

DE ORIG.



6737 Southpoint Drive, South
Suite 100
Jacksonville, Florida 32216
(904) 279-4515
FAX (904) 279-4586
or (904) 279-4581

T. R. Jackson
Assistant Vice President

DUPLICATE ORIGINAL

March 19, 1992

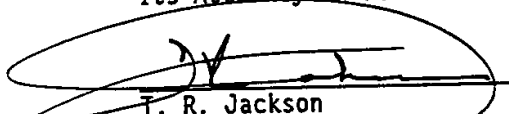
Mr. Thomas Wilson
Detroit Edison Company
2000 Second Avenue
Detroit, MI 48226

Dear Mr. Wilson:

This letter will confirm our understanding and agreement that for One Dollar and Other Valuable Consideration paid by the Detroit Edison Company (DE) effective as of April 1, 1992, CSX Transportation, Inc., hereby waives future rental requirements (provided there shall be no refunds of any prepaid rentals) and termination rights for the now existing aerial and underground wireline and pipeline crossing agreements identified on the attached Exhibit A. Except as described in the preceding sentence, the terms of all such agreements remain unaltered and in full force and effect.

Please indicate your understanding and acceptance of the foregoing by having the duplicate original of this letter executed on your behalf and return to the undersigned. No further revision of the individual license agreements will be necessary to effect the changes set forth in the first sentence of the first paragraph other than this letter exchange, which will constitute a supplement to each agreement.

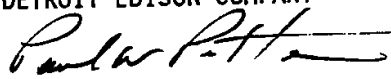
By: CSX TRANSPORTATION, INC.
CSX Real Property, Inc.
Its Attorney-in-Fact


T. R. Jackson
Assistant Vice President

TRJ:hkm

THE FOREGOING IS UNDERSTOOD AND AGREED THIS 19th DAY OF MARCH, 1992.

DETROIT EDISON COMPANY



BY:

Title: Paul W. Potter, Director -
Corporate Real Estate

RECORDED RIGHT OF WAY NO. 25208

SEE!
RECORDED RIGHT OF WAY NO. 49790

Detroit

Edison

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

Mr. T. R. Jackson
Manager-Field Services
Real Estate & Industrial Development
100 North Charles Street
Baltimore, Maryland 21201

August 11, 1980

Proposed Overhead Wire Crossing:

We are submitting this for the purpose of removing shield wire concerning the 345-kV transmission circuits over the railroad.

RECORDED RIGHT OF WAY NO. 25008

Specific Location

Crossing of the Wayne-Pontiac and the Argenta-Pontiac 345-kV transmission circuits over the C&O Railroad approximately 3,165 feet south of the centerline of Pontiac Trail Road and 2,600 feet east of Wixom Road in Section 5, Novi Township, Oakland County, Michigan.

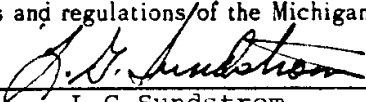
R. R. Valuation Station 18 + 90 R. R. Mile Post _____
City/Village Wixom Township Novi, Section 5
County Oakland Detroit Edison Plan Attached RX 3727D

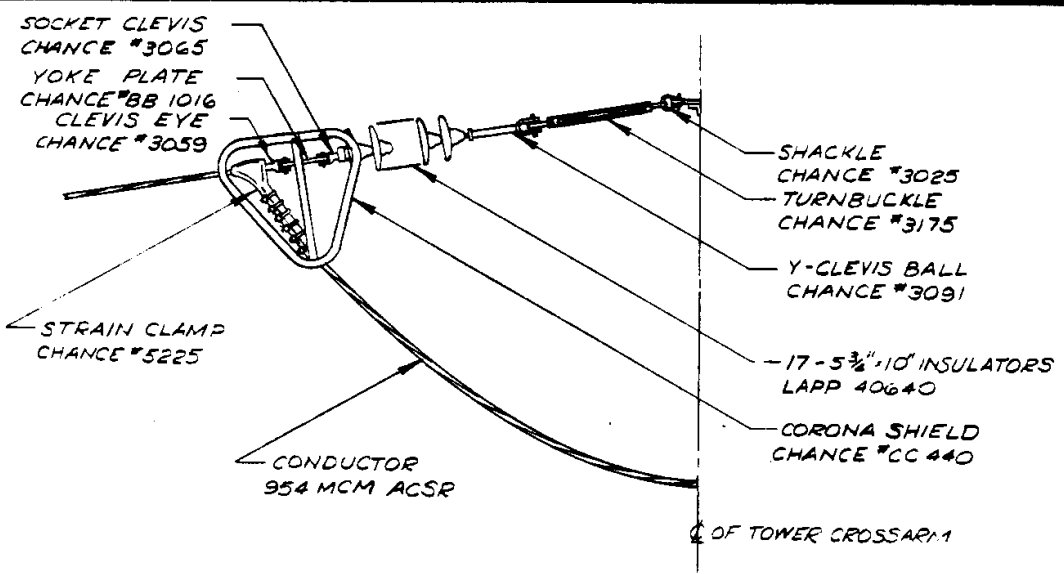
This is a New Crossing _____ This is a Reconstruction of Existing Crossing XX

Previous Agreement Information (if any) Date 4-5-1978 (R. R. Plan) 131-2-1726

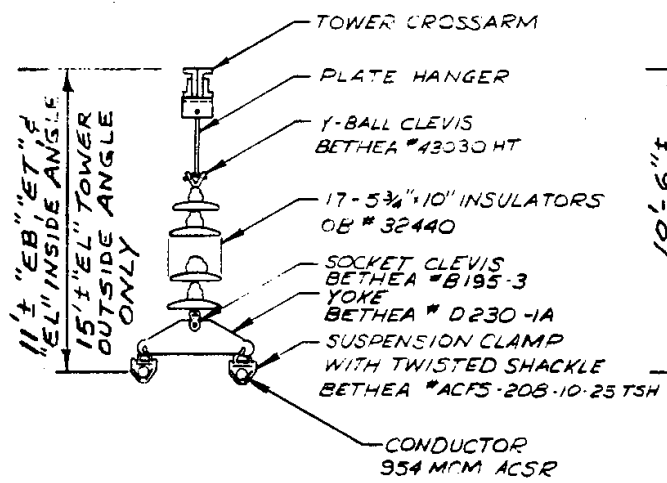
Blanket Waiver of Hearing Covers _____ Waiver of Hearing Requested XX
(Waiver of Hearing to be mailed to applicant listed below)

All construction will be done in accordance with the rules and regulations of the Michigan Public Service Commission.

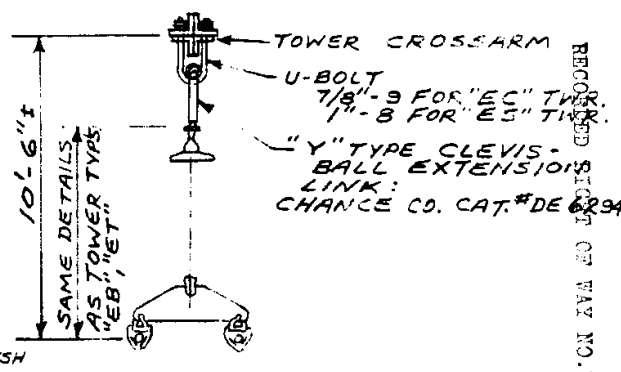

L.G. Sundstrom
Public Agency Coordinator
Real Estate & R/W Dept.
406 G. O.



DEAD-END DETAILS (A.B. CHANCE OR EQUIVALENT)
 TOWER TYPES: "EH", & "EM"



SUSPENSION DETAILS
 TOWER TYPES: "EB", "ET", & "EL"
 EXCEPT AS NOTED



SUSPENSION DETAILS
 TOWER TYPES: "EC", & "ES"

REV. 10/11/68 MLF
 REVISED: 8/21/68 MLF

RECORDED
 FILED
 OCT 21 1968
 MAY NO. 25008

345 KV. SUSPENSION AND DEAD-END DETAILS

APPROVED <i>JMW</i>	THE DETROIT EDISON COMPANY GENERAL ENGINEERING DEPARTMENT	
LAYOUT BY R.O. STURDY	DRAWN BY R.O. STURDY	
DATE 10/12/65	DRAWING NUMBER ED-5924	
SCALE NONE		

**Detroit
Edison**

2009 Second Avenue
Detroit, Michigan 48226
(313) 237-8000

March 17, 1978

**Mr. J. W. Brent
Chief Engineer
Chesapeake & Ohio Railway**

Proposed Overhead Wire Crossing:

We are submitting this because of construction by Chesapeake & Ohio Railway of three new sets of tracks underneath the Detroit Edison Wayne-Pontiac and the Argenta-Pontiac 345 kV transmission circuits.

Specific Location

Crossing of the Wayne-Pontiac and the Argenta-Pontiac 345 kV transmission circuits over the C & O Railroad approximately 3,165 feet south of the centerline of Pontiac Trail Road and 2,600 feet east of Wixom Road in Section 5, Novi Township
OAKLAND COUNTY, Mich

R. R. Valuation Station 18 + 90 R R Mile Post _____

City/Village Wixom Township Novi, Section 5

County Oakland Detroit Edison Plan Attached RX-3727C

This is a New Crossing _____ This is a Reconstruction of Existing Crossing XX

Previous Agreement Information (if any) Date 6/21/72 (R R Plan) 131-4-9446

Blanket Waiver of Hearing Covers _____ Waiver of Hearing Requested XX
(Waiver of Hearing to be mailed to applicant listed below)

RECORDED FILED DE W & E DIV
25008

All construction will be done in accordance with the rules and regulations of the Michigan Public Service Commission.

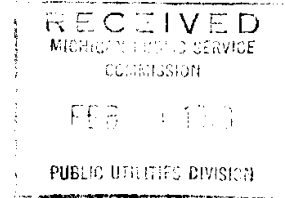
John A. Haddock

JOHN A. HADDOCK
Public Agency Coordinator

THE DETROIT EDISON COMPANY

2000 SECOND AVENUE
DETROIT 26, MICHIGAN

November 6, 1972



Permit No. _____

Michigan Public Service Commission
Lansing 13, Michigan

Gentlemen:

I, W.M. Wiljanen, Office Supervisor, Towers Div. T&D
of The Detroit Edison Company, Detroit, Michigan, hereby certify that the
wire crossing, covered by Wire Crossing Permit No. ED 2-8-7102
issued 7/11/72, has been constructed in accordance with
specifications of the Michigan Public Service Commission and construction
standards of The Detroit Edison Company, approved by Michigan Public Service
Commission on July 19, 1939, file ED 2-9.01, and that this crossing will be
maintained as provided in such specifications and construction standards.

