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July 30, 2020

300943

VIA ELECTRONIC FILING

Ms. Cynthia T. Brown
Chief Section of Administration
Office of Proceedings
Surface Transportation Board
395 E. Street SW, Room 1034
Washington, DC 20024

ENTERED
Office of Proceedings
July 30, 2020
Part of
Public Record

Re: Docket No. FD 36412
Trustees of Joint Drainage Districts Nos. 6 & 56 – Petition for Declaratory
Order

Dear Ms. Brown,

Iowa Northern Railway Company (“INRC”), the respondent in the above-referenced matter, hereby submits its response to the Petition for Declaratory Order filed in the docket under Board rules.

If you have any questions regarding this filing, please contact me at either mbarron@fletcher-sippel.com or 312-252-1511.

Thank you for your assistance in this matter.

Respectfully submitted,

/s/Michael J. Barron, Jr.

Michael J. Barron, Jr.
Attorney for Iowa Northern Railway Company

cc: Robert W. Goodwin (via email)
Kimberly P. Knoshaug (via email)

BEFORE THE SURFACE TRANSPORTATION BOARD

DOCKET NO. FD 36412

**TRUSTEES OF JOINT DRAINAGE DISTRICTS NOS. 6 & 56 —
PETITION FOR DECLARATORY ORDER**

**IOWA NORTHERN RAILWAY COMPANY'S
RESPONSE TO PETITION FOR DECLARATORY ORDER**

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**ATTORNEYS FOR
IOWA NORTHERN RAILWAY COMPANY**

Dated: July 30, 2020

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

DOCKET NO. FD 36412

**TRUSTEES OF JOINT DRAINAGE DISTRICTS NOS. 6 & 56 —
PETITION FOR DECLARATORY ORDER**

**IOWA NORTHERN RAILWAY COMPANY’S
RESPONSE TO PETITION FOR DECLARATORY ORDER**

Iowa Northern Railway Company (“INRC”) hereby responds to the Petition for Declaratory Order filed by the Floyd County, Iowa Board of Supervisors and the Cerro Gordo County, Iowa Board of Supervisors, acting as Trustees of Joint Drainage District Nos. 6 and 56 (“JDD”). As discussed herein, if the Board believes that it would be appropriate for it to address the issue at all in view of the involved state court’s prior ruling, the Surface Transportation Board should declare that the proposed culvert installation under INRC’s rail line embankment would endanger and, accordingly, would unduly interfere with INRC’s provision of rail common carrier service by rail, thus rendering JDD’s attempt to utilize Iowa state law processes to force the installation of the culvert preempted under federal law.

BACKGROUND

JDD has initiated this proceeding because it believes that it is entitled under Iowa law to install a new culvert through an existing INRC embankment, upon which embankment INRC’s main line track is located, and over which multiple trains operate daily. Despite JDD’s contentions,

the proposed culvert project (which JDD alone has selected despite other drainage abatement alternatives that would be less intrusive and dangerous) is not routine, the installation of the culvert threatens the integrity of the embankment through which the culvert would be installed, and JDD has selected this particular project in an effort to shift drainage remediation costs to the railroad and away from itself. Although INRC has explained in detail why JDD's culvert project endangers the embankment and railroad operations over it, JDD has insisted that its preferred approach to drainage abatement (among the options available to it) must be implemented regardless of the risk that INRC has identified.

The drainage remediation project that is at the root of this dispute involves drainage modifications adjacent to and within INRC's right-of-way in Nora Springs, Iowa. The subject section of INRC right-of-way consists of an overpass bridge, known as Bridge 210.8. This concrete bridge was constructed in 1922, replacing a timber trestle. The 1922 plans show that the timber trestle extended at least 15 feet beyond each end of the concrete at both ends of Bridge 210.8. The timber piles from the old bridge were left in place after removing the span from service, and the trestle pilings were covered with earthen fill, such that segments of the older trestle have been replaced with earthen embankments. There are currently four to six trains per day that traverse the Nora Springs segment of the INRC system. In addition to INRC trains, Dakota, Minnesota & Eastern Railroad Corporation (a corporate subsidiary of Canadian Pacific Railway Company and an affiliate of Soo Line Railroad Company), regularly operates trains on INRC's Nora Springs line in order to bypass Mason City, Iowa, thereby reducing congestion at DM&E's Mason City terminal.

Beneath Bridge 210.8 is a road called West Drive. The primary purpose of Bridge 210.8 is to allow vehicular traffic on West Drive to pass beneath the railroad. There has been a road in that same general location since at least 1885, and it was formally known as Primary Road 19. In approximately 1871 or 1872, INRC's predecessor installed Culvert 210.7 to permit the flow of a natural watercourse to traverse the railroad embankment. Culvert 210.7 is a single barrel, stone box culvert that consists of two laid stone foundation walls and stone slab roof. Sometime before 1944, Culvert 210.7 was lengthened with cast-in-place concrete.

JDD's proposed new culvert would be installed to the southeast of Culvert 210.7, and would involve supplementing existing drainage infrastructure, including a culvert that has long supported drainage through the same INRC embankment. The existing culvert is supported by drain tiles proximate to West Street (see the overhead photo attached and incorporated herein as Exhibit A). The existing drainage infrastructure is adequate for current purposes, particularly if JDD had maintained it regularly as it should have. See Exhibit B, Verified Statement of Peter J. Schierloh ("V.S. Schierloh"). Although, by state law, drain tile upkeep has been JDD's responsibility since 1918, JDD consistently has neglected the drainage system, except in 1976, when JDD replaced some of the drainage tiles. The current project is the product of JDD's failure to maintain its drainage system, and its culvert proposal is but one option to address JDD's drainage concerns.

JDD evaluated three options to address drainage issues that it believed bear on the flow of a natural waterway through the embankment. Those options are described in an Engineer's Report prepared at JDD's direction ("Engineer's Report" attached and incorporated herein as Exhibit C), are detailed in the V.S. Schierloh, and consist of the following:

Option No. 1: Replace the section of Main No. 1 tile from West Drive to the existing outlet at South Hooker Avenue in-kind with an equivalent 18" pipe. This would include replacing the section of Main No. 1 tile that passes beneath West Road under INRC's Bridge 210.8,

subject to the provisions of the 1918 Agreement. Silt would be removed from the open ditch at the downstream end of Main No. 1, the natural waterway would be cleaned, and a section of Main No. 1 tile would be replaced.

Option No. 2: Remove a section of Main No. 1 tile from West Drive to the existing outlet at South Hooker Avenue and replace it with an open ditch, including the removal of the section of Main No. 1 tile beneath West Road under INRC's Bridge 210.8. Install a large pipe or concrete box culvert to carry water from the open ditch through the INRC embankment.

Option 3: Replace the section of Main No. 1 tile from the West Drive to the downstream side of the INRC embankment in-kind with an equivalent 18" pipe, including the section of Main No. 1 tile beneath West Road under INRC's Bridge 210.8. From the downstream side of the INRC embankment to the existing outlet at South Hooker Avenue, the existing Main No. 1 tile would be replaced with an open ditch.

Notably, Options 1 and 3 would have involved corrective actions to address JDD's longstanding deferred maintenance of the drainage system that would be undertaken at JDD's expense. Option 2, on the other hand, involved a more extensive and invasive process within INRC's right-of-way and the embankment and would, if implemented, allow JDD to shift all of the project costs to the railroad. The Engineer's Report had endorsed Option 1 as the overall best corrective plan for area drainage (Exhibit C, page 15). Nevertheless, JDD selected Option 2, and the circumstances indicate that JDD did so in order to shift project costs to INRC, and, predictably, JDD's engineer promptly shifted its recommendation thereafter to the one preferred by his client.

Option 2 entails a new culvert installation (and diversion of the natural waterway supported by the existing box culvert) in which a substantial hole would be bored into INRC's embankment, which possesses unknown structural characteristics and known timber obstructions. JDD's proposed open ditch would replace the existing closed drainage tile, but the ditch will capture and artificially channel the surface water, carrying the surface water away from the natural waterway (V.S. Schierloh at 8). The proposed culvert and open drainage ditch are designed as an artificial drainage system, and as such do not possess the proper slope to self-clean of silt in the same manner the natural waterway carried by Culvert 210.7 has for the last 141 years. If JDD fails to clean silt

from the Option 2's open ditch from the areas outside of INRC's right-of-way, the ditch will silt in and fail to function both as a drainage system and as natural waterway. Failure of the natural waterway to function due to JDD's lack of maintenance of their drainage system (and past experience has shown that JDD has a poor track record of maintenance of this drainage system) will result the impoundment of water around the INRC embankment, softening of embankment fill and underlying native soils due to water saturation, and embankment failure. Option 1, on the other hand, would not endanger the embankment or interfere with safe railroad operations (V.S. Schierloh at 6).

The proposed culvert project is anything but a minor operational and railroad safety concern. INRC's embankment has been constructed using earthen fill, covering portions of a timber trestle, which is likely buried within the embankment. The proposed culvert installation would entail a "jack and bore" process. INRC is concerned that the jack and bore culvert installation process will encounter the trestle timbers, either forcing the suspension of the excavation at that location (despite the removal of substantial amounts of earthen fill supporting the railroad line in the process), prompting the separate step of cutting through the trestle timbers, which poses significant chances of causing embankment collapse or subsidence (V.S. Schierloh at 10-13).

JDD has not, and cannot, ensure that the installation of the new culvert will protect the integrity and stability of the embankment, or that the project would prevent against shifts in embankment material that would result in subsidence or collapse that could, in turn, jeopardize the railroad line atop the embankment and train operations over it. While acknowledging that concern, JDD blithely dismisses it by pointing to an electronic monitoring system that it has recommended be deployed in the culvert installation process would detect track alignment changes. But such a detection system will only detect shifts as they occur; it will not predict them, nor will it prevent

against them (V.S. Schierloh at 12). JDD cannot assure that its preferred drainage plan – involving jack and bore method – will protect the INRC embankment integrity or assure that the process will protect against unsafe track conditions atop the embankment.

This is not a straightforward crossing of railroad property that has only an incidental effect on rail transportation, as JDD suggests. Rather, it is a massive infrastructure intrusion on an active rail facility, namely an active railroad line embankment.

PRELIMINARY MATTER

This proceeding stems from an order of the Iowa District Court for Floyd County (the state court), which concluded that federal law preempts JDD's efforts to force its embankment project upon INRC, and, in keeping with that holding, directed JDD to "refrain from installing a culvert" within INRC's embankment "unless and until [JDD has] obtained authority or directive allowing it to proceed [with the installation of the culvert] from the Surface Transportation Board." Iowa District Court Order, April 3, 2020, at 2. In turn, JDD has requested a Board ruling that 49 U.S.C. § 10501(b) does not preempt JDD's invocation of its asserted authority under Code of Iowa Sections 468.109 through 468.113 to force the installation of the proposed steel culvert into and through INRC's railroad embankment. The Iowa court's order and JDD's petition differ with respect to the nature of the order that each expects from the Board, but JDD's Petition is more in keeping with the sort of action that the Board could take in a declaratory order proceeding. In any event, INRC understands that, even if the Board were to render a formal declaration in this proceeding, such a determination would not, and could not, authorize or direct JDD to proceed with its proposed ditch and culvert project.

On a related note, JDD's Petition is predominantly a recitation of the unfolding of the state court litigation to this point, combined with collection of pleadings and decisions taken from that pending case, to which JDD has devoted roughly one page of cursory legal argument. It is thus unclear whether or not JDD truly expects that the Board will rule definitively on the issues presented, given the limited information that JDD has supplied, or whether it expects that the Board will direct a more robust development of the record.

Also, because the State Court has rendered an opinion on the ICCTA preemption issue under the same facts that JDD has presented here, it is unclear whether a "case or controversy" exists warranting what would be, in essence, supplemental Board adjudication.

ARGUMENT

The parties do not dispute that the INRC railroad embankment through which JDD intends to compel the installation of a new culvert is an instrumentality of railroad common carrier transportation, and, accordingly, that ICCTA preemption considerations are relevant. On that note, ICCTA defines rail transportation "expansively to encompass any property, facility, structure or equipment 'related to the movement of passenger or property, or both, by rail, regardless of ownership or an agreement concerning use.'" *14500 Limited LLC -Petition for a Declaratory Order*, FD 35788 (STB served June 5, 2014), 3 (quoting 49 U.S.C. §10502(b)). Clearly, the Iowa District Court recognized that ICCTA would preempt the enforcement of *Iowa Code* Chapter 468 (the "Drainage Code") where such enforcement would have the effect of managing or governing the use of railroad facilities. But JDD alone wishes to be the sole arbiter of whether its plans to assert control over INRC's right-of-way and infrastructure in an effort to shift remedial expenses to the railroad would not impair safe railroad operations over the affected embankment.

It is important to bear in mind that the state court, having examined pertinent ICCTA jurisprudence and the very same evidence and argument that JDD has offered with its Petition,¹ reasonably has determined that JDD's enforcement of the Drainage Code would so threaten INRC operations to render JDD's efforts preempted under ICCTA. Nevertheless, JDD has prevailed upon the state court to relent in its ruling to the limited extent that the court has agreed to allow JDD to see if the Board would second-guess the state court's holding. The state court has added that it will lift its ICCTA preemption-driven prohibition against culvert installation only if the Board were to *authorize* or *direct* the JDD to proceed with its culvert plans. So the questions are whether or not the evidence presented supports a reversal of the state court's ICCTA preemption holding, or whether the Board is content to allow the state court to evaluate the evidence, consult relevant precedent, and reach its own conclusions, as it has. In any event, JDD has not pointed to any Board authority under which it could authorize or direct JDD to undertake the drainage project at the INRC embankment as JDD would prefer to do, and INRC is unaware of any.

Finally, as to the pertinent standard, INRC would agree that, because the proposed culvert installation is akin to the condemnation of a crossing through (or beneath) INRC's operational right-of-way, the Board would need to engage in an as-applied ICCTA preemption analysis: whether JDD's efforts under state law to force a crossing would unduly interfere with, or threaten significant disruption to, INRC's rail common carrier activities and, therefore, would be federally preempted, just as the state court already has concluded. And INRC would tend to agree that the legal concepts generally articulated in *Maumee & Western Railroad Corporation & RMV Ventures, LLC – Petition for Declaratory Order*, FD No. 34354 (STB served Mar. 3, 2004), 2 (“*Maumee & Western*”) are apropos, specifically that “routine, non-conflicting uses, such as non-

¹ See Iowa District Court Order, Attached as Exhibit L to JDD's Petition.

exclusive easements for at-grade road crossings, wire crossings, sewer crossings, etc., are not preempted so long as they would not impede rail operations or pose undue safety risks.” Applying that standard to the pertinent facts, however, JDD would be prohibited under federal law from forcing a new culvert through INRC’s embankment.

The proposed culvert installation, along with the added ditching that would re-channel an existing, natural waterway in such a fashion that the altered watercourse will fail to function as natural waterway, waterlogging the site and softening the INRC embankment is hardly a routine matter, and JDD has not proven, and cannot prove, otherwise. The culvert installation will impede rail operations and poses undue railroad safety risks. In support of its case against ICCTA preemption, JDD has simply deposited the Iowa District Court documents with the Board, and now demands in entirely conclusory fashion that the Board hold, “pursuant to” *Maumee & Western* and the cases it has cited to thereafter, that its efforts to force the culvert installation under state law are not federally preempted, regardless of what the state court had determined. Petition at 9-10. JDD makes no attempt to apply the facts here to those of the cases upon which it relies. Rather, it simply has offered the same case that it presented to the state court, and has requested that the Board render an opinion that contradicts the judgement of the state court on a matter that the Board has long recognized is “typically resolved” by such courts. *Maumee & Western* at 2.

Assuming the Board were to accept JDD’s invitation to second-guess the state court, the cases upon which JDD relies do not support the “no preemption” finding that JDD seeks. To begin with, *Maumee & Western* merely articulates the as-applied standard for routine crossing cases; it did not apply that standard to the facts in that proceeding, and thus compels no particular outcome. Second, *New York Susquehanna v. Jackson*, 500 F.3d 238, 254 (3rd Cir. 2007) (which JDD incorrectly cited to as “550 F3d 238”) is not a crossing case at all. It merely discusses *Maumee & Western* for the general standards of as-applied analysis, and it is not helpful for the proposition

for which JDD appears to have raised it. *Adrian & Blissfield Railroad Company – Petition for Declaratory Order*, FD 36148 (STB served Jan. 31, 2018) also is not a crossing case, although it does address a non-exclusive easement. But, in that case, the Board declined to rule on the ICCTA preemption issue, and instead entrusted that issue to the court. Finally, *Adrian & Blissfield R. Co. v. Village of Blissfield*, 550 F.3d 533, 541 (6111 Cir. 2008) strictly focused on whether the costs that a railroad would incur if required under state law to fund a pedestrian crossing of its tracks was sufficient to find that the requirement was preempted by ICCTA – it did not address safety or operational impacts issues, as are present here.

Eastern Alabama Railway LLC – Petition for Declaratory Order, FD 35583 (Mar. 8, 2012) (“*Eastern Alabama*”) is perhaps instructive, but not necessarily for the reasons for which JDD seems to think. To begin with, that case was initiated at the Board by court referral, where the involved U.S. District Court, unlike the state court here, resolved *not* to address the ICCTA preemption issue itself. Second, that case involved a thorough development of the administrative record by both sides – something that JDD seems intent to shortcut by simply asking the STB to reach the opposite conclusion of the state court using the same evidentiary record upon which the state court had relied. Finally, JDD has made no attempt to demonstrate that it would, in its proposed embankment excavation, adhere to American Railway Engineering and Maintenance-of-Way Association standards, as the Utilities Board committed to do in *Eastern Alabama*. In fact, it is unclear whether any of the alleged experts that JDD as pointed to in support of its arguments before the state court – including the presumably non-expert wife of the Manager of Field Operations of Precision Tunneling – have much, if any, experience working in and around railroad lines, and, thus, it is impossible to ascertain the basis of their collective, conclusory contentions that the tunneling that JDD would ask them to assist with would not unduly interfere with railroad operations and would not compromise the structural integrity of the embankment.

In addition, JDD mistakenly assumes that, because it is proposing a project that involves a form of crossing of railroad right-of-way, the project must be categorized as routine *per se*. The Board and the courts are not prone to such a simplistic, reflexive analysis. Rather, applicable jurisprudence supports a case-by-case assessment to differentiate the truly routine, from the problematic, and a finding of preemption where dangers and meaningful potential for operational impact exist. *See, e.g., The City of Ozark, Ark. – Petition for Declaratory Order*, FD 36104 (STB served Jul. 28, 2017), 4 (“To determine whether the action is preempted as applied, the Board analyzes the facts and circumstances of the case”); *Tri-City R.R. – Petition for Declaratory Order*, FD 35915, (STB served Sep. 14, 2016); *and see also City of Breaux Bridge v. Union Pacific R. Co.*, 2018 WL 6710649 (W.D. La. Dec. 20, 2018). In keeping with these cases, the Board should find preemption to apply here if it decides that a declaratory order is warranted at all.

And, contrary to JDD’s self-serving accusations, INRC’s concerns are driven by serious railroad safety concerns. The culvert and corresponding ditching to alter the involved natural watercourse flow toward the proposed new culvert are very unsafe, and the risk is all the more noteworthy because JDD’s own engineering analysis shows that the dangers of excavation are entirely avoidable. INRC has concluded that the use of the jack and bore excavation method at the proposed location is inherently dangerous. In this particular instance the proposed culvert construction is unsafe and dangerous due to the prospect that such boring and related construction work will encounter buried bridge timbers that will require the excavation to stop or, if it were to proceed thereafter, to cause the embankment to collapse or subside (V.S. Schierloh at 10-12). Also, INRC has determined that JDD’s proposal to re-align the flow of the natural watercourse to bypass the existing culvert will only add to silting that will eventually plug the culvert and undercut the embankment (V.S. Schierloh at 8).

INRC is not basing its arguments on speculation. Careless work on subterranean crossings of railroad right-of-way can, and sometimes do, result in disaster. Consider, for example, the situation that befell Wisconsin Central Ltd. (“WCL”) at Plainfield, Illinois, on June 30, 2017, as detailed in the pre-filed testimony of WCL counsel, John Furlan, before the Illinois Commerce Commission in docket number 18-0795 (“Furlan Testimony”), an excerpt of which is attached and incorporated herein as Exhibit D. In that case, careless excavation activities associated with the maintenance of an existing Northern Illinois Gas Company (“NICOR”) gas line, including the use of the jack and bore methods JDD proposes to use here, caused WCL’s roadbed in the vicinity of NICOR’s field work beneath the WCL right-of-way to subside, resulting in a massive derailment of a loaded oil train. WCL investigated the cause of the derailment as did the Federal Railroad Administration (“FRA”), and both concluded that NICOR’s subterranean activity beneath the railroad right-of-way weakened the track sub-structure and caused a sinkhole to form (Furlan Testimony, Exhibit D, pages 4-17, and the FRA investigation report, attached and incorporated herein as Exhibit E). Estimated total WCL losses from the derailment are in excess of \$10,000,000 (Furlan testimony, Exhibit D, page 9). Instances such as these reveal that there is no place for cavalier decision making when it comes to the safety ramifications of subterranean work within railroad rights-of-way, and no reason to accept JDD’s thoroughly cost-driven preference for dangerous embankment excavation.

Finally, JDD contends, ironically and utterly without support, that INRC is not genuinely motivated here by safety concerns, but rather by economic considerations. To be sure, INRC objects to the notion that JDD can simply pass the buck when it comes to JDD’s extended neglect of the drainage system proximate to the INRC embankment, particularly where, in doing so, JDD has decided against its engineer’s own recommendation in favor of the above-referenced Option 1 in order to shift the costs to INRC. And it would be inappropriate for JDD to use this declaratory

order proceeding in an attempt to persuade the STB to allow JDD shift remedial costs away from itself, when the state court was not so persuaded. But, to be very clear (and setting aside JDD's troubling cost allocation double-standard), INRC would object to JDD's ditching-and-culvert construction proposal even if JDD were to assume all of the costs of such an undertaking, because JDD's preferred approach unreasonably and unnecessarily endangers the embankment and railroad operations over it for the reasons discussed above and in the V.S. Schierloh.

