

STATE OF IOWA
DEPARTMENT OF COMMERCE
UTILITIES BOARD

IN RE: RAILROAD CROSSING SPECIFICATION EXHIBITS	DOCKET NO. 199 IAC 42.3(1)
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ORDER APPROVING, WITH MODIFICATIONS, SPECIFICATION EXHIBITS

(Issued June 13, 2006)

On December 15, 2004, Union Pacific Railroad Company, Burlington Northern Santa Fe Railway Company, Norfolk Southern Corporation, Appanoose County Community Railroad, Burlington Junction Railroad, The Cedar Rapids and Iowa City Railroad, The Chicago Central and Pacific Railroad, Iowa Interstate Railroad, Iowa, Chicago, & Eastern Railroad, Dakota, Minnesota, & Eastern Railroad, Great Western Railway of Iowa, Iowa Northern Railway Company, and Iowa Traction Railroad Company (collectively, Iowa Railroad Group) filed with the Utilities Board (Board) proposed specification exhibits related to crossing of railroad rights-of-way by public utilities. The proposed exhibits were filed for Board review and approval pursuant to 199 IAC 42.3(1). As part of each proposed specification exhibit, there were accompanying proposed guidelines.

The Board, on February 21, 2005, issued an order setting a comment period for interested persons to comment on the proposed specification exhibits and for the railroads to file reply comments. Because of problems with service of the order on some of the railroads, the deadline for the railroads' reply comments was extended

by order issued April 11, 2005. All comments were received by April 22, 2005. ANR Pipeline Company (ANR), Interstate Power and Light Company (IPL), the Iowa Association of Electric Cooperatives (IAEC), the Iowa Telecommunications Association (ITA), and the Water Utility Alliance¹ (WUA) filed comments.

The Iowa Railroad Group filing notes that the railroad and utilities have attempted to reach agreement on standard specification exhibits, but that several unresolved issues remained. The Board has reviewed the proposed specification exhibits and comments and will issue its final determinations in this order. This order has been delayed because of the difficulties the Board had in translating the proposed specification exhibits to electronic form. The translation to electronic format has now been completed. Also, the proposed specification exhibits and guidelines initially filed were not in final form; the Board has included changes subsequently proposed by the Iowa Railroad Group in its filing.

As the Board noted in its February 21, 2005 order, the Board believes that the specification exhibits may require additional modifications after they are tested by use in the field. Such modifications may be agreed to by both utilities and railroads. Because there may be a need for modification on an expedited basis, the Board will not adopt the specification exhibits as part of the Board's administrative rules, but will make the forms available on its Web site, where consensus changes can be made quickly and easily.

¹ The WUA consists of the Iowa Association of Municipal Utilities, the Iowa Association of Water Agencies, the American Waterworks Association, the Iowa Rural Water Association, and the Iowa League of Cities.

Before offering its findings regarding the specification exhibits, the Board will use this opportunity to address two other subjects related to the railroad rights-of-way rules. First, the Board is pleased that some of the railroads promptly filed emergency contact information required by 199 IAC 42.4(2). However, only three members of the Iowa Railroad Group have filed and the Board encourages those who have not filed to do so immediately. Second, the proposed guidelines to all of the specification exhibits refer to the Board's Web site for contact information regarding fiber optic cable and railroad signal locations. This information has not been provided to the Board. If the railroads supply this information, the Board will make it available on its Web site and amend the guidelines accordingly. But because the information has not been supplied, the proposed language in the guidelines referring to the Board's Web site will be deleted.

The Board will offer its comments and changes to all four proposed specification exhibits (Iowa overhead wireline crossing, Iowa underground wireline crossing, Iowa nonflammable pipeline crossing, and Iowa flammable pipeline crossing) and accompanying guidelines. Attached to this order are specification exhibits and guidelines reflecting the Board's revisions that will be made available on the Board's Web site.

On each of the proposed specification exhibits, there is a signature block which provides space for company identification, signatures, and contact information. While none of the commenters suggested changes to the signature block, the Board will make one change. The proposed signature block allows small utilities, who

qualify for certain special provisions in the rules, to self-certify with the statement, “I certify that this utility qualifies as a small utility under IUB rule ____.” The Board will change this phrase to include the rule citation because some users may not be familiar with the rule and will need the citation to see if they qualify as a small utility. The signature block phrase will be amended to state, “I certify that this utility qualifies as a small utility under Iowa Utilities Board Rule 199 IAC 42.1.”

IOWA OVERHEAD WIRELINE CROSSINGS

This proposed specification exhibit would apply to electric and communications overhead wires and cables. IPL and IAEC each objected to proposed Note M on the Iowa Railroad’s proposed exhibit. This note requests substantial information both on new substations to be built within a half mile of the track and on electric lines over 750 volts that are within 1,000 feet of the track for more than 500 feet. IPL said none of the Board’s rules require this information to be provided to railroads when electrical facilities are built near railroad tracks and there is no other similar state or national requirement. IAEC argued that utilities should not be required to provide information on facilities outside the railroad right-of-way; the scope of information should be limited to the crossing itself. The Iowa Railroad Group argued that the information is necessary to avoid potentially dangerous interference with railroad signals.

The Board does not find any support in statute or rule for the Iowa Railroad Group’s position and will delete Note M. Iowa Code § 476.27 and 199 IAC 42 address only railroad crossings, not substations or electric lines that are outside of

railroad right-of-way. Under the law, it appears there is no prohibition or limitation on such facilities so long as railroad right-of-way is not crossed. In fact, Iowa Code § 478.18 encourages electric line routes that parallel railroads.

In addition, proposed Note M appears intended to include instances where the wireline enters and exits railroad right-of-way, but does not actually cross the railroad tracks from one side to the other. Iowa Code § 476.27(1)"b" defines a "Crossing" as "the construction, operation, repair, or maintenance of a facility over, under, or across a railroad right-of-way by a public utility." Rule 199 IAC 42.2 provides that "[t]hese rules do not apply to longitudinal occupancy of railroad right-of-way, but only to the crossing of railroad right-of-way." A wireline that enters and exits railroad right-of-way, but stays on one side of that right-of-way, is a longitudinal occupancy instead of a crossing, and the statute and rules do not apply to a longitudinal occupancy.

Guideline 1 to the proposed overhead wireline specification exhibit states measurements on a cross-section drawing of the crossing are to be taken at right angles to the track, even if because of an angled crossing the actual wire length is greater. One commenter, however, suggested that the Iowa Railroad Group actually intended to ask for the diagonal length. The Board proposes to adopt the guideline as drafted; if the Iowa Railroad Group intended to mean diagonal length, it can propose an amendment to the guideline.

Guideline 3 states construction will be in compliance with 199 IAC 42.7. The ITA pointed out that the referenced rule applies to pipelines and that 199 IAC 42.6 is

the correct reference. The Board agrees and will change the rule reference in the final form.

