

FRAME CRANE PLAN
SCALE: 1/2"=1'-0"

NOTE: FOR REFERENCE PURPOSES THE FRONT OF THE CRANE SHALL BE THE NORTH SIDE.



Department of Public Works
Ministère des Travaux publics

WESTERN REGION



A detail no.	détail no.
A	B location drawing no.
BC	sur dessin no.
C drawing no.	dessin no.
revisions	date

project title / titre du projet
**REPLACEMENT OF
FRAME CRANES
ST. ANDREWS
BRIDGE LOCK & DAM**

designed by / conçu par	W. J. W.
date	OCT. 70
drawn by / dessiné par	D. L.
date	NOV. 70
reviewed by / examiné par	D. J. S.
date	NOV. 70
approved by / approuvé par	<i>P. Madsen</i>
date	Dec 1/70

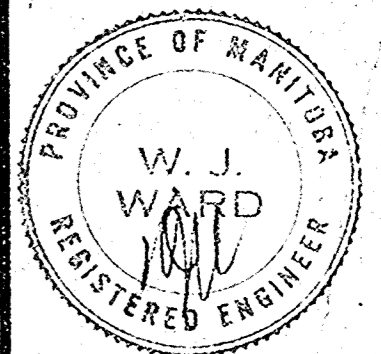
Tender / Soumission	
D.P.W. Project Manager / Administrateur de projets M.T.P.	
project number / no. du projet	54-79237.4
drawing no. / dessin no.	M 1

T. LAMB McMANUS & ASSOCIATES
PROFESSIONAL ENGINEERING CONSULTANTS
WINNIPEG
CALGARY EDMONTON



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approved by	<i>R. Waddler</i>	approuvé par
date	Dec 1/70	
Tender		Soumission

D.P.W. Project Manager / Administrateur de projets M.T.P.

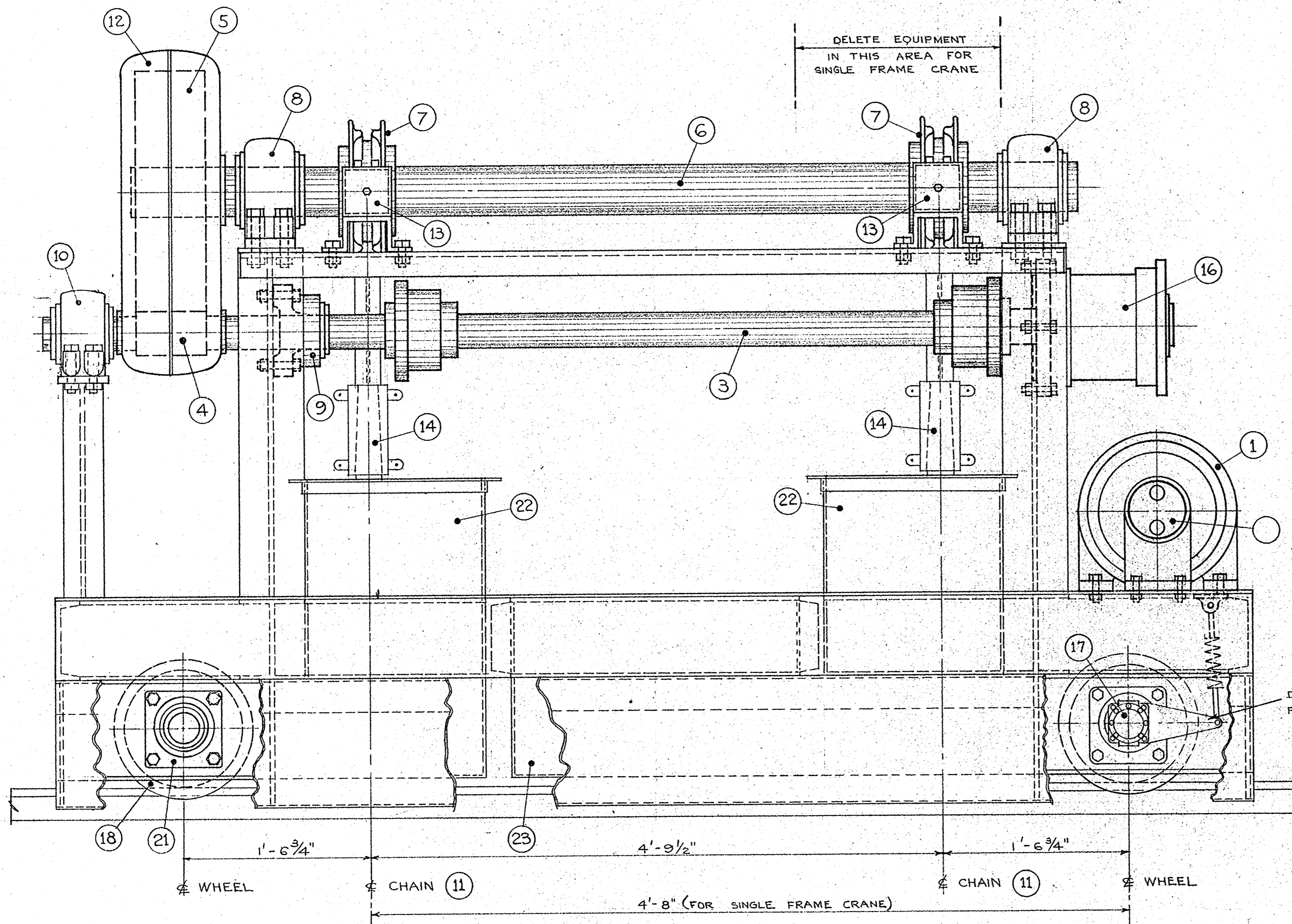
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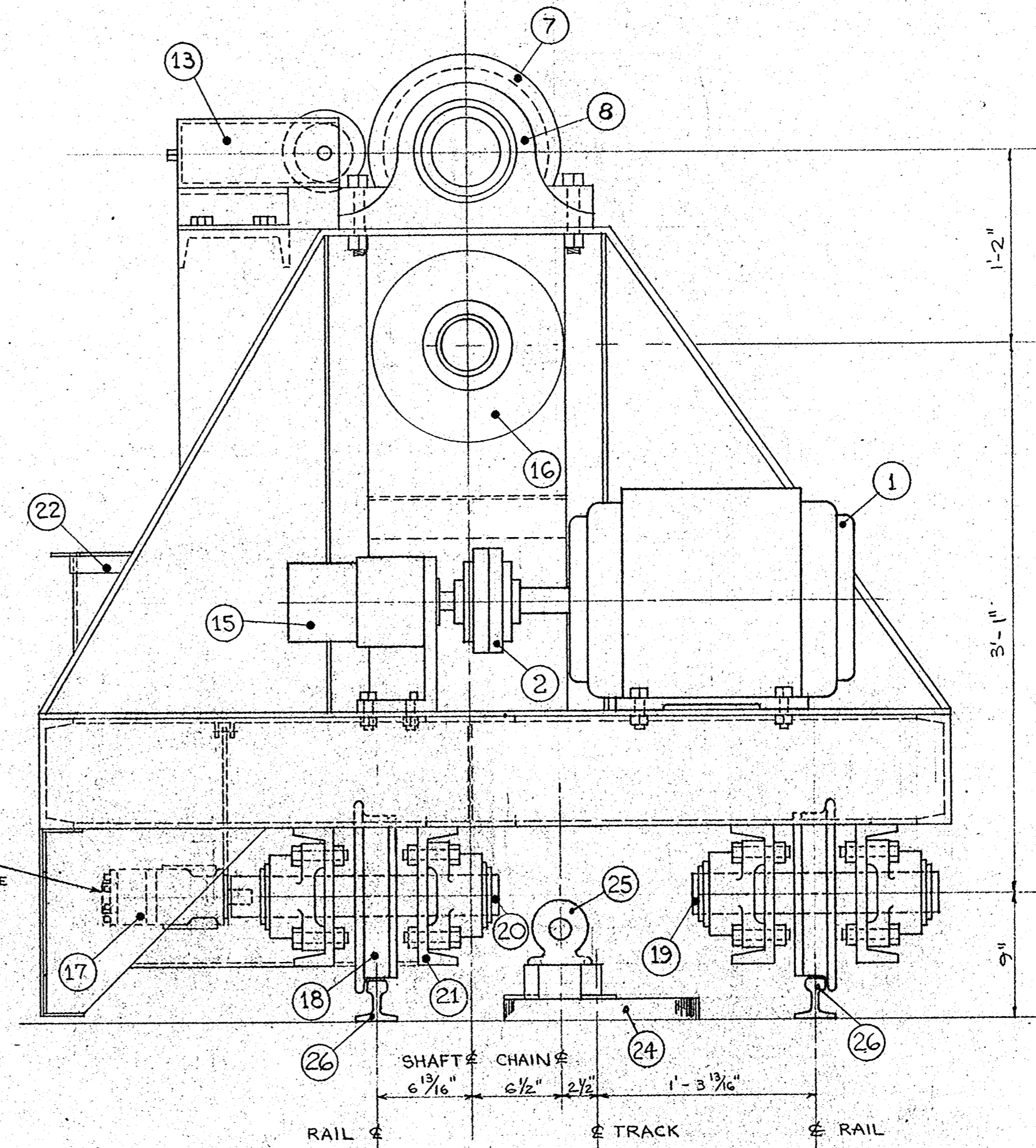
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M 2

