			139.0				139.0				X	
C-330	C-331	Concrete				181.0		181.0			119.0			
											123.0			X
C-329	C-330	Concrete				63.0		63.0						
C-335	C-336	Concrete			436.0						61.0			X
											84.0			X
											289.0	X		X
											330.0			X
C-310	C-311	Concrete			170.0			170.0			29.0	X		
											34.0			
C-331	C-333	Concrete				387.0		387.0			86.5	X		X
											93.5	X		
											161.0	X		X
											219.0	X		X
											261.0			X
											345.0	X		
C-331	Cleanout	Concrete				91.0		91.0			41.0	X		
											93.0	X		
C-309	C-310	Concrete			245.0			245.0			50.0	X		
											97.0	X		X
											149.0	X		
											192.0	X		X
C-308	C-309	Concrete			241.0						23.0	X		
											52.5	X		X
											68.3	X		
											142.2	X		X
											218.9	X		X
C-307	C-308	Concrete			232.0						80.6	X		X
											111.8	X		X
											116.4	X		
											215.0	X		X
C-305	C-306	Concrete			303.0			303.0			147.0			
											170.0			
											236.0			
											274.0			
C-304	C-305	Concrete			300.0			300.0			11.0			X
											23.0			X
											128.0	X		
											151.0			X
											216.0	X		
											252.0			
C-303	C-304	Concrete			222.0			222.0			35.0			
											38.0			X
											85.0			
											123.0			X
											221.0			
											223.0			X
C-319	C-320	Concrete				263.0		263.0			38.0			
											64.0			
											160.0			
C-323	C-324	Concrete		280.0					280.0		117.0	X	X	
											226.0	X	X	
C-313	C-314	Concrete			210.0						33.0			X
											86.0	X		X
											153.0	X		
C-314	C-316	Concrete			419.0						65.0			
											167.0	X		X
											206.0			X
											255.0	X		
											318.0			
C-340	C-342	Concrete				477.0			477.0		9.0	X		X
											150.0			
											278.0	X		
											380.0			
C-342	C-343	Concrete									6.0			
											144.0	X		
											194.0	X		
											197.0	X		
Total				894	3,504	1,681	0	2,931	1,023			41	4	31

MANHOLE REHABILITATION

MH #	Manhole Wall Construction Material	Manhole Surface Type	Manhole Chimney Material	Manhole Depth (ft)	Reseal Casting and Seal	Install External Chimney Seal	Repair Service Connection in Manhole	Line Manhole	Reseal Bench	Replace Manhole	Other
C-300	Block	Gravel	Concrete	9.1	X	X					
C-301	Block	Turf	Concrete	8.3						X	
C-302	Block	Turf	Concrete	5.7		X					
C-303		Turf	Concrete								NFI
C-304	Block	Turf	Concrete	8.8		X					
C-305	Block	Turf	Concrete	8.8		X					
C-306	Block	Turf	Concrete	8.0							
C-307	Block	Pavement	Concrete	9.7		X					
C-308	Block	Turf	Concrete	10.0							
C-309	Block	Turf	Concrete	9.9	X	X					
C-310	Brick	Turf	Concrete	10.1		X					
C-311	Block	Turf	Concrete	8.6		X					
C-312	Block	Turf	Concrete	7.9	X			X			
C-313	Block	Turf	Concrete	7.3		X					
C-314	Block	Turf	Concrete	9.8		X			X		
C-316	Block	Turf	Concrete	8.4		X			X		
C-317	Block	Turf	Concrete	9.3		X					
C-319	Block	Turf	Concrete	11.5		X	X				
C-320	Block	Gravel	Concrete	8.5		X					
C-321	Block	Turf	Concrete	7.6		X					
C-322	Block	Turf	Concrete	7.8		X					
C-323	Block	Turf	Concrete	9.8		X					
C-324	Concrete	Turf	Concrete	10.5		X					
C-325	Block	Turf	Concrete	10.6					X		
C-326	Block	Turf	Concrete	4.1							
C-327	Block	Turf	Concrete	5.6		X					Remove Sump Pump Connection
C-328	Block	Turf	Concrete	12.1							
C-329	Block	Turf	Concrete	10.0		X					
C-330	Block	Turf	Concrete	10.0		X					
C-331	Block	Turf	Concrete	11.3				X	X		
C-333	Block	Turf	Concrete	9.0		X					
C-335	Block	Turf	Concrete	3.6				X			
C-336	Block	Turf	Concrete	3.7				X	X		
C-337	Block	Turf	Concrete	5.0		X					
C-338	Block	Pavement	Concrete	6.0		X					
C-339	Block	Turf	Concrete	4.3		X			X		
C-340	Block	Turf	Concrete	5.1		X			X		
C-342	Block	Turf	Concrete	9.0		X			X		
C-343	Block	Turf	Concrete								
Total					3	27	1	4	8	1	

* NFI = NEEDS FURTHER INSPECTION

LEGEND

PIPE
- LINING
- REPLACEMENT
- NO CHANGE

MANHOLES
- REPAIR
- REPLACEMENT
- NO CHANGE

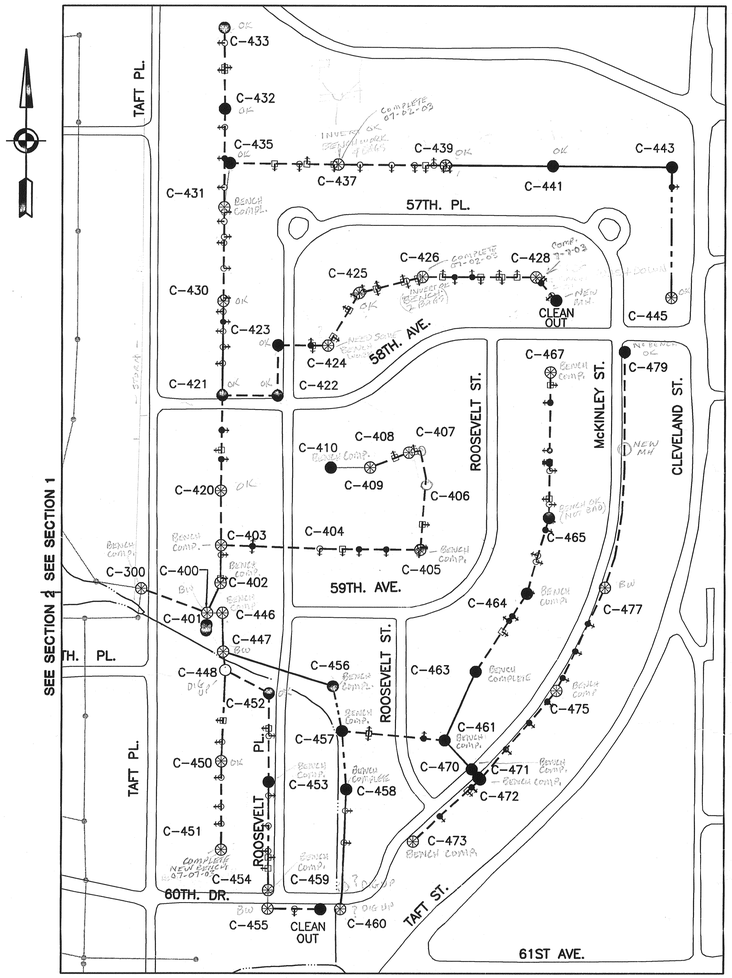
SERVICES
- FACTORY
- BREAK-IN
- PROTRUDING

COMMUNITY UTILITIES SERVICE AREA
SANITARY SEWER REHABILITATION PROJECT

SECTION 1

JOB NO.	20016400	DRAWN	RWP	SCALE:	1"=200'
DATE	1/03	DESIGNED		APPROVED	

R.W. ARMSTRONG
AIRPORTS • ARCHITECTURE • ENVIRONMENTAL • TRANSPORTATION
EST. 1961
2801 S. PENNSYLVANIA STREET
INDIANAPOLIS, INDIANA 46225 (317) 786-0461