Yours very truly,

W.M. Wiljanen

RETURN COPY OF THIS AFFIDAVIT TO REAL ESTATE AND RIGHTS OF WAY DEPARTMENT

RX No. 3727B
Sec. 5, Novi-Twp.
Location City of Wixom
Oakland County
Railroad Chesapeake & Ohio

Subscribed and sworn to before me this
30th day of January 1973.
Joan W. Gamble
Notary Public,
County, Michigan
My Commission expires _____

R.R. V.S. 18 + 90
R.R. File No. 131-4-9446

Feb. 11, 1973

RECORDED RIGHT OF WAY NO. 25008

THE DETROIT EDISON COMPANY

INTERDEPARTMENT CORRESPONDENCE

Real Estate and Rights of Way Department

August 1, 1972

TO RECORDS CENTER:

Attached is fully executed copy of agreement/~~permit~~ ^{amendment to} from:

The Chesapeake and Ohio Railway Company Railroad File No. 131-4-9446

Facilities Covered:

Seventeen (17) steel shield wires supported on wood poles installed under existing 345,000-volt transmission line.

Specific Location:

3165 feet South of center line of Pontiac Trail, 2600 feet East of Wixom Road.

R. R. Valuation Station 18 + 90 Mile Post _____

City/Village ~~XXXXXX~~ Wixom Township Novi, Section 5

County Oakland Detroit Edison Plan No. RX-3727B

Amendment to Agreement/~~Permit~~ ~~XXXXX~~ Date 6-21-72 R. R. Plan No. Used DECo. Plan

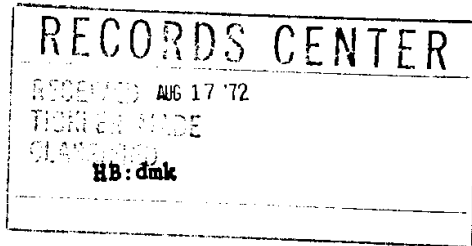
Original Agreement dated 1-15-68

Preparation Fee None Annual Rental Remains the same at \$100.00

Supersedes and Cancels Agreement dated _____

Attached Agreement is to be made a part of R/W 25008

Attached Grand Trunk Western Railroad Permit No. _____ to be made a part of R/W No. 9064.



I. W. Gamble
I. W. Gamble, Assistant to Director

RECORDED RIGHT OF WAY NO. 35008

THE DETROIT EDISON COMPANY

2000 SECOND AVENUE

DETROIT, MICHIGAN 48226

June 27, 1972

Michigan Public Service Commission
Lansing, Michigan 48913

Gentlemen:

The Detroit Edison Company, Detroit, Michigan, hereby makes application for authority to string the following wires over the tracks of the **Chesapeake and Ohio Railway Company in the Township of Novi, Section 5, Oakland County, Michigan. City of Wixom**

Two 345,000-volt transmission circuits with two ground wires located in private property approximately 3165 feet South of the center line of Pontiac Trail Road and 2600 feet East of Wixom Road.

Railroad Station 18 + 90

Plans were omitted and the application is being resubmitted.
The proposed wire crossing will be constructed in accordance with specifications of the Michigan Public Service Commission and the construction standards of The Detroit Edison Company, approved by the Michigan Public Service Commission on July 19, 1939, File ED 2-9.01.

- Enclosed is a waiver of hearing granted by the Railroad Company. Dated 6-19-72
R.R. File # 131-4-9446
- Waiver of hearing by the Railroad Company is covered by blanket waiver.
- This application covers reconstruction of existing crossing and will cancel and supersede wire crossing permit No. ED2-8-6161 dated 2-5-68
- This is a new crossing.

HB:dmk Reference number of construction drawing is RX- 3727B

Yours very truly,

Permit No. ED2-8-7102

Date July 11, 1972

By MPSC

I. W. Gamble
I. W. Gamble
Assistant to Director
Real Estate and Rights of Way Dept.

RECORDED RIGHT OF WAY NO. 2008

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

* * * * *

Railroad Wire-Crossing Permit No. ED2-8-7102

The Detroit Edison Company (Applicant) has filed an application pursuant to Act 171, P.A. 1893, as amended, for permission to string wires across the tracks of the Chesapeake and Ohio Railway Company (Railroad).

Applicant has conformed with the filing procedures of Commission Order No. 1868 and the Railroad has waived the right of notice and hearing provided for in Act 171.

THEREFORE, IT IS ORDERED that Applicant be permitted to string wires across the tracks of the Railroad as indicated on the attached plans and described as follows:

City of
Wixom

County of
Oakland

State of
Michigan

Crossing of two (2) 345 KV, 60 Hz, 3 phase, 3 wire, transmission circuits, known as Wayne-Pontiac and Argenta-Pontiac Lines, on one (1) double circuit steel tower line, with two (2) ground wires and an associated electrostatic shield made up of seventeen (17) EHS steel shield wires. Electrostatic shield is separately supported. Crossing is located at a point approximately 3165' south of the center line of Pontiac Trail Road and 2600' east of Wixom Road in Section 5, Novi Township, T1N, R8E.
12 - 954 MCM 34/7 ACSR phase conductors
(2 conductors bundled per phase wire)
2 - 159 MCM 12/7 ACSR ground wires
17 - 3/16" EHS steel electrostatic shield wires

Per Drawing EX-3727B

At the point of crossing, the wires shall be installed in full accordance with Commission Order No. 2334.

MICHIGAN PUBLIC SERVICE COMMISSION

(S E A L)

Willis F. Ward
Chairman

DATED: July 11, 1972

Lenton G. Sculthorp
Commissioner

Earl B. Klumpperson

Its Secretary

William R. Ralls
Commissioner

RECORDED RIGHT OF WAY NO.

25008



WILLIAM HENSCHELL, JR.
GENERAL MANAGER

THE CHESAPEAKE AND OHIO RAILWAY COMPANY
THE BALTIMORE AND OHIO RAILROAD COMPANY
ONE NORTHLAND PLAZA
SOUTHFIELD, MICHIGAN 48075

June 21, 1972

Files: 131-4-9446 10/37

I. W. GAMBLE

JUL 31 1972

R/E & R/W DEPT:

The Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Gentlemen:

This refers to our agreement dated January 15, 1968 covering an aerial power line crossing at Station 18 plus 90 of spur track serving Ford Motor Company, Toledo Subdivision, Detroit Terminal Division, Oakland County, Michigan, and to your recent request to add seventeen (17) 3/16" EHS steel shield wires as shown on your Drawing RX-3727B, dated 5-24-72, attached hereto and made a part hereof.

This will constitute Railway's consent and approval of the said additional shield wires with the understanding that said new facilities be subject to the terms and conditions of and covered by the aforesaid agreement as fully as though they had originally been described therein and covered thereby; it being understood and agreed that, except as hereby amended, said agreement shall continue unaltered and in full force and effect.

Please sign this letter, which is submitted in duplicate, in the space provided below, returning the original to the undersigned.

Very truly yours,

THE CHESAPEAKE AND OHIO RAILWAY COMPANY

By *W. Henschell*
General Manager

The foregoing is hereby acknowledged
and agreed to this 1st day
of August, 1972.

THE DETROIT EDISON COMPANY

By *W. C. Arnold*
Director
Real Estate and Rights of Way Dept.

APPROVED:
M. W. Fenton
Superintendent

Approved:
S. A. Davis

APPROVED AS TO FORM
RECORDED RIGHT OF WAY NO. 15005
ASST. GENERAL ATTORNEY

DATA SHEET TO ACCOMPANY DRAWING RX-3727B
Revision of Crossing Rx-3727A
Covered Under Permit ED-2-8-6161 (Dated 2-5-68)

Name of Company

The Detroit Edison Company

Name and Location of Crossing

Crossing of the Wayne - Pontiac and the Argenta - Pontiac
345 kV transmission circuits over the C & O Railroad approximately
3,165 feet south of the centerline of Pontiac Trail Road and 2,600
feet east of Wixom Road in Section 5, Novi Township, Oakland County,
Michigan. *City of Wixom*

Circuits

Two 345,000 volt, 60 cycle, 6 wire, 3 phase transmission
circuits with two groundwires.

Towers and Crossarms

Per attached drawings EB, EH and EL.

Conductors

Two 954 Mcm 54/7 ACSR conductors per phase with 18" sub-spacing
and two 159 Mcm 12/7 ACSR groundwires.

Insulators

Seventeen 5-3/4" x 10" O.B. #32440 or equivalent in suspension.

Suspension and Deadend Details

As shown on drawing ED-5924.

Wood Structures

Per drawing ED4-8038.

Guy and Guy Attachments

Per drawing ED4-8038.

Shield Wire

Seventeen 3/16" dia. EHS steel shield wires (over R.R. tracks
and under 345 kV line) supported by wood structures as shown on drawing
ED4-8038.

System Engineering Department
JRW/mak 5/30/72

RECORDED RIGHT OF WAY NO. 25008

THE DETROIT EDISON COMPANY

2000 SECOND AVENUE

DETROIT, MICHIGAN 48226

TO:

June 6, 1972

Mr. J. T. Collinson
General Manager - Chief Engineer
Chesapeake and Ohio Railway Company
P. O. Box 1800
Huntington, West Virginia 25718

18 plus 90
Location: Spur Track to Ford
Sub Division: Toledo
Division: Detroit Terminal
P.S.C. Hearing Waived 6-19-72
The Chesapeake and Ohio Railway Company

J. T. Collinson
Chief Engineer System

Proposed Overhead Wire Crossing:

Your File _____
C. & O. File 131-4-9446

Two 345,000-volt transmission circuits with two ground wires.

(Shield wires supported by wood structures to be installed under power lines and over tracks per attached Drawing ED4-8038)

Specific Location

In private property approximately 3165 feet South of the center line of Pontiac Trail Road and 2600 feet East of Wixom Road.

R. R. Valuation Station 18 + 90 (Ford Spur) R. R. Mile Post _____

City/Village Wixom Township Novi, Section 5

County Oakland Detroit Edison Plan Attached EX-9727B

This is a New Crossing _____ This is a Reconstruction of Existing Crossing X

Previous Agreement Information (if any) Date Jan. 15, 1968 (R. R. Plan) Used DECo. Plan

~~Previous Railroad File No. 131-4-9446~~

Blanket Waiver of Hearing Covers _____ Waiver of Hearing Requested in duplicate
(Waiver of Hearing to be mailed to applicant listed below)

All construction will be done in accordance with the rules and regulations of the Michigan Public Service Commission.

cc: Mr. Arthur Russell

HB:dmk
DE FORM PD 187 8-65 CS

I. W. Gamble
I. W. Gamble, Assistant to Director
Real Estate and Rights of Way Department

RECORDED INDEXED OF MAY 10 1972

Detroit Edison

To: Records Center April 7, 1978

From: Doreen McLain
Real Estate and Rights of Way Department

Subject: Revision of Transmission lines over Chesapeake & Ohio Railroad, City of Wixom, Novi Township, Section 5, TLN, R8E, Oakland County, RX-3727c

The attached papers are for records center storage. Information about the completed transaction is shown in the following summary.