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



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

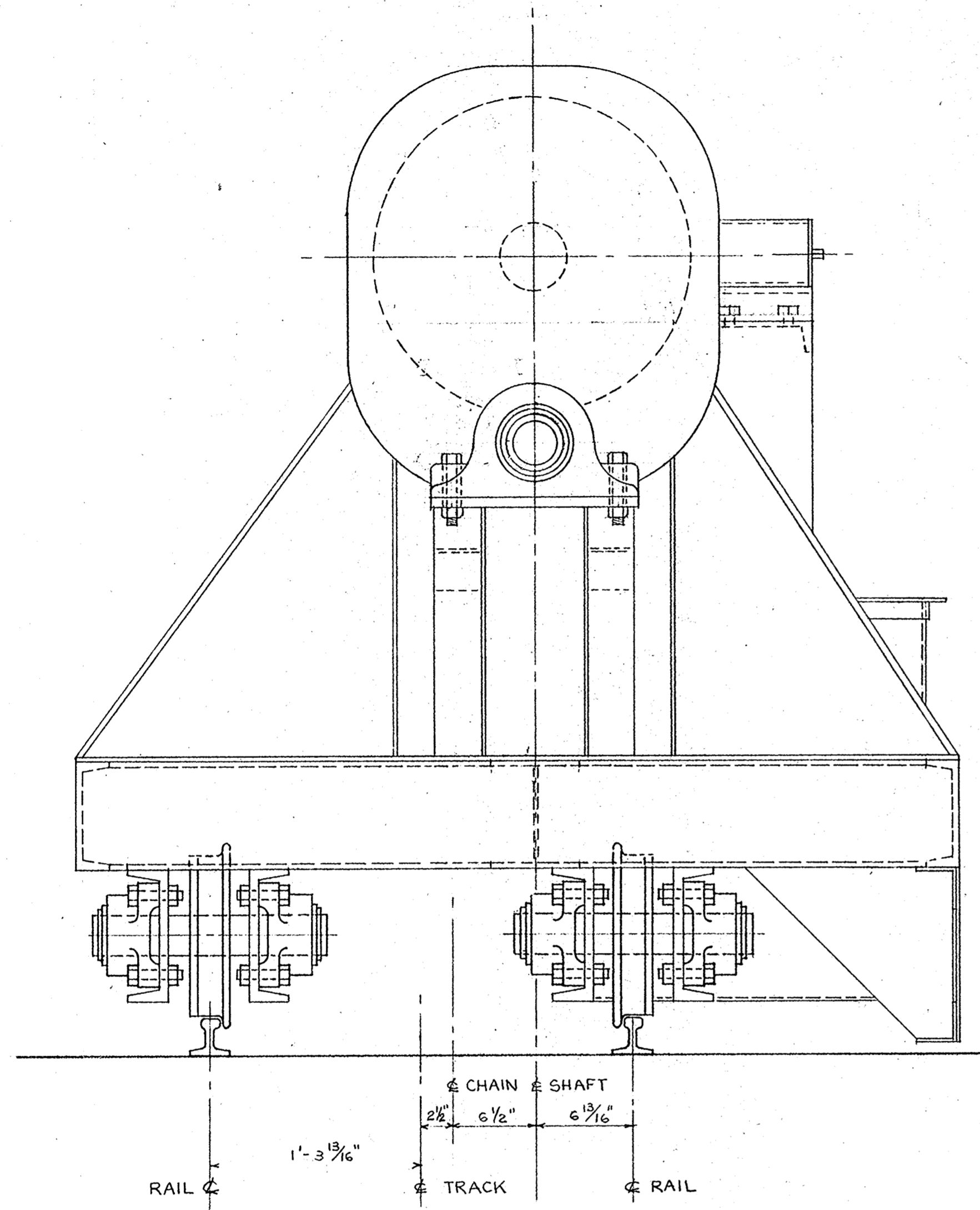
FRAME CRANE EQUIPMENT

- 1. ELECTRIC MOTOR
- 2. FLEXIBLE COUPLING
- 3. DOUBLE PILOTTED FLEXIBLE COUPLING
- 4. PINION & SHAFT
- 5. HERRINGBONE GEAR
- 6. POCKET WHEEL SHAFT
- 7. POCKET WHEEL
- 8. POCKET WHEEL SHAFT PILLOW BLOCK
- 9. PINION SHAFT FLANGE BEARING
- 10. PINION SHAFT PILLOW BLOCK
- 11. 3/4" HIGH TENSILE CHAIN
- 12. GEAR CASE
- 13. CHAIN GUIDE ASSEMBLY
- 14. CHAIN STRAIGHTENING BLOCK ASSEMBLY
- 15. HYDRAULIC PUMP
- 16. HYDRAULIC HOISTING MOTOR

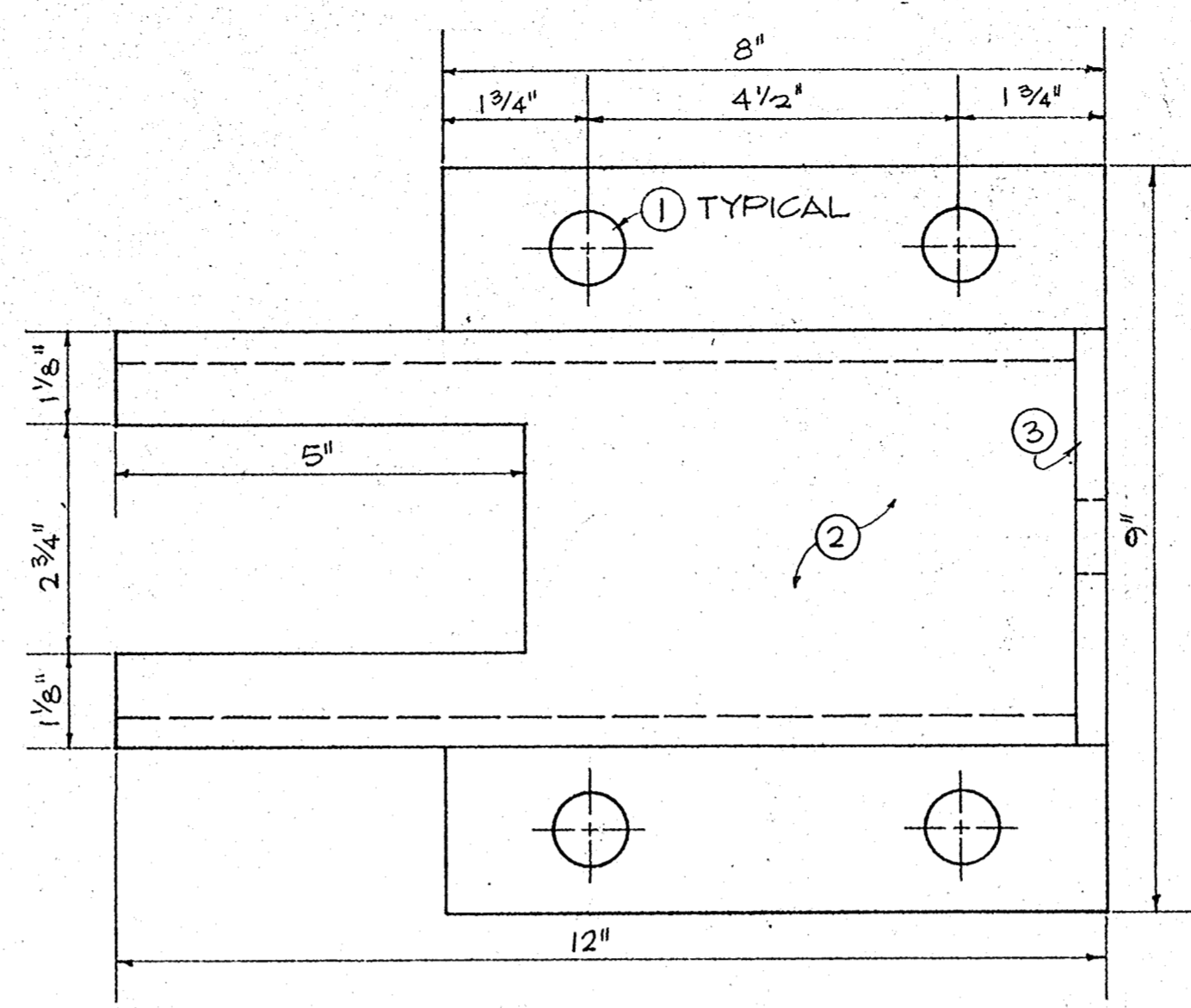
- 17. HYDRAULIC WHEEL DRIVE MOTOR
- 18. TRACK WHEEL
- 19. TRAILING AXLE
- 20. DRIVE AXLE
- 21. AXLE FLANGE BEARING
- 22. CHAIN BOX
- 23. OIL TANK

EXISTING EQUIPMENT

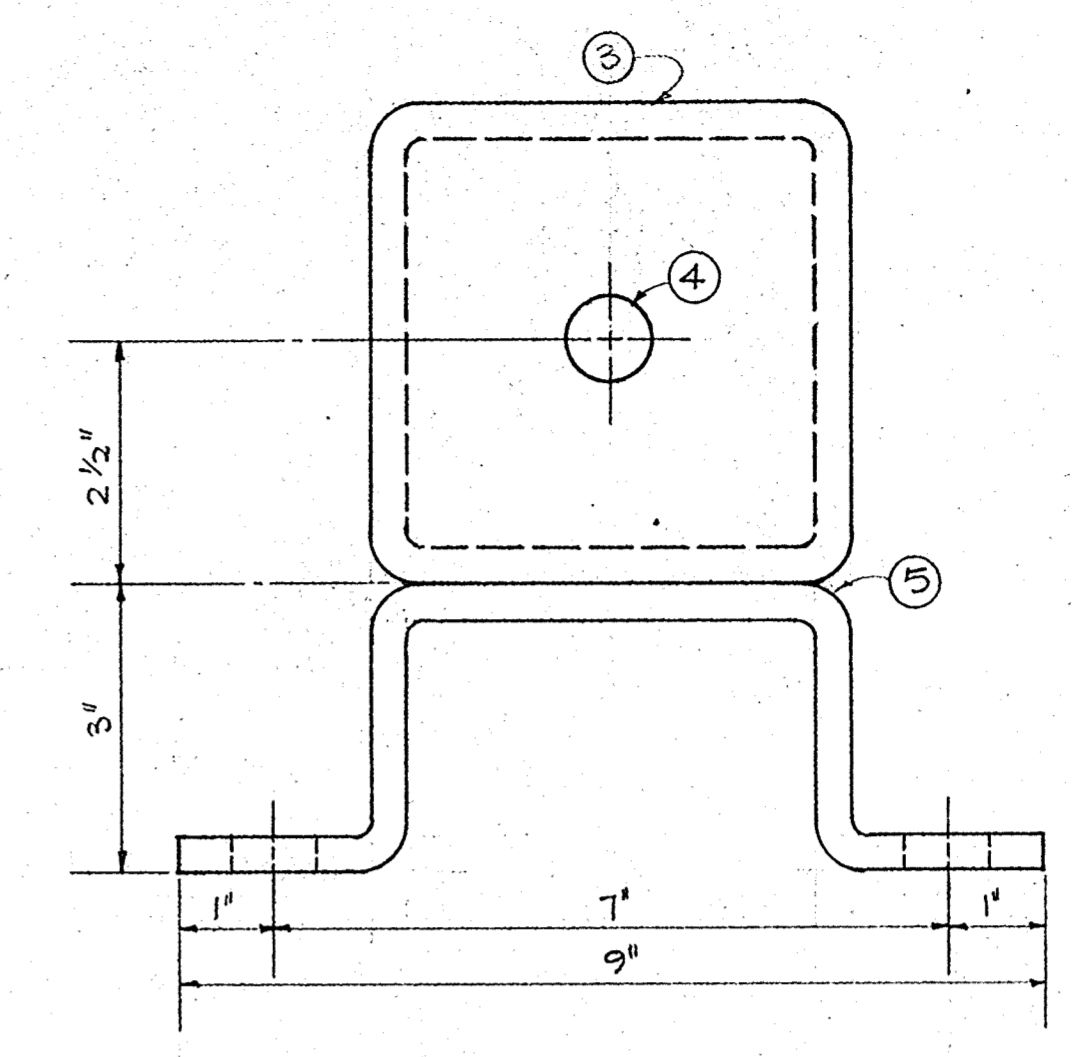
- 24. CHAIN CHECK
- 25. LIFTING EYE
- 26. RAIL



