



**Detroit
Edison**

CORPORATE REAL ESTATE SERVICES

Job Project No.: BM3699
Location Project No.: BM3699
OCCPT/RX No.: RX4521

Date: January 26, 1993
To: Ava D. Thrower
Records Center
From: Tom Wilson *sw*
Subject: Overhead Crossing of Railroad Land

Attached are papers related to the new agreement between Detroit Edison and Grand Trunk Western Railroad for a transmission right of way crossing. The right of way is located in the NE 1/4 of Section 30, Richmond Township, Macomb County, Michigan, East of Pitt and North of 33 Mile Roads.

Transmission and Technical Services, is hereby notified to do the requested work. **Note: All construction work associated with aerial crossings or railroad tracks requires that you notify the operating railroad as to the actual date of construction, in advance of any work.**

The railroad invoice No. is 0070041.

The agreement dated April 12, 1988 provides for a payment of \$400.00 on an annual basis.

Payment was sent to the railroad on January 15, 1993, and was charged to Work Order 767AC641.

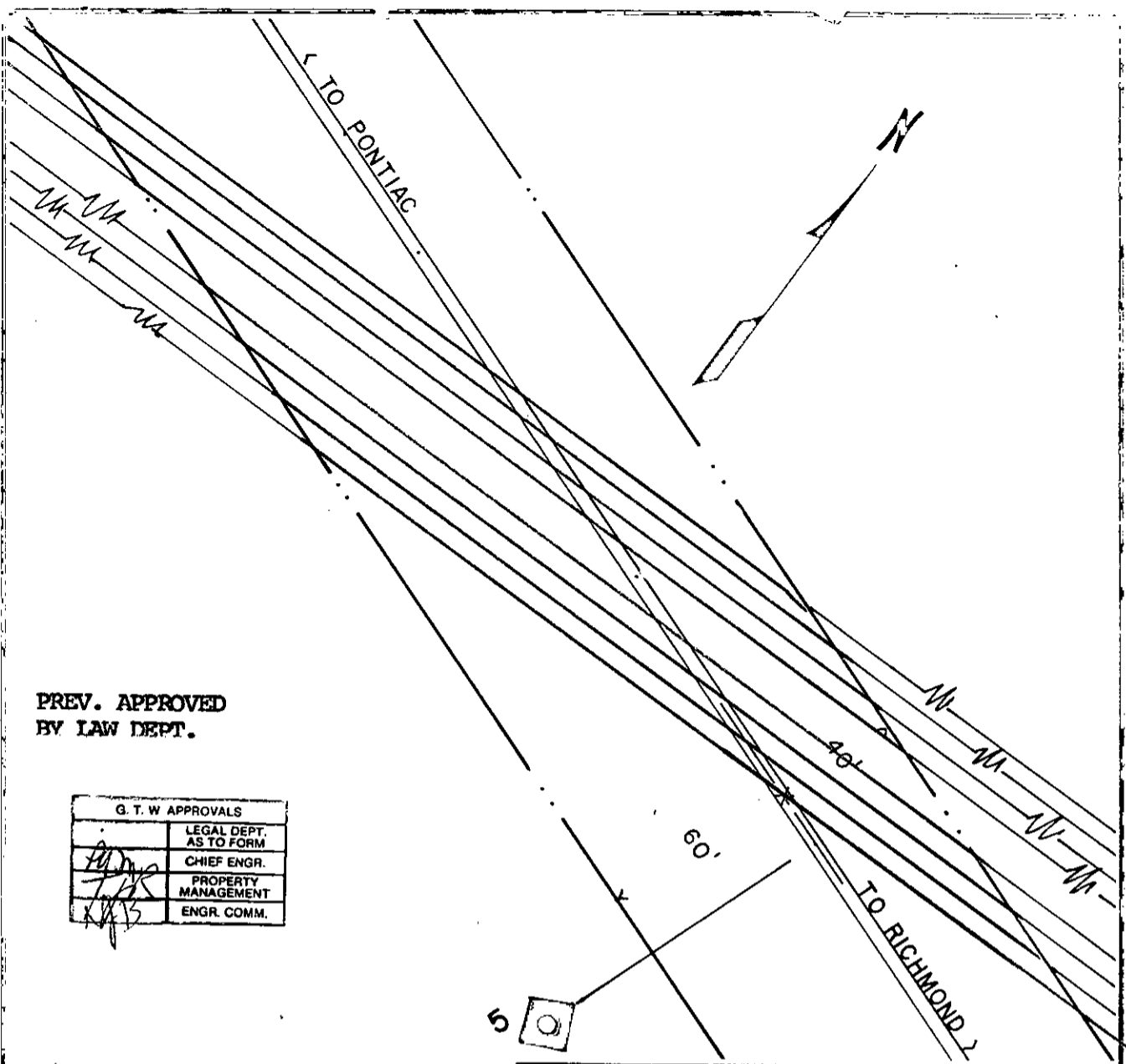
Please incorporate copies of these papers into an appropriate Records Center Right of Way File.