R.R. 1	R.R. INVOICE NO. M.P.S.C. NO. OR R.E. & RW NO. 4	Update Type 10	D.E.C.O. RECORDS CENTER FILE NO. 13	R.X. NO. OR MAP NO. 20	Facility 21	Agreement Date 27
02	0911784	2	25008	3727C		
Payment Frequency 28	Rental 33	OH-UG Code 34	Division 35	County 36	City or Township 44	Section 46

Location															
47															50

- Update Type Codes
 1 = New Agreement
 2 = Revised Agreement
 3 = Terminated Agreement

The Accounts Payable Department is requested to start or change the rental payment effective

Approved: *John A. Davidson*

- cc: Accounts Payable
 Service Planning
 System Engineering C. VANPARIS
 Transmission & Distribution

RECORDED RIGHT OF WAY NO. 25008

NOTE: When issuing orders on Properties & R/W Dept. - Send first three copies to room 310 General Offices. Retain 4th copy.

ORDER FOR WORK
 DE FORM MS 118 5-68 TO: ENG. DESIGN & SERVICES CONST. & MAINT DEPARTMENT PROPERTIES & R/W ELECTRICAL SYSTEM T & D **1**

ISSUING DEPT. AND WORK LOCATION: System Engineering/Lines Engineering/RJS BUDGET ITEM OR W.D. NO. 9KV01-KVN JOB

95064
 9KV019/N03
 9KV01

Argenta - Pontiac,
 Pontiac - Wixom 345 kV Lines MAP SECTION DATE 6/7/72

REASON FOR WORK AND WORK TO BE DONE: To reduce electrostatic induction in railroad cars.

Install wires under the Argenta - Pontiac, Pontiac - Wixom 345 kV transmission lines as shown on drawing ED4-8038.

DRAWING OR B.M. NO.
PROJECT DIRECTOR
PROJECT ENGINEER
PROJECT DESIGNER
DRAFTING TO BE COMPLETED
DATE WORK TO BE STARTED
DATE WORK TO BE COMPLETED <u>A.S.A.P.</u>
ASSIGNED TO
DATE STARTED
DATE COMPLETED
COMPLETED BY
CHECKED BY
MATERIAL COST
LABOR COST

John E. Price
 SIGNED Allen E. Price

COPIES TO: I. Gamble, C. Quick, E. Watt

ABOVE WORK HAS BEEN COMPLETED

When work has been completed sign No. 2 copy and return to originating department when requested.

I. W. GAMBLE
is.
 JUN 8 1972

R/E & R/W DEPT:

RECORDED NUMBER OF WAY NO. 25008

Crossing
24

DATA SHEET TO ACCOMPANY DRAWING RX-3727B
Revision of Crossing Rx-3727A
Covered Under Permit ED-2-8-6161 (Dated 2-5-68)

Name of Company

The Detroit Edison Company

Name and Location of Crossing

Crossing of the Wayne - Pontiac and the Argenta - Pontiac
345 kV transmission circuits over the C & O Railroad approximately
3,165 feet south of the centerline of Pontiac Trail Road and 2,600
feet east of Wixom Road in Section 5, Novi Township, Oakland County,
Michigan. *City of Wixom*

Circuits

Two 345,000 volt, 60 cycle, 6 wire, 3 phase transmission
circuits with two groundwires.

Towers and Crossarms

Per attached drawings EB, EH and EL.

Conductors

Two 954 Mcm 54/7 ACSR conductors per phase with 18" sub-spacing
and two 159 Mcm 12/7 ACSR groundwires.

Insulators

Seventeen 5-3/4" x 10" O.B. #32440 or equivalent in suspension.

Suspension and Deadend Details

As shown on drawing ED-5924.

Wood Structures

Per drawing ED4-8038.

Guy and Guy Attachments

Per drawing ED4-8038.

Shield Wire

Seventeen 3/16" dia. EHS steel shield wires (over R.R. tracks
and under 345 kV line) supported by wood structures as shown on drawing
ED4-8038.

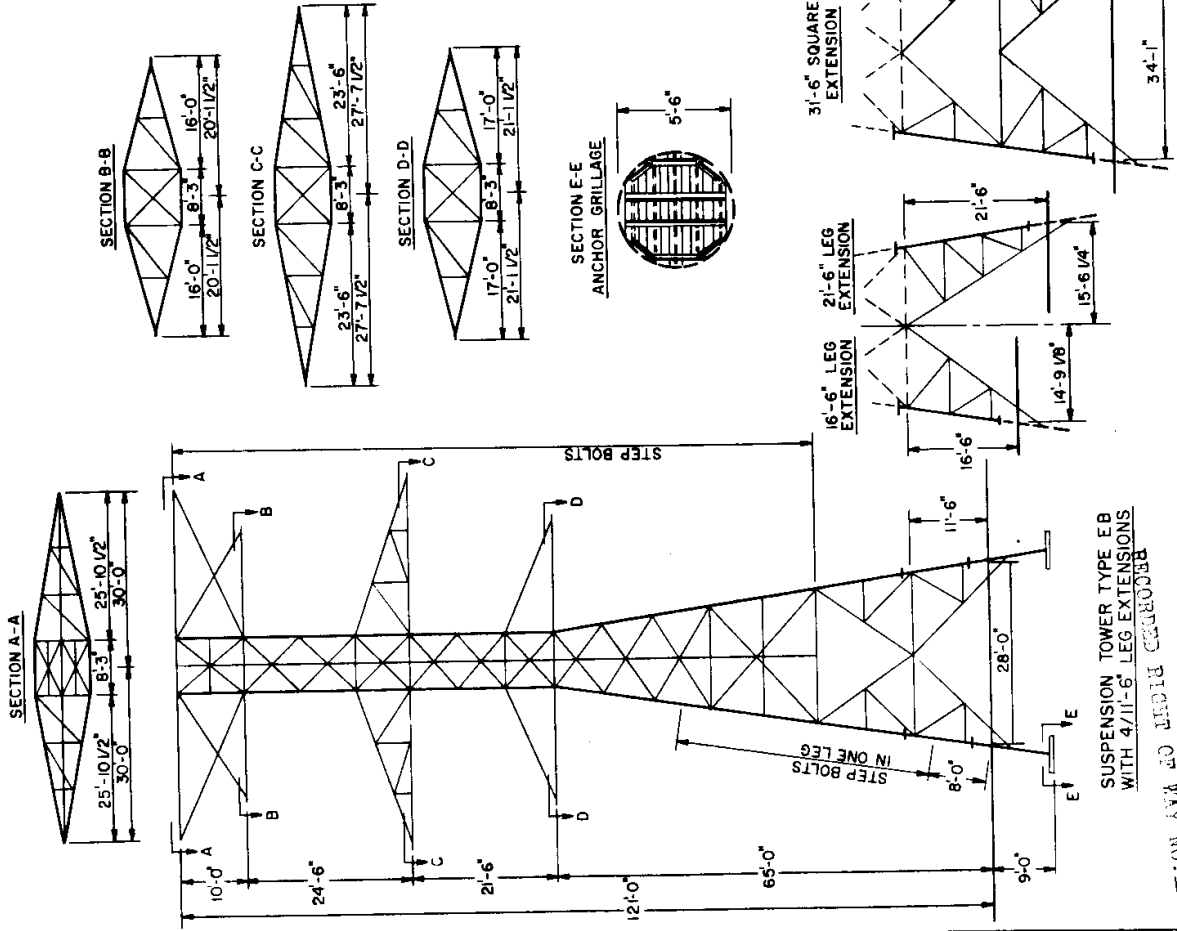
System Engineering Department
JRW/mak 5/30/72

RECORDED RIGHT OF WAY NO. 25008

SUSPENSION TOWER TYPE EB

LOADS

- 1a. Vertical, Double Circuit (1/2" ice)
 - 1. 2 Groundwires @ 1080# = 2160#
 - 2. 6 Two-Conductor Bundles @ 4900# = 29400#
 - Total = 31560#
- 1b. Vertical, Single Circuit (1/2" ice)
 - 1. 1 Groundwire @ 1080# = 1080#
 - 2. 3 Two-Conductor Bundles @ 4900# = 14700#
 - Total = 15780#
- 2. Transverse-Wind on Wires (1/2" ice, 8# wind)
 - a. 2 Groundwires @ 1050# = 2100#
 - b. 6 Two-Conductor Bundles @ 2880# = 17280#
 - Total = 19380#
- 3. Longitudinal
 - a. 1 Two-Conductor Bundle @ 15000#
 - b. 1 Groundwire @ 6600#
 - c. 1 Two-Conductor Bundle @ 12000#
- 4. Wind on Tower (from any direction) of 13 psf on 1-1/4 times projected area of one face
- 5. Vertical Load of Tower
- 6. Vertical, Heavy (1" ice)
 - a. 2 Groundwires @ 2400# = 4800#
 - b. 6 Two-Conductor Bundles @ 8500# = 51000#
 - Total = 55800#



<p style="text-align: center;">SUSPENSION TOWER TYPE EB</p>		<p style="text-align: center;">APPROVED</p>	
		<p style="text-align: center;">THE DETROIT EDISON COMPANY GENERAL ENGINEERING DEPARTMENT</p>	
<p>LAYOUT BY <i>R.O.S.</i></p>		<p>DRAWN BY <i>W.E.S.</i></p>	
<p>DATE 1-30-68</p>		<p>DRAWING NUMBER</p>	
<p>SCALE NONE</p>		<p>EB</p>	

SUSPENSION TOWER TYPE EB
 WITH 47/11-6" LEG EXTENSIONS
 RECORDED PER COPY NO. 25008

Combine
 1.65x(1+2+4+5)
 1.0x3a
 1.0x3b
 1.65x[1a+15/16(2)+4+5] + 1.0x(3c)
 1.65x6
 1.65x[1b+7/16(2)+4+5] + 1.0x(3c)

Material
 Steel per ASTM spec A7, latest revision & ASTM spec A242, latest revision
Coating
 All material galvanized to ASTM spec 123, latest revision
Connections
 Bolted with 3/4" diameter machine bolts
 ASTM spec A394, latest revision
Ultimate Unit Stresses
 A7
 Tension, net section: 33,000#/in² 50,000#/in²
 Compression, Gross section: 33,000-130L/r
 L/r=150
 L/r=113
 L/r=113
 24,000-700L/r
 39,600-1.29(L/r)²
 39,600
 0.5*(L/r)/10,500
 Shear on Bolts = 30,000psi
 Bearing on Bolts = 60,000psi