Subparagraph 199 IAC 42.6(2)"c"(2) requires poles be 50 feet from a straight railroad track, but allows them to be within 10 feet of an industry track. The Iowa Railroad Group, apparently concerned that the 10-foot rule could be used to place a pole too close to an adjacent straight track, included language in Guideline 6, Part 2, to prevent this. However, the language used by the Iowa Railroad Group would allow a pole to be placed less than 50 feet from the straight track if the pole were placed between the two sets of tracks.

The ITA proposed alternate language, which the Iowa Railroad Group accepted with one change. The new provision proposed by the Iowa Railroad Group for Guideline 6, Part 2, is: "2) 50 feet near straight tracks, except for industry tracks where 10 feet is permitted provided there remains 50 feet from the center line of main line tracks." The Board believes this language is consistent with the rules and responsive to the concerns raised by the Iowa Railroad Group. The Board will include the new language in the final form.

Subparagraph 199 IAC 42.6(2)"c"(3) provides that "[t]owers for electric lines capable of operating at 34,500 volts or more shall not be located on railroad right-of-way." The term "tower" is not defined. Guideline 6, Part 3, proposed barring "multi-pole or lattice structured towers, or their equivalent, if other structures are used. . . ." from railroad right-of-way (emphasis added). The underlined language is a new proposal that did not appear on earlier versions of the guidelines that were informally

circulated. The Iowa Railroad Group explained that this language is intended to include mono-tube towers. The Iowa Railroad Group objected to the use of such mono-tube towers because of the wide base of these towers within the limited space of the right-of-way and the difficulty of relocating them to accommodate railroad expansion. The Iowa Railroad Group argued that such structures should not be placed on railroad right-of-way.

IPL objected to the exclusion of mono-tube structures, stating their use may be necessary to cross large railroad yards. IPL also stated that mono-tube structures are more structurally sound than other tower types. In responding to IPL, the Iowa Railroad Group contended that the issues are the same whether the tower is a mono-tube structure or a four-legged platform; the risk of injury from a fallen tower is high and the Iowa Railroad Group has no evidence mono-tubes are more structurally sound. The Iowa Railroad Group also contended that rail yards are not an appropriate location for high-voltage structures.

The Board believes that the mono-tube structures being discussed are the steel single pole structures that have been used in recent years for several large transmission line projects in Iowa. These structures can be over 100 feet tall and bolted to concrete foundations typically 6-8 feet in diameter (or larger for angle or dead-end structures). A mono-tube footprint is larger than the footprint for a single wood pole, but less than the footprint for an H-frame (multi-pole) or lattice structure. The Board is not convinced by the evidence and arguments offered in this docket that mono-tubes are less structurally sound than other types of support structures.

The prohibition of towers in the Board rule was intended to avoid large footprint structures on railroad right-of-way. Because of the offset requirements of 199 IAC 42.6(2), it appears unlikely that a mono-tube pole could be placed on the right-of-way of a railroad track, except perhaps in rare instances. However, at the same time, the Board does not believe the intent of the rule is to prohibit from railroad right-of-way any and all transmission line support structures under any circumstances.

The issue here goes beyond the definition of a tower. The Iowa Railroad Group apparently would apply the rule and proposed guideline to block construction of a transmission line through a rail yard. The Board, through its franchise process under Iowa Code chapter 478, regulates the routing of electric transmission lines. Railroads possibly affected by such a proposed routing receive mailed notice of franchise petitions under 199 IAC 11.5(4) and have an opportunity to participate in the franchise proceeding. The merits of a transmission line route that crosses a railway in a particular manner, or a rail yard, are best addressed through the franchise process. If placement of a structure at such a location is necessary, mono-poles may be the best and smallest footprint option. The Board does not support an interpretation of the tower rule that would restrict the Board's routing authority and will delete the phrase "or their equivalent, if other structures are used" from the guideline.

Proposed Guideline 10 recommends that railroads be contacted in advance to determine the location of fiber optic cable and railroad signals. The guideline further

provides that this information will be listed on the Board and individual railroad Web sites and both should be checked.

As noted in earlier discussion, while this is beyond the scope of the rules, the Board believes it is useful information to include in the guidelines, particularly since the railroads do not participate in the Iowa One Call notice and locating service because of a claimed exemption pursuant to Iowa Code § 480.1(8). The railroads are the only source of information on the location of their own facilities, and it would be useful to also include this information on the Board's Web site. However, in order for the Board to include this information on its Web site, the Iowa Railroad Group or the individual railroads must provide the information to the Board.

The Board will take this opportunity to again remind all railroads of the importance of filing emergency contact information with the Board. Subrule 199 IAC 42.4(2) provides:

42.4(2) *Notification plan filing.* Each railroad and public utility with a facility crossing railroad right-of-way shall establish, and file with the board, a mechanism or plan for receiving emergency notifications 24 hours per day, seven days per week.

The emergency contact information received has been posted on the Board's Web site. Of the 13 companies in the Iowa Railroad Group, only three have provided emergency contact information. None of these contacts are identified as sources for fiber optic cable information. The Board will not be able to adopt the language in proposed Guideline 10 until the railroads make the information available for posting

on the Board's Web site. If this information is provided, the Board will also add its web address to the form.

The Board notes that its staff has checked several (but not all) of the individual railroad company sites and was unable to find contact information for cable and signals on those sites. Until the railroads list the information on their Web sites, that reference will be deleted. The Board hopes the information will be provided both for posting on the Board's Web site and the railroads' individual sites so that the proposed guideline references to this information can be restored. Making the contact information widely available should assist the crossing process and minimize the likelihood of any damage to the railroads' cable and signals.

IOWA UNDERGROUND WIRELINE CROSSINGS

This proposed specification exhibit would apply to electric and communications lines crossing railroad right-of-way underneath the railroad. The proposed exhibit submitted by the Iowa Railroad Group presumes the wires or cables will be installed inside a casing. The Iowa Railroad Group argued that the language of the Board's rule (199 IAC 42.6) "speaks for itself" and requires casings. The Iowa Railroad Group also included extensive argument on why it believes casings should be required as a matter of good construction practice. The ITA responded that the Board's rules do not require casings; that the Board's engineering standards for electric and communications facilities (199 IAC Chapter 25), which are incorporated into the railroad crossing rules in 199 IAC 42.6(1), do not require casings; and that the Iowa Railroad Group's arguments regarding electrical hazards or signal

interference are not applicable to communications lines. IPL requested a separate specification exhibit be submitted for uncased crossings.