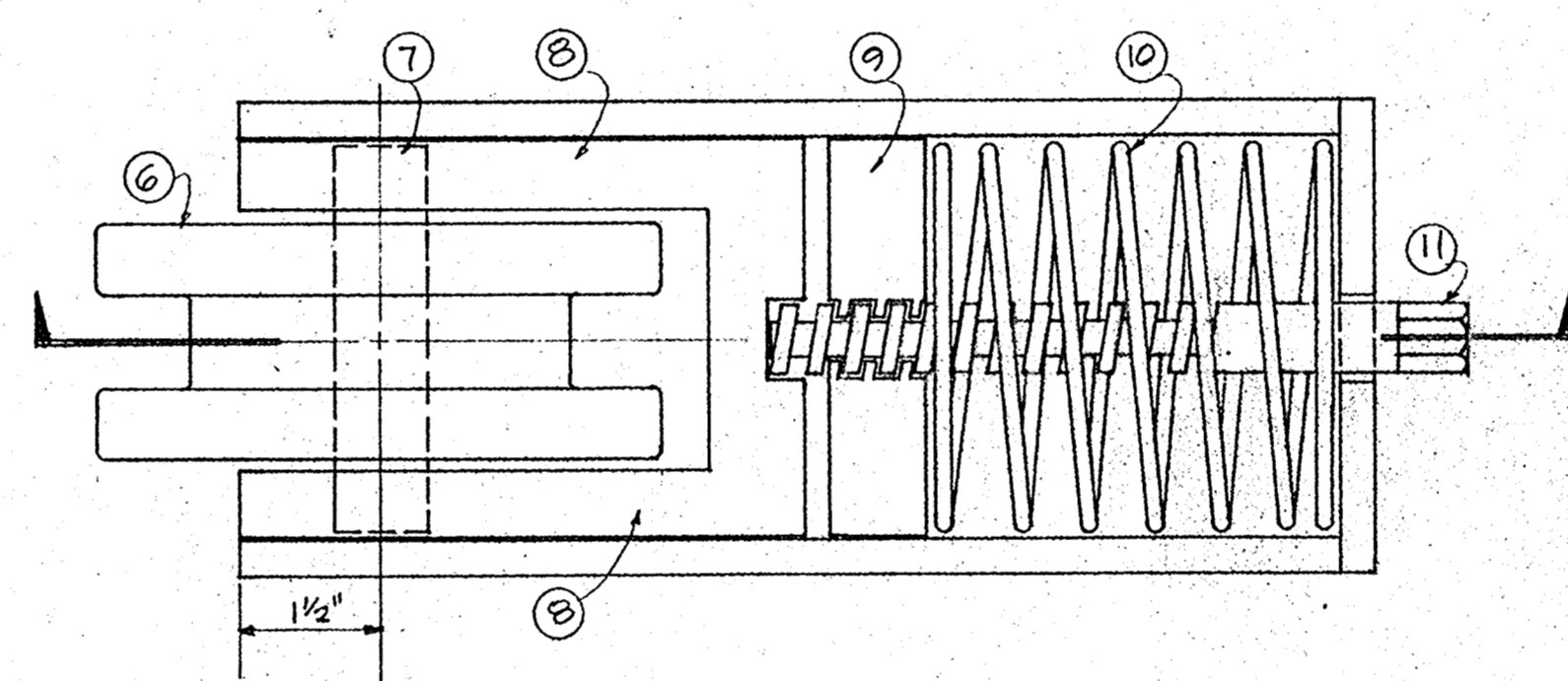
WEST ELEVATION
SCALE 1/2" = 1'-0"