LEGEND

PIPE
- LINING
- REPLACEMENT
- NO CHANGE

MANHOLES
- REPAIR
- REPLACEMENT
- NO CHANGE

SERVICES
- FACTORY
- BREAK-IN
- PROTRUDING

PIPE REHABILITATION

Downstream MH	Upstream MH	Pipe Material	Feet of 18" pipe	Feet of 15" pipe	Feet of 12" pipe	Feet of 10" pipe	Feet of 8" pipe	Line	Replace	Point Repair Location	Service Connection Locations	Connection Repair: Grout	Connection Repair: Replace	Protruding Tap
C-432	C-433	Concrete				221.0		221.0			41.4	X		X
											108.1	X		
											114.6	X		
C-431	C-432	Concrete				275.0		275.0			51.0			X
											139.0			
											218.6	X		X
C-430	C-431	Concrete				258.0		258.0			14.4	X		X
											39.0			X
											81.0	X		X
											98.0			X
											169.0	X		X
											250.0			X
C-420	C-421	Concrete				264.0		264.0		216.0	96.0			
											152.0	X		
											177.0			
C-403	C-420	Concrete				153.0		153.0			11.5	X		X
											42.6	X		X
											56.5	X		X
C-400	C-402	Concrete			90.0				90.0					
C-300	C-400	Concrete		197.0				197.0						
C-435	C-437	VCP					303.0	303.0			12.0	X		
											87.7	X		
											109.1	X		X
											177.6	X		
C-437	C-439	VCP				317.0		317.0			6.0	X		
											56.0	X		
											77.0	X		X
											87.0	X		X
											151.0	X		X
											239.0	X		X
C-443	C-445	VCP					362.0		362.0		55.0		X	
C-421	C-430	Concrete									29.0			
											58.0			
											85.0			
											128.0			
											173.0			
C-421	C-422	VCP				155.0		155.0		63.0				
C-422	C-423	VCP					140.0	140.0						
C-423	C-424	VCP					139.0	139.0			42.5	X		
											49.0			
C-424	C-425	VCP					171.0	171.0		110.0	52.2	X		X
											55.0	X		X
											143.0	X		
C-425	C-426	VCP					182.0	182.0			14.0	X		X
											46.0			
											53.3	X		X
											128.0	X		
											133.5	X		X
											169.7	X		
C-426	C-428	VCP					318.0	318.0			53.2	X		
											96.0	X		
											102.5	X		
											154.9	X		
											179.0			
											228.0			
											262.1	X		
C-428	Cleanout	VCP					85.0	85.0			19.2	X		X
											64.0			X
											72.0	X		
C-402	C-403	Concrete				103.0					27.0	X		
											92.0	X		X
C-403	C-404	VCP					299.0	299.0			23.4			X
											211.0			
											212.0			
C-404	C-405	VCP					258.0	258.0			4.4	X		
											95.0			
											171.0			
											217.1	X		
C-405	C-406	VCP					200.0	200.0			129.0	X		
											192.0	X		X
											195.0	X		
C-406	C-407	VCP					78.0			6.0				
C-407	C-408	VCP					32.0	32.0			14.0	X		
C-408	C-409	VCP					116.0	116.0			74.6	X		
C-448	C-450	VCP					253.0		253.0		53.0		X	X
											112.0		X	
C-453	C-454	VCP			301.0				301.0		59.0		X	
											90.0		X	
											108.0		X	X
											178.0		X	X
											263.0		X	X
C-457	C-456	VCP					126.0		126.0					
C-458	C-457	Concrete		162.0					162.0					
C-459	C-458	Concrete		288.0							61.0	X		X
											149.0	X		X
											?			
C-459	C-460	VCP							45.0					
C-465	C-467	Concrete					405.0	405.0		47.0	36.0	X		
											84.0			
											217.0			
											248.0			
											251.0	X		
											254.0			
											273.0	X		X
											352.0	X		
											368.0	X		X
C-464	C-465	Concrete					218.0	218.0			6.3	X		
											35.0			
											109.4	X		
											126.7	X		X
											212.2	X		X
C-463	C-464	Concrete					259.0	259.0			78.0			
											90.0			
											126.0	X		
											146.0			

MANHOLE REHABILITATION

MH #	Manhole Wall Construction Material	Manhole Surface Type	Manhole Chimney Material	Manhole Depth (ft)	Reset Casting and Seal	Install External Chimney Seal	Repair Service Connection In Manhole	Line Manhole	Reset Bench	Replace Manhole	Other
C-455	Block	Pavement	Concrete	5.7	X			X			
C-460	Block	Pavement	Concrete	4.1							
C-452	Block	Turf	Concrete	7.4							
C-453	Block	Turf	Concrete	6.4							
C-454	Block	Turf	Concrete	5.7					X		
C-404	Block	Pavement	Concrete	5.3					X		
C-405	Block	Pavement	Concrete	6.3		X					
C-406	Block	Pavement	Concrete	6.7							
C-407	Block	Pavement	Concrete	7.9							
C-408	Block	Turf	Concrete	6.8				X			
C-409	Block	Turf	Concrete	3.8	X			X			Remove Tree
C-410	Block	Turf	Brick	2.3							
C-403	Block	Turf	Concrete	11.1		X					
C-421	Block	Turf	Concrete	9.3							
C-422	Block	Turf	Concrete	8.9							
C-423	Block	Turf	Concrete	9.1							
C-459	Block	Turf	Concrete	4.4							
	0	Turf	Concrete	2.3							
C-473	Block	Turf	Concrete	3.3				X			
C-461	Block	Turf	Concrete	7.3							
C-470	Concrete	Turf	Concrete	NA							Sanitary line in stormwater manhole
C-471	Concrete	Turf	Concrete	6.0							
C-472	Block	Turf	Concrete	6.0							
C-475	Concrete	Turf	Concrete	7.1		X					
C-477	Concrete	Turf	Concrete	5.5					X		
C-445	Block	Turf	Concrete	2.2							
C-467	Block	Pavement	Concrete	7.5		X					
C-465	0	Pavement	Concrete								NFI
C-464	Block	Turf	Concrete	8.4							
C-463	Block	Turf	Concrete	8.6							
C-457	Block	Turf	Concrete	6.9							
C-458	Concrete	Turf	Concrete	5.1							
C-456	Block	Turf	Concrete	8.1							
C-424	Block	Turf	Concrete	11.4		X			X		
C-428	Block	Turf		5.6		X			X		
C-426	Block	Turf	Concrete	13.6				X	X		
C-425	Block	Turf	Concrete	14.5				X			
C-448	Block	Turf	Concrete	8.3						X	
C-447	Block	Turf	Concrete	9.4		X			X		
C-300	Block	Gravel	Concrete	9.1	X	X					
C-400	Block	Turf	Concrete	9.3				X	X		
C-446	Block	Turf	Concrete	9.4				X			
C-401	0	Turf	Brick								Wet Well
C-402	Block	Turf	Concrete	10.0		X					
C-437	Block	Pavement	Concrete	8.8			X	X	X		
C-439	Block	Turf	Brick	8.2				X	X		
C-441	0	Turf	Concrete								NFI
C-443	Block	Turf	Concrete	2.9							
C-451	Concrete	Pavement	Concrete	7.2		X					
C-450	Concrete	Pavement	Concrete	9.3		X					
C-420	Block	Pavement	Concrete	12.0							
C-430	Block	Pavement	Concrete	8.7		X					
C-431	Block	Turf	Concrete	8.6		X					
C-435	Block	Turf	Concrete	7.8							
C-432	Block	Turf	Concrete	9.0							
C-433	Block	Turf	Concrete	9.7							Remove Sump Pump Connection
C-479	Concrete	Turf	Concrete								
Total					3	13	1	10	10	1	