Disputing INRC's judgment is merely an attempt to "second guess" operating and managing of its own railroad, an action the Iowa Supreme Court recently found expressly preempted.² *Griffioen v. Cedar Rapids & Iowa City Ry. Co.*, 914 N.W.2d 273 (Iowa 2018). The *Griffioen* court cited with favor other cases involving culverts and water drainage or flood control that are pertinent to the preemption issue raised by the JDD's attempt to forcibly enter INRC's land, install a culvert through its rail bed, and force it to pay for the culvert as well as other costs and attorney's fees.

A & W Props., Inc. v. Kansas City S. Ry., 200 S.W.3d 342 (Tex. App. 2006) is also instructive, in that it supports the proposition that forced modifications to an existing railroad drainage system constitute impermissible local regulation of railroad facilities. The *A & W Props.* court phrased the determinative issue this way: "The question for this Court is whether A & W's claims and the remedies they seek involve 'regulation of rail transportation.'" *Id.* at 351 (quoting 49 U.S.C. § 10501(b)). A & W argued that there was no preemption because its claims were derived from the "traditional Texas police power of flood control" and flooding was a public safety concern. The court rejected both arguments. It ruled that the ICCTA had no exception for police

^{2/} The affidavits from JDD are also not reassuring. If the track shows movement of more than a quarter of an inch, the boring will be stopped. Then what? And the argument that the contractor has to have \$5,000,000.00 in insurance (and inferentially that if something goes wrong suit can be brought against the contractor) supports the fact that INRC's operations are at risk.

powers under the ICCTA preemption language. *Id.* 347. It held that because the remedy sought involved the reconstruction and future maintenance of the railroad's culvert under its tracks, the claims involved the regulation of rail transportation and hence all of the claims, including the statutory ones, were expressly preempted by ICCTA. *Id.*

Case law subsequent to *Eastern Alabama* also make it clear that culvert crossings that go through the railroad track structure are not "routine," but can regulate railroad operations impermissibly. *Waubay Lake Farmers, Ass'n v. BNSF Ry. Co.*, 2014 U.S. Dist. LEXIS 120160 (S.D. S.D. 2014) (Unpub. Op.) held that ICCTA pre-empted the plaintiffs' property flooding claims against BNSF Railway Company premised upon an assertion that an undersized culvert beneath the railroad bed was the flood cause and required a replacement culvert with increased capacity. The *Waubay* plaintiffs contended that the BNSF had a duty to build an increased-sized culvert to meet the plaintiffs' current water flow needs. Op. at *6. The court found that such a claim would "logically" require the railroad to stop using its tracks to eliminate the existing culvert and demolish or rebuild its railroad in some manner to increase water flow via a culvert. *Waubay* at * 17.

CONCLUSION

The state court has determined, under an as-applied analysis, that JDD's efforts to invoke state law to compel the installation of new ditching along INRC's railroad line and to install a new culvert within an INRC railroad line embankment is preempted under ICCTA. The Board need not second-guess, or otherwise overrule the state court. Accordingly, JDD's petition for a declaratory order should be denied. But, in the event that the Board determines that it will second-guess the state court's judgment on the matter, the evidence does not support a finding that JDD's proposal involves a routine crossing undertaking or that the proposed project will not unduly interfere with railroad operations or subject INRC and DM&E to unacceptable safety risks,

particularly where safer alternatives exist that JDD wants to avoid due to the costs it would incur, rather than INRC.

WHEREFORE, the Board should either deny the Petition, or, in the alternative, effectively uphold the state court's ICCTA preemption ruling.

Respectfully submitted,

By: /s/Michael J. Barron, Jr
Michael J. Barron, Jr.

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ATTORNEYS FOR IOWA NORTHERN RAILWAY

Dated: July 30, 2020



	EXHIBIT	JDD 6 & 56 IOWA NORTHERN RAILWAY COMPANY 305 2ND ST. SE., CEDAR RAPIDS, IOWA 52401	EXHIBIT A
	A		
	1" = 100'		
	10/06/2016		

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

DOCKET NO. FD 36412

**TRUSTEES OF JOINT DRAINAGE JDDS NOS. 6 & 56 —
PETITION FOR DECLARATORY ORDER**

**VERIFIED STATEMENT
OF**

**PETER J. SCHIERLOH,
PROFESSIONAL ENGINEER**

**ON BEHALF OF
IOWA NORTHERN RAILWAY COMPANY**

I. INTRODUCTION AND PROFESSIONAL QUALIFICATIONS

I am a professional engineer, licensed in Iowa, employed by SW Bridge Engineers, LLC, of DeForest, Wisconsin. I am Iowa Northern Railway Company's ("INRC") designated Railway Bridge Engineer (RBE) and Railway Bridge Inspector (RBI). I have had professional engineering involvement with Iowa Northern's bridges and culverts since 2008.

I have personally inspected the railroad bridge over West Drive and Culvert 210.7 in Nora Springs, Iowa. I have, in part, reviewed and analyzed the Engineer's Report for Proposed Repairs or Improvement Main No. 1 Joint Drainage No. 6 and 56, dated February 25, 2014 (attached and incorporated herein as Exhibit C), the Joint Drainage JDD No. 6 & 56 Main No. 1 Open Ditch Improvements Project Plans served in conjunction with Notice Pursuant to Section 468.109 dated June 22, 2016, marked Preliminary, Title Sheet Issue Date October 27, 2014, and the Joint Drainage JDD No. 6 & 56 Main No. 1 Open Ditch Improvements Project Plans, Title Sheet Issue Date August 22, 2016, Final Plans. My opinions are based upon my personal knowledge and review of use of jack-and-bore in railroad settings, my training, education, and experience as an engineer, and my work affiliation with the INRC.

II. BACKGROUND OF THE RAIL EMBANKMENT AND DRAINAGE JDD IMPROVEMENTS

A. The Construction of the Railroad in 1871.

The Burlington, Cedar Rapids & Northern Railway ("BCR&N") constructed a railroad over the natural watercourse near Nora Springs in 1871. The railroad embankment runs in a northwesterly direction and crosses the natural watercourse 2,310 feet upstream from the outlet of the natural watercourse into the Shell Rock River.

B. The Location of the Railroad and the Natural Waterway.

The natural waterway passes through the INRC rail line in its natural position and has not been relocated by ditching, levees, or other manmade structures.

C. The History of Iowa Northern's Railroad Ownership and its Current Operations.

The BCR&N was consolidated into the Chicago, Rock Island & Pacific Railroad system, which operated the railroad until entering bankruptcy in 1980. The tracks were inactive for several years after bankruptcy until the INRC progressively re-opened the former BCR&N route between Cedar Rapids and Manly, Iowa starting in 1984.

Today, INRC operates over 253 miles of track in northeast Iowa as a Class III railroad. Four to six trains use the INRC track in Nora Springs on a daily basis throughout the year. These include both INRC trains, as well as Canadian Pacific Railway trains operating over the Iowa Northern Railway track between Nora Springs and Plymouth, Iowa to reduce the number of trains operating through Mason City, Iowa.

D. The Construction of Culvert 210.7 Circa 1871.

The BCR&N provided a structure to pass water through the railroad embankment at or near the location of the existing natural watercourse. No records exist indicating the exact year when Culvert 210.7 was constructed.

The main body of Culvert 210.7 is a single barrel stone box culvert that consists of two laid stone foundation walls and stone slab roof. Nearby stone structures constructed by the BCR&N have construction dates ranging from 1879 to 1889. Amongst structures that we have confirmed build dates on for BCRN line between Cedar Rapids and Manly, Iowa there are no new

structures that were built of stone after 1900. At some point the culvert was lengthened with cast-in-place concrete. Based on photographic evidence, this occurred prior to 1944.

Based on the construction practices of the predecessor railroad and photographs, it is my opinion that Culvert 210.7 was constructed in approximately 1871 or very shortly after the railroad opened. It was lengthened with cast-in-place concrete before 1944.

E. The Current Condition of Culvert 210.7.

I first inspected INRC Culvert 210.7 on November 11, 2013, and again on October 25, 2016. The culvert was also inspected by Mr. Mike Murdaugh, an inspector employed by SW Bridge Engineers, LLC, on July 8th, 2016. The purpose of these inspections was to determine whether Culvert 210.7 was functioning adequately by allowing the passage of the natural watercourse through the INRC embankment and maintaining the integrity of the railroad embankment.

1. The culvert is not in danger of collapse.

All three of these inspections determined that the Culvert 210.7 was functioning adequately as designed, which is to provide an opening through the INRC embankment allow the free passage of the natural watercourse, and there is no indication that it will cease to function as designed for the next three years. It meets all current safety regulations.

2. The Railroad Bridge and West Drive.

Iowa Northern Bridge 210.8 lies 30 feet to the northwest of Culvert 210.7. The primary purpose for Bridge 210.8 is to provide an opening for West Drive to pass underneath the railroad.

Bridge 210.8 was constructed in 1922 and replaced an existing timber trestle that previously carried the railroad over Primary Road 19, which was the name of West Drive at that time. Historic mapping of the Nora Springs area indicates that a roadway in the same general location as West Drive existed as early as 1895.

The current bridge is a single span bridge consisting of concrete encased steel beams resting on concrete abutments. The concrete abutments rest on spread footings without the use of foundation piles.

A timber trestle that the current bridge replaced is shown on the 1922 plans for the bridge. The 1922 plan shows that previous timber trestle extended at least 15 feet beyond each end of the current concrete bridge. Standard practice was and is to leave the timber piles in place after removing a timber bridge from service and burying it new fill.

3. Flooding of West Drive - Lack of Information for Causation.

The information provided by the petitioner in the captioned docket provides no examples of the flooding events on West Drive, nor do they indicate what constitutes a flood event on West Drive. There is no way to evaluate whether the flood events have a serious impact on the functionality of West Drive without a description of what is construed as a flood event. Without specific examples of flood events that substantially hindered the functionality of West Drive, it cannot be determined if the flood event was limited to the drainage of the natural watercourse, or if it was due to floodwaters backing up from the Shell Rock River. In the latter case the proposed drainage ditch will do nothing to reduce flooding on West Drive. Information defining what constitutes a flood event, how that event impacts the functionality of West Drive, and dates and

descriptions of the flood events that have occurred are necessary to evaluate any claim of a flood event and any claim that the proposed project will affect flooding.

4. The JDD Engineer's Report of February 25, 2014 (Exhibit C).

In his 2014 report, the JDD's Engineer proposed three options to address the deterioration of Main No. 1 tile due to the JDD's lack of maintenance. These three options are summarized as follows:

Option No. 1: This option would replace the section of Main No. 1 tile from West Drive to the existing outlet at South Hooker Avenue in-kind with an equivalent 18" pipe. This section of replacement would include the section of Main No. 1 tile that passes under Iowa Northern Bridge 210.8 and is subject to the provisions of a 1918 Agreement. This option also recommended cleaning silt from the open ditch at the downstream end of Main No. 1 tile and some cleaning of the natural waterway in addition to replacing the section of Main No. 1 tile. The Iowa Northern would not be responsible for the cost of this repair.

Option No. 2: This option would remove a section of Main No. 1 tile from West Drive to the existing outlet at South Hooker Avenue and replace it with an open ditch. This section of replacement would include the section of Main No. 1 tile that passes under Iowa Northern Bridge 210.8 and is subject to the provisions of the 1918 Agreement. This option calls the installation of a large pipe or concrete box to carry water from the open ditch through the INRC embankment. The JDD seeks to impose the cost of constructing a new pipe onto the INRC, as well as other additional fees and expenses.

Option 3: This option would replace the section of Main No. 1 tile from the West Drive to the downstream side of the INRC embankment in-kind with an equivalent 18" pipe. This

section of replacement would include the section of Main No. 1 tile that passes under Iowa Northern Bridge 210.8 and is subject to the provisions of the 1918 Agreement. From the downstream side of the INRC embankment to the existing outlet at South Hooker Avenue the existing Main No. 1 tile would be replaced with an open ditch. The INRC would not be responsible for the cost of this work.

5. The JDD Engineer's Recommendation.

In Section 6.0 of the JDD Engineer Kent Rode's report, Mr. Rode recommended that the JDD approve and adopt Option No. 1. The report stated in part:

“We believe the capacity of the Main No. 1 drainage system was adequate in its original state because of the natural surface relief of this watershed . . . The repair of the open ditch and tile as well as the cleanout of the surface drain will restore the efficiency and capacity of the JDD facilities with the least amount of regulatory complications and delays. The proposed repairs are considered to be of public benefit and are conducive to the public health, convenience or welfare.”

III. THE JDD'S FAILURE TO MAINTAIN MAIN NO. 1.

Historically, the JDD failed to maintain the original tile from 1918 through 1976 at which time the original tile was in such poor condition that it had to be replaced at the JDD's expense. In 1976 a section of Main No.1 tile was replaced, including the portion of Main No.1 tile under bridge 210.8. The existing 16" tile was replaced with an 18" tile. The reason for increasing the tile size to 18" was to avoid the cost of additional rock excavation. The 16" tile would have

been at least 56 years old in 1976 and there is no evidence that at any time in that 56-year time period that the JDD performed any work to keep the tile in proper repair.

A. The JDD has not improved its track record for maintaining Main No. 1 tile under Bridge 210.8 since 1976, allowing it to go without maintenance for over four decades.

This lack of maintenance has allowed Main No. 1 tile to deteriorate to the point that the JDD's Engineer is once again calling for replacement of the drain tile under Bridge 210.8 under Option No. 1.

Section 2.1 of the Engineer's report describes the existing 18" tile as being blown out in multiple locations, blocked by silt, and overgrown with brush and trees. In the Section 2.2 of the same report the JDD's Engineer states that the capacity of Main No. 1 tile appears to provide adequate drainage with good surface relief.

Main No. 1 tile as constructed and properly maintained is capable of providing adequate drainage with surface relief. The JDD's Engineer states as much in his report, but the fact that Main No. 1 tile has been in place for nearly a century without previous need for additional drainage relief also provides substantial evidence that Main No. 1 tile is capable of providing adequate drainage. The only time that Main No. 1 tile has not provided adequate drainage in the last 98 years is when the JDD's persistent failure to properly maintain Main No. 1 has resulted in blow outs, silt blockages, and excessive vegetation.

The failure of JDD to maintain Main No. 1 tile is the reason Main No. 1 tile is currently not capable of providing adequate drainage and requires replacement as proposed under Option No. 1.

B. Option No. 2 is an artificial drainage improvement project and is not necessary to drain the natural flow of water through the 'railroad's right of way, requires maintenance by the JDD in order to function, and creates unacceptable risks.

Option No. 2 is a groundwater drainage improvement project. It functionally replaces the existing drainage tile used to drain certain non-railroad lands by artificially channeling the flow of this groundwater, as well as surface water, via an open ditch through a pipe installed through INRC's right of way.

It creates an artificial drain that must be cleaned and maintained by the JDD to continue to function and over time would not be able to drain surface water if silt is not periodically removed from the full extent of the drain, a majority of which would be outside of the INRC ROW and control. This proposal would leave a flat ditch that could not clean itself of silt and will eventually plug the current INRC culvert, thus leading to an inability to maintain drainage on INRC right of way and leading to flooding would be flooded because the INRC culvert itself would silt up and become plugged.

The proposed open drainage ditch under Option No. 2 is at least four feet lower than the existing natural waterway. The reason for the low streambed elevation of the proposed option ditch is to provide adequate artificial groundwater drainage.

Absent this intentional open ditch design that forces groundwater drainage through the right of way, the railroad does not obstruct the natural flow of the waterway since the culvert functions to channel surface water through the railroad embankment.

In other words, Option No. 2 is not necessary to maintain the otherwise natural flow of water through Iowa Northern's embankment, it is as artificial drainage system that will cease to function if it is not properly maintained by the JDD.

C. Option No. 2 Destroys Portions of the Tile Subject to the 1918 Agreement.

The conversion of the lower section of Main No. 1 to an open ditch drainage system in accordance to Option No. 2 will require the removal of approximately 830 feet of the existing 18" drain tile from its existing outlet downstream of INRC embankment, up under Iowa Northern Bridge 210.8, to a point on the upstream side of Iowa Northern Bridge 210.8.

This section of 18" drain tile to be removed includes a portion of drain tile that is subject to the 1918 Agreement.

IV. RISKS OF JACKING AND BORING THE PIPE AND INADEQUACY OF SAFETY PROTOCOLS.

The JDD's plans present two erroneous assumptions. The first is that "jack and bore" is a per se reasonable methodology in all circumstances. It is not. The presence of obstructions or other geotechnical idiosyncrasies in the path of a large—nearly 6 foot—diameter pipe installation will produce conditions that threaten to destabilize the track bed structure. The second misplaced assumption is that laser survey monitoring and the cessation of the installation during train passage is adequate to protect safety. It is not. Destabilization of the track structure is oftentimes latent, and not apparent until a train moves over the right-of-way. At that point, the evidence of destabilization is a derailment.

A. Jack and Bore should not be used where there is a significant threat of subsurface obstructions which the JDD fails to appreciate.

Jack-and-bore is not a one-sized fits all solution to maintaining track bed integrity; treating it as such has historically led to derailments. The integrity of a railroad's track bed is critical for safe railroad operations. A lack of stability throughout the track structure increases the

threat of derailments. The nature of jack and bore relies on a clear path to installation—an augur is used to clear subsurface area; immediately behind a pipeline is slowly “hammered in” from an open-bore bit, proceeding underneath track structure to the prescribed depth. Where jack and bore encounters obstructions in the subsurface, there is a significant risk of undermining the track structure.

1. Obstructions unacceptably heighten the risks of jack-and-bore

The typical causation of such a derailment is because either the jack-and-bore process, or the displacement of surrounding material based on that process, has impacted the “zone of influence”—a subsurface area around the track structure the non-disturbance of which is critical to the track structure’s integrity. Obstructions in the pipeline’s path beneath the sub-surface can cause the auguring and hammering to go awry, redirecting the pipe path and causing subsurface material to be displaced. Whenever you are displacing material around the zone of influence, you risk a void—a lack of support for the track structure. An obstruction that is unable to be overcome necessitates either a change in direction of, or undertaking a new excavation, either one of which can impact the zone of influence and risk undermining the track structure.

Attempting to drill and hammer a large diameter pipe into a subsurface area of unknown composition—or even worse, where an obstruction is known to exist—is not a safe method of installation. Any responsible plan for jack-and-bore would evaluate (1) whether geotechnical surveys indicate the presence of obstructions and (2) identify how known and unknown obstructions will be avoided.

The consequences of failing to consider these issues is frightening in that you increase the risk of derailments of multi-thousand ton rail consists—some of which may very well

have hazardous material—by several orders of magnitude. Where, as here, you have a watercourse, a county highway crossing, and a trackbed of unknown depth and composition (though, as detailed below, there is at least one obstruction) the complications multiply. Any summary statement that jack-and-bore is safe would be simplistic; it fails to even consider, let alone mitigate, the clear risk of a catastrophic derailment.

2. The known presence of an obstruction and failure to investigate are clear dangers to safe railroad operations.

The danger of obstructions is manifest here given the presence of a timber trestle in the embankment. We know the timber trestle lies in the section of embankment where the JDD intends to undertake jack and bore; the 1922 plans for Iowa Northern Bridge 210.8 indicate that a timber trestle was in place within the embankment in close proximity to both Bridge 210.8 and Culvert 210.7.

Jack and bore equipment, designed to bore through granular earth fill, cannot cut through the large fibrous timbers that are used for trestle construction and the jack and bore operation cannot continue until the large timber is removed. It is analogous to digging a hole through a telephone pole with a garden spade. If the timber cannot be removed, the partially-installed pipe is abandoned in place and another attempt to jack and bore a new pipe is made adjacent to the first. But even if this process is undertaken, there can be no reversing the soil displacement and potential void or impact on the zone of influence. The JDD ignores this obstruction to the peril of the railroad and the public.

The JDD's evidence in this regard is incredibly naïve by claiming that the drilling is a cure all and that obstructions can simply be bored through. Supplemental Affidavit of Rode,

3. Clearly, Mr. Rode is unaware of the empirical problems of jack and bore with geologic obstructions—though his dismissive approach to obstructions is emblematic of his over confidence gained from only a single experience with jack-and-bore under a railroad (a project of unknown magnitude, location, and time; (Affidavit of Rode, 6)) and renders his opinion that there will be no impact on railroad operations entirely conclusory. *Id.* Moreover, the evidence the JDD has presented indicates no appreciation for meaningful geotechnical survey; the importance of site conditions; or the dynamics of subsurface soil displacement. The only evidence the JDD presents is that it took bores outside of the track structure that were too shallow and were simplistic in the analysis, identifying it only as “rock” and failing to consider the composition, gradient, or other signals that even this imprecise measure might indicate about the geotechnical conditions. Engineer’s Report, Appendix C (Exhibit C to the Reply). The JDD thus proposes to drill both into the dangerous known and the potentially-just-as-dangerous unknown. Blind faith in the non-existence of problems, or the simplistic assumption the problems can be drilled through, is no replacement for thoughtful consideration of threats. Regrettably, the testimony I have reviewed suggests only the former exists here.

B. The Proposed Monitoring and Work Stop Protocols are Insufficient for Safe Railroad Operations.

The JDD’s protocols, which are entirely reactive in nature, do nothing to forecast, or predict the impact on track structure. The challenge of subsurface excavation is that its effect is not readily apparent. While use of “laser” measuring can sound sophisticated in its precision, the movement it detects means that a problem already exists. The trackbed is required to support rail consists where each car—of which there can be more than 100—weighs tens of thousands of

pounds empty, and nearly three hundred thousand pounds when loaded. The disruptions created by the JDD's proposed process will occur deep within the fill and will grow to a critical level under the track structure without any displacement detectible to the "laser" measuring system. This unstable condition will remain hidden until an embankment failure is triggered by the load and vibration from passing train. The embankment failure will result in a sudden and substantial drop in the track, causing the derailment of the passing "trigger" train with catastrophic results.

