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FILED NO 1276
BOOK 119 PAGE 560

1985 DEC 20 PM 4:00

MARY E. WELTY
RECORDER
MADISON COUNTY, IOWA

Fee $ 255.00

51 pgs

EASEMENT GRANT

KNOW ALL MEN BY THESE PRESENTS:

That CHICAGO PACIFIC CORPORATION, a Delaware corporation, (hereinafter referred to as the "Grantor"), in consideration of the sum of TEN AND 00/100 DOLLARS and other good and valuable considerations in hand paid, does hereby grant unto IOWA POWER AND LIGHT COMPANY, (hereinafter referred to as the "Grantee"), nonexclusive easements for pipeline purposes (hereinafter referred to as "pipeline(s)"), and no other purpose, in the County of Madison, State of Iowa, along the courses indicated in hatched lines on Exhibits "A-1" through "A-8" attached hereto and by reference made a part hereof, described on Exhibits "C-1" through "C-8" attached hereto and by reference made a part hereof.

Grantee's use of the properties (herein described "premises") is made subject to the following terms and conditions which are deemed covenants and shall run with the land:

1. The pipeline(s), when constructed, or if and when the existing pipe(s) shall be replaced, shall be constructed and conform to the specifications referenced on Exhibits "B-1" through "B-8" and attached hereto and by reference made a part hereof.

2. Grantor shall permit Grantee reasonable right of entry for the purpose of constructing, replacing, repairing, maintaining and operating said pipeline(s), it being understood that Grantor may restrict the location of entry points or access on, or over the premises.

3. Grantee shall pay the entire cost of constructing, replacing, repairing, maintaining and operating said pipeline(s). All of said work shall be done in a good and workmanlike manner and in accordance with the plans, specifications and profiles, specifically including date of commencement of work, to be prepared by Grantee and submitted in writing for approval to Grantor; and, except in emergencies, until such approval is first had, and such approval shall not be unreasonably withheld, said work upon the premises shall not be begun by Grantee. Grantor reserves the right to have a representative present, but in no way waives any rights under this Easement Grant by failing to have said representative present.

4. Grantor shall have the right to retain existing tracks and other improvements at the locations of these easements and shall also have the right at any and all times in the future to construct, maintain and operate over said easements such additional track, tracks and other improvements as it may from time to time elect. Nothing shall be done or suffered to be done by Grantee that will in any manner impair the usefulness or safety of the existing tracks and other improvements of the Grantor or of such track, tracks and other improvements as Grantor may construct in the future across or above said easements. The Grantor reserves the exclusive right to grant future easements under, over, across, parallel with, or within the above-described premises, provided that such easements do not unreasonably interfere with the permitted usage herein.

5. Grantee agrees that before and during the construction, replacement, repair, maintenance or operation of said pipeline(s), or at any other time, Grantor shall have the right to provide such safe and temporary structures as Grantor may deem necessary for safely caring for and preserving Grantor's tracks, buildings or other improvements, and Grantee agrees to pay to Grantor the entire cost of putting in and removing such temporary structures and of restoring property of Grantor as near as may be to the same condition in which it was before the commencement of the work.

6. Grantee agrees that if, at any time(s), Grantor shall change the location(s) or grade(s) of Grantor's tracks at any point of crossing or at any point along a parallel course with the pipeline(s) or shall desire to use the premises at said crossing point parallel course with the pipeline(s) or parallel course for any purpose whatever, Grantee, at its own expense shall make all changes required by Grantor. If Grantee shall fail, neglect or refuse to make such change for a period of thirty (30) days after receiving written notice from Grantor, then Grantor may forthwith make such change at Grantee's expense.

7. Grantee shall at all times construct, replace, repair, maintain and operate said pipeline(s) in a secure, safe and sanitary condition and in accordance with all applicable laws, ordinances, rules and regulations. If the manner of constructing, replacing, repairing, maintaining and operating said pipeline(s) shall at any time be in violation of any applicable law, rule, regulation or ordinance, then Grantee shall at no cost or expense to Grantor, upon receipt of appropriate notice from a governmental agency having enforcement jurisdiction in the premises make such changes or repairs as shall be necessary. Failure or refusal of Grantee to make the required changes or repairs within the time prescribed by said agency shall terminate these easements, and the Grantee's rights and interest shall revert to Grantor, provided that they shall not terminate as long as Grantee in good faith and by pursuit of appropriate legal or equitable remedies, enjoins, defends against, appeals from or pursues other lawful measures to avoid the enforcement of said laws, ordinances, rules or regulations.

8. Grantee shall indemnify and save Grantor, CHICAGO PACIFIC CORPORATION, and its employees, agents, invitees, contractors, tenants and licensees, harmless from and against all claims, losses, demands and causes of action, including attorneys' fees, court costs and/or judgments arising in favor of any person or other legal entity (including Grantee or its employees, agents, invitees, contractors, tenants or licensees) which are caused by, or arise directly or indirectly from the construction, use and operation of said pipeline(s) or the grant of this easement.

9. All rights and interest to said premises shall revert to Grantor if Grantee vacates, abandons or ceases to use said easements. At Grantor's request, Grantee shall immediately deliver to Grantor an instrument in proper form for approval and recording by Grantor, releasing the premises from the easement.

10. Notwithstanding anything to the contrary herein, the Grantor shall in no event incur liability to Grantee for the failure of or defect in Grantor's title or estate in the premises.

11. The grants, covenants and stipulations hereof shall extend to and be binding upon the respective successors and assigns of the parties hereto.

IN WITNESS WHEREOF, this instrument is executed by Grantor this 29th day of October, 19 85.

ATTEST: CHICAGO PACIFIC CORPORATION

CHICAGO PACIFIC CORPORATION SEAL 1971 CORPORATE

ASST. SECRETARY

By: G. Steven Cronen

VICE PRESIDENT

STATE OF ILLINOIS)
) SS
COUNTY OF COOK)

I, the undersigned, a Notary Public, in and for the County and State aforesaid, do hereby certify that G. Steven Cronen personally known to me to be the Vice President of CHICAGO PACIFIC CORPORATION, a Delaware corporation, and Nancy A. Norman personally known to me to be the Asst. Secretary of said corporation, and personally known to me to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that as such Vice President and Asst. Secretary they signed and delivered the said instrument as Vice President and Asst. Secretary of said corporation, and caused the corporate seal of said corporation to be affixed thereto, pursuant to authority given by the Board of Directors of said corporation as their free and voluntary act, and as the free and voluntary act and deed of said corporation for the uses and purposes therein set forth.

Given under my hand and seal this 29th day of October, 19 85.

MARY NELL JACKSON NOTARY PUBLIC COOK COUNTY, IL

Mary Nell Jackson
Notary Public

My Commission Expires:

November 1, 1987

aw

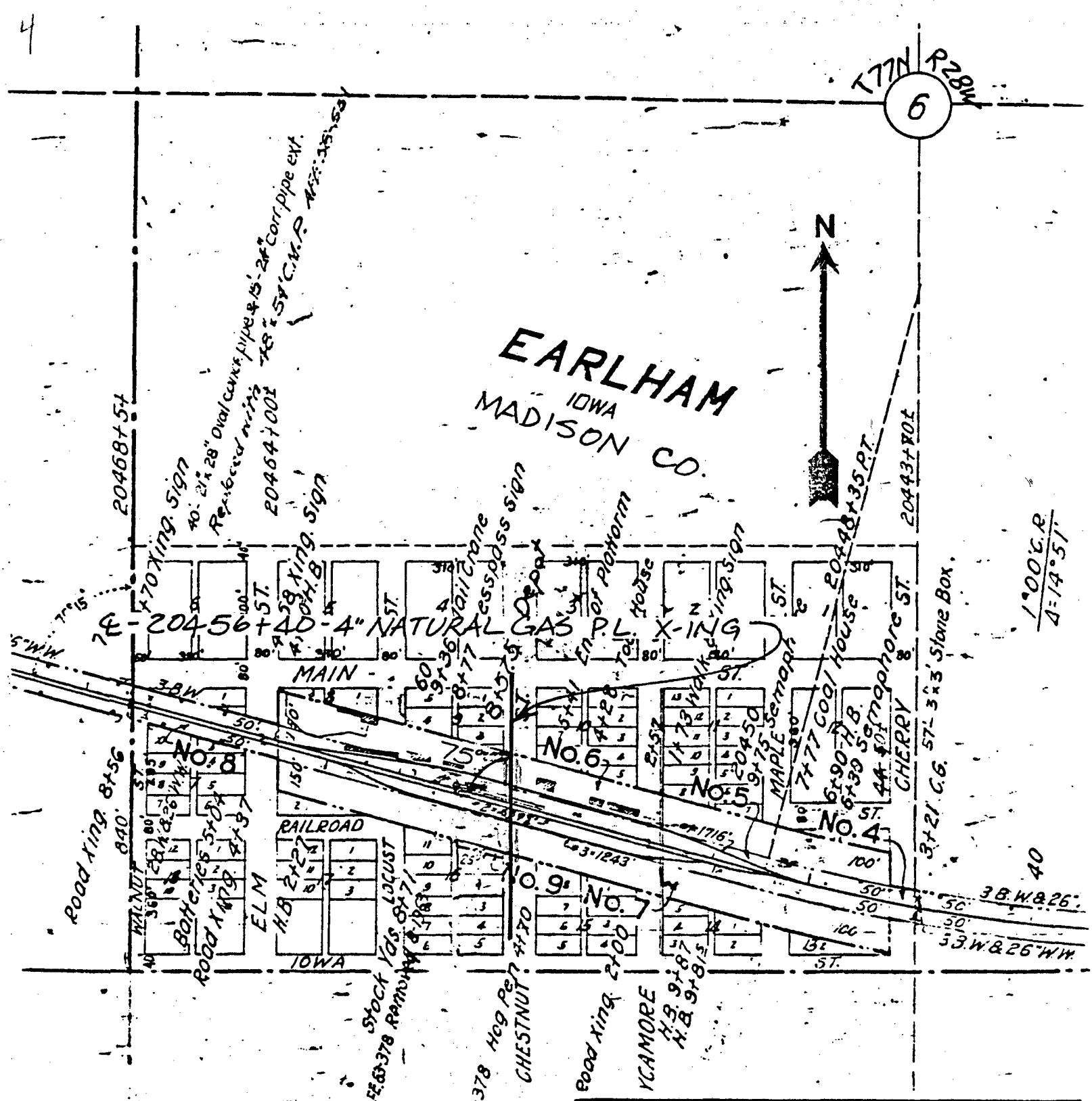


EXHIBIT "A"	FILE NO. NG-10
CHICAGO PACIFIC CORPORATION 200 SOUTH MICHIGAN AVE. CHICAGO, ILLINOIS 60604	
4" NATURAL GAS P.L. X-ING	
EARLHAM, IOWA	
IOWA POWER	
SW1/4 SEC 6, T77N-R28W	
SCALE 1" = 400' MAP	
DATE 11-1-85 PREPARED BY: S.G.	
REV.	

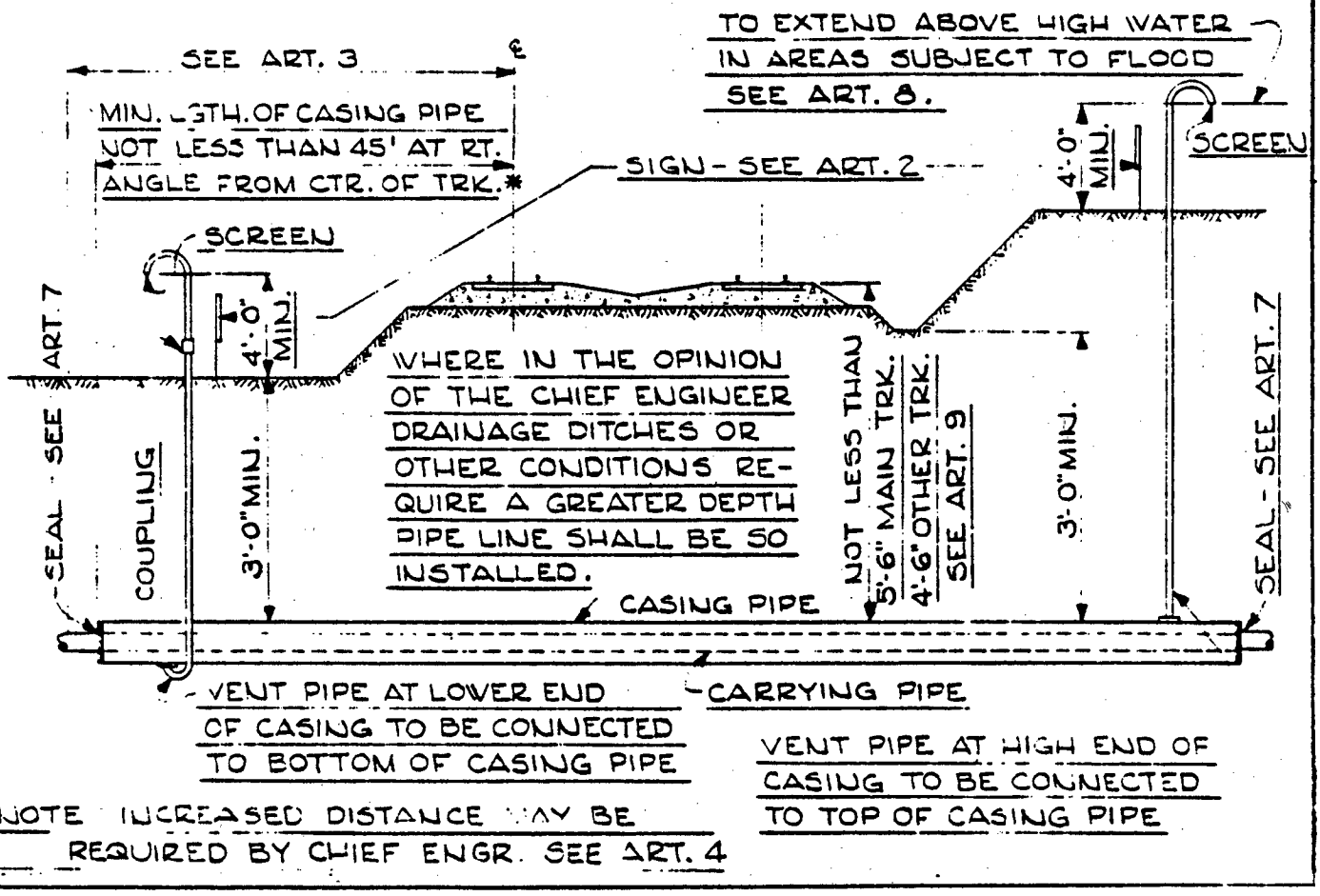
THIS EXHIBIT IS A REPRESENTATION OF THE PREMISES PROPOSED TO BE CONVEYED. THIS EXHIBIT IS NOT A SURVEY.

ROCK ISLAND LINES

SP 32

EXHIBIT "B"

STANDARD PLAN AND SPECIFICATIONS TO ACCOMPANY CONTRACTS FOR UNDERGRADE CROSSINGS OF PIPELINES CARRYING TOXIC OR FLAMMABLE FLUIDS.



*NOTE INCREASED DISTANCE MAY BE REQUIRED BY CHIEF ENGR. SEE ART. 4

1. SCOPE

Pipelines included under these specifications are those installed to carry oil, gas, petroleum products, or other flammable or highly volatile or toxic substances under pressure.

2. GENERAL REQUIREMENTS

a. Pipelines under railway tracks and across railway rights-of-way shall be encased in a larger pipe or conduit called the casing pipe.
Casing pipe may be omitted in the following locations:

(1) Under secondary or industry tracks as approved by the Chief Engineer of the railroad.

(2) On pipelines in streets where the stress in the pipe from internal pressure and external loads does not exceed 40 percent of the specified minimum yield strength (multiplied by longitudinal joint factor) of the steel pipe material.

Pipelines shall be installed under tracks by boring or jacking, if practicable. Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45 degrees and shall not be placed within a culvert, under railway bridges nor closer than 45 feet to any portion of any railway bridge, building or other important structure, except in special cases and then by special design as approved by the Chief Engineer of the railroad.

INDEX NUMBER
BOX 81 - 35

b. Pipelines laid longitudinally on railway rights-of-way shall be located as far as practicable from any tracks or other important structures. If located within 15 feet of the center line of any track or closer than 45 feet to nearest point of any bridge, building or other important structure, the carrier pipe shall be encased or of special design as approved by the Chief Engineer of the railroad.

c. Any replacement of a carrier pipe shall be considered a new installation, subject to the requirements of these specifications.

d. Where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so prescribed shall be deemed a part of these specifications.

e. Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railway rights-of-way.

f. All pipelines, except those in streets shall be prominently marked at the rights-of-way (on both sides of track for undercrossings) by signs substantially worded thus:

"HIGH PRESSURE . . . . . MAIN . . . . . FEET UNDER"

3. CARRIER PIPE

Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current ASA B 31.4, Code for Oil Transportation Piping, ASA B 31.8, Code for Gas Transmission and Distribution Piping Systems, and other applicable ASA Codes, except that the maximum allowable stresses* for design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by longitudinal joint factor) of the pipe as defined in the ASA Codes;

* If the maximum allowable stress in the carrier pipe on either side of the crossing is less than specified above, the carrier pipe at the crossing shall be designed at the same stress as the adjacent carrier pipe.

a. Steel pipe within a casing under railway tracks and across railway rights-of-way (the following percentages apply to hoop stress):

(1) Seventy-two percent for installations on oil pipelines.

(2) Fifty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Sixty percent for installations on gas pipelines.

b. Steel pipe without a casing under secondary or industry tracks (the following percentages apply to the sum of the hoop stress due to the maximum anticipated internal pressure and the flexural ring stress due to external loads):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Fifty percent for installations on gas pipelines.

c. Steel pipe laid longitudinally on railway rights-of-way (the following percentages apply to hoop stress):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Forty percent for installations on gas pipelines.

The minimum wall thickness for steel or wrought iron carrier pipe shall be 0.2 inches. For pipelines 1½ inches in diameter and smaller, operating at pressures less than 100 psi, a thickness not less than that specified for extra-strong steel pipe by the U.S. Department of Commerce, National Bureau of Standards, may be used.

Requisites for carrier line pipe under railway tracks shall apply for a minimum distance of 50 feet (measured at right angle) from center line of outside tracks or 2 feet beyond toe of slope or 25 feet beyond the ends of casing (when casing is required), whichever is greater. This requirement does not apply to lines in streets.

The pipe shall be laid with sufficient slack so that it is not in tension.

4. CASING PIPE

Casing pipe and joints shall be of metal and of leakproof construction, capable of withstanding railway loading.

WALL THICKNESS FOR STEEL CASING PIPE
FOR E 72 LOADING (INCLUDING IMPACT)

MINIMUM THICKNESS INCHES	DIAMETER OF PIPE
0.188	Under 12¾
0.219	12¾
0.250	14 and 16
0.281	18
0.312	20
0.344	22
0.375	24 and 26
0.406	28
0.438	30
0.500	32 and 34
0.563	36, 38 and 40
0.625	42

Steel pipe to have a minimum yield strength of 35,000 psi.

When casing is installed without benefit of a protective coating, and said casing is not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size which is a minimum of 0.063 in. greater than the thickness shown except for diameters under 12¾ inches.

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American Standards Association Specifications A 21. The pipe shall be of the mechanical joint type or plain-end pipe with compression type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ASA A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe." Pit-cast pipe may be used up to 20 inches in diameter. Centrifugal-cast pipe shall be used for pipes over 20 inches in diameter.

The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing pipe. All joints or couplings, suppotts, insulators or centering devices for the carrier pipe within a casing under railroad tracks shall be taken into account. In addition, a minimum vertical deflection of the casing pipe of 3 percent of its diameter plus ½ inches clearance shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe the inside diameter of the casing pipe shall be at least 2 inches greater than the outside diameter of the carrier pipe for pipe less than 8 inches in diameter; at least 3¼ inches greater for pipe 8 inches to 16 inches inclusive, in diameter, and at least 4½ inches greater for pipe 18 inches in diameter and over.