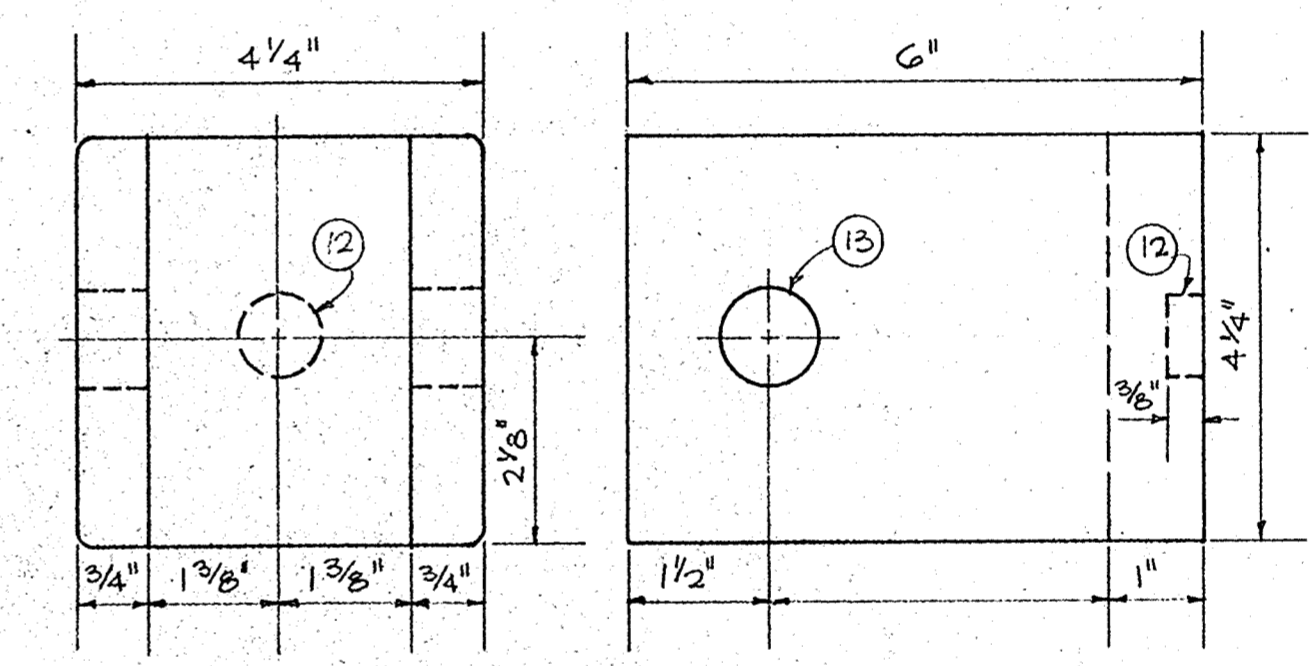
PLAN OF FRAME



END VIEW OF FRAME

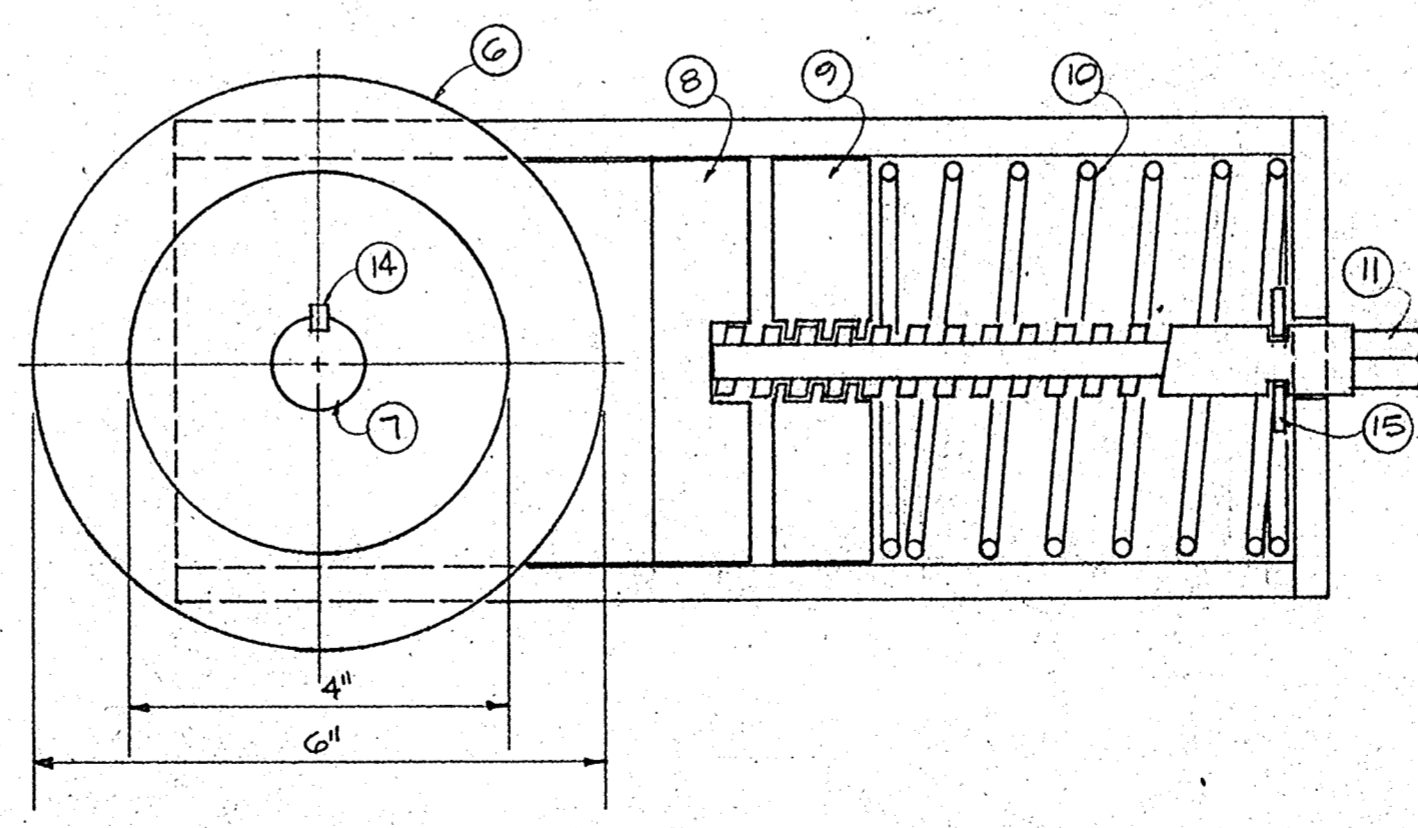


SPRING MECHANISM



EXACT DIMENSIONS OF YOKE AS REQUIRED TO FIT INSIDE 5"x5"x 3/8" TUBE FRAMING

YOKE



SECTION

CHAIN GUIDE DETAILS
SCALE - 1/2 FULL SIZE

NOTES

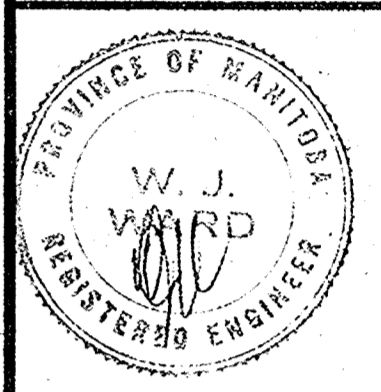
NO.	DESCRIPTION
①	HOLE FOR 3/4" BOLT
②	FRAME FABRICATED FROM 5"x5"x 3/8" TUBING
③	3/8" END PLATE WELDED TO TUBING
④	HOLE FOR 3/4" SCREW
⑤	MOUNTING BASE WELDED TO FRAME ALL AROUND
⑥	CHAIN GUIDE WHEEL
⑦	1" Ø SHAFT
⑧	CHAIN GUIDE WHEEL YOKE - SEE DETAIL
⑨	1" THICK COMPRESSION PLATE TAPPED FOR FLAT-THREADED SCREW
⑩	HIGH TENSILE STEEL SPRING
⑪	HEX HEAD ON FLAT-THREADED SCREW
⑫	3/8" DEEP RECESS IN YOKE FOR 3/4" SCREW
⑬	HOLE FOR 1" Ø SHAFT
⑭	SHAFT KEY
⑮	STOP WASHER

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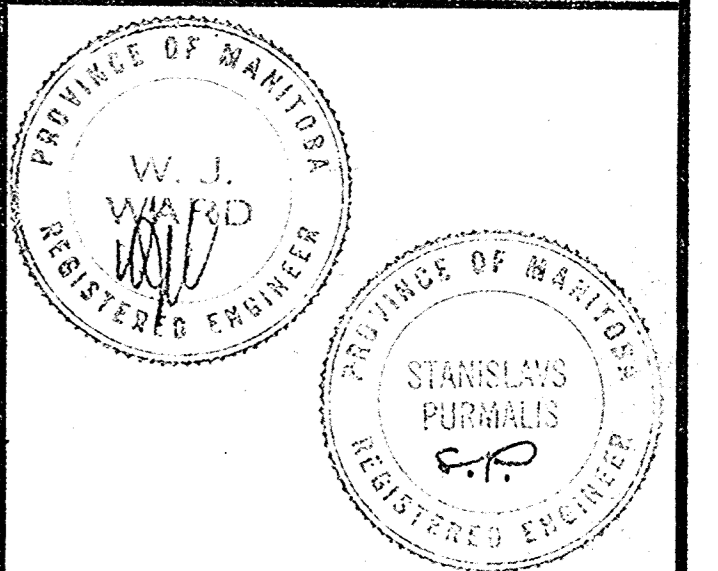
designed by / conçu par	W. J. W.
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reviewed by / examiné par	D. J. S.
date	NOV. 70
approved by / approuvé par	<i>D. J. S.</i>
date	Dec 1/70

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M 3



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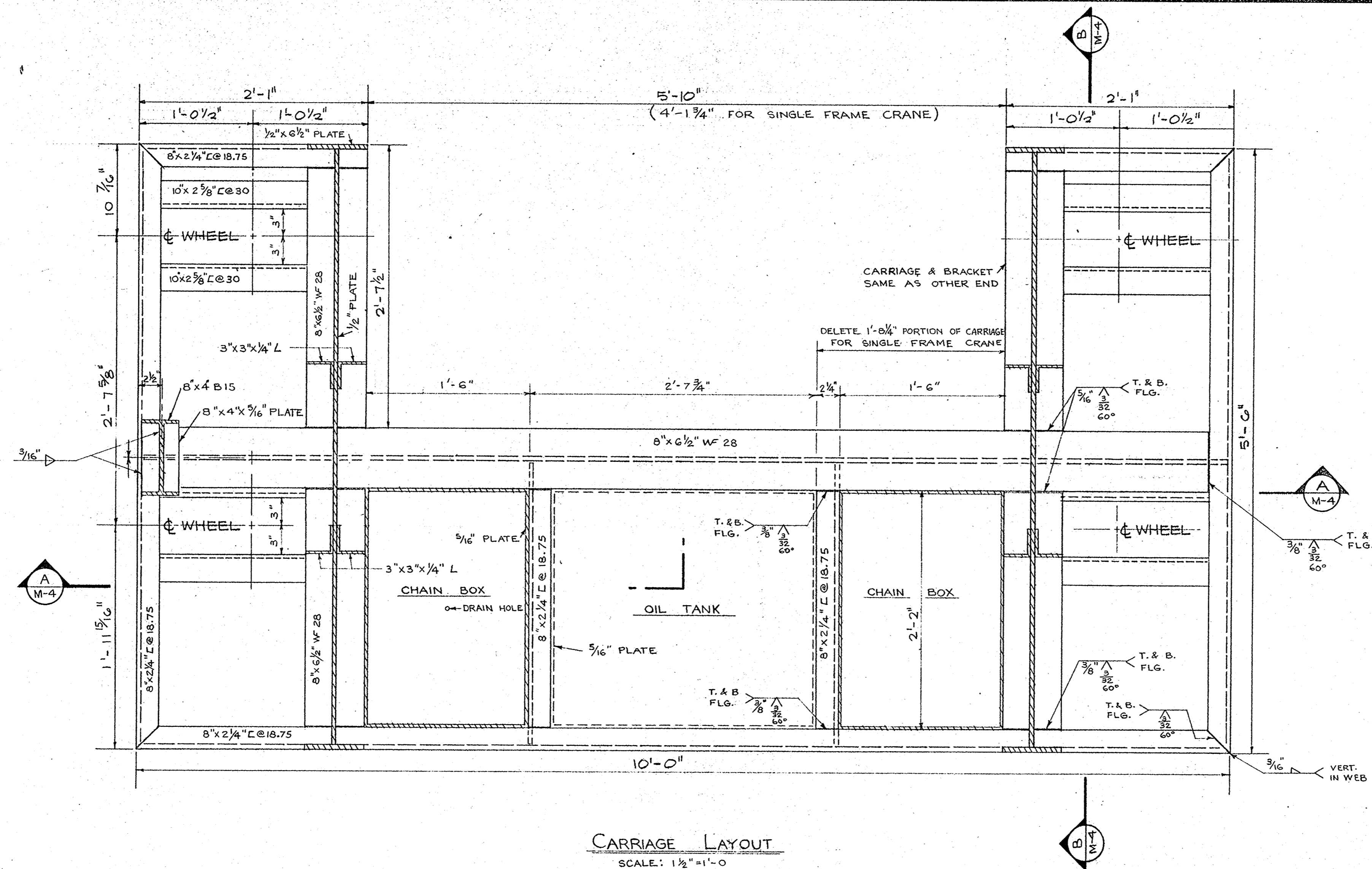
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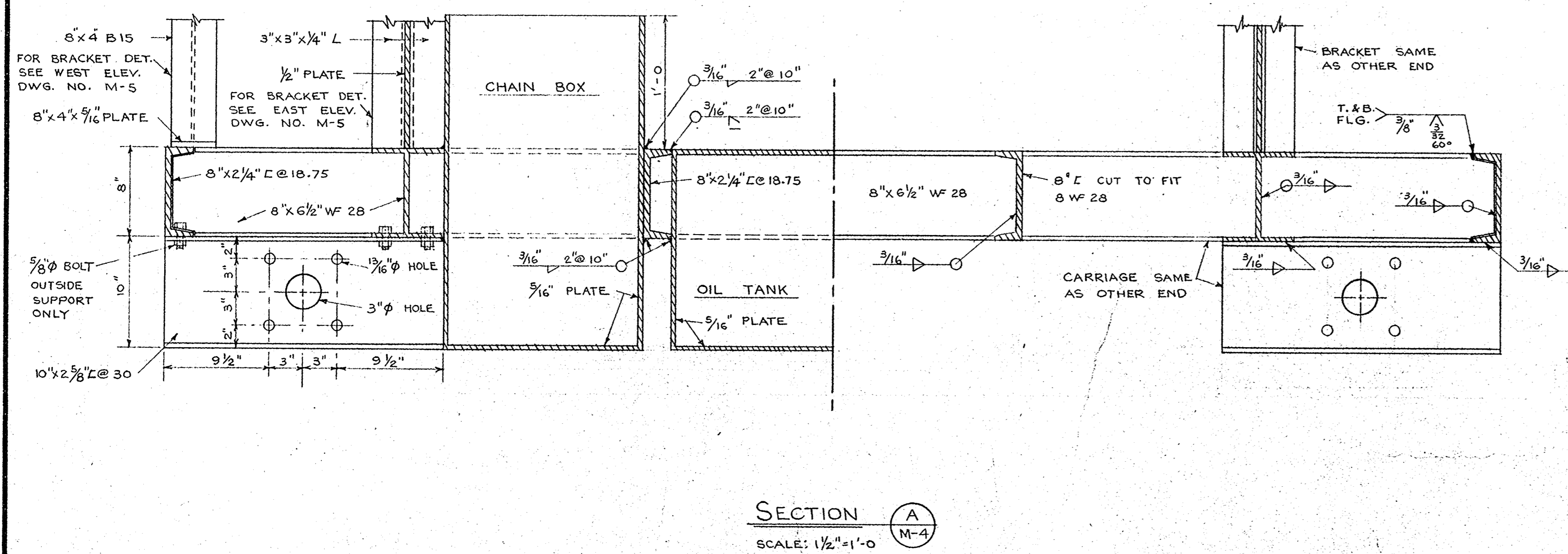
designed by S. P. conçu par
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date NOV. 70
reviewed by W. J. W. examiné par
date NOV. 70
approved by *W.J. W.* approuvé par
date *Dec 4/70*
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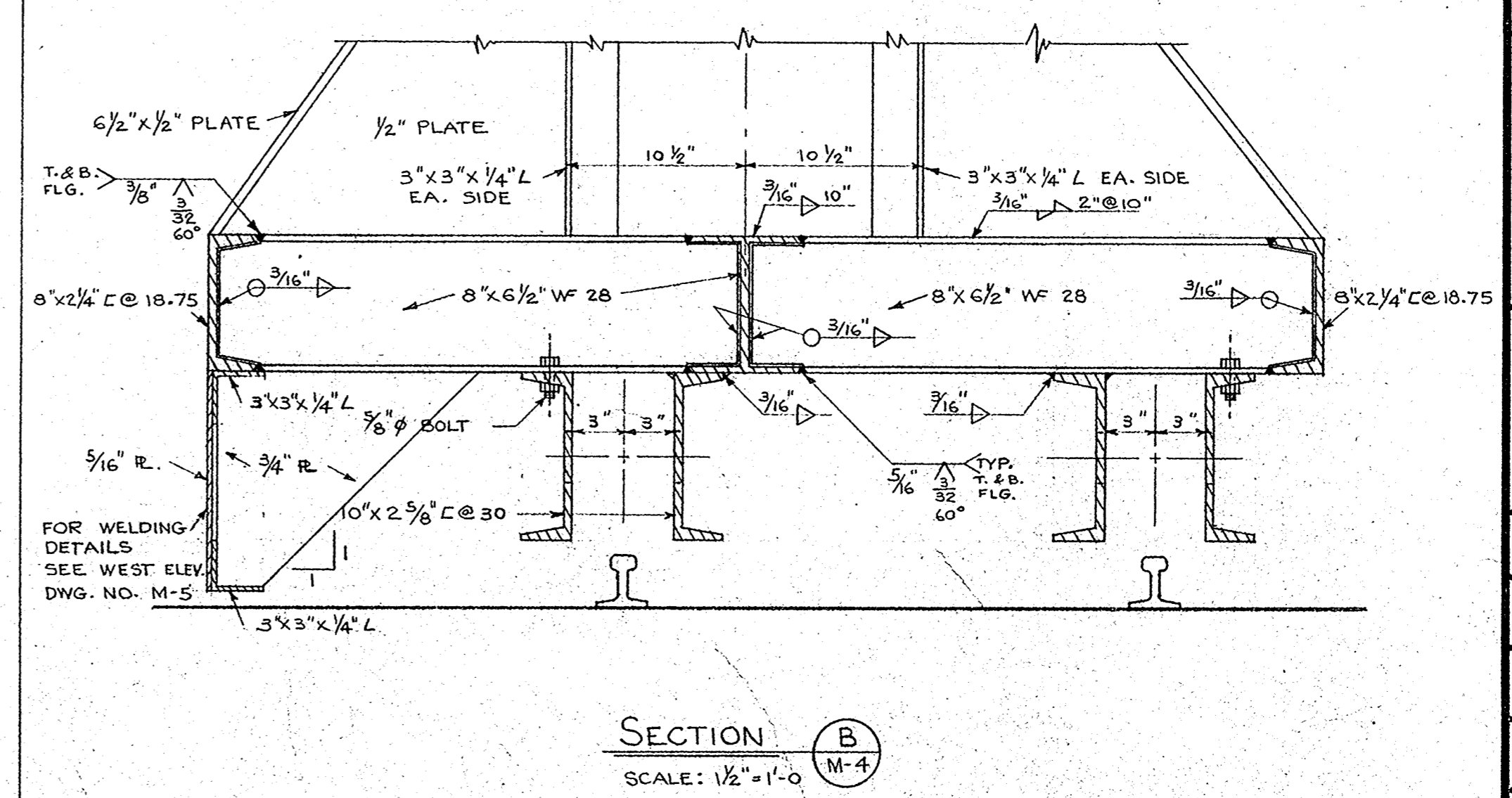
drawing no. dessin no.
M 4