The JDD's promise to "stop work" when a train goes by is similarly short-sighted. The fatal act—the disruption to track structure—has already been undertaken. While prudent to stop activity to aid a safe installation, such a temporary cessation does nothing to make an unsafe installation safe. It does nothing to change the fundamental risks of undertaking jack-and-bore in the presence of known obstructions.

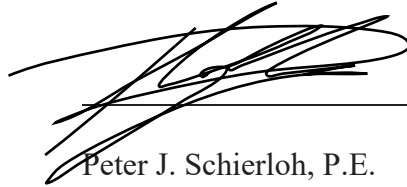
C. The Railroad's Hobson's Choice.

If jack-and-bore is permitted to go forward in the manner in which the JDD has proposed in other proceedings—without information on the subsurface geotechnical conditions and without regard to the presence of obstructions, both known and unknown here—the railroad would be faced with an impossible choice. INRC could either (1) continue to operate notwithstanding the JDD's disregard for track integrity or (2) cease to perform its common carrier operations until the jack-and-bore is completed and the track integrity can be reasonably assured. From an engineering and operations standpoint, where the JDD's professional engineer concludes that other viable options exist, it is a choice the railroad should not be forced to make. The responsible engineering choice is to avoid multiplying the risk of disrupting the track structure and threatening derailment.

If no suitable location for jack and bore installation is found, the cut and cover method would be used. This would cause a break in the track structure and plainly require the cessation of railroad operations.

VERIFICATION

I, Peter J. Schierloh, verify under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Further, I certify that I am qualified authorized to verify the foregoing Verified Statement.



Peter J. Schierloh, P.E.

Dated: July 30, 2020

Engineer's Report For:

PROPOSED REPAIRS OR IMPROVEMENT

**MAIN NO. 1
JOINT DRAINAGE DISTRICT
NO. 6 AND 56**

FLOYD AND CERRO GORDO COUNTIES, IOWA

Date: February 25, 2014
Project No. 116480



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ENGINEER'S REPORT
PROPOSED REPAIRS OR IMPROVEMENT
MAIN NO. 1
JOINT DRAINAGE DISTRICT NO. 6 AND 56
FLOYD AND CERRO GORDO COUNTIES, IOWA
2014

I&S PROJECT NO. 116480

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa. Kent L. Rode, P.E. Date License No.: 16323 My License Renewal Date is December 31, 2015 Sections covered by this seal: <u>All Sections Listed in the Table of Contents</u>
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**ENGINEER'S REPORT
PROPOSED REPAIRS OR IMPROVEMENT
MAIN NO.1
JOINT DRAINAGE DISTRICT NO. 6 AND 56
FLOYD AND CERRO GORDO COUNTIES, IOWA
2014**

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**ENGINEER'S REPORT
PROPOSED TILE AND OPEN DITCH REPAIRS OR OPEN DITCH IMPROVEMENT
MAIN NO. 1
JOINT DRAINAGE DISTRICT NO. 6 AND 56
FLOYD AND CERRO GORDO COUNTIES, IOWA
2014**

1. INTRODUCTION

1.1. Scope of Work

The purpose of this report is to provide information relative to drainage relief requested by landowners within Joint Drainage District No. 6 and 56 Floyd and Cerro Gordo Counties, Iowa (JDD6&56). A request was presented by landowners to the Joint Board of Supervisors for drainage repairs with an alternate open ditch construction in June of 2011 and the Board appointed I&S Group Inc. to complete a preliminary study. In September of 2011, preliminary information was discussed and the Board directed an engineering study on Main No. 1 and the Tile of Main No. 2 of the joint district.

On August 27, 2013, a joint discussion was held in Nora Springs to gather input from landowners in regard to concerns with JDD6&56. Based on this joint discussion, the Joint Board directed I&S Group to continue with an engineering study and prepare an engineer's report for repairs or improvements to Main No. 1 of JDD6&56. This study and report includes a review of the facilities and history of Joint Drainage District 6 & 56 and an examination of the condition and capacity of the main tile and open ditch system of Main No. 1.

Our report includes three options for Main No. 1 of the Joint District. Option one is for repairs which include a clean out the existing open ditch and replacement of a portion of the main tile. Option two includes an open ditch improvement which would extend the open ditch west, thereby replacing a portion of the existing main tile. This ditch would replace the tile through and west of the crossing of the Iowa Northern Railway Company railroad track, to an area south of West Drive where the main tile currently crosses this roadway. The third option includes clean out of the existing open ditch, repairs to the main tile from its outlet through and west of the railroad and construction of a short ditch in place of the tile in the area generally between the railroad and West Drive.

These three options will include the acquisition of needed right-of-way for the existing open ditch facility. In addition, our report discusses the annexation of additional benefited lands that drain to this open ditch or facility along with classification/reclassification of all benefited lands to an open ditch/main assessment schedule.

1.2. Location

This district lies on the boundary of Floyd and Cerro Gordo Counties located generally west of the City of Nora Springs. The watershed of the joint district, which includes Mains No. 1 and No. 2, is located in Sections 7, and 18 of Rock Grove Township (T-96-N, R-18-W) in Floyd County and in Sections 2, 3, 10, 11 12, 13, & 14 of Portland Township (T-96-N, R-19-W) of Cerro Gordo County. The watershed of Main No. 1, which is the focus of this report, is located in Sections 7, and 18 of Rock Grove Township and Sections 12 & 13 of Portland Township. The eastern part of this watershed is located in the southwest corner of the City of Nora Springs, Iowa Corporate Limits.

The original lands of the joint district were listed as 1379.8 acres plus approximately 50 acres of railroad lands for a total of approximately 1430 acres. Our review of the watershed boundary finds 389 acres to drain by surface to the original outlet of Main No. 1 of JDD6&56, compared to the 251 acres on the original assessment schedule.

The open ditch of JDD5&56 Main No. 1 outlets into a small channel in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 7-96-18 near the crossing on South Hooker Avenue in Nora Springs. This small channel continues easterly for approximately 850 feet to the Shell Rock River. From its outlet, the open ditch extends westerly approximately 500 feet in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 7-96-19. The remainder of Main No. 1 is tile.

1.3. District Facilities

There are several existing district facilities that lie within the jurisdiction of JDD6&56 Main No. 1. The JDD6&56 Main No.1 facilities consist of an open ditch, a tile main and three (3) lateral tile lines. A description of the general location and route of each follows:

Main 1

Open Ditch- Outlets to a small channel in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 7-96-18 that continues easterly to the Shell Rock River. The open ditch extends in a southwesterly direction approximately 500 feet from a road culvert under South Hooker Avenue towards the south line of the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 7-96-18 to the outlet of the main tile.

Main 1 Tile- Outlets to the upper end of Main 1 open ditch in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 7-96-18. This tile extends west from the open ditch approximately 700 feet in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 7-96-18. This tile then crosses the Iowa Northern Railroad and continues west and south in the NW $\frac{1}{4}$ Section 18-96-18 for approximately 1300 feet to West Drive, then continues northwest for approximately 1500 feet to the north line of SE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 12-96-19.

- Lateral 1A- Outlets to the main tile in the NW¼ NW¼ Section 18-96-18. This tile extends west for approximately 2500 feet to the west edge of the NE¼ NE¼ of Section 13-96-19.
- Lateral 1B- Outlets to the main tile in the NW¼ NW¼ Section 18-96-18. This tile extends west for approximately 650 feet to the east edge of the NE¼ NE¼ of Section 13-96-19.
- Lateral 1B1- Outlets to the Lateral 1B tile in the NW¼ NW¼ Section 18-96-18. This tile extends northwest for approximately 400 feet to the east edge of the NE¼ NE¼ of Section 13-96-19.
- Lateral 1C- Outlets to the main tile near the south line of the SW¼ SW¼ Section 7-96-18. This tile extends west for approximately 700 feet to the east edge of the NE¼ NE¼ of Section 13-96-19.

In addition to these district facilities, there is a surface channel that carries surface water from the railroad culvert near Main No. 1 and carries surface water flow parallel to the Main No. 1 tile for about 735 feet to the outlet point of the Main No. 1 tile. This surface channel is not owned or operated by the JDD 6&56, but maintenance of the channel is important to maintaining the Main No. 1 tile and ditch.

1.4. History

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|------------------|--|
| June 24, 1917 | Petition filed for drainage relief. Location starts in Section 2 Cerro Gordo County and end in Section 18 Floyd County. |
| July 27, 1917 | C. H. Steven appointed Engineer. |
| May 27, 1918 | Engineers Report Filed. |
| July 29, 1918 | Hearing on Engineers Report. |
| August 20, 1918 | Report approved, refers to district as Joint District No. 1. Project divided into Main No. 1 and Main No. 2. |
| August 20, 1918 | Agreement between District and Chicago Rock Island & Pacific Railway. District may construct tile across Railroad, Railroad allows construction, District will not assess for crossings installation or future maintenance due to a failure to properly notify. |
| October 2, 1918 | Bid letting for construction of project. |
| October 9, 1918 | Johnson Bros awarded contract for supply construction materials. Bid price is \$8096.15 Nordstrom & Adams awarded contract for construction of drains. Bid price for Main No.1 is \$1809.45 and Main No. 2 is \$6820.50. Work shall begin on construction November 9, 1918 and be completed by June 1, 1920. |
| August 30, 1920 | Commissioners appointed to Assess Benefits. |
| October 18, 1920 | Commissioners assessment of benefits completed. |

November 17, 1920	Resolution for hearing on Report of Commissioners. Resolution states Joint District No. 1 is known as District No. 56 Cerro Gordo County and District No. 6 Floyd County.
January 21, 1921	Hearing on commissioner's report, report approved.
March 5, 1930	Joint Boards request reclassification.
June 29, 1931	Reclassification report filed and approved. Main No.1, Laterals 1-A, 1-B, 1-C, Main No.2 and, Laterals 2-A, 2-B, 2-C, 2-D, 2-E, 2-F Reclassified.
July 6, 1931	Additional special assessment for Main No. 1 and Laterals 1-A, 1-B, 1-C.
November 6, 1947	Repairs requested in Cerro Gordo County. Engineer Reports repairs needed. Assessment approved on lands in Cerro Gordo County.
October 8, 1958	Engineer Ralph Wallace presents oral report. Report approved, report states funds on hand not balanced between districts based on original assessment. Future balance percent given for DD 6 and DD56.
September 12, 1962	Engineer Ralph Wallace appointed to make report on outlet of Joint District 6 & 56.
October 23, 1962	Engineers report for repairs to Main No.1 Outlet approved. Work approved to be completed.
December 15, 1962	Engineer reports repairs completed, assessment of 24% of original assessment is to be levied and assessed for DD 6, Main No. 1.
January 28, 1969	Floyd Board places a 50% of original assessment for DD 6 Main No.1 for repairs.
October 19, 1972	Joint Boards, issue an assessment at 10% of original assessment for DD 56
December 18, 1975	Repairs requested in Sect. 12 Cerro Gordo.
March 9, 1976	Engineer Phillip J. Dvorak report on repairs requested and appointed to determine maintenance required.
August 13&30, 1976	Exploratory work on Lateral 2A, blow outs found & repairs made. Exploratory work on Main No. 1, tile lines full of water, alignment of main found to run under railroad underpass.
October 4-15, 1976	Report of exploratory work on Main No. 1. Temporary trench excavated in Sect. 7 & 18 to relieve main. Temporary trench and open ditch found on limestone. Rock excavation needed to install 16" tile, alternative 18" tile suggested which requires less excavation and is more economical.
October 18, 1976	Engineer Dvorak's report of exploratory works in August & October. Board directs repairs to be completed.
December 30, 1976	Dvorak reports repairs completed. Rock excavation not economical for 16" tile; an 18" was installed. Reports tile in district found in poor condition, tile cracked but still carries water.

October 15, 1980	Board discuss blockage of tile under US Hwy 18 in Cerro Gordo County.
December 8&9, 1981	Bids received for repair work on Lateral 2A. Bid rejected after DOT review. Engineer Gerald Hollander to revise plans and specifications for rebid.
December 29, 1981	Bids received for repair work on Lateral 2A, contract awarded to Bruening Rock Products.
April 10, 1987	Engineer Gerald Hollander report for repairs on Main No. 2
January 10, 1995	Assessment on DD 6 Main No. 1 for repairs and future maintenance.
June 28, 2005	Assessment on JDD56 & 6 Main No. 1 for repairs and maintenance.
April 28, 2011	Assessment on JDD56 & 6 for repairs.
June 14, 2011	Bill Fett of Floyd County requested relief/repair on property west of Nora Springs. Fett explains tile needs repair, suggested open ditch to replace tile. Joint Boards discuss problems with tile and possible solutions and the need for a study for this project. I&S group appointed as Engineer.
September 13, 2011	Joint Boards request for study of work on Main No.2 & Main No. 1 with possible Open Ditch.
August 27, 2013	Joint discussion held at Nora Springs City Hall, members of Joint Boards present. I&S Group gave history of districts. Focus of discussion is Main No. 1 on and near Fett property. Board request tile and ditch cost estimates and report for a future hearing.

2. INVESTIGATION

2.1. Survey & Investigation

During the fall of 2011, we performed a field review of the JDD6&56 Main No. 1 route with a survey of the open ditch route. Profile data was gathered along with cross-sections to determine the sediment level in the channel and the typical dimension of the channel. Tile elevations and sizes were measured where they were exposed at collapses and blowouts. This survey was completed from the existing culvert under South Hooker Avenue upstream to the culvert under West Drive. The total length of this tile and drainage channel segment is 2,500 feet. LIDAR elevation information was also obtained for the Main No. 1 drainage basin.

The downstream open ditch section is severely silted to a level that blocks the Main No. 1 tile outlet to over half of the pipe depth. Brush and trees are growing over portions of the ditch and the tile.

Several tile blowouts were observed over the 18 inch and 14 inch tile. The tile is very shallow in many of these blowout locations. In some locations replacement tile pipe has been installed, and the adjacent tile is collapsed or blown out. The pipe elevation and

location was measured where it was exposed, and the pipe interior was photographed in several locations.

An unmapped 12 inch tile branch was shown on a previous repair record which was not shown on the Joint District's maps.

At several locations test pits were dug to determine the elevation of rock. Those elevations are shown on the preliminary plans.

LIDAR elevation information was used to update the surface drainage basin areas that drain into Main No. 1.

2.2. Channel and Tile Capacity

The existing dimensions of the open ditch were determined based on the surveyed cross-sections. The tile size and slopes were determined from a review of the original plans, repair records, and field surveys of the visible blowouts where the top of pipe and the pipe invert was visible.

The tile conduit controls the capacity of the system, with an existing drainage coefficient of 3/16 – 1/4 inches per day drainage coefficient. This capacity appears to provide adequate drainage with good surface relief, although it is somewhat less than the current design standard of 3/8 inches per day that is currently being used on lands which have good surface drainage relief. Making a repair to the existing tile will not bring the drainage coefficient and hydraulic capacity up to this current design standard.

2.3. District Right-of-Way

There is no record of right-of-way on the JDD6&56 Main No. 1 open ditch segment. This right-of-way would normally have been acquired at establishment of the district and would have included the land required to dig the ditch and pile the spoil on either side, typically 20 feet from the top of bank. For construction methods used at the time of original construction, a 45 feet wide right-of-way would have been required.

2.4. Conservation Acres

We note that there is an area of conservation along the existing open ditch. There are some manageable drawbacks which must be addressed because of these areas.

The destruction of vegetation by spoil placement or leveling with open ditch construction is not normally allowed as part of the farm program conservation rules. The owner of any Conservation Reserve Program acres must request a waiver from the USDA Farm Service Agency County Committee. The county committee will grant waivers for ditch maintenance if seeding restoration, in compliance with NRCS

requirements, is completed. If the project is authorized, all farm program conservation program owners on the repair portion of the ditch must independently seek the FSA County Committee waivers. This process should be initiated immediately if the repair is authorized.

Although open ditch maintenance and repair is specifically exempted from Clean Water Act jurisdiction, the excavated materials may not be side cast into jurisdictional waters or wetlands. This restriction must be taken into account in the project design and cost estimate.

2.5. Jurisdictional Wetlands

The USDA Farm Program has long-included wetland conservation compliance "swampbuster" provisions administrated by the Natural Resources Conservation Service (NRCS). These rules and policies require that the lost functions, values and area of each converted (better drained) farmed wetland be replaced (mitigated). Under Part 12 of Title 7 of the Federal Regulations, "activities of a water resource district, drainage district, or similar entity will be attributed to all persons within the jurisdiction of the district or other entity who are assessed for the activities of the district or entity. Accordingly, where a person's wetland is converted due to the actions of the district or entity, the person shall be considered to have caused or permitted the drainage." However, Drainage Districts in Iowa have the right to maintain the existing drainage capacity of their facilities. Therefore, under a repair option the only wetlands that could be affected would be wetlands or farmed wetlands located adjacent to the open ditch that may have spoil placed in them during the excavation of the open ditch. This situation can be avoided.

The US Army Corps of Engineer (USACE) in conjunction with the US Environmental Protection Agency (USEPA) also have jurisdiction to wetlands under the Federal Clean Water Act Section 404. However, for the wetlands to be jurisdictional they have to be connected to waters of the United States and not isolated wetlands. To be connected, the wetlands would need to be adjacent and surface connected to the Main Open Ditch of this district.

Therefore, if an improvement option is selected that increases the capacity of the outlet system, impacts to wetlands will need to be considered both under the Farm Bill and Clean Water Act. To determine if wetlands will be impacted, the NRCS requires that all lands in the watershed must have a wetland determination completed prior to any construction by the District. The landowners or their tenants are the only individuals that can request this determination. If a landowner does not request a certified wetland

determination and the District proceeds with an improvement project, the landowner may be found to be in violation of the farm program rules and not eligible for program benefits. In addition, the USDA could file claim for refund of farm program payments. Therefore, if an improvement option is approved, we will encourage all landowners within the watershed boundary of Main No. 1 to request a certified wetland determination from the NRCS. Please note the NRCS will only provide determinations on agricultural lands producing a commodity crop. For other lands, a consultant will need to be hired to make the wetland determination.

2.6. Impacts to Wetlands

The watershed of Tile Main No. 1 has natural surface relief along with a tile system with a capacity of over 1/8 inch drainage coefficient. It is therefore unlikely that there are wetlands or farmed wetlands in this watershed. In an effort to determine the potential of wetlands, we have reviewed USFWS Wetland Inventory Maps to assess the likelihood of non-converted wetlands. The lands in the natural drainage way along the alignment of the District tile main do show up as potential wetland. Therefore, again with documentation of the District's tile main along the drainage coarse, we would expect these lands would be found to be prior converted lands. Based on this review, we do not expect mitigation of wetlands will be necessary if an improvement to the outlet system is approved and therefore no costs for mitigation have been included in our estimates.

3. PROPOSED WORK

The investigation has confirmed the need for drainage relief in the district. It is necessary to reshape a portion of the ditch's banks, remove the sediment from the open ditch, and clear overgrown trees and a brush to restore the drainage efficiency and capacity and establish a ditch alignment in one location. Options for repairing or replacing the existing tile that is in poor condition and is collapsing in many locations were evaluated.

Three options for repair or improvement were evaluated at the request of the JDD6&56 Board and are summarized in the following sections.

3.1. Option 1 - Open Ditch and Tile Repairs

This option includes cleaning the existing lower ditch of Main No. 1 to restore its original slope and capacity and replacing the Main No. 1 pipe with an 18 inch

Reinforced Concrete Pipe tile from the current outlet location to the downstream side of West Drive.

This report shows the replacement tile installed along the same route as the current tile, including crossing the railroad at the current roadway underpass rather than at the original design location of the tile. It appears that the route was changed to avoid rock excavation along the original design route, and also to avoid the expense and permitting required to bore a pipe under the existing railroad tracks.

The existing surface channel from the railroad culvert downstream to the Main No. 1 tile outlet would be cleaned and repaired as a grassed waterway and the JDD 6&56 would obtain right-of-way for this surface drainage channel to maintain both the surface channel and the drain tile below and parallel to the channel. This channel is an important part of the surface drainage system of JDD6&56, and can be best maintained by JDD6&56. Control of this channel right-of-way would also allow the Joint District to maintain and remove trees and brush from over their tile to control root intrusion into the tile.

The Joint District should acquire permanent right of way of 100 feet for the existing open ditch segment from the South Hooker Avenue culvert to the outlet of the existing 18 inch Main No. 1 tile to allow future maintenance, and also for the surface drain channel downstream from the railroad culvert on Main No. 1 to the outlet of the existing 18 inch Main No. 1 tile; this will allow the Joint District to maintain surface drainage in the area and also control brush and tree growth over this portion of the Joint District's 18 inch tile.

3.2. Option 2 - Open Ditch Improvements

This option includes new open ditch construction to replace the entire drain tile in Main No. 1 between South Hooker Avenue and West Drive. This open ditch would also replace the existing surface drainage channel from the railroad culvert to the outlet of the Main No. 1 tile.

At the South Hooker Avenue culvert, a grouted riprap chute would be constructed to protect the culvert inlet from erosion and to maintain a stable 1 foot drop from the open channel to the culvert inlet.

An 8 foot wide open ditch with 2:1 side slopes would be cleaned from this culvert upstream approximately 1200 feet to the railroad culvert. This ditch would be flatter and deeper than the existing ditch and tile.

A new railroad culvert at a deeper elevation and size would be needed for the new ditch to meet current design criteria for drainage ditches. The culvert would be either an 8

foot diameter steel pipe bored in place or an 8'x6' box culvert. Round pipe would be more easily bored under the existing railroad tracks if installation by open cut is not allowed by the railroad. The round pipe invert would be installed at 1' below the channel bottom to match the round pipe hydraulics to the open channel hydraulics.

The railroad would have the responsibility for the cost of this new railroad culvert under the procedures established by the Iowa Code. The costs of this new railroad culvert are not included in the assessable costs for this reason.