Casing pipe under railroad tracks and across railway rights-of-way shall extend to the greater of the following distances, measured at right angles to the center line of track:

a. 2 feet beyond toe of slope.
b. 3 feet beyond ditch line.
c. A minimum distance of 45 feet each side from center line of outside track.

If additional tracks are constructed in the future, the casing shall be extended accordingly.

5. CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length, except at the ends of casing where ends are left open, or through vent pipes when ends of casing are sealed. Casing shall be so installed as to prevent the formation of a waterway under the railway and with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, Chapter 1, of the current American Railway Engineering Specifications. All open excavations within twenty feet (20 feet) of the center line of any track shall be covered so as to accept pedestrian use safely during hours when pipeline installation is not actively in progress. During hours of darkness, adequate warning lights shall be placed at the side of the excavation.

Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1 inch, remedial measures as approved by the Chief Engineer of the railroad shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railroad.

Tunneling operations shall be conducted as approved by the Chief Engineer of the railroad. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

Jacking and receiving pits must be located outside the point where a 1.5 to 1.0 slope projected down from a point 12 feet out from center line of track at level of top of tie will intersect the bottom of the pit. If this

requirement cannot be fulfilled, design drawings of the pit showing details of the shoring and bracing are to be submitted for approval of the railroad prior to starting any excavation.

Where casing and/or carrier pipe is cathodically protected the Chief Engineer of the railroad shall be notified and suitable test made to insure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, published in July 1951 by the National Association of Corrosion Engineers.

6. INSPECTION AND TESTING

ASA Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility within the railway rights-of-way except that the proof testing of strength of carrier pipe shall be in accordance with requirements of ASA Code B 31.8 for Location Classes 2, 3, or 4 or ASA Code B 31.4 as applicable.

7. SEALS

Where ends of casing are below ground they shall be suitably sealed to outside of carrier pipe.

Where ends of casing are at or above ground surface and above high-water level, they may be left open, provided drainage is afforded in such manner that leakage will be conducted away from railway tracks or structure. Where proper drainage is not provided, the ends of the casing shall be sealed.

8. VENTS

Casing pipe, when sealed, shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than 2 inches in diameter, shall be attached near end of casing and project through ground surface at right-of-way lines or not less than 45 feet (measured at right angles) from center line of nearest track.

Vent pipe, or pipes, shall extend not less than 4 feet above ground surface. Top of vent pipe shall be fitted with down-turned elbow properly screened, or a relief valve. Vents in locations subject to high water shall extend above the maximum elevation of high water and shall be supported and protected in a manner that meets the approval of the Chief Engineer of the railroad.

Vent pipes shall be at least 4 feet (vertically) from aerial electric wires.

9. DEPTH OF INSTALLATION

a. Casing pipe under railway tracks and across railway rights-of-way shall be not less than 5½ feet from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4½ feet. On other portions of rights-of-way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 feet.

b. Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4½ feet from base of railway rail to top of pipe at its closest point nor less than 3 feet from ground surface or from bottom of ditches.

c. Pipeline laid longitudinally on railway rights-of-way, 50 feet or less from center line of track, shall be buried not less than 5 feet from ground surface to top of pipe. Where pipeline is laid more than 50 feet from center line of track, minimum cover shall be at least 2 feet.

10. APPROVAL

Applicant for proposed pipeline crossing shall submit to the railroad sufficient number of copies of a plan-profile drawing of that portion of the pipeline to be constructed on railroad right-of-way. Drawing shall be made to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of casing and vents, railway survey station, right-of-way lines and general layout of tracks and railway facilities. Drawing should show a cross section from field survey, showing pipe in relation to actual profile of ground and tracks. If open cutting or tunneling is necessary, detail drawings of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the aforesaid drawing (s), applicant shall also submit the following information concerning the pipeline and its operation:

	CARRIER PIPE	CASING PIPE
Contents to be handled		
Outside Diameter		
Pipe Material		
Specification and Grade		
External Coating		
Wall Thickness		
Minimum Yield Stress		
Maximum Operating Pressure		
Type of Joint		

Cathodic Protection ☐ YES ☐ NO Casing Insulators ☐ YES ☐ NO

Shut-Off — Applicant should describe location of nearest upstream valve from railroad that can be operated to shut off fluid flow. If nearest valve is not automatically operated on loss of pipeline pressure or is not constantly attended by applicant's personnel, Applicant should supply instructions on procedure and locations involved in effecting shut-off of pipeline through area of crossing under railroad.

All of the aforesaid information should be submitted to the railroad and shall be approved by the Chief Engineer of the railroad before construction is begun. The execution of the work on railroad right-of-way, including the supporting tracks shall be subject to the inspection and direction of the Chief Engineer of the railroad or his authorized representative.

H. F. Longbelt — ENGINEER MAINTENANCE OF WAY
C E Welker — CHIEF ENGINEER
[illegible] — GENERAL MANAGER
J B Buffle — V.P. OPERATIONS & MTCE.

EXHIBIT "C"

File No. NG-10

M.P. 387 + 2266

E.P.S. 20456 + 40

Iowa Power

Earlham, IA

4" Natural Gas Pipeline Crossing

A 10 foot nonexclusive easement across the former right-of-way of the C. R. I. & P. RR Co., having a width of 300 feet, as now evidenced, monumented, occupied, or recorded in the Southwest Quarter of Section 6, Township 77 North, Range 28 West, of the Fifth Principal Meridian, the centerline of said easement being described as intersecting the centerline of said Grantor's right-of-way a distance of 1270 feet Westerly of the East Line of said Southwest Quarter of Section 6, as measured along the centerline of said Grantor's right-of-way, the centerline of said easement intersects the centerline of said Grantor's right-of-way at an angle of 75 degrees, as measured from Westerly to Northerly all in Madison County, Iowa.

Map No. $\frac{55\text{-}2}{1}$

mj

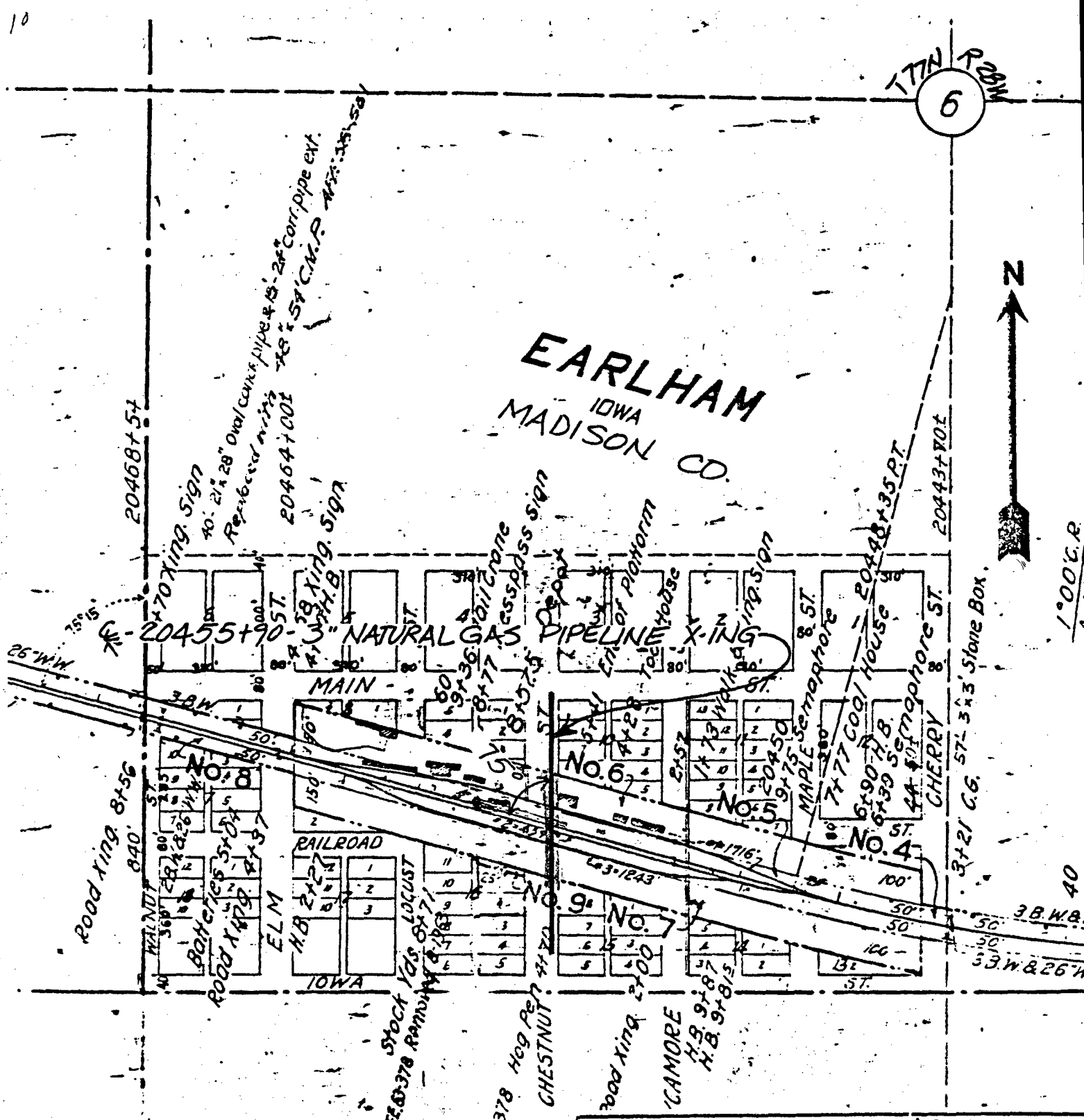
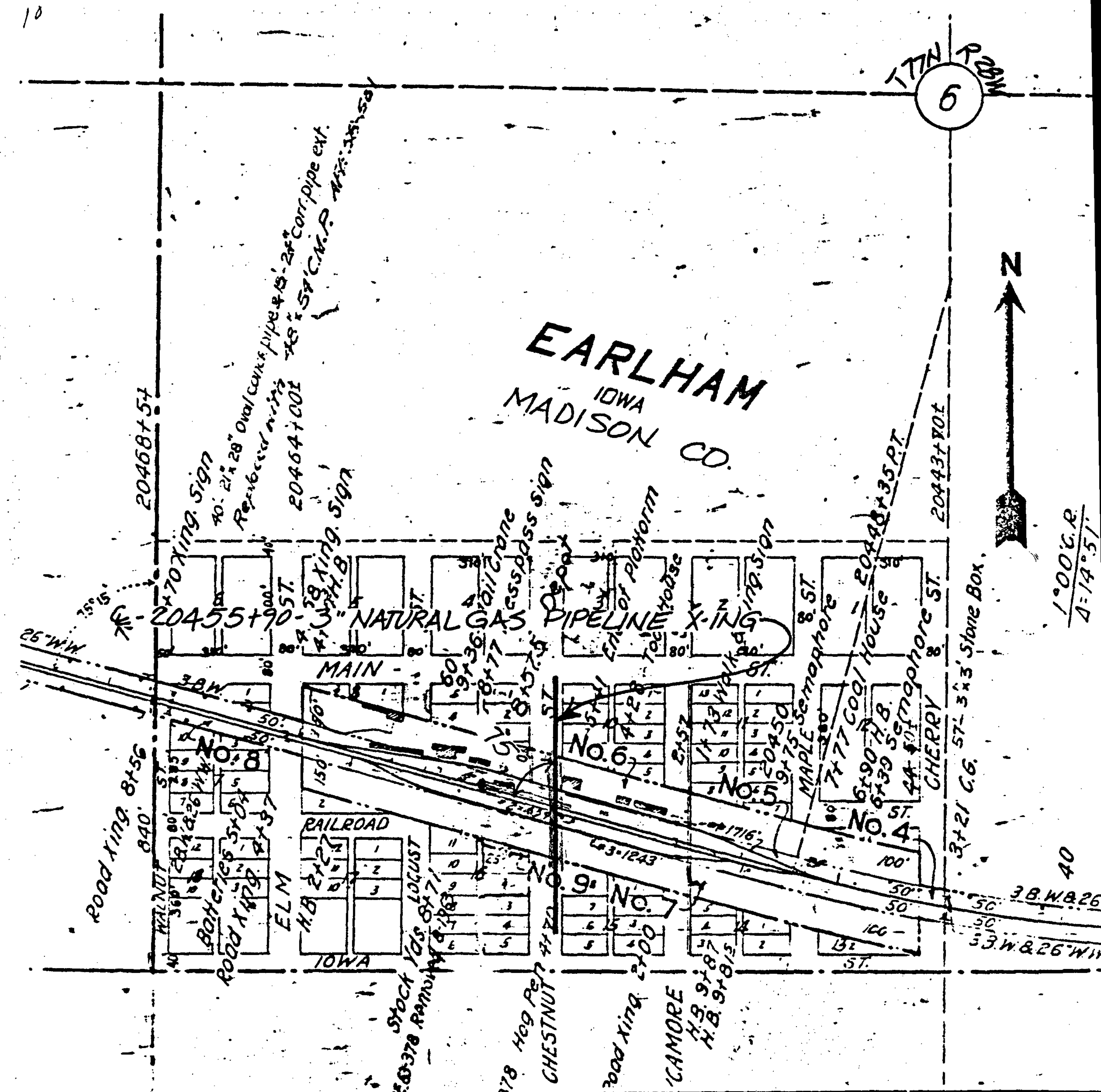


EXHIBIT "A"	FILE NO. NG-11
CHICAGO PACIFIC CORPORATION 200 SOUTH MICHIGAN AVE. CHICAGO, ILLINOIS 60604	
3" NATURAL GAS P.L. X-ING	
EARLHAM, IOWA	
IOWA POWER	
SW¼ SEC 6, T 77 N-R 28 W	
SCALE 1" = 400' MAP	
DATE 11-1-85 PREPARED BY: S.G.	
REV.	

THIS EXHIBIT IS A REPRESENTATION OF THE PREMISES PROPOSED TO BE CONVEYED. THIS EXHIBIT IS NOT A SURVEY.

10



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EXHIBIT "A" | FILE NO. NG-11

CHICAGO PACIFIC CORPORATION
200 SOUTH MICHIGAN AVE.
CHICAGO, ILLINOIS 60604

3" NATURAL GAS P.L. X-ING
EARLHAM, IOWA
IOWA POWER
SW 1/4 SEC 6, T77N-R28W

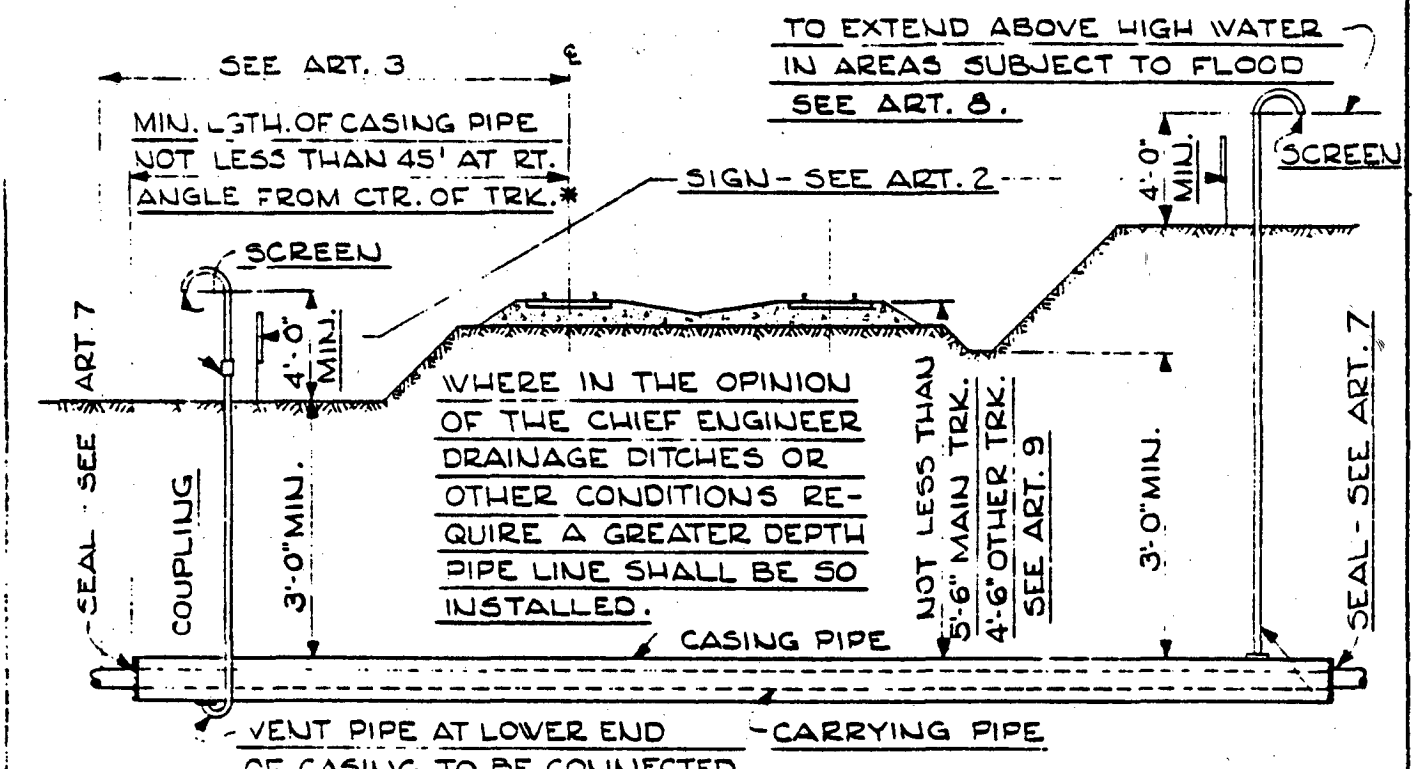
SCALE 1" = 400' MAP
DATE 11-1-85 PREPARED BY: S.G.
REV.

ROCK ISLAND LINES

SP 32

EXHIBIT "B"

STANDARD PLAN AND SPECIFICATIONS TO ACCOMPANY CONTRACTS FOR UNDERGRADE CROSSINGS OF PIPELINES CARRYING TOXIC OR FLAMMABLE FLUIDS.



*NOTE INCREASED DISTANCE MAY BE REQUIRED BY CHIEF ENGR. SEE ART. 4

1. SCOPE

Pipelines included under these specifications are those installed to carry oil, gas, petroleum products, or other flammable or highly volatile or toxic substances under pressure.

2. GENERAL REQUIREMENTS

a. Pipelines under railway tracks and across railway rights-of-way shall be encased in a larger pipe or conduit called the casing pipe.
Casing pipe may be omitted in the following locations:

(1) Under secondary or industry tracks as approved by the Chief Engineer of the railroad.

(2) On pipelines in streets where the stress in the pipe from internal pressure and external loads does not exceed 40 percent of the specified minimum yield strength (multiplied by longitudinal joint factor) of the steel pipe material.

Pipelines shall be installed under tracks by boring or jacking, if practicable. Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45 degrees and shall not be placed within a culvert, under railway bridges nor closer than 45 feet to any portion of any railway bridge, building or other important structure, except in special cases and then by special design as approved by the Chief Engineer of the railroad.

INDEX NUMBER
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b. Pipelines laid longitudinally on railway rights-of-way shall be located as far as practicable from any tracks or other important structures. If located within 15 feet of the center line of any track or closer than 45 feet to nearest point of any bridge, building or other important structure, the carrier pipe shall be encased or of special design as approved by the Chief Engineer of the railroad.

c. Any replacement of a carrier pipe shall be considered a new installation, subject to the requirements of these specifications.

d. Where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so prescribed shall be deemed a part of these specifications.

e. Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railway rights-of-way.

f. All pipelines, except those in streets shall be prominently marked at the rights-of-way (on both sides of track for undercrossings) by signs substantially worded thus:

"HIGH PRESSURE . . . . . MAIN . . . . . FEET UNDER"

3. CARRIER PIPE

Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current ASA B 31.4, Code for Oil Transportation Piping, ASA B 31.8, Code for Gas Transmission and Distribution Piping Systems, and other applicable ASA Codes, except that the maximum allowable stresses* for design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by longitudinal joint factor) of the pipe as defined in the ASA Codes;

* If the maximum allowable stress in the carrier pipe on either side of the crossing is less than specified above, the carrier pipe at the crossing shall be designed at the same stress as the adjacent carrier pipe.

a. Steel pipe within a casing under railway tracks and across railway rights-of-way (the following percentages apply to hoop stress):

(1) Seventy-two percent for installations on oil pipelines.