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

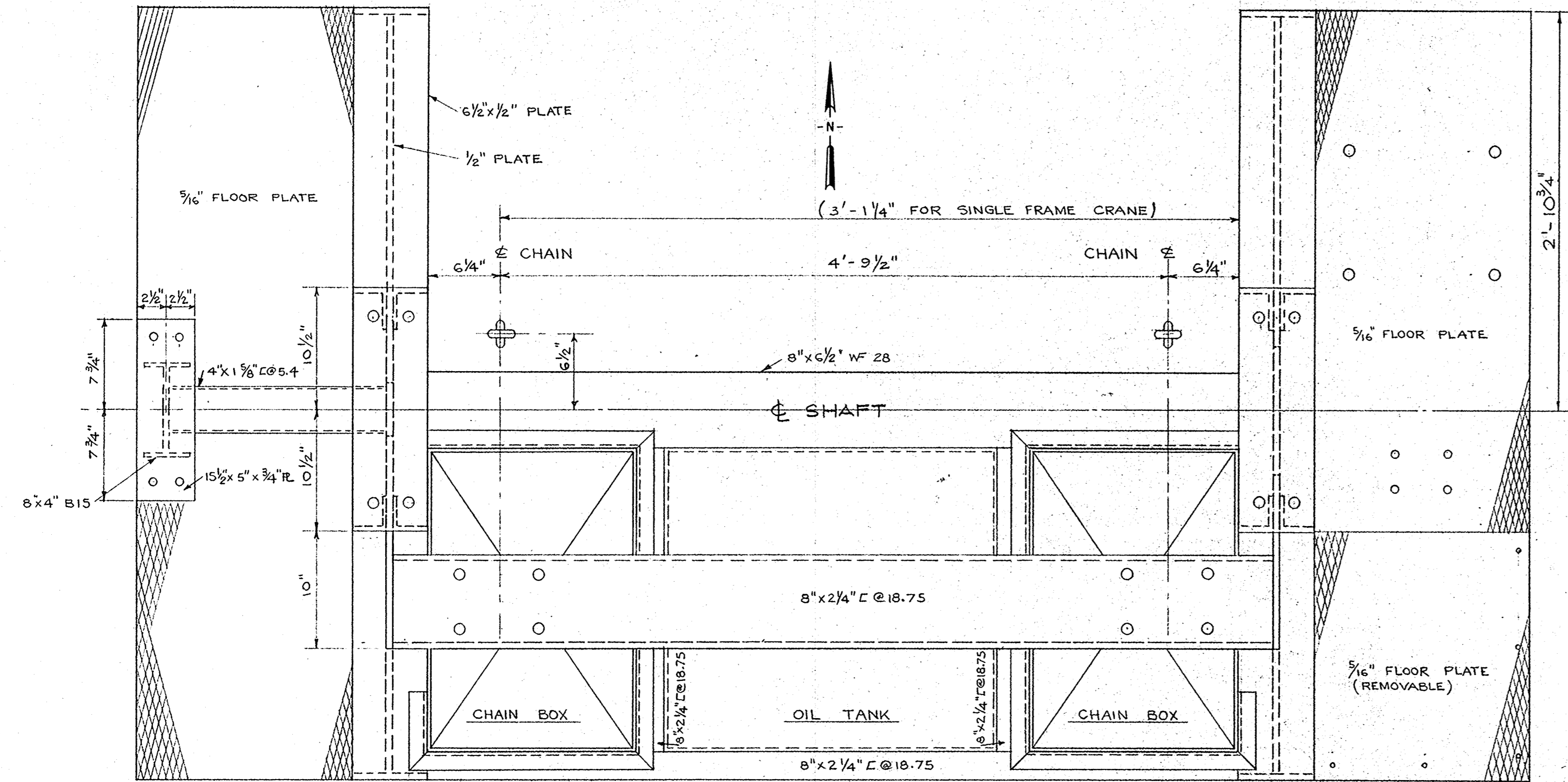


SECTION A
SCALE: 1/2"=1'-0"