* NFI = NEEDS FURTHER INSPECTION

PIPE REHABILITATION

Downstream MH	Upstream MH	Pipe Material	Feet of 18" pipe	Feet of 15" pipe	Feet of 12" pipe	Feet of 10" pipe	Feet of 8" pipe	Line	Replace	Point Repair Location	Service Connection Locations	Connection Repair: Grout	Connection Repair: Replace	Protruding Tap
C-461	C-471	Concrete		138.0				138.0						
C-457	C-461	Concrete		288.0				288.0			59.0			
											213.0	X		X
											215.0			
C-477	C-479	VCP					480.0	480.0		160.0				
C-475	C-477	VCP					316.0	316.0			110.0			
											194.0			
											276.0			
C-472	C-475	VCP					324.0	324.0			39.0			
											116.0			
											214.0			
C-472	C-473	VCP					309.0	309.0			103.0			
											209.0	X		
											302.0			
C-448	C-452	VCP		138.0				138.0						
C-452	C-453	VCP			244.0			244.0			127.1	X		X
											148.0	X		
C-455	Cleanout	VCP					105.0	105.0			72.0	X		X
C-450	C-451	VCP					254.0	254.0			71.8	X		X
											120.5	X		X
											202.4	X		X
Total				1,211	635	1,746	5,732	7,561	1,339			66	8	43

COMMUNITY UTILITIES SERVICE AREA
SANITARY SEWER REHABILITATION PROJECT

SECTION 2

JOB NO.	20016400	DRAWN	RWP	SCALE:	1"=200'
DATE	1/03	DESIGNED		APPROVED	

R.W. ARMSTRONG
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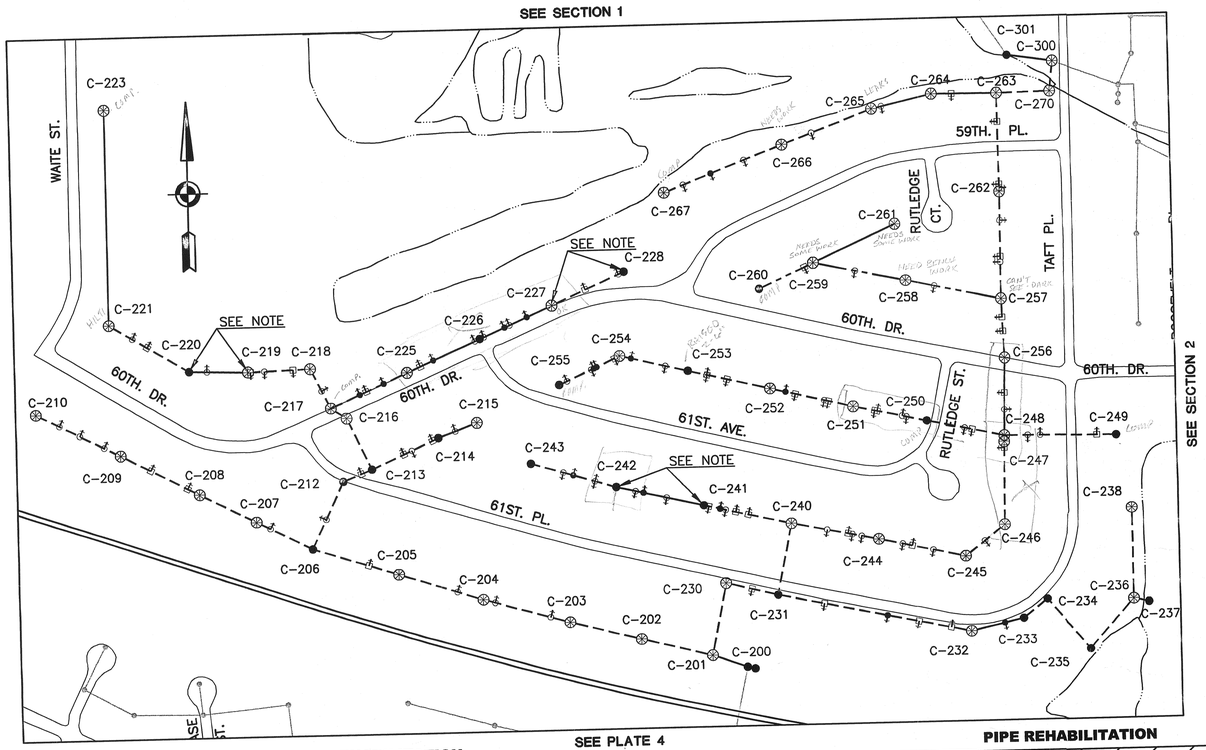

LEGEND

PIPE

- LINING
- REPLACEMENT
- NO CHANGE

MANHOLES

- REPAIR
- REPLACEMENT
- NO CHANGE

SERVICES

- FACTORY
- BREAK-IN
- PROTRUDING

NOTE:
CAMERA BLOCKED BY PROTRUSION, THE REST OF THE SEGMENT UNFILMED BECAUSE OF THIS PROTRUSION.

MANHOLE REHABILITATION

MH #	Manhole Wall Construction Material	Manhole Surface Type	Manhole Chimney Material	Manhole Depth (ft)	Reset Casting and Seal	Install External Chimney Seal	Repair Service Connection in Manhole	Line	Reset Bench	Replace Manhole	Other
C-230	Block	Turf	Concrete	13.0	X						
C-231	Block	Turf	Concrete	10.9							
C-232	Concrete	Turf	Concrete	8.4				X			
C-249	Block	Turf	Concrete	8.4							
C-236	Concrete	Turf	Concrete	3.8					X		
C-238	Concrete	Turf	Concrete	3.7					X		
C-201	Block	Pavement	Concrete	10.6	X				X		
C-202	Concrete	Pavement	Concrete	15.3					X		
C-203	Concrete	Turf	Concrete	14.8					X		
C-204	Concrete	Turf	Brick	15.0	X				X		
C-205	Concrete	Turf	Concrete	15.0				X			
C-300	Block	Gravel	Concrete	9.1	X	X					
C-270	Block	Turf	Concrete	10.3				X			
C-263	Block	Turf	Concrete	8.6		X					
C-264	Concrete	Turf	Concrete	5.7		X					
C-265	Block	Turf	Concrete	5.9				X	X		
C-266	Block	Turf	Concrete	7.0		X	X		X		
C-267	Block	Turf	Concrete	5.7	X						
C-227	Concrete	Turf	Concrete	7.0	X				X		
C-226	0	Turf	Concrete								NFI
C-225	Concrete	Turf	Concrete	8.0							
C-217	Concrete	Turf	Concrete						X		
C-216	Concrete	Turf	Concrete	8.8					X		
C-218	Concrete	Turf	Concrete	6.8					X		
C-219	Concrete	Turf	Concrete	5.5		X			X		
C-208	Concrete	Turf	Concrete	10.3					X		
C-209	Concrete			9.9			X		X		
C-220											NFI
C-210	Concrete	Turf	Concrete	8.7					X		
C-221	Concrete	Turf	Concrete	5.2					X		
C-207	Concrete	Turf	Concrete	12.6	X						
C-206	Concrete	Turf	Concrete	15.4							
C-212	Concrete	Turf	Concrete	11.8							
C-213	Concrete	Turf	Concrete	12.7					X		
C-214	Concrete	Turf	Concrete	11.8							
C-255	Concrete			8.6	X				X		
C-215	Concrete	Turf	Concrete	12.0					X		
C-243	Concrete	Turf	Concrete	11.2							
C-242	Concrete	Pavement	Concrete	11.7							NFI
C-241	0	Turf	Concrete								
C-240	Block	Turf	Concrete	12.7			X		X		
C-244	Concrete	Pavement	Concrete	10.4					X		
C-245	Concrete	Turf	Concrete	10.0			X				
C-246	Block	Turf	Concrete	10.4			X				
C-247	0	Turf	Concrete			X					Lift Station
C-248	Block	Turf	Concrete	10.8	X				X		
C-256	Concrete	Turf	Concrete	12.4	X				X		
C-262	Concrete	Turf	Concrete	13.8		X					
C-257	Concrete			15.0					X		
C-254	Concrete	Turf	Concrete	10.0	X	X			X		
C-253	0	Turf	Concrete								NFI
C-252	Block	Turf	Concrete	12.7					X		
C-251	Concrete	Turf	Brick	12.6	X	X			X		
C-250	Block	Turf	Brick	11.6							
C-258	Block	Turf	Brick	12.3					X		
C-261	Concrete	Turf	Concrete	9.3	X	X					
C-259	Concrete	Turf	Concrete	10.7		X					
C-260	Concrete	Turf	Concrete	9.8							NFI
C-228	0	Turf	Concrete								
C-223	Concrete	Turf	Concrete			X					
Total					13	12	5	4	29	0	