(2) Fifty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Sixty percent for installations on gas pipelines.

b. Steel pipe without a casing under secondary or industry tracks (the following percentages apply to the sum of the hoop stress due to the maximum anticipated internal pressure and the flexural ring stress due to external loads):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Fifty percent for installations on gas pipelines.

c. Steel pipe laid longitudinally on railway rights-of-way (the following percentages apply to hoop stress):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Forty percent for installations on gas pipelines.

The minimum wall thickness for steel or wrought iron carrier pipe shall be 0.2 inches. For pipelines 1½ inches in diameter and smaller, operating at pressures less than 100 psi, a thickness not less than that specified for extra-strong steel pipe by the U.S. Department of Commerce, National Bureau of Standards, may be used.

Requisites for carrier line pipe under railway tracks shall apply for a minimum distance of 50 feet (measured at right angle) from center line of outside tracks or 2 feet beyond toe of slope or 25 feet beyond the ends of casing (when casing is required), whichever is greater. This requirement does not apply to lines in streets.

The pipe shall be laid with sufficient slack so that it is not in tension.

4. CASING PIPE

Casing pipe and joints shall be of metal and of leakproof construction, capable of withstanding railway loading.

13.

WALL THICKNESS FOR STEEL CASING PIPE
FOR E 72 LOADING (INCLUDING IMPACT)

MINIMUM THICKNESS INCHES	DIAMETER OF PIPE
0.188	Under 12¾
0.219	12¾
0.250	14 and 16
0.281	18
0.312	20
0.344	22
0.375	24 and 26
0.406	28
0.438	30
0.500	32 and 34
0.563	36, 38 and 40
0.625	42

Steel pipe to have a minimum yield strength of 35,000 psi.

When casing is installed without benefit of a protective coating, and said casing is not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size which is a minimum of 0.063 in. greater than the thickness shown except for diameters under 12¾ inches.

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American Standards Association Specifications A 21. The pipe shall be of the mechanical joint type or plain-end pipe with compression type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ASA A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe." Pit-cast pipe may be used up to 20 inches in diameter. Centrifugal-cast pipe shall be used for pipes over 20 inches in diameter.

The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing pipe. All joints or couplings, suppotts, insulators or centering devices for the carrier pipe within a casing under railroad tracks shall be taken into account. In addition, a minimum vertical deflection of the casing pipe of 3 percent of its diameter plus ½ inches clearance shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe the inside diameter of the casing pipe shall be at least 2 inches greater than the outside diameter of the carrier pipe for pipe less than 8 inches in diameter; at least 3¼ inches greater for pipe 8 inches to 16 inches inclusive, in diameter, and at least 4½ inches greater for pipe 18 inches in diameter and over.

Casing pipe under railroad tracks and across railway rights-of-way shall extend to the greater of the following distances,measured at right angles to the center line of track:

a. 2 feet beyond toe of slope.
b. 3 feet beyond ditch line.
c. A minimum distance of 45 feet each side from center line of outside track.

If additional tracks are constructed in the future, the casing shall be extended accordingly.

5. CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length, except at the ends of casing where ends are left open, or through vent pipes when ends of casing are sealed. Casing shall be so installed as to prevent the formation of a waterway under the railway and with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, Chapter 1, of the current American Railway Engineering Specifications. All open excavations within twenty feet (20 feet) of the center line of any track shall be covered so as to accept pedestrian use safely during hours when pipeline installation is not actively in progress. During hours of darkness, adequate warning lights shall be placed at the side of the excavation.

Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1 inch, remedial measures as approved by the Chief Engineer of the railroad shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railroad.

Tunneling operations shall be conducted as approved by the Chief Engineer of the railroad. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

Jacking and receiving pits must be located outside the point where a 1.5 to 1.0 slope projected down from a point 12 feet out from center line of track at level of top of tie will intersect the bottom of the pit. If this

requirement cannot be fulfilled, design drawings of the pit showing details of the shoring and bracing are to be submitted for approval of the railroad prior to starting any excavation.

Where casing and/or carrier pipe is cathodically protected the Chief Engineer of the railroad shall be notified and suitable test made to insure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, published in July 1951 by the National Association of Corrosion Engineers.

6. INSPECTION AND TESTING

ASA Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility within the railway rights-of-way except that the proof testing of strength of carrier pipe shall be in accordance with requirements of ASA Code B 31.8 for Location Classes 2, 3, or 4 or ASA Code B 31.4 as applicable.

7. SEALS

Where ends of casing are below ground they shall be suitably sealed to outside of carrier pipe.

Where ends of casing are at or above ground surface and above high-water level, they may be left open, provided drainage is afforded in such manner that leakage will be conducted away from railway tracks or structure. Where proper drainage is not provided, the ends of the casing shall be sealed.

8. VENTS

Casing pipe, when sealed, shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than 2 inches in diameter, shall be attached near end of casing and project through ground surface at right-of-way lines or not less than 45 feet (measured at right angles) from center line of nearest track.

Vent pipe, or pipes, shall extend not less than 4 feet above ground surface. Top of vent pipe shall be fitted with down-turned elbow properly screened, or a relief valve. Vents in locations subject to high water shall extend above the maximum elevation of high water and shall be supported and protected in a manner that meets the approval of the Chief Engineer of the railroad.

Vent pipes shall be at least 4 feet (vertically) from aerial electric wires.

9. DEPTH OF INSTALLATION

a. Casing pipe under railway tracks and across railway rights-of-way shall be not less than 5½ feet from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4½ feet. On other portions of rights-of-way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 feet.

b. Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4½ feet from base of railway rail to top of pipe at its closest point nor less than 3 feet from ground surface or from bottom of ditches.

c. Pipeline laid longitudinally on railway rights-of-way, 50 feet or less from center line of track, shall be buried not less than 5 feet from ground surface to top of pipe. Where pipeline is laid more than 50 feet from center line of track, minimum cover shall be at least 2 feet.

10. APPROVAL

Applicant for proposed pipeline crossing shall submit to the railroad sufficient number of copies of a plan-profile drawing of that portion of the pipeline to be constructed on railroad right-of-way. Drawing shall be made to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of casing and vents, railway survey station, right-of-way lines and general layout of tracks and railway facilities. Drawing should show a cross section from field survey, showing pipe in relation to actual profile of ground and tracks. If open cutting or tunneling is necessary, detail drawings of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the aforesaid drawing (s), applicant shall also submit the following information concerning the pipeline and its operation:

	CARRIER PIPE	CASING PIPE
Contents to be handled		
Outside Diameter		
Pipe Material		
Specification and Grade		
External Coating		
Wall Thickness		
Minimum Yield Stress		
Maximum Operating Pressure		
Type of Joint		

Cathodic Protection ☐ YES ☐ NO Casing Insulators ☐ YES ☐ NO

Shut-Off — Applicant should describe location of nearest upstream valve from railroad that can be operated to shut off fluid flow. If nearest valve is not automatically operated on loss of pipeline pressure or is not constantly attended by applicant's personnel, Applicant should supply instructions on procedure and locations involved in effecting shut-off of pipeline through area of crossing under railroad.

All of the aforesaid information should be submitted to the railroad and shall be approved by the Chief Engineer of the railroad before construction is begun. The execution of the work on railroad right-of-way, including the supporting tracks shall be subject to the inspection and direction of the Chief Engineer of the railroad or his authorized representative.

H.F. Longbelt — ENGINEER MAINTENANCE OF WAY
G E Weller — CHIEF ENGINEER
[illegible] — GENERAL MANAGER
J B Buffle — V.P. OPERATIONS & MTCE.

15

EXHIBIT "C"

File No. NG-11

M.P. 387 + 2216

E.P.S. 20455 + 90

Iowa Power

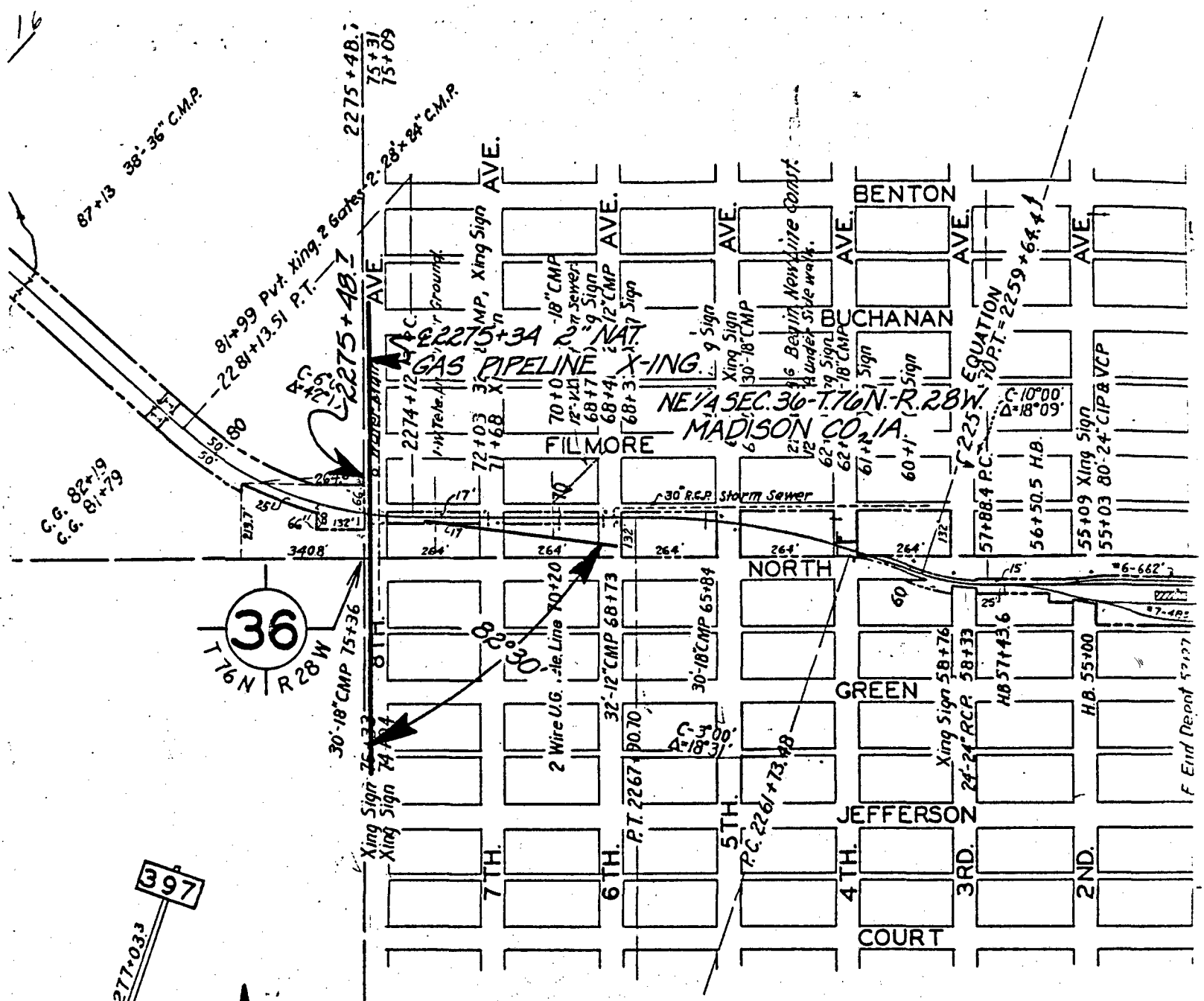
Earlham, IA

3" Natural Gas Pipeline Crossing

A 10 foot nonexclusive easement across the former right-of-way of the C. R. I. & P. RR Co., having a width of 300 feet, as now evidenced, monumented, occupied, or recorded in the Southwest Quarter of Section 6, Township 77 North, Range 28 West, of the Fifth Principal Meridian, the centerline of said easement being described as intersecting the centerline of said Grantor's right-of-way a distance of 1220 feet Westerly of the East Line of said Southwest Quarter of Section 6, as measured along the centerline of said Grantor's right-of-way, the centerline of said easement intersects the centerline of said Grantor's right-of-way at an angle of 75 degrees, as measured from Westerly to Northerly all in Madison County, Iowa.

Map No. $\frac{55-2}{1}$

mj



THIS EXHIBIT IS A REPRESENTATION OF THE PREMISES PROPOSED TO BE CONVEYED. THIS EXHIBIT IS NOT A SURVEY.

WINTERS
IOWA
INCORP.

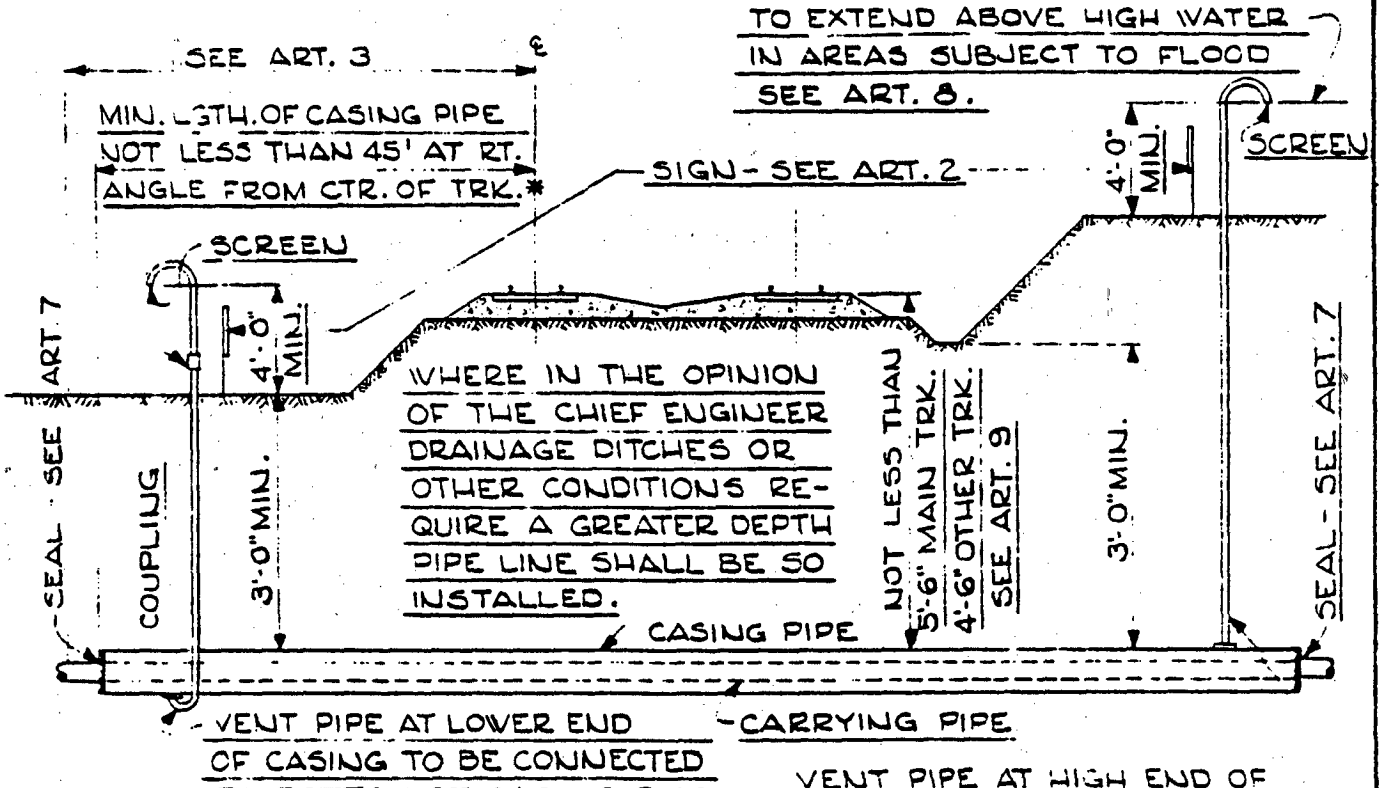
EXHIBIT "A"	FILE NO. NG-12
CHICAGO PACIFIC CORPORATION 200 SOUTH MICHIGAN AVE. CHICAGO, ILLINOIS 60604	
2" NAT. GAS PIPELINE X-ING.	
WINTERSET, IA.	
IOWA POWER.	
NE¼ SEC. 36-76-28-MADISON CO. IA.	
SCALE 1"= 400'	MAP 55-4/9
DATE 11-2-85	PREPARED BY: G.T.
REV.	

ROCK ISLAND LINES

SP 32

EXHIBIT "B"

STANDARD PLAN AND SPECIFICATIONS TO ACCOMPANY CONTRACTS FOR UNDERGRADE CROSSINGS OF PIPELINES CARRYING TOXIC OR FLAMMABLE FLUIDS.



*NOTE INCREASED DISTANCE MAY BE REQUIRED BY CHIEF ENGR. SEE ART. 4

1. SCOPE

Pipelines included under these specifications are those installed to carry oil, gas, petroleum products, or other flammable or highly volatile or toxic substances under pressure.

2. GENERAL REQUIREMENTS

a. Pipelines under railway tracks and across railway rights-of-way shall be encased in a larger pipe or conduit called the casing pipe.
Casing pipe may be omitted in the following locations:

(1) Under secondary or industry tracks as approved by the Chief Engineer of the railroad.

(2) On pipelines in streets where the stress in the pipe from internal pressure and external loads does not exceed 40 percent of the specified minimum yield strength (multiplied by longitudinal joint factor) of the steel pipe material.

Pipelines shall be installed under tracks by boring or jacking, if practicable. Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45 degrees and shall not be placed within a culvert, under railway bridges nor closer than 45 feet to any portion of any railway bridge, building or other important structure, except in special cases and then by special design as approved by the Chief Engineer of the railroad.

INDEX NUMBER
BOX 81 - 35

b. Pipelines laid longitudinally on railway rights-of-way shall be located as far as practicable from any tracks or other important structures. If located within 15 feet of the center line of any track or closer than 45 feet to nearest point of any bridge, building or other important structure, the carrier pipe shall be encased or of special design as approved by the Chief Engineer of the railroad.

c. Any replacement of a carrier pipe shall be considered a new installation, subject to the requirements of these specifications.

d. Where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so prescribed shall be deemed a part of these specifications.

e. Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railway rights-of-way.

f. All pipelines, except those in streets shall be prominently marked at the rights-of-way (on both sides of track for undercrossings) by signs substantially worded thus:

"HIGH PRESSURE . . . . . MAIN . . . . . FEET UNDER"

3. CARRIER PIPE

Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current ASA B 31.4, Code for Oil Transportation Piping, ASA B 31.8, Code for Gas Transmission and Distribution Piping Systems, and other applicable ASA Codes, except that the maximum allowable stresses* for design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by longitudinal joint factor) of the pipe as defined in the ASA Codes;

* If the maximum allowable stress in the carrier pipe on either side of the crossing is less than specified above, the carrier pipe at the crossing shall be designed at the same stress as the adjacent carrier pipe.

a. Steel pipe within a casing under railway tracks and across railway rights-of-way (the following percentages apply to hoop stress):

(1) Seventy-two percent for installations on oil pipelines.

(2) Fifty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Sixty percent for installations on gas pipelines.

b. Steel pipe without a casing under secondary or industry tracks (the following percentages apply to the sum of the hoop stress due to the maximum anticipated internal pressure and the flexural ring stress due to external loads):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Fifty percent for installations on gas pipelines.

c. Steel pipe laid longitudinally on railway rights-of-way (the following percentages apply to hoop stress):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Forty percent for installations on gas pipelines.

The minimum wall thickness for steel or wrought iron carrier pipe shall be 0.2 inches. For pipelines 1½ inches in diameter and smaller, operating at pressures less than 100 psi, a thickness not less than that specified for extra-strong steel pipe by the U.S. Department of Commerce, National Bureau of Standards, may be used.