HEAVY ANGLE DEAD-END TOWER TYPE EH

LOADS

1. Vertical
 - a. 2 Groundwires @ 1100#
 - b. 6 Two-Conductor Bundles @ 5000#
Total
- 2a. Transverse-Wind on Wires (1/2" ice, 8# wind)
 1. 2 Groundwires @ 1100#
 2. 6 Two-Conductor Bundles @ 3000#
Total
- 2b. Transverse-Angle in Line
 1. 2 Groundwires @ 6000#
 2. 6 Two-Conductor Bundles @ 22000#
Total
3. Longitudinal
 - a. 2 Groundwires @ 6000# or
 - b. 6 Dual Conductors @ 22000#
Total
4. Wind on Tower (from any direction) of 13 psf on 1-1/4 times projected area of one face
5. Vertical Load of Tower
6. Torsion
 - a. 1 Groundwire @ 6000#
 - b. 3 Two-Conductor Bundles @ 22000#
Total
7. Vertical-Heavy (1" ice)
 - a. 2 Groundwires @ 2400
 - b. 6 Two-Conductor Bundles @ 8000#
Total

Combine
 1. 65x(1+2a+2b+4+5)
 1. 65x(1+3a+2+3+4+5)
 1. 25x(1+1/4oF2a+4+5+6)
 1. 65x(7)

Material
 Steel per ASTM spec. A7, latest revision & ASTM spec A242, latest revision

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

Connections
 Bolted with 3/4" diameter machine bolts, ASTM spec A394, latest revision

Ultimate Unit Stresses
 Tension, net section, A7
 33,000#/in²
 A242
 45,000#/in²

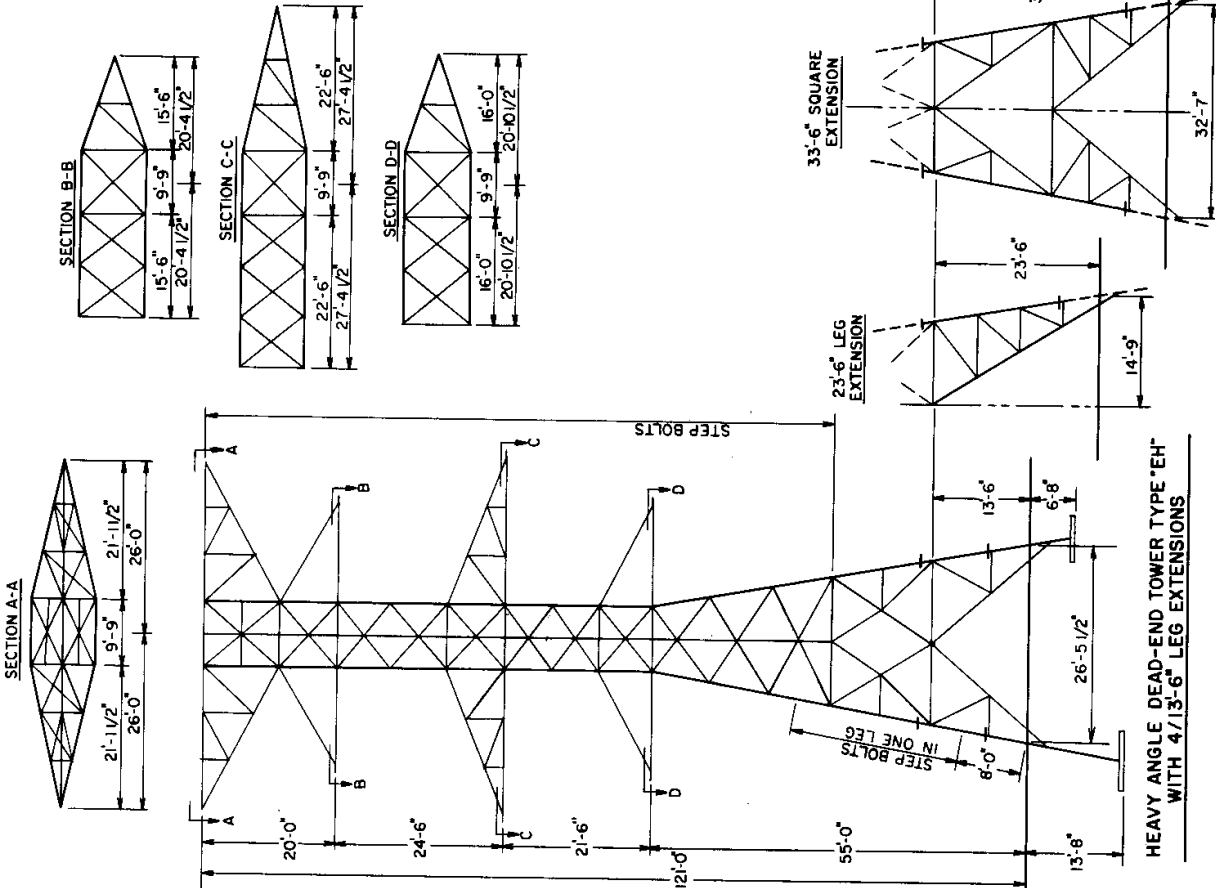
Compression, 130L/r/in²
 49,500#-218L/r/in²
 (39,000#max.)

Cross Section, L/r<100
 33,000#/in²
 43,000#-170L/r/in²

L/r<150
 33,000#/in²
 39,000#-145L/r/in²

L/r<200
 24,000#/in²
 70L/r/in²

Shear on Bolts = 45,000psi
 Root of Thread = 30,000psi
 nom. diameter = 60,000psi
 Bearing on Bolts = 60,000psi



HEAVY ANGLE DEAD-END TOWER TYPE "EH" WITH 4/13'-6" LEG EXTENSIONS

HEAVY ANGLE DEAD-END TOWER TYPE "EH"		APPROVED	THE DETROIT EDISON COMPANY	
		<i>[Signature]</i>	GENERAL ENGINEERING DEPARTMENT	
LAYOUT BY	R.O.S.	DRAWN BY		W.E.S.
DATE	1-8-68	DRAWING NUMBER		EH
SCALE	NONE			

RECORDED DRAWING NO. 25008

LIGHT ANGLE SUSPENSION TOWER TYPE EL

LOADS

1. Vertical
 - a. 2 Groundwires @ 1100#
 - b. 6 Two-Conductor Bundles @ 5000#
 - Total
- 2a. Transverse-Wind on Wires ($\frac{1}{2}$ " ice, 8# wind)
 - 1. 2 Groundwires @ 1100#
 - 2. 6 Two-Conductor Bundles @ 3000#
 - Total
- 2b. Transverse-Angle in Line
 - 1. 2 Groundwires @ 1450#
 - 2. 6 Two-Conductor Bundles @ 5300#
 - Total

= 2200#
= 30000#
= 32200#

= 2200#
= 18000#
= 20200#

= 2900#
= 31800#
= 34700#

3. Longitudinal
 - a. 1 Groundwire @ 6600# or
 - b. 1 Two-Conductor Bundle @ 14,400#
4. Wind on Tower (from any direction) of 13psf on $1\frac{1}{4}$ times projected area of one face

5. Vertical Load of Tower

= 4800#
= 48000#
= 52800#

Combine

- 1.65x(1+2+2b+4+5)
- 1.65x[1+15(2a+2b)+3+4+5]
- 1.65x(6)

Material
Steel per ASTM spec. A7, latest revision & ASTM spec A242, latest revision

Coating

All material galvanized to ASTM spec. 123, latest revision
Bolted with 3/4" diameter machine bolts, ASTM spec A394, latest revision

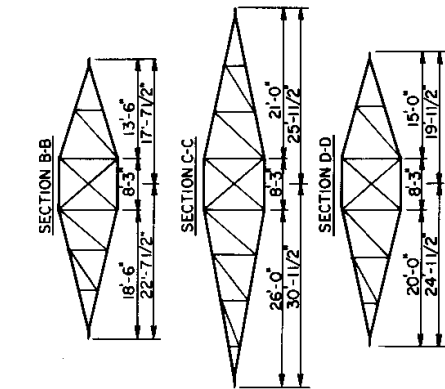
Ultimate Unit Stresses
Tension, net section $\frac{A7}{A242}$
#/in² 33,000 45,000#/in²

Compression, Gross Section; L/r-100
33,000 495,000#-218L/r/
#/in²-130 in²
L/r/in² (39,000#Max.)
(30,000#Max.)

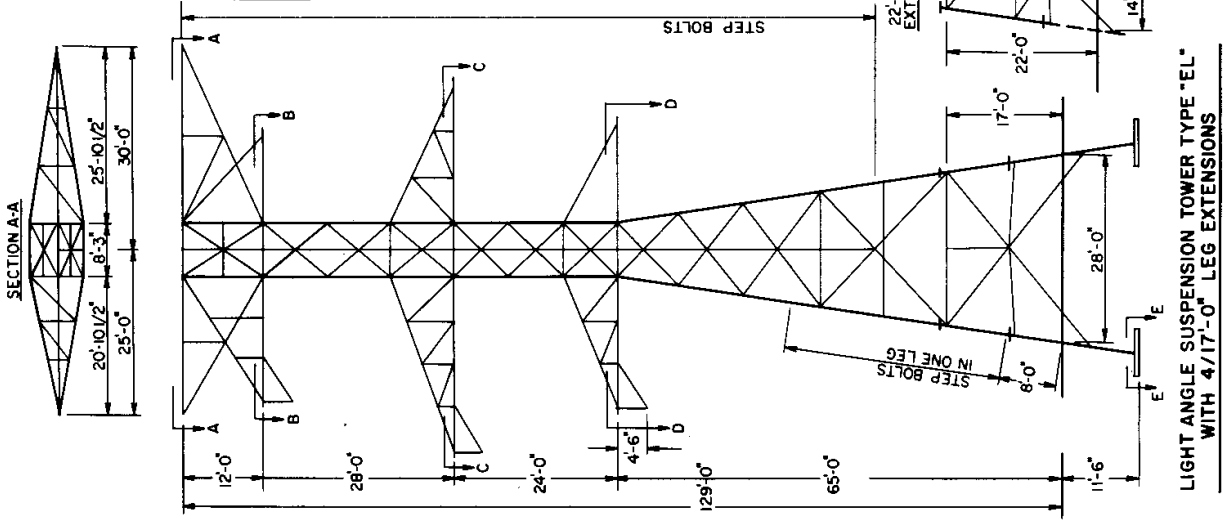
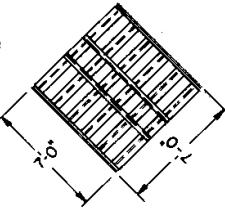
L/r-150 33,000#/in² 4,3000#-170
-1300L/r/in² L/r/in²
L/r-200 24,000#/in² 39,000#-145
-70L/r#/in² L/r/in²