Attachments

cc: Clark F. VanParis

RECORDED RIGHT OF WAY NO. 34636-2286

RECORDED RIGHT OF WAY NO. 34636-1286



PREV. APPROVED
BY LAW DEPT.

G. T. W. APPROVALS	
<i>[Signature]</i>	LEGAL DEPT. AS TO FORM
<i>[Signature]</i>	CHIEF ENGR.
<i>[Signature]</i>	PROPERTY MANAGEMENT
<i>[Signature]</i>	ENGR. COMM.

Proposed installation to consist of twelve-1431 MCM, 45/7 ACSR, 345,000 volt wires & two-159 MCM, 12/7 ACSR, ground wires 48' above top of rail at MP 5.02

GTW Wire Crossing No. 2725
D.E. Co. Crossing No. RX 4521

ANY CLEARANCES SHOWN ARE FROM CENTERLINE OF TRACK, UNLESS OTHERWISE NOTED.

GRAND TRUNK WESTERN RAILROAD COMPANY
ROMEO SUBDIVISION
ARMADA, MACOMB COUNTY, MICHIGAN

LICENSE

DETROIT EDISON COMPANY
OFFICE OF ENGINEER SURVEYS & CONSTRUCTION
DETROIT, MICHIGAN

PLAN NO. L-13-88 MARCH 8, 1988
SCALE 1" = 50' FILE NO. M 7-16

BOUNDARIES OF G. T. W. R. R. CO. ——— . . . ———

PERMIT NOS 536 UNDER MASTER AGREEMENT DATED 1/2/32
FILE NO. L-7-41

W. L. Masters
Engineer, Surveys & Construction, System

~~RENTAL FOR THIS PERMIT:~~

\$600.00 for the period April 12, 1988 thru December 31, 1988
\$400.00 per annum thereafter.

GRAND TRUNK WESTERN RAILROAD COMPANY,
a Michigan corporation

S. M. Cameron

By *[Signature]*
Its Manager, Property Management

DETROIT EDISON COMPANY,
a Michigan corporation

XX *Thomas Wilson*
THOMAS WILSON

By X *[Signature]*
Its Paul W. Potter, Director - Corporate Real Estate

PREV. APPROVED



2000 Second Avenue
Detroit, Michigan 48226
(313) 237-8000

February 29, 1988

W. LaMasters
Engineer of Surveys
and Construction
Grand Trunk Western
Railroad Company
1333 Brewery Park Boulevard
Detroit, MI 48207-2699

Re: Wire Crossing Notification

Dear Mr. LaMasters:

This letter is prior notification of the construction of an overhead wire crossing over your railroad tracks by The Detroit Edison Company.

Proposed Overhead Wire Crossing

1. Location: Belle River-Jewell #3 345 kV transmission line over Grank Trunk tracks. Located 1,485' east of Pitt Road and Approximately 2,820' north of 33 Mile Road, Richmond Township, Macomb County, Michigan
2. Edison Project and Crossing Nos.: BM 3699 - RX 4521
3. New or Reconstruction: New
4. Please indicate your:
 - R.R. Valuation Station No. _____
 - R.R. Mile Post No. _____
 - Requirements for Flagman or Inspection _____

All construction will be done in accordance with specification of the Michigan Public Service Commission and all applicable codes and laws.

In the event we have not otherwise received acknowledgement of this notification, within 45 days of the above date, our crews have been instructed to begin work.

Construction of the crossing will begin no later than May 16, 1988. Please contact Brenda L. Golson our Real Estate Coordination Specialist-Railroads on (313) 237-8316, prior to this date, if you have any questions.

Sincerely,

Thomas Wilson
Real Estate Associate

/BLG
attachments

RECORDED RIGHT OF WAY NO. 34636-1286

DATA SHEET TO ACCOMPANY DRAWING RX-4521
(This is a new crossing)

Name of Company:

The Detroit Edison Company.