Requisites for carrier line pipe under railway tracks shall apply for a minimum distance of 50 feet (measured at right angle) from center line of outside tracks or 2 feet beyond toe of slope or 25 feet beyond the ends of casing (when casing is required), whichever is greater. This requirement does not apply to lines in streets.

The pipe shall be laid with sufficient slack so that it is not in tension.

4. CASING PIPE

Casing pipe and joints shall be of metal and of leakproof construction, capable of withstanding railway loading.

WALL THICKNESS FOR STEEL CASING PIPE
FOR E 72 LOADING (INCLUDING IMPACT)

MINIMUM THICKNESS INCHES	DIAMETER OF PIPE
0.188	Under 12¾
0.219	12¾
0.250	14 and 16
0.281	18
0.312	20
0.344	22
0.375	24 and 26
0.406	28
0.438	30
0.500	32 and 34
0.563	36, 38 and 40
0.625	42

Steel pipe to have a minimum yield strength of 35,000 psi.

When casing is installed without benefit of a protective coating, and said casing is not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size which is a minimum of 0.063 in. greater than the thickness shown except for diameters under 12¾ inches.

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American Standards Association Specifications A 21. The pipe shall be of the mechanical joint type or plain-end pipe with compression type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ASA A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe." Pit-cast pipe may be used up to 20 inches in diameter. Centrifugal-cast pipe shall be used for pipes over 20 inches in diameter.

The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing pipe. All joints or couplings, supports, insulators or centering devices for the carrier pipe within a casing under railroad tracks shall be taken into account. In addition, a minimum vertical deflection of the casing pipe of 3 percent of its diameter plus ½ inches clearance shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe the inside diameter of the casing pipe shall be at least 2 inches greater than the outside diameter of the carrier pipe for pipe less than 8 inches in diameter; at least 3¼ inches greater for pipe 8 inches to 16 inches inclusive, in diameter, and at least 4½ inches greater for pipe 18 inches in diameter and over.

Casing pipe under railroad tracks and across railway rights-of-way shall extend to the greater of the following distances, measured at right angles to the center line of track:

a. 2 feet beyond toe of slope.
b. 3 feet beyond ditch line.
c. A minimum distance of 45 feet each side from center line of outside track.

If additional tracks are constructed in the future, the casing shall be extended accordingly.

5. CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length, except at the ends of casing where ends are left open, or through vent pipes when ends of casing are sealed. Casing shall be so installed as to prevent the formation of a waterway under the railway and with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, Chapter 1, of the current American Railway Engineering Specifications. All open excavations within twenty feet (20 feet) of the center line of any track shall be covered so as to accept pedestrian use safely during hours when pipeline installation is not actively in progress. During hours of darkness, adequate warning lights shall be placed at the side of the excavation.

Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1 inch, remedial measures as approved by the Chief Engineer of the railroad shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railroad.

Tunneling operations shall be conducted as approved by the Chief Engineer of the railroad. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

Jacking and receiving pits must be located outside the point where a 1.5 to 1.0 slope projected down from a point 12 feet out from center line of track at level of top of tie will intersect the bottom of the pit. If this

requirement cannot be fulfilled, design drawings of the pit showing details of the shoring and bracing are to be submitted for approval of the railroad prior to starting any excavation.

Where casing and/or carrier pipe is cathodically protected the Chief Engineer of the railroad shall be notified and suitable test made to insure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, published in July 1951 by the National Association of Corrosion Engineers.

6. INSPECTION AND TESTING

ASA Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility within the railway rights-of-way except that the proof testing of strength of carrier pipe shall be in accordance with requirements of ASA Code B 31.8 for Location Classes 2, 3, or 4 or ASA Code B 31.4 as applicable.

7. SEALS

Where ends of casing are below ground they shall be suitably sealed to outside of carrier pipe.

Where ends of casing are at or above ground surface and above high-water level, they may be left open, provided drainage is afforded in such manner that leakage will be conducted away from railway tracks or structure. Where proper drainage is not provided, the ends of the casing shall be sealed.

8. VENTS

Casing pipe, when sealed, shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than 2 inches in diameter, shall be attached near end of casing and project through ground surface at right-of-way lines or not less than 45 feet (measured at right angles) from center line of nearest track.

Vent pipe, or pipes, shall extend not less than 4 feet above ground surface. Top of vent pipe shall be fitted with down-turned elbow properly screened, or a relief valve. Vents in locations subject to high water shall extend above the maximum elevation of high water and shall be supported and protected in a manner that meets the approval of the Chief Engineer of the railroad.

Vent pipes shall be at least 4 feet (vertically) from aerial electric wires.

9. DEPTH OF INSTALLATION

a. Casing pipe under railway tracks and across railway rights-of-way shall be not less than 5½ feet from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4½ feet. On other portions of rights-of-way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 feet.

b. Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4½ feet from base of railway rail to top of pipe at its closest point nor less than 3 feet from ground surface or from bottom of ditches.

c. Pipeline laid longitudinally on railway rights-of-way, 50 feet or less from center line of track, shall be buried not less than 5 feet from ground surface to top of pipe. Where pipeline is laid more than 50 feet from center line of track, minimum cover shall be at least 2 feet.

10. APPROVAL

Applicant for proposed pipeline crossing shall submit to the railroad sufficient number of copies of a plan-profile drawing of that portion of the pipeline to be constructed on railroad right-of-way. Drawing shall be made to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of casing and vents, railway survey station, right-of-way lines and general layout of tracks and railway facilities. Drawing should show a cross section from field survey, showing pipe in relation to actual profile of ground and tracks. If open cutting or tunneling is necessary, detail drawings of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the aforesaid drawing (s), applicant shall also submit the following information concerning the pipeline and its operation:

	CARRIER PIPE	CASING PIPE
Contents to be handled		
Outside Diameter		
Pipe Material		
Specification and Grade		
External Coating		
Wall Thickness		
Minimum Yield Stress		
Maximum Operating Pressure		
Type of Joint		

Cathodic Protection ☐ YES ☐ NO Casing Insulators ☐ YES ☐ NO

Shut-Off — Applicant should describe location of nearest upstream valve from railroad that can be operated to shut off fluid flow. If nearest valve is not automatically operated on loss of pipeline pressure or is not constantly attended by applicant's personnel, Applicant should supply instructions on procedure and locations involved in effecting shut-off of pipeline through area of crossing under railroad.

All of the aforesaid information should be submitted to the railroad and shall be approved by the Chief Engineer of the railroad before construction is begun. The execution of the work on railroad right-of-way, including the supporting tracks shall be subject to the inspection and direction of the Chief Engineer of the railroad or his authorized representative.

H.F. Longbelt — ENGINEER MAINTENANCE OF WAY
C.E. Weller — CHIEF ENGINEER
[illegible] — GENERAL MANAGER
J.B. Buffle — V.P. OPERATIONS & MTCE.

EXHIBIT "C"

File No.	NG-12	Iowa Power	
M.P.	396 + 455 Ft.	Winterset, IA	
E.P.S.	2275 + 34	2" Natural Gas Pipeline Crossing	

A 10 foot nonexclusive easement across the former right-of-way of the C. R. I. & P. RR Co., having a width of 34 feet, as now evidenced, monumented, occupied, or recorded in the Northeast Quarter of Section 36, Township 76 North, Range 28 West, of the Fifth Principal Meridian, the centerline of said easement being described as intersecting the centerline of said Grantor's right-of-way a distance of 15 feet Easterly of the West line of said Northeast Quarter of Section 36, as measured along the centerline of said Grantor's right-of-way, the centerline of said easement intersects the centerline of said Grantor's right-of-way at an angle of 82 degrees, 30 minutes, as measured from tangent Easterly to Southerly all in Madison County, Iowa.

Map No. $\frac{55-4}{9}$

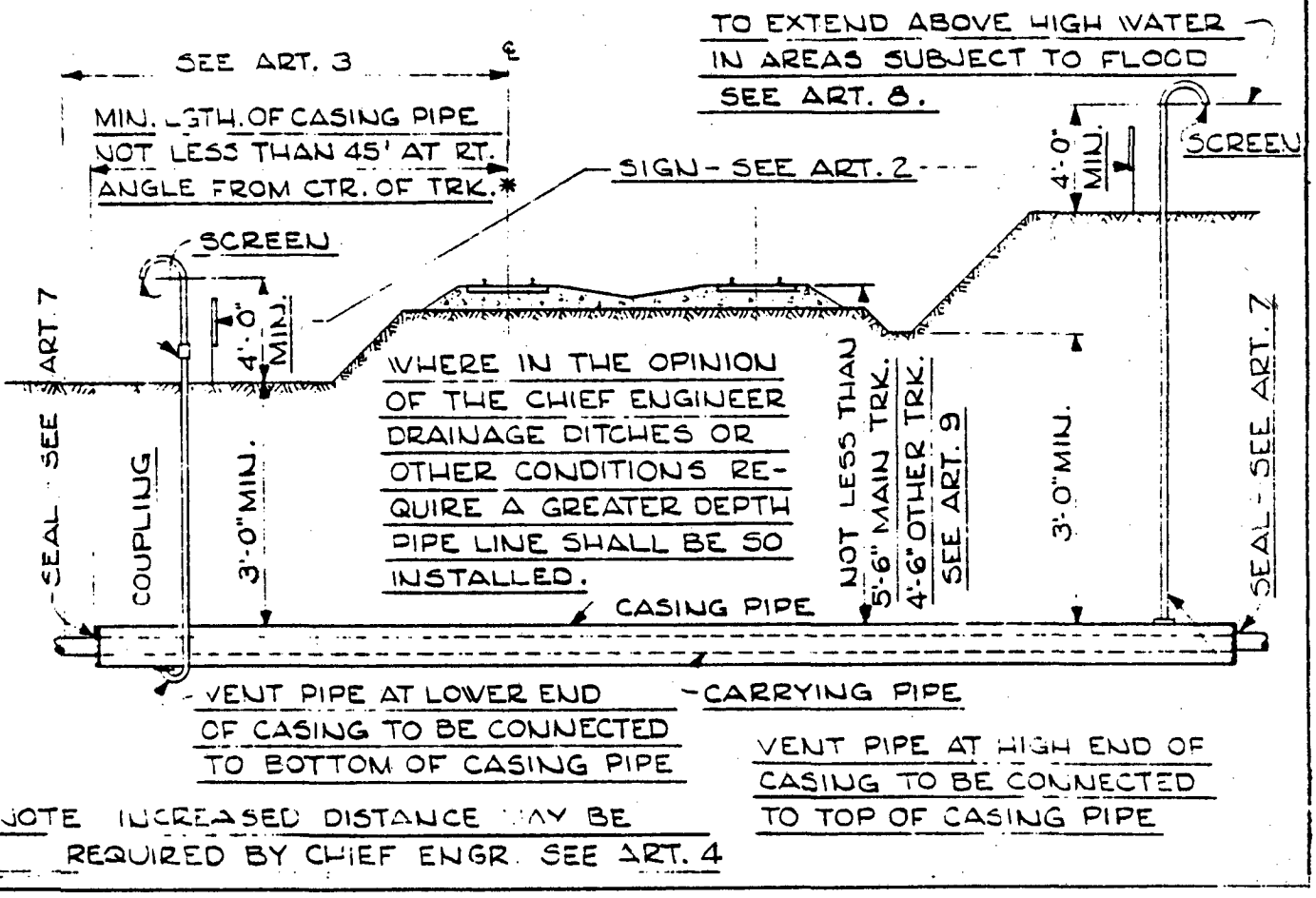
mj

ROCK ISLAND LINES

S.P. 32

EXHIBIT "B"

STANDARD PLAN AND SPECIFICATIONS TO ACCOMPANY CONTRACTS FOR UNDERGRADE CROSSINGS OF PIPELINES CARRYING TOXIC OR FLAMMABLE FLUIDS.



*NOTE INCREASED DISTANCE MAY BE REQUIRED BY CHIEF ENGR. SEE ART. 4

1. SCOPE

Pipelines included under these specifications are those installed to carry oil, gas, petroleum products, or other flammable or highly volatile or toxic substances under pressure.

2. GENERAL REQUIREMENTS

a. Pipelines under railway tracks and across railway rights-of-way shall be encased in a larger pipe or conduit called the casing pipe.
Casing pipe may be omitted in the following locations:

(1) Under secondary or industry tracks as approved by the Chief Engineer of the railroad.

(2) On pipelines in streets where the stress in the pipe from internal pressure and external loads does not exceed 40 percent of the specified minimum yield strength (multiplied by longitudinal joint factor) of the steel pipe material.

Pipelines shall be installed under tracks by boring or jacking, if practicable. Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45 degrees and shall not be placed within a culvert, under railway bridges nor closer than 45 feet to any portion of any railway bridge, building or other important structure, except in special cases and then by special design as approved by the Chief Engineer of the railroad.

INDEX NUMBER
BOX 81 - 35

b. Pipelines laid longitudinally on railway rights-of-way shall be located as far as practicable from any tracks or other important structures. If located within 15 feet of the center line of any track or closer than 45 feet to nearest point of any bridge, building or other important structure, the carrier pipe shall be encased or of special design as approved by the Chief Engineer of the railroad.

c. Any replacement of a carrier pipe shall be considered a new installation, subject to the requirements of these specifications.

d. Where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so prescribed shall be deemed a part of these specifications.

e. Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railway rights-of-way.

f. All pipelines, except those in streets shall be prominently marked at the rights-of-way (on both sides of track for undercrossings) by signs substantially worded thus:

"HIGH PRESSURE . . . . . MAIN . . . . . FEET UNDER"

3. CARRIER PIPE

Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current ASA B 31.4, Code for Oil Transportation Piping, ASA B 31.8, Code for Gas Transmission and Distribution Piping Systems, and other applicable ASA Codes, except that the maximum allowable stresses* for design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by longitudinal joint factor) of the pipe as defined in the ASA Codes:

* If the maximum allowable stress in the carrier pipe on either side of the crossing is less than specified above, the carrier pipe at the crossing shall be designed at the same stress as the adjacent carrier pipe.

a. Steel pipe within a casing under railway tracks and across railway rights-of-way (the following percentages apply to hoop stress):

(1) Seventy-two percent for installations on oil pipelines.

(2) Fifty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Sixty percent for installations on gas pipelines.

b. Steel pipe without a casing under secondary or industry tracks (the following percentages apply to the sum of the hoop stress due to the maximum anticipated internal pressure and the flexural ring stress due to external loads):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Fifty percent for installations on gas pipelines.

c. Steel pipe laid longitudinally on railway rights-of-way (the following percentages apply to hoop stress):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Forty percent for installations on gas pipelines.

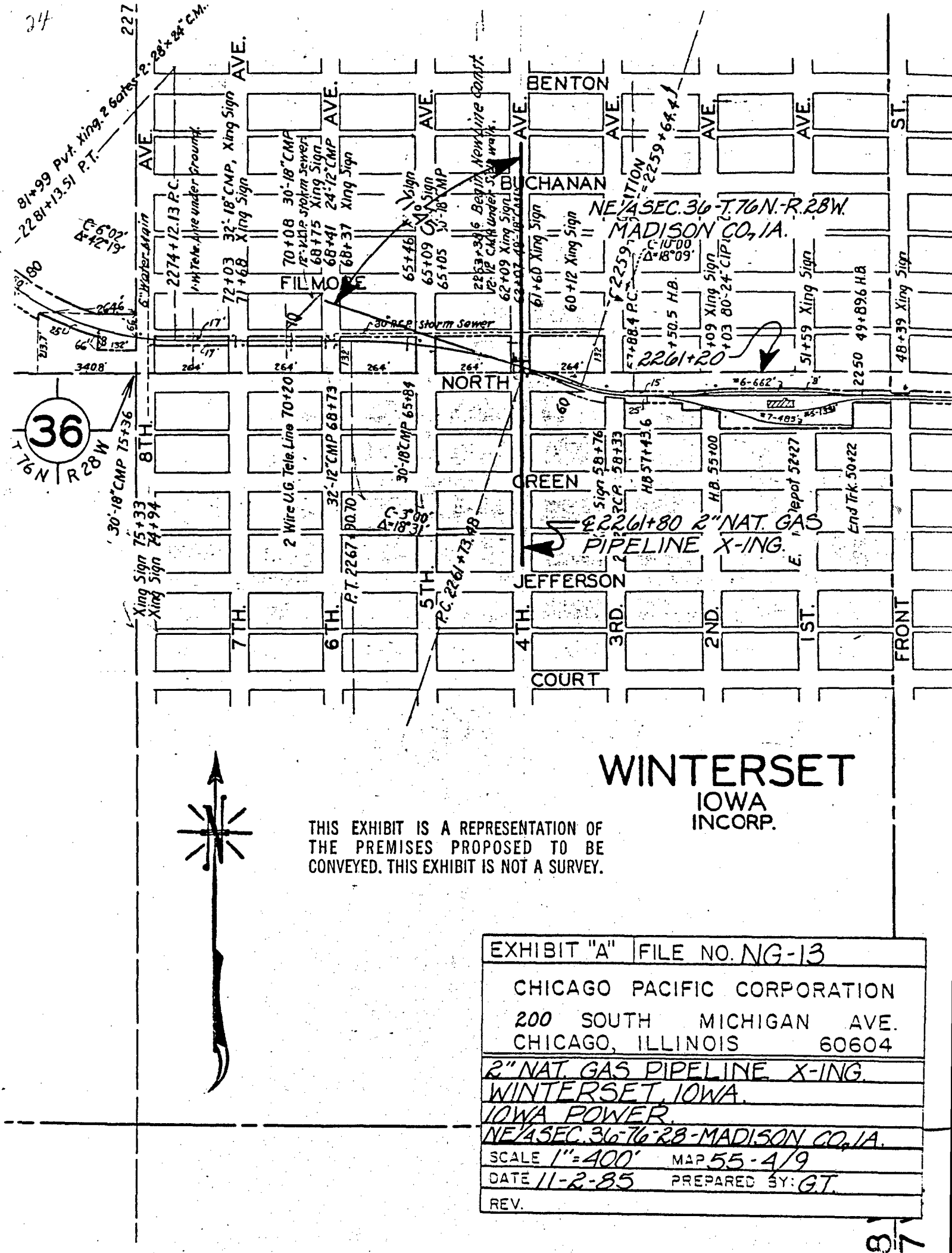
The minimum wall thickness for steel or wrought iron carrier pipe shall be 0.2 inches. For pipelines 1½ inches in diameter and smaller, operating at pressures less than 100 psi, a thickness not less than that specified for extra-strong steel pipe by the U.S. Department of Commerce, National Bureau of Standards, may be used.

Requisites for carrier line pipe under railway tracks shall apply for a minimum distance of 50 feet (measured at right angle) from center line of outside tracks or 2 feet beyond toe of slope or 25 feet beyond the ends of casing (when casing is required), whichever is greater. This requirement does not apply to lines in streets.

The pipe shall be laid with sufficient slack so that it is not in tension.

4. CASING PIPE

Casing pipe and joints shall be of metal and of leakproof construction, capable of withstanding railway loading.



WINTERSET
IOWA
INCORP.

THIS EXHIBIT IS A REPRESENTATION OF THE PREMISES PROPOSED TO BE CONVEYED. THIS EXHIBIT IS NOT A SURVEY.

EXHIBIT "A"	FILE NO. NG-13
CHICAGO PACIFIC CORPORATION 200 SOUTH MICHIGAN AVE. CHICAGO, ILLINOIS 60604	
2" NAT. GAS PIPELINE X-ING.	
WINTERSET, IOWA.	
IOWA POWER.	
NE/4 SEC. 36-76-28-MADISON CO., IA.	
SCALE 1"=400'	MAP 55-4/9
DATE 11-2-85	PREPARED BY: G.T.
REV.	

WALL THICKNESS FOR STEEL CASING PIPE
FOR E 72 LOADING (INCLUDING IMPACT)

MINIMUM THICKNESS INCHES	DIAMETER OF PIPE
0.188	Under 12¾
0.219	12¾
0.250	14 and 16
0.281	18
0.312	20
0.344	22
0.375	24 and 26
0.406	28
0.438	30
0.500	32 and 34
0.563	36, 38 and 40
0.625	42

Steel pipe to have a minimum yield strength of 35,000 psi.