The open ditch would continue upstream of the new railroad culvert to West Drive. The open ditch would be at a deeper elevation than the lateral tile pipes to allow the lateral tile to freely discharge into the ditch and to prevent minor siltation from blocking the lateral tile.

At the upstream end of this new ditch, a drop structure would be installed to allow surface water flow to enter the new ditch without causing excessive erosion, and to allow the existing Main No. 1 drain tile to have a drop into the new ditch. The drop structure would be a concrete wall with a footing anchored or keyed into bedrock and a riprap-lined plunge pool for energy dissipation downstream of the wall.

This new ditch would be considered an improvement rather than maintenance, and the deeper ditch bottom could trigger NRCS review of upstream farmed wetlands for potential consequences of additional draining. Landowners would be responsible to check and delineate their own wetlands on their property to document their compliance with all farm program requirements. Noncompliance with this wetland review requirement by a landowner could potentially disqualify the property from future farm program payments.

3.3. Option 3 – Short Open Ditch and Tile

This option includes a new open ditch constructed to replace the portion of drain tile in Main No. 1 between the railroad culvert and West Drive, as requested by the landowner. A concrete wall drop structure would be installed at the upstream end of the short ditch to protect the upstream end of the short ditch from erosion from surface water flows that would enter the ditch. The Main No. 1 drain tile would be replaced with 18 inch tile from its current outlet and under the railroad underpass to the new open ditch that would begin just upstream of the railroad crossing. The existing railroad culvert would remain in use. This design will not increase the drainage capacity of the system with an 18 inch tile at deeper and flatter slope used in the downstream segment of Main No. 1. The outlet elevation of this tile would be the same as for Option 1.

Some concerns with this option are that the new ditch will tend to capture more of the overland surface runoff and add that additional water and sediment to what is currently carried in the existing Main No. 1 tile. The short open ditch will require more frequent

cleanout because of this. Also, downstream replacement tile should be installed about 1-2 feet deeper than the existing tile to allow all lateral tiles in the reach to outlet freely into the new ditch section. This would be designed to not increase the flow capacity of the system, but the deeper tile and ditch depth may trigger some of the same NRCS review of any upstream wetlands for additional drainage as was discussed in Option 2. Landowners would be responsible to check and delineate their own wetlands on their property to document their compliance with all farm program requirements. Noncompliance with this wetland review requirement by a landowner could potentially disqualify their property from future farm program payments.

3.4. Work Limits and Damages

Landowners are entitled to full reimbursement for damages resulting from the work on said drainage tile and outside of open ditch rights-of-way. These damages will be established at a project completion hearing after the work is complete. The contractor will be assigned temporary work limits along each side of the ditch and tile to allow for construction activities. The work limits for the open ditch will be set at approximately 35 to 40 feet outside of the toe of the spoil pile of the ditch. Along the tile replacement areas, the work limits would be 50 feet wide.

It is anticipated that the repair work will commence in 2014. No crop damages are expected because the construction zones are not currently in row crop production.

If an option is selected that involves railroad review and approval of a new culvert or pipe crossing location, then the schedule may require an additional 6-12 months for coordination with the railroad. Wetland reviews by regulatory agencies for options that are considered to be improvements may also require additional approval time in the project schedule.

Conservation acres exist within the work area. Seeding of these areas is typically performed by the landowner with reimbursement being made at the project completion hearing. Seed mixes for these lands is often very specific for the type of conservation practice which is utilized.

3.5. Annexation

The shaded areas of the district plat on sheet A.02 of the proposed plans show the roughly 138 acres of benefiting land not included on the JDD6&56 Main No. 1 assessment schedule. These areas are outside the district boundary and not within any other district. These areas should be added to the schedule as surface water from these lands will be conveyed by the open ditch of JDD6&56 and do receive benefit from this facility.

The cost of the annexation of the 138 acres is estimated at \$4,500. The annexed lands would generate more than enough funds on this upcoming project to pay for the annexation. These acres benefit from the open ditch and the repair project and should share in cost of future work.

It would be cost effective to do this annexation as part of the proposed project. Most landowners now in the drainage district would likely support the annexation; those being annexed would tend to be opposed. It should be emphasized to the owners of the annexed lands that assessments are based upon relative benefits and that if this benefit is small, the assessment is also relatively small. We recommend annexation of all benefiting areas in both Main No. 1 and Main No. 2 drainage basins at this time.

3.6. Right-of-Way Needs

Drainage districts acquire easements or rights-of-way for drainage district open ditches. The district secures authority to go onto private land to construct these ditches and to maintain them by following the procedural steps laid out in the Code of Iowa. No right-of-way appears to have previously been acquired for the JDD6&56 open ditch and the private channel. It is now recommended to be acquired through this report.

The original ditch was constructed and subsequently extended privately with no record of right-of-way being acquired. The original construction required 45 feet of right of way along the current open ditch. This right of way is tabulated in Appendix A and is claimed by the JDD6&56 through this report. We recommend that JDD6&56 acquire a permanent right-of-way of 100-feet in width along the original 500 feet of open ditch and continuing for the upstream private channel to the railroad culvert to facilitate maintenance now and into the future. This right-of-way will usually be centered on the open ditch with typically 15 to 20 feet on each side of the completed ditch for maintenance access. This represents additional right of way outside the 45 feet that was needed to construct the original drainage ditch.

If additional new open ditch construction is approved, similar permanent right-of-way is recommended along the entire ditch route for the same purposes of construction and maintenance.

Drainage districts do not acquire easements or rights-of-way for closed (underground) drainage district tile mains or laterals. The district secures authority to go onto private land to construct the tile main and laterals and to maintain them by following the procedural steps laid out in the Code of Iowa.

When the final option for design and construction is approved, we will prepare a tabulation of the proposed right-of-way area needed to meet the recommended 100-foot width divided into cropable and non-cropable areas. The price for each of these areas within the right-of-way will be recommended to the board by appointed

appraisers. An appraisal commission made up of two landowners from the county and the engineer are appointed by the board to recommend fair payment. The right-of-way appraiser's report is considered at a public hearing prior to adoption.

For right-of-way acquisition, the price of lands outside the top of bank is reduced from market value for two reasons, 1) the landowner has the beneficial use of the leveled spoil pile inside the right-of-way subject to the needs of the district, and 2) the open ditch right-of-way is exempted from real estate taxes and drainage district assessments. In our estimating for this project, we used \$1000/acre for lands which will remain in the beneficial use of the landowner and \$8,000 for lands which would become un-farmable because of the open ditch.

4. ESTIMATE OF PROBABLE COST

The cost estimates for Options 1, 2 and 3 are contained in Appendix B. These estimates represent our best judgment of the probable cost based upon our experience with similar projects. The quantities and unit costs for construction are believed to be reasonably accurate for use in this report and hearing. Actual costs are subject to the market for the respective components and to other economic forces. These estimates carry no actual or implied guarantees.

5. ASSESSMENT SCHEDULE REVIEW

5.1. Benefited Lands

Joint Drainage District No. 6 & 56 pays all of its expenses by levying assessments upon the assessment schedule as adopted in 1931. This assessment schedule does not include all of the lands believed to be receiving benefit from the tile and open ditch. The landowners in the district pay disproportionate shares of assessments because these lands have avoided assessment.

It is recommended that these lands now lying outside the district but which benefit from Joint Drainage District No. 6 & 56 be annexed to the district. The lands recommended to be annexed are shown on the plats of the district on attached plan sheets A.02 and A.03.

Section 468.119 of the Iowa Code states "...if the board becomes convinced that additional lands contiguous to the district, and without regard to county boundaries, are benefited by the improvement to said district as contemplated in Section 468.126, board may adopt with or without a petition from owners of the proposed annexed lands, a resolution of necessity for annexation of such additional land."

5.2. Reclassification

The 1931 assessment schedules for Tile Main No. 1 & No. 2. did separate the lateral tile lines on to separate assessment schedules. However, if the Board approves the annexation of additional benefitted lands, these lands will need to be classified in accordance with the 1931 schedule. The resulting adjusted schedule will be 80 years old and not based on the more accurate data available through modern soils maps and LiDAR elevation data. Therefore, it is recommended that the facilities of Tile Main No. 1 and 2 be reclassified to provide a fair and equitable method of paying for construction of the needed repairs and future maintenance of all facilities of the District. Even though Main No. 2 will not be part of this project, we recommend it also be reclassified so that the distribution of benefits in both watersheds are based on the same criteria. In addition, because part of the base map work necessary for one district will also be used for the adjoining district, the cost per acre will be lower for both mains.

6. DISCUSSION AND RECOMMENDATIONS

This report has confirmed the need to restore the drainage efficiency and repair of the district's Main No. 1 tile and open ditch. A repair or improvement is warranted and can be accomplished by doing the work shown on the preliminary plans contained in this report for any one of the three alternatives shown.

However, we recommend the Joint Board of Supervisors acting as Trustees for the District approve and adopt Option No. 1. This option calls for the repair/cleanout of the open ditch, repair/replacement of the main tile of Main No. 1 and the establishment of surface drain east of the railroad. We believe the capacity of the Main No. 1 drainage system was adequate in its original state because of the natural surface relief of this watershed. Over the years, tree root intrusions into the lower tile main and siltation of the open ditch of Main No. 1 has caused the tile system to be pressurized during times of larger flows. This has resulted in the tile blowouts and tile failures of the main tile. The repair of the open ditch and tile as well as the cleanout of the surface drain will restore the efficiency and capacity of the district facilities with the least amount of regulatory complications and delays. The proposed repairs are considered to be of public benefit and are conducive to the public health, convenience or welfare.

Annexation Recommended. 138 acres of lands within the watershed of Main No. 1 of the JDD6&56 open ditch appear to benefit from the facilities of JDD6&56 but have not been assessed for the maintenance of those facilities. In addition, 44 acres of lands within the watershed of Main No. 2 benefit from the facilities of Main No. 2. In order to fairly distribute the costs of future maintenance, it is recommended that the annexation procedure be implemented.

Reclassification Recommended. There are material inequities in the current assessment schedule used by the district. Several areas that drain into the joint district are not included in the current assessment schedule. Because of this need for annexation, repairs to the Main No. 1 tile and open ditch would currently not be paid for by some parcels which would be receiving benefit. We recommend that reclassification of the Main No. 1 open ditch and tile schedules be pursued, and that the Main No. 2 area be reclassified at the same time.

Installment Payments. Iowa drainage law allows for drainage district costs for large projects to be spread over as many as twenty years at the discretion of the Board of Supervisors. Typically, the board would spread assessments of the magnitude contemplated in this report over ten years. If we assume that the Board will adopt Option No. 1 and allow ten annual installments at 5% interest, the average annual per acre repair project costs for lands in the district, including newly annexed lands, would be approximately \$81.00 per acre per year. Be reminded that assessments are based upon benefits and that some parcels will likely bear two to three times the average assessments.

Recommended Steps. It is recommended that the Joint Boards of Supervisors acting as trustees for Joint Drainage District No. 6 & 56 take appropriate action, with legal guidance, to accomplish the following:

1. Tentatively approve this engineer's report and schedule a public hearing to consider the input of the district landowners.
2. After consideration of the comments and requests of the landowners, adopt the engineer's report and establish 735 feet of surface drain from the upper end of the existing open ditch of Main No. 1 to the culvert located beneath the Iowa Northern Railway as facilities of JDD6&56.
3. Adopt Option No. 1 for construction, modified as deemed appropriate, to satisfy the desires of the District.
4. Direct the engineer to prepare final plans and specifications for the adopted plan and proceed toward a bid letting.
5. Appoint appraisers to set values upon the district right-of-way. Review and approve the report of the appraisers. Acquire right-of-way along the existing Main No. 1 open ditch and along the surface drain between the upper end of the open ditch and the railroad culvert.
6. Initiate annexation of benefited lands not on the assessment schedule. This should include lands served by Main No. 1 as well as by Main No. 2.
7. Initiate reclassification of benefits for all district open ditch and tile facilities.

Respectfully submitted,
I&S GROUP, INC.

Kent L. Rode, P.E.

The following appendices are included with this report.

- Appendix A – Right – of- Way Tabulation
- Appendix B – Estimate of Probable Costs
- Appendix C – Preliminary Plans

APPENDIX A

OPEN DITCH RIGHT OF WAY TABULATION

ENGINEER'S REPORT
 PROPOSED TILE AND OPEN DITCH REPAIRS OR OPEN DITCH IMPROVEMENT
 JOINT DRAINAGE DISTRICT NOS. 6 56
 FLOYD AND CERRO GORDO COUNTIES, IOWA
 2014

Open Ditch Right-of-Way Tabulation

Landowner	Section & Township	Parcel	Existing Right-of-Way (ac)	Right-of-Way Required (100') (ac)	Right-of-Way To Be Acquired (ac)
Angie L. Brallier 1/4; ETAL 3/4	7-96-18	PT SE SW & SW SE	0.52	1.15	0.63
TOTALS:			0.52	1.15	0.63

Note:

Total acres that are to be acquired will be adjusted between adjacent parcels owned by the same individual landowner. Total Right-of-Way acres for this reach are computed by summing the original ROW plus the adjusted ROW to be acquired. The acres needed to be acquired are close approximations enabled by GPS survey methods. No right-of-way is required on th public road and railroad crossings

APPENDIX B

ESTIMATE OF PROBABLE COSTS

OPTION NO. 1 - OPEN DITCH AND TILE REPAIRS**MAIN NO. 1****JOINT DRAINAGE DISTRICT NO. 6 & 56
FLOYD AND CERRO GORDO COUNTIES****ENGINEER'S OPINION OF PROBABLE PROJECT COST**

ITEM	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1.	Mobilization	1	LS	\$7,000	\$7,000
2.	Open Ditch and Surface Drain Excavation	728	CY	\$3.50	\$2,548
3.	Topsoil, Strip, Salvage and Respread	600	CY	\$5.00	\$3,000
4.	Spoil Bank Leveling (Two Sides)	5.0	STA	\$350	\$1,750
5.	Furnish & Install CMP Surface Drain Pipe				
a.	18" Dia.	90	LF	\$30	\$2,700
6.	Furnish & Install CMP Drain Tile Extensions				
a.	12" Dia.	40	LF	\$25	\$1,000
7.	Geotextile Fabric	140	SY	\$2.50	\$350
8.	Furnish & Place Class "E" Riprap	100	TN	\$40	\$4,000
9.	Clearing, Grubbing, & Rubbish Disposal	1	LS	\$17,000	\$17,000
10.	Open Ditch Fertilizing & Seeding	5.0	STA	\$100	\$500
11.	Rock Chute Structure	1	LS	\$10,000	\$10,000
12.	2000D Reinforced Concrete Pipe, 18" Dia.	2,008	LF	\$30	\$60,240
13.	18" Dia. R.C.P. Elbow Section, Fabrication Only	6	EA	\$525	\$3,150
14.	8" on 18" R.C.P. Tee, Fabrication Only	2	EA	\$350	\$700
15.	18" Dia. R.C.P. Apron Section w/ Footing	1	EA	\$2,000	\$2,000
16.	Tile Trench Stabilization and Cradling Rock	25	TN	\$30	\$750
17.	Lateral Tile Connections, 10" Dia. Or Smaller	3	EA	\$350	\$1,050
18.	HMA Full-Depth Patch	55	SY	\$80	\$4,400
19.	Granular Surfacing	15	TN	\$35	\$525
20.	Traffic Control	1	LS	\$1,000	\$1,000
21.	Seeding, Fertilizing and Mulching	1.0	AC	\$1,500	\$1,500

ESTIMATED CONSTRUCTION COST**\$125,163**

Engineering Services:

Preliminary Survey	\$5,250
Preliminary Investigation and Informal Hearing	\$9,750
Engineering Study, Report, Plans, and Hearing	\$25,000
Final Plans & Specs	\$8,000
Bidding and Negotiating	\$3,750
Construction Staking	\$3,500
Resident Observation Services	\$5,250
Construction Admin Services	\$5,500

Legal & Auditor Services, Publication, Misc.

\$3,000

Crop and Seeding Damages

\$4,000

Contingencies and Finance Costs

\$25,000

REPAIR PROJECT COST SUBTOTAL**\$223,163**

Other District Costs:

District Right-of-Way (2.4 AC @ \$1000.00)	\$2,400
Engineering Services:	
Right-of-Way Acquisition	\$3,500
Annexation	\$4,500
Reclassification of Main No. 1	\$10,000

TOTAL ESTIMATED PROJECT COST**\$243,563**

Average Cost per Currently Assessed Acres (251 AC) =

\$970

Average Cost per Acre for 10 years =

\$125.67

Average Cost per Benefited Acre (389 AC) =

\$626

Average Cost per Acre for 10 years =

\$81.09

OPTION NO. 2 - OPEN DITCH IMPROVEMENTS**MAIN NO. 1****JOINT DRAINAGE DISTRICT NO. 6 & 56****FLOYD AND CERRO GORDO COUNTIES****ENGINEER'S OPINION OF PROBABLE PROJECT COST**

ITEM	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1.	Mobilization	1	LS	\$6,000	\$6,000
2.	Open Ditch Excavation	4,475	CY	\$3.50	\$15,663
3.	Topsoil, Strip, Salvage and Respread	3,500	CY	\$5.00	\$17,500
4.	Spoil Bank Leveling (Two Sides)	24.3	STA	\$350	\$8,505
5.	Furnish & Install CMP Surface Drain Pipe				
	a. 18" Dia.	40	LF	\$30	\$1,200
	b. 24" Dia.	40	LF	\$35	\$1,400
	c. 30" Dia.	40	LF	\$40	\$1,600
6.	Furnish & Install CMP Drain Tile Extensions				
	a. 12" Dia.	40	LF	\$25	\$1,000
	b. 15" Dia.	40	LF	\$30	\$1,200
7.	Geotextile Fabric	140	SY	\$2.50	\$350
8.	Furnish & Place Class "E" Riprap	100	TN	\$40	\$4,000
9.	Clearing, Grubbing, & Rubbish Disposal	1	LS	\$17,000	\$17,000
10.	Open Ditch Fertilizing & Seeding	24.3	STA	\$100	\$2,428
11.	Drop Structure	1.0	LS	\$15,000	\$15,000

ESTIMATED CONSTRUCTION COST**\$92,846**

Engineering Services:

Preliminary Survey	\$5,250
Preliminary Investigation and Informal Hearing	\$9,750
Engineering Study, Report, Plans, and Hearing	\$25,000
Final Plans & Specs	\$9,000
Permitting	\$6,500
Bidding and Negotiating	\$3,750
Construction Staking	\$3,500
Resident Observation Services	\$5,250
Construction Admin Services	\$5,500

Legal & Auditor Services, Publication, Misc.

\$3,000

Crop and Seeding Damages

\$4,000

Contingencies and Finance Costs

\$25,000**PROJECT COST SUBTOTAL****\$198,346**

Other District Costs:

District Right-of-Way (3.2 AC @ \$1000.00)	\$3,200
District Right-of-Way (1.0 AC @ \$8000.00)	\$8,000
Engineering Services:	
Right-of-Way Acquisition	\$3,500
Annexation	\$4,500
Reclassification of Main No. 1	<u>\$10,000</u>

TOTAL ESTIMATED PROJECT COST**\$227,546**

Average Cost per Currently Assessed Acres (251 AC) =

\$907

Average Cost per Acre for 10 years =

\$117.40

Average Cost per Benefited Acre (389 AC) =

\$585

Average Cost per Acre for 10 years =

\$75.75**RAILROAD CROSSING - Cost paid by Railroad**

1.	Mobilization	1	LS	\$5,000	\$5,000
2.	Jack and Bore 100" X 1.250" Steel Casing Pipe Culvert	90	LF	\$3,600	\$324,000
3.	Seeding and Fertilizing	1	LS	\$1,500	\$1,500

ESTIMATED CONSTRUCTION COST**\$330,500**

OPTION NO. 3 - SHORT OPEN DITCH AND TILE**MAIN NO. 1****JOINT DRAINAGE DISTRICT NO. 6 & 56****FLOYD AND CERRO GORDO COUNTIES****ENGINEER'S OPINION OF PROBABLE PROJECT COST**

ITEM	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1.	Mobilization	1	LS	\$8,000	\$8,000
2.	Open Ditch and Surface Drain Excavation	2,700	CY	\$3.50	\$9,450
3.	Topsoil, Strip, Salvage and Respread	4,100	CY	\$5.00	\$20,500
4.	Spoil Bank Leveling (Two Sides)	15.8	STA	\$350	\$5,513
5.	Furnish & Install CMP Surface Drain Pipe				
	a. 18" Dia.	40	LF	\$30	\$1,200
	b. 24" Dia.	40	LF	\$35	\$1,400
	c. 30" Dia.	40	LF	\$40	\$1,600
6.	Furnish & Install CMP Drain Tile Extensions				
	a. 12" Dia.	40	LF	\$25	\$1,000
	b. 15" Dia.	40	LF	\$30	\$1,200
7.	Geotextile Fabric	140	SY	\$2.50	\$350
8.	Furnish & Place Class "E" Riprap	100	TN	\$35	\$3,500
9.	Clearing, Grubbing, & Rubbish Disposal	1	LS	\$17,000	\$17,000
10.	Open Ditch Fertilizing & Seeding	15.8	STA	\$100	\$1,575
11.	Drop Structure	1	LS	\$15,000	\$15,000
12.	Rock Chute Structure	1	LS	\$10,000	\$10,000
13.	2000D Reinforced Concrete Pipe, 18" Dia.	938	LF	\$40	\$37,520
14.	18" Dia. R.C.P. Elbow Section, Fabrication Only	2	EA	\$525	\$1,050
15.	18" Dia. R.C.P. Apron Section w/ Footing	1	EA	\$2,000	\$2,000
16.	Tile Trench Stabilization and Cradling Rock	20	TN	\$30	\$600
17.	Lateral Tile Connections, 10" Dia. Or Smaller	3	EA	\$350	\$1,050
18.	HMA Full-Depth Patch	55	SY	\$80	\$4,400
19.	Granular Surfacing	15	TN	\$35	\$525
20.	Traffic Control	1	LS	\$1,000	\$1,000
21.	Seeding, Fertilizing and Mulching	1.0	AC	\$1,500	\$1,500

ESTIMATED CONSTRUCTION COST**\$146,933**

Engineering Services:

Preliminary Survey	\$5,250
Preliminary Investigation and Informal Hearing	\$9,750
Engineering Study, Report, Plans, and Hearing	\$25,000
Final Plans & Specs	\$9,000
Permitting	\$6,500
Bidding and Negotiating	\$3,750
Construction Staking	\$3,500
Resident Observation Services	\$5,250
Construction Admin Services	\$5,500

Legal & Auditor Services, Publication, Misc.