Shear on Bolts
root of thread = 45,000psi
nom. diameter = 30,000psi

Bearing on Bolts = 60,000psi



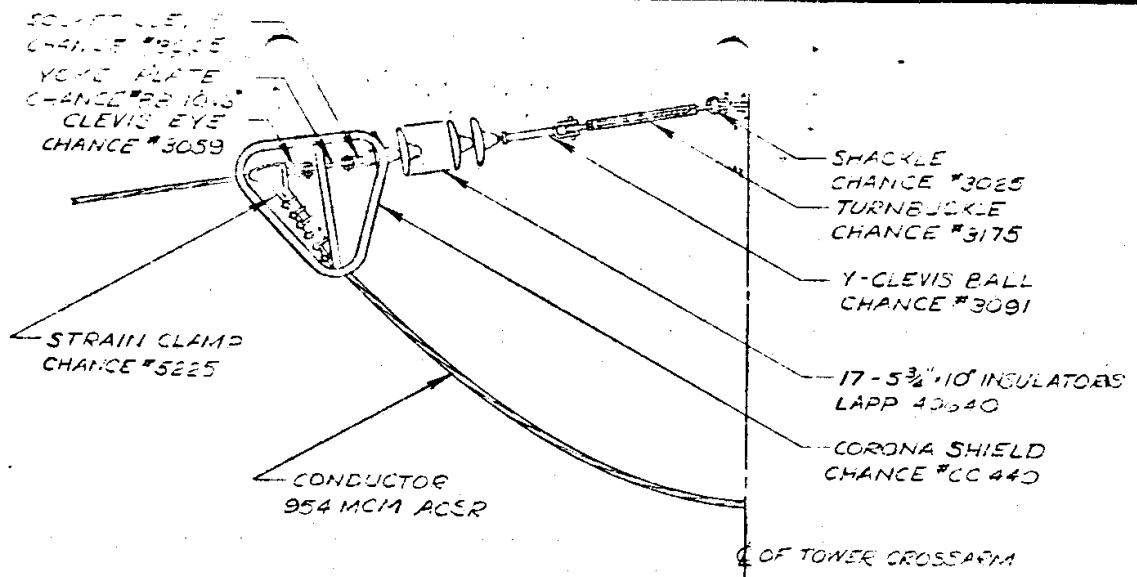
SECTION E-E
ANCHOR GRILLAGE



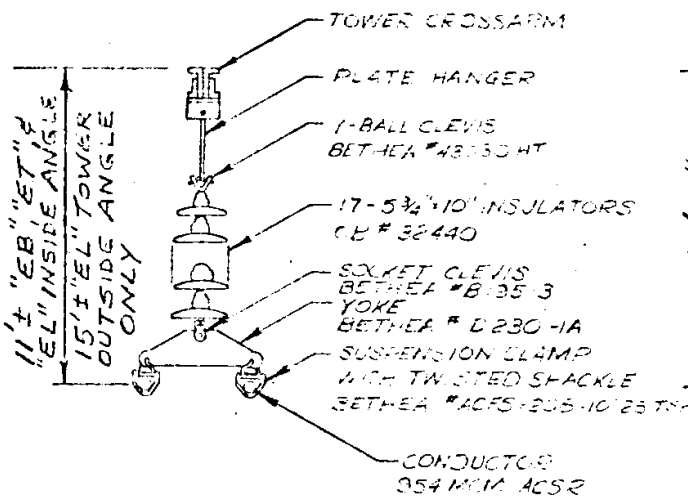
LIGHT ANGLE SUSPENSION TOWER TYPE "EL"
WITH 4/17'-0" LEG EXTENSIONS

<p>LIGHT ANGLE SUSPENSION TOWER TYPE EL</p>		APPROVED	
		<p>THE DETROIT EDISON COMPANY GENERAL ENGINEERING DEPARTMENT</p>	
LAYOUT BY	R.O.S.	DRAWN BY	W.E.S.
DATE	1-9-68	DRAWING NUMBER	EL
SCALE	NONE		

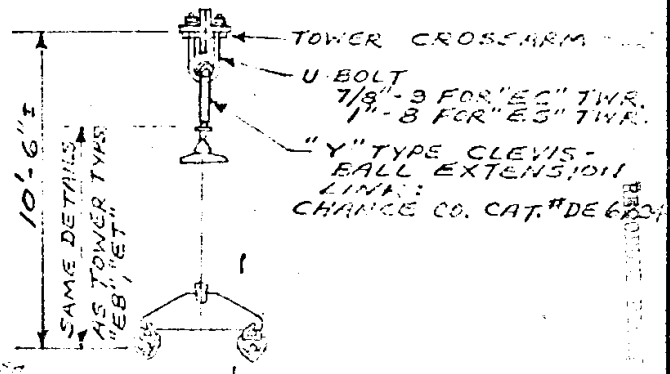
RECORDED RIGHT OF WAY 25008



DEAD-END DETAILS (A.E. CHANCE OR EQUIVALENT)
 TOWER TYPES: "EH", & "EM"



SUSPENSION DETAILS
 TOWER TYPES: "EB", "ET", & "EL"
 EXCEPT AS NOTED



SUSPENSION DETAILS
 TOWER TYPES: "EC", & "ES"

REV. 10/11/58 MLE
 REVISED: 8/21/59 MLE

345 KV. SUSPENSION AND DEAD-END DETAILS

APPROVED <i>[Signature]</i>	THE DETROIT EDISON COMPANY GENERAL ENGINEERING DEPARTMENT	
LAYOUT BY ROSTURBY	DRAWN BY ROSTURBY	
DATE 10/12/58	DRAWING NUMBER ED-3924	
SCALE NONE		

PROTECTIVE RELAY OF WAY NO. 25008

**Detroit
Edison**

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

March 31, 1978

Mr. Bruce Bordner
Office Engineer
Michigan Department of State
Highways & Transportation
P.O. Box 1226
18101 Nine Mile Road
Southfield, MI 48075

APPROVED

APR 1 1978

Bruce J. Bordner
DIST. UTILITY ENGINEER
MICHIGAN STATE HIGHWAY DEPT.

Dear Mr. Bordner:

New tracks were installed under existing transmission facilities at these locations:

Crossing of the Wayne-Pontiac and the Argenta-Pontiac 345 kV transmission circuits over the Chesapeake & Ohio Railroad approximately 3,165 feet south of the centerline of Pontiac Trail Road and 2,600 feet east of Wixom Road in Section 5, Novi Township.

The railroad has given a waiver dated March 22, 1978. The proposed crossing is shown on drawing No. RX-3727C.

Please grant a State Highway Permit to the Detroit Edison Company for the proposed crossing.

DO NOT WRITE IN THIS BOX		
Application No.	63000-4-78	
Permit No.	ME-144-78	
Date of Issuance	4-5-78	
Fee Amount	10 ⁰⁰	Date 4/4/78
Cash	Bill <input checked="" type="checkbox"/>	By <i>JAH</i>

Very truly yours,

John A. Haddow
John A. Haddow
Public Agency Coordinator
Real Estate & R/W

JAH/dm

RECORDED RIGHT OF WAY NO. 25008

Engineering Department

Chessie System

Operating Headquarters Building
P. O. Box 1800
Huntington, W. Va. 25718

March 23, 1978

File: 131-2-1726 BH/89

The Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Attention: Mr. John H. Haddow
Public Agency Coordinator

Gentlemen:

This refers to that certain agreement dated January 15, 1968, amended June 21, 1972, between our respective companies, covering construction, operation and maintenance of an aerial wire line crossing the Railway's right of way and spur track (Lincoln Lead) at Station 18 plus 90, Toledo Subdivision, Detroit Terminal Division (now called Michigan Division), at Wixom, Oakland County, Michigan, and to your letter of March 17, 1978, submitting revised plan to show three (3) sets of additional tracks installed beneath said aerial wire line crossing, as shown on Detroit Edison's Plan RX-3727C (last revised 2-27-78) and data sheet attached hereto and made a part hereof, and the purpose of this letter is to amend the aforesaid agreement accordingly.

This will constitute Railway's consent and approval of the revised drawing with the understanding that said new facilities be subject to the terms and conditions of and covered by the aforesaid agreement as fully as though they had originally been described therein and covered thereby; it being understood and agreed that, except as hereby amended, said agreement shall continue unaltered and in full force and effect.

Please sign this letter-amendment, which is submitted in duplicate, in the space provided below, indicating acceptance of amendment, returning the original to the undersigned.

Very truly yours,

THE CHESAPEAKE AND OHIO RAILWAY COMPANY

By *Robert R. Tewksbury*
Chief Engineer

Letter-amendment acknowledged and
agreed to this 30th day of March, 1978

THE DETROIT EDISON COMPANY
By *Robert R. Tewksbury* Its ROBERT R. TEWKSBURY, DIRECTOR
Real Estate and Right of Way Dept.

The Chessie System railroads are the C&O, B&O, WM and affiliated lines. Chessie System, Inc. is the parent for the railroads, Chessie Resources, Inc., Western Pocahontas Corp. and The Greenbrier.

RECORDED RIGHT OF WAY NO. 25008

DATA SHEET TO ACCOMPANY DRAWING RX-3727C
Revision of Crossing RX-3727B
Covered Under Permit ED2-8-7102 Dated 7/11/72

Name of Company

The Detroit Edison Company

Name and Location of Crossing

Crossing of the Wayne-Pontiac and the Argenta-Pontiac 345 kV transmission circuits over the C & O Railroad approximately 3,165 feet south of the centerline of Pontiac Trail Road and 2,600 feet east of Wixom Road in Section 5, Novi Township, Oakland County, Michigan.

Circuits

Two 345,000 volt, 60 cycle, 6 wire, 3 phase transmission circuits with two groundwires.

Towers and Crossarms

Per attached drawings EB, EH, and EL.

Conductors

Two 954 Mcm 54/7 ACSR conductors per phase with 18" sub-spacing and two 159 Mcm 12/7 ACSR groundwires.

Insulators

Seventeen 5-3/5" x 10" O.B. #32440 or equivalent in suspension.

Wood Structures

Per drawing ED4-8038.

Guy and Guy Attachments

Per drawing ED4-8038.

Suspension and Deadend Details

As shown on drawing ED-5924.