When casing is installed without benefit of a protective coating, and said casing is not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size which is a minimum of 0.063 in. greater than the thickness shown except for diameters under 12¾ inches.

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American Standards Association Specifications A 21. The pipe shall be of the mechanical joint type or plain-end pipe with compression type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ASA A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe." Pit-cast pipe may be used up to 20 inches in diameter. Centrifugal-cast pipe shall be used for pipes over 20 inches in diameter.

The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing pipe. All joints or couplings, supports, insulators or centering devices for the carrier pipe within a casing under railroad tracks shall be taken into account. In addition, a minimum vertical deflection of the casing pipe of 3 percent of its diameter plus ½ inches clearance shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe the inside diameter of the casing pipe shall be at least 2 inches greater than the outside diameter of the carrier pipe for pipe less than 8 inches in diameter; at least 3¼ inches greater for pipe 8 inches to 16 inches inclusive, in diameter, and at least 4½ inches greater for pipe 18 inches in diameter and over.

Casing pipe under railroad tracks and across railway rights-of-way shall extend to the greater of the following distances,measured at right angles to the center line of track:

a. 2 feet beyond toe of slope.
b. 3 feet beyond ditch line.
c. A minimum distance of 45 feet each side from center line of outside track.

If additional tracks are constructed in the future, the casing shall be extended accordingly.

5. CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length, except at the ends of casing where ends are left open, or through vent pipes when ends of casing are sealed. Casing shall be so installed as to prevent the formation of a waterway under the railway and with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, Chapter 1, of the current American Railway Engineering Specifications. All open excavations within twenty feet (20 feet) of the center line of any track shall be covered so as to accept pedestrian use safely during hours when pipeline installation is not actively in progress. During hours of darkness, adequate warning lights shall be placed at the side of the excavation.

Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1 inch, remedial measures as approved by the Chief Engineer of the railroad shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railroad.

Tunneling operations shall be conducted as approved by the Chief Engineer of the railroad. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

Jacking and receiving pits must be located outside the point where a 1.5 to 1.0 slope projected down from a point 12 feet out from center line of track at level of top of tie will intersect the bottom of the pit. If this

requirement cannot be fulfilled, design drawings of the pit showing details of the shoring and bracing are to be submitted for approval of the railroad prior to starting any excavation.

Where casing and/or carrier pipe is cathodically protected the Chief Engineer of the railroad shall be notified and suitable test made to insure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, published in July 1951 by the National Association of Corrosion Engineers.

6. INSPECTION AND TESTING

ASA Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility within the railway rights-of-way except that the proof testing of strength of carrier pipe shall be in accordance with requirements of ASA Code B 31.8 for Location Classes 2, 3, or 4 or ASA Code B 31.4 as applicable.

7. SEALS

Where ends of casing are below ground they shall be suitably sealed to outside of carrier pipe.

Where ends of casing are at or above ground surface and above high-water level, they may be left open, provided drainage is afforded in such manner that leakage will be conducted away from railway tracks or structure. Where proper drainage is not provided, the ends of the casing shall be sealed.

8. VENTS

Casing pipe, when sealed, shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than 2 inches in diameter, shall be attached near end of casing and project through ground surface at right-of-way lines or not less than 45 feet (measured at right angles) from center line of nearest track.

Vent pipe, or pipes, shall extend not less than 4 feet above ground surface. Top of vent pipe shall be fitted with down-turned elbow properly screened, or a relief valve. Vents in locations subject to high water shall extend above the maximum elevation of high water and shall be supported and protected in a manner that meets the approval of the Chief Engineer of the railroad.

Vent pipes shall be at least 4 feet (vertically) from aerial electric wires.

9. DEPTH OF INSTALLATION

a. Casing pipe under railway tracks and across railway rights-of-way shall be not less than 5½ feet from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4½ feet. On other portions of rights-of-way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 feet.

b. Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4½ feet from base of railway rail to top of pipe at its closest point nor less than 3 feet from ground surface or from bottom of ditches.

c. Pipeline laid longitudinally on railway rights-of-way, 50 feet or less from center line of track, shall be buried not less than 5 feet from ground surface to top of pipe. Where pipeline is laid more than 50 feet from center line of track, minimum cover shall be at least 2 feet.

10. APPROVAL

Applicant for proposed pipeline crossing shall submit to the railroad sufficient number of copies of a plan-profile drawing of that portion of the pipeline to be constructed on railroad right-of-way. Drawing shall be made to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of casing and vents, railway survey station, right-of-way lines and general layout of tracks and railway facilities. Drawing should show a cross section from field survey, showing pipe in relation to actual profile of ground and tracks. If open cutting or tunneling is necessary, detail drawings of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the aforesaid drawing (s), applicant shall also submit the following information concerning the pipeline and its operation:

	CARRIER PIPE	CASING PIPE
Contents to be handled		
Outside Diameter		
Pipe Material		
Specification and Grade		
External Coating		
Wall Thickness		
Minimum Yield Stress		
Maximum Operating Pressure		
Type of Joint		

Cathodic Protection ☐ YES ☐ NO Casing Insulators ☐ YES ☐ NO

Shut-Off — Applicant should describe location of nearest upstream valve from railroad that can be operated to shut off fluid flow. If nearest valve is not automatically operated on loss of pipeline pressure or is not constantly attended by applicant's personnel, Applicant should supply instructions on procedure and locations involved in effecting shut-off of pipeline through area of crossing under railroad.

All of the aforesaid information should be submitted to the railroad and shall be approved by the Chief Engineer of the railroad before construction is begun. The execution of the work on railroad right-of-way, including the supporting tracks shall be subject to the inspection and direction of the Chief Engineer of the railroad or his authorized representative.

H. F. Longbelt — ENGINEER MAINTENANCE OF WAY
C E Weber — CHIEF ENGINEER
[illegible] — GENERAL MANAGER
J B Buffle — V.P. OPERATIONS & MTCE.

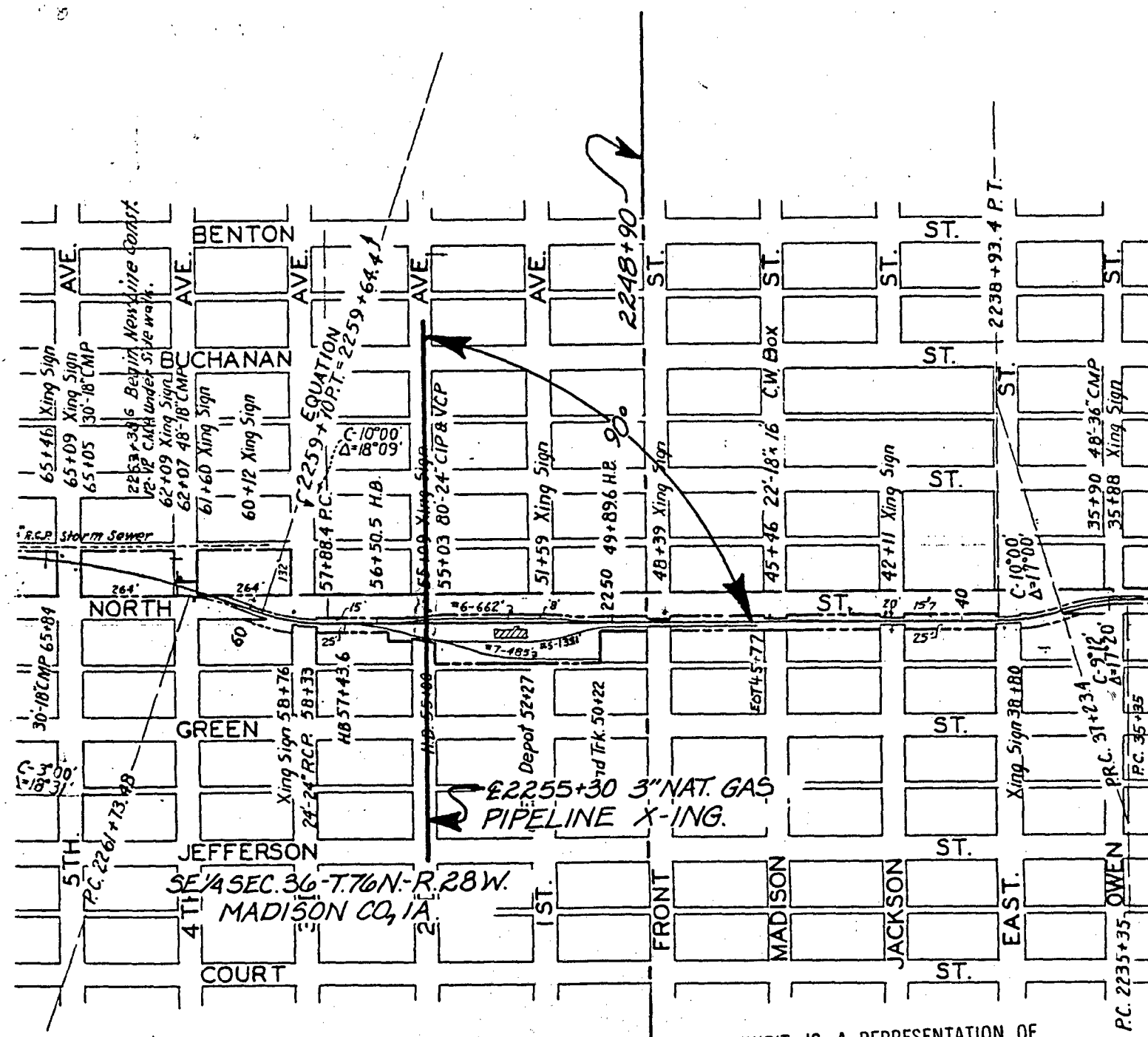
EXHIBIT "C"

File No.	NG-13	Iowa Power
M.P.	397 + 1523 Ft.	Winterset, IA
E.P.S.	2261 + 80	2" Natural Gas Pipeline Crossing

A 10 foot nonexclusive easement across the former right-of-way of the C. R. I. & P. RR Co., having a width of 40 feet, as now evidenced, monumented, occupied, or recorded in the Northeast Quarter of Section 36, Township 76 North, Range 28 West, of the Fifth Principal Meridian, the centerline of said easement being described as intersecting the centerline of said Grantor's right-of-way a distance of 60 feet Northwesterly of the South line of said Northeast Quarter of Section 36, as measured along the centerline of said Grantor's right-of-way, the centerline of said easement intersects the centerline of said Grantor's right-of-way at an angle of 71 degrees, 45 minutes, as measured from Westerly to Northerly all in Madison County, Iowa.

Map No. $\frac{55\text{-}4}{9}$

mj



WINTERSET
IOWA
INCORP.

THIS EXHIBIT IS A REPRESENTATION OF THE PREMISES PROPOSED TO BE CONVEYED. THIS EXHIBIT IS NOT A SURVEY.

EXHIBIT "A"	FILE NO. NG-14
CHICAGO PACIFIC CORPORATION 200 SOUTH MICHIGAN AVE. CHICAGO, ILLINOIS 60604	
3" NAT. GAS PIPELINE X-ING.	
WINTERSET, IOWA.	
IOWA POWER.	
SE¼ SEC. 36-76-28-MADISON CO, IA.	
SCALE 1"=400'	MAP 55-4/9
DATE 11-2-85	PREPARED BY: G.T.
REV.	

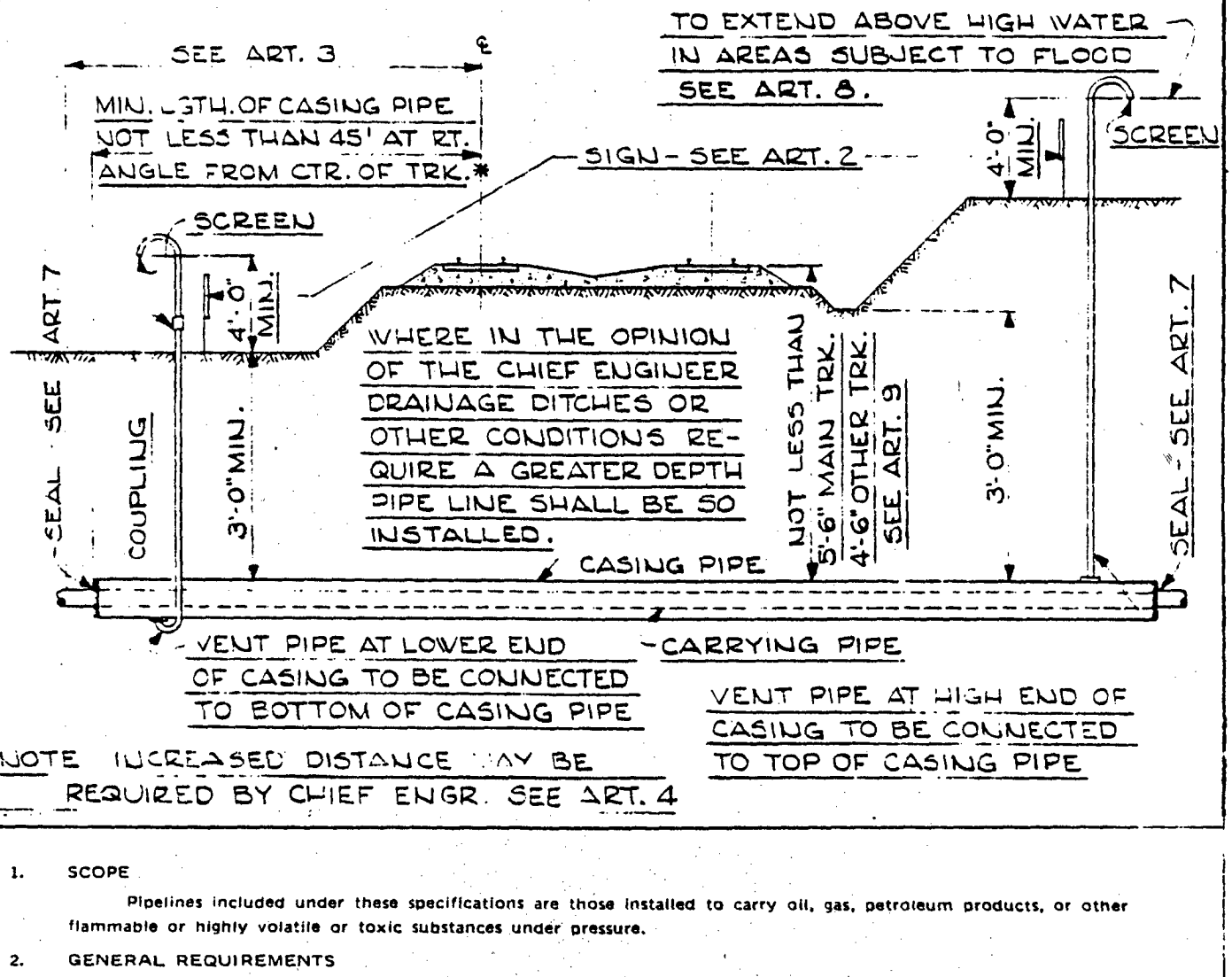
T.76N., R.28 W. | T. 76N., R. 27 W.

ROCK ISLAND LINES

SP 32

EXHIBIT "B"

STANDARD PLAN AND SPECIFICATIONS TO ACCOMPANY CONTRACTS FOR UNDERGRADE CROSSINGS OF PIPELINES CARRYING TOXIC OR FLAMMABLE FLUIDS.



*NOTE INCREASED DISTANCE MAY BE REQUIRED BY CHIEF ENGR. SEE ART. 4

1. SCOPE

Pipelines included under these specifications are those installed to carry oil, gas, petroleum products, or other flammable or highly volatile or toxic substances under pressure.

2. GENERAL REQUIREMENTS

a. Pipelines under railway tracks and across railway rights-of-way shall be encased in a larger pipe or conduit called the casing pipe.
Casing pipe may be omitted in the following locations:

(1) Under secondary or industry tracks as approved by the Chief Engineer of the railroad.

(2) On pipelines in streets where the stress in the pipe from internal pressure and external loads does not exceed 40 percent of the specified minimum yield strength (multiplied by longitudinal joint factor) of the steel pipe material.

Pipelines shall be installed under tracks by boring or jacking, if practicable. Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45 degrees and shall not be placed within a culvert, under railway bridges nor closer than 45 feet to any portion of any railway bridge, building or other important structure, except in special cases and then by special design as approved by the Chief Engineer of the railroad.

INDEX NUMBER
BOX 81 - 35

b. Pipelines laid longitudinally on railway rights-of-way shall be located as far as practicable from any tracks or other important structures. If located within 15 feet of the center line of any track or closer than 45 feet to nearest point of any bridge, building or other important structure, the carrier pipe shall be encased or of special design as approved by the Chief Engineer of the railroad.

c. Any replacement of a carrier pipe shall be considered a new installation, subject to the requirements of these specifications.

d. Where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so prescribed shall be deemed a part of these specifications.

e. Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railway rights-of-way.

f. All pipelines, except those in streets shall be prominently marked at the rights-of-way (on both sides of track for undercrossings) by signs substantially worded thus:

"HIGH PRESSURE . . . . . MAIN . . . . . FEET UNDER"

3. CARRIER PIPE

Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current ASA B 31.4, Code for Oil Transportation Piping, ASA B 31.8, Code for Gas Transmission and Distribution Piping Systems, and other applicable ASA Codes, except that the maximum allowable stresses* for design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by longitudinal joint factor) of the pipe as defined in the ASA Codes;

* If the maximum allowable stress in the carrier pipe on either side of the crossing is less than specified above, the carrier pipe at the crossing shall be designed at the same stress as the adjacent carrier pipe.

a. Steel pipe within a casing under railway tracks and across railway rights-of-way (the following percentages apply to hoop stress):

(1) Seventy-two percent for installations on oil pipelines.

(2) Fifty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Sixty percent for installations on gas pipelines.

b. Steel pipe without a casing under secondary or industry tracks (the following percentages apply to the sum of the hoop stress due to the maximum anticipated internal pressure and the flexural ring stress due to external loads):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Fifty percent for installations on gas pipelines.

c. Steel pipe laid longitudinally on railway rights-of-way (the following percentages apply to hoop stress):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Forty percent for installations on gas pipelines.

The minimum wall thickness for steel or wrought iron carrier pipe shall be 0.2 inches. For pipelines 1½ inches in diameter and smaller, operating at pressures less than 100 psi, a thickness not less than that specified for extra-strong steel pipe by the U.S. Department of Commerce, National Bureau of Standards, may be used.

Requisites for carrier line pipe under railway tracks shall apply for a minimum distance of 50 feet (measured at right angle) from center line of outside tracks or 2 feet beyond toe of slope or 25 feet beyond the ends of casing (when casing is required), whichever is greater. This requirement does not apply to lines in streets.

The pipe shall be laid with sufficient slack so that it is not in tension.

4. CASING PIPE

Casing pipe and joints shall be of metal and of leakproof construction, capable of withstanding railway loading.

WALL THICKNESS FOR STEEL CASING PIPE
FOR E 72 LOADING (INCLUDING IMPACT)

MINIMUM THICKNESS INCHES	DIAMETER OF PIPE
0.188	Under 12¾
0.219	12¾
0.250	14 and 16
0.281	18
0.312	20
0.344	22
0.375	24 and 26
0.406	28
0.438	30
0.500	32 and 34
0.563	36, 38 and 40
0.625	42

Steel pipe to have a minimum yield strength of 35,000 psi.

When casing is installed without benefit of a protective coating, and said casing is not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size which is a minimum of 0.063 in. greater than the thickness shown except for diameters under 12¾ inches.

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American Standards Association Specifications A 21. The pipe shall be of the mechanical joint type or plain-end pipe with compression type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ASA A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe." Pit-cast pipe may be used up to 20 inches in diameter. Centrifugal-cast pipe shall be used for pipes over 20 inches in diameter.