\$3,000

Crop and Seeding Damages

\$4,000

Contingencies and Finance Costs

\$25,000

REPAIR PROJECT COST SUBTOTAL**\$252,433**

Other District Costs:

District Right-of-Way (3.2 AC @ \$1000.00)	\$3,200
District Right-of-Way (1.0 AC @ \$8000.00)	\$8,000

Engineering Services:

Right-of-Way Acquisition	\$3,500
Annexation	\$4,500
Reclassification of Main No. 1	\$10,000

TOTAL ESTIMATED PROJECT COST**\$281,633**

Average Cost per Currently Assessed Acres (251 AC) =

\$1,122

Average Cost per Acre for 10 years =

\$145.31

Average Cost per Benefited Acre (389 AC) =

\$724

Average Cost per Acre for 10 years =

\$93.76

APPENDIX C

PRELIMINARY PROPOSED PLANS

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I&S PROJECT NO. 116480

EXISTING

- | SYMBOL | DESCRIPTION |
|--------|----------------------------|
| | CITY LIMITS |
| | SECTION LINE |
| | QUARTER SECTION LINE |
| | RIGHT OF WAY LINE |
| | PROPERTY / LOT LINE |
| | EASEMENT LINE |
| | RAILROAD |
| | WATER EDGE |
| | WETLAND BOUNDARY |
| | WETLAND / MARSH |
| | FENCE LINE |
| | CULVERT |
| | STORM SEWER |
| | TILE |
| | SANITARY SEWER |
| | WATER |
| | UNDERGROUND TELEPHONE |
| | OVERHEAD ELECTRIC |
| | UNDERGROUND ELECTRIC |
| | UNDERGROUND TV |
| | GAS |
| | UNDERGROUND FIBER OPTIC |
| | CONTOUR (MAJOR) |
| | CONTOUR (MINOR) |
| | DECIDUOUS TREE |
| | CONIFEROUS TREE |
| | TRAIL LINE |
| | MANHOLE |
| | CATCH BASIN |
| | HYDRANT |
| | VALVE |
| | CURB STOP |
| | POWER POLE |
| | UTILITY PEDESTAL / CABINET |
| | RIGHT OF WAY |
| | EASEMENT |
| | CULVERT |
| | STORM SEWER |
| | STORM SEWER (PIPE WIDTH) |
| | SANITARY SEWER |
| | WATER |
| | OVERHEAD ELECTRIC |
| | UNDERGROUND ELECTRIC |
| | UNDERGROUND TV |
| | GAS |
| | CONTOUR |
| | MANHOLE |
| | CATCH BASIN |
| | HYDRANT |
| | VALVE |
| | PCC PATCH |
| | FILL DEPTH HMA PATCH |
| | GRAVEL REPLACEMENT |
| | HOT MIX ASPHALT |

TITLE SHEET

- | | |
|-----------|---|
| A.01 | TITLE SHEET |
| A.02 | MAIN NO. 1 LANDOWNERS PLAT |
| A.03 | DISTRICT PLAT |
| D.01+D.03 | OPTION 1 TILE REPAIR PLAN AND PROFILE |
| D.04+D.05 | OPTION 2 EXISTING AND PROPOSED OPEN DITCH |
| D.06+D.08 | OPTION 3 SHORT OPEN DITCH AND TILE |



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

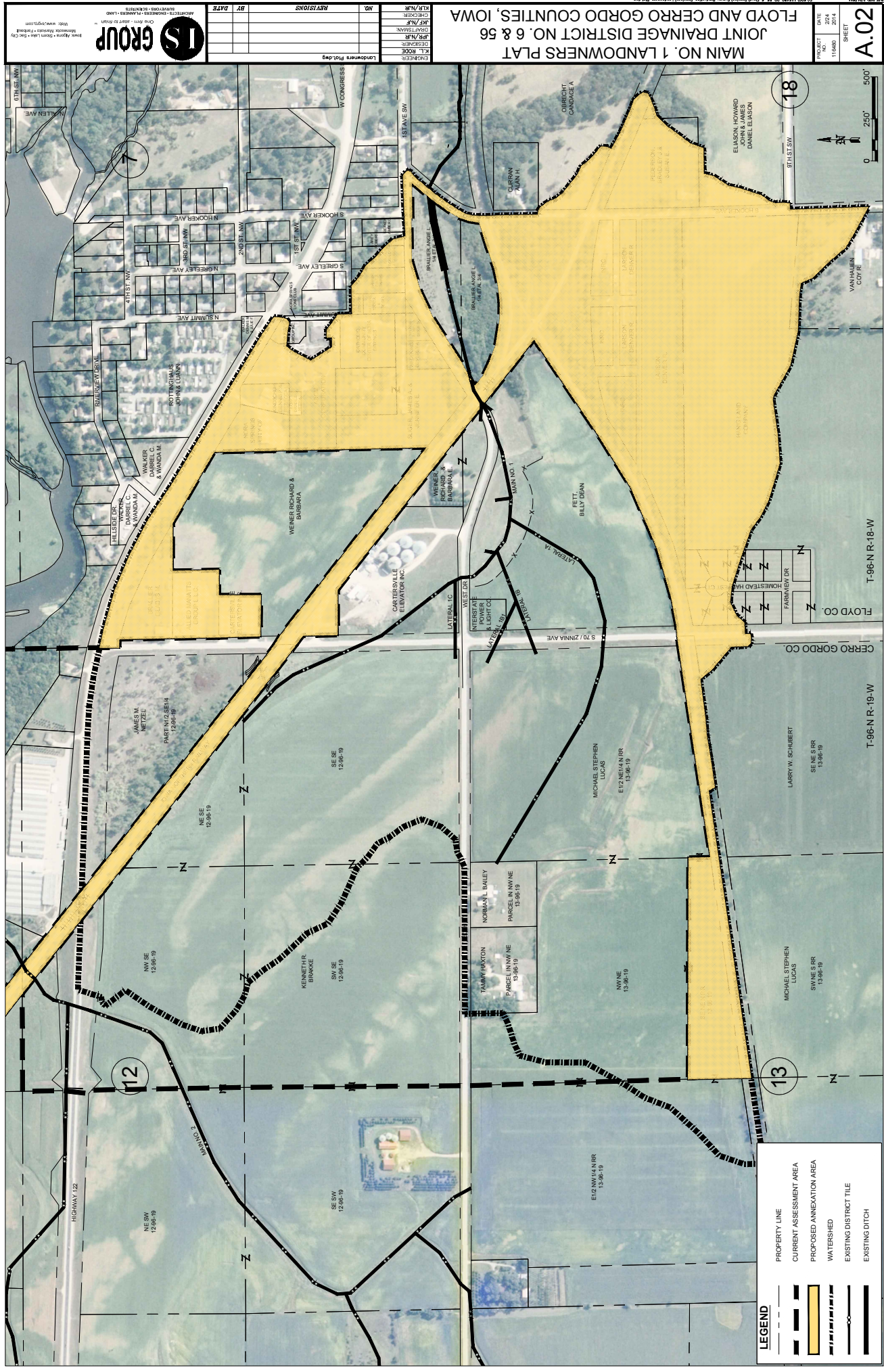
KENT L. RODE Date
Pages or sheets covered by this seal: ALL SHEETS
LISTED IN THE INDEX OF DRAWINGS
My license renewal date is December 31, 2015.

1. ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE THE SPECIFICATIONS, AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL AND SUPPLEMENTARY CONDITIONS AND DISCIPLINES AND ALL APPENDICES), MODIFICATIONS AND AMENDMENTS TO THE CONTRACT DOCUMENTS ISSUED BY THE ENGINEER.
2. CONTRACT DOCUMENTS SHALL BE

THE CURRENT EDITION OF THE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS SHALL APPLY TO CONSTRUCTION WORK ON THE PROJECT. PLUS THE BIDDING INFORMATION AND CONTRACT PROVISIONS OF I&S GROUP, INCORPORATED.

A.01

NOTE:
THE CLARITY OF THESE PLANS DEPENDS UPON
COLOR COPIES. IF THIS TEXT DOES NOT APPEAR
IN COLLAR, THIS IS NOT AN ORIGINAL PLAN SET
AND MAY RESULT IN MISINTERPRETATION.



IS GROUP

www.isgroup.com

15000 S. Highway 122, Suite 100
Des Moines, Iowa 50315

Phone: 515.281.1000
Fax: 515.281.1001

REVISIONS

NO.	DATE	BY
1	11/18/2014	11/18/2014

NO.	DATE	BY
1	11/18/2014	11/18/2014

JOINT DRAINAGE DISTRICT NO. 6 & 56
FLOYD AND CERRO GORDO COUNTIES, IOWA

PROJECT NO. 224
SHEET 11680
A.02

LEGEND

PROPERTY LINE

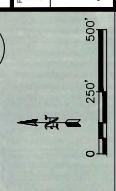
CURRENT ASSESSMENT AREA

PROPOSED ANNEXATION AREA

WATERSHED

EXISTING DISTRICT TILE

EXISTING DITCH



6TH ST SW
18
ELSON, EDWARD
JOHN & JAMES
DANIEL ELSON

VANHAUSEN CO. R

FLOYD CO.

CERRO GORDO CO.

T-96-N-R-18-W

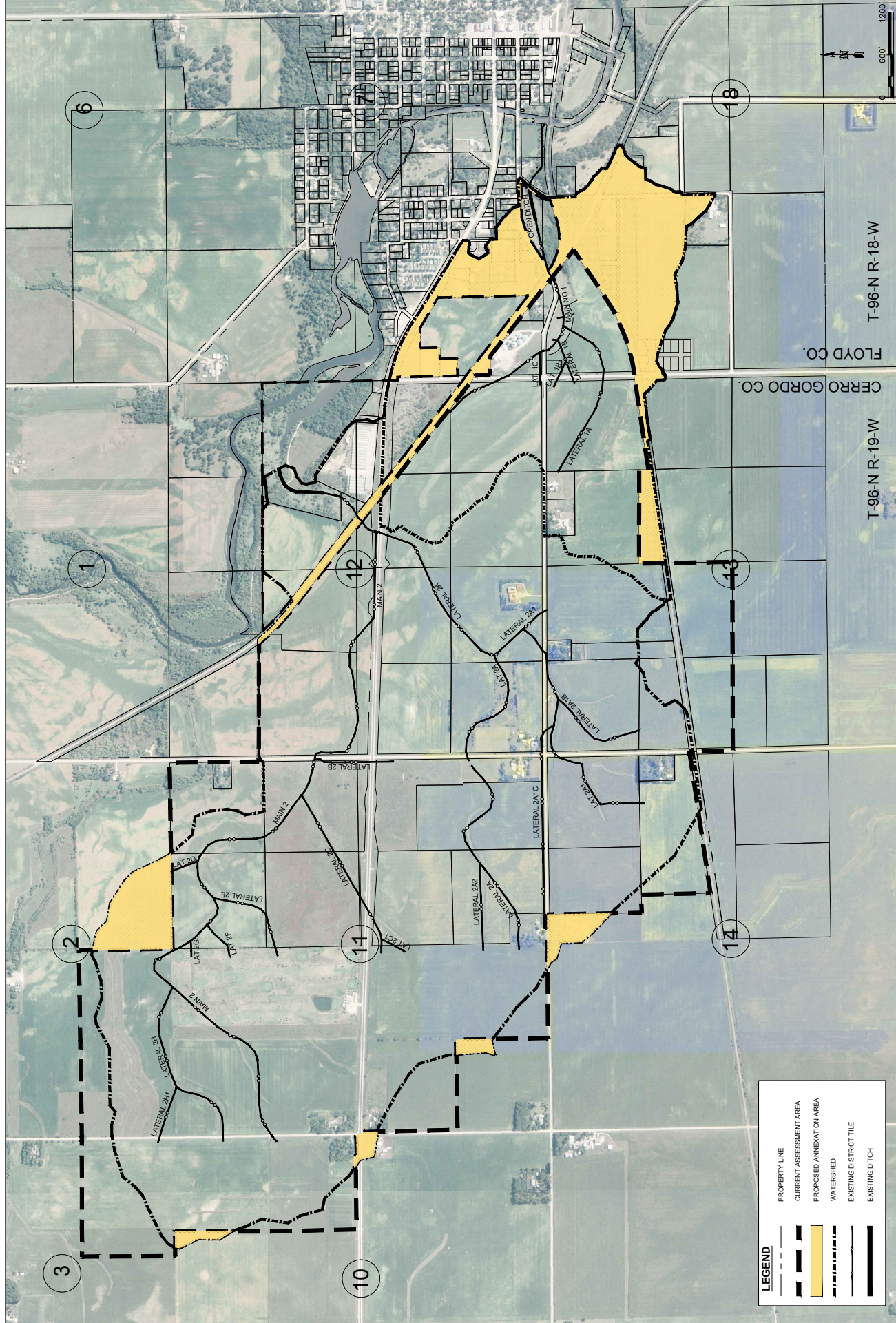
T-96-N-R-19-W

13

12

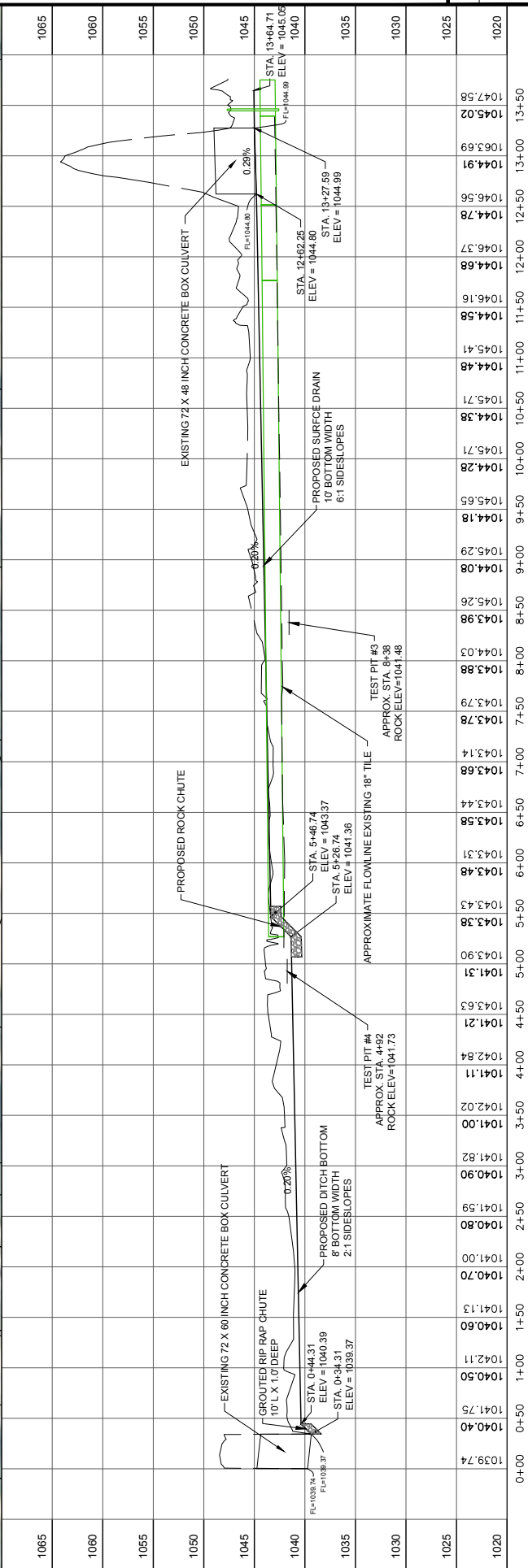
HIGHWAY 122

ENGINEER	Londowners Plotting	DESIGNER	PR/NA/R	DRAFTSMAN	KF/NA/R	CHECKER	UR/NA/R	NO.	REVISIONS			BY	DATE					



ENGINEER:	K.L. RODE
DESIGNER:	JPR/NJR
DRAFTSMAN	J.K. FRASE
CHECKER	KLR/NJR

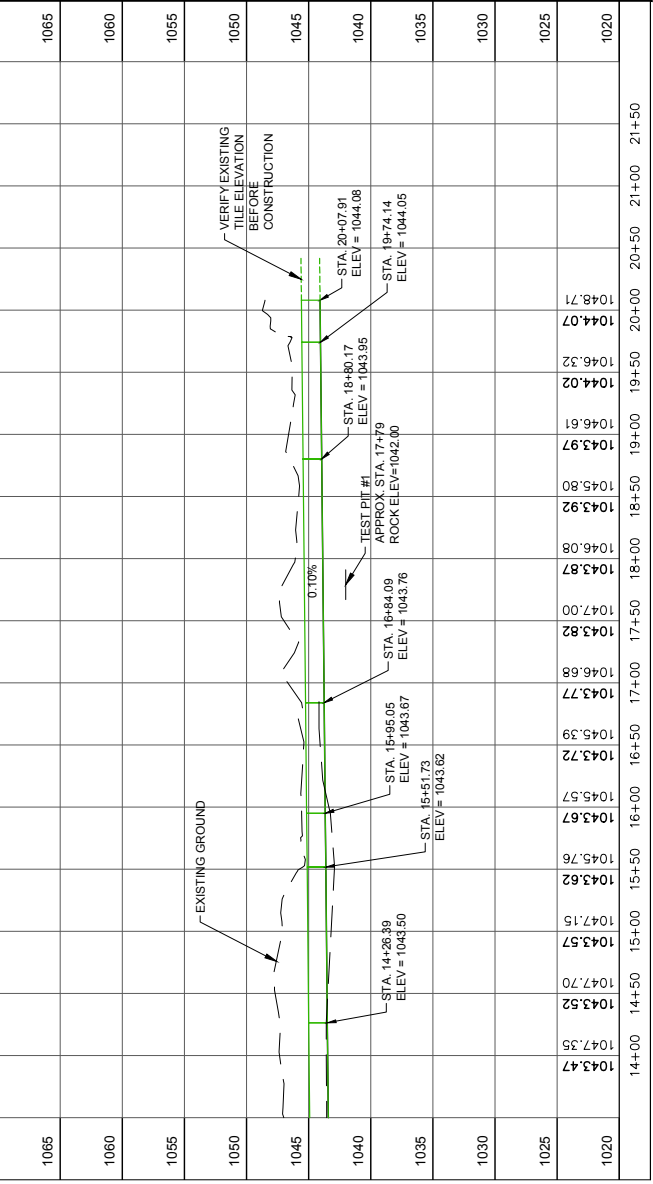
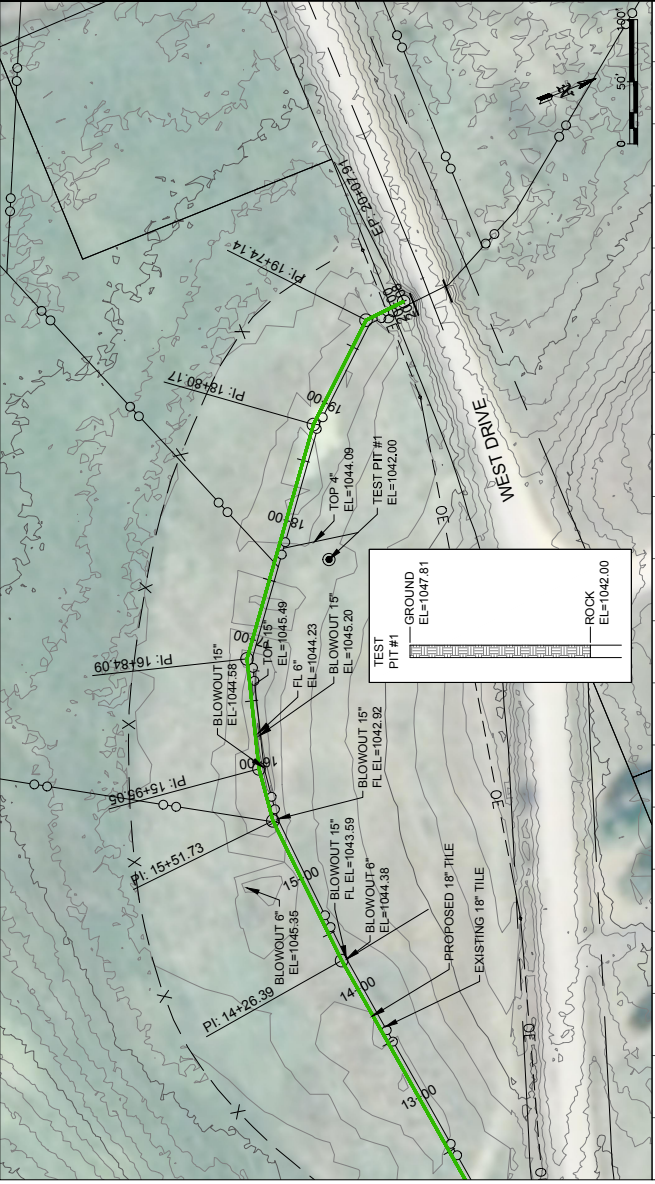
NO.	REVISIONS	BY	DATE



OPTION 1 TILE REPAIR PLAN AND PROFILE
JOINT DRAINAGE DISTRICT NO. 6 & 56
FLOYD AND CERRO GORDO COUNTIES, IOWA

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San Diego, CA
Seattle, WA
Tampa, FL
Washington, DC
Wichita, KS
Wilmington, DE
Winston-Salem, NC
Yonkers, NY