Name and Location of Crossing:

Crossing of the Belle River-Jewell #2 345 kV transmission line over Grand Trunk Western Railroad tracks. Located 1485 feet east of Pitt Road and approximately 2,820 feet north of 33 Mile Road in Richmond Township, County of Macomb.

Circuits:

Double circuit, 12 conductor (2 per phase) 345,000 volt, 60 cycle, 3 phase transmission circuits with two groundwires.

Towers:

See attached drawing .

Conductors:

12-1431 MCM 45/7 ACSR and two 159 MCM 12/7 ACSR groundwires.

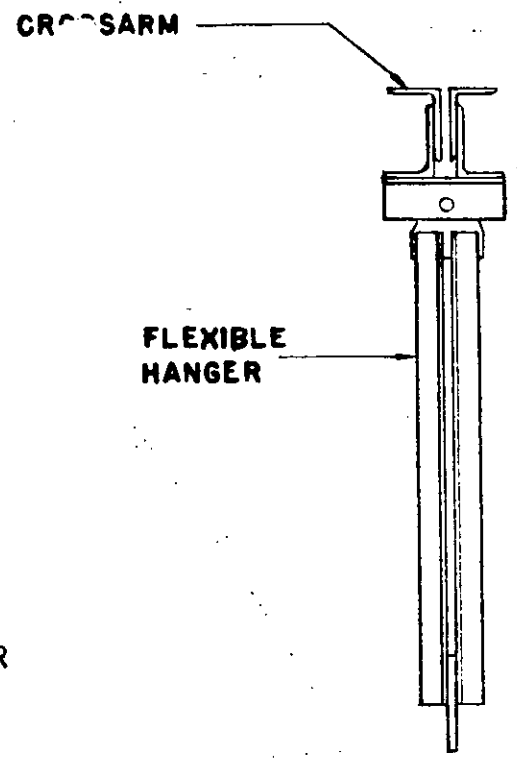
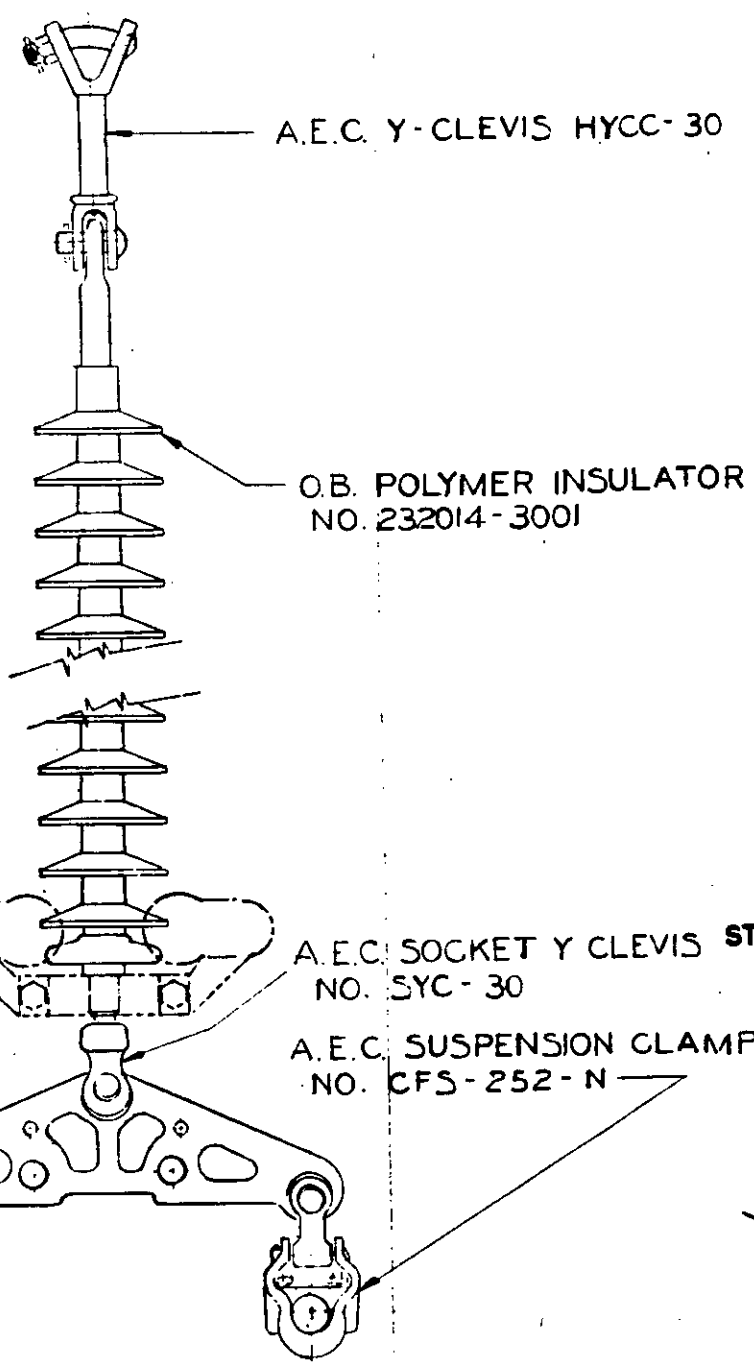
Insulators:

One 25,000 lb. polymer insulator. Ohio Brass Number 232014-3001.

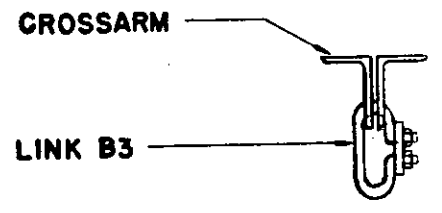
Power System Organization
AFK/lm 02-05-88

RECORDED RIGHT OF WAY NO. 34636 - P286

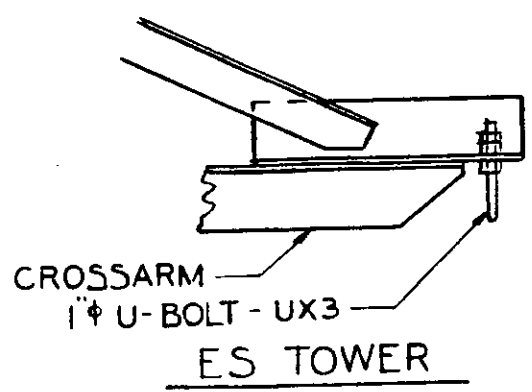
A.E.C. Y CLEVIS EYE NO. YCS-24-90
 A.E.C. YOKE PLATE NO. YPD-30-18437-2



EL TOWER
 (OUTSIDE ANGLE)



EL TOWER
 (INSIDE ANGLE)

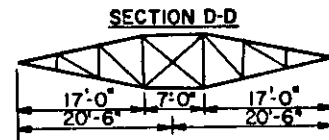
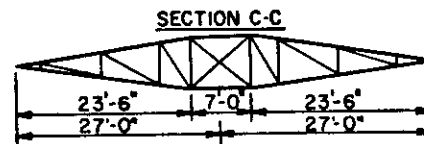
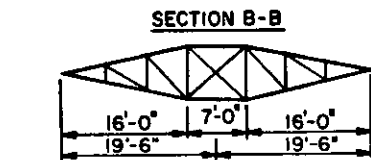
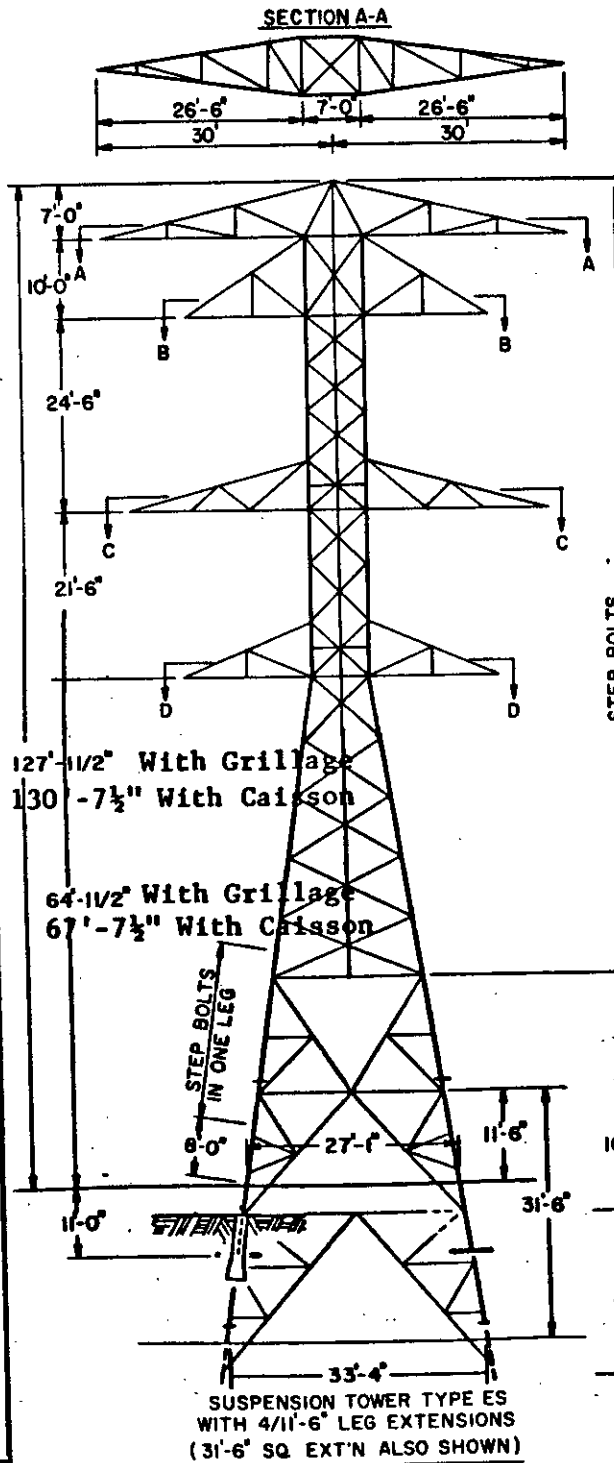