System Engineering Department
CVP/nld 3/7/78

RECORDED RIGHT OF WAY NO. 25008

The Chesapeake and Ohio Railway Company

WIRE AND/OR CABLE LINE CROSSINGS

THIS AGREEMENT, made as of the 15th day of January, 1968, between THE CHESAPEAKE AND OHIO RAILWAY COMPANY, a Virginia corporation, hereinafter called "Railway", and THE DETROIT EDISON COMPANY, a New York Corporation

hereinafter called "Licensee" (all words herein referring to Licensee to be taken of such number and gender as the context may require):

WITNESSETH THAT:

WHEREAS, Licensee desires to construct, operate and maintain a wire and/or cable line over and across the right of way, tracks and wires of Railway, consisting of two (2) 345,000 volt, 60 cycle, 6-wire, 3 phase transmission circuit with two ground wires.

at a point located at Station 18 plus 90 of spur track serving Ford Motor Company

Mile Post Feet, Toledo

Subdivision, Saginaw Division, at or near Wixom

 , County of Oakland, State of Michigan

said crossing, together with the necessary poles, towers, conduits, fixtures, and appurtenances thereto, being in accordance with attached Licensee's Drawing No. RX-3727A

marked for identification "Exhibit A" and Licensee's Data Sheet, marked for identification "Exhibit B"

 which are made a part of this agreement and

 which are incorporated herein and made a part hereof by reference; said crossing and the aforesaid facilities and appurtenances thereto being hereinafter referred to collectively as "Crossing"; and

WHEREAS, Railway is willing for said Crossing so to be constructed, operated and maintained, upon the following terms, covenants, conditions and limitations;

NOW, THEREFORE, in consideration of the premises and the observance by Licensee of the terms, covenants, conditions and limitations hereinafter set forth, it is agreed by and between the parties hereto as follows:

1. Railway hereby licenses and permits Licensee, at its sole risk, cost and expense, to construct, operate, maintain and renew said Crossing across the right of way, tracks, wires and any other facilities of Railway

 , and of any other person, firm, corporation or association which now or may hereafter have any such facilities on Railway's right of way at or in the vicinity

RECORDED RIGHT OF WAY NO. 20108

WAYNE-PONTIAC 345KV
ARGENTA-PONTIAC 345KV

#8804
"ARGENTA-PONTIAC" 345KV
E OF TOWERS
"WAYNE-PONTIAC" 345KV

TOWER #8804
TYPE: EB+111.6'

925' SPAN
INITIAL SAG = 25.0' @ 50°F
FINAL SAG = 26.7' @ 50°F

#8803

TOWER #8803
STA 18+90

TOWER #8803
TYPE: EB+21.6'

750' SPAN
INITIAL SAG = 16.3' @ 60°F
FINAL SAG = 17.5' @ 60°F

#8802

TOWER #8802
TYPE: EB+21.5'

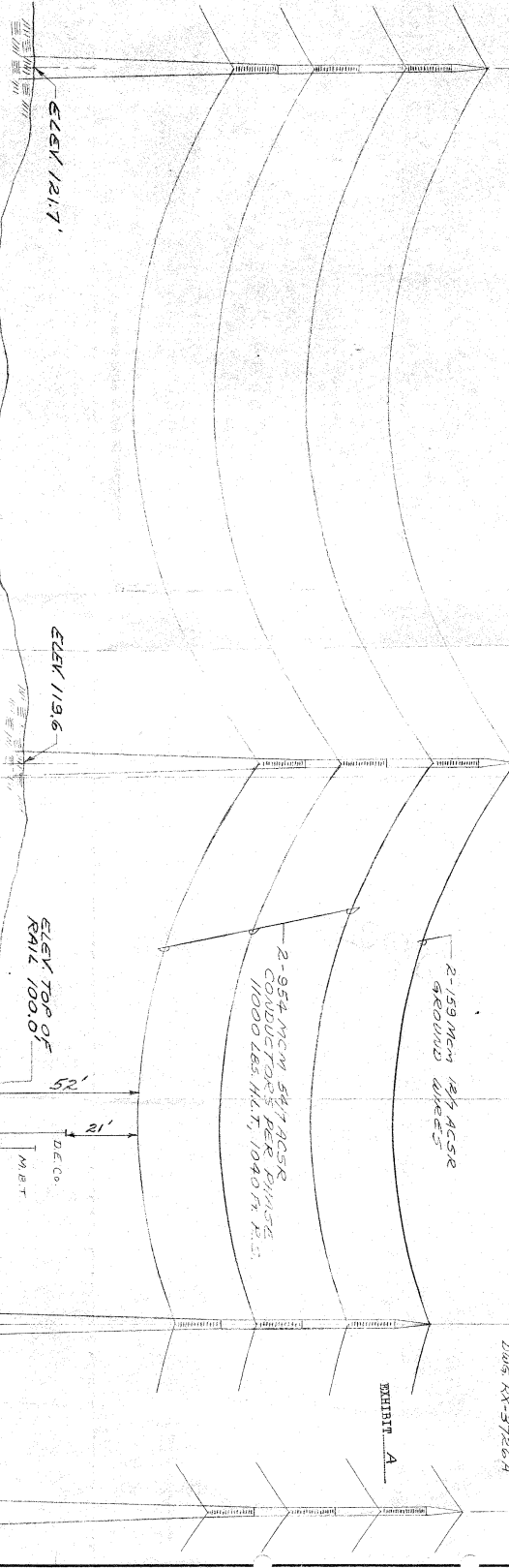
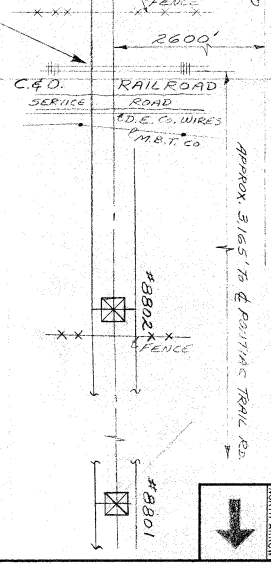
TOWER #8802
TYPE: EB+21.5'

885' SPAN
INITIAL SAG = 22.8' @ 60°F
FINAL SAG = 24.4' @ 60°F
FOR ELEVATION SEE DRAWG RX-3726A

#8801

TOWER #8801
TYPE: EB+131.6'

PLAN OF CROSSINGS
SCALE: 1"=100'



ELEVATION OF CROSSING
SCALE: HORIZONTAL = 1"=100'
VERTICAL = 1"=20'

NOTE
345KV SUBSTATION DETAILS
SEE DRAWING NO. ED-5924.

NOTE:
CROSSING WAS COVERED
UNDER PERMIT NO. ED2-8-5729
DATED: 2-2-66

RECORDED RIGHT OF WAY
25008

APPROVED
E. M. WATERS, JR.
ASST. UTILITIES ENGINEER

CITY: WIXOM
COUNTY: OAKLAND
TOWNSHIP: NOV1
TLN-R, B.E.

SECTION NO. 5

THE DETROIT EDISON COMPANY
PLAN SUBMITTED TO
MICHIGAN PUBLIC SERVICE COMMISSION
FOR 345000 VOLT CROSSING
OVER THE C&O RAILROAD
DRAWN BY M.E.T.
APPROVED BY J.S.W./J.H.
DATE 12-28-67
PERMIT NO. ED
DRAWING NO. RX-3727A



FOR 345 KV SUSPENSION DETAILS
SEE DRAWING ED-5924

ELEVATION OF CROSSING
SCALE 1" = 100' HORIZ.
1" = 20' VERT.

PX-3727A
PERMIT ED2-B-616
(DATED 2-5-68)

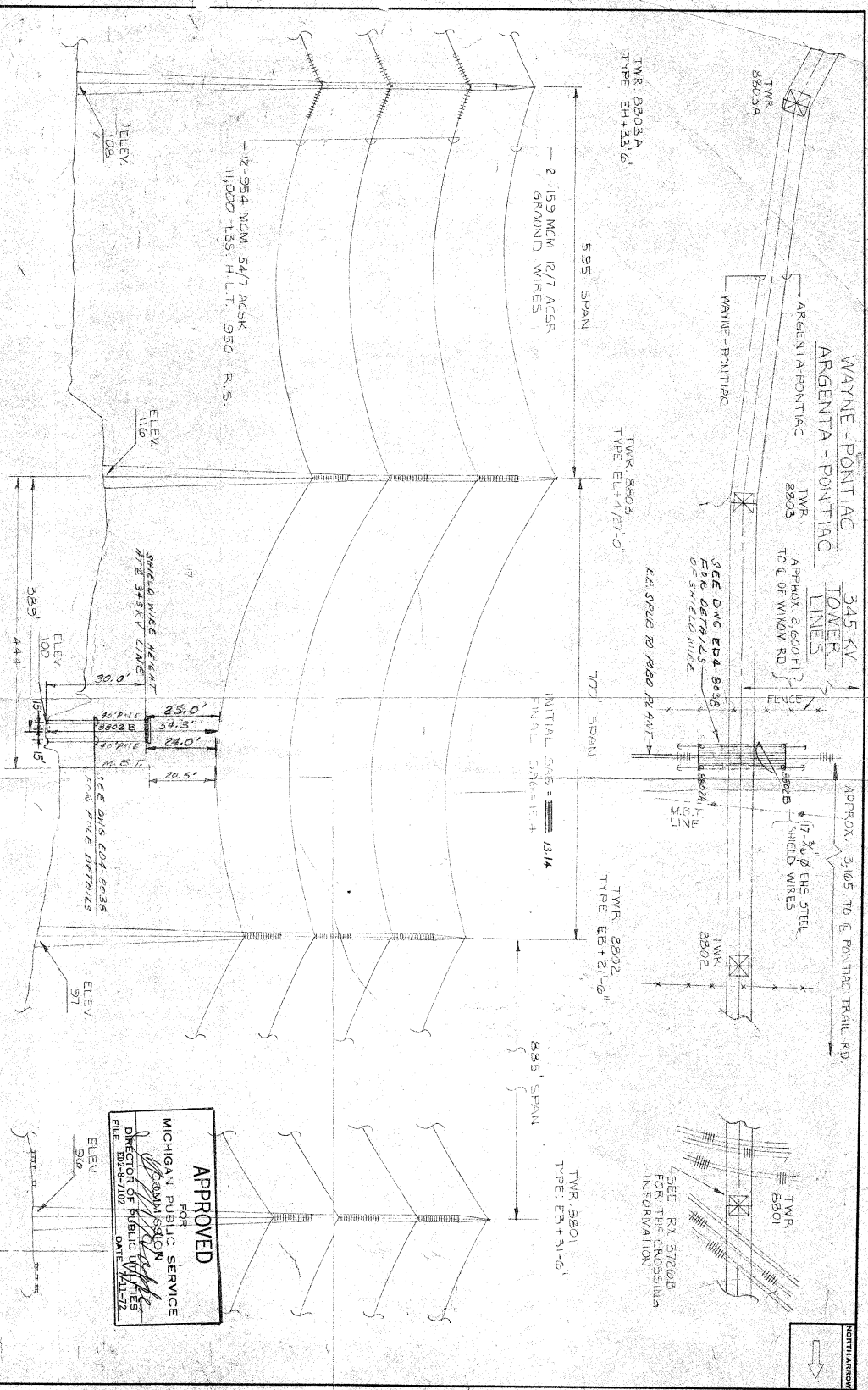
CITY WILKINSON
COUNTY OAKLAND
TOWNSHIP NOVY

TIN-R, B, E
SECTION NO. 5

THE DETROIT EDISON COMPANY
PLAN SUBMITTED TO
MICHIGAN PUBLIC SERVICE COMMISSION
FOR 345,000 VOLT CROSSING
ORDERED BY BALDWIN DATE 5-24-72
DRAWN BY C. VAN BEEK DATE 5-25-72
APPROVED BY [Signature] DATE 5-25-72
PERMIT NO. [Signature]
DRAWING NO. RX-3727B