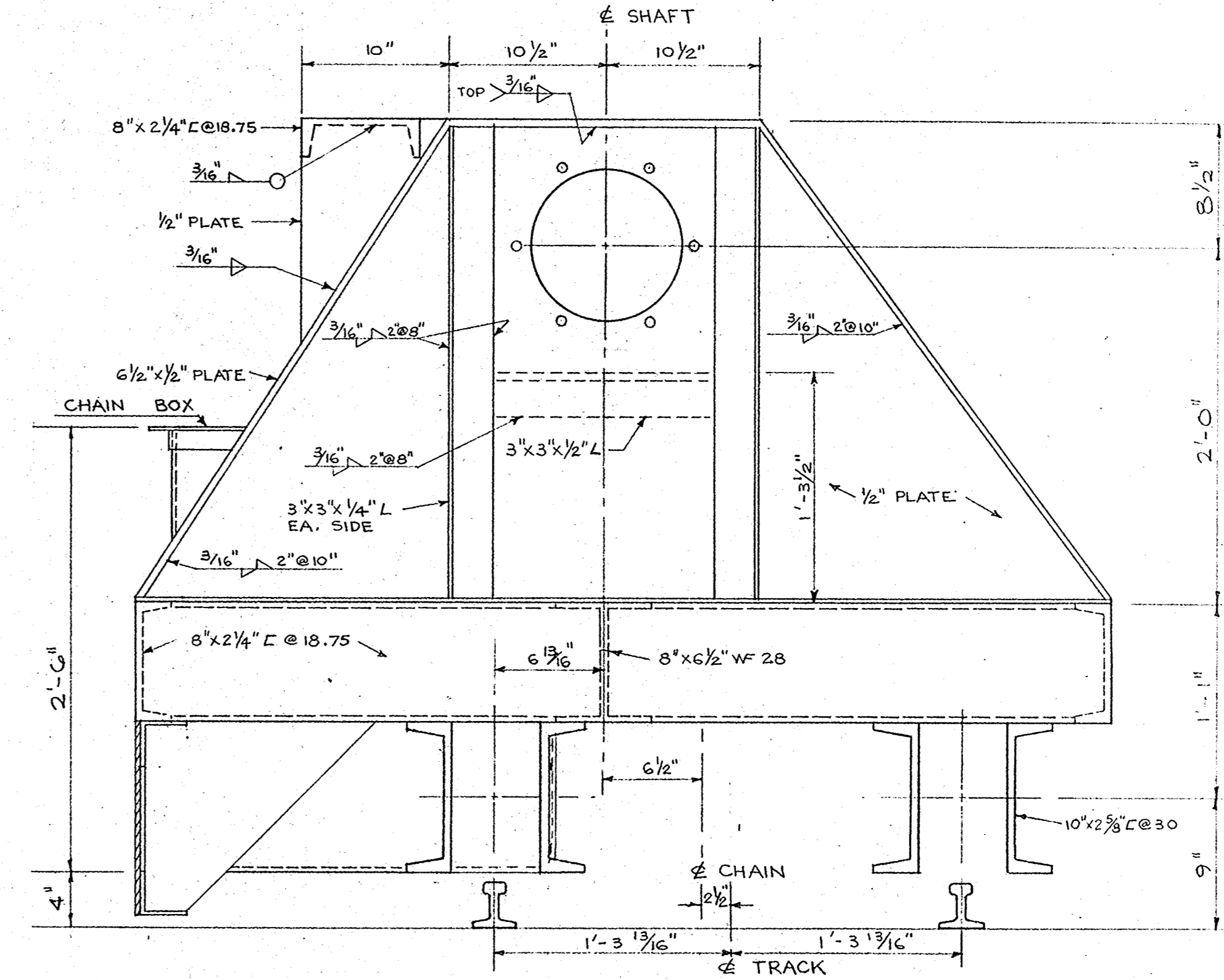


SECTION B
SCALE: 1/2"=1'-0"

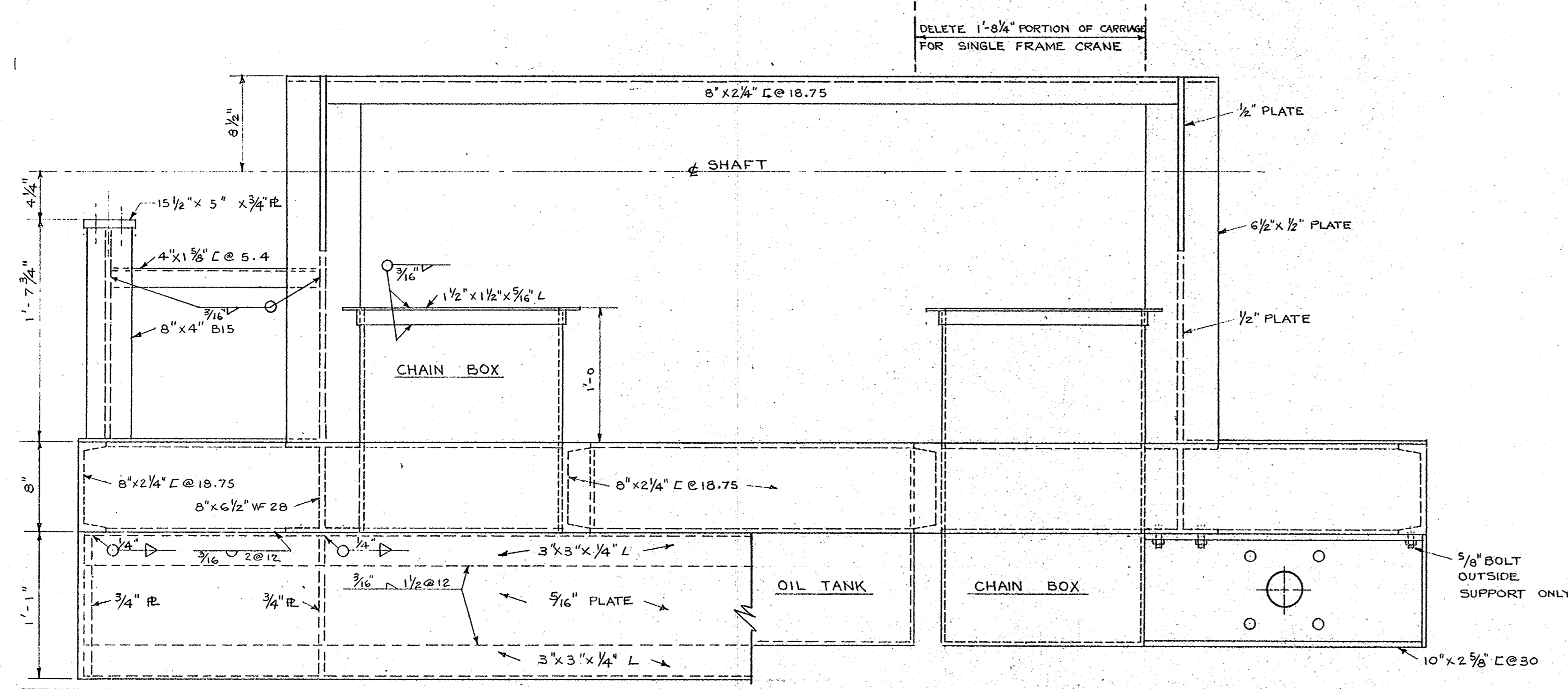
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WINNIPEG EDMONTON
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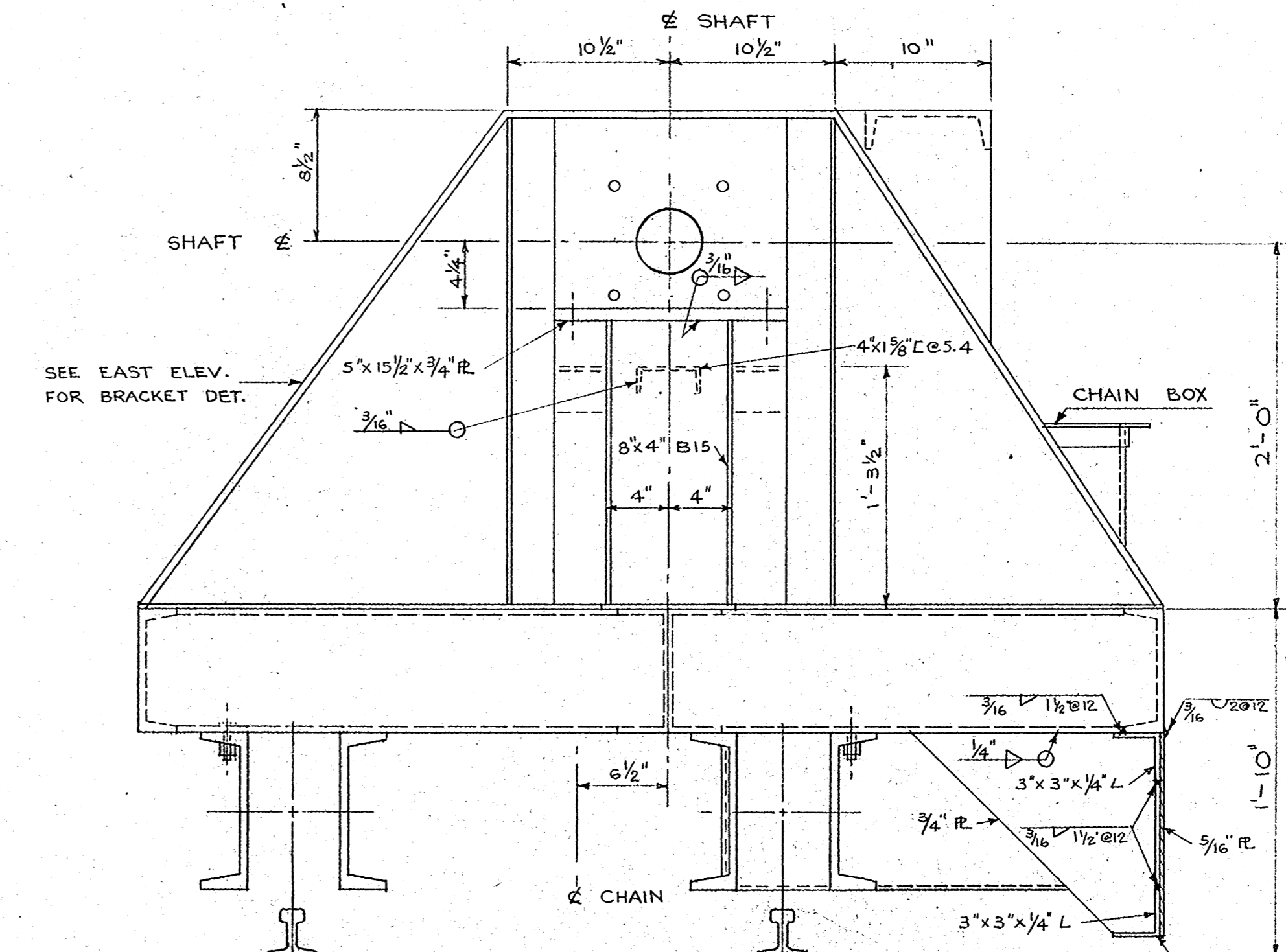
CARRIAGE PLAN
SCALE: 1 1/2" = 1'-0"



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



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

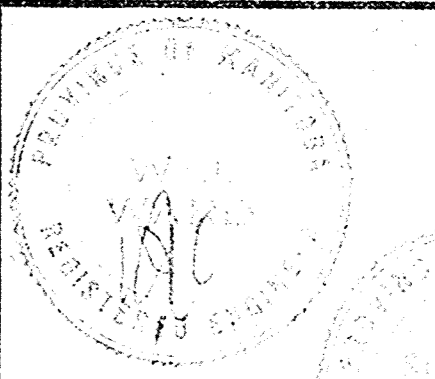


WEST ELEVATION
SCALE: 1 1/2" = 1'-0"