RECORDED RIGHT OF WAY NO. 34634-1

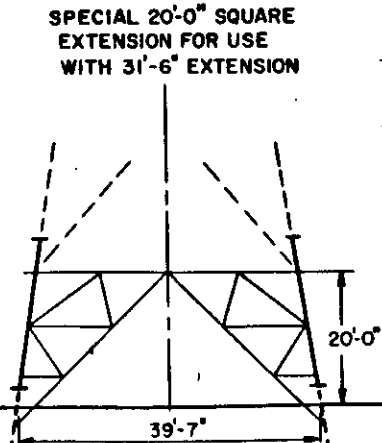
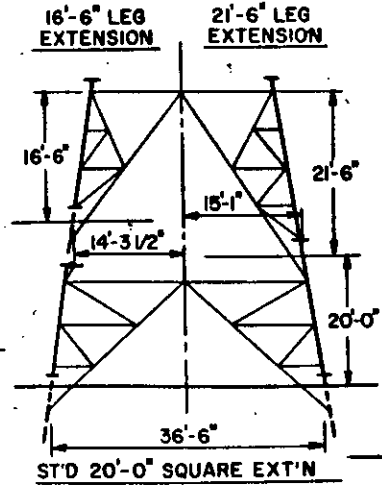
345 KV SUSPENSION DETAILS

APPROVED	THE DETROIT EDISON COMPANY TRANSMISSION PROJECTS	
	LAYOUT BY	DRAWN BY KUCEKA
	DATE 2-9-88	DRAWING NUMBER
	SCALE 2/5	

SUSPENSION TOWER TYPE ES



3'-6" ADDITION FOR CAISSON ANCHOR INSTALLATION 1970 AND LATER



SUSPENSION TOWER TYPE ES WITH 4/11'-6" LEG EXTENSIONS (31'-6" SQ EXT'N ALSO SHOWN)

LOADS

1. Vertical (1/2" ice)
 - a. 2 Groundwires @ 1500# = 3000#
 - b. 6 Two-Conductor Bundles @ 6700# = 40200#
 - Total = 43200#
2. Transverse-Wind on Wires (1/2" ice, 8# wind)
 - a. 2 Groundwires @ 1450# = 2900#
 - b. 6 Two-Conductor Bundles @ 4350# = 26100#
 - Total = 29000#
3. Longitudinal
 - a. 1 Two-Conductor Bundle @ 14,400#
 - b. 1 Groundwire @ 6600#
4. Wind on Tower (from any direction) of 13 psf on 1-1/2 times projected area of one face
5. Vertical Load of Tower
6. Vertical - Heavy (1" ice)
 - a. 2 Groundwires @ 3300# = 6600#
 - b. 6 Two-Conductor Bundles @ 11500# = 69000#
 - Total = 75600#