The Board rule that specifically addresses wireline crossings of railroads, 199 IAC 42.6, “[e]ngineering standards for electric and communications lines,” contains only one reference to casings, which is in subrule 42.6(3)"d." This subrule provides:

d. Casings must extend at least 30 feet from the centerline of the nearest track, measured at a right angle, except that casings for electrical conductors operating at more than 750 volts shall extend the full width of the right-of-way. At burial depths of less than 15 feet below the track, the casing material shall be steel or rigid metal conduit. At depths of 15 feet or more, polyvinyl chloride (PVC) casing pipe may be used.

The Iowa Railroad Group contended that the inclusion of this subrule means casings are required, while the ITA argued that this subrule only describes how casings are to be installed but does not require they be installed.

Whether pipelines should be encased was a disputed issue in the rule making proceeding that resulted in these rules, Docket No. RMU-02-7. The Board specifically required casings for one particular type of pipeline crossing (paragraph 42.7(1)"d" regarding slip jointed water and wastewater pipe), but not for all crossings. With that exception, the Board did not specifically require casings and the technical standards incorporated by reference in the rules do not require casings. The inclusion of standards for casings, if used, does not mandate their use. The Board will modify the proposed specification exhibit to require casing information only if the crossing will be encased.

Note F requires that the method that will be used to install the casing be identified. Consistent with the discussion above, Note F will be revised to apply whether the crossing is cased or uncased. The form currently provides the following options: Dry bore and jack; Tunnel; or Other. IPL and the WUA proposed that horizontal directional drilling (HDD) be added to the list of options. The Iowa Railroad Group responded that it would accept a reference to “dry bore horizontal directional drilling” if the utility is required to provide detailed information on its drilling methodology.

In Docket No. RMU-02-7, the Board adopted rules that specifically permit HDD techniques that use drilling mud. The mud is a semi-liquid bentonite (a type of clay) slurry. It appears adding “dry bore” to HDD could be construed as not allowing this commonly used and well-established installation method. Because the Board believes HDD will be a common method of utility installation, it should be listed as an option on the form; however, the Board will not add any qualifiers or special requirements for HDD’s use.

As with the overhead wire crossing specification form, the underground form’s guidelines have references to measurements being taken at right angles (Guideline 1), a rule reference to 199 IAC 42.7 instead of 199 IAC 42.6 (Guideline 3), contact information regarding fiber optic cable and railroad signal locations (Guideline 13), and information regarding electric lines and substations away from the crossing (Guideline 15). The Board will treat these issues for the underground guidelines in the same way it did for the overhead guidelines.

IOWA ENCASED NONFLAMMABLE PIPELINE CROSSINGS

The proposed specification exhibit for encased nonflammable pipeline crossings would apply to pipelines carrying nonflammable substances, such as water and sewer lines. As was the case with underground wire crossings, some commenters indicated that the title of the specification exhibit appeared to require pipeline casings for all crossings. However, as noted earlier, the Board's rules require only that slip jointed water and sewer pipe must be encased.

199 IAC 42.7(1)"d."

Because casings are not mandatory except in limited circumstances, the proposed specification exhibit will be modified to require casing information only if the crossing will be encased. As was the case for underground wire crossings, the Board will consider future proposals to have separate specification exhibits.

Note E, which is the equivalent of Note F on the underground wireline form, will be revised to apply whether the crossing is cased or uncased. The Board also will adopt the same changes in language to accommodate HDD. This leaves the specification exhibit with three choices—dry bore and jack, tunnel, and HDD. Another category, "other", was proposed for deletion on the exhibit forms submitted by the Iowa Railroad Group. The Board will add "other" back to the form because the Board will not assume that the three options listed will be the only installation methods ever used.

Guideline 1 states measurements on a cross-section drawing are to be taken at right angles to the railroad track. However, at least one of the measurements

requested is not a right-angle measurement. The Board will add the phrase “except as noted” to this guideline. Guideline 7 relates to the same issues as Guideline 10 for overhead wireline crossings, that is, location of fiber optic cable and railroad signals. The Board will adopt the same solution here as it did for the overhead wireline crossings.

The language proposed by the Iowa Railroad Group for Guideline 10 is “[u]nless otherwise authorized by the Railroad, a Railroad representative must be present during the installation of pipeline crossings.” IPL proposed additional language stating that if the railroad is notified but the railroad representative is not present, the installation can proceed and the utility will not be charged for the cost of providing a representative. The WUA noted that the Board rules require the representative be present only if there are underground railroad signal lines in the area.

The WUA rule reference was 199 IAC 42.6(3)"g," which is applicable only to wireline crossings. This subrule provides:

g. Unless otherwise authorized by the railroad, a railroad representative must be present during installation of buried crossings if there are underground railroad signal lines in the vicinity of the crossing.

The paragraph applicable to pipeline crossings is 199 IAC 42.7(2)"f," which provides:

f. For unusually large pipeline crossings that do not involve special circumstances, or for crossings where geotechnical study has identified potentially destabilizing soil conditions, the railroad company may require that a railroad representative be present during installation, and may also require the presence of a survey crew to monitor the tracks for any change in alignment.

It is apparent from the two quotes that the Board intended to specifically prescribe when a railroad representative must be present. Neither the Iowa Railroad Group's language nor IPL's proposed amendment is consistent with the Board's rules. Since Board rules do not require a railroad representative be present at pipeline crossings except as provided in paragraph 42.7(2)"f," the Board will delete Guideline 10.

The WUA noted that PVC pipe is acceptable in Board rules for water and wastewater usage and requested that PVC pipe be added to the list of approved materials in the exhibit guidelines. However, the proposed specification exhibits provided by the Iowa Railroad Group do not include an approved material list. Because the Board's rules specifically allow PVC pipe to be used for water and wastewater pipelines (199 IAC 42.7(1)"c"), no change to the specification exhibit to specifically list PVC pipe is necessary.

IOWA ENCASED FLAMMABLE PIPELINE CROSSINGS

The proposed specification exhibit for encased flammable pipeline crossings would apply to pipelines carrying flammable substances, such as natural gas or petroleum products. The only difference between this proposed specification exhibit and the one for non-flammable pipelines is that the exhibit for flammable pipeline crossings presumes the casing will have vent pipes and therefore additional drawing detail is requested. The guidelines, although numbered a little differently, are identical in the two proposed exhibits, and the Board will adopt the same

modifications to the flammable pipeline crossings exhibit as it did to the nonflammable pipelines crossing exhibit.

CONCLUSION

The Board finds that the proposed specification exhibits, including guidelines, submitted by the Iowa Railroad Group are acceptable and will approve them, with the modifications contained in this order. The specification exhibits and guidelines, as modified by the Board, are attached to this order and incorporated by reference.

The proposed guidelines submitted by the Iowa Railroad Group included a small diagram intended to aid in calculating right-angle distances. The diagram appears to have been scanned electronically and transferred to the point it became blurred and difficult to read. The Board will delete the diagram, but will put it back in the guidelines if a better quality electronic copy is provided.