* NFI = NEEDS FURTHER INSPECTION

PIPE REHABILITATION

Downstream MH	Upstream MH	Pipe Material	Feet of 18" pipe	Feet of 15" pipe	Feet of 12" pipe	Feet of 10" pipe	Feet of 8" pipe	Line	Replace	Point Repair Location	Service Connection Locations	Connection Repair: Grout	Connection Repair: Replace	Protruding Tap
C-230	C-231	VCP		149.0				149.0			75.0	X		
C-231	C-232	VCP		554.0				554.0		336.0	58.0	X		
											150.0	X		
											240.0			
											420.0	X		
C-231	C-240	VCP		203.0				203.0						
C-233	C-234	VCP				84.0		84.0						
C-234	C-235	VCP					184.0	184.0						
C-235	C-236	VCP					184.0	184.0						
C-236	C-238	VCP					254.0	254.0						
											10.0	X		
											12.0	X		
C-201	C-202	VCP			205.0			205.0						
C-201	C-230	VCP		204.0				204.0			127.0	X		X
C-202	C-203	VCP			206.0			206.0						
C-203	C-204	VCP			248.0			248.0			34.0	X		X
											194.0	X		X
C-204	C-205	VCP			251.0			251.0			171.0	X		X
C-205	C-206	VCP			253.0			253.0			163.0	X		
C-270	C-300	VCP				81.0		81.0		19.5				
C-263	C-264	VCP				-					57.0	X		
C-263	C-270	VCP		183.0				183.0			29.0	X		X
C-264	C-265	VCP				173.0				1.0	89.0	X		X
C-265	C-266	VCP				268.0		268.0			58.0	X		X
C-266	C-267	VCP					355.0	355.0			141.0			
											241.0	X		X
C-227	C-228	VCP					221+	221.0			103.0	X		
											205.0	X		X
C-226	C-227	VCP					224.0				77.0			
											130.0	X		X
											145.0			
											209.0	X		X
C-225	C-226	VCP					224.0	224.0			15.0	X		X
											143.0			
											183.0	X		
C-217	C-225	VCP					234.0	234.0			72.0			
											125.0	X		
											140.0			
C-217	C-218	VCP				126.0		126.0			69.0	X		X
C-218	C-219	VCP					176.0	-	-		7.0	X		
											46.0	X		X
											126.0	X		
C-219	C-220	VCP					50+	165.0			50.0	X		X
C-208	C-209	VCP			246.0			246.0			94.0			
											209.0	X		
C-209	C-210	VCP			265.0			265.0			73.0	X		X
											136.0	X		X
											211.0	X		X
C-220	C-221	VCP					259.0	259.0			76.0	X		X
											123.0	X		
C-207	C-208	VCP			179.0			179.0						
C-206	C-207	VCP			174.0			174.0			43.0	X		
C-206	C-212	VCP			208.0			208.0			116.0	X		

PIPE REHABILITATION

Downstream MH	Upstream MH	Pipe Material	Feet of 18" pipe	Feet of 15" pipe	Feet of 12" pipe	Feet of 10" pipe	Feet of 8" pipe	Line	Replace	Point Repair Location	Service Connection Locations	Connection Repair: Grout	Connection Repair: Replace	Protruding Tap
C-212	C-213	VCP			87.0			87.0			32.0	X		
C-213	C-214	VCP					208.0	208.0			18.0	X		
											82.0	X		X
											106.0	X		
C-213	C-216	VCP				159.0		159.0						
C-214	C-215	VCP					121.0		6.0		6.5			X
C-242	C-243	VCP				251.0		251.0	2.0		94.0	X		X
											123.0			
											186.0	X		X
											187.0			X
C-241	C-242	VCP				250.0					55.0	X		X
											78.0			
											144.0	X		X
C-240	C-241	VCP				163.0		163.0	91.0		14.0	X		
											40.0			
											62.0	X		X
C-240	C-241	VCP				163.0		163.0	91.0		14.0	X		
											40.0			
											62.0	X		X
											91.0	X		
											127.0	X		
C-240	C-244	VCP		249.0				249.0			49.0	X		X
											76.0	X		X
											88.0	X		
											147.0	X		X
C-244	C-245	VCP		252.0				252.0			93.0	X		
											153.0	X		X
											180.0	X		X
C-245	C-246	VCP		142.0				142.0			72.0	X		X
C-246	C-248	VCP		259.0				259.0			20.0	X		
C-248	C-250	VCP					216.0	216.0	107.0		108.0	X		X
											129.0	X		X
C-250	C-249	VCP					314.0	314.0			54.0	X		
											213.0	X		X
											248.0	X		X
C-256	C-257	VCP		164.0				164.0			51.0	X		
											90.0	X		
C-262	C-263	VCP		273.0				273.0			78.0	X		
											251.0	X		
											261.0	X		
C-257	C-258	VCP					272.0		272.0		82.0		X	X
C-257	C-262	VCP		294.0				294.0			80.0	X		X
											178.0	X		
											193.0	X		X
C-254	C-255	VCP					186.0	186.0			24.0	X		X
											99.0	X		X
											109.0			
											115.0			
											186.0	X		X
C-253	C-254	VCP					195.0	195.0			33.0			
											131.0	X		X

PIPE REHABILITATION

Downstream MH	Upstream MH	Pipe Material	Feet of 18" pipe	Feet of 15" pipe	Feet of 12" pipe	Feet of 10" pipe	Feet of 8" pipe	Line	Replace	Point Repair Location	Service Connection Locations	Connection Repair: Grout	Connection Repair: Replace	Protruding Tap
C-252	C-253	VCP					236.0	236.0			54.0	X		X
											55.0	X		
											112.0	X		
C-251	C-252	VCP					238.0	238.0			44.0			
											72.0		X	
											155.0	X		
											187.0	X		
C-250	C-251	VCP					211.0	211.0			61.0	X		X
											68.0	X		
											140.0	X		X
											152.0	X		X
											23.0	X		X
C-259	C-261	VCP					251(13	251(13			83.0			
											130.0		X	
C-259	C-260	VCP					169.0		169.0		140.0		X	
											119.0		X	
C-258	C-259	VCP					263.0		263.0					
Total			0	2,777	2,322	1,555	4,723	10,264	704			86	5	52