Combine

1. Double Circuit:
 - 1.65 x (1+2+4+5) = Intact
 - 1.65 x (1+15/16x2+3+4+5) = Broken Conductor Bundle or Groundwire
 - 1.65 x (6) = Heavy Vertical
2. Single Circuit:
 - 1.65 x (1+7/16x2+4+5) = Intact
 - 1.65 x (1+7/16x2+3b+4+5) = Broken Groundwire
 - 1.65 x (1+7/16x2+4+5) + 1.0 x (3a) = Broken Conductor Bundle
 - 1.65 x (6) = Heavy Vertical

Material

Steel per ASTM spec. A36, latest revision
 & High Strength Steel -44,000psi yield
 -50,000psi yield
 -60,000psi yield

Coating

All material galvanized to ASTM spec. 123, latest revision.

Connections

Bolted with 5/8" diameter machine bolts, ASTM spec A394, latest revision.

Ultimate Unit Stresses

Tension, Net Section = $0.9F_y$ (F_y = Yield Stress in psi)
 Compression, Gross Section;
 For $L/r \leq 50$ $S_c = F_y(1 - F_y/900)$
 For $50 \leq L/r \leq 3 \times 10^4$ $S_c = F_y(1 - 2 \times 10^{-4} \frac{L}{r} \sqrt{F_y})$
 For $\frac{3 \times 10^4}{\sqrt{F_y}} \leq L/r$ $S_c = \frac{3 \times 10^8}{(L/r)^2}$
 Shear on Bolts = 30,000psi
 Bearing on Bolts = 60,000psi

SUSPENSION TOWER TYPE ES

APPROVED	DATE	LAYOUT BY	DRAWN BY
	1-26-68	R.O.S.	W.E.S.
SCALE	NONE		

THE DETROIT EDISON COMPANY
GENERAL ENGINEERING DEPARTMENT

THE CALCULATIONS FOR THIS TRIAL ARE FOR JEWELL-SARATOGA 345KV TWR 13887-13929
 STRESS-STRAIN CURVES USED REPRESENT 1,192,500 CM ACSR 45/7

STARTING INDEX	COMPUTED RULING SPAN	STARTING SAG OR TENSION	AREA OF CONDUCTOR	INITIAL LIMIT MAX TENSION	INITIAL BARE LIMIT TENSION	FINAL BARE LIMIT SAG OR TENSION
1	1107.9	14000.00	1.20200	22980.00	13405.00	9575.00

*****CREEP IS A FACTOR*****

INDEX	TEMP.	SAG	INITIAL TENSION	SAG	FINAL TENSION	SAG IS IN FEET AND TENSION IS IN POUNDS.
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1	0.	35.66	-14000.	37.52	13318.
2	0.	30.39	8179.	34.06	7305.
3	32.	36.19	11992.	38.65	11238.
4	10.	31.06	8002.	34.74	7162.
5	20.	31.75	7831.	35.43	7025.
6	30.	32.42	7671.	36.11	6894.
7	40.	33.08	7518.	36.77	6771.
8	50.	33.75	7372.	37.43	6654.
9	60.	34.40	7233.	38.08	6541.
10	70.	35.04	7101.	38.72	6434.
11	80.	35.68	6975.	39.35	6332.
12	90.	36.32	6854.	39.98	6234.
13	100.	36.95	6739.	40.60	6141.
14	110.	37.57	6629.	41.21	6050.
15	120.	38.18	6524.	41.82	5964.
16	257.	46.04	5426.	49.47	5056.

----MINUS SIGN INDICATES CONTROLLING SAG OR TENSION VALUE

RECORDED RIGHT OF WAY NO. 9887-228

TO (NAME AND ADDRESS INCL ZIP CODE)
Grand Trunk Western Railroad Company
P.O. Box 77136
Detroit, MI 48277

DATE OF REQUEST 1-15-93
REQUESTED CHECK DATE 1-15-93
CONTRACT NO.