APPROVED
FOR
MICHIGAN PUBLIC SERVICE
COMMISSION
DIRECTOR OF PUBLIC UTILITIES
FILE: 82-8-7102 DATE: 11-1-72

ALL DIM AT 68°F



RECORDED RIGHT OF WAY
85008

FOR 345 KV SUSPENSION DETAILS
SEE DRAWING ED-5974

RECORDED RIGHT OF WAY
8500'

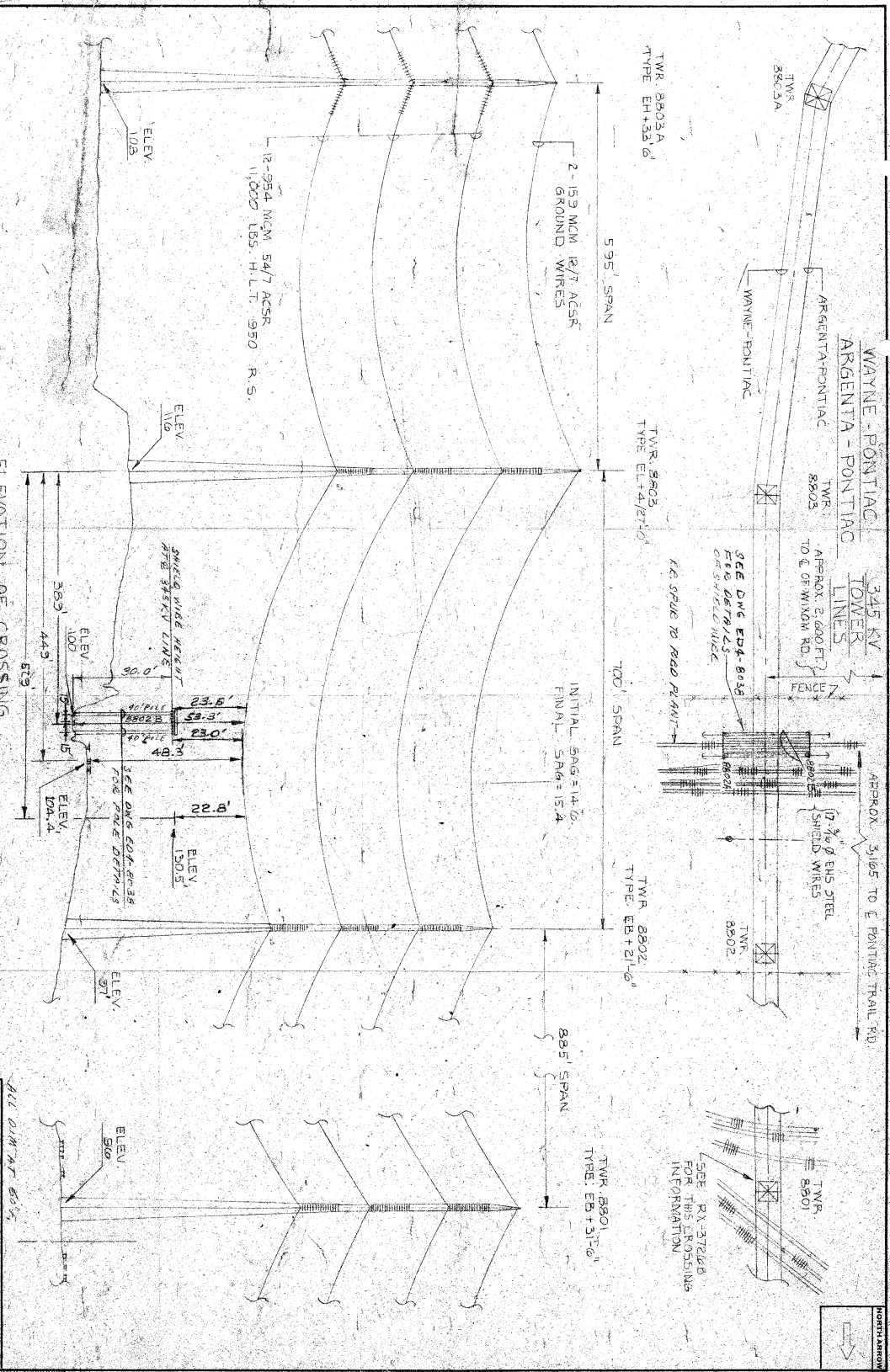
ELEVATION OF CROSSING
SCALE: 1" = 100' HORIZ.
1" = 20' VERT.

REVISED 2-27-78
FIELD BK 102 PAGE 123

RX-3727A
PERMIT ED2-8-6161
(DATED 2-5-68)

CITY: WARREN
COUNTY: CUYAHOGA
TOWNSHIP: WYOMING
LINE: K.R.B.E.
SECTION NO: 5

THE DETROIT EDISON COMPANY
PLAN SUBMITTED TO
MICHIGAN PUBLIC SERVICE COMMISSION
FOR 345 KV VOLT CROSSING
OVER THE C.T.O. RAILROAD
DRAWN BY C.VAN PARIS DATE 5-24-72
APPROVED BY DATE 5-25-72
PERMIT NO. RX-3727A
DATED 2-8-70



ALL DIM AT 68°F

SEE RX-3726B
FOR TOWER CROSSING
INFORMATION



11. Licensee shall pay to Railway upon the execution of this agreement a sum of One Hundred Dollars (\$100.00) toward the cost of preparation of plans and supervision expense. Licensee shall also pay to Railway as a rental charge for the use of its premises the sum of One Hundred Dollars (\$100.00) per annum in advance for each and every year, or fraction thereof, during which this agreement shall remain in force and effect.

[Handwritten signature]

12. This agreement shall continue in force and effect until terminated by ninety (90) days' notice in writing from either party to the other of its intention to terminate the same, except that termination of this agreement shall not relieve or release Licensee from any liability or obligation which may have been incurred or assumed by Licensee hereunder prior to the termination hereof.

13. In the event this agreement shall be at any time terminated as herein provided, or Licensee, in the judgment of Railway, shall have abandoned said Crossing, said Licensee shall, at its sole risk, cost and expense, forthwith upon request of Railway so to do, remove said Crossing from and across the right of way and premises aforesaid, and in the event of the failure or refusal of Licensee, within thirty (30) days after receipt of such request, to remove said Crossing and restore and leave said right of way and premises in as good condition as before the installation of said Crossing, then and in that event Railway, without incurring any liability to Licensee, may, at its option, remove said Crossing. Licensee shall reimburse Railway for the entire cost and expense of such removal and restoration upon receipt of Railway's bill therefor.

14. The terms and provisions of this agreement shall inure to the benefit of and be binding upon the successors and assigns of Railway, _____ and any other person, firm, corporation or association now or hereafter having facilities on Railway's right of way at or in the vicinity of the Crossing, and the successors, heirs, personal representatives and assigns of Licensee. No assignment by Licensee of this agreement or of any rights hereunder shall be made without the prior written consent of Railway.

15. Agreement dated December 29, 1965 between the above parties covering a wire line crossing at the above location is hereby terminated.

IN TESTIMONY WHEREOF, the parties hereto have caused these presents to be duly executed.

Approved as to form:

THE CHESAPEAKE AND OHIO RAILWAY COMPANY

[Handwritten initials: RUC, EDE, RUC]

[Handwritten signature]

Assistant General Solicitor

By *[Handwritten signature]*
General Manager

THE DETROIT EDISON COMPANY

Licensee

By *[Handwritten signature]*

Director
Properties and Right of Way Department
(title)

Contract Checked
MAG
Right of Way

[Handwritten signature]
[Handwritten signature]

RECORDED RIGHT OF WAY NO. 25228

1A SHEET TO ACCOMPANY DRAWING I 3727A

Revision of Crossing Rx-3727

Covered Under Permit ED-2-8-5729 Dated: 2-2-66

Name of Company

The Detroit Edison Company

Name and Location of Crossing

Crossing of the "Wayne-Pontiac", and the "Argenta-Pontiac" 345KV transmission circuits over the C&O Railroad approximately 3,165 ft. south of the centerline of Pontiac Trail Road and 2,600 ft. east of Wixom Road in Section 5, Novi Township, Oakland County, Michigan.

Circuits

Two - 345,000 volt, 60 cycle, 6 wire, 3 phase transmission circuits with two ground wires.

Towers and Crossarms

Per attached photostat #T-9975

Conductors

Two - 954 MCM 54/7 ACSR conductors per phase with 18" sub spacing and two - 159 MCM 12/7 ACSR ground wires.

Insulators

17 - 5 3/4" x 10" O.B. #32440 or equivalent in suspension.

Guy and Guy Attachments

None

Guy Clamps and Insulators

None

Guy Anchor and Anchor Rods

None

Suspension and Deadend Details

As shown on attached drawing No. ED-5924.

EXHIBIT B

APPROVED
E. M. HASTINGS, JR.
ASST. UTILITIES ENGINEER

General Engineering Dept.
MLF/gmk 12/26/67

RECORDED RIGHT OF WAY NO. 25002

SUSPENSION TOWER TYPE EB

LOADS

- 1a. Vertical, Double Circuit (1/2" ice)
 1. 2 Groundwires @ 1080# = 2160#
 2. 6 Two-Conductor Bundles @ 4900# = 29400#
 Total = 31560#
- 1b. Vertical, Single Circuit (1/2" ice)
 1. 1 Groundwire @ 1080# = 1080#
 2. 3 Two-Conductor Bundles @ 4900# = 14700#
 Total = 15780#
2. Transverse-Wind on Wires (1/2" ice, 8# wind)
 a. 2 Groundwires @ 1050# = 2100#
 b. 6 Two-Conductor Bundles @ 2880# = 17280#
 Total = 19380#
3. Longitudinal
 a. 1 Two-Conductor Bundle @ 15000# = 15000#
 b. 1 Groundwire @ 6600# = 6600#
 c. 1 Two-Conductor Bundle @ 12000# = 12000#
4. Wind on Tower (from any direction) of 13 psf on 1-1/4 times projected area of one face
5. Vertical Load of Tower
6. Vertical, Heavy (1" ice)
 a. 2 Groundwires @ 2400# = 4800#
 b. 6 Two-Conductor Bundles @ 8500# = 51000#
 Total = 55800#

- Combine
 1. 65x(1e+2+4+5) = Intact Conductor Bundle,
 1. 0x3a = Broken Conductor Bundle, Independent
1. 0x3b = Broken Groundwire,
 1. 65x[1e+15/16(2)+4+5] + 1. 0x(3c) = Double Ckt., 1 Broken Conductor Bundle
1. 65x6 = Heavy vertical
 1. 65x[1b+7/16(2)+4+5] + 1. 0x(3c) = Single Ckt., 1 Broken Conductor Bundle

Material
 Steel per ASTM spec A7, latest revision & ASTM spec A242, latest revision

Coatings
 All materials galvanized to ASTM spec 123, latest revision

Connections
 Bolted with 3/4" diameter machine bolts
 ASTM spec A394, latest revision