COMMUNITY UTILITIES SERVICE AREA
SANITARY SEWER REHABILITATION PROJECT

SECTION 3

JOB NO.	20016400	DRAWN	RWP	SCALE:	1"=200'
DATE	1/03	DESIGNED	CSM	APPROVED	RDK

R.W. ARMSTRONG
AIRPORTS • ARCHITECTURE • ENVIRONMENTAL • TRANSPORTATION
EST. 1961
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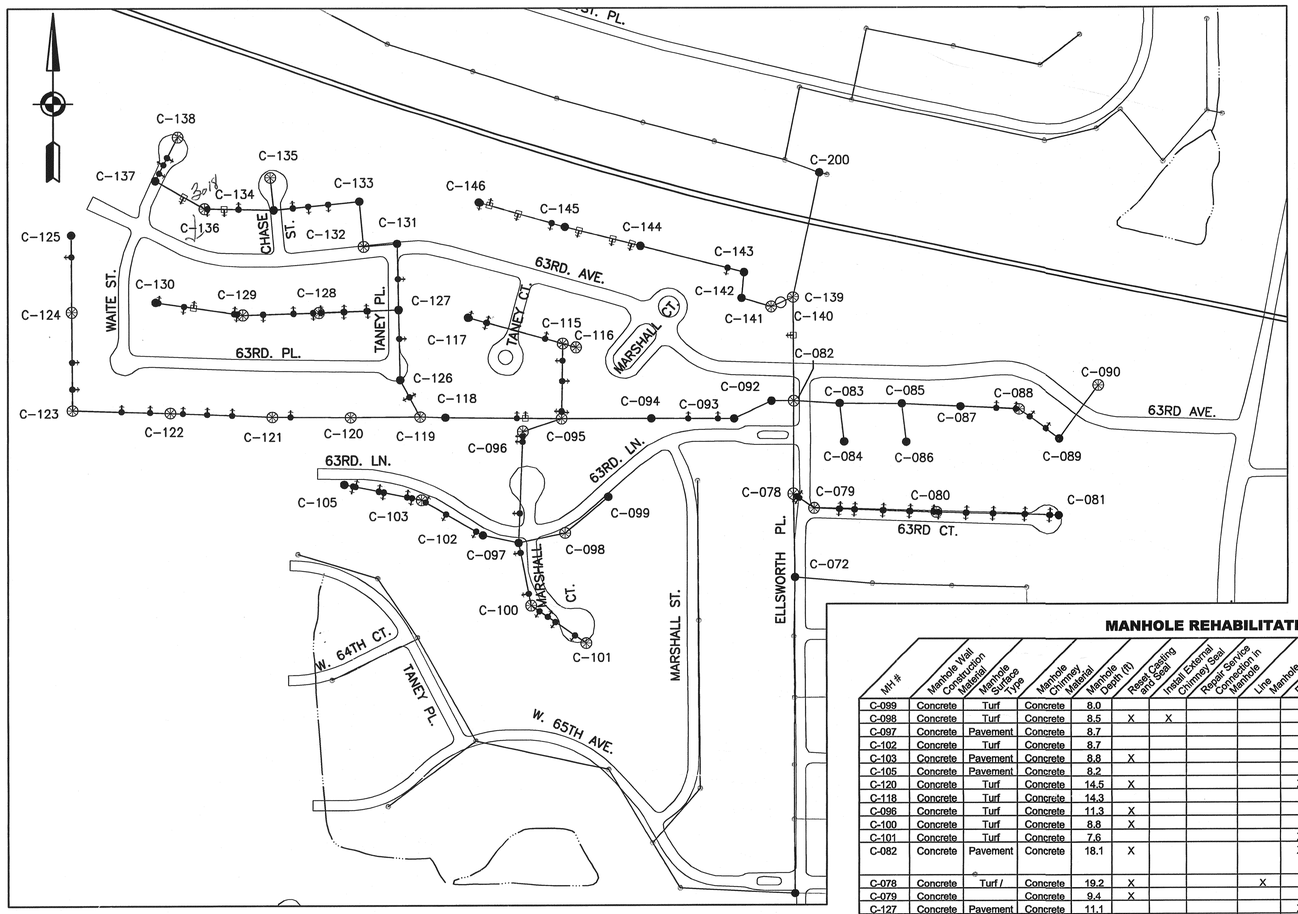
INDIANAPOLIS, INDIANA 46225 (317) 786-0461

SEE SECTION 3



SEE SECTION 5

LEGEND

PIPE

- LINING
- REPLACEMENT
- NO CHANGE

MANHOLES

- REPAIR
- REPLACEMENT
- NO CHANGE

SERVICES

- FACTORY
- BREAK-IN
- PROTRUDING

MANHOLE REHABILITATION

MH #	Manhole Wall Construction Material	Manhole Surface Type	Manhole Chimney Material	Manhole Depth (ft)	Reset Casting and Seal	Install External Chimney Seal	Repair Service Connection in Manhole	Line Manhole	Reset Bench	Replace Manhole	Other
C-099	Concrete	Turf	Concrete	8.0							
C-098	Concrete	Turf	Concrete	8.5	X	X					
C-097	Concrete	Pavement	Concrete	8.7							
C-102	Concrete	Turf	Concrete	8.7							
C-103	Concrete	Pavement	Concrete	8.8	X						
C-105	Concrete	Pavement	Concrete	8.2							
C-120	Concrete	Turf	Concrete	14.5	X				X		
C-118	Concrete	Turf	Concrete	14.3							
C-096	Concrete	Turf	Concrete	11.3	X						
C-100	Concrete	Turf	Concrete	8.8	X						
C-101	Concrete	Turf	Concrete	7.6					X		
C-082	Concrete	Pavement	Concrete	18.1	X				X		Repair sidewalk section
C-078	Concrete	Turf /	Concrete	19.2	X			X			
C-079	Concrete		Concrete	9.4	X						
C-127	Concrete	Pavement	Concrete	11.1					X		
C-127		Turf	Concrete								
C-132	Concrete	Turf	Concrete	8.9					X		
C-135	Concrete		Concrete	6.4	X				X		
C-134	Concrete	Pavement	Concrete	8.5	X	X			X		
C-137	Concrete	Turf	Concrete	5.9							
C-138	Concrete	Pavement	Concrete	4.4		X			X		
C-130	Concrete	Pavement	Concrete	7.1							
C-080	Concrete	Pavement	Concrete	8.7					X		
C-081	Concrete	Pavement	Concrete	7.9							
C-093	Concrete	Pavement	Concrete	17.8							
C-094	Concrete	Pavement	Concrete	17.1							
C-095	Concrete	Turf	Concrete	16.3					X		
C-119	Concrete	Pavement	Concrete	15.2					X		
C-121	Concrete	Turf	Concrete	14.6					X		
C-122	Concrete	Turf	Concrete	13.0				X	X		
C-123	Concrete	Turf	Concrete	12.6					X		
C-124	Concrete	Turf	Concrete	11.7	X						
C-125	Concrete	Turf	Concrete	9.0							
C-129	Concrete	Turf	Concrete	8.5	X						
C-128	Concrete	Turf	Concrete	9.5	X				X		
C-133	Concrete	Turf	Concrete	9.5							
C-146	Concrete	Turf	Concrete	8.3							
C-145	Concrete	Turf	Concrete	8.5							
C-143	Concrete	Turf	Concrete	8.4							
C-083	Concrete	Turf	Concrete	12.2							
C-085	0	Turf									NFI
C-088	Concrete	Turf	Concrete	6.3	X						
C-089	Concrete	Turf	Concrete	8.1							
C-090	Concrete	Turf	Concrete	6.5		X					
C-142	Concrete	Turf	Concrete	8.4							
C-141	Concrete	Turf	Concrete	9.3	X				X		
C-140	Concrete	Turf	Concrete	9.5						X	
C-139	Concrete	Turf	Concrete	15.7	X	X					
C-116	Concrete	Turf	Concrete	9.1					X		
C-115	Concrete	Pavement	Concrete	9.8					X		
C-117	Concrete	Turf	Concrete	7.8							
C-136	Concrete	Turf	Concrete	6.4					X		
C-200	Block	Turf	Concrete	11.8				X	X		
C-144	Concrete	Turf	Concrete	9.4							
C-084	Concrete		Concrete	-							
C-087	0	Turf	Concrete	-							NFI
C-092	0	Turf	Concrete	-							NFI
C-126	0	Turf	Concrete	-							NFI
		Toatal			16	5	0	3	20	1	