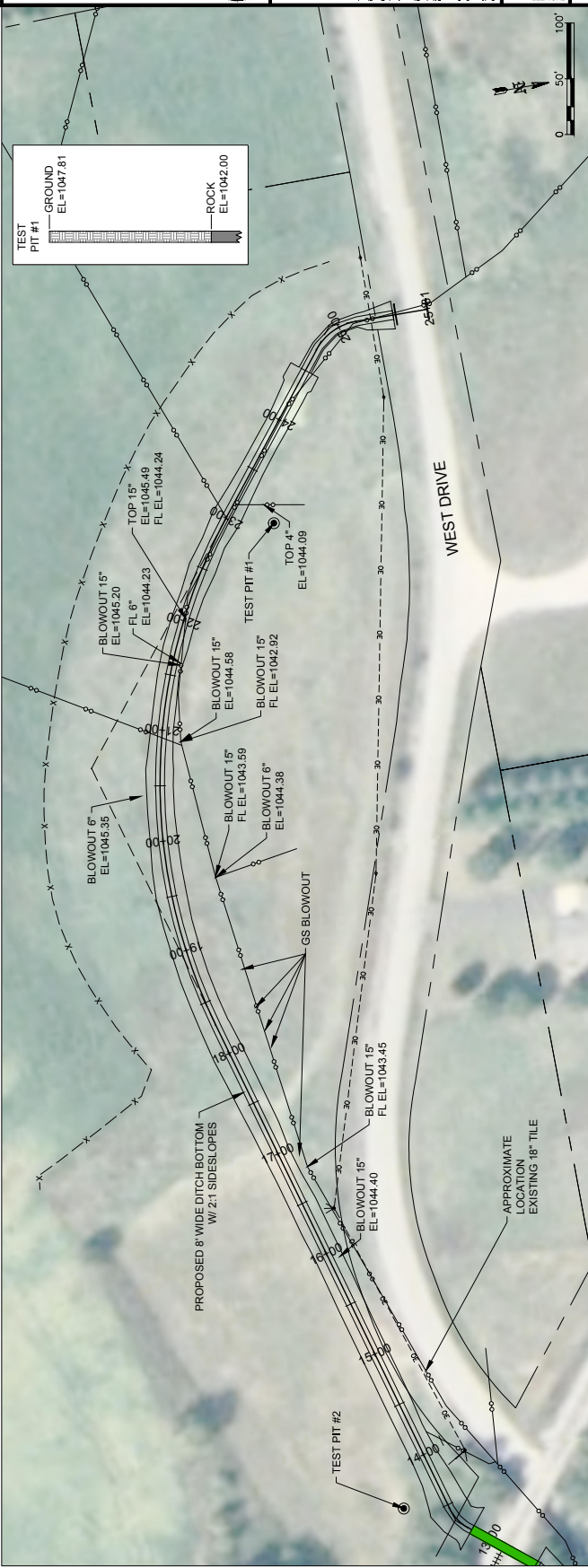


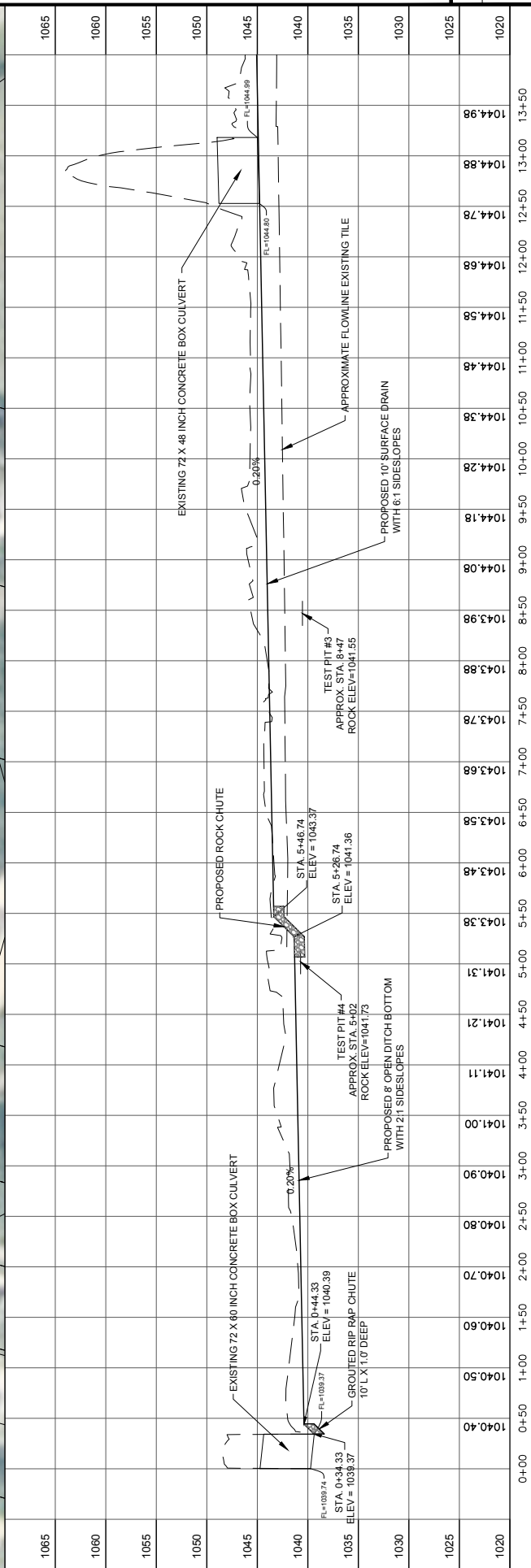
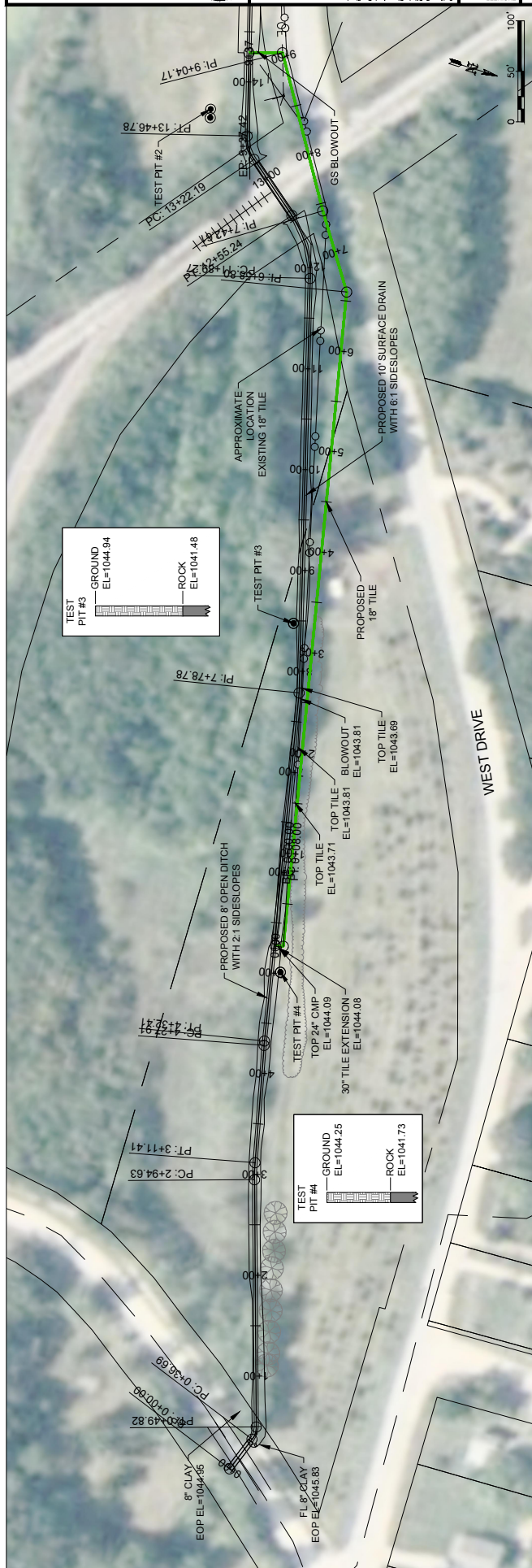
OPTION 2 EXISTING AND PROPOSED OPEN DITCH
JOINT DRAINAGE DISTRICT NO. 6 & 56
FLOYD AND CERRO GORDO COUNTIES, IOWA

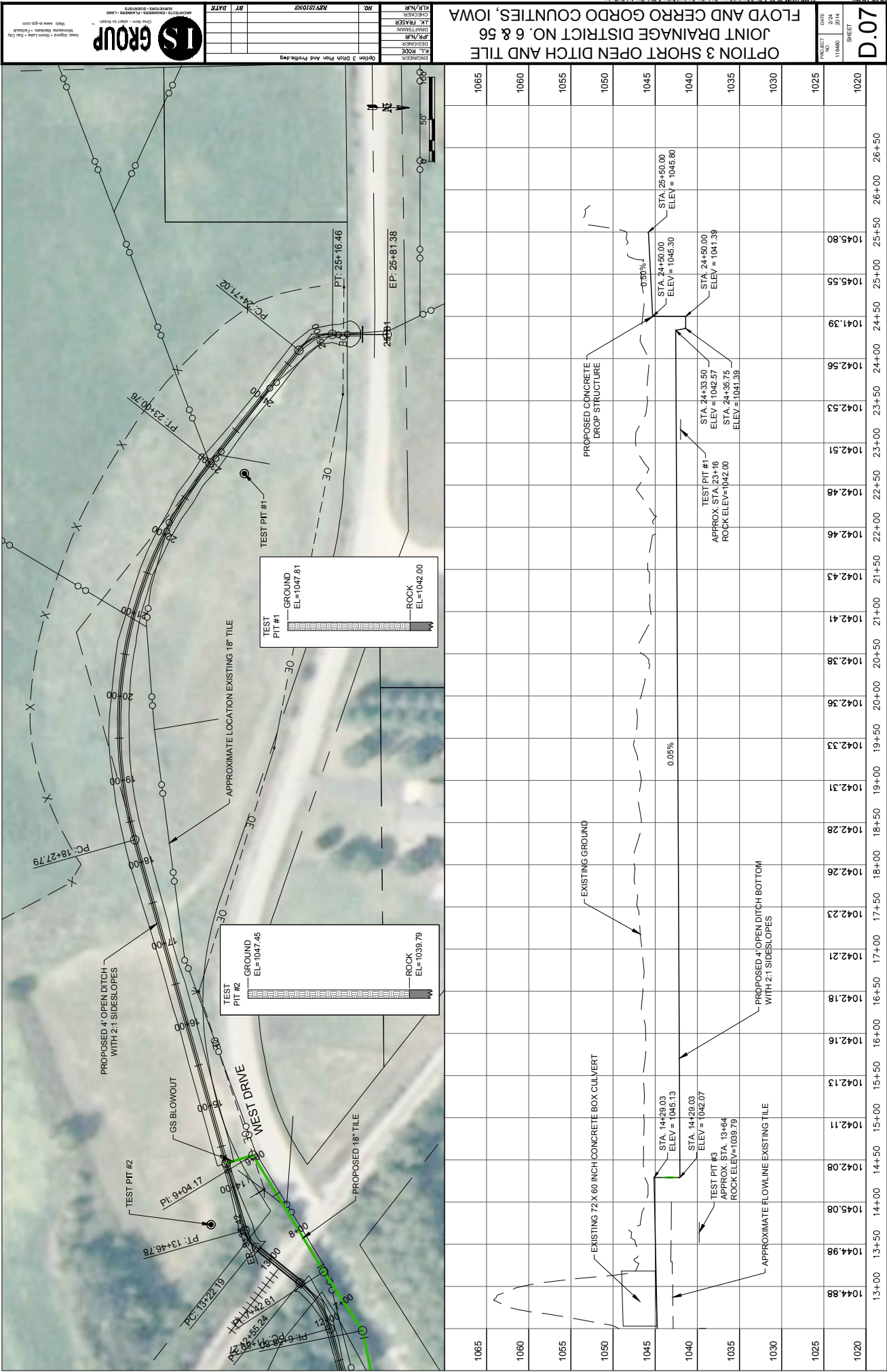
NO.	REVISIONS	BY	DATE



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SURVEYORS • SCIENTISTS
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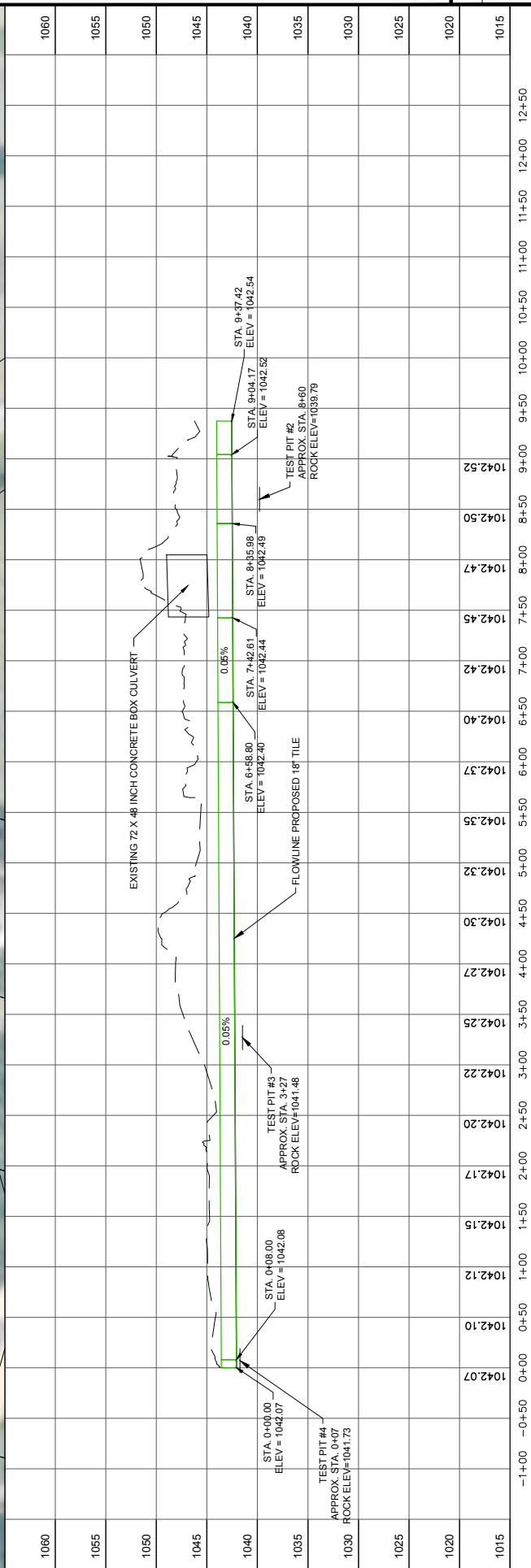
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ENGINEER: K.L. RODE
DESIGNER: JPR/NJR
DRAFTSMAN: J.K. FRASER
CHECKER: KLR/NJR

Option 3 Ditch Plan And Profile.dwg		
NO.	REVISIONS	BY DATE



**STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION**

Northern Illinois Gas Company	)	
d/b/a Nicor Gas	)	
	)	Docket No. 18-0795
	)	
Petition for Order Pursuant to Sections 8-503	)	
and 8-509 of the Public Utilities Act	)	
authorizing the use of Eminent Domain Power	)	
	)	

**PRE-FILED DIRECT TESTIMONY
OF JOHN FURLAN, ESQ.
ON BEHALF OF
INTERVENOR WISCONSIN CENTRAL LTD.**

April 11, 2019

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I. BACKGROUND

Q: Please state your name and business address for the record.

A: My name is John Furlan. My business address is 17641 S. Ashland Avenue, Homewood, Illinois.

Q: What is your position?

A: I am employed by Illinois Central Railroad Company ("ICRR") and serve as Litigation Counsel for ICRR, Wisconsin Central Ltd. ("WCL"), Chicago, Central & Pacific Railroad Company ("CC&P"), and other operating railroad subsidiaries of [REDACTED]

Q: Is WCL a wholly-owned subsidiary of [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Q: How long have you been in this position?

A: Ten years.

18 **Q: Please describe your prior professional experience.**

19 A: I graduated from Loyola University of Chicago School of Law in 1990. As a student, I
20 practiced under a Rule 711 license in the Homicide Task Force and the Paternity Division of the
21 Cook County Public Defender's Office. Upon graduating and passing the bar, I took a job as an
22 Assistant Cook County Public Defender, where I served in the Domestic Violence Division, the
23 Misdemeanor Jury Division, the Preliminary Hearing Unit, Narcotics Court, and the Felony Trial
24 Division. I have represented thousands of indigent clients charged with all manner of crimes
25 ranging from murder, criminal sexual assault, armed violence, home invasion, and armed
26 robbery to possession of stolen motor vehicles, burglary, and narcotics possession. I left the
27 Cook County Public Defender's Office in 2000 to work at O'Connor & Karnes, a small litigation
28 firm. While at that firm, I represented municipalities and police officers in §1983 civil rights
29 cases alleging police misconduct, including excessive force, false arrest, and improper vehicular
30 pursuit. My practice also included cases involving product liability, medical malpractice, legal
31 malpractice, negligence, wrongful death, commercial disputes, divorce, FELA, insurance
32 coverage disputes, and appellate practice. In 2008, I left the firm and began work in my present
33 position. As litigation counsel, I manage approximately 300 cases and claims in a territory that
34 comprises six mid-western states. In my 28 years as an attorney, I have been fortunate to have
35 tried 27 jury trials, 180 bench trials, conducted thousands of felony preliminary hearings, and
36 argued several cases in the Illinois Appellate Court.

37 **Q: Have you appeared in this matter?**

38 A: No. I am the corporate representative for WCL.

39 **Q: Has there been any other corporate representative of WCL monitoring this matter**
40 **on behalf of the Company?**

41 A: No.

42 **Q: Are you familiar with the Protective Order entered in this matter?**

43 A: Yes.

44 **Q: Have you executed the certification required to view Confidential and Highly**
45 **Confidential information?**

46 A: Yes.

47 **Q: Are you familiar with the nature of this proceeding?**

48 A: Yes, I have reviewed the Nicor Petitions, the Exhibits, and the discovery responses.

49 **II. NICOR'S SAFETY RECORD AND BURDEN ON INTERSTATE COMMERCE**

50 **Q: Does Nicor's Petition rely on any prior history between WCL and Nicor?**

51 A: Nicor claims it has safely operated its Aux Sable pipeline for 40 years, including under
52 the railroad crossings that are the subject of the Petition. Nicor Petition, ¶ 9. Nicor claims that

notwithstanding its “established record of safety,” WCL filed a lawsuit alleging that Nicor’s pipeline work at milepost 10.3 of WCL’s Plainfield subdivision caused a subsidence that derailed a freight train. Nicor Petition, ¶ 9. Nicor claims it filed its current Petitions because WCL engaged in “evasive communications and positioning regarding an unrelated 2017 Derailment.” Nicor Petition, ¶ 15.

Q: Do you have personal knowledge of that subsidence and ensuing derailment, and historical safety record that Nicor’s Petition addresses?

A: Yes. On June 30, 2017, I received an emergency communication regarding a train derailment in Plainfield, Illinois. From that communication, I learned that we had a large-scale derailment of an oil train in an urban location. Since this was an oil train, my first thought was that I hoped no one was injured or killed. Oil train derailments can be devastating. In July 2013, an oil train operated by Montreal, Maine & Atlantic Railway (“MMA”) derailed in a small Quebec town called Lac Megantic. The entire rail industry took notice. The Lac Megantic disaster claimed 47 lives when the MMA oil train derailed and exploded in the middle of town. The victims ranged in age from 4 to 97. First responders recovered 42 charred bodies, but 5 bodies were never found and were presumed to be incinerated in the explosion. Photos of that tragedy are attached as Exhibit A. The MMA train was not operated by CNR or any CNR subsidiary. On the one-year anniversary of the Lac Megantic derailment, I was part of a railroad delegation that met with the survivors. I listened to their first-hand accounts of people screaming

72 because they were trapped by burning rivers of oil. They told me about how fire erupted and
73 exploded out of sewers and the plumbing in their homes. They also told me about how the smoke
74 was so thick and dark that they choked for breath and did not know whether they were running to
75 safety or further into danger.

76 **Q: Did you respond to the Plainfield derailment?**

77 A: Yes.

78 **Q: What did you see when you arrived?**

79 A: When I arrived, I was relieved to see that there had been no explosion, and that no one
80 had been injured or killed. I learned that the train consisted of 115 tanks cars and four
81 locomotives. I saw about a dozen tank cars lying off the tracks. Photos of the derailment scene
82 are attached as Exhibit B. I learned that 41 tank cars had been destroyed or damaged and three of
83 the tank cars had breached and spilled crude oil. Much of the oil was contained in a pit next to
84 our tracks that had been used to attempt to install a natural gas pipeline under our right of way,
85 though there was a concern that the oil could make its way to the DuPage River, which would
86 result in an environmental disaster. I knew our dangerous good officers and outside contractors
87 were doing the best they could to contain the oil. I remember thinking to myself that we were
88 really lucky, because this could have been so much, much worse. I was also thankful that there
89 were so many good people - railroad employees, contractors, police, firefighters, Illinois EPA,
90 FRA, and local government representatives - working to clean up this awful mess and help us

91 find out how this happened. I learned that Nicor had accessed our property to renew a segment of
92 its Aux Sable pipeline pursuant to a license agreement (see “Plainfield License” attached as
93 Exhibit C) with WCL’s predecessor, Elgin, Joliet & Eastern Railway Company (“EJE”). I also
94 learned that Nicor had hired Michels Corporation (“Michels”) to perform the construction.

95 **Q: How much oil spilled?**

96 A: About 40,000 gallons of crude oil was spilled.

97 **Q: Did WCL determine what caused the derailment?**

98 A: Yes. We examined all possible causes of the derailment. We had outside counsel and
99 geotechnical experts at the scene to assist in the process. We reviewed locomotive event recorder
100 data and locomotive video and spoke with the train crew. We found that train handling did not
101 cause the derailment. We reviewed recent track inspection reports, including hi-rail/walking
102 inspections, rail flaw detection reports, and geometry car reports, and found that track issues did
103 not cause the derailment. We reviewed precipitation and geological records and found that a
104 washout or natural occurrence did not cause the derailment. After our preliminary investigation,
105 we found that Nicor’s and Michel’s work under our right-of-way weakened the track
106 substructure and caused a sinkhole to form, which derailed the train. On August 25, 2017, I sent
107 a letter to Nicor outlining the results of our investigation. Exhibit D.