The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing pipe. All joints or couplings, supports, insulators or centering devices for the carrier pipe within a casing under railroad tracks shall be taken into account. In addition, a minimum vertical deflection of the casing pipe of 3 percent of its diameter plus ½ inches clearance shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe the inside diameter of the casing pipe shall be at least 2 inches greater than the outside diameter of the carrier pipe for pipe less than 8 inches in diameter; at least 3¼ inches greater for pipe 8 inches to 16 inches inclusive, in diameter, and at least 4½ inches greater for pipe 18 inches in diameter and over.

Casing pipe under railroad tracks and across railway rights-of-way shall extend to the greater of the following distances, measured at right angles to the center line of track:

a. 2 feet beyond toe of slope.
b. 3 feet beyond ditch line.
c. A minimum distance of 45 feet each side from center line of outside track.

If additional tracks are constructed in the future, the casing shall be extended accordingly.

5. CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length, except at the ends of casing where ends are left open, or through vent pipes when ends of casing are sealed. Casing shall be so installed as to prevent the formation of a waterway under the railway and with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, Chapter 1, of the current American Railway Engineering Specifications. All open excavations within twenty feet (20 feet) of the center line of any track shall be covered so as to accept pedestrian use safely during hours when pipeline installation is not actively in progress. During hours of darkness, adequate warning lights shall be placed at the side of the excavation.

Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1 inch, remedial measures as approved by the Chief Engineer of the railroad shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railroad.

Tunneling operations shall be conducted as approved by the Chief Engineer of the railroad. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

Jacking and receiving pits must be located outside the point where a 1.5 to 1.0 slope projected down from a point 12 feet out from center line of track at level of top of tie will intersect the bottom of the pit. If this

requirement cannot be fulfilled, design drawings of the pit showing details of the shoring and bracing are to be submitted for approval of the railroad prior to starting any excavation.

Where casing and/or carrier pipe is cathodically protected the Chief Engineer of the railroad shall be notified and suitable test made to insure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, published in July 1951 by the National Association of Corrosion Engineers.

6. INSPECTION AND TESTING

ASA Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility within the railway rights-of-way except that the proof testing of strength of carrier pipe shall be in accordance with requirements of ASA Code B 31.8 for Location Classes 2, 3, or 4 or ASA Code B 31.4 as applicable.

7. SEALS

Where ends of casing are below ground they shall be suitably sealed to outside of carrier pipe.

Where ends of casing are at or above ground surface and above high-water level, they may be left open, provided drainage is afforded in such manner that leakage will be conducted away from railway tracks or structure. Where proper drainage is not provided, the ends of the casing shall be sealed.

8. VENTS

Casing pipe, when sealed, shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than 2 inches in diameter, shall be attached near end of casing and project through ground surface at right-of-way lines or not less than 45 feet (measured at right angles) from center line of nearest track.

Vent pipe, or pipes, shall extend not less than 4 feet above ground surface. Top of vent pipe shall be fitted with down-turned elbow properly screened, or a relief valve. Vents in locations subject to high water shall extend above the maximum elevation of high water and shall be supported and protected in a manner that meets the approval of the Chief Engineer of the railroad.

Vent pipes shall be at least 4 feet (vertically) from aerial electric wires.

9. DEPTH OF INSTALLATION

a. Casing pipe under railway tracks and across railway rights-of-way shall be not less than 5½ feet from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4½ feet. On other portions of rights-of-way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 feet.

b. Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4½ feet from base of railway rail to top of pipe at its closest point nor less than 3 feet from ground surface or from bottom of ditches.

c. Pipeline laid longitudinally on railway rights-of-way, 50 feet or less from center line of track, shall be buried not less than 5 feet from ground surface to top of pipe. Where pipeline is laid more than 50 feet from center line of track, minimum cover shall be at least 2 feet.

10. APPROVAL

Applicant for proposed pipeline crossing shall submit to the railroad sufficient number of copies of a plan-profile drawing of that portion of the pipeline to be constructed on railroad right-of-way. Drawing shall be made to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of casing and vents, railway survey station, right-of-way lines and general layout of tracks and railway facilities. Drawing should show a cross section from field survey, showing pipe in relation to actual profile of ground and tracks. If open cutting or tunneling is necessary, detail drawings of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the aforesaid drawing (s), applicant shall also submit the following information concerning the pipeline and its operation:

	CARRIER PIPE	CASING PIPE
Contents to be handled		
Outside Diameter		
Pipe Material		
Specification and Grade		
External Coating		
Wall Thickness		
Minimum Yield Stress		
Maximum Operating Pressure		
Type of Joint		

Cathodic Protection ☐ YES ☐ NO Casing Insulators ☐ YES ☐ NO

Shut-Off — Applicant should describe location of nearest upstream valve from railroad that can be operated to shut off fluid flow. If nearest valve is not automatically operated on loss of pipeline pressure or is not constantly attended by applicant's personnel, Applicant should supply instructions on procedure and locations involved in effecting shut-off of pipeline through area of crossing under railroad.

All of the aforesaid information should be submitted to the railroad and shall be approved by the Chief Engineer of the railroad before construction is begun. The execution of the work on railroad right-of-way, including the supporting tracks shall be subject to the inspection and direction of the Chief Engineer of the railroad or his authorized representative.

H. F. Longbelt — ENGINEER MAINTENANCE OF WAY
C E Weller — CHIEF ENGINEER
[illegible] — GENERAL MANAGER
J B Bubbel — V.P. OPERATIONS & MTCE.

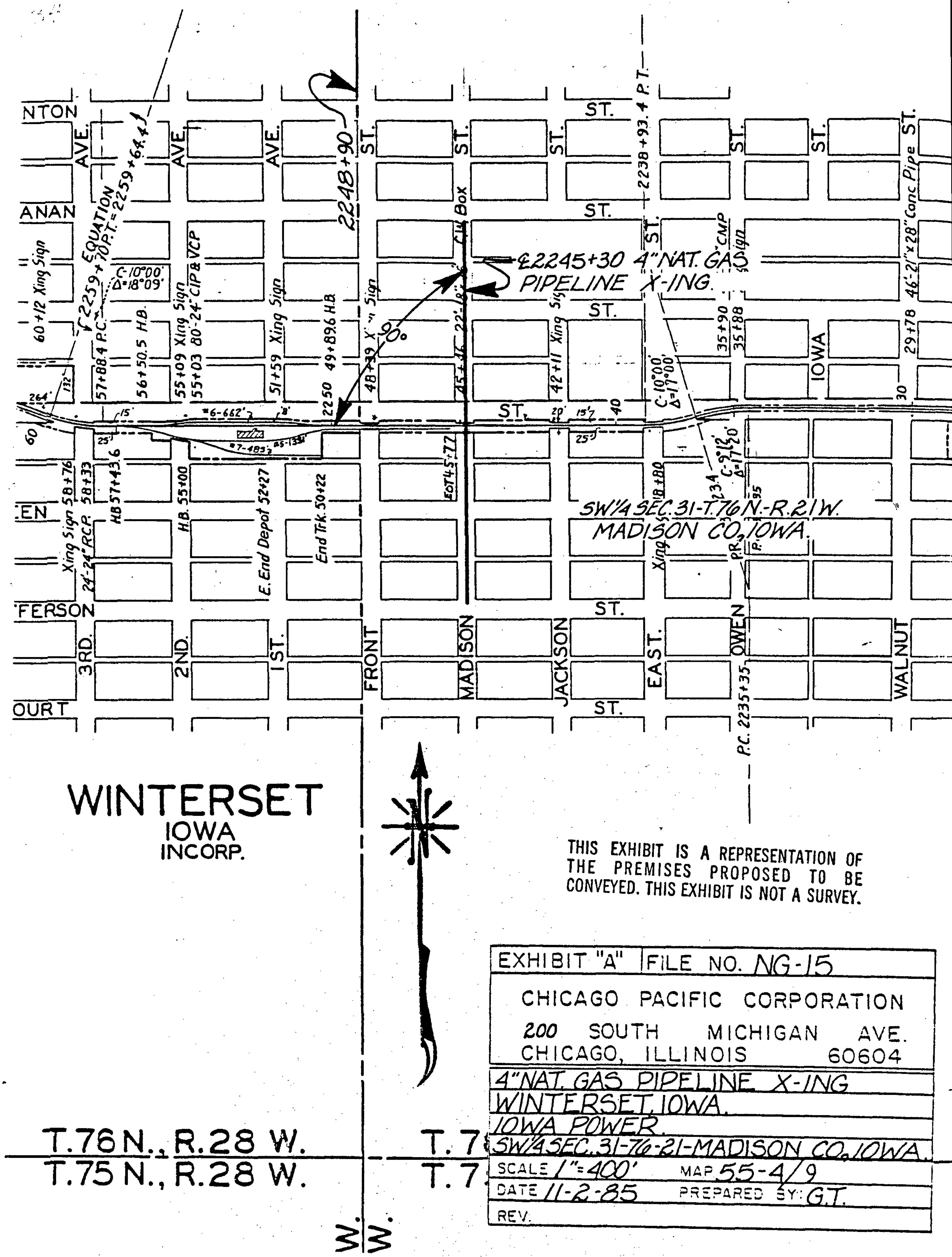
EXHIBIT "C"

File No.	NG-14	Iowa Power	
M.P.	397 + 2173 Ft.	Winterset, IA	
E.P.S.	2255 + 30	3" Natural Gas Pipeline Crossing	

A 10 foot nonexclusive easement across the former right-of-way of the C. R. I. & P. RR Co., having a width of 130 feet, as now evidenced, monumented, occupied, or recorded in the Southeast Quarter of Section 36, Township 76 North, Range 28 West, of the Fifth Principal Meridian, the centerline of said easement being described as intersecting the centerline of said Grantor's right-of-way a distance of 640 feet Westerly of the East line of said Southeast Quarter of Section 36, as measured along the centerline of said Grantor's right-of-way, the centerline of said easement intersects the centerline of said Grantor's right-of-way at an angle of 90 degrees, all in Madison County, Iowa.

Map No. $\frac{55-4}{9}$

mj



THIS EXHIBIT IS A REPRESENTATION OF THE PREMISES PROPOSED TO BE CONVEYED. THIS EXHIBIT IS NOT A SURVEY.

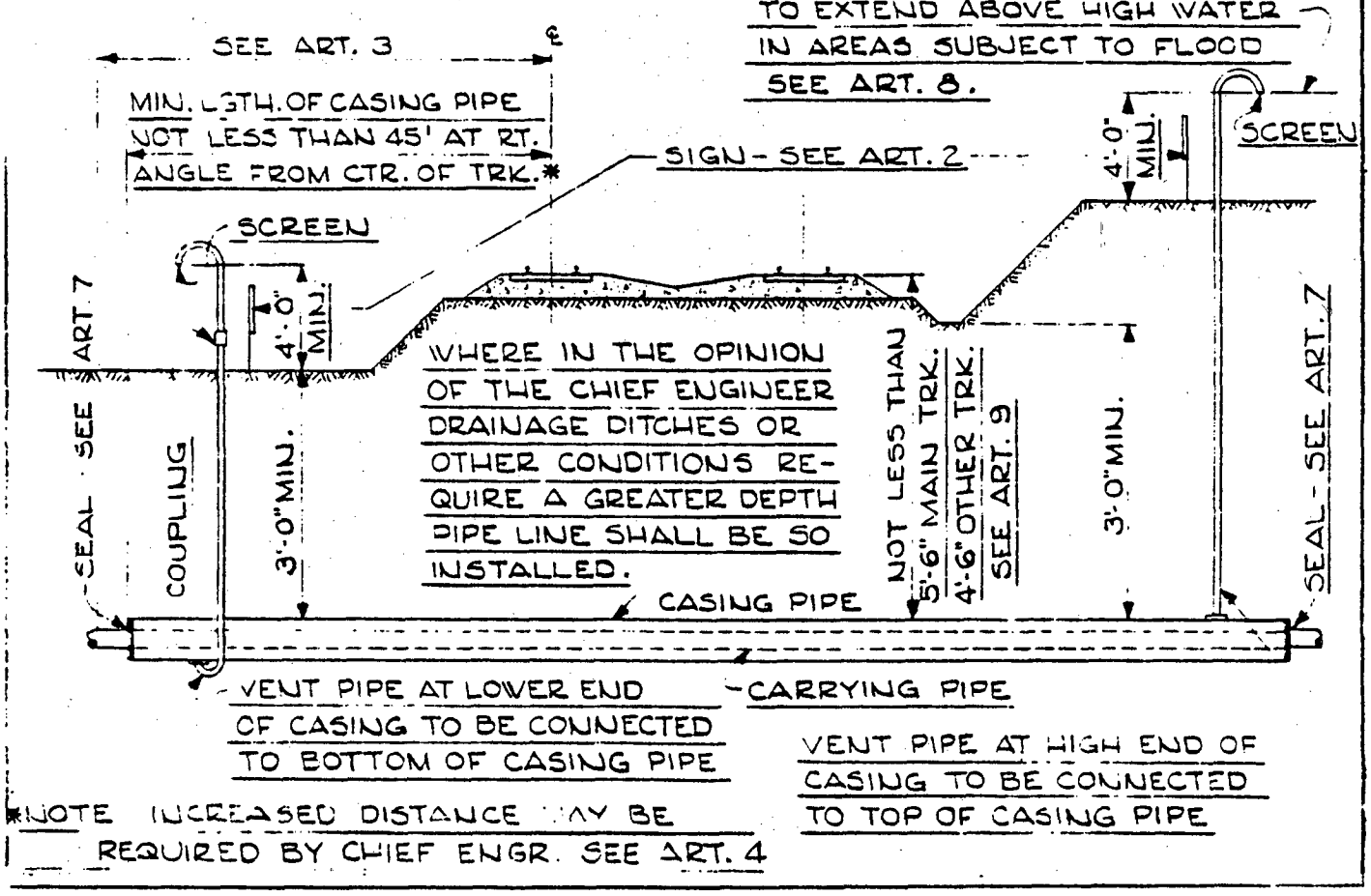
EXHIBIT "A"	FILE NO. NG-15
CHICAGO PACIFIC CORPORATION 200 SOUTH MICHIGAN AVE. CHICAGO, ILLINOIS 60604	
4" NAT. GAS PIPELINE X-ING	
WINTERSET, IOWA.	
IOWA POWER.	
SW¼ SEC. 31-76-21-MADISON CO. IOWA.	
SCALE 1"=400'	MAP 55-4/9
DATE 11-2-85	PREPARED BY: G.T.
REV.	

ROCK ISLAND LINES

SP 32

EXHIBIT "B"

STANDARD PLAN AND SPECIFICATIONS TO ACCOMPANY CONTRACTS FOR UNDERGRADE CROSSINGS OF PIPELINES CARRYING TOXIC OR FLAMMABLE FLUIDS.



1. SCOPE

Pipelines included under these specifications are those installed to carry oil, gas, petroleum products, or other flammable or highly volatile or toxic substances under pressure.

2. GENERAL REQUIREMENTS

a. Pipelines under railway tracks and across railway rights-of-way shall be encased in a larger pipe or conduit called the casing pipe.
Casing pipe may be omitted in the following locations:

(1) Under secondary or industry tracks as approved by the Chief Engineer of the railroad.

(2) On pipelines in streets where the stress in the pipe from internal pressure and external loads does not exceed 40 percent of the specified minimum yield strength (multiplied by longitudinal joint factor) of the steel pipe material.

Pipelines shall be installed under tracks by boring or jacking, if practicable. Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45 degrees and shall not be placed within a culvert, under railway bridges nor closer than 45 feet to any portion of any railway bridge, building or other important structure, except in special cases and then by special design as approved by the Chief Engineer of the railroad.

INDEX NUMBER
BOX 81 - 35

b. Pipelines laid longitudinally on railway rights-of-way shall be located as far as practicable from any tracks or other important structures. If located within 15 feet of the center line of any track or closer than 45 feet to nearest point of any bridge, building or other important structure, the carrier pipe shall be encased or of special design as approved by the Chief Engineer of the railroad.

c. Any replacement of a carrier pipe shall be considered a new installation, subject to the requirements of these specifications.

d. Where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so prescribed shall be deemed a part of these specifications.

e. Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railway rights-of-way.

f. All pipelines, except those in streets shall be prominently marked at the rights-of-way (on both sides of track for undercrossings) by signs substantially worded thus:

"HIGH PRESSURE . . . . . MAIN . . . . . FEET UNDER"

3. CARRIER PIPE

Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current ASA B 31.4, Code for Oil Transportation Piping, ASA B 31.8, Code for Gas Transmission and Distribution Piping Systems, and other applicable ASA Codes, except that the maximum allowable stresses* for design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by longitudinal joint factor) of the pipe as defined in the ASA Codes:

* If the maximum allowable stress in the carrier pipe on either side of the crossing is less than specified above, the carrier pipe at the crossing shall be designed at the same stress as the adjacent carrier pipe.

a. Steel pipe within a casing under railway tracks and across railway rights-of-way (the following percentages apply to hoop stress):

(1) Seventy-two percent for installations on oil pipelines.

(2) Fifty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Sixty percent for installations on gas pipelines.

b. Steel pipe without a casing under secondary or industry tracks (the following percentages apply to the sum of the hoop stress due to the maximum anticipated internal pressure and the flexural ring stress due to external loads):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Fifty percent for installations on gas pipelines.

c. Steel pipe laid longitudinally on railway rights-of-way (the following percentages apply to hoop stress):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Forty percent for installations on gas pipelines.

The minimum wall thickness for steel or wrought iron carrier pipe shall be 0.2 inches. For pipelines 1½ inches in diameter and smaller, operating at pressures less than 100 psi, a thickness not less than that specified for extra-strong steel pipe by the U.S. Department of Commerce, National Bureau of Standards, may be used.

Requisites for carrier line pipe under railway tracks shall apply for a minimum distance of 50 feet (measured at right angle) from center line of outside tracks or 2 feet beyond toe of slope or 25 feet beyond the ends of casing (when casing is required), whichever is greater. This requirement does not apply to lines in streets.

The pipe shall be laid with sufficient slack so that it is not in tension.

4. CASING PIPE

Casing pipe and joints shall be of metal and of leakproof construction, capable of withstanding railway loading.

WALL THICKNESS FOR STEEL CASING PIPE
FOR E 72 LOADING (INCLUDING IMPACT)

MINIMUM THICKNESS INCHES	DIAMETER OF PIPE
0.188	Under 12¾
0.219	12¾
0.250	14 and 16
0.281	18
0.312	20
0.344	22
0.375	24 and 26
0.406	28
0.438	30
0.500	32 and 34
0.563	36, 38 and 40
0.625	42

Steel pipe to have a minimum yield strength of 35,000 psi.

When casing is installed without benefit of a protective coating, and said casing is not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size which is a minimum of 0.063 in. greater than the thickness shown except for diameters under 12¾ inches.

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American Standards Association Specifications A 21. The pipe shall be of the mechanical joint type or plain-end pipe with compression type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ASA A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe." Pit-cast pipe may be used up to 20 inches in diameter. Centrifugal-cast pipe shall be used for pipes over 20 inches in diameter.

The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing pipe. All joints or couplings, supports, insulators or centering devices for the carrier pipe within a casing under railroad tracks shall be taken into account. In addition, a minimum vertical deflection of the casing pipe of 3 percent of its diameter plus ½ inches clearance shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe the inside diameter of the casing pipe shall be at least 2 inches greater than the outside diameter of the carrier pipe for pipe less than 8 inches in diameter; at least 3¼ inches greater for pipe 8 inches to 16 inches inclusive, in diameter, and at least 4½ inches greater for pipe 18 inches in diameter and over.

Casing pipe under railroad tracks and across railway rights-of-way shall extend to the greater of the following distances, measured at right angles to the center line of track:

a. 2 feet beyond toe of slope.
b. 3 feet beyond ditch line.
c. A minimum distance of 45 feet each side from center line of outside track.

If additional tracks are constructed in the future, the casing shall be extended accordingly.

5. CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length, except at the ends of casing where ends are left open, or through vent pipes when ends of casing are sealed. Casing shall be so installed as to prevent the formation of a waterway under the railway and with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, Chapter 1, of the current American Railway Engineering Specifications. All open excavations within twenty feet (20 feet) of the center line of any track shall be covered so as to accept pedestrian use safely during hours when pipeline installation is not actively in progress. During hours of darkness, adequate warning lights shall be placed at the side of the excavation.

Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1 inch, remedial measures as approved by the Chief Engineer of the railroad shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railroad.

Tunneling operations shall be conducted as approved by the Chief Engineer of the railroad. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

Jacking and receiving pits must be located outside the point where a 1.5 to 1.0 slope projected down from a point 12 feet out from center line of track at level of top of tie will intersect the bottom of the pit. If this

requirement cannot be fulfilled, design drawings of the pit showing details of the shoring and bracing are to be submitted for approval of the railroad prior to starting any excavation.

Where casing and/or carrier pipe is cathodically protected the Chief Engineer of the railroad shall be notified and suitable test made to insure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, published in July 1951 by the National Association of Corrosion Engineers.

6. INSPECTION AND TESTING

ASA Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility within the railway rights-of-way except that the proof testing of strength of carrier pipe shall be in accordance with requirements of ASA Code B 31.8 for Location Classes 2, 3, or 4 or ASA Code B 31.4 as applicable.

7. SEALS

Where ends of casing are below ground they shall be suitably sealed to outside of carrier pipe.

Where ends of casing are at or above ground surface and above high-water level, they may be left open, provided drainage is afforded in such manner that leakage will be conducted away from railway tracks or structure. Where proper drainage is not provided, the ends of the casing shall be sealed.

8. VENTS

Casing pipe, when sealed, shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than 2 inches in diameter, shall be attached near end of casing and project through ground surface at right-of-way lines or not less than 45 feet (measured at right angles) from center line of nearest track.

Vent pipe, or pipes, shall extend not less than 4 feet above ground surface. Top of vent pipe shall be fitted with down-turned elbow properly screened, or a relief valve. Vents in locations subject to high water shall extend above the maximum elevation of high water and shall be supported and protected in a manner that meets the approval of the Chief Engineer of the railroad.

Vent pipes shall be at least 4 feet (vertically) from aerial electric wires.

9. DEPTH OF INSTALLATION

a. Casing pipe under railway tracks and across railway rights-of-way shall be not less than 5½ feet from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4½ feet. On other portions of rights-of-way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 feet.

b. Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4½ feet from base of railway rail to top of pipe at its closest point nor less than 3 feet from ground surface or from bottom of ditches.

c. Pipeline laid longitudinally on railway rights-of-way, 50 feet or less from center line of track, shall be buried not less than 5 feet from ground surface to top of pipe. Where pipeline is laid more than 50 feet from center line of track, minimum cover shall be at least 2 feet.

10. APPROVAL

Applicant for proposed pipeline crossing shall submit to the railroad sufficient number of copies of a plan-profile drawing of that portion of the pipeline to be constructed on railroad right-of-way. Drawing shall be made to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of casing and vents, railway survey station, right-of-way lines and general layout of tracks and railway facilities. Drawing should show a cross section from field survey, showing pipe in relation to actual profile of ground and tracks. If open cutting or tunneling is necessary, detail drawings of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the aforesaid drawing (s), applicant shall also submit the following information concerning the pipeline and its operation:

	CARRIER PIPE	CASING PIPE
Contents to be handled		
Outside Diameter		
Pipe Material		
Specification and Grade		
External Coating		
Wall Thickness		
Minimum Yield Stress		
Maximum Operating Pressure		
Type of Joint		

Cathodic Protection ☐ YES ☐ NO Casing Insulators ☐ YES ☐ NO

Shut-Off — Applicant should describe location of nearest upstream valve from railroad that can be operated to shut off fluid flow. If nearest valve is not automatically operated on loss of pipeline pressure or is not constantly attended by applicant's personnel, Applicant should supply instructions on procedure and locations involved in effecting shut-off of pipeline through area of crossing under railroad.

All of the aforesaid information should be submitted to the railroad and shall be approved by the Chief Engineer of the railroad before construction is begun. The execution of the work on railroad right-of-way, including the supporting tracks shall be subject to the inspection and direction of the Chief Engineer of the railroad or his authorized representative.

H.F. Longhelt — ENGINEER MAINTENANCE OF WAY
C.E. Weller — CHIEF ENGINEER
[illegible] — GENERAL MANAGER
J.B. Buffle — V.P. OPERATIONS and MTCE.

597

EXHIBIT "C"

File No. NG-15 Iowa Power

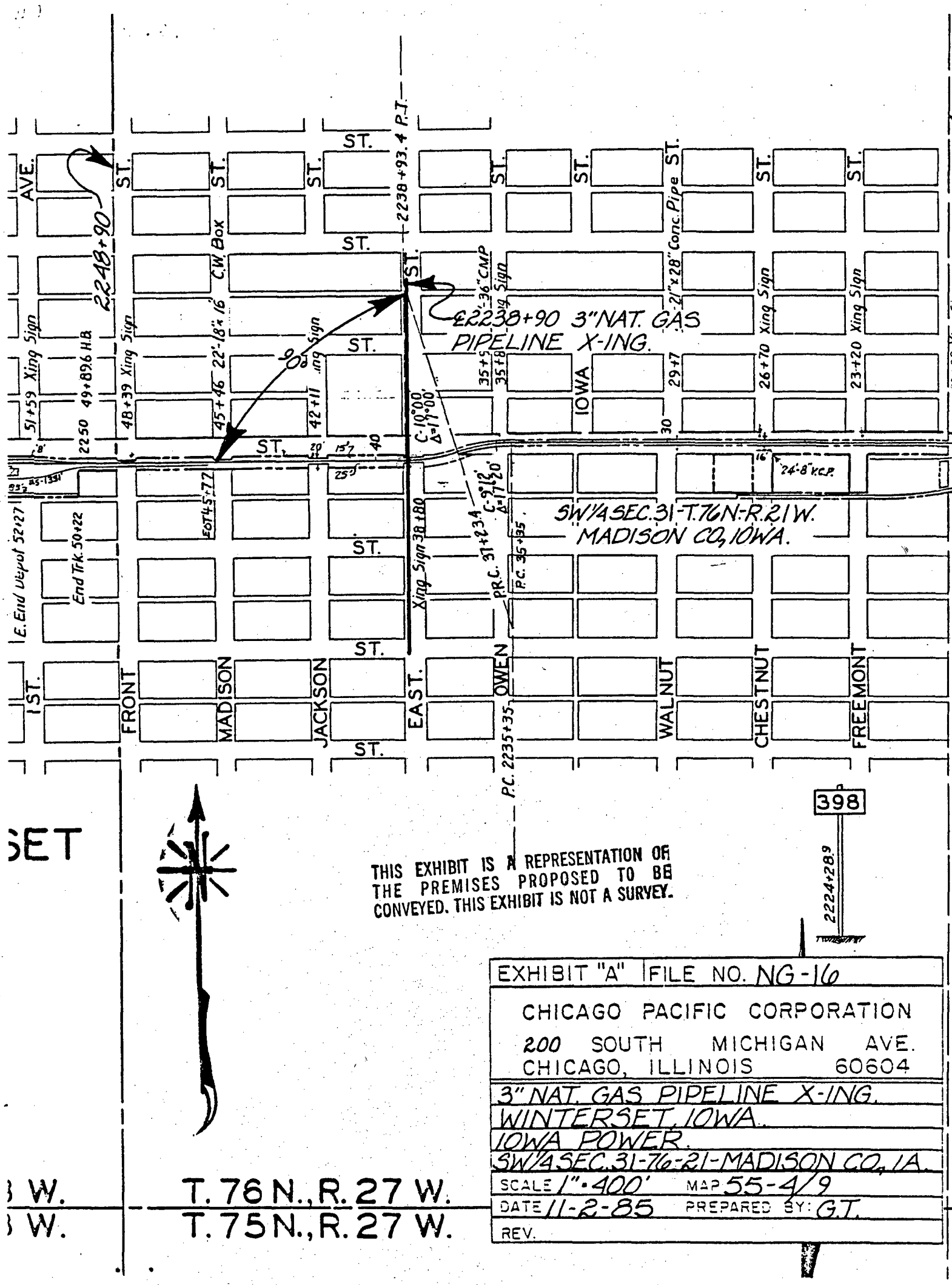
M.P. 397 + 3173 Ft. Winterset, IA

E.P.S. 2245 + 30 4" Natural Gas Pipeline Crossing

A 10 foot nonexclusive easement across the former right-of-way of the C. R. I. & P. RR Co., having a width of 35 feet, as now evidenced, monumented, occupied, or recorded in the Southwest Quarter of Section 31, Township 76 North, Range 27 West, of the Fifth Principal Meridian, the centerline of said easement being described as intersecting the centerline of said Grantor's right-of-way a distance of 370 feet Easterly of the West line of said Southwest Quarter of Section 31, as measured along the centerline of said Grantor's right-of-way, the centerline of said easement intersects the centerline of said Grantor's right-of-way at an angle of 90 degrees, all in Madison County, Iowa.

Map No. $\frac{55-4}{9}$

mj



SET

W.

W.

EXHIBIT "A"	FILE NO. NG-16
CHICAGO PACIFIC CORPORATION 200 SOUTH MICHIGAN AVE. CHICAGO, ILLINOIS 60604	
3" NAT. GAS PIPELINE X-ING.	
WINTERSET, IOWA.	
IOWA POWER.	
SW1/4 SEC. 31-76-21-MADISON CO, IA.	
SCALE 1" = 400'	MAP 55-4/9
DATE 11-2-85	PREPARED BY: G.T.
REV.	

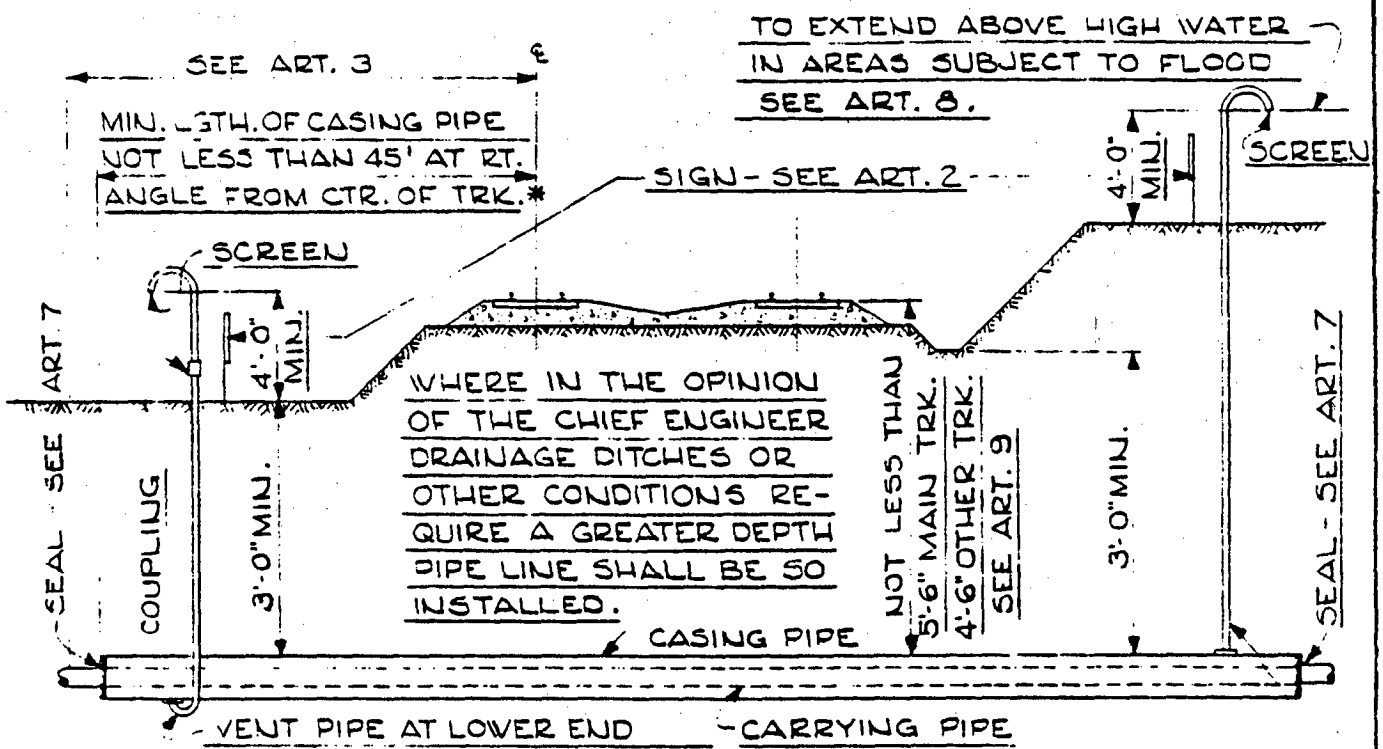
600

ROCK ISLAND LINES

S.P. 32

EXHIBIT "B"

STANDARD PLAN AND SPECIFICATIONS TO ACCOMPANY CONTRACTS FOR UNDERGRADE CROSSINGS OF PIPELINES CARRYING TOXIC OR FLAMMABLE FLUIDS.



*NOTE INCREASED DISTANCE MAY BE REQUIRED BY CHIEF ENGR. SEE ART. 4

1. SCOPE

Pipelines included under these specifications are those installed to carry oil, gas, petroleum products, or other flammable or highly volatile or toxic substances under pressure.

2. GENERAL REQUIREMENTS

a. Pipelines under railway tracks and across railway rights-of-way shall be encased in a larger pipe or conduit called the casing pipe.
Casing pipe may be omitted in the following locations:

(1) Under secondary or industry tracks as approved by the Chief Engineer of the railroad.

(2) On pipelines in streets where the stress in the pipe from internal pressure and external loads does not exceed 40 percent of the specified minimum yield strength (multiplied by longitudinal joint factor) of the steel pipe material.

Pipelines shall be installed under tracks by boring or jacking, if practicable. Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45 degrees and shall not be placed within a culvert, under railway bridges nor closer than 45 feet to any portion of any railway bridge, building or other important structure, except in special cases and then by special design as approved by the Chief Engineer of the railroad.

INDEX NUMBER
BOX 81 - 35

WALL THICKNESS FOR STEEL CASING PIPE
FOR E 72 LOADING (INCLUDING IMPACT)

MINIMUM THICKNESS INCHES	DIAMETER OF PIPE
0.188	Under 12¾
0.219	12¾
0.250	14 and 16
0.281	18
0.312	20
0.344	22
0.375	24 and 26
0.406	28
0.438	30
0.500	32 and 34
0.563	36, 38 and 40
0.625	42

Steel pipe to have a minimum yield strength of 35,000 psi.

When casing is installed without benefit of a protective coating, and said casing is not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size which is a minimum of 0.063 in. greater than the thickness shown except for diameters under 12¾ inches.

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American Standards Association Specifications A 21. The pipe shall be of the mechanical joint type or plain-end pipe with compression type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ASA A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe." Pit-cast pipe may be used up to 20 inches in diameter. Centrifugal-cast pipe shall be used for pipes over 20 inches in diameter.

The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing pipe. All joints or couplings, supports, insulators or centering devices for the carrier pipe within a casing under railroad tracks shall be taken into account. In addition, a minimum vertical deflection of the casing pipe of 3 percent of its diameter plus ½ inches clearance shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe the inside diameter of the casing pipe shall be at least 2 inches greater than the outside diameter of the carrier pipe for pipe less than 8 inches in diameter; at least 3¼ inches greater for pipe 8 inches to 16 inches inclusive, in diameter, and at least 4½ inches greater for pipe 18 inches in diameter and over.

Casing pipe under railroad tracks and across railway rights-of-way shall extend to the greater of the following distances, measured at right angles to the center line of track:

a. 2 feet beyond toe of slope.
b. 3 feet beyond ditch line.
c. A minimum distance of 45 feet each side from center line of outside track.

If additional tracks are constructed in the future, the casing shall be extended accordingly.

5. CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length, except at the ends of casing where ends are left open, or through vent pipes when ends of casing are sealed. Casing shall be so installed as to prevent the formation of a waterway under the railway and with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, Chapter 1, of the current American Railway Engineering Specifications. All open excavations within twenty feet (20 feet) of the center line of any track shall be covered so as to accept pedestrian use safely during hours when pipeline installation is not actively in progress. During hours of darkness, adequate warning lights shall be placed at the side of the excavation.

Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1 inch, remedial measures as approved by the Chief Engineer of the railroad shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railroad.

Tunneling operations shall be conducted as approved by the Chief Engineer of the railroad. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

Jacking and receiving pits must be located outside the point where a 1.5 to 1.0 slope projected down from a point 12 feet out from center line of track at level of top of tie will intersect the bottom of the pit. If this

requirement cannot be fulfilled, design drawings of the pit showing details of the shoring and bracing are to be submitted for approval of the railroad prior to starting any excavation.

Where casing and/or carrier pipe is cathodically protected the Chief Engineer of the railroad shall be notified and suitable test made to insure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, published in July 1951 by the National Association of Corrosion Engineers.

6. INSPECTION AND TESTING

ASA Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility within the railway rights-of-way except that the proof testing of strength of carrier pipe shall be in accordance with requirements of ASA Code B 31.8 for Location Classes 2, 3, or 4 or ASA Code B 31.4 as applicable.

7. SEALS

Where ends of casing are below ground they shall be suitably sealed to outside of carrier pipe.

Where ends of casing are at or above ground surface and above high-water level, they may be left open, provided drainage is afforded in such manner that leakage will be conducted away from railway tracks or structure. Where proper drainage is not provided, the ends of the casing shall be sealed.

8. VENTS

Casing pipe, when sealed, shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than 2 inches in diameter, shall be attached near end of casing and project through ground surface at right-of-way lines or not less than 45 feet (measured at right angles) from center line of nearest track.

Vent pipe, or pipes, shall extend not less than 4 feet above ground surface. Top of vent pipe shall be fitted with down-turned elbow properly screened, or a relief valve. Vents in locations subject to high water shall extend above the maximum elevation of high water and shall be supported and protected in a manner that meets the approval of the Chief Engineer of the railroad.

Vent pipes shall be at least 4 feet (vertically) from aerial electric wires.

9. DEPTH OF INSTALLATION

a. Casing pipe under railway tracks and across railway rights-of-way shall be not less than 5½ feet from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4½ feet. On other portions of rights-of-way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 feet.

b. Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4½ feet from base of railway rail to top of pipe at its closest point nor less than 3 feet from ground surface or from bottom of ditches.

c. Pipeline laid longitudinally on railway rights-of-way, 50 feet or less from center line of track, shall be buried not less than 5 feet from ground surface to top of pipe. Where pipeline is laid more than 50 feet from center line of track, minimum cover shall be at least 2 feet.

10. APPROVAL

Applicant for proposed pipeline crossing shall submit to the railroad sufficient number of copies of a plan-profile drawing of that portion of the pipeline to be constructed on railroad right-of-way. Drawing shall be made to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of casing and vents, railway survey station, right-of-way lines and general layout of tracks and railway facilities. Drawing should show a cross section from field survey, showing pipe in relation to actual profile of ground and tracks. If open cutting or tunneling is necessary, detail drawings of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the aforesaid drawing (s), applicant shall also submit the following information concerning the pipeline and its operation:

	CARRIER PIPE	CASING PIPE
Contents to be handled		
Outside Diameter		
Pipe Material		
Specification and Grade		
External Coating		
Wall Thickness		
Minimum Yield Stress		
Maximum Operating Pressure		
Type of Joint		

Cathodic Protection ☐ YES ☐ NO Casing Insulators ☐ YES ☐ NO

Shut-Off — Applicant should describe location of nearest upstream valve from railroad that can be operated to shut off fluid flow. If nearest valve is not automatically operated on loss of pipeline pressure or is not constantly attended by applicant's personnel, Applicant should supply instructions on procedure and locations involved in effecting shut-off of pipeline through area of crossing under railroad.

All of the aforesaid information should be submitted to the railroad and shall be approved by the Chief Engineer of the railroad before construction is begun. The execution of the work on railroad right-of-way, including the supporting tracks shall be subject to the inspection and direction of the Chief Engineer of the railroad or his authorized representative.