STATE WHAT PAYMENT IS FOR (ATTACH COPY IF REQUIRED BY PAYEE)

Back Rent for New License Agreements

1. First years rent processing fee =	\$ 600.00
4 years back rent at \$400.00 per years =	\$ 1,600.00
2. First years rent/processing fee =	\$ 500.00
4 years back rent at \$300.00 per year =	\$ 1,200.00
3. First years rent processing fee =	\$ 1,000.00
4 years back rent at \$800.00 per year =	\$ 3,200.00
Total	\$ 8,100.00

VENDOR CODE E7236
TAX CODE USE/SALES TAX OR I/A
DISC CODE CASH DISCOUNT AMT.
FREIGHT ADD'L CHG
ADDITIONAL CHARGE AMT AUDITED

ACCOUNT NAME	ITEM	WORK ORDER	AMOUNT
1. P536	01	867AC641	\$2,200
2. P537	02	767AC641	\$1,700
3. P538	03	767AC641	\$4,200
	04		
		TOTAL AMOUNT	\$8,100

PREPARED BY
Thomas Wilson

APPROVED FOR PAYMENT
[Signature]

APPROVED

AUDITED

ORDER RIGHT OF PAY NO. 34636-12886

SEND CHECK TO Thomas Wilson, 2310 WCB

9321-836 FD; E7236 - C2797-C2157

*** TOTAL *** Remittance from Detroit Edison. Please detach before depositing

8100.00
DE 983-1250 12-91 X

457626 62-38
311

Detroit Edison
2000 Second Avenue
Detroit, Michigan 48226

Bankers Trust (Delaware)
(Wilmington, Delaware)

General Account *****8100*DOLLARS*00*CENTS*** Date 01/15/93 Check Number 984619

\$8,100.00

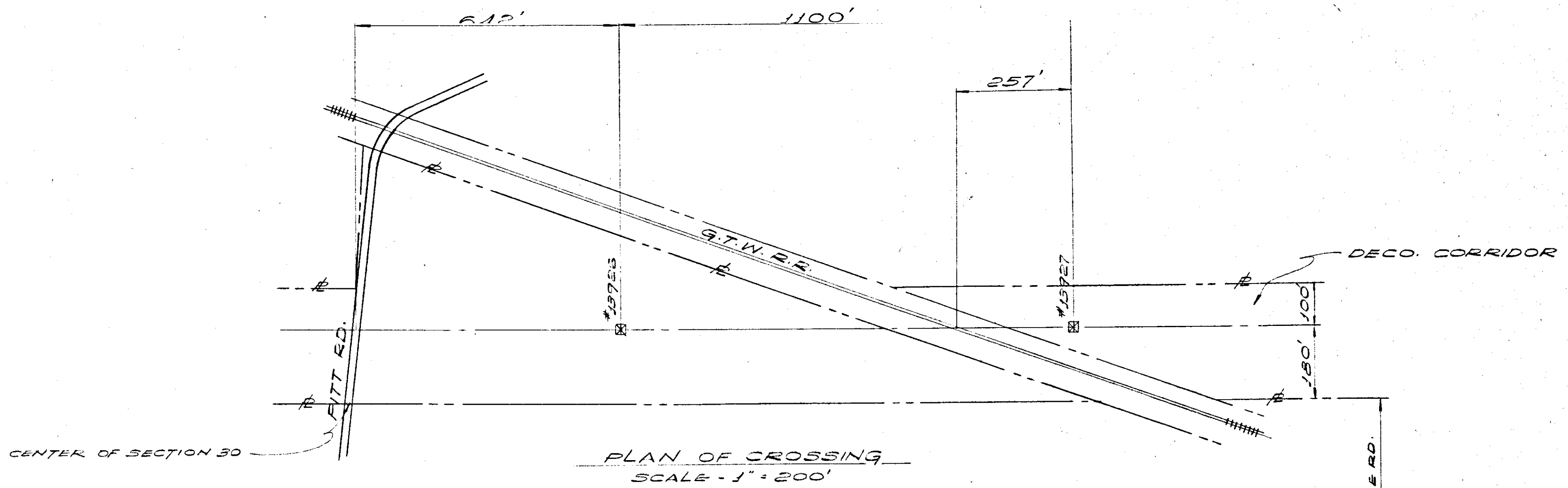
GRAND TRUNK WESTERN RAILROAD CO
P O BOX 77136
DETROIT, MI 48227