108 **Q: Were there any other investigations into what caused the derailment?**

109 A: Yes. The Federal Railroad Administration (“FRA”) conducted an independent
110 investigation. WCL, Nicor, and Michels all cooperated and were parties to the FRA’s
111 investigation. The FRA released its report, the synopsis of which is attached as Exhibit E. In that
112 report, the FRA found that the derailment was not caused by train handling issues, track issues,
113 track washout, or a naturally-occurring depression in the ground under the track structure. The
114 FRA’s investigation found that Nicor’s and Michels’ attempted installation of the Aux Sable
115 pipeline under WCL’s right of way caused a subsidence, also known as a sinkhole, that
116 undermined the track structure and caused the train to derail.

117 **Q: Did you contact Nicor and Michels after finding out the cause of the derailment?**

118 A: Yes, I set up a meeting between Nicor’s, Michels’, and WCL’s in-house counsel, outside
119 counsel, and principal decision-makers to disclose our findings and to discuss how our
120 companies could cooperate and move forward together. I felt that it was in all of our companies’
121 best interests to sit down and resolve our disputes without litigation and to examine the safety
122 issues so that incidents like this would not happen again. That meeting occurred on July 11,
123 2017. During the meeting, I gave Nicor and Michels copies of locomotive video showing the
124 subsidence that derailed the train, a copy of the event recorder (*i.e.*, “black box”) data from the
125 lead locomotive, geometry car reports, rail flaw detection reports, hi-rail/walking inspection
126 reports, weather reports from the National Oceanic and Atmospheric Administration (“NOAA”),

127 photos of the derailment scene taken by an aerial drone, and a cross-section representation of the
128 track substructure. I walked everyone through the documents and video at the meeting. We
129 discussed how Nicor could go forward with its Aux Sable pipeline project under our right of
130 way, since it had abandoned the pipeline it was installing and had not connected the ends outside
131 our right-of-way. We discussed how Michels could improve its emergency communications
132 protocol, since it had not advised the railroad of any of the problems it had encountered in
133 attempting to install the pipeline. We also discussed WCL's safety concerns and how WCL
134 could receive compensation from Nicor and Michels for the damage they caused.

135 **Q: Was Nicor ever able to reconnect its Aux Sable pipeline under WCL's right of way?**

136 A: Yes. In late September 2017, Nicor filed an injunction action against WCL seeking a
137 court order to reconnect the Aux Sable pipeline. I'm not sure why Nicor felt the need to do so,
138 since WCL organized discussions on how the parties could move forward and shared numerous
139 documents with Nicor and Michels. In any event, within two weeks of Nicor's filing, I
140 personally negotiated an agreement between WCL and Nicor that allowed Nicor to access
141 WCL's right of way, reconnect its Aux Sable pipeline, and perform federally mandated pressure
142 testing both at the derailment site, and on another nearby WCL rail line.

143 **Q: Does WCL have an estimate of the total damage Nicor and Michels caused,**
144 **including property casualty, remediation, and environmental contamination?**

145 A: Yes. Current losses that WCL has incurred and paid out are \$9,938,057.50. We anticipate
146 that total losses will be between \$10,000,000.00 and \$12,000,000.00.

147 **Q: How do derailments like the one in Plainfield affect rail operations on the CN**
148 **network and the rail industry at large?**

149 A: A derailment halts train traffic at the derailment site, but the effect is exponential. Rail
150 systems are networks, so a train stopped at one location stops all trains behind it. If the
151 derailment occurs on a main line, like the one in Plainfield, as many as 20 to 25 trains can be
152 affected. Many of these trains are over a mile long. If a mile-long train cannot move because of a
153 derailment in front of it, it will occupy grade crossings. This means that pedestrian and vehicular
154 traffic (like ambulances and fire trucks) cannot cross the tracks where the trains are stopped, and
155 may not be able to take alternate routes because the train may be occupying several crossings.
156 CN's rail system, like many other class I rail systems, consists of single main line tracks. Trains
157 travel in both directions and move past each other using sidings. So if a northbound train has
158 priority over a southbound train, the rail traffic controller directs the southbound train to siding
159 where it sits until the northbound train moves past the southbound train. As I said, when a
160 derailment occurs, all train traffic behind the derailed train stops – but all train traffic *in front* of
161 the derailed train also stops - so the exponential effect I described is doubled. The longer it takes

162 to clean up the derailment and get train traffic moving again, the worse the problem becomes.
163 Trains that are waiting to leave railyards cannot do so. Trains that are waiting to get into
164 railyards cannot do so because they are occupied by trains unable to leave. Depending on where
165 other trains are in relation to the derailment, they can sometimes be re-routed. However, re-
166 routing takes additional time and often involves using another railroad's tracks, which then
167 causes congestion on the other railroads' lines. A good way to think about it is to imagine
168 holding a funnel under a kitchen water faucet. If the funnel is unblocked, the water flows through
169 with no problems. But if you block the small end of the funnel with your finger, the water begins
170 to fill the funnel. If you block it long enough, the funnel will fill up and overflow because the
171 water can no longer get through the funnel. This affects both safety and interstate commerce.

172 **Q: What effects do derailments like the one in Plainfield have beyond rail operations?**

173 A: If trains cannot move, millions of dollars in goods becomes frozen in place and cannot
174 reach their destinations. Many of the shipments we deliver are time sensitive. A water filtration
175 plant may have to shut down because it does not have chlorine. Consumer goods may not reach
176 distribution facilities in time to be loaded onto trucks for delivery to retail outlets. Home building
177 may be delayed due to a lack of lumber. Power plants may slow production because of lack of
178 coal. Grain does not get to mills where it is turned into flour. A company that molds plastic parts
179 may have to shut down production because it has not received its shipment of raw plastic pellets.
180 A steel mill may have to shut down production because it has not received iron ore pellets. A

181 natural gas fracking company may have to shut down operations because it has not received
182 frack sand or drilling pipe. The list goes on and on. Name a bulk commodity, and the railroad
183 transports it where it is needed.

184 **Q: Once the tracks are repaired, is there no longer an impact on interstate commerce?**

185 A: The effects of a derailment are felt on interstate commerce even after train traffic is
186 resumed. Once tracks are repaired, trains travel at a reduced speed pursuant to a slow order and
187 monitored to ensure there are no issues with the repairs. In Plainfield, we had a slow order for
188 over a year due to the circumstances of that derailment. As a result, we had 127.6 minutes of
189 train delay every day and incurred the cost of monitoring the track and train traffic for settlement
190 until the derailment site could be grouted. We also received complaints from the surrounding
191 communities about trains blocking crossings and had to explain that this was due to the slow
192 order.

193 **Q: Why was there a slow order in place for a year in Plainfield?**

194 A: WCL was not able to fully remediate the site after the derailment because it did not have
195 complete information about Nicor's and Michels' pipe installing operations that led to the
196 derailment. WCL tried to be transparent and voluntarily gave Nicor and Michels as much
197 information as it could in the months after the derailment. But Michels and Nicor refused to
198 share any meaningful information or documents with WCL. As a result, to protect public safety,
199 WCL was forced to have round-the-clock monitoring of the derailment site by a watchman and a

surveyor at a cost of about \$4,000 per day. For every train that passed over the site, a watchman watched for any indication of track destabilization and a surveyor monitored ground settlement. To fully remediate the derailment site and restore regular rail operations, WCL had two options: (1) it could excavate the pipe Nicor abandoned and back fill the track structure; or (2) it could stabilize the track bed around the pipe through grouting with concrete. Nicor's abandoned pipe was 22 feet below the rails, so excavating it and backfilling it would have shut down the railroad for over a week with the exponential effect on rail operations and interstate commerce I previously described. The excavation would require heavy earth moving machinery to be working dangerously close to Nicor's active pipeline, so it would also have required Nicor to shut down its Aux Sable pipeline for the duration of the work. Excavation was also estimated to cost between \$3,000,000 and \$5,000,000. Grouting was a much less expensive option and would not require a shut down of Nicor's pipeline or of rail operations. However, grouting had two problems: (1) since Nicor and Michels refused to share any information, our geotechnical engineers and grouting contractors would be shooting in the dark as to where to grout; and (2) we ran the risk that Nicor and Michels would claim we spoliated evidence.

Q: So what did WCL do?

A: WCL tried using several technologies to investigate the ground conditions where Nicor and Michels tried to install the pipe, including ground penetrating radar, seismic refraction testing, seismic multichannel analysis of surface waves testing ("MASW"), and electrical

219 resistivity testing. Because the pipe was located 22 to 25 feet below the rails and under the water
220 table, these technologies did not give an adequate picture of what was going on under the track
221 substructure. So WCL had to file a lawsuit to obtain discovery of the information and documents
222 Nicor and Michels refused to share that would allow our geotechnical consultants and grouting
223 contractors to devise a comprehensive and effective grouting plan. In the interest of public
224 safety, the Court granted our motion for protective order allowing us to grout the derailment site
225 without fear that evidence would be spoliated and allowed us to have certain discovery on an
226 expedited basis.

227 **Q: What did WCL find out in discovery?**

228 A: We knew it was bad when we conducted our initial investigation, but the documents and
229 depositions revealed that it was much worse than we imagined. This explained why Nicor and
230 Michels refused to share information that would have allowed us to remediate the tracks sooner
231 and not burdened interstate commerce for so long. We found out that Nicor had retained K&S
232 Engineers, Inc. ("K&S") to do geotechnical exploration for Phase V of the Aux Sable pipeline
233 replacement project. K&S prepared a report in which it warned that extensive dewatering would
234 be required and that excavations extending below the initially observed water levels could result
235 in hydrostatic conditions and instability at the base of the excavations. K&S's recommendation
236 to Nicor were to install temporary monitoring wells/piezometers to better evaluate groundwater
237 level trends and to have full-time observation and monitoring by a geotechnical engineer. Nicor

238 did not disclose the K&S report to WCL when it applied for a permit to perform work pursuant
239 to the Plainfield License. Nicor also never installed the wells/piezometers and never retained a
240 geotechnical engineer to monitor the worksite. Nicor retained Michels to install the pipeline
241 under WCL's right of way, but never gave Michels the warnings sections of the K&S report that
242 predicted all of the adverse and potentially dangerous conditions that Michels crews encountered
243 when they were conducting the work.

244 **Q: Did WCL find out anything else in discovery that raised concerns about Nicor**
245 **performing work safely?**

246 A: Yes. The casing pipe to be installed under WCL's right of way was a 245-foot long
247 welded steel pipe that was 36" in diameter. Using a jack-and-bore installation method, the pipe
248 should have been advanced at a rate of one foot per minute without displacing surrounding soils
249 and materials to prevent the risk of a subsidence forming above the pipe. The process should
250 have taken about four hours. Instead, it took 18 days, from June 12, 2017 to June 30, 2017, was
251 never completed, and resulted in the derailment of an oil train.

252 The man put in charge of the project, Gator Branch, had only worked one bore prior to
253 this one. Gator was inexperienced and poorly equipped to be in charge. Gator's crew dug a bore
254 pit on the southwest side of WCL's tracks and a receiving pit on the northeast side of WCL's
255 tracks at the worksite. As predicted in the K&S report, extensive dewatering was required, so
256 Nicor and Michels spent three days using pumps to lower the groundwater enough so that steel

trench boxes could be placed in the pits and crews could begin work. The dewatering pulled ground water out from under the track structure.

They used an 18-inch pneumatic hammer to pound the pipe into the railroad embankment under WCL's tracks. After 115 feet, the pipe stopped moving despite repeated hammering. The crew spent two days removing dirt and other materials from the inside of the pipe with an augur. Their documents establish that they augured 105 feet past the end of the pipe, so instead of removing material from inside the pipe, they burrowed into the soil with no protection above from the formation of a subsidence. This risked a cave-in. During the auguring process, the crew encountered a boulder, which was another problem predicted by the K&S report that Nicor withheld from Michels. They used the augur to try to clear the boulder, but when they withdrew the auger, they found that the bore head had been ground down and nine of the auger's teeth were missing. Pneumatic hammering then resumed.

The engineering drawings specified where the pipe should emerge on the other side of tracks, but it did not emerge where it was supposed to. This is because of the method they used to guide the pipe. To determine whether the pipe was being installed on a horizontal plane, as called for in the engineering drawings, they put a smart level (like the ones you can buy at Home Depot to hang picture frames in your home) on the end of the pipe with the expectation that it would accurately reflect the position of the other end of the pipe stuck into the earth 245 feet away. To determine proper left-to-right alignment, Gator Branch testified that they stuck two sticks in the ground and "eyeballed it." Gator actually testified that: "after 40 feet you just got to

277 turn around, pray to God, and hope it goes straight.” Not surprisingly, the end of the pipe could
278 not be found on the other side of the tracks, so they spent the next three days digging around the
279 embankment with an excavator looking for the end of the pipe they lost. At this time, the
280 receiving pit was filling up with so much water, they thought the entire pit would cave in, so they
281 brought in additional dewatering equipment, which pulled more water out of the embankment
282 under WCL’s tracks. The dewatering system could not keep up, and sediment had to be cleaned
283 from the system twice.

284 After three days of searching, they found the end of the casing pipe. At this point, the
285 245-foot carrier pipe (which carries the gas) was welded to an isolation plate, which was then
286 welded to the casing pipe. They resumed hammering with the 18-inch pneumatic hammer, but
287 the pipe would not move, so they switched to a 24-inch pneumatic hammer. The pipe only
288 moved nine feet with the bigger hammer, so the crew used a tractor winch to pull the pipe on the
289 receiving pit side, while they hammered the pipe on the bore pit side. The hammer broke a weld
290 in the pipe, so the crew had to stop and re-weld the pipe. The crew then decided to remove the
291 winch and weld a hammer to the receiving end of the pipe. The plan was to hammer both ends of
292 the pipe in the same direction to get it to move. Except the pipe did not move the way they
293 planned.

294 As they were hammering both sides of the pipe, the receiving end of the pipe was pulled
295 out of the embankment 15 feet 6 inches, but the bore pit side of the pipe was only pushed into the
296 embankment 13 feet 6 inches. This means the pipe separated or broke and created a two-foot gap

297 under the tracks. Realizing this, the crew hammered the bore pit side of the pipe to try to close
298 the gap. Gator testified that he does not know how long this took, so there is no clear information
299 about how long the pieces of the pipe were separated under the tracks, or what kind of structural
300 damage occurred when the crews hammered the pipe to try to get the broken ends to meet under
301 the tracks. The next day, they augured the casing pipe from the receiving pit, but the auger was
302 not able to advance beyond 105 feet, so it was removed. Pneumatic hammering resumed for a
303 time, but was stopped when water was found in the carrier pipe—where water should not be. The
304 day after that, they continued auguring because the pipe would not move, but then noticed that
305 the material being removed was sandy with lots of water, not soil. They decided to leave the
306 problem for the next day and quit work about 5:00 on June 30, 2017. The train derailed two
307 hours later.

308 **Q: Was Nicor aware of all of the issues you've described?**

309 A: Yes. It was Nicor's project. Nicor had employees on scene every day supervising the
310 project. Nicor had daily meetings with Michels employees to get updates on the work. In order to
311 be paid for its work, Michels submitted daily reports to Nicor detailing the work it did. Despite
312 18 days of problems and reckless construction decisions, neither Nicor nor Michels ever
313 informed WCL of what was going on. A simple phone call may have prevented this derailment,
314 because WCL could have issued a stop order over the worksite. What is curious is that when the

SYNOPSIS

On June 30, 2017, at 6:51 p.m. CDT, southbound Canadian National Railway Company (CN) crude oil train U 76052-25, operating on the CN Leithton Subdivision, derailed 19 cars near the middle of the train at milepost 9.8. The accident occurred in Plainfield, Illinois, which is 38 miles southwest of Chicago, Illinois. There were no injuries as a result of this derailment.

The train was operating at a recorded speed of 40 mph when it experienced an undesired emergency application of the air brakes. The method of train operation in this territory was Centralized Traffic Control (CTC). The incident resulted in the derailment of 19 loaded rail tank cars of the 115 car crude oil unit train. Of the 115 cars in the train, two were buffer cars loaded with sand, one located at the front and one at the rear end.

All derailed cars contained hazardous material, UN 1267 Petroleum Crude Oil. There was an estimated 30,045 gallons released with no fire or lasting environmental impact. Plainfield Fire Department implemented a 1,000-foot evacuation area for nearby businesses; however, the impact of the evacuation was limited due to the fact the incident occurred after normal business hours. No private homes were evacuated or citizens displaced.

At the time of the derailment the weather was dusk and 72 degrees.

The total damage is estimated at \$2,999,799; \$257,573 to track, signal and structures and \$2,742,226 for equipment.

The sudden deterioration of the subgrade at the point of derailment (POD) where Michels Construction had been boring, indicates that the subgrade was compromised by the underground work.

The FRA's investigation determined the probable cause of this derailment was M506, track damage caused by non-railroad interference with track structure.

U.S. Department of Transportation Federal Railroad Administration		FRA FACTUAL RAILROAD ACCIDENT REPORT				FRA File #R4-2017-1211	
TRAIN SUMMARY							
1. Name of Railroad Operating Train #1 Canadian National - North America				1a. Alphabetic Code CN		1b. Railroad Accident/Incident No. R4-2017-05	
GENERAL INFORMATION							
1. Name of Railroad or Other Entity Responsible for Track Maintenance Canadian National - North America				1a. Alphabetic Code CN		1b. Railroad Accident/Incident No. 927769	
2. U.S. DOT Grade Crossing Identification Number				3. Date of Accident/Incident 6/30/2017		4. Time of Accident/Incident 6:51 PM	
5. Type of Accident/Incident Derailment							
6. Cars Carrying HAZMAT 113		7. HAZMAT Cars Damaged/Derailed 19		8. Cars Releasing HAZMAT 5		9. People Evacuated 0	
10. Subdivision Leithton		11. Nearest City/Town Plainfield		12. Milepost (to nearest tenth) 9.8		13. State Abbr. IL	
14. County WILL		15. Temperature (F) 72 °F		16. Visibility Dusk		17. Weather Clear	
18. Type of Track Main		19. Track Name/Number Main		20. FRA Track Class Freight Trains-60, Passenger Trains-80		21. Annual Track Density (gross tons in millions) 45.01	
22. Time Table Direction South							

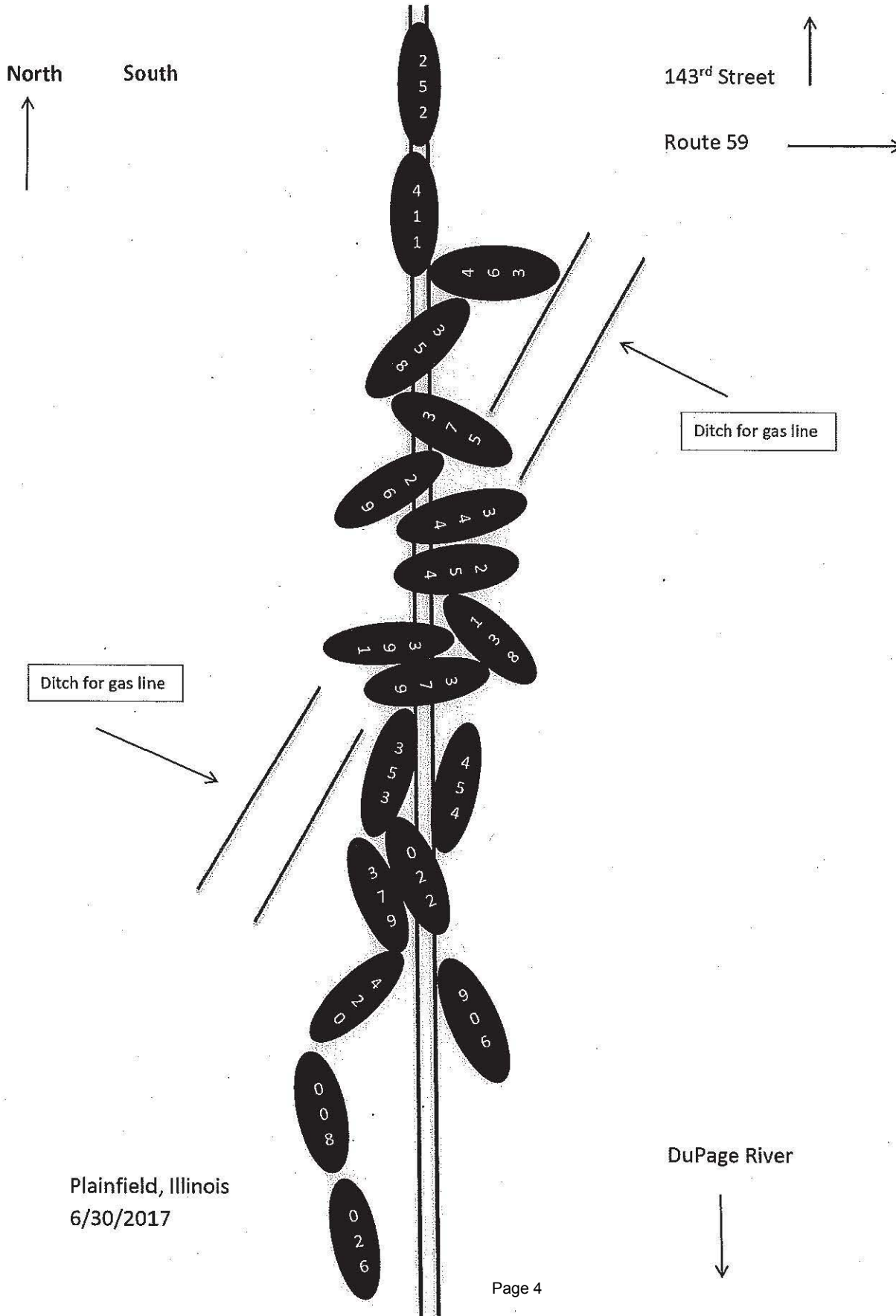
U.S. Department of Transportation Federal Railroad Administration		FRA FACTUAL RAILROAD ACCIDENT REPORT										FRA File #R4-2017-1211		
OPERATING TRAIN #1														
1. Type of Equipment Consist: Freight Train						2. Was Equipment Attended? Yes			3. Train Number/Symbol U76052-25					
4. Speed (recorded speed, if available) R - Recorded 40 MPH E - Estimated		Code R	5. Trailing Tons (gross excluding power units) 16143		6a. Remotely Controlled Locomotive? 0 = Not a remotely controlled operation 1 = Remote control portable transmitter 2 = Remote control tower operation 3 = Remote control portable transmitter - more than one remote control transmitter							Code 0		
6. Type of Territory Signalization: <u>Signaled</u> Method of Operation/Authority for Movement: <u>Signal Indication</u> Supplemental/Adjunct Codes:														
7. Principal Car/Unit		a. Initial and Number		b. Position in Train		c. Loaded (yes/no)		8. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box			Alcohol		Drugs	
(1) First Involved (derailed, struck, etc.)		XCRX 211026		78		yes					0		0	
(2) Causing (if mechanical, cause reported)		N/A		0		no		9. Was this consist transporting passengers?			No			
10. Locomotive Units (Exclude EMU, DMU, and Cab Car Locomotives.)		a. Head End	Mid Train		Rear End		11. Cars (Include EMU, DMU, and Cab Car Locomotives.)		Loaded		Empty		e. Caboose	
			b. Manual	c. Remote	d. Manual	e. Remote			a. Freight	b. Pass.	c. Freight	d. Pass.		
(1) Total in Train		2	0	0	0	2	(1) Total in Equipment Consist		115	0	0	0	0	
(2) Total Derailed		0	0	0	0	0	(2) Total Derailed		19	0	0	0	0	
12. Equipment Damage This Consist 2742226				13. Track, Signal, Way & Structure Damage 257573										
14. Primary Cause Code M506 - Track damage caused by non-railroad interference with track structure														
15. Contributing Cause Code M506 - Track damage caused by non-railroad interference with track structure														
Number of Crew Members														
16. Engineers/Operators		17. Firemen		18. Conductors		19. Brakemen		20. Engineer/Operator			21. Conductor			
1		0		1		0		Hrs: 8 Mins: 11			Hrs: 8 Mins: 11			
Casualties to:		22. Railroad Employees		23. Train Passengers		24. Others		25. EOT Device?			26. Was EOT Device Properly Armed?			
Fatal		0		0		0		No			N/A			
Nonfatal		0		0		0		27. Caboose Occupied by Crew?			N/A			
28. Latitude 41.616552000				29. Longitude -88.203853000										

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File #R4-2017-1211

SKETCHES

Sketch



NARRATIVE

CIRCUMSTANCES PRIOR TO ACCIDENT

The crew of Canadian National Railway Company (CN) Train U76052-25 included a locomotive engineer and a conductor. Both reported for duty at 10:40 a.m., CDT, on June 30, 2017, at the CN crew office at Shops Yard in Fond Du Lac, Wisconsin. The crew was to operate the train from Fond Du Lac to Joliet, Illinois.