H. J. Longbelt — ENGINEER MAINTENANCE OF WAY
C E Weller — CHIEF ENGINEER
GENERAL MANAGER
J B Buffle — V.P. OPERATIONS & MTCE.

EXHIBIT "C"

File No. NG-16

M.P. 397 + 3813 Ft.

E.P.S. 2238 + 90

Iowa Power

Winterset, IA

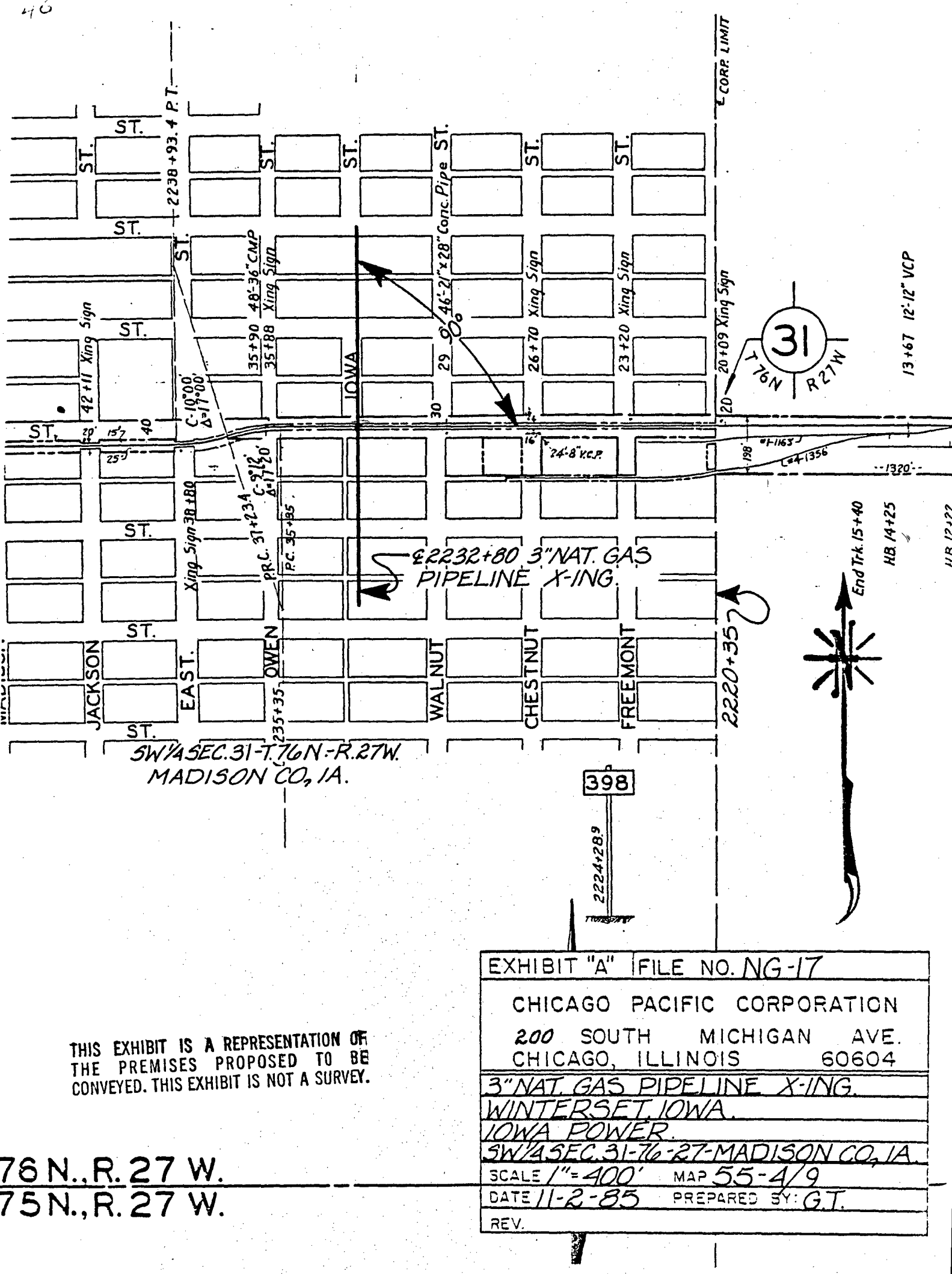
3" Natural Gas Pipeline Crossing

A 10 foot nonexclusive easement across the former right-of-way of the C. R. I. & P. RR Co., having a width of 20 feet, as now evidenced, monumented, occupied, or recorded in the Southwest Quarter of Section 31, Township 76 North, Range 27 West, of the Fifth Principal Meridian, the centerline of said easement being described as intersecting the centerline of said Grantor's right-of-way a distance of 1010 feet Easterly of the West line of said Southwest Quarter of Section 31, as measured along the centerline of said Grantor's right-of-way, the centerline of said easement intersects the centerline of said Grantor's right-of-way at an angle of 90 degrees, all in Madison County, Iowa.

Map No. $\frac{55-4}{9}$

mj

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THIS EXHIBIT IS A REPRESENTATION OF THE PREMISES PROPOSED TO BE CONVEYED. THIS EXHIBIT IS NOT A SURVEY.

76 N., R. 27 W.
75 N., R. 27 W.

EXHIBIT "A"	FILE NO. NG-17
CHICAGO PACIFIC CORPORATION 200 SOUTH MICHIGAN AVE. CHICAGO, ILLINOIS 60604	
3" NAT. GAS PIPELINE X-ING.	
WINTERSET, IOWA.	
IOWA POWER.	
SW¼ SEC. 31-76-27-MADISON CO, IA.	
SCALE 1"=400'	MAP 55-4/9
DATE 11-2-85	PREPARED BY: G.T.
REV.	

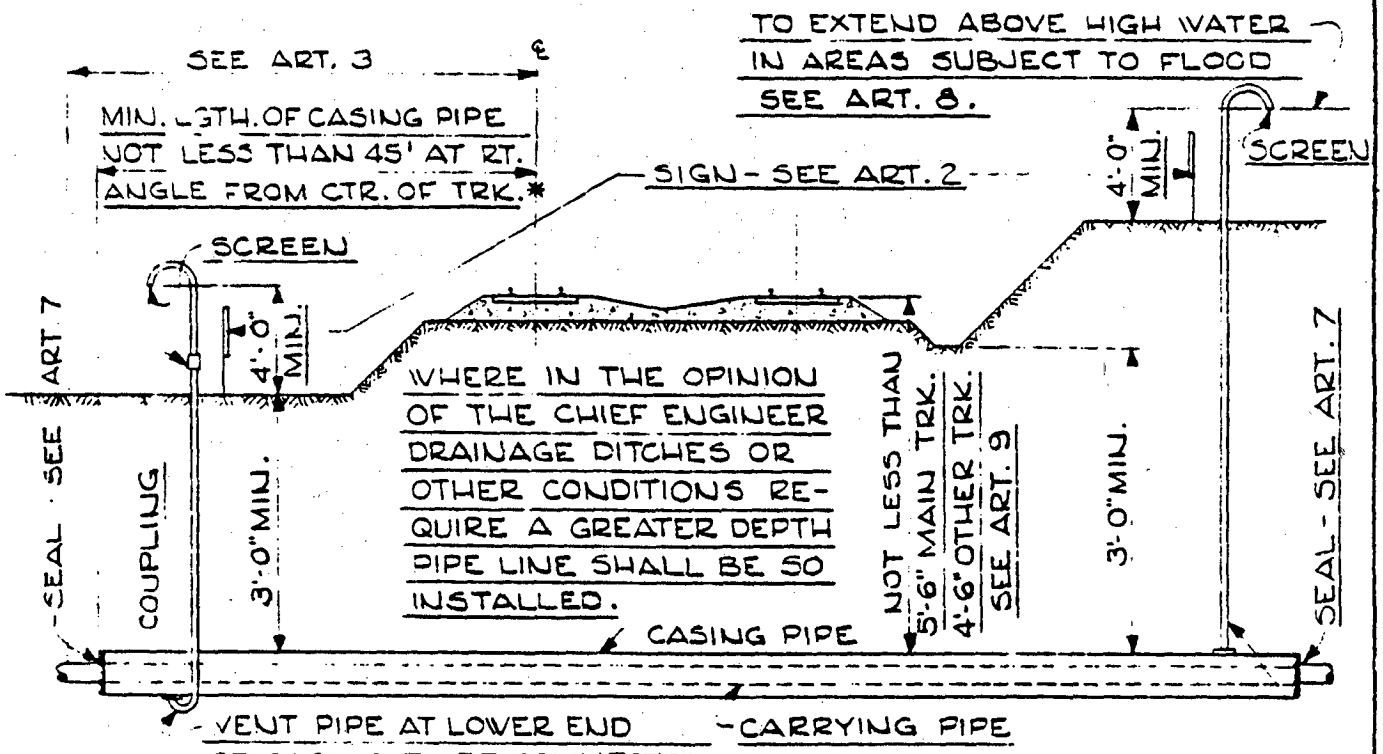
605

ROCK ISLAND LINES

SP 32

EXHIBIT "B"

STANDARD PLAN AND SPECIFICATIONS TO ACCOMPANY CONTRACTS FOR UNDERGRADE CROSSINGS OF PIPELINES CARRYING TOXIC OR FLAMMABLE FLUIDS.



*NOTE INCREASED DISTANCE MAY BE REQUIRED BY CHIEF ENGR. SEE ART. 4

1. SCOPE

Pipelines included under these specifications are those installed to carry oil, gas, petroleum products, or other flammable or highly volatile or toxic substances under pressure.

2. GENERAL REQUIREMENTS

a. Pipelines under railway tracks and across railway rights-of-way shall be encased in a larger pipe or conduit called the casing pipe.
Casing pipe may be omitted in the following locations:

(1) Under secondary or industry tracks as approved by the Chief Engineer of the railroad.

(2) On pipelines in streets where the stress in the pipe from internal pressure and external loads does not exceed 40 percent of the specified minimum yield strength (multiplied by longitudinal joint factor) of the steel pipe material.

Pipelines shall be installed under tracks by boring or jacking, if practicable. Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45 degrees and shall not be placed within a culvert, under railway bridges nor closer than 45 feet to any portion of any railway bridge, building or other important structure, except in special cases and then by special design as approved by the Chief Engineer of the railroad.

INDEX NUMBER
BOX 81 - 35

b. Pipelines laid longitudinally on railway rights-of-way shall be located as far as practicable from any tracks or other important structures. If located within 15 feet of the center line of any track or closer than 45 feet to nearest point of any bridge, building or other important structure, the carrier pipe shall be encased or of special design as approved by the Chief Engineer of the railroad.

c. Any replacement of a carrier pipe shall be considered a new installation, subject to the requirements of these specifications.

d. Where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so prescribed shall be deemed a part of these specifications.

e. Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railway rights-of-way.

f. All pipelines, except those in streets shall be prominently marked at the rights-of-way (on both sides of track for undercrossings) by signs substantially worded thus:

"HIGH PRESSURE . . . . . MAIN . . . . . FEET UNDER"

3. CARRIER PIPE

Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current ASA B 31.4, Code for Oil Transportation Piping, ASA B 31.8, Code for Gas Transmission and Distribution Piping Systems, and other applicable ASA Codes, except that the maximum allowable stresses* for design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by longitudinal joint factor) of the pipe as defined in the ASA Codes;

* If the maximum allowable stress in the carrier pipe on either side of the crossing is less than specified above, the carrier pipe at the crossing shall be designed at the same stress as the adjacent carrier pipe.

a. Steel pipe within a casing under railway tracks and across railway rights-of-way (the following percentages apply to hoop stress):

(1) Seventy-two percent for installations on oil pipelines.

(2) Fifty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Sixty percent for installations on gas pipelines.

b. Steel pipe without a casing under secondary or industry tracks (the following percentages apply to the sum of the hoop stress due to the maximum anticipated internal pressure and the flexural ring stress due to external loads):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Fifty percent for installations on gas pipelines.

c. Steel pipe laid longitudinally on railway rights-of-way (the following percentages apply to hoop stress):

(1) Sixty percent for installations on oil pipelines.

(2) Forty percent for pipelines carrying liquefied petroleum gas and other flammable liquids with low flash point.

(3) Forty percent for installations on gas pipelines.

The minimum wall thickness for steel or wrought iron carrier pipe shall be 0.2 inches. For pipelines 1½ inches in diameter and smaller, operating at pressures less than 100 psi, a thickness not less than that specified for extra-strong steel pipe by the U.S. Department of Commerce, National Bureau of Standards, may be used.

Requisites for carrier line pipe under railway tracks shall apply for a minimum distance of 50 feet (measured at right angle) from center line of outside tracks or 2 feet beyond toe of slope or 25 feet beyond the ends of casing (when casing is required), whichever is greater. This requirement does not apply to lines in streets.

The pipe shall be laid with sufficient slack so that it is not in tension.

4. CASING PIPE

Casing pipe and joints shall be of metal and of leakproof construction, capable of withstanding railway loading.

60%

WALL THICKNESS FOR STEEL CASING PIPE
FOR E 72 LOADING (INCLUDING IMPACT)

MINIMUM THICKNESS INCHES	DIAMETER OF PIPE
0.188	Under 12¾
0.219	12¾
0.250	14 and 16
0.281	18
0.312	20
0.344	22
0.375	24 and 26
0.406	28
0.438	30
0.500	32 and 34
0.563	36, 38 and 40
0.625	42

Steel pipe to have a minimum yield strength of 35,000 psi.

When casing is installed without benefit of a protective coating, and said casing is not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size which is a minimum of 0.063 in. greater than the thickness shown except for diameters under 12¾ inches.

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American Standards Association Specifications A 21. The pipe shall be of the mechanical joint type or plain-end pipe with compression type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ASA A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe." Pit-cast pipe may be used up to 20 inches in diameter. Centrifugal-cast pipe shall be used for pipes over 20 inches in diameter.

The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing pipe. All joints or couplings, suppotts, insulators or centering devices for the carrier pipe within a casing under railroad tracks shall be taken into account. In addition, a minimum vertical deflection of the casing pipe of 3 percent of its diameter plus ½ inches clearance shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe the inside diameter of the casing pipe shall be at least 2 inches greater than the outside diameter of the carrier pipe for pipe less than 8 inches in diameter; at least 3¼ inches greater for pipe 8 inches to 16 inches inclusive, in diameter, and at least 4½ inches greater for pipe 18 inches in diameter and over.

Casing pipe under railroad tracks and across railway rights-of-way shall extend to the greater of the following distances,measured at right angles to the center line of track:

a. 2 feet beyond toe of slope.
b. 3 feet beyond ditch line.
c. A minimum distance of 45 feet each side from center line of outside track.

If additional tracks are constructed in the future, the casing shall be extended accordingly.

5. CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length, except at the ends of casing where ends are left open, or through vent pipes when ends of casing are sealed. Casing shall be so installed as to prevent the formation of a waterway under the railway and with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, Chapter 1, of the current American Railway Engineering Specifications. All open excavations within twenty feet (20 feet) of the center line of any track shall be covered so as to accept pedestrian use safely during hours when pipeline installation is not actively in progress. During hours of darkness, adequate warning lights shall be placed at the side of the excavation.

Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1 inch, remedial measures as approved by the Chief Engineer of the railroad shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railroad.

Tunneling operations shall be conducted as approved by the Chief Engineer of the railroad. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

Jacking and receiving pits must be located outside the point where a 1.5 to 1.0 slope projected down from a point 12 feet out from center line of track at level of top of tie will intersect the bottom of the pit. If this

requirement cannot be fulfilled, design drawings of the pit showing details of the shoring and bracing are to be submitted for approval of the railroad prior to starting any excavation.

Where casing and/or carrier pipe is cathodically protected the Chief Engineer of the railroad shall be notified and suitable test made to insure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, published in July 1951 by the National Association of Corrosion Engineers.

6. INSPECTION AND TESTING

ASA Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility within the railway rights-of-way except that the proof testing of strength of carrier pipe shall be in accordance with requirements of ASA Code B 31.8 for Location Classes 2, 3, or 4 or ASA Code B 31.4 as applicable.

7. SEALS

Where ends of casing are below ground they shall be suitably sealed to outside of carrier pipe.

Where ends of casing are at or above ground surface and above high-water level, they may be left open, provided drainage is afforded in such manner that leakage will be conducted away from railway tracks or structure. Where proper drainage is not provided, the ends of the casing shall be sealed.

8. VENTS

Casing pipe, when sealed, shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than 2 inches in diameter, shall be attached near end of casing and project through ground surface at right-of-way lines or not less than 45 feet (measured at right angles) from center line of nearest track.

Vent pipe, or pipes, shall extend not less than 4 feet above ground surface. Top of vent pipe shall be fitted with down-turned elbow properly screened, or a relief valve. Vents in locations subject to high water shall extend above the maximum elevation of high water and shall be supported and protected in a manner that meets the approval of the Chief Engineer of the railroad.

Vent pipes shall be at least 4 feet (vertically) from aerial electric wires.

9. DEPTH OF INSTALLATION

a. Casing pipe under railway tracks and across railway rights-of-way shall be not less than 5½ feet from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4½ feet. On other portions of rights-of-way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 feet.

b. Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4½ feet from base of railway rail to top of pipe at its closest point nor less than 3 feet from ground surface or from bottom of ditches.

c. Pipeline laid longitudinally on railway rights-of-way, 50 feet or less from center line of track, shall be buried not less than 5 feet from ground surface to top of pipe. Where pipeline is laid more than 50 feet from center line of track, minimum cover shall be at least 2 feet.

10. APPROVAL

Applicant for proposed pipeline crossing shall submit to the railroad sufficient number of copies of a plan-profile drawing of that portion of the pipeline to be constructed on railroad right-of-way. Drawing shall be made to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of casing and vents, railway survey station, right-of-way lines and general layout of tracks and railway facilities. Drawing should show a cross section from field survey, showing pipe in relation to actual profile of ground and tracks. If open cutting or tunneling is necessary, detail drawings of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the aforesaid drawing (s), applicant shall also submit the following information concerning the pipeline and its operation:

	CARRIER PIPE	CASING PIPE
Contents to be handled		
Outside Diameter		
Pipe Material		
Specification and Grade		
External Coating		
Wall Thickness		
Minimum Yield Stress		
Maximum Operating Pressure		
Type of Joint		

Cathodic Protection ☐ YES ☐ NO Casing Insulators ☐ YES ☐ NO

Shut-Off — Applicant should describe location of nearest upstream valve from railroad that can be operated to shut off fluid flow. If nearest valve is not automatically operated on loss of pipeline pressure or is not constantly attended by applicant's personnel, Applicant should supply instructions on procedure and locations involved in effecting shut-off of pipeline through area of crossing under railroad.

All of the aforesaid information should be submitted to the railroad and shall be approved by the Chief Engineer of the railroad before construction is begun. The execution of the work on railroad right-of-way, including the supporting tracks shall be subject to the inspection and direction of the Chief Engineer of the railroad or his authorized representative.

H.F. Longbelt — ENGINEER MAINTENANCE OF WAY
C.E. Weller — CHIEF ENGINEER
[illegible] — GENERAL MANAGER
J.B. Bubbl[illegible] — V.P. OPERATIONS & MTCE.

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EXHIBIT "C"

File No. NG-17 Iowa Power

M.P. 397 + 4423 Ft. Winterset, IA

E.P.S. 2232 + 80 3" Natural Gas Pipeline Crossing

A 10 foot nonexclusive easement across the former right-of-way of the C. R. I. & P. RR Co., having a width of 20 feet, as now evidenced, monumented, occupied, or recorded in the Southwest Quarter of Section 31, Township 76 North, Range 27 West, of the Fifth Principal Meridian, the centerline of said easement being described as intersecting the centerline of said Grantor's right-of-way a distance of 1245 feet Westerly of the East line of said Southwest Quarter of Section 31, as measured along the centerline of said Grantor's right-of-way, the centerline of said easement intersects the centerline of said Grantor's right-of-way at an angle of 90 degrees, all in Madison County, Iowa.

Map No. $\frac{55-4}{9}$

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