Also, all the guidelines contain a sentence reading, “[t]he form specifies that one or more available dimensions are requested, but the more dimensions provided will help the Railroad process the application more quickly.” The sentence is awkward and the Board will revise it to read, “[t]he form specifies that one or more available dimensions are requested, but providing additional dimensions will help the Railroad process the application more quickly.”

Finally, the Board notes that while it was able to prepare an electronic version of the specification exhibits, it was unable, due to the format in which the proposed exhibits were received, to prepare a version of the specification exhibits that can be completed electronically by the user. If any interested person provides such a

version, the Board will post it on its Web site. As the exhibits are now, they will have to be printed from the Web site, completed manually, and physically delivered to the railroad.

ORDERING CLAUSE

IT IS THEREFORE ORDERED:

The proposed specification exhibits, including guidelines, submitted by the Iowa Railroad Group are approved, subject to the modifications contained in this order. Copies of the modified specification exhibits and guidelines are attached to this order.

UTILITIES BOARD

/s/ John R. Norris

/s/ Diane Munns

ATTEST:

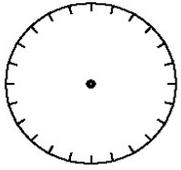
/s/ Judi K. Cooper
Executive Secretary

/s/ Curtis W. Stamp

Dated at Des Moines, Iowa, this 13th day of June, 2006.

IOWA OVERHEAD WIRELINE CROSSING

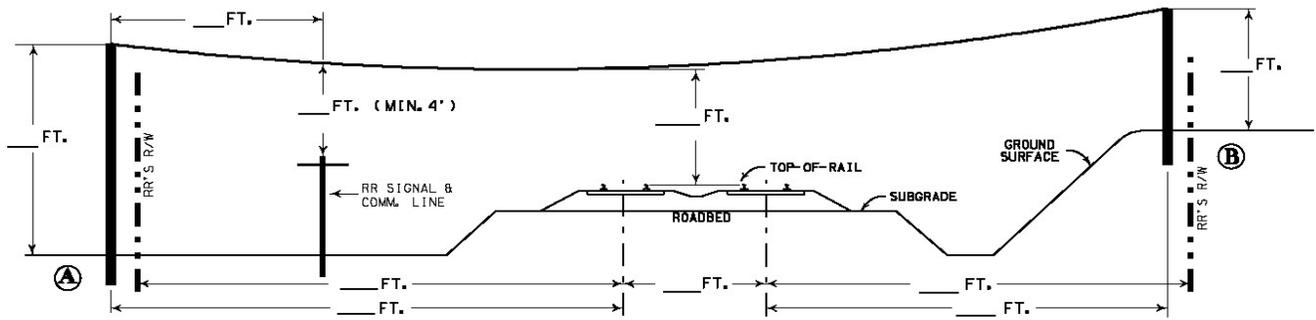
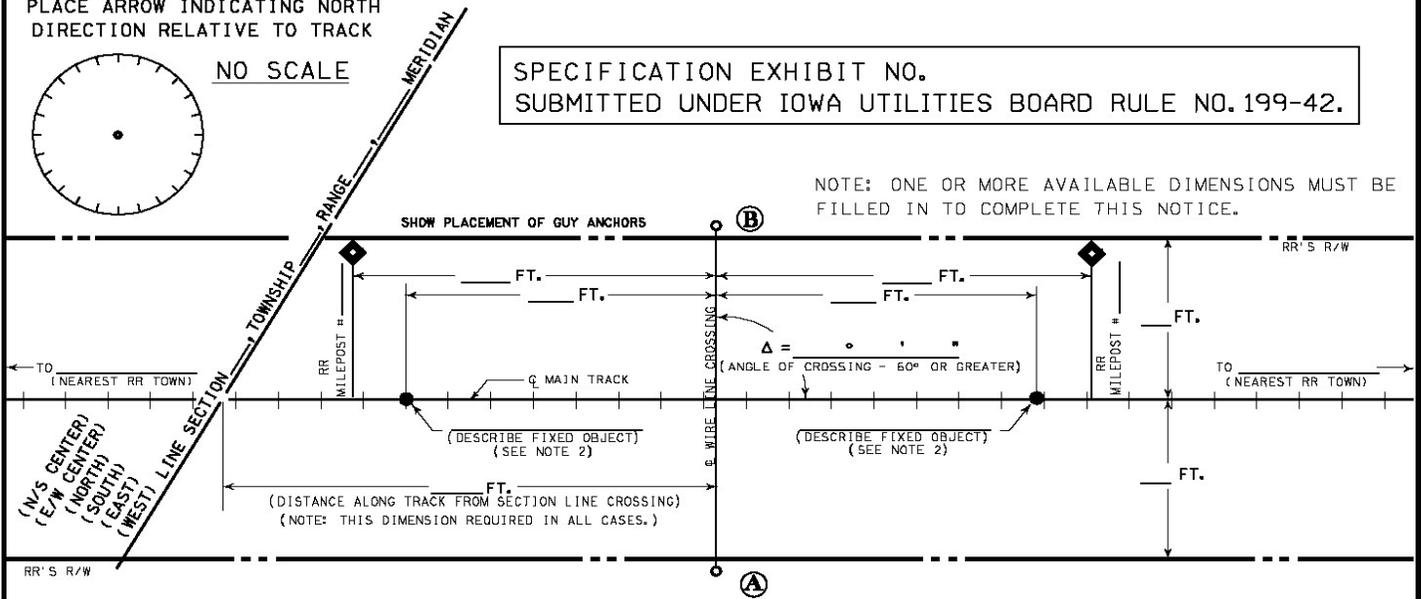
PLACE ARROW INDICATING NORTH DIRECTION RELATIVE TO TRACK



NO SCALE

SPECIFICATION EXHIBIT NO.
SUBMITTED UNDER IOWA UTILITIES BOARD RULE NO. 199-42.

NOTE: ONE OR MORE AVAILABLE DIMENSIONS MUST BE FILLED IN TO COMPLETE THIS NOTICE.