Prior to reporting for this duty period, the engineer and conductor were released from covered service at 2:50 p.m., CDT, on June 26, 2017. Both crew members received more than the statutory off-duty rest period prior to reporting. Fond Du Lac is the home terminal for each of the crew members.

The crew's assigned freight train consisted of two head-end locomotives, two buffer freight cars of sand, 113 tank cars of petroleum crude oil, and two distributed power unit (DPU) locomotives at the rear of the train. The total length of the train was 7,122 feet with 16,143 trailing tons.

When the crew arrived at the on-duty location, they received all required train documentation and held a required job briefing. CN train U76052-25 received a Class 1 initial terminal train air brake test at the CN Symington Yard in Winnipeg, Manitoba, Canada, at 6:37 p.m., on June 27, 2017, which was conducted by the CN Yard crew that assembled the train.

On June 30, at 11:54 a.m., U76052-25 departed Fond Du Lac Wisconsin in CTC (Centralized Traffic Control) territory on the Waukesha Subdivision in a southward timetable direction. Timetable direction will be used throughout this report. At milepost 37.9 the train left the Waukesha Subdivision and advanced onto the Leithton Subdivision which is CTC territory in its entirety.

CN U.S. Hazmat Handling Instructions identifies this train as a Key Train which is authorized to operate at a maximum speed of 50 mph. Maximum speed on the Leithton Subdivision is 45 mph. All High Threat Urban Area's (HTUA) as identified in the timetable are restricted to 35 mph. The last speed restriction in regard to HTUA, was between milepost 25 and milepost 14 on the Leithton Subdivision.

The train approached the accident area, near Milepost (MP) 9.8, on the single main track. The locomotive engineer was seated at the control stand on the right (west) side of the control cab and was operating the train. The conductor was seated at the desk on the left (east) side of the control cab. In this area of the railroad, the track is tangent for over two and ½ miles preceding the derailment.

The train was operated at speeds between 35 mph and 44 mph over the previous ten minutes preceding the derailment. The train was traveling at a recorded 40 mph immediately prior to the incident.

THE ACCIDENT

At 6:51 p.m., CDT, on June 30, 2017, southbound CN Train U76052-25 had an undesired emergency application of the air brakes in Plainfield, Illinois which is located 38 miles southwest of Chicago, Illinois. The weather conditions at the time of the derailment were reported to be dusk and 72 °F. The locomotive

event recorder download from the controlling locomotive, CN 2272, indicated the speed was 40 mph at the time of the undesired emergency air brake application.

The conductor contacted the CN train dispatcher, via radio, to report the occurrence. The conductor proceeded outside to make a walking inspection of the train. Continuous communication was established between the conductor and engineer prior to leaving the cab of the locomotive. During the walking inspection, the conductor discovered the first of the derailed rail cars, lines 78 through 96 as indicated on the train consist, to have derailed in an accordion fashion.

The conductor encountered emergency responders and requested to speak to the Incident Commander to which he relayed information about the train and its commodity. During this time, the engineer remotely powered off the distributed power at the rear of the train, which was subsequently verified by the conductor. Additional emergency responders were notified and began to arrive on scene. A command center was established by the Plainfield Police Department at the church located at 24199 Riverwalk Ct, in Plainfield, approximately 1100 feet southeast of the derailment site. There was no fire associated with this derailment. The subsequent inspection of the derailment site indicated that a total of 19 cars were derailed with five cars breached and releasing commodity.

The derailment occurred on tangent track. There were no injuries to the two crew members or the public. The train crew members were post-accident drug tested under FRA authority at Silver Cross Hospital in New Lenox, Illinois.

The estimated total monetary damage of the derailment was \$2,742,226 to equipment and \$257,573 of damage to track, signal and structure.

There was no fire, no injuries and no home evacuations due to the derailment. This was single main track, not used for passenger service operations. This is a High Hazard Flammable Train (HHFT) route. This accident would not have been PTC preventable.

POST ACCIDENT INVESTIGATION

The FRA, CN Management and CN track employees were notified, along with Emergency Responders, and began arriving on the scene.

The crew of train U76052-25 indicated that they felt a soft spot with the locomotive "bottoming out" at a location recently excavated, prior to the undesired emergency brake application. Inspection of the entire train by both the FRA and CN mechanical personnel revealed that 25 cars ahead of the general pile up, that had not derailed, showed signs of impact to the axles.

Initially, there was an evacuation of a half mile perimeter surrounding the derailment site which was then shortened to 1000 feet that only included an industrial park near the derailment site. Due to the readings produced by air monitoring equipment of the Rochester, Minnesota, Chemical Assessment Team (RCAT), positioned near the breached cars, the evacuation continued through the morning. At 12:01 p.m., CDT, on July 1, 2017, RCAT reduced the evacuation to a 400 foot radius.

On July 1, 2017, the breached cars were trans loaded and CN track employees, Hulcher Services and Cranemaster began the clean-up of the damaged equipment and the process of installing 15 new track panels.

The FRA reviewed the outward facing camera from the lead locomotive of U76052-25 which showed a 10-foot-long by 4-foot-wide area of the roadbed, shoulder and cribs to be vacant of ballast at the location of recent boring by a contractor installing a new natural gas pipeline at the point of derailment,

approximately 20' to 25' northwest of the existing gas pipeline that was being replaced.

On July 2, 2017, a FRA track inspector inspected the area prior to operating over the derailment site. The main track was re-opened and the first train to traverse the location was the M34241-30 at 6:27 a.m., CDT, at 10 mph with no issues. The speed was slowly increased to 15 mph; 17 trains operated over the area without any track settlement issues. The CN raised the track speed to 20 mph on 7/4/2017 and kept the 24-hour monitoring in place.

During FRA's investigation into the incident the train crew, CN Road master, Michels Pipeline Corporation supervisors, MiCon Dewatering contractors, CN Design and Construction engineers as well as Nicor engineers were interviewed.

ANALYSIS AND CONCLUSIONS

Analysis- Toxicological Testing-

The accident met the criteria for 49 CFR Part 219 Subpart C post-accident toxicological testing. The train crew was tested under this authority at a local hospital. The test results for the crew members were negative.

Conclusion:

Impairment of the crew was not a causal factor in this accident.

Analysis-Fatigue analysis of train crew members:

FRA used a fatigue analysis software program to create an analysis model for each crew member's overall effectiveness rate at the time of the accident. This model was produced through calculations made using the collected work/rest data from each of the crew members. FRA uses an overall effectiveness rate of 77.5 percent as the baseline for fatigue analysis, which is equivalent to blood alcohol content (BAC) of 0.05. At or above this baseline, FRA does not consider fatigue as probable for an employee. Software sleep settings vary according to information obtained from each employee. If an employee does not provide sleep information, FRA uses the default software settings.

FRA obtained fatigue related information, including a 10-day work history, for the employees involved in this accident.

Information for the train crew assigned to train U76052-25:

Fatigue Conclusions:

1. Locomotive Engineer: U76052-25

Sleep setting - Excellent

Overall effectiveness = 97.48%

Lapse Index = 0.5

Reaction Time = 102.59%

Chronic Sleep Debt = 4.87

Hours of Continuous Wakefulness = 11.68

Time of Day 18:41

BAC Equivalent = <0.05

Finding: Fatigue was not probable for this employee.

2. Conductor: U76052-25

Sleep setting - Excellent

Overall effectiveness = 95.46%

Lapse Index = 0.75

Reaction Time = 104.76%

Chronic Sleep Debt = 5.32

Hours of Continuous Wakefulness = 11.68

Time of Day 18:41

BAC Equivalent = <0.05

Finding: Fatigue was not probable for this employee

Conclusion:

FAST indicates that fatigue was not the probable cause for the crew members at the time of the accident.

Analysis-Locomotive Engineer Operating Performance:

FRA analyzed the event recorder data provided by CN for lead locomotive CN 2272.

Conclusion:

The locomotive engineer was in compliance with all applicable railroad timetable speeds and train handling requirements and not a causal factor in the incident.

Analysis-Training and Certification Records:

Both engineer and conductor were in compliance with 49CFR Part 240 and 242 at the time of the incident.

Conclusion:

Training and certification of both crew members were current and not a causal factor in the incident.

Analysis-Mechanical:

A Class 1 air brake test was performed at 6:37 p.m., CDT, on June 27, 2017, by the yard crew that assembled train U7650-25 at Winnipeg, Manitoba, Canada. After the air test, no additional cars were picked up or set out prior to the accident. FRA reviewed the relevant records for the equipment involved in the incident and noted defects/damage caused by the derailment.

Conclusion:

The condition of the mechanical equipment was not a causal factor in this derailment.

Analysis-Hazardous Materials:

A total of 19 cars of petroleum crude oil derailed.

Line 83, XCRX 211022 (DOT 111A100W1), a loaded tank car containing 25,367 gallons of petroleum crude oil, UN 1267 - Class 3- Flammable liquid. XCRX 211022 experienced a breach and released an estimated 2,620 gallons of product. FRA inspection revealed a 3-inch-long by 3-inch-wide puncture in the outer jacket and a 3 inch by 3 inch split in the inner tank compartment, resulting from being struck by

another piece of equipment during derailment.

Line 87, XCRX 210391 (DOT 111A100W1), a loaded tank car containing 25,431 gallons of petroleum crude oil, UN 1267 - Class 3- Flammable liquid. XCRX 210391 experienced a breach and released an estimated 21,456 gallons of product. FRA Inspection revealed a 9-inch-long by 5-inch-wide inner tank tear within the center of the right side of the car, resulting from being struck by another piece of equipment during derailment.

Line 89, XCRX 210254 (DOT 111A100W1), a loaded tank car containing 25,394 gallons of petroleum crude oil, UN 1267 - Class 3- Flammable liquid. XCRX 210254 experienced a breach and released an estimated 5,594 gallons of product. FRA Inspection revealed a 25-inch-long by 28-inch-wide inner tank puncture on the B-head end, resulting from being struck by another piece of equipment during derailment.

Line 90, XCRX 210344 (DOT 111A100W1), a loaded tank car containing 25,417 gallons of petroleum crude oil, UN 1267 – Class 3-Flammable liquid. XCRX 210344 experienced a breach and released an estimated 217 gallons of product. FRA Inspection revealed the car was leaking from the bottom outlet valve that was opened during the derailment but the valve assembly and valve was still in place.

Line 94, XCRX 210463 (DOT 111A100W1), a loaded tank car containing 25,435 gallons of petroleum crude oil, UN 1267 – Class 3-Flammable liquid. XCRX 210463 experienced a breach and released an estimated 160 gallons of product. FRA Inspection revealed that the bottom outlet adaptor was torn off at the bottom outlet valve mounting flange and the handle was gone, resulting from being derailing and being dragged on the ground.

FRA reviewed all emergency response, hazardous material documents and equipment noting no defects.
Conclusion:

Hazardous materials were not a causal factor in the cause of this derailment.

Analysis-Signal:

The area of the derailment is Centralized Traffic Control (CTC). The method of operation is signal indication. FRA reviewed the relevant records for the equipment involved in the incident and noted no defects.

Conclusion:

Signal equipment was not a causal factor in this derailment.

Analysis-Track:

The track structure in the area of the accident consisted of a single main track oriented in a north-south direction. The rail used in the area is 136-pound continuous welded rail manufactured by Bethlehem Steel in 2000. Both the east and west rails through the area were seated in 136RE-pound double-shoulder eleven-inch tie plates attached atop of timber cross-ties. The rails were fastened through the tie plates to standard wooden crossties with conventional 6-inch cut track spikes with an anchor pattern of every-other tie through the area. Crossties through the area were 8 foot, 6-inch hardwood ties in good condition.

The track around the derailment was last inspected on June 29, 2017, by a qualified CN track inspector.

The track inspector noted "fouled or insufficient ballast failing to maintain proper geometry" at mile 8.95 while conducting his hi-rail inspection between mile 5.52 and 20.50. FRA investigation also reviewed the previous 60 days of track inspection records for the Leithton Subdivision, during this time CN track inspectors recorded three track defects and one switch defects since May 1, 2017, between mile 5.52 and mile 20.50 or at the derailment site of mile 9.8. After the main track was restored at mile 9.8, CN operated a rail detector car through the area and identified zero rail defects in the area.

FRA reviewed video from the lead locomotive of Train U76052-25 which showed a large void in the roadbed on the east rail at milepost 9.8. FRA also reviewed still photos retrieved from trains that travelled over the area prior to the derailment on June 30. At 2:50 PM there is no indication of any disturbance to the roadbed. The next train through at 5:16 captured a small void on the shoulder of the east rail. The next train at 5:37 captured a significant increase in the size of the void. At 6:51 PM Train U76052 (derailed train) head end video shows the large void on the shoulder of the east side of the roadbed at milepost 9.8.

From May 11, 2017, and July 31, 2017, between mile 5.52 and mile 20.50 CN geometry cars identified zero defects on the Leithton Subdivision:

The most recent test for internal defects (cracked or broken rail) as required by Title 49 Code of Federal Regulations 213.237(a) was conducted by CN during a special inspection on July 2, 2017, two days after the derailment at mile 9.8. CN records indicate no rail defects were identified between mile 9.87 and 10.3. From January 1, 2017 to June 30, 2017, between mile 5.0 and mile 15.0, CN's rail detector has found four rail defects on the Leithton Subdivision. All the existing defects listed below were properly remediated per CFR Title 49, Part 213.113 and were not a contributing cause to the derailment:

- 5/17/2017 DFW (Broken or defective weld) 10%* mile 9.63 Remedial Action: Monitored (existing PSO)
- 6/26/2017 DFW (Broken or defective weld) 10%* mile 9.73 Remedial Action: Monitored (UTT Existing PSO)
- 6/26/2017 HSH (Horizontal split head) 2" mile 6.15 Remedial Action: Applied TSO.
- 6/27/2017 DF (Detail Fracture) 15%* mile 12.70 Remedial Action: Monitored (UTT Existing PSO).

*Percent of existing rail head cross-sectional area weakened by defect.

In the two weeks leading up to the derailment there was a reported 1.53" of rainfall in that area. There were multiple days where Michels Pipeline canceled the boring project due to the heavy rainfall according to their daily reports. Dewatering operations were done by MiCon and was ongoing due to water saturation at the boring site.

Conclusion:

FRA's investigation determined the point of derailment was near mile 9.8, a location where a distinctive catastrophic event happened which was determined by the large hole in the sub-grade and the amount of rail cars piled up in this area. The hole developed between 2:50 PM and 6:51 PM.

Analysis-CN Third Party Contractor (Michels):

On June 3, 2017, Railpros contacted the CN through email to confirm that they had a flagman available for 6/13/17 through 6/17/17 and 6/19/17. June 19, 2017 was the last day for Railpros to provide flagmen

services for Michels to do their boring under the tracks. From June 20, 2017 through June 30, 2017, there were no flagmen required by the CN for Mi-con continue with their dewatering operations.

Conclusion:

The CN was aware of what days there was a flagman but may not have known what days boring was to be done. There was clear communication for the days that work was to be done at the boring location. Daily reports of the work performed was not reported to the CN. The CN would only be contacted when Railpros would let them know the dates that a flagman was needed to be on site.

Analysis-CN Third Party Contractor (Golder Associates):

As part of CN's investigation of the derailment, they hired a geotechnical engineering firm to provide expertise in what may have caused the sinkhole formation and subsequent derailment. In a detailed report provided to the FRA titled, Interim Evaluation of Potential Causes of MP 10.03 Leithton Subdivision Derailment, Golder Associates provided background of the project, testing conducted, site conditions, subsurface conditions and potential causes of the subsurface loss of integrity at the derailment site. The report was based on information available at the time and various documents requested of Michels and MiCon were not provided.

Conclusion:

It is the opinion of Golder Associates "that the emergence of a "sinkhole" at the surface of the rail embankment and the subsequent derailment are directly attributable to construction of a pipeline beneath the tracks in the area of derailment. While under some very specific circumstances "sinkholes" and other voids might occur or exist from other causes, the specific site subsurface conditions and timing of the observed sinkhole and derailment render other causes implausible."

The CN determined the cause of this derailment to be classified as code M506, Track damage caused by non-railroad interference with track structure.

OVERALL CONCLUSIONS

CN train U76052-25 experienced an undesired emergency air brake application after the derailment of 19 rail cars at mile 9.8. This location (41.616552 latitude, -88.203853 longitude) was identified as the point of derailment.

Train handling was not a causal factor in this derailment. The analysis of the effectiveness of the crew members did not suggest that fatigue may have been a factor. The crew members were found to have operated the train in conformance with their rules and were awake at the time of the derailment.

Mechanical conditions of the rolling stock were not a causal factor. FRA reviewed the relevant records for the equipment involved in the incident and noted only damage caused by the derailment.

Signal appliances were not a causal factor in this derailment. FRA reviewed the relevant records for the equipment involved in the incident and noted no defects.

Hazardous materials were not found to be a causal factor in this derailment. FRA reviewed the relevant

records for the equipment involved in the incident and noted no defects.

PROBABLE CAUSE AND CONTRIBUTING FACTORS

The FRA's investigation of the derailment site, the surrounding area, and CN records, determined there were several factors indicating the primary cause to be failed sub-grade due to contractor boring and dewatering work that was done underneath and near the track near mile 9.8.

In response to the derailment on June 30, 2017 in Plainfield, IL., the CN has continued to monitor and survey the location where the new natural gas pipeline was inserted under the road bed after every train passes the location, with sub-contractors Golder Associates and Benesch. The water table is monitored periodically at that location as well. The CN has also continued to enforce a 20-mph speed restriction as a precaution. The CN Design & Construction has made an additional requirement for contractors to have all plans and drawings stamped and approved by a Professional Engineer (PE) prior to being submitted to the CN even though the plans that were submitted by Nicor for this pipeline replacement project did have a PE stamp. CN Chief Engineer stated that a contractor flagman will remain onsite throughout the duration of the work along with a Geo-Technical Engineer from Golder Associates to monitor the water table including giving Mi-con a specific water table level not to exceed during dewatering operations. Following each train, station measurements will be taken to monitor for settlement. Due to pending litigation, CN and Nicor have agreed to suspend work at the new location, derailment site, and remove the existing 36-inch line pipe from the 42-inch casing pipe at the old location. A new 36-inch line pipe will then be installed in the existing 42-inch casing at the original pipeline location.

FRA determined the probable cause of this derailment to be classified as code M506, track damage caused by non-railroad interference with track structure. The work being done by Michel's Pipeline Corporation appears to have disrupted the track structure and along with the amount of rainwater and high water-table, a void in the substructure is the probable cause of the roadbed collapsing.

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ATTACHMENTS

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CERTIFICATE OF SERVICE

The undersigned, an attorney, certifies that a copy of the foregoing response of Iowa Northern Railway Company was served via email upon Robert W. Goodwin, attorney for the Petitioner, this 30th day of July, 2020.

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