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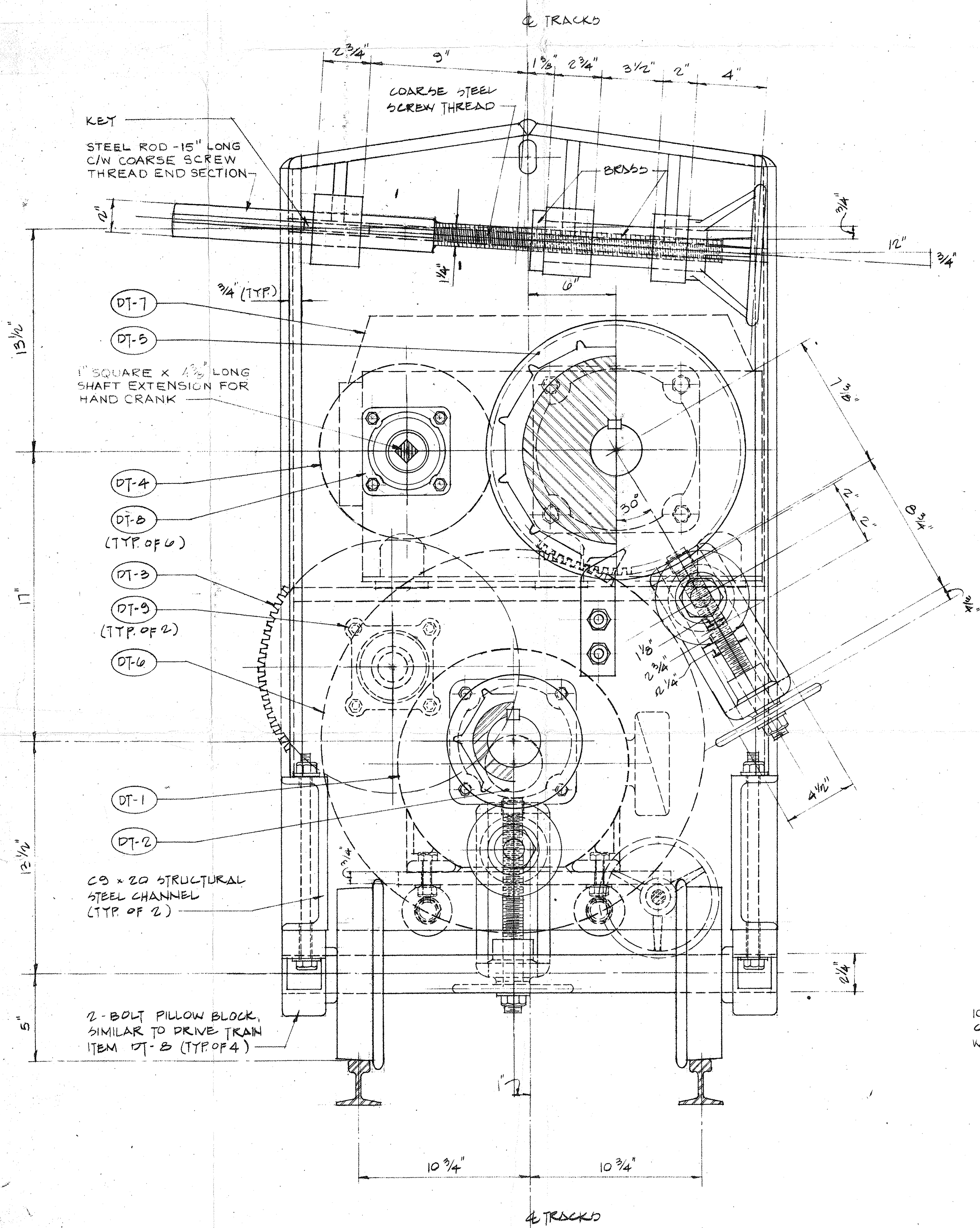
23 MAR 93 3 MAR 93 WEM

GENERAL NOTES

- FOR CLARITY, NOT ALL COMPONENTS SHOWN IN EACH VIEW.
- ALL WORK CARRIED OUT IN FABRICATION OF CRANES SHALL BE OF GOOD QUALITY WORKMANSHIP TO THE APPROVAL OF THE ENGINEER.
- FABRICATOR SHALL PROVIDE COMPLETE ELECTRICAL WIRING OF CRANES C/W PANEL, FOR MOTOR STARTING, OPERATION AND CONTROL. WIRING SHALL BE CARRIED OUT BY A QUALIFIED ELECTRICIAN. (OWNER PROVIDES ELECTRICAL POWER TO CRANES THROUGH A SINGLE CABLE C/W 4-PRONG CRUIS-HINDS ARKTYPE MODEL, NEMA MALE COUPLING. COUPLING ON ELECTRICAL PANEL SHALL BE A 4-PRONG QUICK DISCONNECT FEMALE COUPLING. APPLICATOR ELECTRIC COMPANY, CAT. NO. AP-367, STYLE 1, OR APPROVED EQUAL.) CONTROL OF CRANES SHALL BE FROM A HAND HELD REMOTE CONTROLLER C/W 6 FT CABLE TO CRANE. REMOTE CONTROLLER SWITCHES SHALL ALLOW FOR SWITCHING TO EITHER LOW OR HIGH SPEED, FORWARD OR REVERSE, FORWARD AND REVERSE SWITCHES SHALL BE PRESS-ON-RELEASE-OFF TYPES.

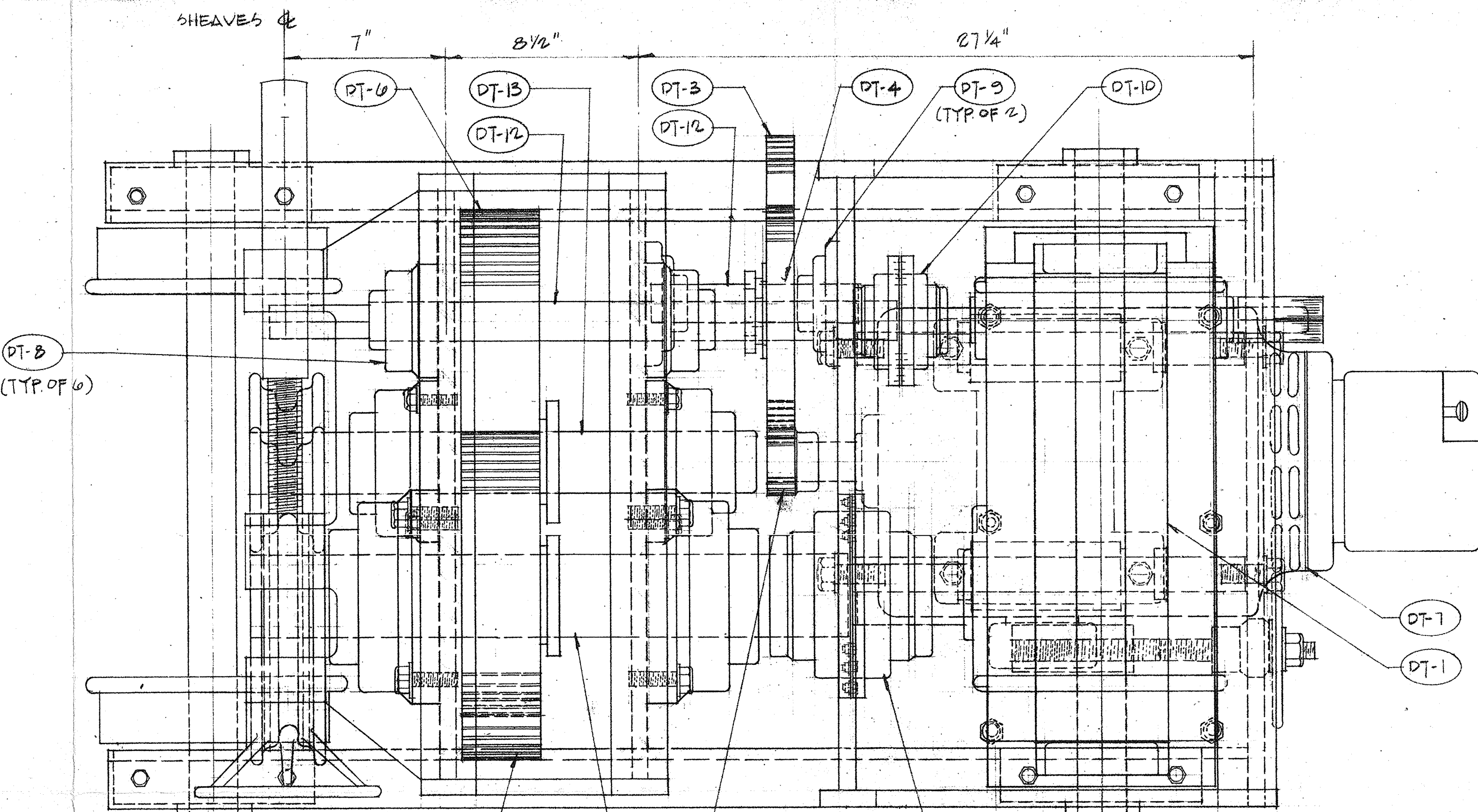
NO-LOAD LARGE SHEAVE HIGH SPEED | 5.40 RPM | 5.22 RPM
 * ACCORDING TO ENGINEERING REPORT DATED JUNE, 1967.