CROSS SECTION AB

- A) IS WIRELINE CROSSING WITHIN PUBLIC ROAD? _____ YES; _____ NO;
- B) IF YES, NAME OF STREET _____
- C) TYPE OF WIRELINE CROSSING: _____ TELEPHONE; _____ TELEVISION; _____ FIBER OPTIC; _____ DISTRIBUTION; _____ TRANSMISSION; OTHER: _____
- D) IS THERE A SIGNAL OR COMMUNICATION POLELINE NEAR THE TRACKS? _____
- E) CIRCUITS TO BE CARRIED ON PROPOSED WIRELINE:
- | CIRCUITS | VOLTAGE TO | | PHASE | NO. OF | | SIZE | MATERIAL | SOLID OR STRANDED |
|----------|------------|---------|-------|--------|-------|-------|----------|-------------------|
| | GROUND | VOLTAGE | | WIRES | WIRES | | | |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
- F) CROSSING SPAN: LENGTH _____ FT.; MAXIMUM CONDUCTOR SAG _____ IN. AT _____ DEGREES F
CALCULATED PER CURRENT NATIONAL ELECTRICAL SAFETY CODE
- G) POLES: MATERIAL _____ LENGTH _____ FT. DEPTH OF SETTING _____ FT.
HEIGHT ABOVE GROUND _____ FT.
- H) HEAD GUYS: NUMBER ON EACH POLE _____; SIZE OR STRENGTH _____; LEAD _____
- I) SIDE GUYS: NUMBER EACH WAY _____; SIZE OR STRENGTH _____; LEAD _____
- J) CONDUCTOR ATTACHMENT: TIES OR CLAMPS _____

FOR RAILROAD REPRESENTATIVE USE

RAILROAD _____ MP _____

SUBDIVISION _____ E.S. _____

_____, IOWA (STATE)

(NEAREST STATION) (COUNTY)

PHONE: _____ RR FILE NO. _____

E-MAIL _____

FOR UTILITY REPRESENTATIVE USE

UTILITY _____ DATE: _____

ADDRESS _____

BY _____ PHONE _____

E-MAIL _____

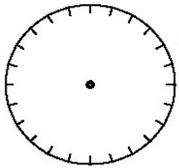
TO BE COMPLETED BY **SMALL UTILITY** AS DEFINED IN THE IUB RULES
I CERTIFY THAT THIS UTILITY QUALIFIES AS A SMALL UTILITY UNDER
IOWA UTILITIES BOARD RULE 199 IAC 42.1.
SIGNED _____ DATE _____

GUIDELINES TO IOWA OVERHEAD WIRELINE CROSSING

1. Horizontal distances, in cross section AB on the Specification Exhibit, to be measured at right angles from centerline of track.
2. Allowable fixed objects include: back walls of bridges, centerline of road crossings and overhead viaducts (give road name), or centerline of culverts.
3. Installation shall be in accordance with Iowa Utilities Board Rule 199 IAC 42.6.
4. In determining the minimum above top-of-rail clearance, the height of a rail car shall be assumed to be 23 feet instead of the 20 feet presumed for most applications by the American National Standards Institute (ANSI) C-2, the National Electrical Safety Code (NESC).
5. Minimum 4' clearance required above signal and communication lines.
6. The perpendicular distance of poles from the center line of the tracks shall not be less than largest of the following:
 - 1) unguyed poles shall be located a minimum distance equal to the height of the poles above ground line plus 10 feet. If guys are installed, they shall be placed in a manner that would prevent the pole from leaning or falling in the direction of the tracks,
 - 2) 50 feet near straight tracks, except for industry track where 10 feet is permitted provided there remains 50 feet from the center line of main line tracks. If located adjacent to curved track, the clearance shall be increased by 1.5 inches per degree of track curvature, and
 - 3) multi-pole or lattice structured towers, if other structures are used, for electric lines capable of operating 34,500 volts or more shall not be located on railroad right of way.
7. Poles shall be located a minimum distance from overhead railroad signal or communication lines equal to the height of the pole above ground line, or must be guyed at a right angle away from such lines.
8. Crossing shall not be install under or within 500 feet of a railroad bridge, or 300 feet from the centerline of a culvert or switch area.
9. The form specifies that one or more available dimensions are requested, but providing additional dimensions will help the Railroad process the application more quickly.
10. It is recommended that the Railroad be contacted in advance for fiber optic cable and railroad signal locations.
11. Nearest Railroad Town means nearest town on the railroad in each direction. If not known, reference Iowa DOT Rail map at <http://www.iowarail.com/industry/maps.asp>.

IOWA UNDERGROUND WIRELINE CROSSING

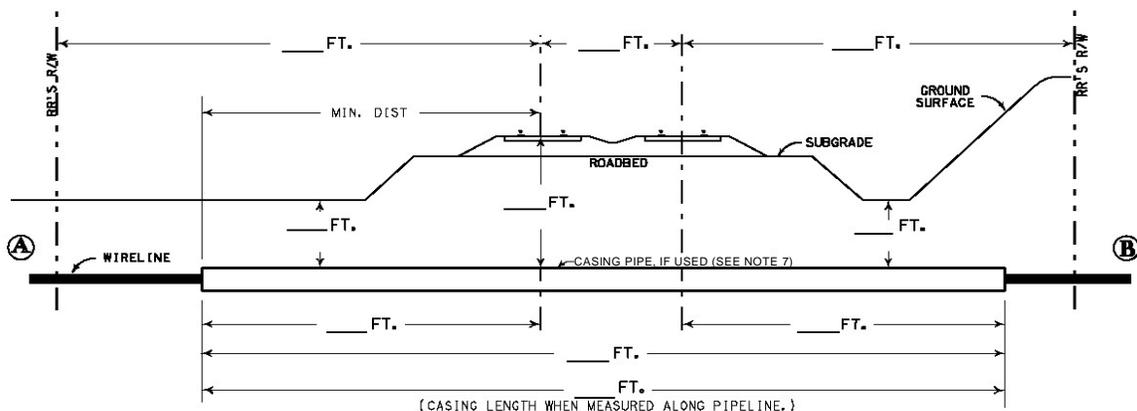
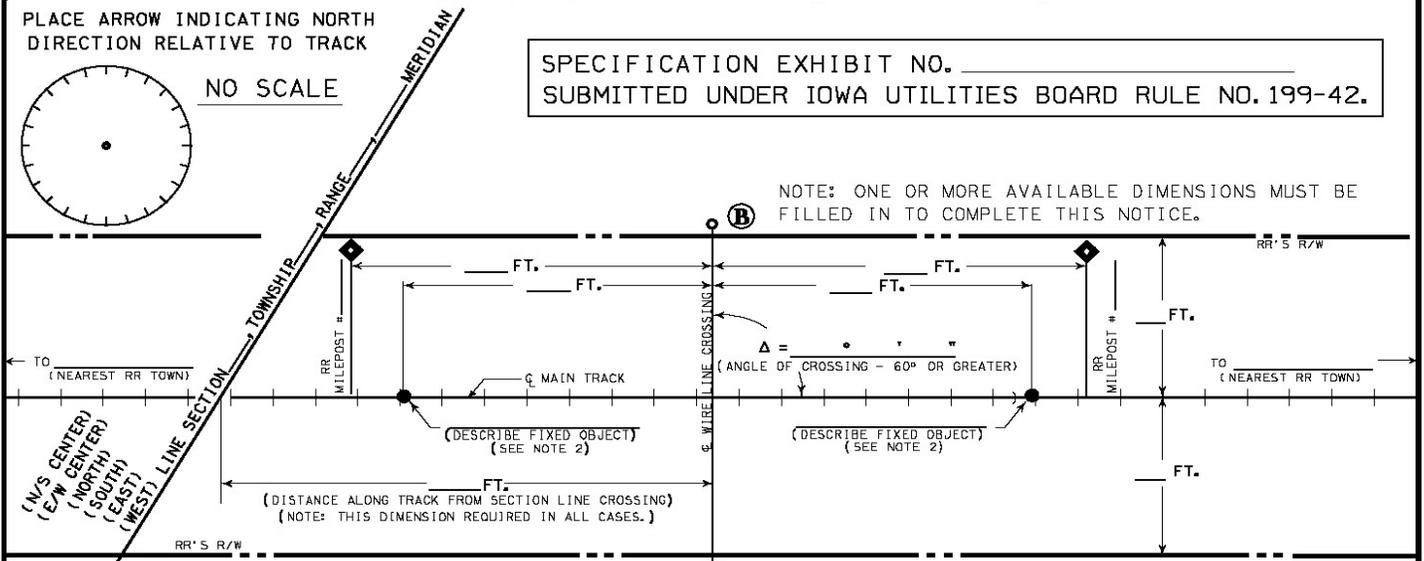
PLACE ARROW INDICATING NORTH DIRECTION RELATIVE TO TRACK