* NFI = NEEDS FURTHER INSPECTION

PIPE REHABILITATION

Downstream MH	Upstream MH	Pipe Material	Feet of 18" pipe	Feet of 15" pipe	Feet of 12" pipe	Feet of 10" pipe	Feet of 8" pipe	Line	Replace	Point Repair Location	Service Connection Locations	Connection Repair: Grout	Connection Repair: Replace	Connection Repair: Protruding Tap
C-082	C-083	VCP					128.0	128.0						
C-078	C-079	VCP					69.0	69.0			54.0			
											56.0			
											58.0			
C-079	C-080	VCP					343.0	343.0			71.0			
											73.0			
											76.0			
											148.0			
											150.0			
											228.0			
											230.0			
											272.0			
											275.0			
C-080	C-081	VCP					343.0	343.0			24.0			
											26.0			
											94.0			
											96.0			
											183.0			
											185.0			
											258.0			
											260.0			
											337.0			
C-127	C-128	VCP					223.0				6.0			
											69.0			
											71.0			
											133.0			
											136.0			
C-132	C-133	VCP					126.0	126.0						
C-134	C-136	VCP					194.0	194.0			8.0			
											55.0	X		
											95.0			
C-137	C-138	VCP					134.0	134.0			63.0			
											85.0			
											111.0			
C-093	C-094	VCP				231.0		231.0			103.0			
											186.0			
C-094	C-095	VCP				251.0		251.0						
C-095	C-115	VCP					209.0	209.0			48.0			
											104.0			
											188.0			
											191.0			
C-095	C-118	VCP				325.0		325.0			200.0			
											224.4	X		
C-121	C-122	VCP				285.0		285.0			35.0			
											103.0			
											173.0			
C-122	C-123	VCP				274.0				217.0	137.0			
											217.0			
C-123	C-124	VCP				272.0		272.0			138.0			
											212.0			
C-124	C-125	VCP				215.0		215.0			60.0			
C-129	C-130	VCP					249.0	249.0			8.0			
											80.0			
											107.0			
											222.0			
											229.0			
C-133	C-134	VCP					240.0	240.0			54.0			
											97.0			
											153.0			
C-145	C-146	VCP					249.0	249.0			6.0			
											31.5	X		
											115.1	X		
											211.9			
C-143	C-144	VCP					259.0	259.0			251.0			
C-083	C-085	VCP					174.0	174.0						
C-085	C-087	VCP					165.0	165.0			9.0			
											55.0			
C-088	C-089	VCP					138.0	138.0			46.0			
											101.0			
C-089	C-090	VCP					185.0	185.0						
C-082	C-139	Concrete	293.0								104.8	X		
C-142	C-143	VCP					73.0	73.0						
C-141	C-142	VCP					86.0	86.0						
C-139	C-141	VCP					67.0	67.0						
C-115	C-117	VCP					274.0	274.0			5.0			
											53.0			
											55.0			
											223.0			
C-136	C-137	VCP					157.0	157.0			90.7	X		
C-144	C-145	VCP					255.0	255.0		250.0	40.6	X		
											139.0	X		
											193.0	X		
											250.0			
C-126	C-127	VCP					204.0	204.0			79.0			
C-118	C-119	VCP				71.0			71.0					
C-097	C-098	PVC					133.0				33.0			
											38.0	X		
Total			293	0	0	1,924	4,677	5,900	71			10	0	0

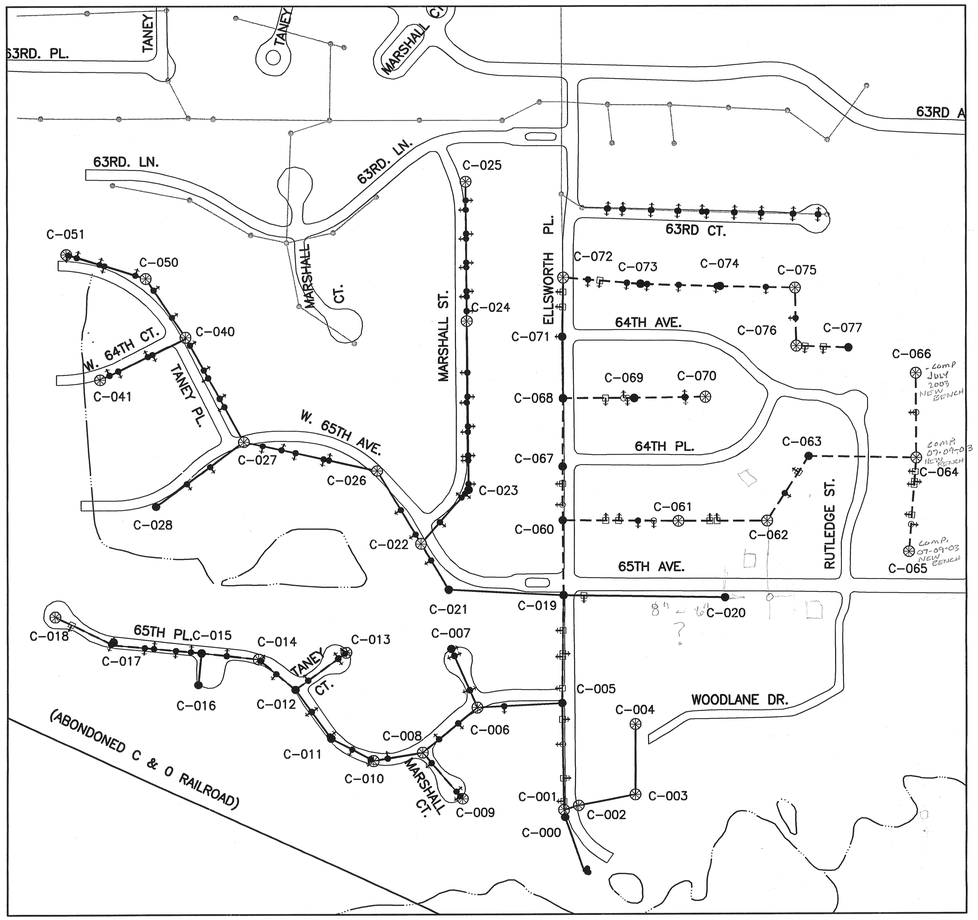
COMMUNITY UTILITIES SERVICE AREA
SANITARY SEWER REHABILITATION PROJECT

SECTION 4

JOB NO.	20016400	DRAWN	RWP	SCALE:	1"=200'
DATE	1/03	DESIGNED		APPROVED	

AIRPORTS • ARCHITECTURE
R.W. ARMSTRONG
EST. 1961
ENVIRONMENTAL • TRANSPORTATION
2801 S. PENNSYLVANIA STREET
INDIANAPOLIS, INDIANA 46225 (317) 786-0461