PARAMETER	DESIGN CRITERIA	
	EXISTING CRANES	NEW CRANES
MOTOR HP AND DESIGN	2 HP/DESIGN "B"	3 HP/DESIGN "C"
MOTOR TO LARGE SHEAVE GEAR RATIO	222.222	228.670
HAND CRANK TO LARGE SHEAVE GEAR RATIO	31.333	68.601
RATED PULLING CAPACITY	3300 LB*	4125 LB
FULL-LOAD LARGE SHEAVE HIGH SPEED	5.22 RPM	5.03 RPM



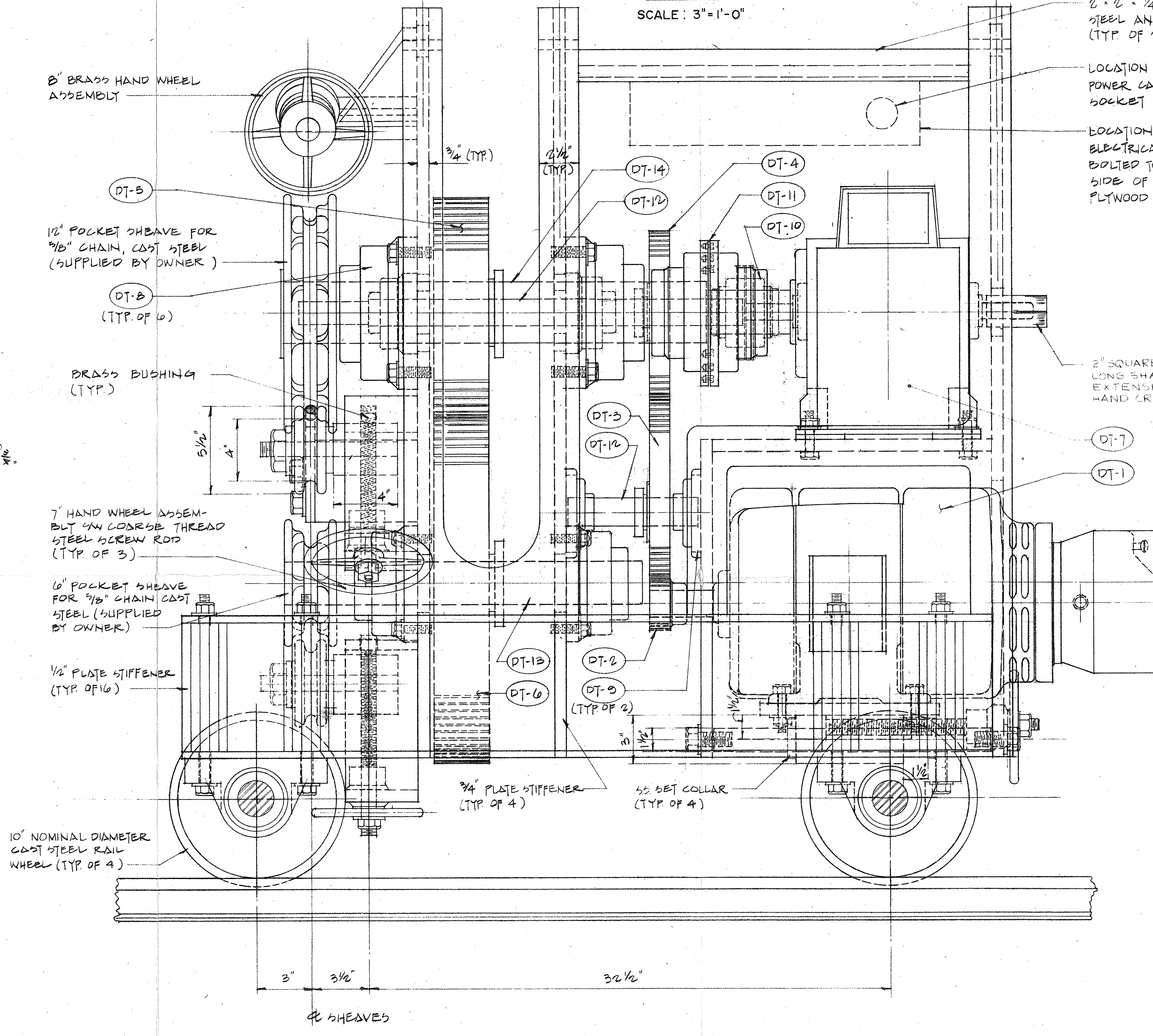
END ELEVATION

(SHOWING HALF OF CHAIN SHEAVES IN SECTION)
 SCALE: 3" = 1'-0"



PLAN

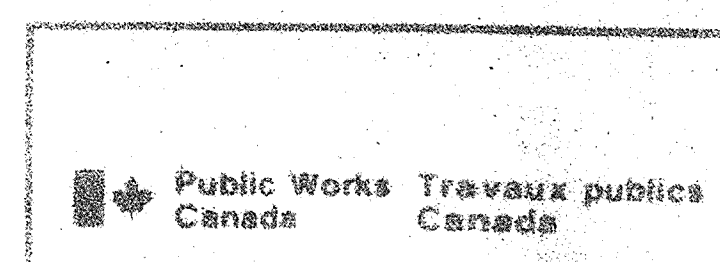
SCALE: 3" = 1'-0"



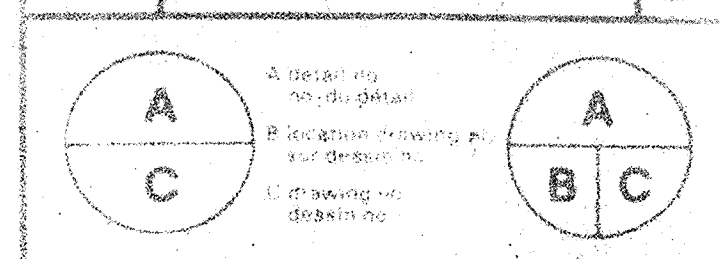
ELEVATION

(LOOKING UPSTREAM)
 SCALE: 3" = 1'-0"

ITEM NO.	DESCRIPTION	QTY/CRANE
DT-1	ELECTRIC MOTOR, 3-PHASE EDMAC DESIGN C/W SQUIBREL-CAGE INDUCTION MOTOR, HIGH STARTING TORQUE, REVERSIBLE, 2-SPEED, 3HP/1-1/2 HP, 1200 RPM/600 RPM SYNCHRONOUS SPEEDS, 208 VOLTS, 60 HERTZ, 1.15 SERVICE FACTOR, CONTINUOUS TIME RATING, INSULATION CLASS F, SEVERE DUTY TYPE, C/W CAST-IRON FRAME, ENDSTELLS AND CONDUIT BOX, CAST ALUMINUM ROTOR, STAINLESS STEEL NAMEPLATE, MOTOR MOUNTED DISK BRAKE (25 FT. LB. BRAKE TORQUE), D.T. AND W.P. BRAKE ENCLOSURE, ETC. UNIT SHALL BE COE TYPE KG OR APPROVED EQUAL.	1
DT-2	MINIMUM BORE SPUR GEAR, 8 PITCH, 1-1/2 IN. FACE, 14-1/2° PRESSURE ANGLE, 3,000 IN PITCH DIAMETER, 24 TEETH, STEEL CONSTRUCTION, ETC. ITEM SHALL BE BROWNING NO. NCS848 OR APPROVED EQUAL.	1
DT-3	SAME AS DT-2 EXCEPT 15,000 IN. PITCH DIAMETER, 120 TEETH, CAST IRON CONSTRUCTION C/W SPLIT TAPER RUBBERING, KEY, BOLTS, ETC. ITEM SHALL BE BROWNING NO. NCS848 OR APPROVED EQUAL.	1
DT-4	SAME AS DT-3 EXCEPT 10,000 IN. PITCH DIAMETER, 80 TEETH, ETC. ITEM SHALL BE BROWNING NO. NCS848 OR APPROVED EQUAL.	1
DT-5	SPUR GEAR, 4 PITCH, 3-1/2 IN. FACE, 20° PRESSURE ANGLE, 14,000 IN. PITCH DIAMETER, 56 TEETH, CAST IRON CONSTRUCTION C/W SPLIT TAPER RUBBERING, KEY, BOLTS, ETC. ITEM SHALL BE BROWNING NO. YCS6856 OR APPROVED EQUAL.	1
DT-6	SAME AS DT-5 EXCEPT 22,000 IN. PITCH DIAMETER.	1
DT-7	PARALLEL SHAFT SPEED REDUCER, 70.63 NOMINAL GEAR RATIO, 68,600 EXACT GEAR RATIO, C/W WELDED STEEL HOUSING, CARBURIZED AND GROUND GEARS, TAPERED ROLLER BEARINGS, SPLASH LUBRICATION, ETC. UNIT SHALL BE BROWNING SIZF 3007, ASSEMBLY CONFIGURATION 25, OR APPROVED EQUAL.	1
DT-8	FLANGE BLOCK, DOUBLE ROW SPHERICAL ROLLER BEARING, HIGH CAPACITY, SELF ALIGNING C/W CAST-IRON HOUSING, SETSCREWS, ETC. ITEM SHALL BE BROWNING 1000 SERIES OR APPROVED EQUAL. (REFER TO SHAFT DIAMETER FOR BORE SIZE.)	6
DT-9	FLANGE BLOCK, SINGLE ROW BALL BEARING, MEDIUM DUTY, SELF ALIGNING, C/W MALLEABLE HOUSING, SETSCREWS, ETC. ITEM SHALL BE BROWNING MODEL 7530 OR APPROVED EQUAL. (REFER TO SHAFT DIAMETER FOR BORE SIZE.)	2
DT-10	FLEXIBLE COUPLING, INTERFERENCE FIT, C/W HIGH STRENGTH SPRING STEEL GRID, STEEL COVER, STEEL HOUS, LUBRICATION FITTINGS, ETC. ITEM SHALL BE BROWNING COUPLING REFERENCE NO. 181 OR APPROVED EQUAL. (REFER TO SHAFT DIAMETER FOR BORE SIZE.)	1
DT-11	SAME AS DT-10 EXCEPT ITEM SHALL BE LONG SHAFT EXTENSION FOR HAND CRANK.	1
DT-12	1-3/4" NOMINAL DIAMETER "LOWER" STEEL SHAFT, CAPTAIN, MATERIAL SHALL BE 4140 QUENCHED AND TEMPERED STEEL.	1
DT-13	SAME AS DT-12 EXCEPT 2-3/8" NOMINAL DIAMETER.	1
DT-14	SAME AS DT-13 EXCEPT 3-1/2" NOMINAL DIAMETER.	1



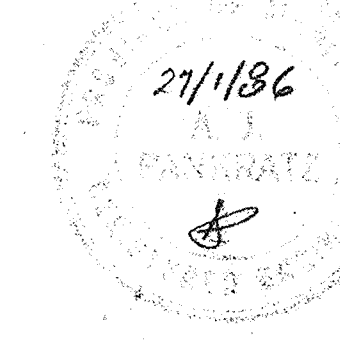
2	ADDED HAND CRANK SHAFT EXTENSION LENGTH	FEB 6/86
1	REMOVED BRASS STABILIZATION OF 7" HANDWHEELS & SCREWS, INCREASED DISTANCE BETWEEN TRACK CENTRES, INCREASED HEIGHT OF 8" BRASS HANDWHEEL ASSEMBLY	



ST. ANDREWS DAM CURTAIN CRANE

ST. ANDREWS DAM CURTAIN CRANE ENGINEERING DESIGN DRAWING

Designed by **R. C. L.**
 Date **JAN. 24, 1986**
 Drawn by **M. N. T.**
 Date **JAN. 24, 1986**



Project number **780073**

A. J. P. ENGINEERING SERVICES
 WINNIPEG MANITOBA
 CONSULTING MECHANICAL ENGINEERS