NO SCALE

SPECIFICATION EXHIBIT NO. _____
 SUBMITTED UNDER IOWA UTILITIES BOARD RULE NO. 199-42.

NOTE: ONE OR MORE AVAILABLE DIMENSIONS MUST BE FILLED IN TO COMPLETE THIS NOTICE.



CROSS SECTION AB

FOR RAILROAD REPRESENTATIVE USE

RAILROAD _____ MP _____
 SUBDIVISION _____ E.S. _____
 _____, IOWA
 (NEAREST STATION) (COUNTY) (STATE)
 PHONE: _____ RR FILE NO. _____
 E-MAIL _____

FOR UTILITY REPRESENTATIVE USE

UTILITY _____ DATE: _____
 ADDRESS _____
 BY _____ PHONE _____
 E-MAIL _____

- A) IS WIRELINE CROSSING WITHIN PUBLIC ROAD? _____ YES; _____ NO;
- B) IF YES, NAME OF STREET _____
- C) TYPE OF WIRELINE CROSSING: _____ TELEPHONE; _____ TELEVISION; _____ FIBER OPTIC;
 _____ ELECTRIC; OTHER; _____
- D) VOLTAGE TO BE CARRIED UNDER TRACK _____, NO. OF WIRES _____
- E) IF CASING TO BE USED, TYPE OF CASING TO BE INSTALLED _____
- F) METHOD OF INSTALLATION:
 _____ HORIZONTAL DIRECTIONAL DRILLING;
 _____ DRY BORE AND JACK (WET BORE NOT PERMITTED);
 _____ TUNNEL; OTHER _____
- G) DISTANCE FROM CENTER LINE OF TRACK TO NEAR FACE OF BORING AND JACKING PITS WHEN MEASURED AT RIGHT ANGLES TO THE TRACK _____ (30' MIN.)
- H) DISTANCE TO NEAREST ROAD CROSSING WITH SIGNAL LIGHTS OR GATES (IF LESS THAN ONE MILE) _____

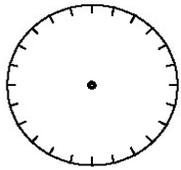
TO BE COMPLETED BY **SMALL UTILITY** AS DEFINED IN THE IUB RULES
 I CERTIFY THAT THIS UTILITY QUALIFIES AS A SMALL UTILITY UNDER
 IOWA UTILITIES BOARD RULE 199 IAC 42.1.
 SIGNED _____ DATE _____

GUIDELINES TO IOWA UNDERGROUND WIRELINE CROSSING

1. Horizontal distances, in cross section AB on the Specification Exhibit, to be measured at right angles from centerline of track, except as noted.
2. Allowable fixed objects include: back walls of bridges, centerline of road crossings and overhead viaducts (give road name), or centerline of culverts.
3. Installation shall be in accordance with Iowa Utilities Board Rule 199 IAC 42.6.
4. The minimum depth below the base of the rail shall be 4.5 feet, except for fiber optic cables, which shall be 5.0 feet.
5. The minimum depth at other locations on the right of way shall be: 1) 5.0 feet for fiber optic cables, 2) 4.0 feet for conductors operating at more than 750 volts, 3) 3.0 feet for all other lines.
6. Crossing shall not be installed within 50 feet of the end of a railroad bridge, the centerline of a culvert, or a switch area.
7. Casings, if used, must extend a minimum of 30 feet from the centerline of nearest track, measured at right angles, except that casings for electrical conductors, if used, operating at more than 750 volts shall extend the full width of the right of way. At burial depths of less than 15 feet below the base of rails, the casing material shall be steel or rigid metal conduit. At depths of 15 feet or more, polyvinyl chloride (PVC) casing pipe may be used.
8. Except for the track and ballast area, warning tape shall be installed one foot below ground level over conductors operating at more than 750 volts, except that tape is not required for lines installed using directional drilling.
9. Bored crossing shall not be installed using water jetting or other methods that might leave cavities beneath the railroad right of way. Pits for boring or drilling crossings shall be beyond the limits of the railroad embankment and railroad live loads.
10. Unless otherwise authorized by the railroad, a railroad representative must be present during installation of buried crossings if there are underground railroad signal lines in the vicinity of crossing.
11. The form specifies that one or more available dimensions are requested, but providing additional dimensions will help the Railroad process the application more quickly.
12. It is recommended that the Railroad be contacted in advance for fiber optic cable and railroad signal locations.
13. Nearest Railroad Town means nearest town on the railroad in each direction. If not known, reference Iowa DOT Rail map at <http://www.iowarail.com/industry/maps.asp>.