SEE SECTION 4



MANHOLE REHABILITATION

MH #	Manhole Wall Construction Material	Manhole Surface Type	Manhole Chimney Material	Manhole Depth (ft)	Reset Casting and Seal	Install External Chimney Seal	Repair Service Connection in Manhole	Line Manhole	Reset Bench	Replace Manhole	Other
C-018	Concrete	Pavement	Concrete	10.1		X					
C-017	Concrete	Pavement	Concrete	9.8							
C-016	Concrete	Pavement	Concrete	8.0							
C-015	Concrete	Pavement	Concrete	9.7							
C-014	Concrete	Pavement	Concrete	10.2		X					
C-012	Concrete	Pavement	Concrete	11.3							
C-027	Concrete	Pavement	Concrete	13.8	X				X		
C-040	Concrete			9.2	X	X					
C-041	Concrete	Turf	Concrete	7.3	X				X		
C-050	Concrete	Pavement	Concrete	8.8	X	X					
C-051	Concrete	Turf	Concrete	6.2					X		
C-026	Concrete	Turf	Concrete	14.3					X		
C-022	Concrete	Turf	Concrete	15.4		X					
C-023	Concrete	Turf	Concrete	8.8							
C-024	Concrete	Turf	Concrete	7.6	X	X					
C-025	Concrete	Turf	Concrete	7.4		X					
C-021	Concrete	Turf	Concrete	16.2							
C-019	Concrete	Turf	Concrete	15.8							
C-005	Concrete	Pavement	Concrete	17.0							
C-007	Concrete	Pavement	Concrete	7.2							
C-013	Concrete	Turf	Concrete	9.0	X			X			
C-010	Concrete	Pavement	Concrete	11.1		X		X			
C-008	Concrete	Pavement	Concrete	11.0	X	X					
C-009	Concrete	Pavement	Concrete	8.6		X					
C-006	Concrete	Turf	Concrete	12.0	X	X					
C-020	Concrete	Pavement	Concrete	3.5							
C-065	Concrete	Turf	Concrete	7.6	X			X	X		
C-060	Concrete	Turf	Concrete	17.0							
C-001	Concrete	Turf	Concrete	14.1	X	X		X			
C-011	Concrete	Turf	Concrete	11.2							
C-002	Concrete	Turf	Concrete	7.9	X	X					
C-003	Concrete	Pavement	None	6.0				X	X		
C-067	Concrete	Pavement	Concrete	16.3							
C-068	Concrete	Turf	Concrete	17.6							
C-071	Concrete	Turf	Concrete	16.0							
C-072	Concrete	Turf	Concrete	16.6					X		
C-061	Concrete	Turf	Concrete	14.2	X				X		
C-062	Concrete	Turf	Concrete	16.1				X			
C-063	Concrete	Turf	Concrete	12.4							
C-064	Concrete	Turf	Brick	8.7	X				X		
C-066	Concrete	Turf	Concrete	8.6	X				X		
C-077	Concrete	Turf	Concrete	7.4							
C-075	Concrete	Turf	Concrete	9.8					X		
C-074	Concrete	Turf	Concrete	10.4							
C-073	Concrete	Turf	Concrete	11.4							
C-069	Concrete	Turf	Concrete	10.1							
C-070	Concrete	Pavement	Concrete	8.7			X				
C-076	Concrete	Turf	Concrete	7.7		X					
C-028	0	Turf	Concrete								NFI
C-004	Concrete	Turf	Concrete			X			X		
Total					14	15	1	6	12	0	

PIPE REHABILITATION

Downstream MH	Upstream MH	Pipe Material	Feet of 18" pipe	Feet of 15" pipe	Feet of 12" pipe	Feet of 10" pipe	Feet of 8" pipe	Line	Replace	Point Repair Location	Service Connection Locations	Connection Repair: Grout	Connection Repair: Replace	Connection Repair: Protruding Tap
C-017	C-018	VCP			179.0			176.0			51.0	X		
											173.0			
											175.0			
C-015	C-017	VCP			249.0			249.0			88.0			
											114.0			
											176.0			
											218.0			
C-014	C-015	VCP			161.0			161.0			71.0			
C-012	C-014	VCP			134.0			134.0			6.0			
											64.0			
C-012	C-013	VCP			176.0			176.0			5.0			
											27.0			
											29.0			
											132.0			
C-008	C-009	VCP					171.0	171.0						
C-001	C-005	Concrete	397.0								45.0	X		
											114.0	X		X
											208.0	X		
											273.0	X		
C-005	C-019	Concrete	305.0					305.0			99.0	X		
											163.0	X		
											171.0	X		
											260.0	X		
C-019	C-060	Concrete	207.0					207.0			61.0	X		
C-051	C-050	PVC					232.0			20.0	6.0			
										21.7	31.0			
											97.0			
											111.0			
											202.0			
C-060	C-061	VCP					323.0	323.0			69.0	X		X
											113.0			
											167.0	X		
											203.0	X		
C-060	C-067	Concrete	157.0					157.0			34.0	X		
											105.0	X		X
C-067	C-068	Concrete	188.0					188.0			66.0	X		
											154.0	X		
C-069	C-070	VCP	199.0					199.0			56.0			
											58.0			
C-068	C-069	VCP					199.0	199.0			19.0	X		X
											30.0	X		X
											80.0	X		
C-072	C-073	VCP					217.0	217.0			38.0			
											114.0	X		
											147.0			
C-061	C-062	VCP					248.0	248.0			140.0	X		
											160.0	X		
C-062	C-063	VCP					215.0	215.0			53.0	X		
											124.0			
C-063	C-064	VCP					302.0	302.0						
C-064	C-065	VCP					263.0	263.0			75.0			X
											101.0	X		
											187.0	X		
											196.0	X		
											224.0	X		
C-064	C-066	VCP					233.0	233.0			108.0	X		X
C-075	C-076	VCP					158.0	158.0			77.0	X		
C-073	C-074	VCP					224.0	224.0			10.0			
											116.0			
											204.0			
C-074	C-075	VCP					209.0	209.0			81.0			
C-076	C-077	VCP					146.0	146.0			70.0	X		
											121.0	X		
Total			1,453	0	899	0	3,140	4,860	0	42		32	0	7

* NFI = NEEDS FURTHER INSPECTION

LEGEND

PIPE
- LINING
- REPLACEMENT
- NO CHANGE

MANHOLES
- REPAIR
- REPLACEMENT
- NO CHANGE

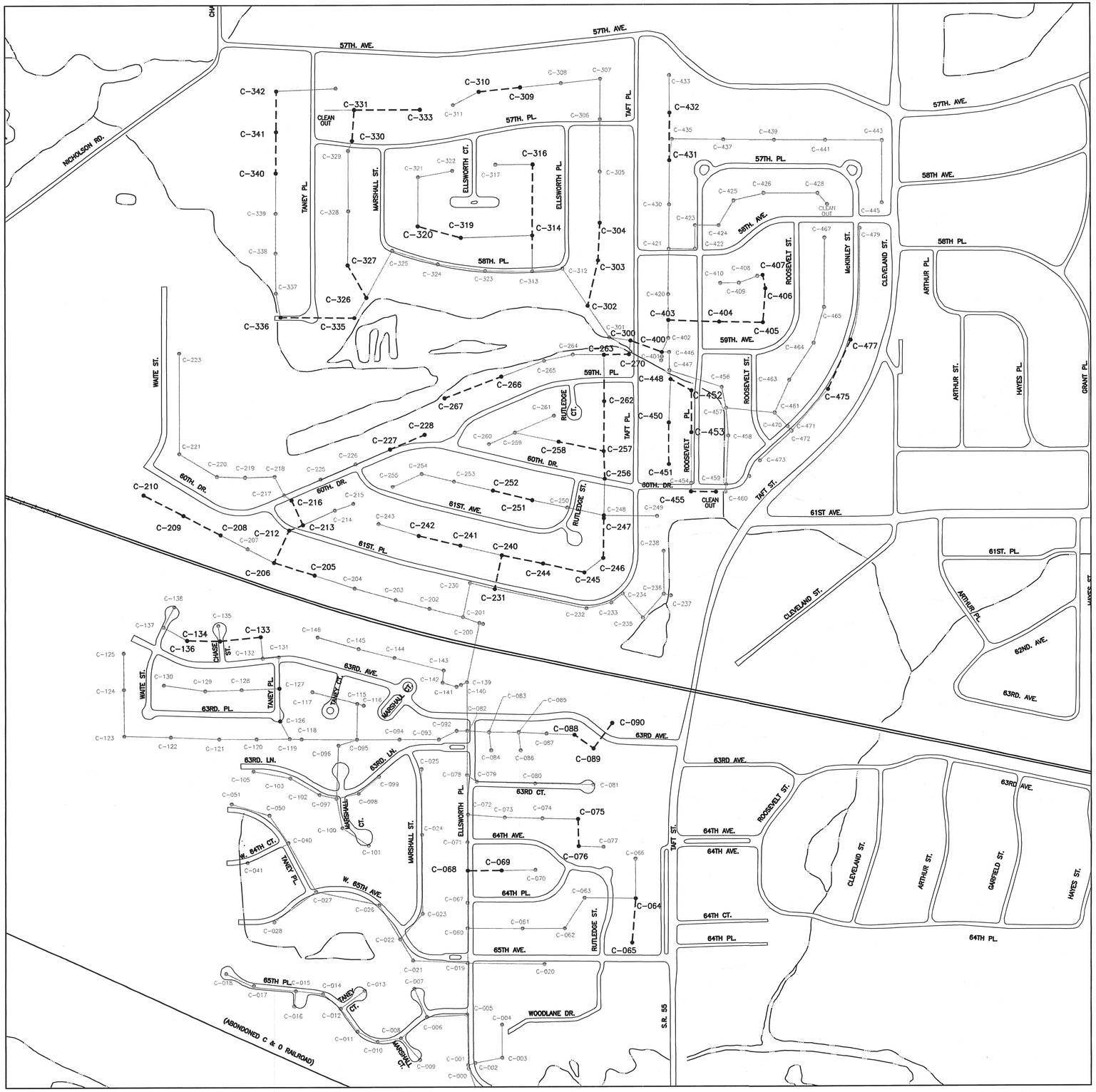
SERVICES
- FACTORY
- BREAK-IN
- PROTRUDING