Ultimate Unit Stresses
 A7 A242

Tension, net section:
 33,000#/in² 50,000#/in²

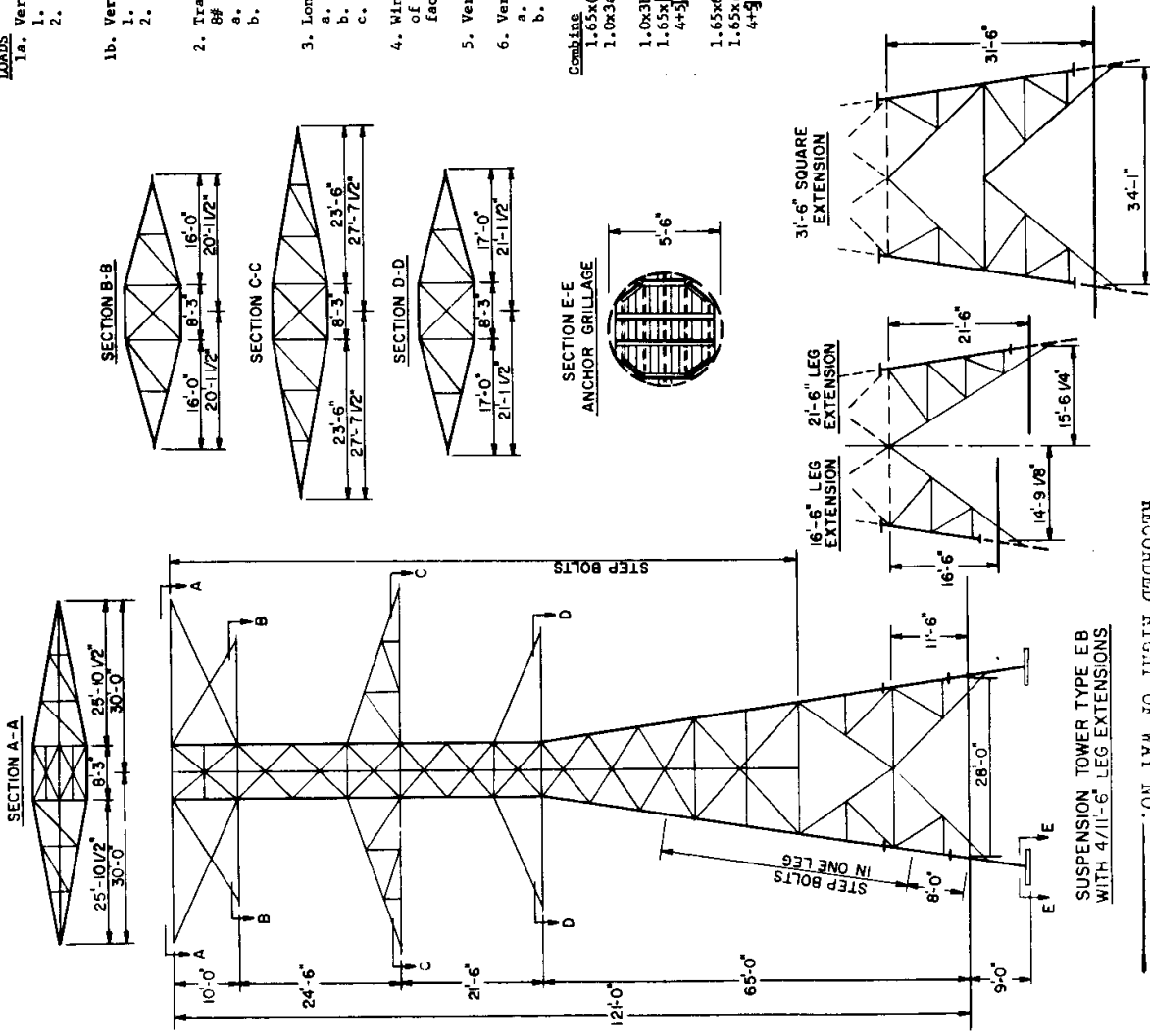
Compression,
 Gross section:
 L/r=150 33,000-1300/r

L/r=150 24,000-70L/r

L/r=113 39,600-1.29(L/r)²

L/r=113 39,600

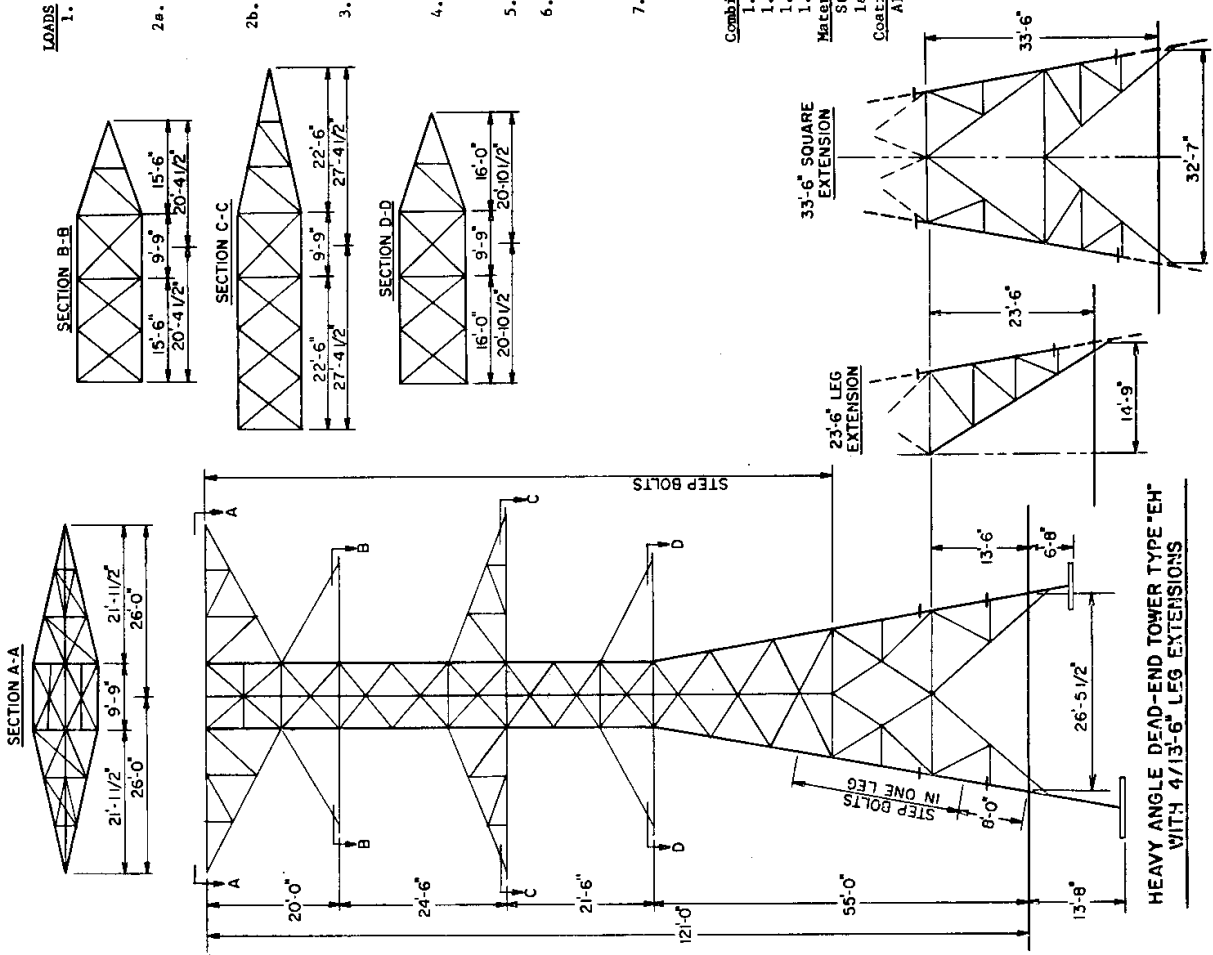
Shear on Bolts = 30,000psi
 Bearing on Bolts = 60,000psi



SUSPENSION TOWER TYPE EB		APPROVED		
		THE DETROIT EDISON COMPANY GENERAL ENGINEERING DEPARTMENT		
LAYOUT BY		ROS	DRAWN BY	WES
DATE		1-30-68	DRAWING NUMBER	
SCALE		NONE	EB	

RECORDED RIGHT OF WAY NO. 25008

HEAVY ANGLE DEAD-END TOWER TYPE EH



- LOADS**
1. Vertical
 - a. 2 Groundwires @ 1100#
 - b. 6 Two-Conductor Bundles @ 5000#
 - Total = 2200#
 - 2a. Transverse-Wind on Wires (1/2" ice, 8# wind)
 1. 2 Groundwires @ 1100#
 2. 6 Two-Conductor Bundles @ 3000#
 - Total = 2200#
 - 2b. Transverse-Angle in Line
 1. 2 Groundwires @ 6000#
 2. 6 Two-Conductor Bundles @ 22000#
 - Total = 12000#
 3. Longitudinal
 - a. 2 Groundwires @ 6000# or
 - b. 6 Dual Conductors @ 22000#
 - Total = 12000#
 4. Wind on Tower (from any direction) of 13 psf on 1-1/4 times projected area of one face
 5. Vertical Load of Tower
 6. Torsion
 - a. 1 Groundwire @ 6000#
 - b. 3 Two-Conductor Bundles @ 22000#
 - Total = 6000#
 7. Vertical-Heavy (1" ice)
 - a. 2 Groundwires @ 2400
 - b. 6 Two-Conductor Bundles @ 8000#
 - Total = 4800#

Combine

- 1.65x(1+2a+2b+4+5)
- 1.65x(1+1/2a+3+4+5)
- 1.25x(1+1/4of2a+4+5+6)
- 1.55x(7)

Material
Steel per ASTM spec. A7, latest revision & ASTM spec A242, latest revision
Coating

Connections
All material galvanized to ASTM spec. 123, latest revision
Bolted with 3/4" diameter machine bolts, ASTM spec A394, latest revision

Ultimate Unit Stresses

Tension, net section	$\frac{A242}{A7}$	45,000#/in ²
Compression, Gross Section;	$\frac{A242}{A7}$	49,500#-218L/r/in ² (39,000#Max.)
L/r < 100		43,000#-170L/r/in ²
L/r < 150		39,000#-145L/r/in ²
L/r < 200		24,000#/in ²
Shear on Bolts		45,000psi
nom. diameter		30,000psi
Bearing on Bolts		60,000psi

HEAVY ANGLE DEAD-END TOWER TYPE "EH"	APPROVED	THE DETROIT EDISON COMPANY GENERAL ENGINEERING DEPARTMENT	
	<i>[Signature]</i>	LAYOUT BY R.O.S.	DRAWN BY W.E.S.
	<i>[Signature]</i>	DATE 1-8-68	DRAWING NUMBER EH
		SCALE NONE	

RECORDED RIGHT OF WAY NO. 25008