IOWA NONFLAMMABLE PIPELINE CROSSING

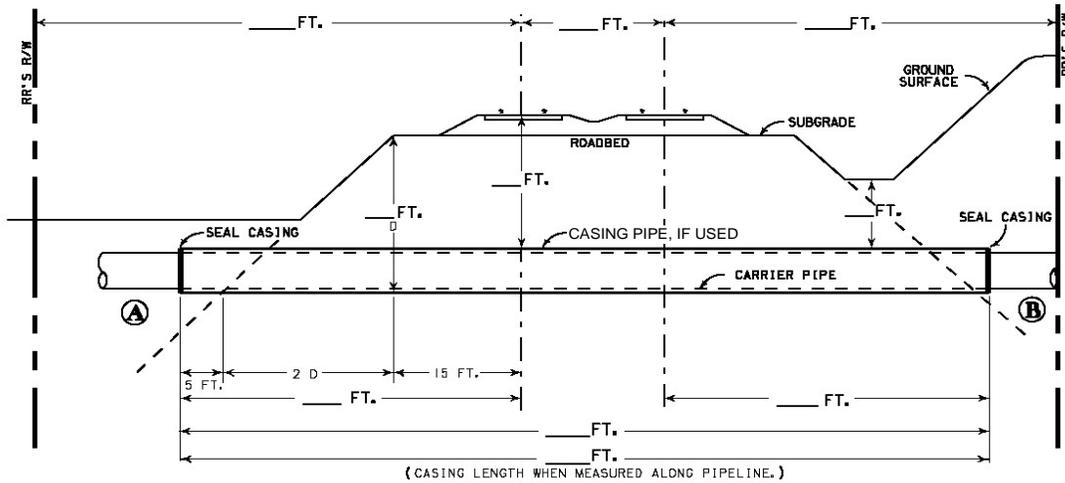
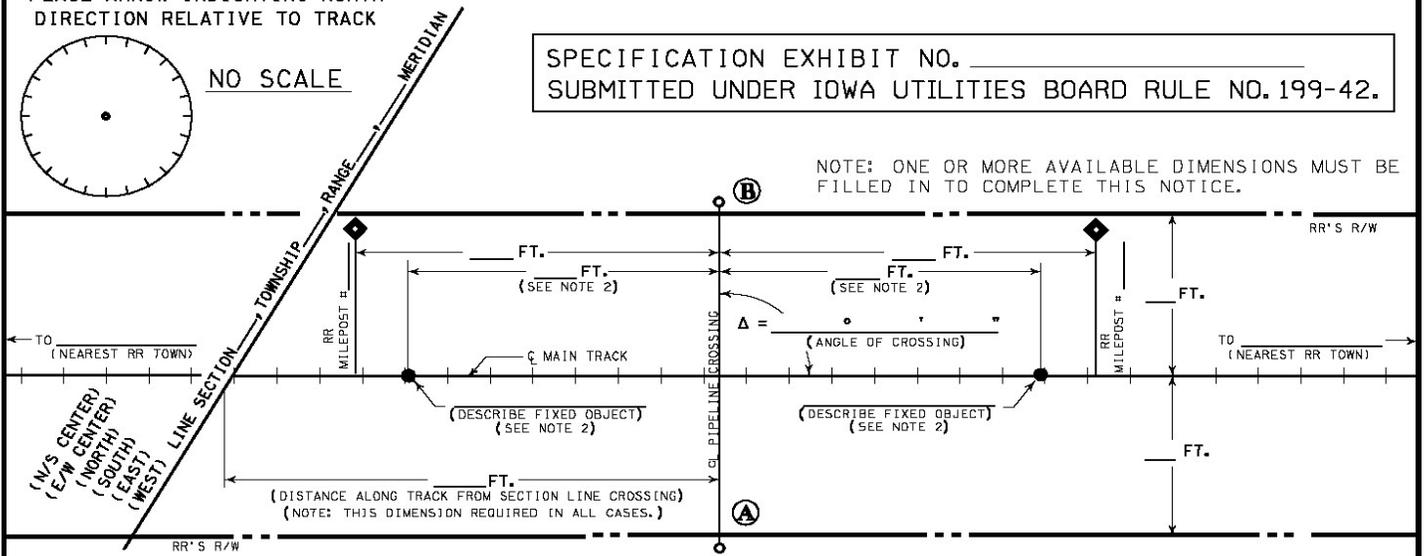
PLACE ARROW INDICATING NORTH DIRECTION RELATIVE TO TRACK



NO SCALE

SPECIFICATION EXHIBIT NO. _____
SUBMITTED UNDER IOWA UTILITIES BOARD RULE NO. 199-42.

NOTE: ONE OR MORE AVAILABLE DIMENSIONS MUST BE FILLED IN TO COMPLETE THIS NOTICE.



CROSS SECTION AB

- A) IS PIPELINE CROSSING WITHIN PUBLIC ROAD? YES; NO;
- B) IF YES, NAME OF STREET _____
- C) CARRIER PIPE:
 COMMODITY TO BE CONVEYED _____
 OPERATING PRESSURE _____ PSIG
 MAXIMUM OPERATING PRESSURE _____ PSIG
 WALL THICKNESS _____; DIAMETER _____; MATERIAL _____;
- D) CASING PIPE, IF USED:
 WALL THICKNESS _____; DIAMETER _____; MATERIAL _____;
- E) METHOD OF INSTALLATION:
 HORIZONTAL DIRECTIONAL DRILLING;
 DRY BORE AND JACK (WET BORE NOT PERMITTED);
 TUNNEL; OTHER _____
- F) WILL CONSTRUCTION BE BY AN OUTSIDE CONTRACTOR? YES; NO;
- G) DISTANCE FROM CENTER LINE OF TRACK TO NEAR FACE OF BORING AND JACKING PITS WHEN MEASURED AT RIGHT ANGLES TO THE TRACK _____ (30' MIN.)

FOR RAILROAD REPRESENTATIVE USE

RAILROAD _____ MP _____
 SUBDIVISION _____ E.S. _____
 _____, IOWA
 (NEAREST STATION) (COUNTY) (STATE)
 PHONE: _____ RR FILE NO. _____
 E-MAIL _____

FOR UTILITY REPRESENTATIVE USE

UTILITY _____ DATE: _____
 ADDRESS _____
 BY _____ PHONE _____
 E-MAIL _____

TO BE COMPLETED BY **SMALL UTILITY** AS DEFINED IN THE IUB RULES
 I CERTIFY THAT THIS UTILITY QUALIFIES AS A SMALL UTILITY UNDER
 IOWA UTILITIES BOARD RULE 199 IAC 42.1.
 SIGNED _____ DATE _____

GUIDELINES TO IOWA NONFLAMMABLE PIPELINE CROSSING

1. Horizontal distances, in cross section AB on the Specification Exhibit, to be measured at right angles from centerline of track, except as noted.
2. Allowable fixed objects include: back walls of bridges, centerline of road crossings and overhead viaducts (give road name), or centerline of culverts.
3. Installation shall be in accordance with Iowa Utilities Board Rule 199 IAC 42.7.
4. Steel Casing Wall Thickness Chart:

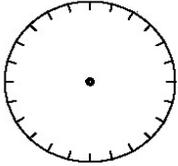
<u>Minimum Thickness</u>		<u>Diameter of Casing Pipe</u>
0.2500"	1/4"	12" or less
0.3125"	5/16"	Over 12" – 18"
0.3750"	3/8"	Over 18" – 22"
0.4375"	7/16"	Over 22" – 28"
0.5000"	1/2"	Over 28" – 34"
0.5625"	9/16"	Over 34" – 42"
0.6250"	5/8"	Over 42" – 48"

or American Railway Engineering and Maintenance Right-of-Way Association (AREMA) Manual for Railway Engineering, Chapter 1, Part 5, Table 1-5-5.