COMMUNITY UTILITIES SERVICE AREA
SANITARY SEWER REHABILITATION PROJECT

SECTION 5

JOB NO. 20016400	DRAWN RWP	SCALE: 1"=200'
DATE 1/03	DESIGNED	APPROVED

R.W. ARMSTRONG
AIRPORTS • ARCHITECTURE • ENVIRONMENTAL • TRANSPORTATION
EST. 1961
2801 S. PENNSYLVANIA STREET
INDIANAPOLIS, INDIANA 46225 (317) 786-0461



GRAPHIC SCALE

300 0 150 300 600

SCALE: 1"=300'

LEGEND

- - - - - - - - - SECTIONS THAT NEED ROOT REMOVAL

COMMUNITY UTILITIES SERVICE AREA SANITARY SEWER REHABILITATION PROJECT			
ROOT REMOVAL			
JOB NO. 20016400	DRAWN RWP	SCALE: 1"=300'	
DATE 1/03	DESIGNED	APPROVED	

AIRPORTS • ARCHITECTURE
R.W. ARMSTRONG
ESTD. 1946
ENVIRONMENTAL • TRANSPORTATION
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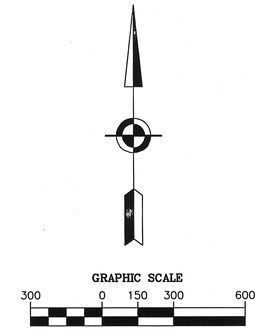

LEGEND

⊗ — MANHOLES THAT ARE NOT INSPECTED OR NEED FURTHER INVESTIGATION.

- - - - - - - - - SECTIONS OF PIPE ARE NOT INSPECTED OR NEED FURTHER INVESTIGATION.

COMMUNITY UTILITIES SERVICE AREA
SANITARY SEWER REHABILITATION PROJECT

FURTHER INVESTIGATION

JOB NO.	20016400	DRAWN	RWP	SCALE:	1"=300'
DATE	1/03	DESIGNED		APPROVED	

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E.S.T. 1965
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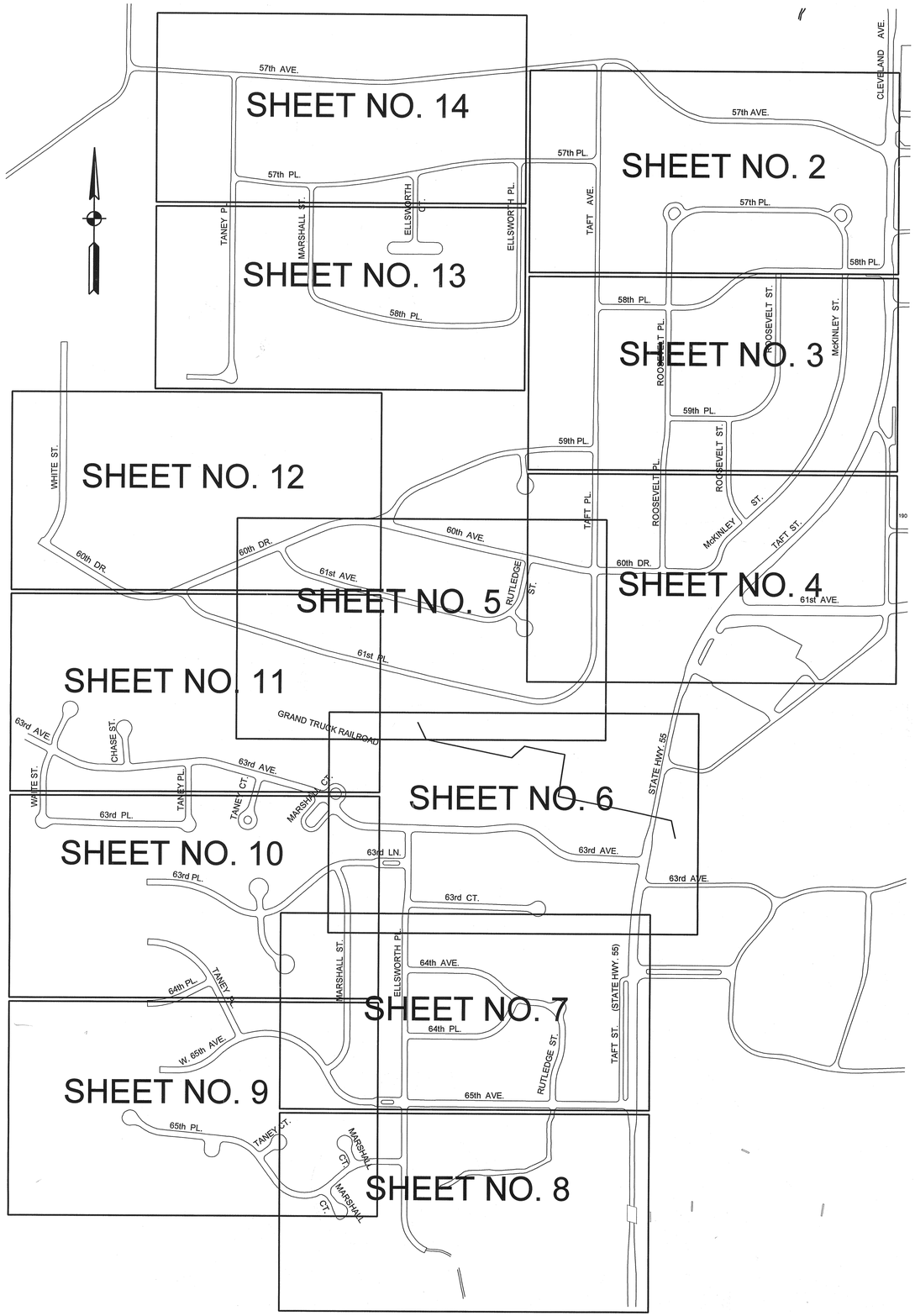

INDEX KEY MAP
N.T.S.

MERRILLVILLE CONSERVANCY DISTRICT

COMMUNITY UTILITIES SERVICE AREA
SANITARY SEWER REHABILITATION PROJECT

SMOKE TESTING MAPS

AUGUST, 2004

AIRPORTS • ARCHITECTURE
R.W. ARMSTRONG
EST. 1961
ENVIRONMENTAL • TRANSPORTATION

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