[Signature]
Authorized Agent's Signature

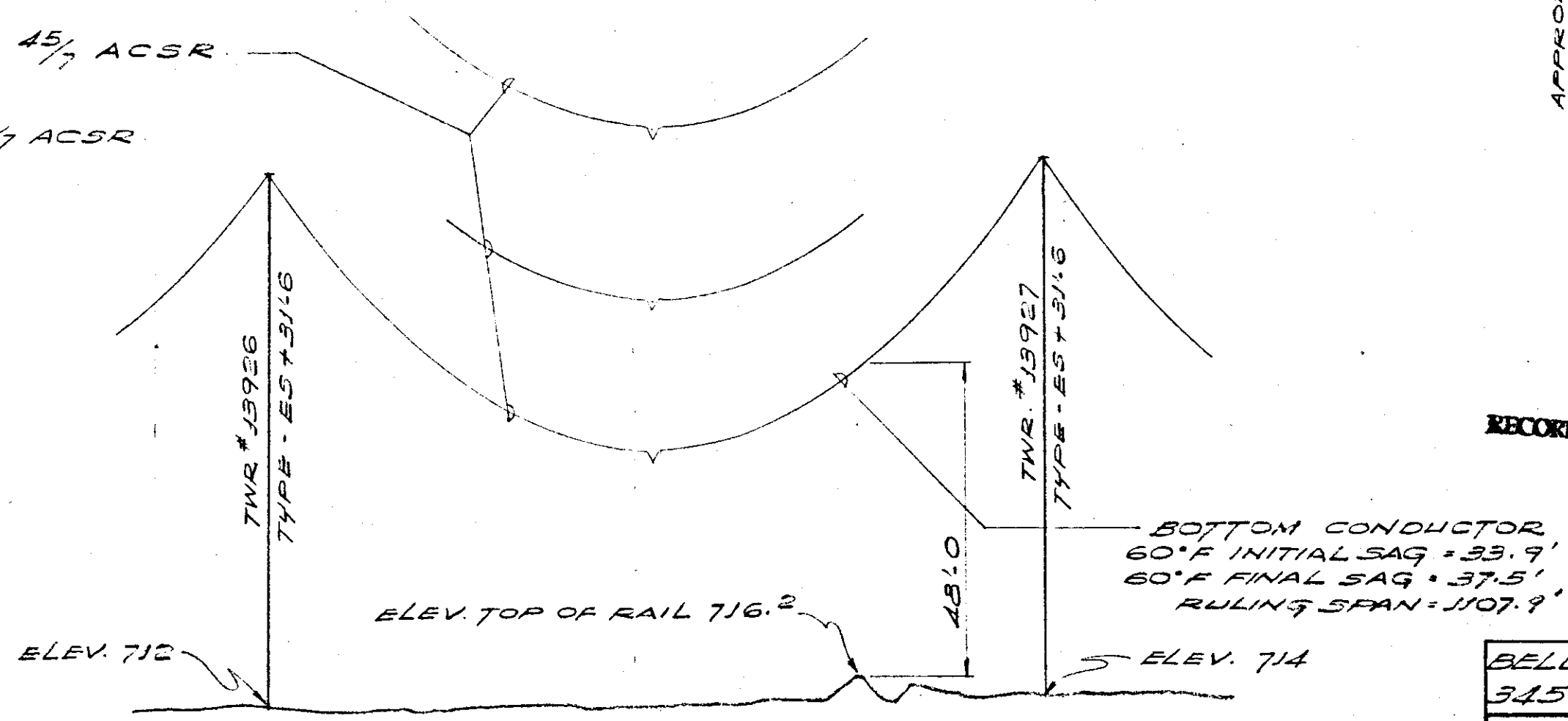
NOT VALID OVER \$250,000.00
1 SIGNATURE REQUIRED UNDER \$250,000.00

Authorized Agent's Counter Signature

Pay to the order of



12 CONDUCTORS - 1431 MCM $\frac{45}{7}$ ACSR
(2 PER PHASE)
@ 14000# HLT
2 GROUNDWIRES - 159 MCM $\frac{12}{7}$ ACSR



RECORDED R/W FILE NO. 34636 p 286

ELEVATION OF CROSSING
SCALE - HOR. 1" = 200' VERT. 1" = 20'

BELLE RIVER - JEWELL #2 345 KV TRANSMISSION LINE	
THE DETROIT EDISON COMPANY PLAN SUBMITTED TO MICHIGAN PUBLIC SERVICE COMMISSION	
FOR 345,000 VOLT CROSSING OVER G.T.W.R.R.	
DRAWN BY KUCERA	DATE 9-17-87
APPROVED BY	DATE
PERMIT NO. ED	DRAWING NO. RX-4521

CITY _____
COUNTY MACOMB
TOWNSHIP RICHMOND
75N - R14E
SECTION NO. N.E. 1/4 - 30

RECORDS SECTION OF THE 34636-1286