5. The form specifies that one or more available dimensions are requested, but providing additional dimensions will help the Railroad process the application more quickly.
6. It is recommended that the Railroad be contacted in advance for fiber optic cable and railroad signal locations.
7. For unusually large pipeline crossings that do not involve special circumstances, or for crossings where geotechnical study has identified potentially destabilizing soil conditions, the railroad company may require that a railroad representative be present during installation, and may also require the presence of a survey crew to monitor the tracks for any change in alignment.
8. Nearest Railroad Town means nearest town on the railroad in each direction. If not known, reference Iowa DOT Rail map at <http://www.iowarail.com/industry/maps.asp>.

IOWA FLAMMABLE PIPELINE CROSSING

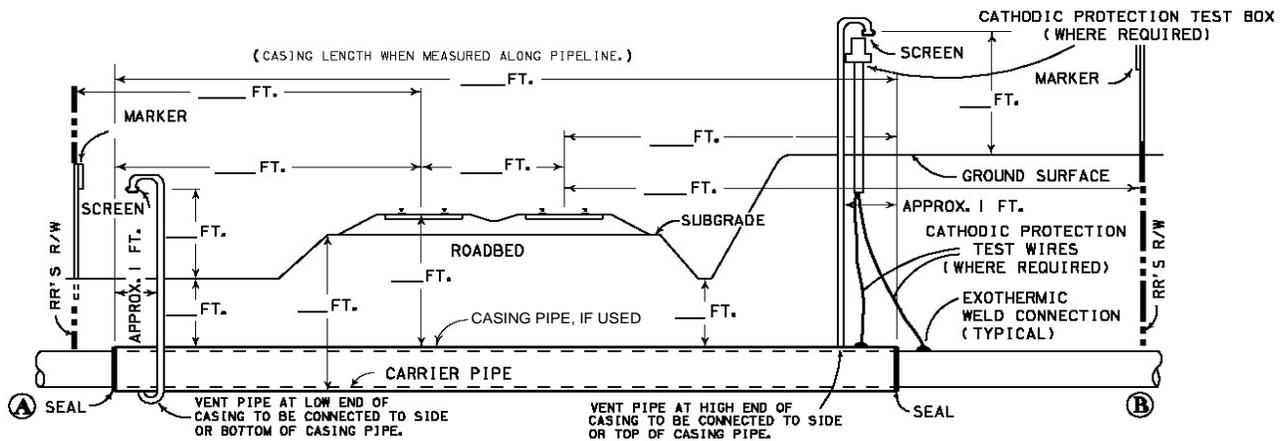
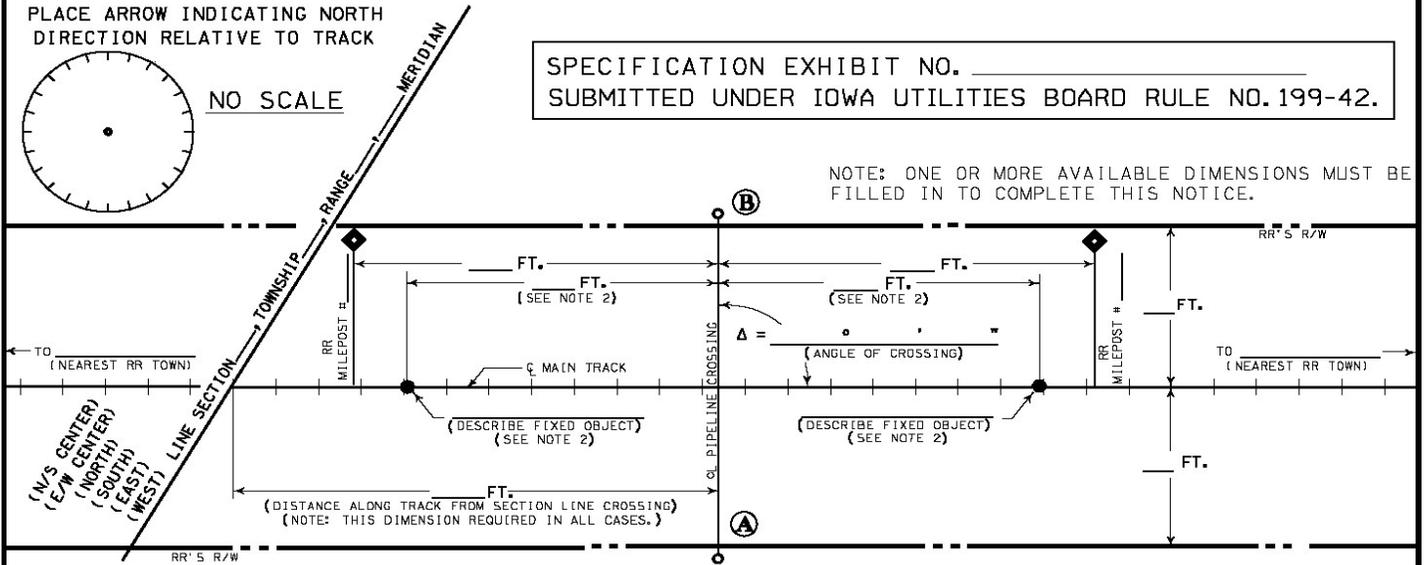
PLACE ARROW INDICATING NORTH DIRECTION RELATIVE TO TRACK



NO SCALE

SPECIFICATION EXHIBIT NO. _____
SUBMITTED UNDER IOWA UTILITIES BOARD RULE NO. 199-42.

NOTE: ONE OR MORE AVAILABLE DIMENSIONS MUST BE FILLED IN TO COMPLETE THIS NOTICE.



- A) IS PIPELINE CROSSING WITHIN PUBLIC ROAD? YES; NO;
- B) IF YES, NAME OF STREET _____
- C) CARRIER PIPE:
 COMMODITY TO BE CONVEYED _____
 OPERATING PRESSURE _____ PSIG
 MAXIMUM OPERATING PRESSURE _____ PSIG
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- D) CASING PIPE, IF USED:
 WALL THICKNESS _____; DIAMETER _____; MATERIAL _____;
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RAILROAD _____ MP _____
 SUBDIVISION _____ E.S. _____
 _____, IOWA
 (NEAREST STATION) (COUNTY) (STATE)
 PHONE: _____ RR FILE NO. _____
 E-MAIL _____

FOR UTILITY REPRESENTATIVE USE

UTILITY _____ DATE: _____
 ADDRESS _____
 BY _____ PHONE _____
 E-MAIL _____

TO BE COMPLETED BY **SMALL UTILITY** AS DEFINED IN THE IUB RULES
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